CHECKERING & CARVING of GUNSTOCKS

by Monty Kennedy

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The Checkering and Carving of Gunstocks

By

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With designs and patterns from other leading American Gunmakers—together with notes and data regarding their layouts, tools and individual methods of checkering and carving.

Far be it from this hombre to stand on his hind legs and say "This is *the* way to do a checkering job." Nope, there are nearly always variations and different roads that get you to the desired destination, and I reckon the same goes for checkering a gun handle. There is even disagreement as to which is the proper term, "checkering" or "checking." Doggoned if I know, I grew up where they said "checkering" so, right or wrong, that is the term I will use.

So to the gent that does not have a clear idea of how to go about dolling up his pet smokepole, I will try my utmost to get a trail built, with the aid of photographs and illustrations, that will guide him to the realization of a good checkering job. I know it will work, if skillfully executed. It has worked for me and others who have followed these directions.

To the reader who already knows how to checker, let me say that I hope you may find in this work something more than pastime reading, because for sure there is far better literature than this available for that purpose. You may not agree with the methods used or some of the opinions herein expressed, but remember, I said I would try to build *a* trail, not *the* trail. Sure, I know there are other ways of killing a dog than by choking the poor cuss to death with butter.

Then too, it is very likely that many an individual will discover as he progresses, especially after the first job, little kinks, short cuts and aids that will not be mentioned here. More power to him, and I would appreciate it if he would let me in on any such good deals.

There are several types of checkering that can be applied to a gunstock; however, the most popular is the sharp crested diamond, length about 3½ times its width. Because it is the most common, popular and practical, and the easiest to do, let us confine ourselves at the present time to that type. Later on we can go into a little more variation in types, but let us keep this as simple as possible lest *I* get confused.

Of course we can not do any type or style of checkering without tools and equipment, but before we belabor ourselves with manual exertion, let us just beat our gums for a spell over some of the questions that might arise pertaining to checkering in general.

Since this is to be a custom job, and you hope, the apple of your eye, for the love of all that is beautiful and holy, *let us not rush things!* Let us not start out to scratch up your pride and joy before the "oil" finish is ripe. O. K. maybe it really is oil and nothing else, but all the more reason for giving it plenty of time to cure. And be it straight linseed oil or a combination of oil and spar varnish, we want the pores well filled and the finish cut down to the surface of the wood. *But,* and this is a big one with me, be extremely sure you have no silicate filler in that wood, unless you want to be overhauling your checkering tools every time you look up to get your eyes uncrossed. Nothing will beat a good spar or bartop varnish for a filler, the latter being the cream of the crop for my dough. Neither do I like pumice for a cutting agent. Yeah, I hear a howl of protest, but I am sticking to my guns. The goldanged stuff imbeds in the surface and does not do tools a bit of good. Besides pumice has a habit of cutting the soft spots faster than the hard ones, which may be either filler or wood.

My pet method is to use wet-or-dry sandpaper, with turp diluted linseed oil, one part of each. Unhuh, it is slow maybe, but a 280-grit for preliminary work, followed by 320, then 400 gives a good finish, as nearly as is possible, free from abrasive. A light finish rub with linseed oil and rotten stone, if you wish, will add lustre if the finish is good and hard. Here I am sticking my nose into stock finishing but since that part of finishing bears closely on checkering, I think we are entitled to a word or two on that subject.

Quite often a stock is checkered immediately after the last rub down, but let us give this job more time, if possible. The surface will be harder and the tool will cut cleaner and better. Many woods, though hard enough, are inclined to fuzz under the checkering tool and with these especially, it is wise to allow

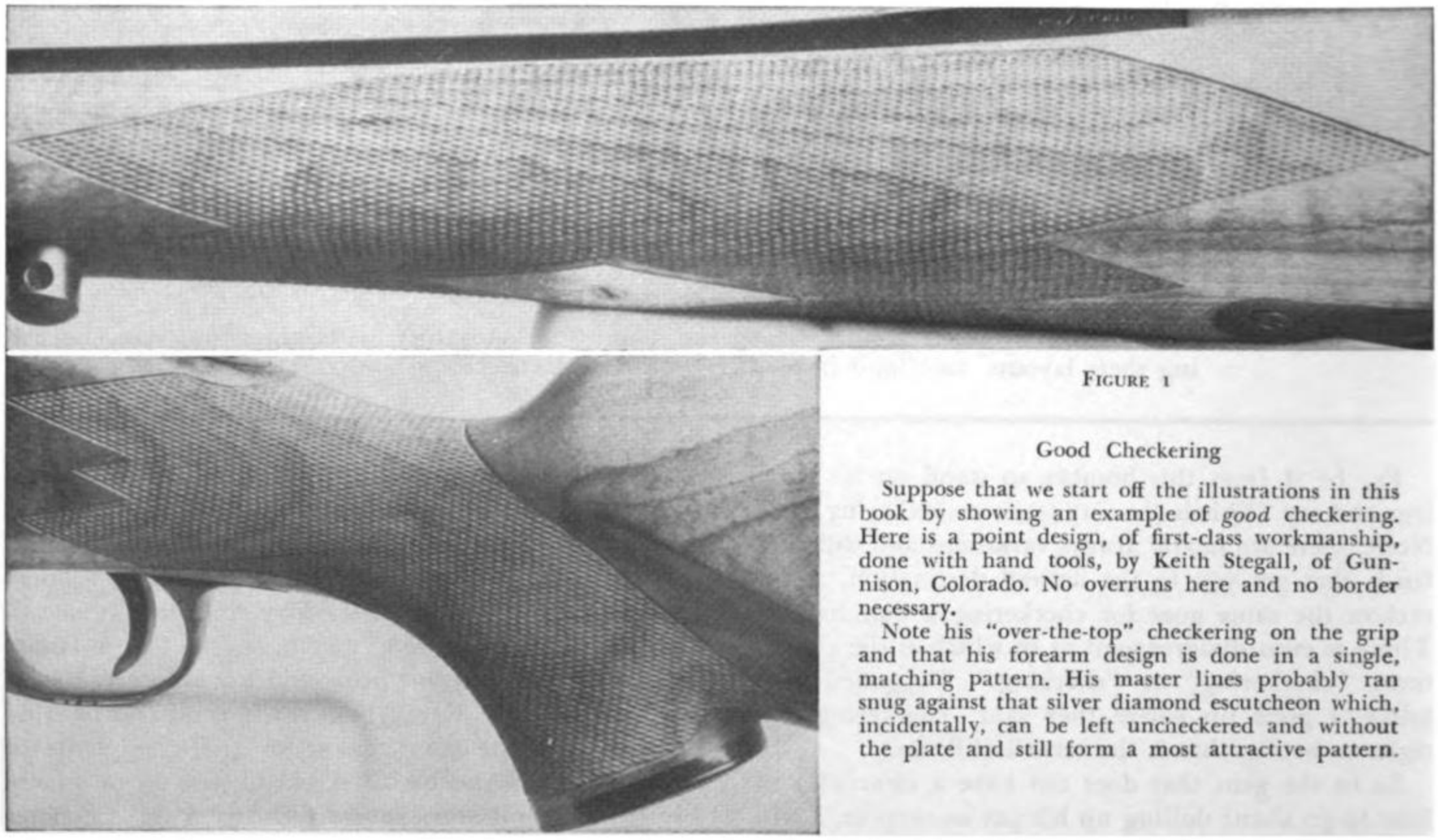

FIGURE 1

Good Checkering

Suppose that we start off the illustrations in this book by showing an example of *good* checkering. Here is a point design, of first-class workmanship, done with hand tools, by Keith Stegall, of Gunnison, Colorado. No overruns here and no border necessary.

Note his "over-the-top" checkering on the grip and that his forearm design is done in a single, matching pattern. His master lines probably ran snug against that silver diamond escutcheon which, incidentally, can be left uncheckered and without the plate and still form a most attractive pattern.

the finish to thoroughly harden. If your rifle is otherwise ready to put together, it may be fully assembled, and shot if desired, or just admired for a few days while allowing the finish a little more curing time.

On the other hand maybe you are breaking your neck to get your smoker in shape for buck season, varmint or whatever. Hope you are doing better than I did on my current private project. I started four months ahead of deer season, thinking I would have lots of time to get my .270 Magnum wildcat all in shape, mit Zeiss Zielvier attached, stock nicely finished and checkered. Did I make it? Hell, no! The iron is still in the white and the stock not even satisfactorily filled. You know how it is with the shoemaker's kids. Maybe I will have it ready next season.

So you are the doc. It is your child and we will make a good job of it either way. But do not rush the actual checkering! Better your gun is forever slick than botched up with a hurried job of check-

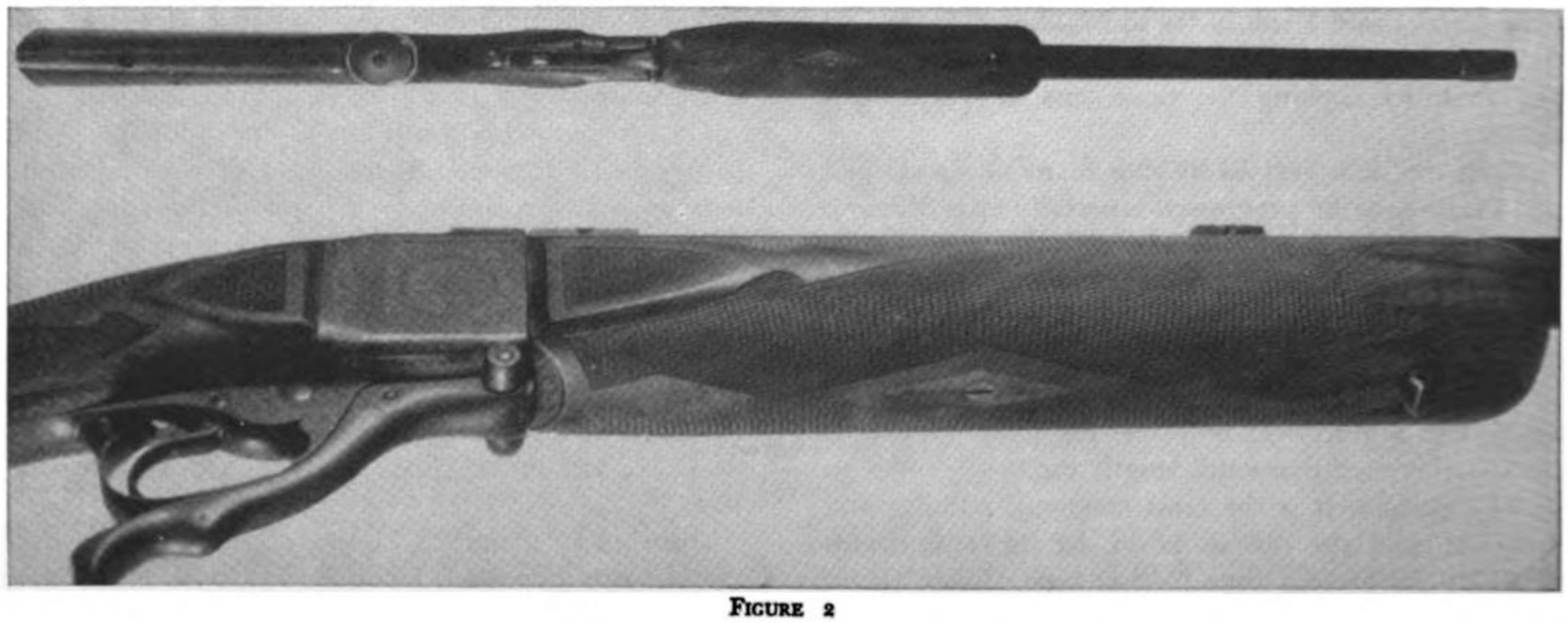

FIGURE 2

GOOD CHECKERING AND A GOOD DESIGN TO FIT THE JOB

A well-turned-out Farquharson, as stocked and finished up by the late Alvin Linden. Note that fore-and-aft panels have been artistically worked into both butt and forearm and that the checkering covers these panels yet is also a harmonious part of the entire pattern.

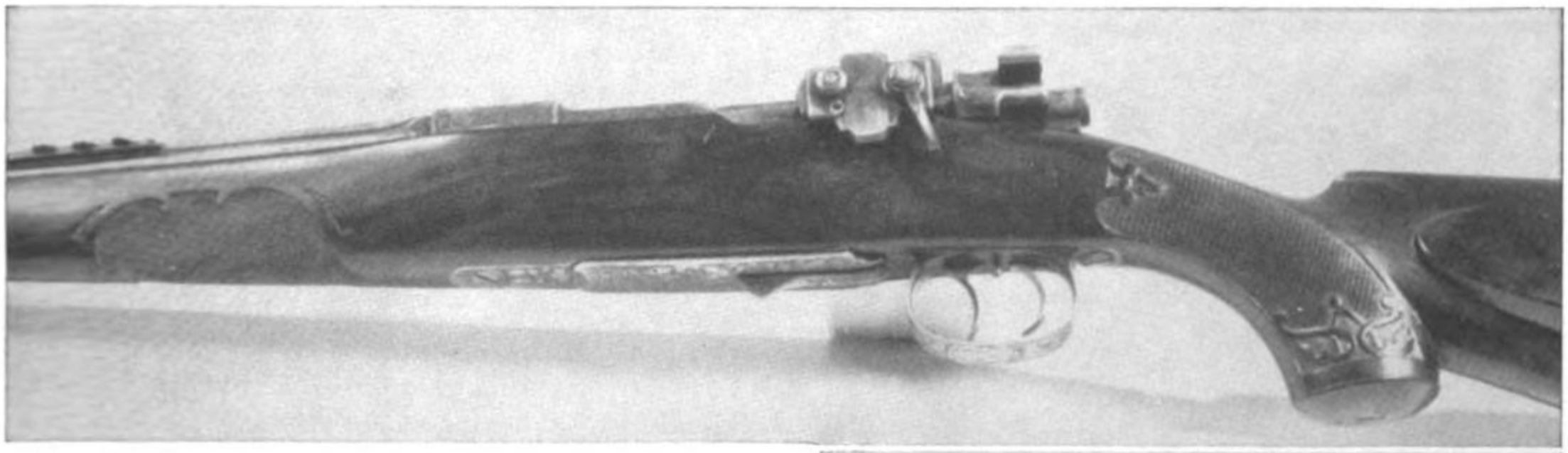

FIGURE 3

This rifle was built by the late Fred Adolph of Genoa, New York, probably about 35 years ago. It is an example of fine workmanship in both metal and wood work. In design and lines, this stock leans heavily towards the German style of sporting rifle stocks then so popular in this country before the bolt action rifle had become popular.

Note the thin comb with its slight undercut, with cheek-piece set too low and too far back to meet with modern American rifleman ideas and approval.

A close up of the grip shows the effect of wear and the accumulation of oil and dirt on the fine checkering, which is about 25-lines to the inch. This rifle now belongs to Todd Oviatt, Vice-president of Pfeifer Rifle Company and nephew of the original owner. *Photo by Paul Wolfe.*

ering, for a poor checkering job is worse than none at all.

Fortunately you selected, or happened to get, a dense, close-grained blank, which was a dang smart bit of doing, for a good strong stock, a fine finish and a clean sharp and durable checkering job. That wood would handle a 24-line job, but since we are new in the racket, let us stick to 20 lines per inch. Some may criticize this as being too fine for a beginner, but from my experience I am inclined to think it is O.K. Twenty-line is large enough to see with the naked eye, or one properly fitted with glasses. A reading glass of 3 or 4 power is swell for pointing up or putting on the finishing touches.

When a 20-line job is properly executed, it is a pretty classy affair, being fine enough for good looks and yet it affords a practical gripping surface, even after the sharp points wear a bit smooth, as they are bound to do with use. I am not condemning the finer work, it is beautiful when well done, but it is not as durable, between the points wearing down and the V grooves filling with dirt and oil. The finer the checkering the smoother it gets with use. In Figure No. 3 we see a wrist panel from a beautiful Mauser, built by the late Fred Adolph: the checkering is about 25 lines per inch. Thirty years or so of handling has worn the crests from the diamonds and filled the grooves with an accumulation of oil and dirt. It was quite a job to clean up, the first course being to scrub the checkering with a stiff toothbrush and lacquer thinner. A half-hour's work of soaking and scrubbing removed most of the dirt and a couple of passes with a finishing tool brought the checkering back to life. The wood is a fine hard American walnut and it did its share admirably to preserve the work of that master gunsmith.

Spacing can run from 16 to 32 lines per inch, maybe finer, but I have never seen it. Around 25 lines per inch, and finer, is "glass work" for most eyes and requires an experienced and steady hand. Personally, I think there are more hilarious ways of going nuts than by doing superfine checkering, although a stock-maker friend of mine seems to thrive on it.

As a rule, checkering is more commonly found on the sporter types than on target and bull gun. It seems to me though, the latter have just as good a right to such decoration as a sporter. There are bench rest shooters who advocate checkering on the under side of the fore end where it bears on the rest. The idea is to increase friction for control of the recoil. The main difference is in the size of the panels, due to the usual difference in the size of the stocks. As a rule a target type or bull gun will stand coarser checkering on account of the more bulky stock.

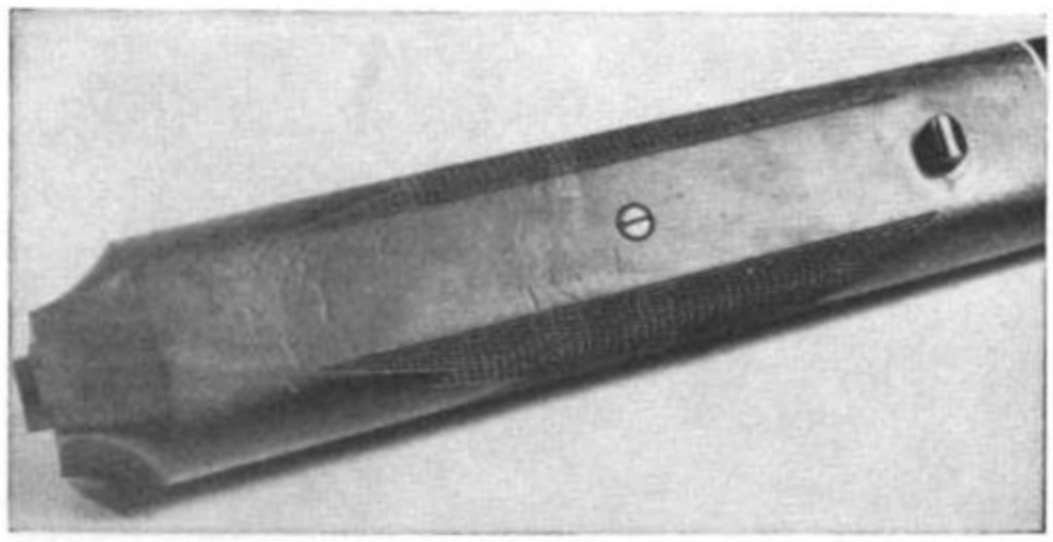

FIGURE 4

Photo of the forearm from one of Joe Pfeifer's pet varmint rifles, a Sharps-Borchardt .224 P.R. Joe is careful of his rifles, yet one can esaily see what three years of rest shooting of one type or another has done to this forearm. The wood in this case is a good grade of Oregon walnut, close-grained and hard. From this photo one may form an idea of what would have happened to any checkering that might have inhabited the bottom of such a forearm. *Photo by Paul Wolfe.*

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A person should pretty well have in mind the design he wants to scratch on his weapon before the commencement day. There are various designs and, with variations, there is no end to the number that may be cooked up. The full size pattern sheets show some of the favorites, with the same ones along with others appearing on pages throughout this work. Nearly every stockmaker has his pet designs, plenty of which have been rounded up to show in these pages.

The odd thing is that some of the plainest appearing are by no means the easiest and some of the more intricate looking are really the easiest to do. Maybe you will say "Phooey, why hand us that line?" That is understandable as there was a day when I would have said the same, and not too much experience was required to educate me.

Take that No. 8 for instance, with a fleur-de-lis and the ribbon wandering thru it. Not bad looking, is it? While the actual time consumed to execute will be much greater, it is really no more difficult than some plainer ones and actually is less complicated to lay out and do right than a point design like No. 5. This No. 5 is an old pet of mine, pretty plain looking you say, yes, maybe so, but quiet, subtle class is there just the same. There is no fleur-de-lis, no curliques nor ribbons, but well done it can hold its own in any company. On many of the finer pieces both domestic and foreign, you will find the point design prevailing. There is a trend in this country in later years, toward the scroll designs and many a truly fine piece is so done, so it is not for me to say which is the most appropriate.

And you ask, why such a gosh awful big space on the bottom of the fore end left plain? Well, that is not just happen so or because of a big rush; not laziness either. Lots of gents do considerable rest shooting, either at the range, out of a car window or whatever rest may be handy. Ordinarily the shooter is going to rest his piece on something that will not harm even checkering, but sooner or later, and usually sooner, when rest shooting is done, the under side of the fore end is going to come in contact with that which was unintended. Plain wood is going to take the beating better and with less complaint than checkered wood.

Figure No. 4 illustrates that point pretty well. That fore end belongs to one of Joe Pfeifer's pet varmint rifles, a Sharps-Borchardt .224 P. R. Joe is about as careful of his rifles as any man I know, and the wood is hard Oregon walnut, yet you can see what will happen in the most careful hands. The stock was about three years old at the time it was photographed.

It has always been hard for me to make a choice between the practical advantages of No. 5 and the less practical but more beautiful No. 7. My advice though is to start with something on the order of No. 1. Why? Well, it is like this. With No. 1 we can lay out the entire outline, grip and fore end, before the checkering is started. The outline itself is such that all checkering lines can be carried out without interruptions. In No. 8 or No. 9 for instances, the fleur-de-lis breaks several lines which have to be picked up and carried on for various distances. We have to watch our Ps and Qs in doing that, to keep them in line and space.

On the subject of durability of checkering there is some room for argument. My stand is for the 90° variety, that is, made with a 90° V tool. Many fine craftsmen use the 60° tools and with them do very fine work; invariably it is around 25 lines per inch

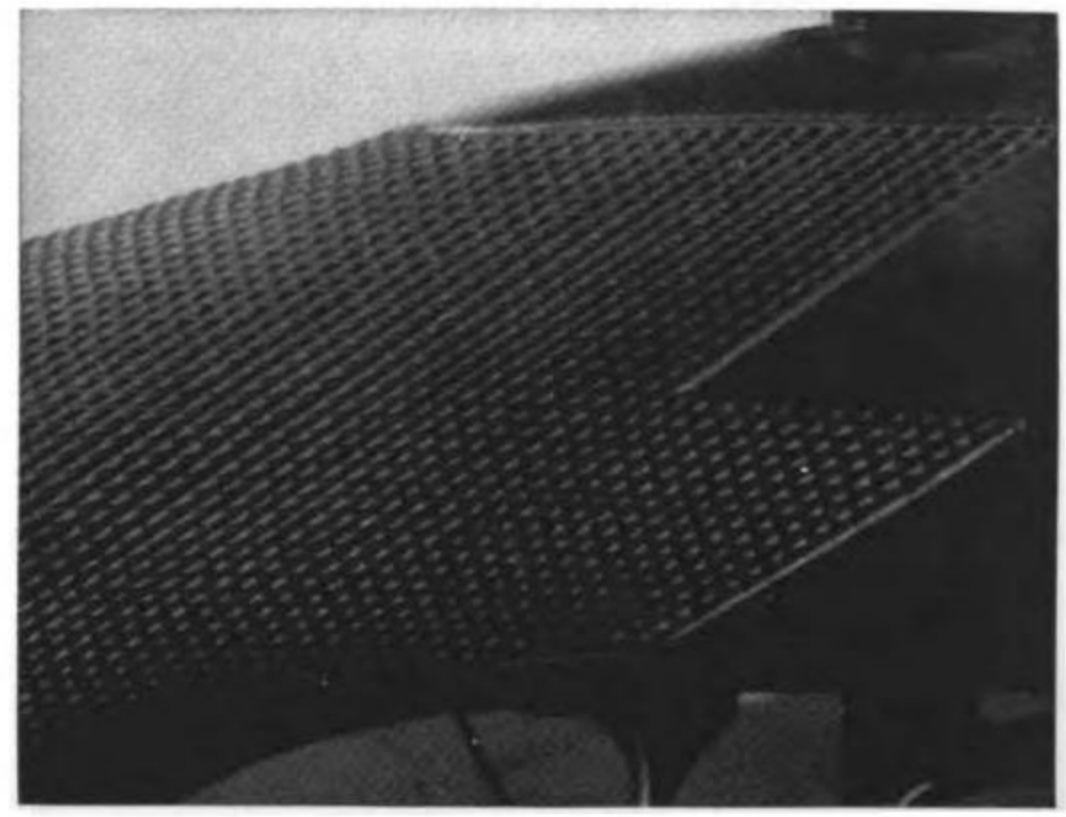


FIGURE 5

Illustrating why a border around the pattern is *sometimes* a necessity. Take your magnifying glass to this job and note the many runovers at the ends of the lines—some of which were not quite covered up.

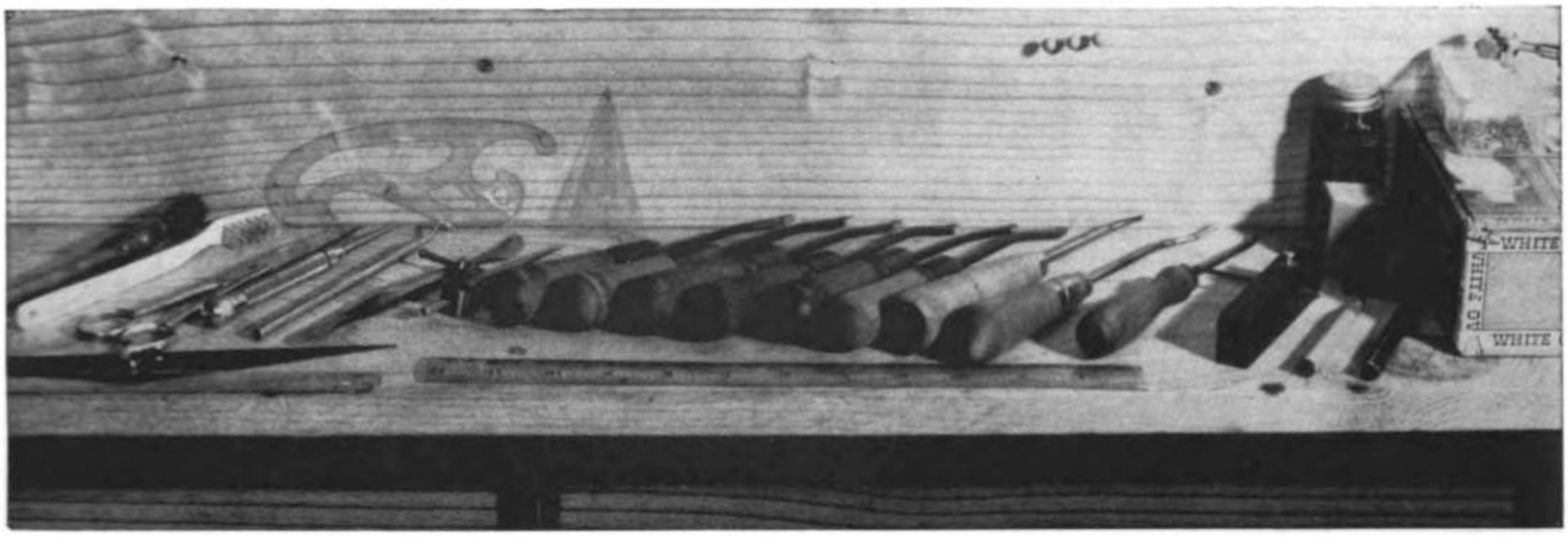


FIGURE 6

This is the author's layout of checkering equipment. All that is, except the Dem-Bart engine and shaft, the handpiece may be seen on the plastic box on top of the White Owl Ceegar box. All these tools generally get a workout during a job. At one time there was insignia painted on the handles for quick identification, however I notice that most of it has become a bit too dim for the camera. The only thing that seems to be missing is the veiner, it's in the Ceegar box.

or finer, and the diamonds are shorter, usually around 2½ times their width. My argument against the 60° work is that the diamonds formed are too high (if they have been brought to a point) in proportion to the size of their base, making them more vulnerable to breakage, then they wear down too easily. A 90° diamond has a base just twice as wide as it is high, where the base of a 60° diamond has a base only about 2/3 of its height. Those sharp 60° grooves also fill more readily with dirt and grease. So, I will stand for the 90° diamond about 3½ times as long as its width, as I have found it to be the all around most satisfactory for utility, durability and beauty. On a fore end the diamonds should point fore-and-aft, while on the wrist panels they may point slightly up.

Since none of the checkering lines form an outline, as is the case in a point design, we do not have to be so afraid of our lines shifting angles and winding up with uneven or unsymmetrical points. Of course, we want to keep the spacing as perfect as possible, and be just as careful as if we were doing a point design, but in case we vary just a little, it will scarcely be noticed in a design like No. 1.

Then there is the question of using a border. A border, as referred to in this article, is a separate bead worked around the edge of a panel of checkering as shown elsewhere. In some ways a border is a handy little crutch though in circles where fine work is appreciated it gets that "down the nose" look. That does not mean it is exactly taboo, but after all its main use is to cover runovers. To get the most out of that statement, take a peek at some of the Kraut jobs that often have a double bead that still covers runovers about as well as a Banty hen trying to mother a brood of Plymouth Rocks.

So let us put it this way—try to not leave runovers, which is nothing more or less than failure to terminate a line at the proper place, thus eliminating all need for a border. Then if too many slips have occurred, a neat narrow border can be worked around the panel. The border will look better than an outline sprouting whiskers like the average buck hunter the fourth day out.

However, if you just naturally like a border, for cripes sakes slap one on—this is your baby and you are the gent to be pleased. When I appear to be talking against a certain point or method, I am just speaking from what I have found to be the average idea of what is fitting and proper with perhaps a generous salting of my own opinion. If, after you

FIGURE 7

A KIT OF CHECKERING TOOLS

Here we see the checkering tools with which the late Al Linden did his good work. That tool on the left in the right-hand half of the case looks as if it might be a spacer, and from the looks of what remains of its edge it has spaced many a panel.

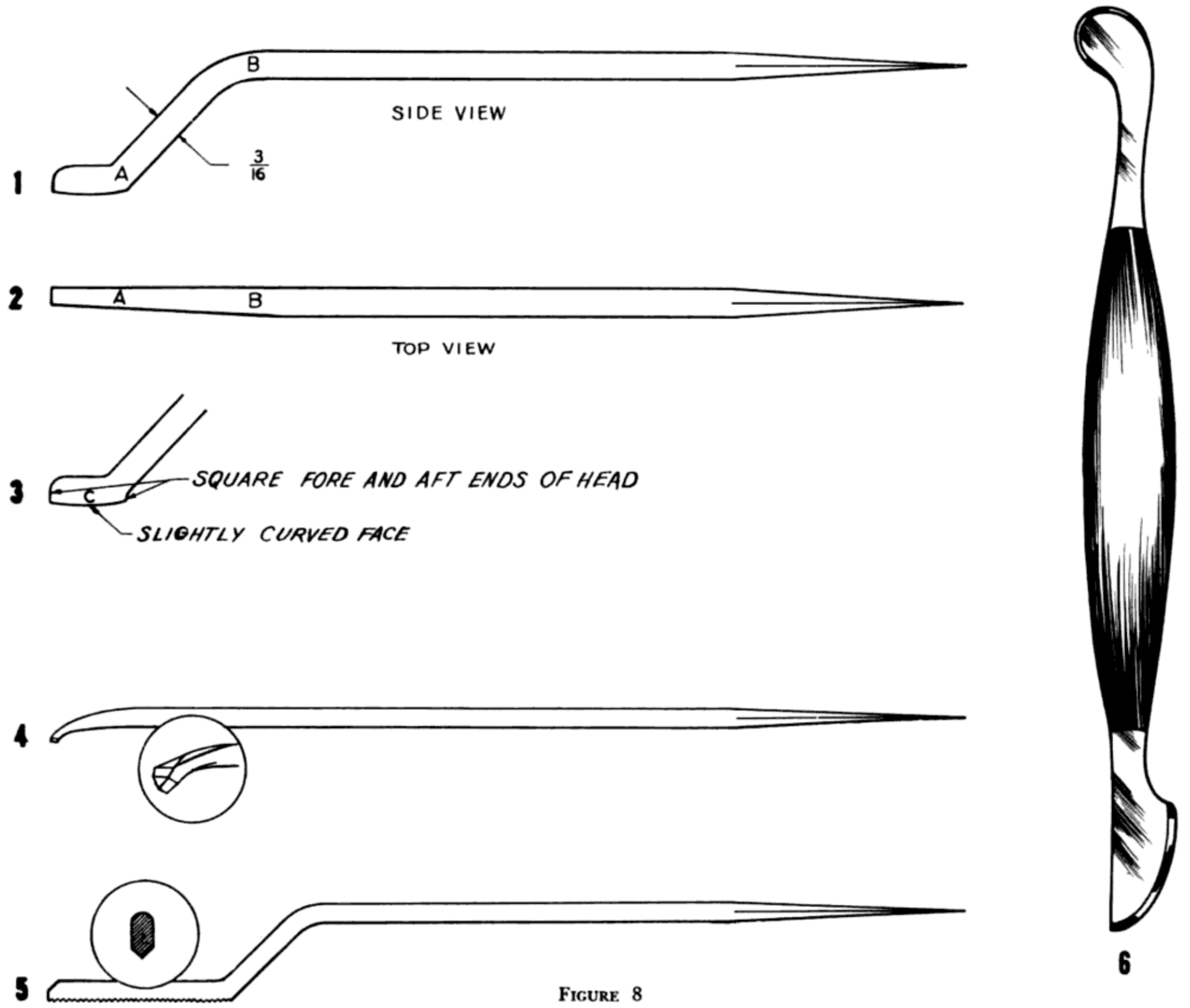


FIGURE 8

DETAILS OF THE VARIOUS CHECKERING TOOLS AS NEEDED AND AS MAY BE MADE UP BY THE INDIVIDUAL GUNSTOCKER.

have read this, and thought it over and maybe cussed and discussed it with your buddy and still want something that sounds taboo on these pages, go ahead and have it. If everyone had the same likes and dislikes in shooting irons there would be little need for a custom stockmaker or gunmaker.

It is now about time to get busy and rig up some equipment to do this job of checkering. We could chip our teeth at this rate for hours on end and never get as much as a scratch on wood. Somehow talking does not seem to accomplish much around where there is manual labor to be done, except maybe to make the blabbermouth unpopular.

CHECKERING TOOLS

There are several conveniences used in this work that can be dispensed with, but checkering tools are an absolute must. I have heard of such makeshifts as a piece of umbrella rib bent to a suitable shape, the edges sharpened, teeth filed therein and used for a spacer. A small three corner or square file has been used for a V tool. Such equipment might produce passable results, but I would hate to tackle a job of my own or for someone else so equipped. Since to this stage in the game we have not skimped on labor or taken any undue chances, let us not endanger the last step in completing a fine stock with inadequate checkering tools, especially as long as they can be made for a material outlay of not more than 50c.

There are two tools that are really essential to a simple job of checkering. One is a spacer, which does exactly as its name implies, spaces our lines. The other is the V tool, for deepening the lines until the crest of each diamond is sharp. Then if a border must be had, there is the border tool, which is similar to the spacer except that the groove on the face is U-shaped instead of V. It is also a good thing to have a tool with a short V edge, sort of a V-shaped scraper, for getting in tight places and working around sharp turns. It is a cranky little gadget though and has to be used with plenty of care and discretion and even then it is mighty apt to

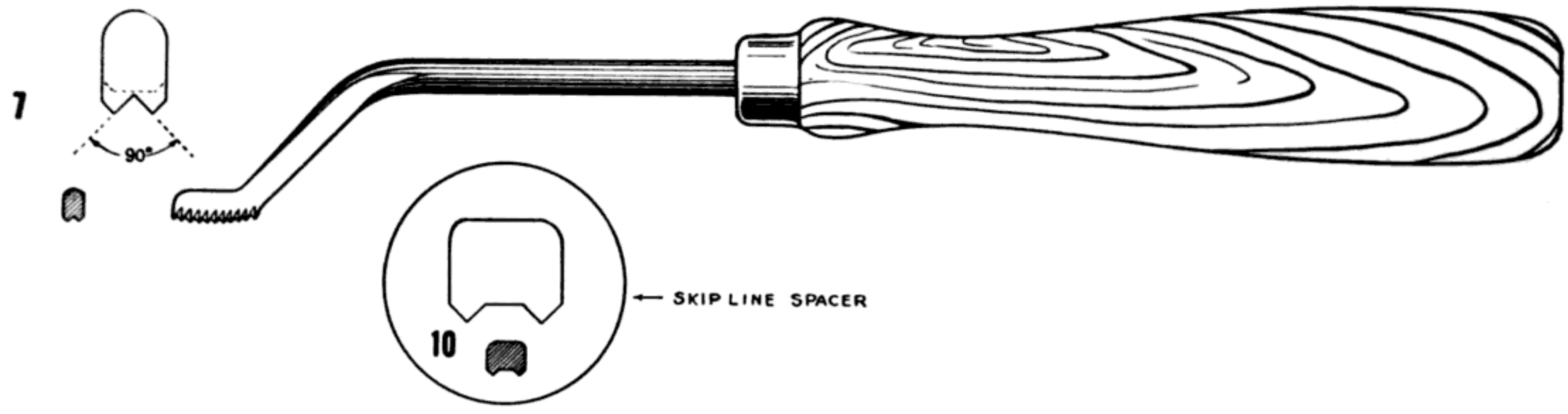


FIGURE 9

DETAILS OF WORKING FACES AND TEETH OF CHECKERING TOOLS

induce a spasm of profanity. A better idea of this tool can be had from Figure No. 8—(4), so no more will be said about it here. For the same purpose a small 90° veiner is an excellent tool. Very sharp curves can be cut with it, smoothly and cleanly. It is my favorite tool for this work and I have adopted it for cutting in nearly all curved outlines, working from pencil lines or scribe lines. Also it makes a fine weapon for finishing short checkering lines where other tools are too large.

Another useful, in fact practically necessary tool, for the beginner, is a marking knife. A very good knife for this purpose can be made from a broken or worn-out hack saw blade. Procure a piece about 6″ long, grind the teeth off and shape like Figure No. 8—(6). That will tell the story quicker and much better than a bushel of words. Wrap the mid-section with friction tape, leaving ½″ of each end uncovered and grind with a rather short bevel.

The best material for making homespun checkering tools is drill rod, of 3/16″ diameter, so rustle up three pieces about 6″ long. Three, because while we are at it we might as well make up a border tool, just in case, along with the spacer and V tool.

All three can be heated and bent to shape and made to dimensions given in Figure No. 8. Do not heat beyond a bright red, because I have been told by gents who are supposed to know about steel that heating to a high temperature burns out the carbon or something that helps the steel hold a good edge.

Now reheat the north end and flatten to a thickness of slightly over 3/32″, so that it will clean up with a mill file to that thickness. The flattening should start at B in Figure No. 8—(2) and be down to the 3/32″ at A.

The business end of the weapon, or head, should be filed from the face side to a depth of ⅛″ and the offset (A to B) trimmed 3/16″, just to give it a trimmer and more "wieldy" appearance. Give the head square fore-and-aft ends as in Figure No. 8—(3) and a length of 7/16″. The square ends are necessary to allow the operator to make a full depth cut right up to the end of the line. There are spots where, due to the curve of the pistol grip, one cannot make a cut with the forward end of the tool, hence the squared portion of the aft end, which will work backing up in such places.

While the fire is still going, heat up the south ends and forge a square point, tapering for about 1½″. If it winds up with a diamond-shaped cross

section, so what? All we want is a tang that can be driven into a wood handle with full assurance that it will not turn. The tang can be filed to shape if that method is preferable. At this time it would be wise to check all tools for alignment; that is, see that the entire tool is straight in the vertical plane. It is easy to get them wapperjawed while doing the bending and forging.

So far all three of our hopefuls have had the same treatment. All should be close to the same weight and shape so the "feel" will be as nearly alike as possible.

Now the medicine differs somewhat, so we will take each tool individually for a spell. Set the tang in a vise with the offset as nearly vertical as possible, with the face up and with a new or sharp 6" mill file, give this face a slight curve fore-and-aft and a V edge of an included angle of 90°. Take care to keep the point of the V or edge in the center and parallel with the tang.

Now we are going to need a set of needle files. Maybe a whole set is not necessary, but at least a knife, a three and a four square, a flat and a round will definitely get a workout. Be sure to get files with sharp edges on the three and four squares. Heller American-Swiss are O.K. for this work. However, the Swiss firm of Graube are tops for all types of fine files.

With the knife file, space off the edge, being careful to work at right angles to the edge, for 32 teeth (approximately) per inch. If a metal checkering file of 32 or more teeth per inch is available it is really the ticket for spacing the teeth. While I use a checkering file for this purpose I wouldn't recommend the purchase of one for this purpose alone, as they cost too many bucks for all the gain from its use. If one wants to be fussy about this spacing without the use of a checkering file, use a 4" or 6" combination square and gage from the end to tool, setting for 1/32" at a time and marking with a scribe or needle file with a safe side.

After the spacing is done to your satisfaction go over again and cut, still square across, teeth about .020" deep. Then rotate the tang in the vise till the offset is at a 45° angle away from the victim. Again with the knife file, and using the teeth already cut as guides file the teeth in the side of the V to about the same depth that was cut in the edge of the V. Swap ends with the tool and repeat the process with the other side of the V.

When the spacing is shipshape, go over the teeth, working still with the knife file, bringing them to a more even and thinner edge. It is not desirable to have a knife edge on this type of tooth; it should work more like a scraper. If the bevel is entirely removed, the tool will dig into the wood, producing ragged cuts, tears and maybe kindling wood. The face of the tooth should be nearly at right angles with the face of the tool.

Stick a handle on this new creation and try it out. If it digs, tame it down by lessening the hook of the teeth. If it hesitates to take hold, give them more hook. If it is still lazy, reduce the width of the bevel. When everything is O.K. lay the V tool aside and start another. The spacer? Good choice.

Shape up the face of this tool as before, with the same slight curve. Now, with a steady hand and a glassy eye, take the knife file and lay a groove right down the middle of the face of said tool. If the center turns out to be a bit elusive, "pull" the groove to right or left by bearing over with the file until it is right. Next swap the knife for the four square and deepen the groove till the edges are .050" apart. Be careful to hold the file so that the angle of the sides of the V are equal. Then take the flat file and cut the remaining flat parts of the face at a 45° angle, or a 90° angle to the sides of the V just cut.

After this shaping operation is completed, lay out teeth as with the V tool. Cut the teeth square across slightly deeper than the V groove in the face of the tool. Proceed as before to cut teeth in the 45° faces. Test-hop this baby to see how it "takes the wood." It should not be quite so enthusiastic as the V tool, because after all, its main duty is to space the lines.

The angle of 90° tools may be checked with any precision square, preferably by holding up to the light. If no such square is available a gage can be made from a small piece of sheet steel. The main idea is to get a 90° notch with straight sides and a *sharp* corner. If there is the least fillet there it is as

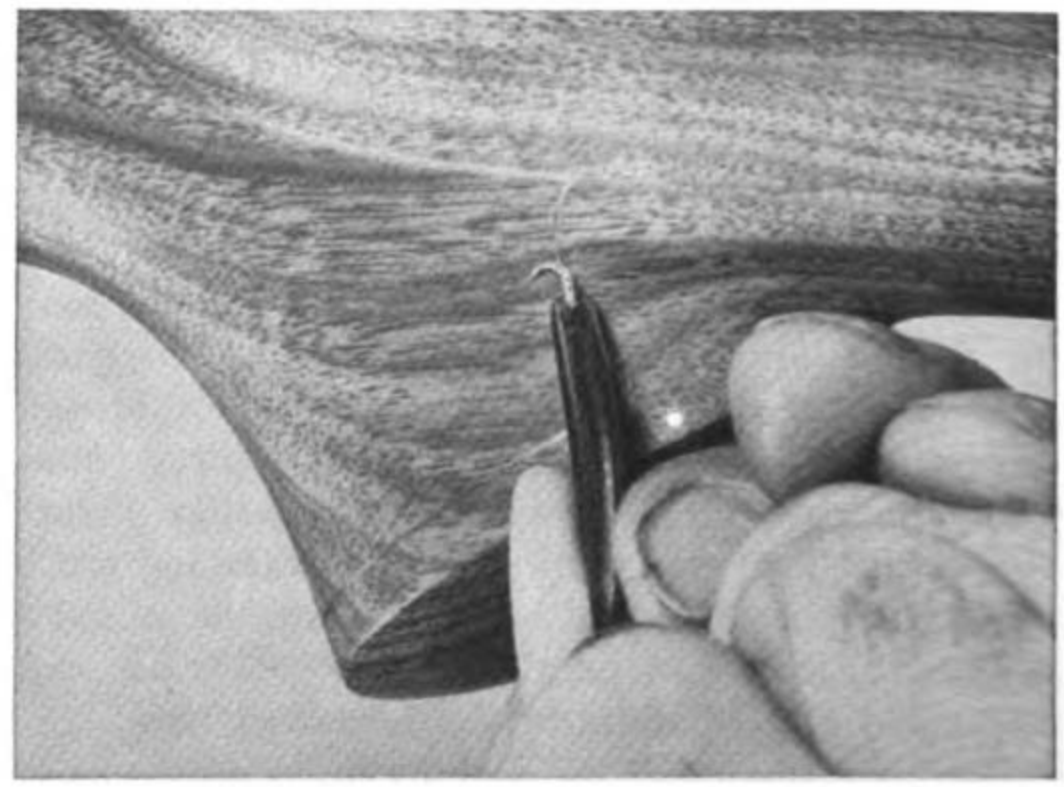


FIGURE 10

Bob Emmons' camera catches the veiner at work. That is not a worm making its getaway—just the wood that is being removed. A sharp tool can turn out chips much longer than the one shown here, not that we're interested in long slim chips but just to call attention that they are a by-product of an efficient and smooth working tool.

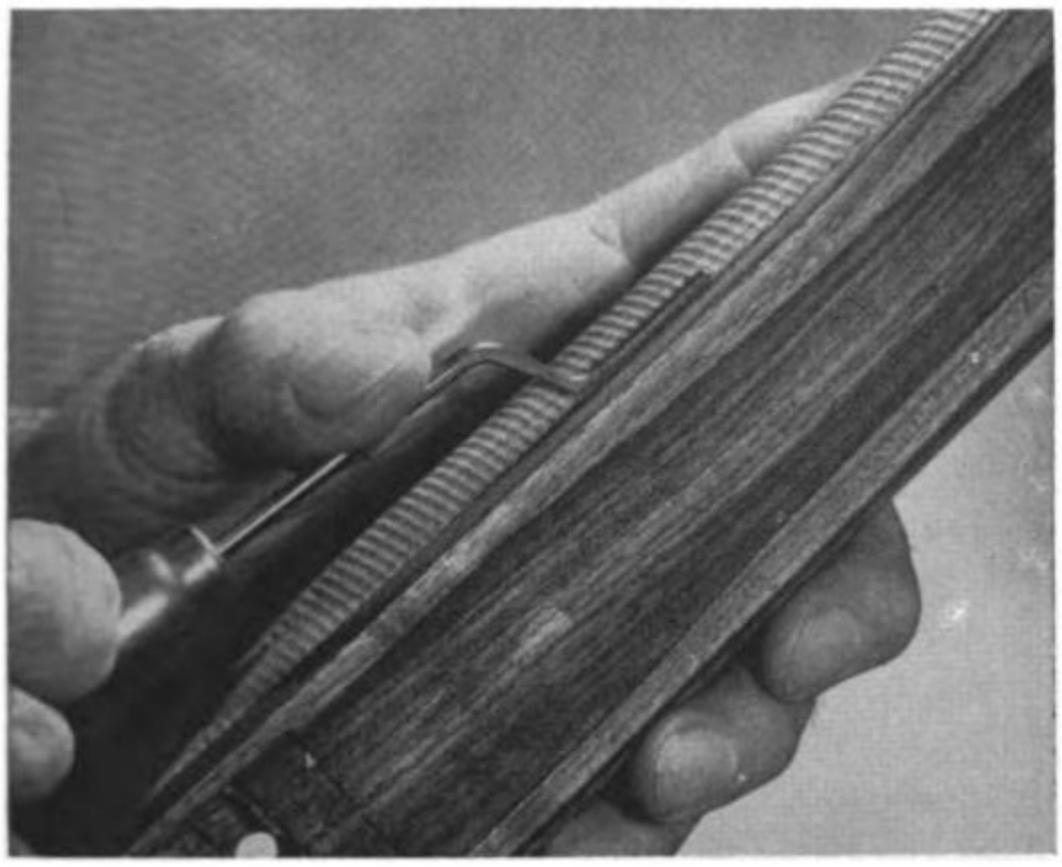


FIGURE 11

Here gives my "jointer" in use. The spindle is locked and both hands are in use making a final pass along the base line. This jointer is one of the best anti-wiggle tools I ever stumbled onto, it doesn't matter whether it's burl, birdseye or tiger-tail—this little home-brewed tool goes on about its business and leaves a straight trail behind it, regardless. *Photo by Bob Emmons.*

useless as mammary glands on a male pig. Even if it is not exactly 90° it doesn't matter—just so there is a method for arriving at a common angle on all tools. For 60° tools a machinist's gage for grinding 60° threading tools is the ticket. It makes no difference what the angle may be, it is smart to have a gage of some sort for duplication and repetition.

Make the border tool in the same way as the spacer except, after the groove is laid out down the center of the face, use the small end of the round needle file to cut a circular groove .050" wide. From there on apply the same medicine you used on the spacer. Give teeth the same shape and hook. Try out all the tools and satisfy yourself that they are taking to the wood properly. We definitely do not want them to be eager to the point that they will tear the wood, yet they must be willing to cut.

When satisfied with the performance of all tools, heat the heads to a bright cherry red, applying the heat to the back of the head (not against the teeth) and dunk them in salt brine. They will now be *awful* hard, so from now on handle with care and do not put a lot of pressure on the points while in use, unless you relish the prospect of making a new tool. Having to make a new tool in the midst of a panel of checkering is tragic. If you do not think so, try it.

It is not exactly necessary, but if one has a thin, fine-edged hard Arkansas slip stone, and the inclination to use it, a little touch-up to the teeth with said stone will improve the smoothness of operation. This stone is a necessity for resharpening the cutting edges when the tool becomes dull. Unless a stone is available for this purpose, the tools will have to be annealed for sharpening with a file. However, for one or two jobs, no difficulty should be encountered from dullness unless a silicate filler has been used. A word of caution here. Never, if it can be helped, sharpen a tool while a panel of checkering is in progress. This applies especially to the spacer. It is almost impossible to get exactly the same shape twice, and a mighty small discrepancy can cause difficulty. Here again I am speaking from experience.

Actually this hardening is a matter of choice. A good grade of drill rod will do a remarkable job of holding an edge without hardening. I have used and seen many tools unhardened that did good work and lasted well. In fact the only tool I would recommend hardening would be the spacer and border tools; these because a hardened tool will preserve the painstaking work required to make a good tool of this type. A V tool is much easier to make and since the filable tool is much easier sharpened, I never harden a V tool anymore. An escapement file is the ticket for finishing and sharpening these soft tools, and besides that they are a good thing to have around if much fine file work is to be done.

Since we are in the toolmaking business at the present, let us make a number that is not exactly necessary but is good medicine to have handy when it is needed. Illustration No. 11 shows this tool full size if not in full detail. It is made like No. 8 except that the head is longer, has no curve to face and can be made from 1/8" or 5/32" drill rod. It is used to straighten lines that have a tendency to wiggle due to curly grain or where in not-too-hard wood the grain is trying to guide the tool. It is also swell for making straight outlines really straight. I call it a "jointer" V tool as it fills the same need as a jointer plane where planes are used. I have never hardened a jointer, mainly because I have not found it necessary and I am sure hardening would cause the tool to readily break.

Now that the scratching tools are made, scrape up some matching small file handles, something about 4" long and 7/8" to 1" in diameter at the largest place. Of course, the individual's hand is the best judge. Make them fit the hand and feel good. Also be sure to anchor the tools solidly in the handles. If a tool turns in the handle at the wrong time it may do irreparable damage.

Do not be afraid of getting these tools dull; do a lot of practicing with them, especially the spacer and V tool. Lay out a pattern on a piece of flat walnut and go to work on it. Do the best job you can, repeat until you are satisfied with the results and then round off an edge and do a panel on this contour. Shape

up a chunk to simulate a pistol grip and whip up your spacing on these difficult inside contours.

If an old rifle stock is available, doll it up with an acre of checkering. An old military stock is good for this purpose, especially a Mauser, Enfield or a Springfield with one of those putrid would-be pistol grips of late vintage. There is no better practice available. The wood in many of these service rifles is soft and mushy, and as experience will teach you, soft wood is the hardest to checker. But just now it is practice in spacing and V tool control we are interested in, so if you can do decent work in soft wood, it is a pretty sure bet you can do better in harder wood that cuts cleaner and provides a firmer guiding groove for your spacer.

Again I say, be serious about your practice, just as though you were doing a good stock.

Store Bought Tools

For the hombre who prefers to buy his checkering tools, there is a mighty neat and highly efficient product on the market. Better, I would say, than 95% of the handmade tools. That is the Dem-Bart line, made by the Dem-Bart Company, P. O. Box 700, Tacoma, Washington.

For sometime I had used tools of my own make because there was nothing on the market that would work for me. Several makes were tried and most of them were returned "muy pronto." The Dem-Bart ended my quest for readymade tools and the necessity of making my own.

The main feature of the Dem-Bart tool is the replaceable machinemade cutter. Being machinemade they are alike from cutter to cutter of the same spacing, thus allowing the change of a dull cutter for a sharp one at any stage of progress. Dunno what kind of steel is used in them, but they are harder than Hades, cut good and hold an edge well.

Each type is made in three grades; that is, fine, medium and coarse. The coarse is really a hog for wood, being too coarse for most wood. The medium is best for the bulk of wood removal and the fine one is for finishing. This fine cutter surpasses any file I ever saw for finish work. The V edges of these tools are really edges and if used with proper care will leave no filleted grooves. They can be used in tight places to much better advantage than a file. They have recently added another number to their line with a greater offset to the shank and a cutter only about 1/8" long. This is really a honey for tight spots. I have gotten best results by turning the cutter around so as to cut on the pull stroke. The cutters are held in a slot in the shank with a small pin, and may be had in 16, 18, 20, 22, 24 and 28 lines per inch and there are border cutters of two widths.

Dem-Bart makes a spacer with cutting teeth on only one side, the other being a smooth V. The idea is to use the smooth V as a guide only, which I have found to be more satisfactory than using a cutting agent as a guide. It has less tendency to climb out of the groove and will not enlarge your guide line. This system necessitates the use of right hand and left

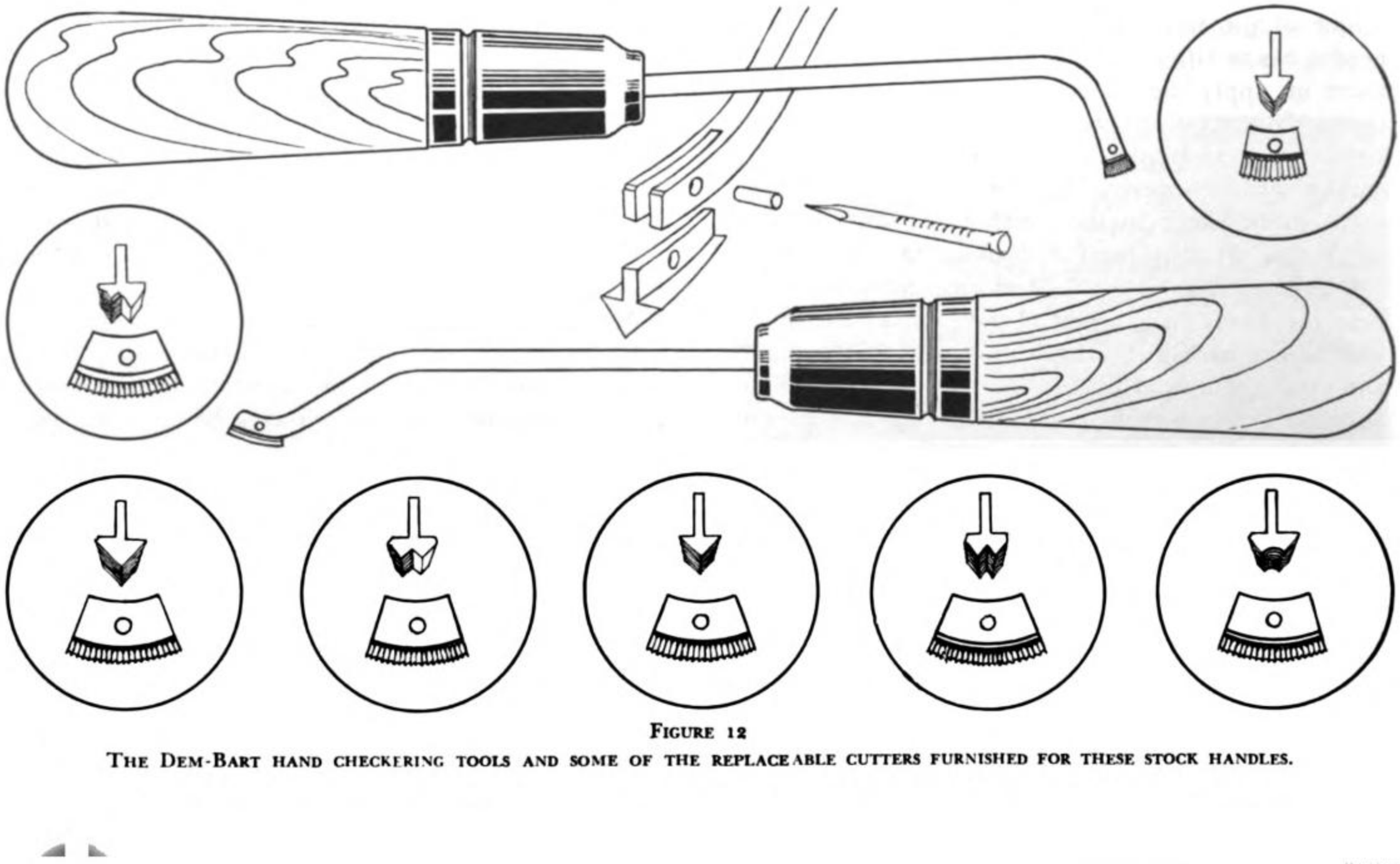


FIGURE 12

THE DEM-BART HAND CHECKERING TOOLS AND SOME OF THE REPLACEABLE CUTTERS FURNISHED FOR THESE STOCK HANDLES.

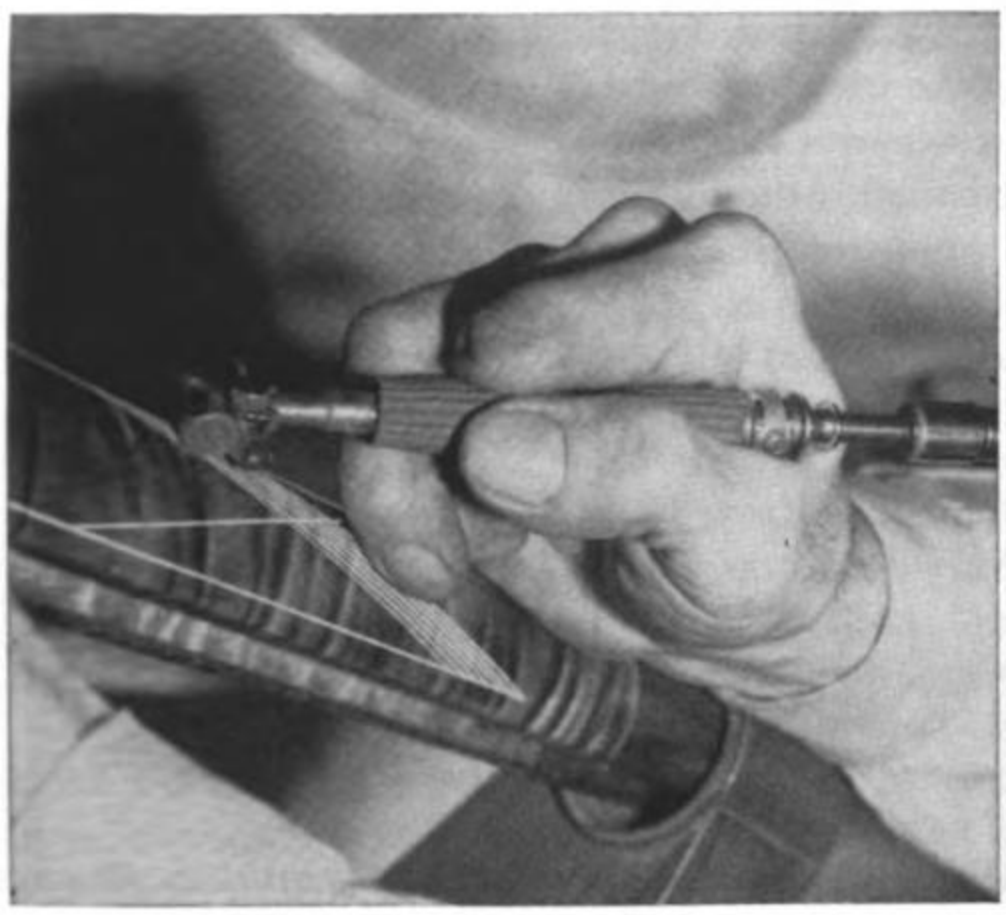


FIGURE 13

A very good view of the Dem-Bart E tool at work. This is no fake shot, the little buzz saw was really kicking out the wood. The same technique is used with this E tool for spacing as with hand tools. This stock is an unusually fine piece of curly maple that I got from Howard Clark, Stevens Point, Wisconsin. The suigied finish was laid on just about as heavy as can be done without resulting in a bonfire and it makes the cut grooves loom up as though they were painted on with white paint. Belongs to Smitty Brown, Sunland, California, who thinks this stock makes his Model 52 sporter just about the cutest plinker in circulation.

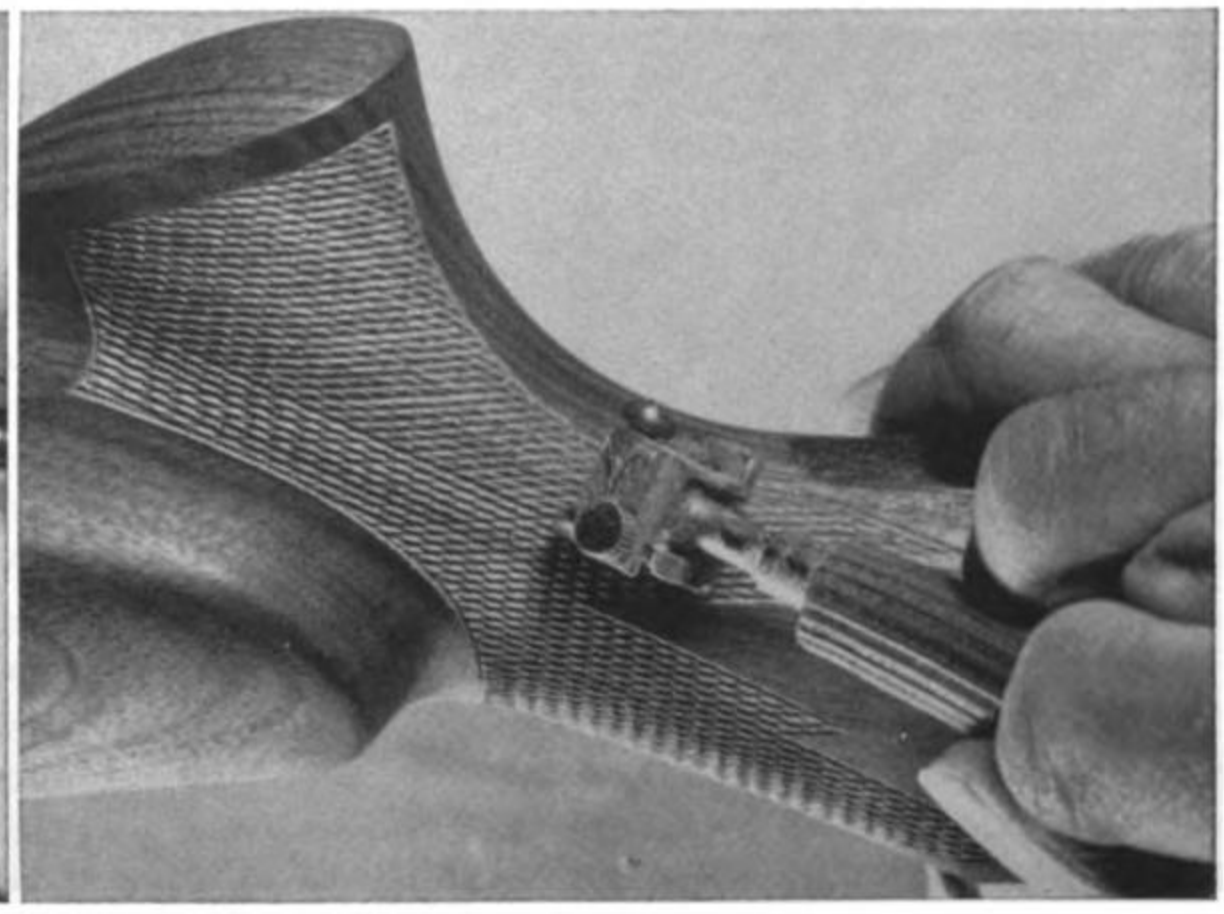


FIGURE 14

The Dem-Bart E tool at work on the second pass. Instead of working from right to left as in spacing we are backing up to keep from messing up the spacing. Dunno why it should mess up the spacing when working from right to left, but it does and if there is a skeptic in the crowd let him try it out. Note the nicks in the outline. Since the outline isn't near full depth these nicks will be obliterated when the final cut is made. See what *could* happen if outlines were cut to full depth before checkering is finished.

hand spacers for each size used, but I find it well worth while.

The shank of this tool is made of 1/8" square steel, nicely shaped and fitted with a well made handle. The shank is mild enough to be bent into any shape desired. Having some extra tools on hand, I took a couple and reversed fine and medium V cutters in the slots. In this way it is possible to "pull" the tool instead of pushing it on the cutting stroke. This is an advantage in many cases where the grain is wrong for best cut in places that are approachable only from one direction or to keep from turning the cradle around for a few strokes. I find this kink so useful that I would buy a couple of tools especially for the purpose if none were otherwise available.

The complete tool sells for $2.25 each and extra cutters are 75c each—50c for the short V cutter.

The Dem-Bart Electric Checkering Tool

In 1947, the Dem-Bart Company came out with one of the greatest assets to a stockmaker since the first walnut tree got big enough to cut a blank from—the Electric Checkering tool, or the E tool for short. Joe Bartolat told me early in '46 about the machine and I had looked forward to its debut, but with much less enthusiasm than I experienced the first time I picked up one and used it.

The handpiece is really all that Dem-Bart makes; the rest is a Fordham dental engine. As can be seen from the photos, the handpiece is about the size of an average fountain pen in diameter and about 4" long. The frame, shank and guide are made of beryllium copper, finely finished and put together with the care and precision of a fine watch. All parts, with the exception of the cutter wheel, are chrome plated and polished.

Figure No. 15 is a good picture of the E tool at work. A indicates the cutter wheel in motion, and B the nut which holds the cutter in place. The shaft that can be seen protruding from the nut is integral with the cutter and has a flat side by which it is driven. This cutter is highspeed steel and the teeth are ground to an included working angle of 90°. These cutters may be returned to the company for regrinding when they become dull. I can usually get four checkering jobs from one sharpening, so at the rate of one dollar per grind cutters cost me two-bits per job. Of course they could be used longer but I do not like to run them dull; takes more time and the wheel begins to follow the grain, or the path of least resistance. When they are sharp they cut a nice straight line, just like a Missourian plowing corn. The makers claim this tool should be used before the finish is applied to the stock—that much longer cutter life results. It is plumb reasonable to expect that longer cutter life would result, but to my way of thinking, the checkering job comes last. Danged if I can see myself finishing a stock right up to the

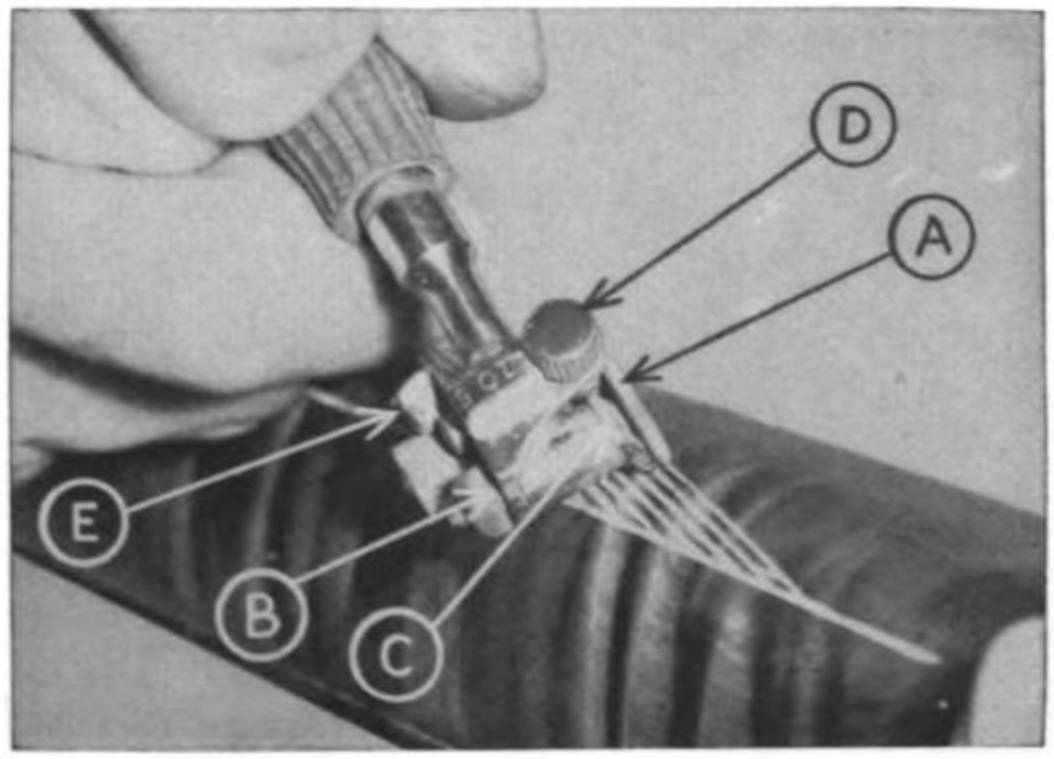


FIGURE 15
THE DEM-BART "E" TOOL AND ITS ADJUSTING AND OPERATING SYSTEM.

edge of a panel and doing a good job without getting gunk in the checkering and sanding off the crests of several rows of diamonds. Nope, I am not kicking about the regrinding expense, I will finish first and checker last.

A recent letter from Mr. Bartolat stated that they had a carbide wheel nearly ready to market. This I am looking forward to as are, I reckon, most users of the machine. Bartolat says the teeth are precision indexed which should give added smoothness to the operation and aid in accurate regrinds, which will be necessary far less often.

Getting back to the machine, C indicates the guide which follows the last groove cut. It is pivoted aft of the cutter wheel and spring loaded, so that when the tool is placed to the wood the guide gets there first and is firmly nestled in the guiding groove before the cutter gets in any licks. The knob D regulates a guide stop which limits the depth of cut. However, the depth of cut is also regulated by the way the tool is held; by that I mean the tool must be held so that the wheel is always normal to the immediate contour where it is working.

Knob E is the space regulator; it works directly on the guide, moving it toward or away from the cutter wheel. Two sizes of cutters are furnished, all the same diameter, but different in thickness. With the thicker one, from 16 to 22 lines per inch can be cut, and as fine as 32 per inch can be cut with the thinner wheel.

Very little care is necessary to keep the E tool running. The shank unscrews from the head, exposing all the innards it has, a ring gear and pinion (nope, no differential). A little wad of special grease, furnished by Dem-Bart, applied to the pinion keeps the head lubricated for several hours and an occasional drop of oil to the motor and shaft keeps everything running smooth and easy.

The E tool is used very much in the same manner as any spacing tool. The master lines are laid out and cut in with a V tool to make an original guiding groove. Due to the construction, spacing must be done from right to left, one groove at a time, till all spacing is done on one side of the master line. Then swap ends with the work and space the opposite way from the same master line. As with hand spacing, I get best results by completing the first cut before commencing the second.

When the E tool was designed I believe it was intended to be used as a once-over tool. However, I have gotten best results (for precision work that is, not speed) by spacing lightly all over and then making a second pass. At first I got into plenty of grief on the second pass, spacing went all haywire when advancing from right to left as *must* be done first time over. Then I found if the second pass was run from left to right, or opposite to the first, that spac-

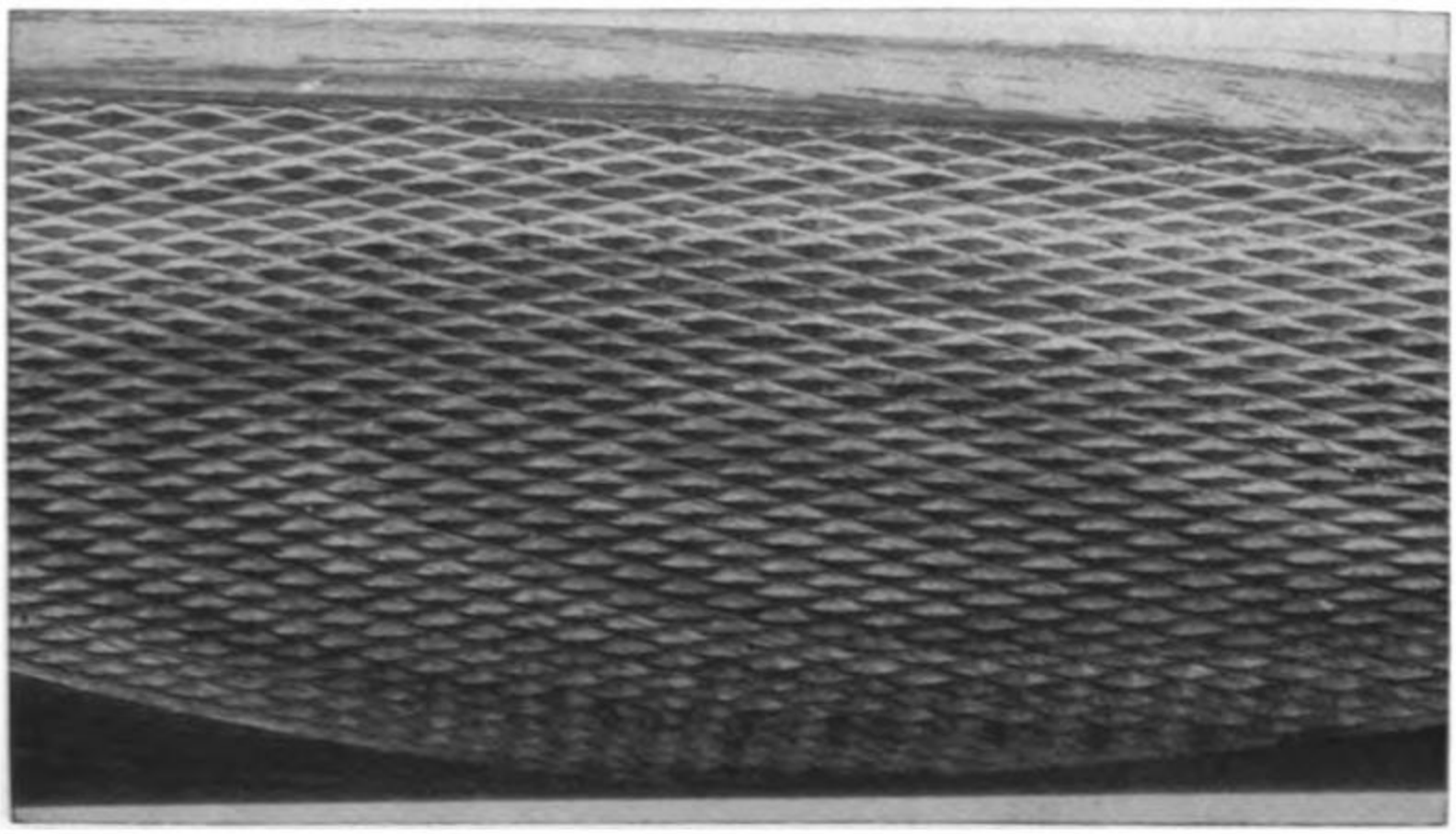


FIGURE 16

GOOD CHECKERING

This close up photo shows what can be done with the Dem-Bart Electric tool. Only the master lines and the top outline were cut with hand tool. This work was done with three passes with the E tool, and a couple swipes with a toothbrush. A good brushing will remove the debris that can be seen clinging to the edges of diamonds. A pass with a fine-tooth hand tool makes a really fine job of this. As a rule, however, I make two passes with the "E" tool and then two passes with the hand tool. *Photo by Bob Emmons.*

ing was not affected and the work could be deepened almost to finish depth and kept more uniform than if it was done in just one pass. With a little strategy and employment of every possibility of the E tool, only a light pass of a hand finishing tool is necessary, even when working right against an outline.

One might think that the cutter wheel teeth would fill up and quit cutting, but with a dry hard finish like I use, (it is all *in* the wood) no such trouble has ever been encountered; they really make the sawdust fly. I have checkered a few stocks with a fine build-up of rubbed linseed oil and have never encountered any clogging difficulty. However, a stockmaker friend of mine, who quite extensively used a built-up finish on the French polish order, encountered plenty of trouble with the teeth filling up. Shellac, varnish or oxydized linseed oil get gummy when heated so it is rather to be expected they will give trouble with a fast moving cutter, and they will drive a man nuts trying to cut thru with a hand tool.

It has been said that this tool gives best results in soft wood and that it is not suitable for fancy patterns. I cannot figure out just how such a notion was arrived at, because like any other checkering tool it is at its best in the harder woods such as fine French or Oregon walnut, maple and the rosewoods. It works equally as well on plain and fancy patterns. I use it in all my work including the skip line style, using a hand spacer only for the wide spacing.

This tool is not exactly a bargain for the hobbyist or the occasional stockmaker, since the complete outfit, with two cutter wheels, full instructions and two hand tools costs $155.00. It was intended for professional use and as such is, I believe, worth every buck. One reason for the high cost is in the quality of the materials and component parts. For instance, the motor and shaft, as before mentioned, is a Fordham product of the highest quality. A motor of this type could be obtained for around $25.00 but I for one am glad that the best quality was used.

The gunsmith will find that this "E" tool has many other uses than just as a checkering tool. The hand piece, after the head assembly is removed, will take any burr or tool with a shank size of .093"; this being the standard size of burrs used by all dental machines. These burrs have many shapes and sizes of heads and points and will be found to be very useful in all types of carving, both in wood and steel. One's local dentist is continually throwing away his used drills and will probably give away such upon request.

To use a bit larger than can be put into the standard "E" handpiece, the whole handpiece and flex joint can be unsnapped at the point where it joins the rubber covered shaft housing and replaced with a larger chuck. The Jacobs Chuck Company, of Hartford, Connecticut, make two types of ball-bearing chucks to fit this assembly, I believe they retail for about $16.00. One of them is about 3/4" in diameter and the other is about 1 1/8"; this larger is adjustable for shanks of zero to 1/4".

With an attachment such as this added to the "E" tool, the gunsmith is equipped to really do some serious light-grinding, tool sharpening, drilling and cutting-off—and not have his rig quit or burn up on him as so many of these light hand tools will do. The best place to buy these special rotary files, bits, saws, grinding heads and such is the Severance Tool Company, of Los Angeles, California, and of Chicago, Illinois, they having locations in both places and specializing in nothing else but these types of cutters and gadgets.

Newman E. Nelson, of Olympia, Washington says, "If the tool did only the spacing job and would only cut the groove one half of the depth, it is worth twice the money it sells for."

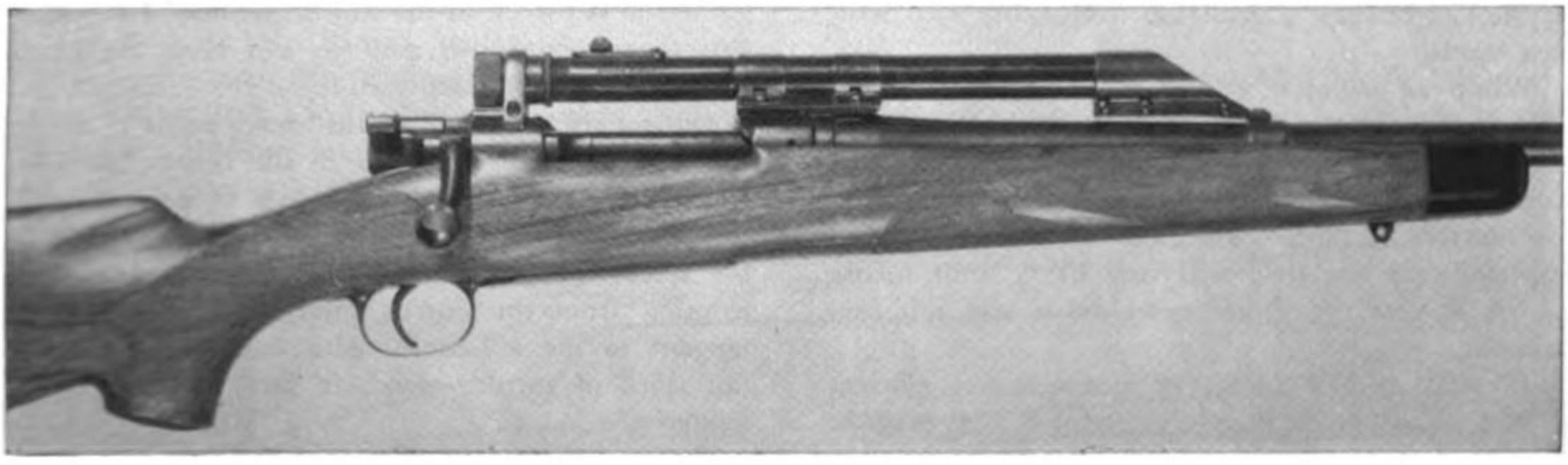


FIGURE 17

An agreeable and attractive point-and-curve pattern on a Springfield sporter, restocked by the late Alvin Linden. This combination may not be "harmonious" but it sure looks good.

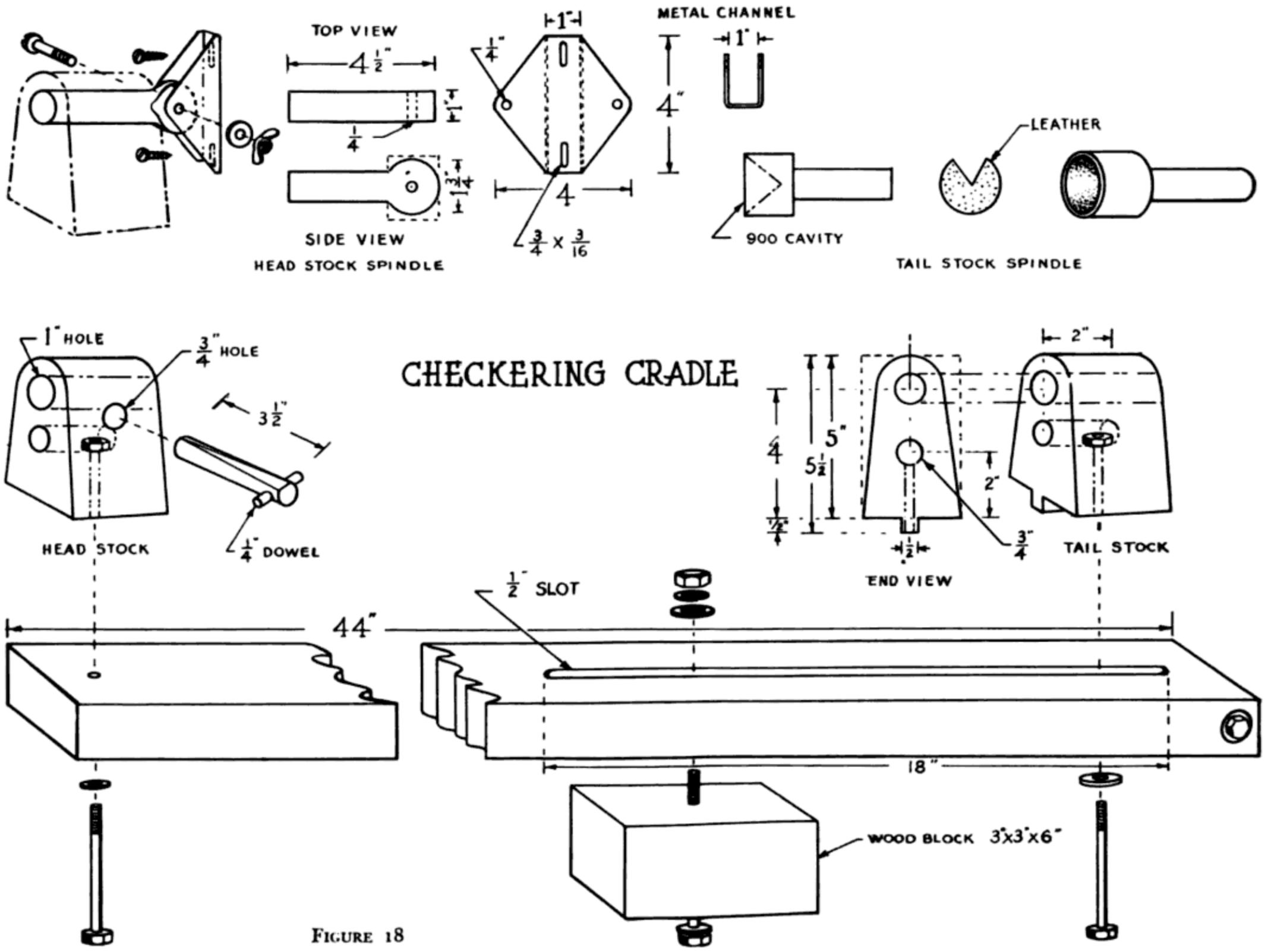


FIGURE 18

CHECKERING CRADLES

How much trouble we go to in building this critter depends on how much energy is available, what and how much in the way of makings is at hand and how much a person wants to spend.

Illustrations and photos will do as much good as chin music, but since this is suppoed to be a literary classic as well as an art gallery on the subject, I will try not to confuse you all too irreparably with written words.

While we are at it we just as well make a decent job of this cradle. Your shooting buddy may take a notion to try his hand at checkering, so make it convenient for him, and then Joe Blow (who you do not care so much about, and whose criticism you especially do not like) will very likely want to use it. A checkering cradle is seldom a one job contrivance.

Illustration No. 19 shows a simple yet efficient cradle. The bed is a 44″ length of 2 x 4 (1⅝″ x 3¾″) of any clear material affording necessary strength for rigidity. Fir is perhaps the handiest and is satisfactory. Cut a ½″ slot in the center of the 4″ width, from 24″ from the head stock end to within 2″ of the tail stock end. Better put a 3/16″ or ¼″ bolt through the tail stock end to keep the slot from splitting out that remaining two inches.

For the head and tail stocks, a hard wood will be advantageous, though not an absolute necessity. From a 3 x 3, lay out a couple of blocks, one 5″ and one 5½″ long. That 5½″ block is for the tail stock, the extra ½″ to allow a ½ x ½ tongue to guide the tail stock in the slot of the bed. Let us lay this tongue out now, and we will have the main body of the blocks identical.

Swing a circle on a 1″ radius from a point 4″ above the base of each block and in the center laterally. Using this point as a center, bore a 1″ hole through the block, square as possible with the face. Now the stocks may be cut out and trimmed to a line running from the outer, lower edge of the base, tangent to the 2″ circle. Also relieve the base of tail stock of surplus wood, to form the tongue or guide.

Bore a ¾″ hole 2″ deep into the stocks, parallel to the 1″ hole and 2″ above the base, and a 5/16″ hole vertically from center to the base, intersecting the ¾″ hole. A 5/16″ machine bolt through the

bed and engaging a nut in the 3/4" hole will freeze the head stock in place. If possible, do the boring on a drill press. Use a regular 5/16" washer under the head of this bolt. A twin brother to it would be the ticket for holding the tail stock in place except we need a large washer, about 1 1/2" in diameter under the bed. We may have to make it special as 1 1/2" washers with 5/16" holes are scarce as hen teeth.

Here a wood turning lathe comes in handy. If there is not one in the family there is usually one in the possession of a friend or acquaintance who could be persuaded to make a few chips fly for your happiness.

We need a couple of spindles of maple, preferably, per Illustration No. 18—1" in diameter for 3" of the length and 2" in diameter for an additional 1 1/2". In one have a 90° cavity turned, leaving a rim of 1/32" width around the edge.

Thank your benefactor very kindly, rush home and line said cavity with a piece of soft leather about the weight of boot uppers. Dry tan is best because we want to cement it in place when a good fit is obtained.

Now take that other spindle and flatten off the 2" portion to the thickness of 1" or even with the diameter of the 3" portion. We did not really need it 2" in diameter but that made it simpler for the gent who did the turning to make them the same and simpler for me to write. Drill a 1/4" hole, or size F, if an F drill is available, centered in the flattened part and trim the corners off to a 3/4" radius about the hole.

For a spell now we will have to turn sheet-metal hand and bend up a channel 1" wide, inside dimension, by 1 1/2" deep by 4" long. It should be about 18-gauge mild steel or .064 in aluminum alloy. Perhaps a piece of aircraft extrusion or a bent rib section may be obtained close enough to the described dimensions to be usable by altering the head stock spindle to fit the inside dimensions. Drill a 1/4" or F hole through both flanges, center lengthwise and 7/8" from the web. In the web itself, halfway between flanges, cut a couple of 3/16" slots parallel lengthwise, 3/4" long and terminating 1/4" from the end.

Trim the corners of the flanges, take a good generous bite, say from the edge of web tangent to a 3/4" circle swung about the center of the 1/4" hole. Smooth the edges and corners with a file and burr the edges of the 1/4" hole and slots. Slip the flanges astraddle of the flattened end of the head stock spindle and put a 1/4" stove bolt through the 1/4" hole in the channel and spindle.

We are dang near done now—just cut a block from that 3 x 3, 5" or 6" long and bolt it to the bottom side of the cradle bed through the 1/2" slot. A 1/2" machine bolt with large washers on both ends and a lock nut is advisable. By clamping this block in a vise, we have our cradle mounted and can swing and tilt it (if we have a swivel base vise) to any position desired. The slot allows the cradle to be pivoted under whatever part of the stock is being worked on.

There is one other feature that can be added to this cradle, and while it is not an absolute necessity, I strongly advise in its favor. That is a lock for the head stock spindle. There are times, for instance when cleaning up the edge of a panel, that for several minutes a person will not have to rotate the stock. At such times it is advantageous to employ both hands in manipulation of the finishing tool.

For a simple lock I would suggest boring a 3/4" hole, center of head stock, centered 3/4" below center of and at right angles to the head stock spindle hole. To this hole fit a birch or maple dowel about 3 1/2" long with an easy sliding fit, and plane a flat on one side tapering from zero on one end to a depth of 1/4" on the other. With the head spindle in place and locked, this should leave an equal amount of dowel sticking out of each side. Now drill a 1/4" hole horizontally through the small end of dowel and glue or pin in a 1 1/2" piece of 1/4" dowel. This will prevent loss of the lock and keep it from withdrawing enough to allow it to turn. This lock can be seen in Illustration No. 18.

The leather should be cemented in the tail stock cup by now, so let us slip it into the 1" hole in the tail stock and Glory be, the dag nabbed thing is complete!

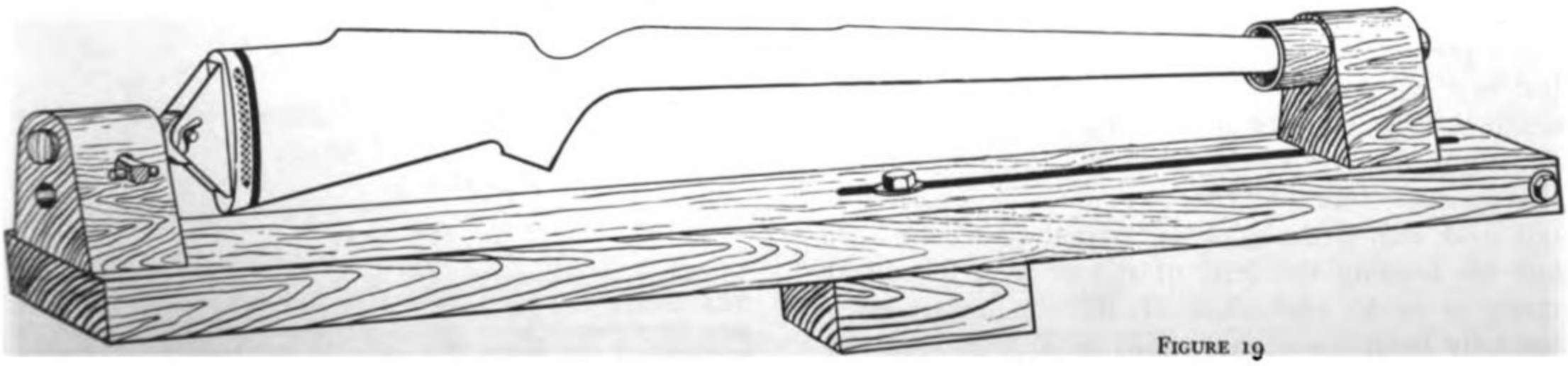


FIGURE 19

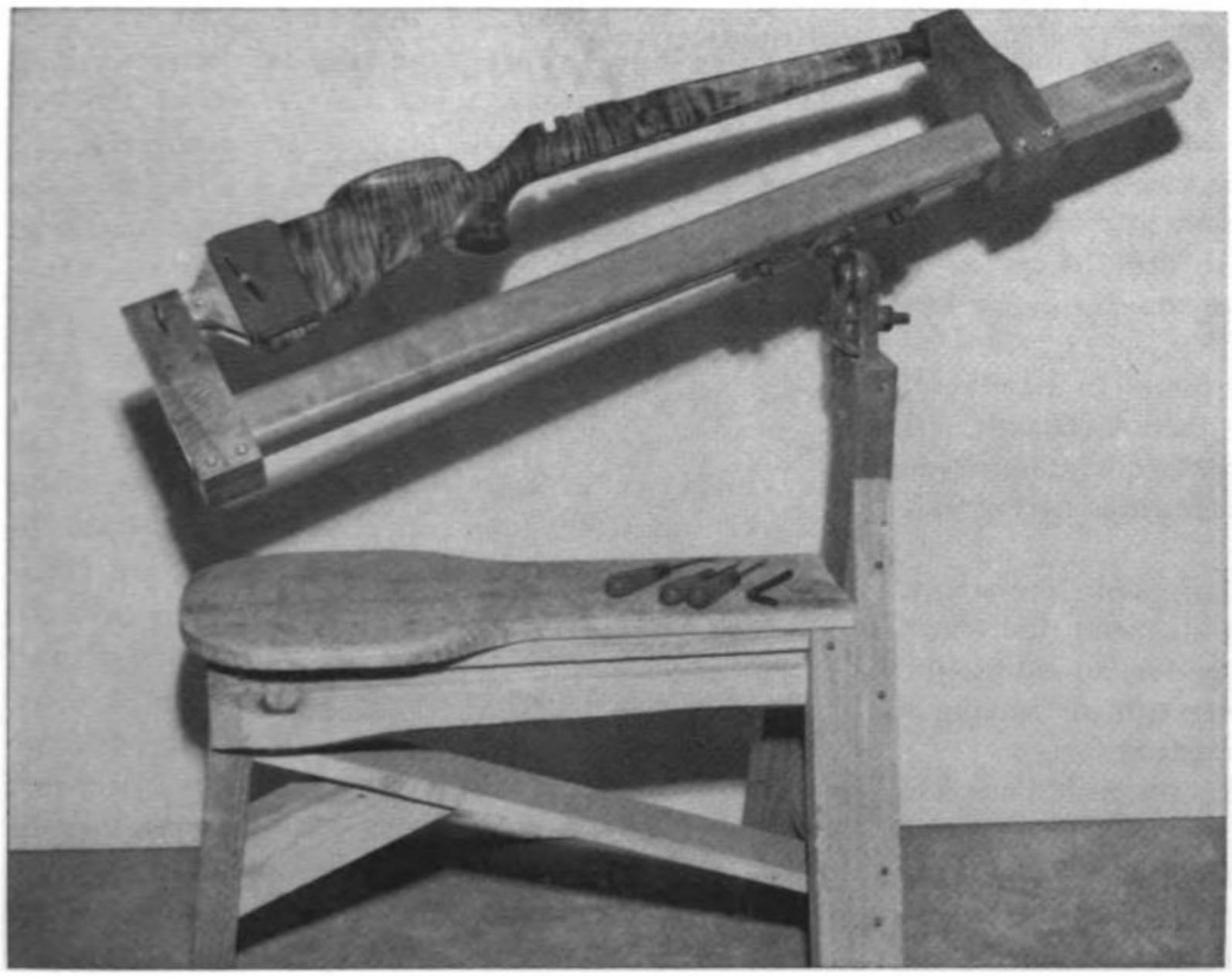


FIGURE 20

This is a good shot of my present checkering cradle. It is only the second one I've built, having used the original till I had pretty well doped out what I wanted in a cradle. Note the felt lined clamp to grab the butt, the headstock spindle lock, leather lined tail stock cup, and Sears-Roebuck trailer hitch ball joint mount. Slot in under side of bed (section of square dural airplane tubing) allows the cradle to be moved to bring the working area to the most convenient position.

The day I built the horse for this cradle, I was living and working up in the high Sierras east of Placerville, and the biggest damn buck I ever saw in California sauntered by the shop and stopped about 35 yards away to look in the window. He was really a beauty, six points to the side, as near as I could see. Found out later he bedded about 300 yards from my house in a spruce thicket. Nope, I never got him. Hope nobody ever did. He was too beautiful.

Yeah, I know its a screwy sounding affair that never came out of a book. This was what happened the first time I needed a cradle and did not like the idea of mounting a stock between points as most books show. That cup will handle practically any fore end, even a bull gun, if the fore end is rounded off at all.

With your recoil pad glued on, (if you have a pad and if it is glued on) all we have to do is to remove the screws, substitute others of the same size about 3/4" or 7/8" longer and, using the slots in the web of channel as screw holes, screw the channel to the butt of the stock. Replace stove bolt holding the channel to the tail stock spindle, slide the tail stock up snug on the fore end and lock in place. In case you have a steel butt plate, use the regular butt plate screws to fasten the channel in place without removing the butt plate. The slots take care of most any variation in screw spacing one is apt to encounter. While this is hardly the last word in cradle design it is fairly easy to construct and will turn the trick.

My present cradle is shown in Figure No. 20. The bed is a 2" x 2" square dural tube slotted underneath to allow it to be moved endwise on its mount. This lets me adjust the pivot point under either the grip or fore end or any point desired. The tail stock cup is the same as the one just described, but for holding the butt of the stock a felt lined clamp is used. The whole cradle is mounted on a specially built horse, by means of a Sears-Roebuck trailer hitch. Unorthodox perhaps, but so far I can not think of any improvements to make outside of padding the seat. I cannot decide which is the worst, the hard seat or the tremendous effort required to pad the dang thing.

LIGHT

In checkering, light is one thing and proper lighting is another, and is very important. Correct lighting not only makes possible better work but lessens

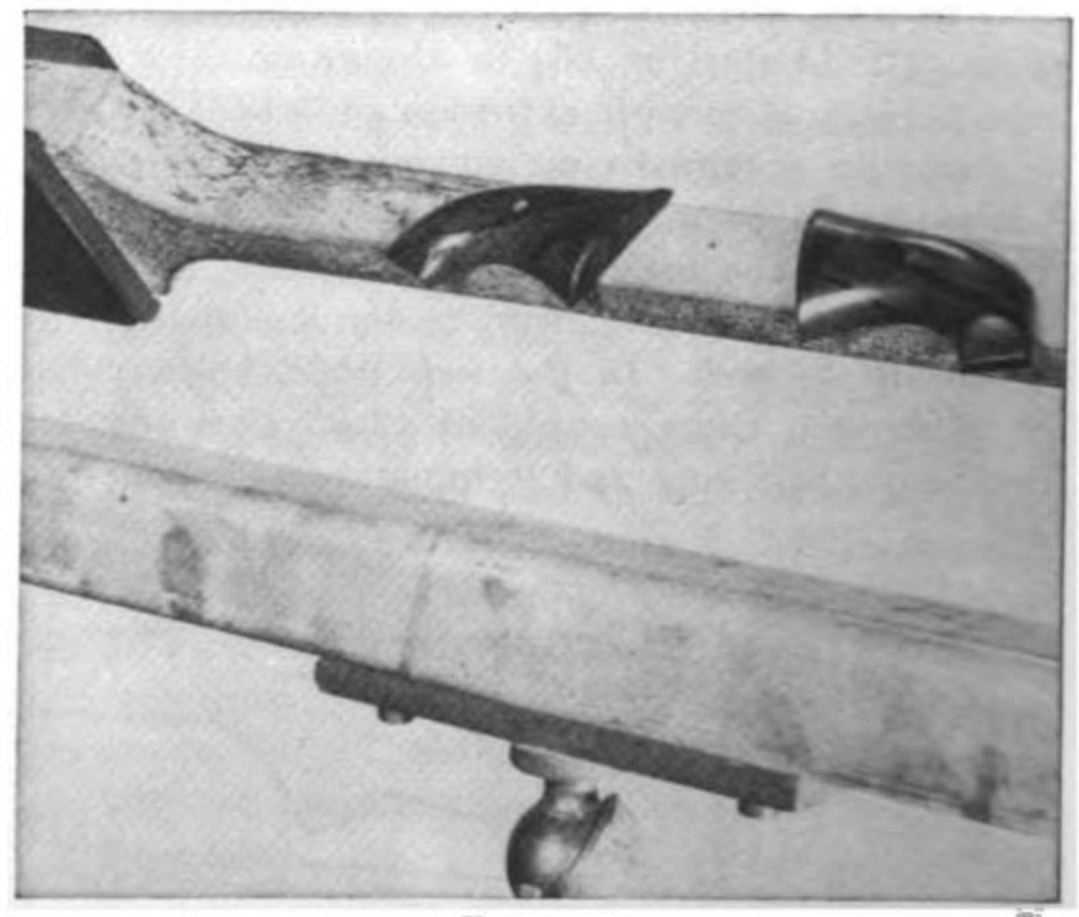


FIGURE 21

Method of mounting pistol grips in cradle for checkering. That crutch they are screwed to is sure a handy gadget. This pair of Frontier grips are made from balsimo, a breed of rosewood, I am told. The color is red with black streaks.

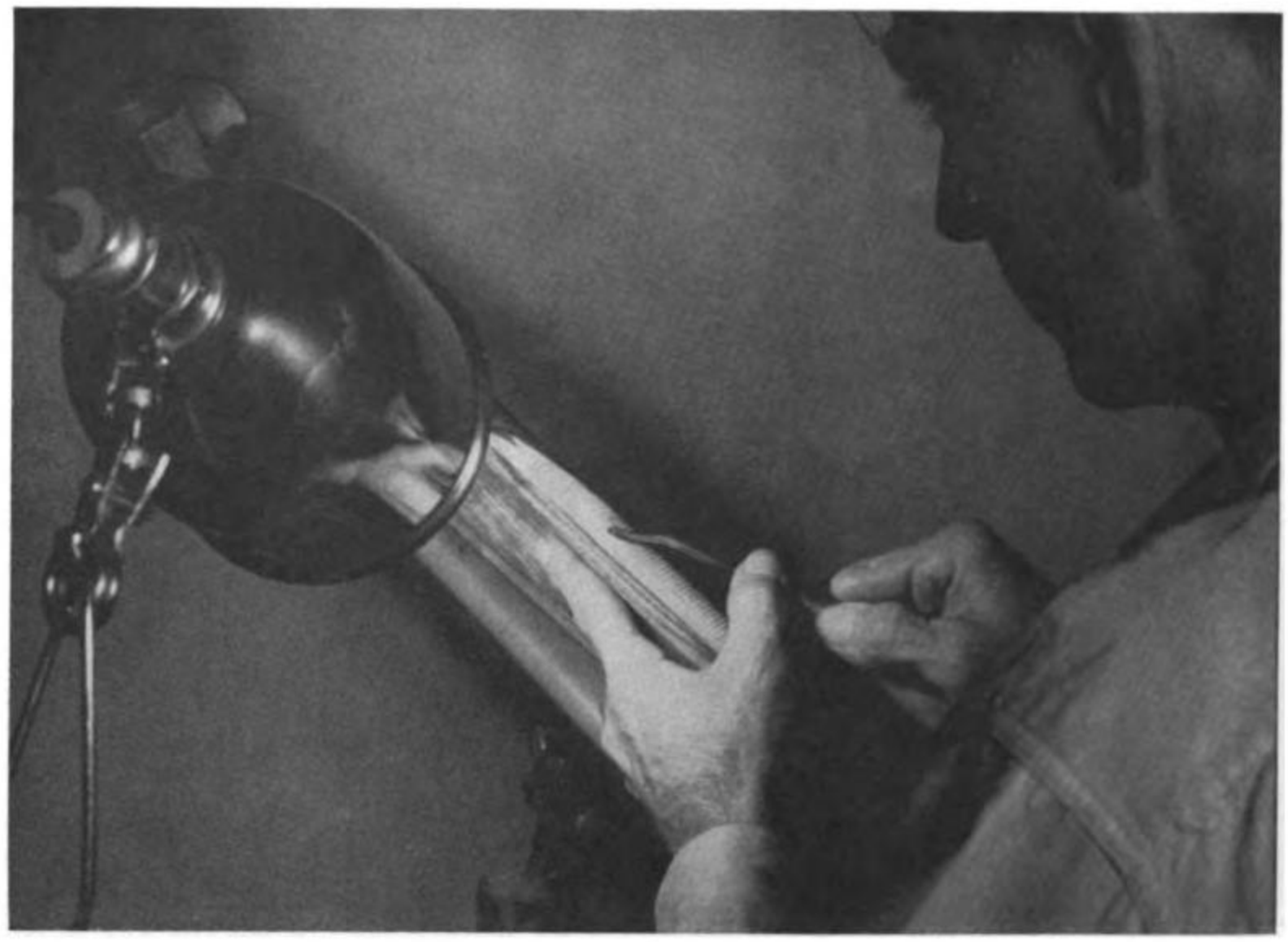


FIGURE 22

Here is my idea of how to use a light to best advantage while checkering. The light hits only the work and area close by, as can be seen from this photo. Most important—none comes anywhere near reaching the operator's eyes. Since the room light is dim, no eyeshade is necessary. The only trouble I have with this light is that occasionally I touch it—and #$%&XZ but it IS hot. *Photo by Bob Emmons.*

eye strain more than anything else to be considered. I have experimented with several systems of lighting and have arrived at the conclusion that artificial light is the best when properly used. My checkering light is a 75-watt bulb with a 4″ diameter reflector that extends 1″ beyond the extremity of the bulb. It is mounted on a ball jointed arm that can be adjusted to bring the light to bear at any spot and from any angle.

Throwing the light on the work at such an angle as to place part of each diamond in shadow, will often show up imperfections otherwise not readily noticeable. It can often fool one too, making a diamond look lopsided when it really is not. For final inspection it is pretty hard to beat daylight, the outside variety.

I like plenty of general light for laying out the outlines of the panel, but when it comes to spacing, and from there on, I turn out all other light and pull down the shades. Only the 75-watt shaded light is used and that from angles that emphasize depth of the work, always keeping direct rays of the light well away from the eyes. Figure No. 22 shows this light in use.

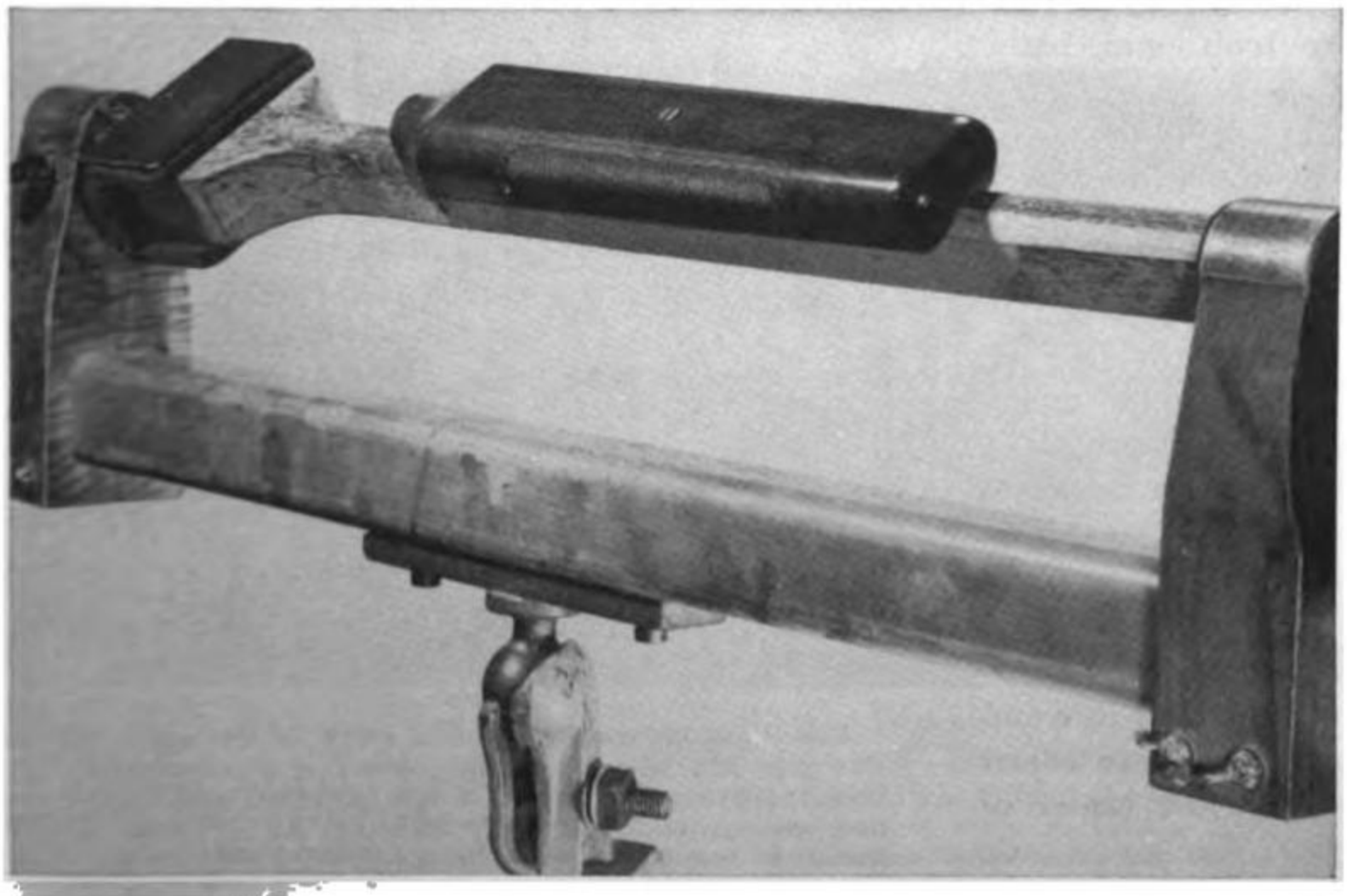


FIGURE 23

This shot shows the method of mounting a single shot fore end in the cradle for checkering. I checkered this fore end from one of my .224 P. R. High-Walls the first night I had my Dem-Bart Electric tool. Just *had* to test hop it. I still don't know what was ailing me when I put that goofy border around the panel. Reckon my bro.-in-law, Butch Busche left one of his leather working tools laying around and I did it in my sleep. At least that's as good an alibi as I can think of. The wood is South American walnut or laurel, as some call it.

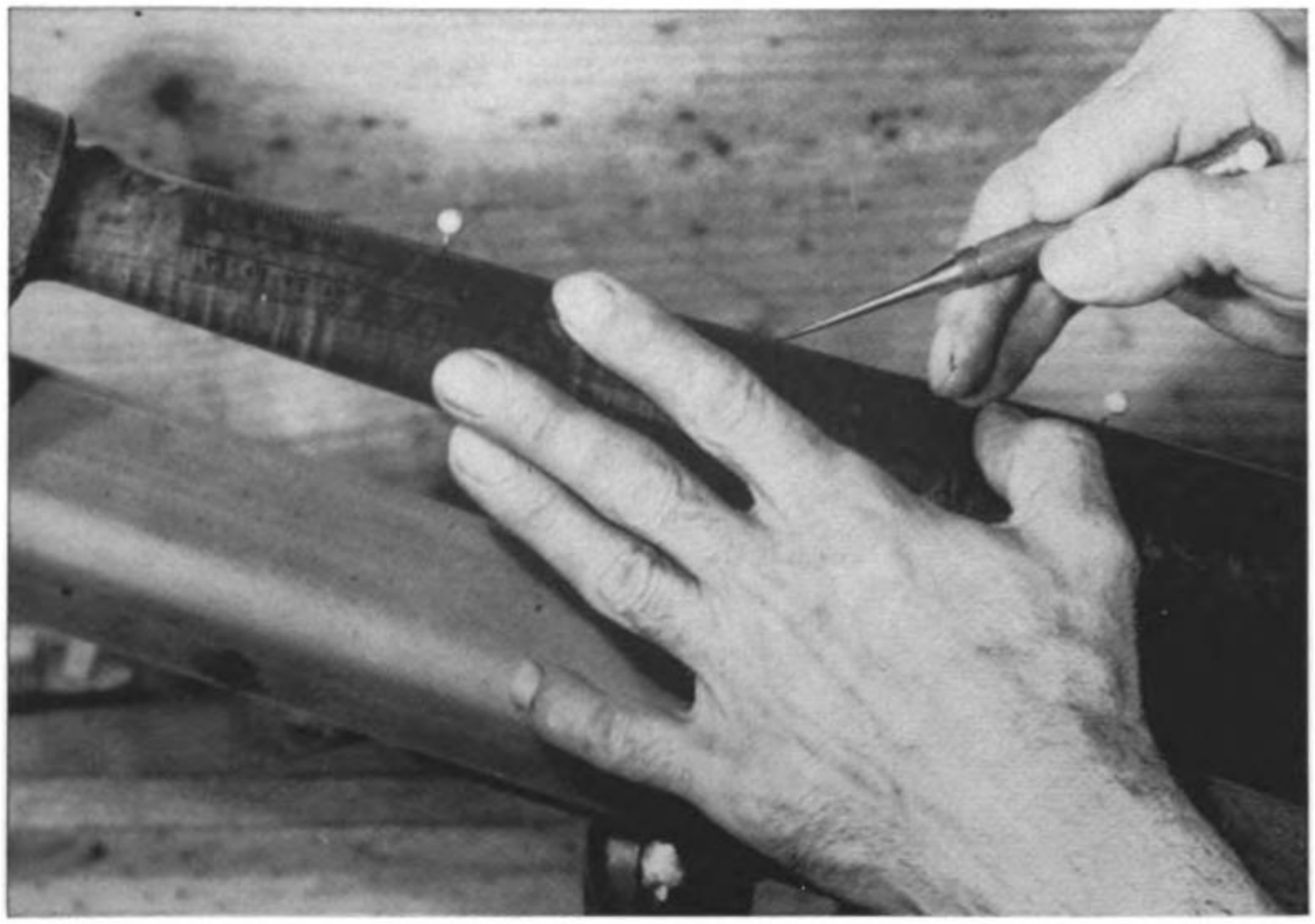


FIGURE 24

Here we are seen laying in the upper outline of the fore end panel. The scale is held against the pins, which were located by gaging from the top side of fore end with adjustable square. This is one way of doing it. The line may be gaged in entirely with an adjustable square, using the corner of the blade as a scribe. It's a smart idea to put a band of scotch tape over the head of said square wherever it rides on the wood to ease its travel and protect the wood itself. My own gadget for this purpose is a little gage made from a block of ebony and a 2½" piece of spring wire with a 90° snout on the business end. This gage may be seen on the shelf in pix of authors checkering tools. *Photo by Mark Speer.*

Perhaps more or less light power would be beneficial but I think that is a matter of personal requirements. One type of light I do advise against is fluorescent. While there are mighty good stockmakers who use this type of light I still think they would encounter less eye strain if they used incandescent light. I believe my lighting is one thing that makes checkering so easy for me. I have often let my checkering jobs pile up till I have five or six to do, then settle down and do nothing but checker for a week and feel no ill effects from it. In fact it made my feet very happy?

GETTING DOWN TO BUSINESS

Before really getting down to business, let us clear the work bench of unnecessary tools, gun parts, stock blanks and what not. We want a clearing big enough to lay out our equipment, small though it may be. A few gadgets are going to be needed to aid in layout work, but wait until the need arises to make them. That flexible 12" clear plastic scale that has been kicking around the desk for a couple of years will come in right handy now, providing the edges are straight. It is just the thing for laying out straight lines and measuring around curves and contours. It might be a good idea to hit the edges with about 320-grit sandpaper to be sure it does not do any scratching on the painstakingly finished stock.

Since we will start out with Pattern No. 1, we can lay out the entire outline of all the panels before a line of actual checkering is done. The fore end is the easiest to lay out and checker so let us adjust our cradle to pivot at a point near the center of where the fore end panel will be.

With the aid of the plastic scale, lay out a straight line 3/16" below the top edge of the fore end, 6" to 7" long depending on the length of the fore end and how large a panel is wanted. Figure No. 24 shows a handy way to use the scale straight edge, employing a couple of pins driven lightly into the wood at or near the ends of the straight line. Another and easier way is to use, (if one is available) a gage as shown in Figure No. 25. The one illustrated is a block of ebony 1" x 5/8" x 3" with a hook scribe made from a piece

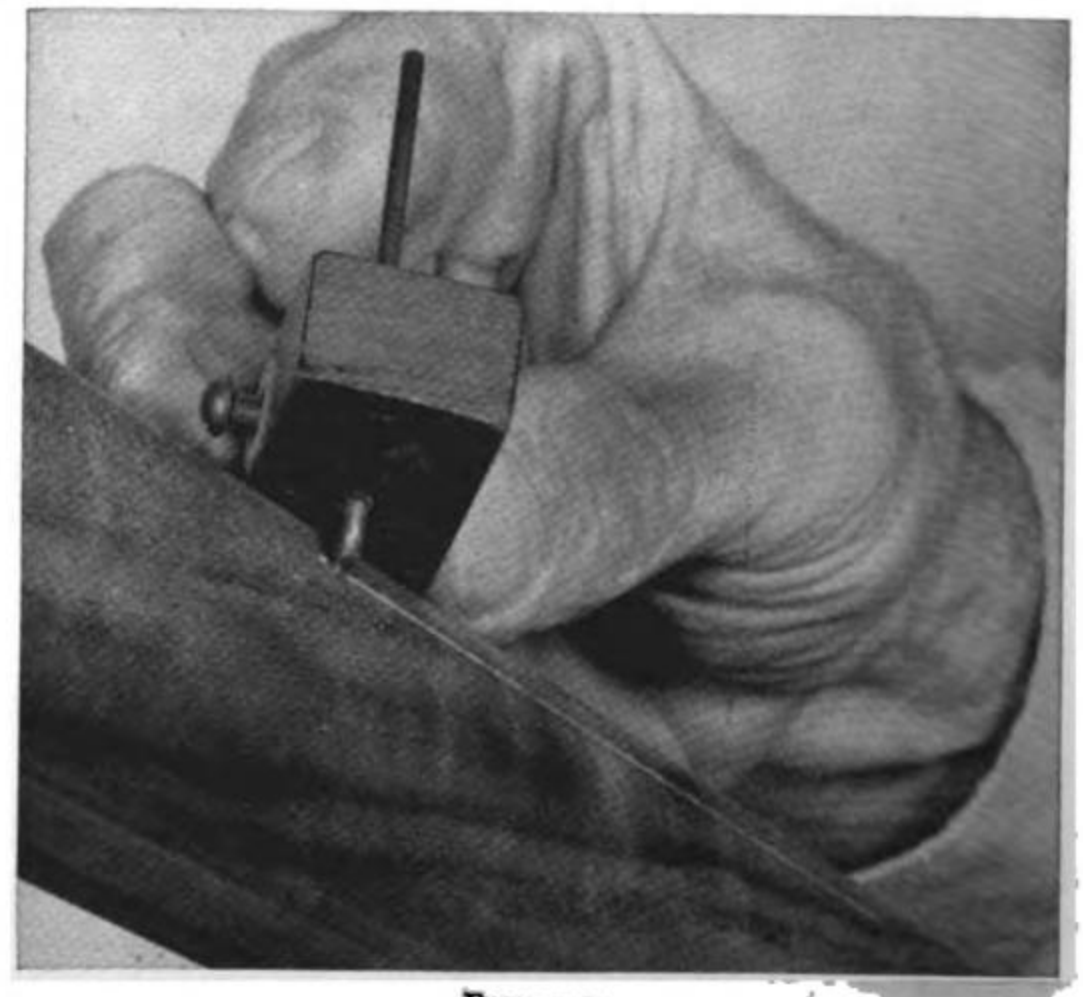


FIGURE 25

This shows my usual method of laying in the upper outline. The gage is a homemade affair, described in the text of this book. I like it because it is sure and fast and cuts a line deep enough to follow easily with a V tool. *Photo by Bob Emmons.*

of .064 spring wire. The end of the spring wire was heated and bent, then dressed to shape with a file. A ¾″ x 6 wood screw, with the point filed off, answers for a locking device. The gage shown is one I made six or seven years ago and to me is a right valuable tool.

For a rifle having a 24″ barrel and a half barrel length fore end, 7″ to 8″ should be O. K. Start this line about even with forward end of receiver on both sides of the stock. From Pattern No. 1 trace a copy of the fore end panel on a piece of art paper or its equivalent. Lay this pattern on the fore end, the upper edge even with the line previously laid out. Hold it in place with two or three rubber bands and mark around it *lightly* with that soft pencil. Remove and replace on opposite side and repeat the pencil work.

Another handy method I have found to transfer patterns to the wood is to punch holes in the paper tracing along the lines we wish to transfer and mark through these holes with a very soft lead pencil or a grease pencil. If one knows for sure that the tracing is right in all respects the pattern can be marked by pricking along the lines with a scribe.

Now, with the plastic scale, check the distance between the fore-and-aft ends of the straight lines of the panel in the underside of the fore end. They should be parallel or only slightly farther apart at the aft ends. The shape and taper of the fore end controls this factor, and the pattern may need slight alteration to bring both sides into proper relation. The distance between is also controlled by the size and shape. The lower edge of the panel should reach far enough around the fore end, that when viewed from the side very little of the uncheckered strip is in view. On the fore end that is rather wide and flattened on the under side, it is a good plan

FIGURE 27

Following through with the plastic scale where the layout diamond couldn't reach. The scale wraps around the fore end and lies close, making possible a clean accurate line.

to let the lower lines follow the taper of the fore end, viewed from the under side.

When necessary alteration has been made and the layout is satisfactory, take the layout knife and follow the pencil layouts, pressing the knife just deep enough into the wood to make a groove or depression that can be followed with the V tool with assurance that said V tool will not jump the track. The curved portion can be done free hand, but the straight lines can best be done with the help of the plastic scale. It will help to stick a pin in each end of the straight line to steady the straight edge. A truer free hand line can be cut by rolling the knife than by just pushing or pulling it. My own layout knife is made from a plaster patternmaker's tool. The layout

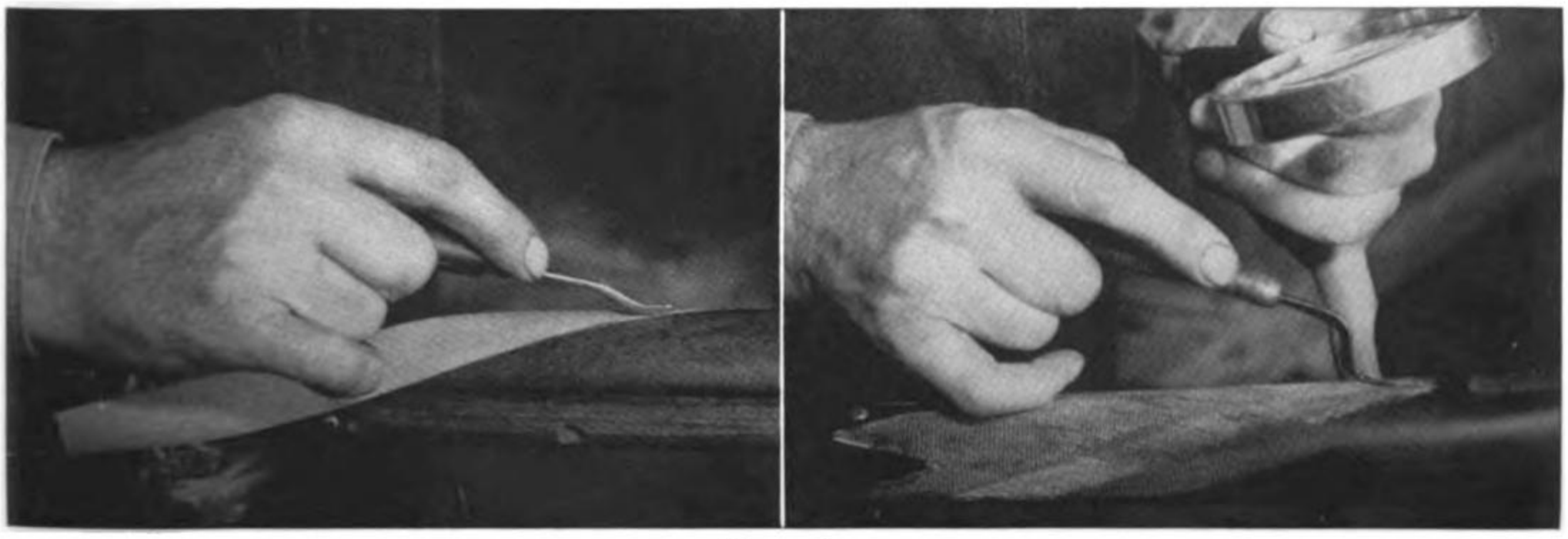
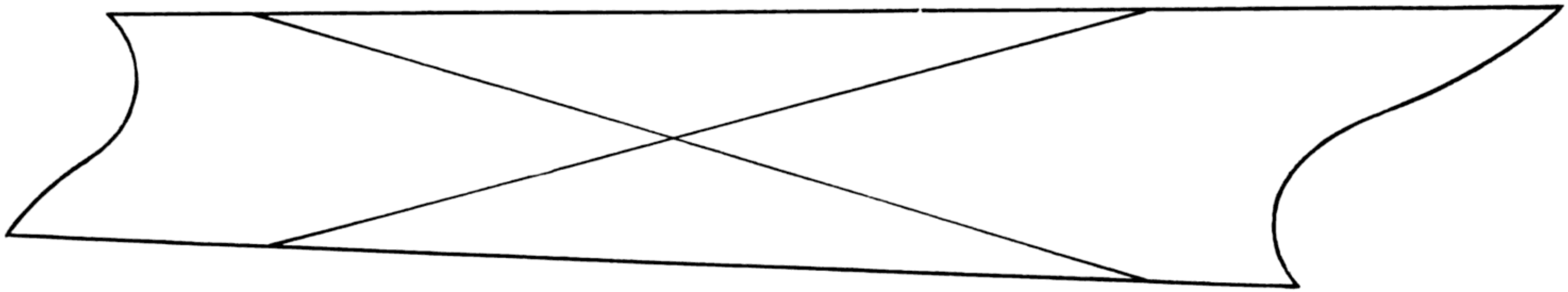


FIGURE 26

A COUPLE OF AL LINDEN'S TRICKS

Left: Ole Skratch laying out a master line and running it clear around the bottom of a forearm by means of a piece of Scotch or Masking Tape; this being his method of making a *straight* line across or around a curved surface. Right: Finishing up a close bit of work on the ends of a point pattern by means of the short V tool and a magnifying glass. There were no overruns on that job.

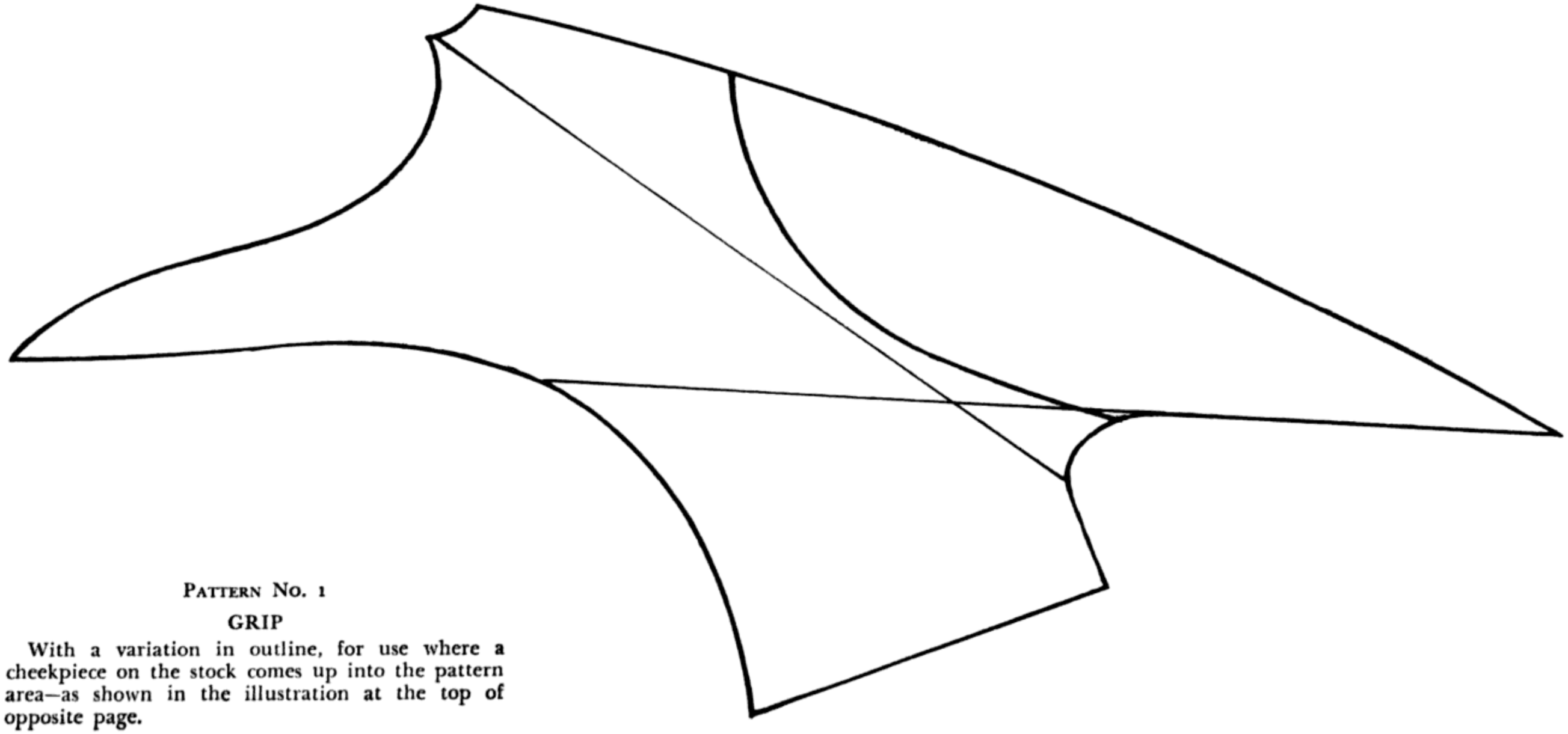


PATTERN NO. 1

FOREARM

This is the pattern I have selected as a good one for the beginner to start with, because the outline can be completely laid-in in advance. The above sketch can be traced off and used as a template for a two-piece layout of this design.

For this design in a one-piece, and somewhat harder pattern to execute, see Pattern No. 3, in which this design is carried around and under the forearm as well as on both sides.



PATTERN NO. 1

GRIP

With a variation in outline, for use where a cheekpiece on the stock comes up into the pattern area—as shown in the illustration at the top of opposite page.

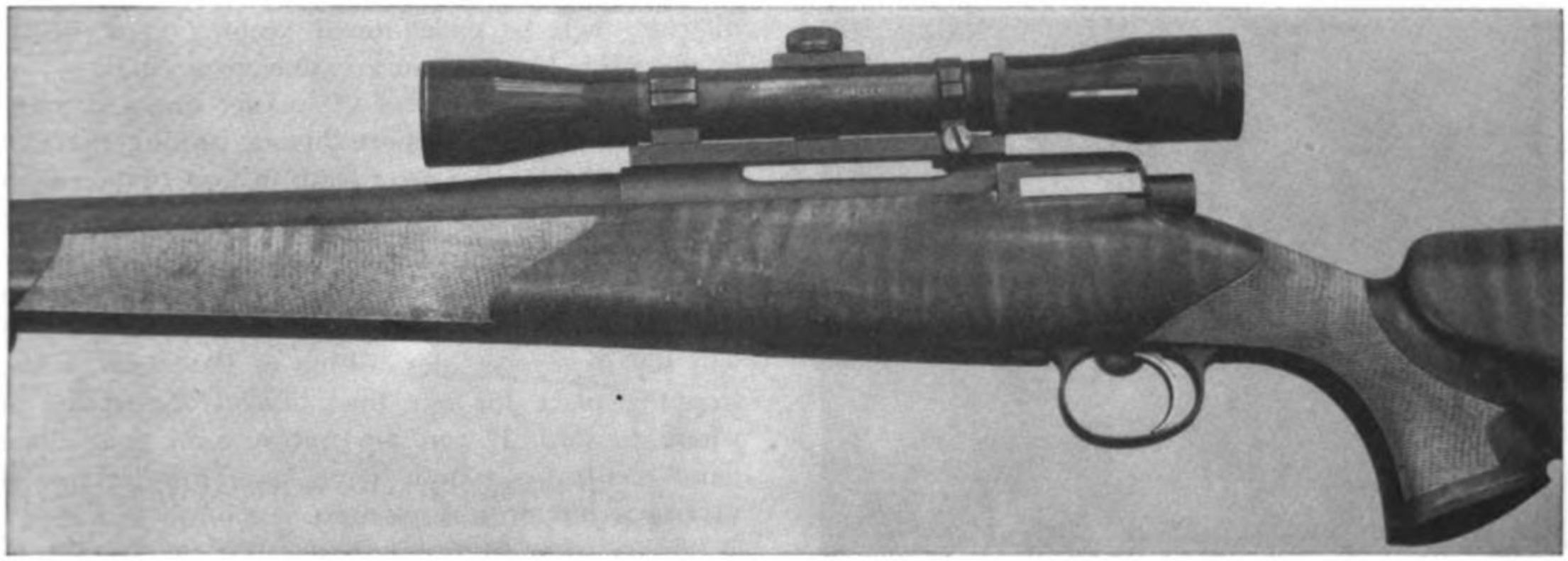


FIGURE 28

Pattern No. 1 on a .375 H & H Magnum built on an Enfield action remodeled by Sam May while he was with the Pfeifer Rifle Company. The stock is suigied curly maple, toasted to a dark reddish brown, making the checkering stand out like a lighted window on a dark night. This rifle was built for Pee Wee Distarce, big time midget race car driver. Pee Wee figures to use it this Fall (1951) to add another moose, bear and hard-telling-what-else to his trophy collection. *Photo by Bob Emmons.*

knife, if properly stoned, comes in mighty handy for carving the tight outline curves around fleur-de-lis and such. My pet tool for real tight curves is an offset chisel made from a dentist's instrument of torture. For the average close turns the little V scraper mentioned awhile back, in Illustration No. 4, is the best bet.

The first trip around the panel outline should be light, at the most not over one-half the finished depth. How deep should it be when finished? The same depth as the checkering. Of course it would be handy to have this outline full depth to run out into, as we come to the end of a groove but you would also put nicks into it that could not be obliterated without turning the outline into a storm drain. Nope, keep the outline shallow till the checkering on that particular panel is finished. Then work it deeper and I am betting that unless you executed some real runovers, you will have a right clean outline, free of nicks.

While recovering from the rigors of nervous strain brought on by cutting the outlines of both fore end panels, let us lay out on a piece of stiff paper or preferably some breed of clear sheet plastic, about .020" thick, a diamond 7" long by 2" wide and cut it out. It is handy to have lines scratched on it from point to point, lengthwise and crosswise. This diamond is 3½ times its width, which is about the

FIGURE 29

AN AL LINDEN .22 MATCH RIFLE JOB

This is an early model of Remington 37 Rangemaster, fitted with a heavy Stevens barrel and a special speed trigger. The forearm checkering pattern is one of Al's combinations of a point-and-curve pattern—and quite a bit out of the ordinary. It runs back-and-out around the adjustable fore swivel. Al wrote:

"The stock is made of Brazilian wood and has a real, honest-to-goodness I-lay-me-down-in-comfort cheekpiece—the kind you either swear by, or at (depending on whether or not you own it, or had a hand in designing it). Viewed from the side, this comb appears to be far too high to permit withdrawal of the bolt, but the comb is offset sufficiently to the right to permit this and to enable the shooter to go to sleep on it while aiming.

"This Rangemaster has a milled trigger guard instead of the cheap, tin can, air-rifle type considered good enough for some other makes of target rifles. It also has other features which, according to enthusiastic owners and shooters, entitles it to its name. But, be they ever so good, there are always gun cranks who insist on making them better. Were it not for these rugged and often ridiculed individuals we would still be in the Stone Age and slinging rocks at each other."

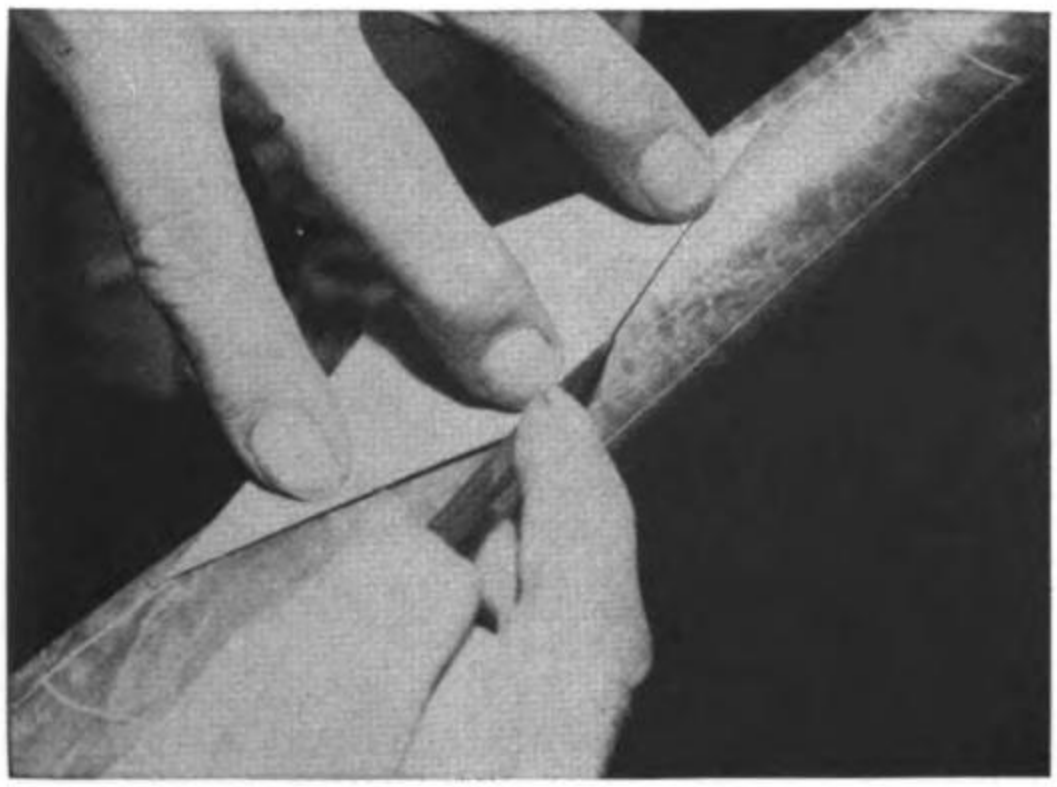


FIGURE 30

Showing the use of the diamond in laying out the master lines on a two panel design fore end. Altho the one shown here is made from cardboard (probably a Wheaties box) the author advises the use of clear flexible plastic about .020" thick. Note how the long points of the diamond are placed on the upper outline. The lines scribed from this diamond will not reach clear to the lower outline but can be extended by laying the plastic scale along what we do have and extending to destination. This shot shows the diamond being used on a curved end pattern, but the procedure for its use is the same for any design.

ideal proportions for the jillions of diamonds we are going to create before long.

Lay this diamond lengthwise about the center of our base line (the first one we laid out, 3/16" from top edge of fore end) bring the two long points to bear exactly on the base line, Figure No. 30, and with a scriber, scratch lines along the two sides of the diamond extending into the panel. Extend these lines clear to the other outline of the panel. This can be done by carefully laying the flexible scale along the line scribed from the diamond; wrap it around the contour of the fore end so as to project straight lines normal to the contour. A third hand would sure come in handy here; you may as well know I do not think it is a disgrace to call for a bit of help in such cases. Follow up with layout knife, deepening the lines enough to guide the V tool.

Got them? Swell! Those, my friends are two mighty important lines, lines on which your whole panel depends for straight, even and properly proportioned checkering—call them the "master lines." Check them over, be certain they are straight and carry out the angle of the diamand; be sure also they are deep and well-defined enough to guide the V tool for the deepening pass. This pass with the V tool should not be over one-half finish depth.

Now get yourself and the cradle into a comfortable position, so that when you grasp the spacer and lay one side in a master line, the whole tool and your forearm is in line with the master line. If care is taken to keep the tool and your arm thus, little difficulty will be encountered keeping your spacer in the guide line and an accurate space cut.

Start at the near end of the master line and move the spacer forward in short thrusts, canting the tool enough to keep one row of teeth in firm contact with the master line. Continue the length of the master line until you have a clear well defined line nearly as deep as the master, surely deep enough to act as a guide for the next pass. Needless to say, but I will say it anyway, the outline of the panel is the stopping place for our lines, and I mean that is where to *stop*. If you are not sure of your "one hand" control, use both hands, and your feet too if necessary, but do not *over-run*.

We are away from our master line now, so let us refer to the next guiding line as just "guide line." Do not be too sure that because your master lines were straight as a Missourian's corn row that your lines will stay that way. At times and in some woods they have a nasty habit of wanting to wander.. So take a squint occasionally along your last-made line to see if it is O.K. If you find it moving, check back to where it started and, with the long V tool, try to straighten out the difficulty. If all the bend can not be removed by the time the last line is reached, continue to space and bear over which ever way

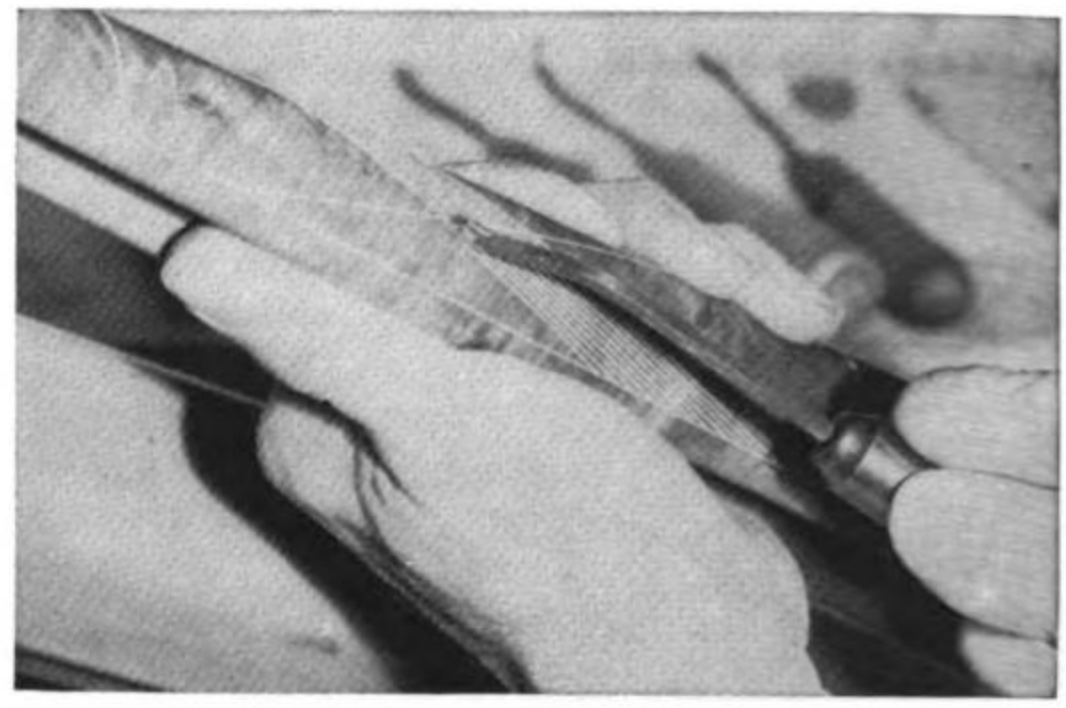
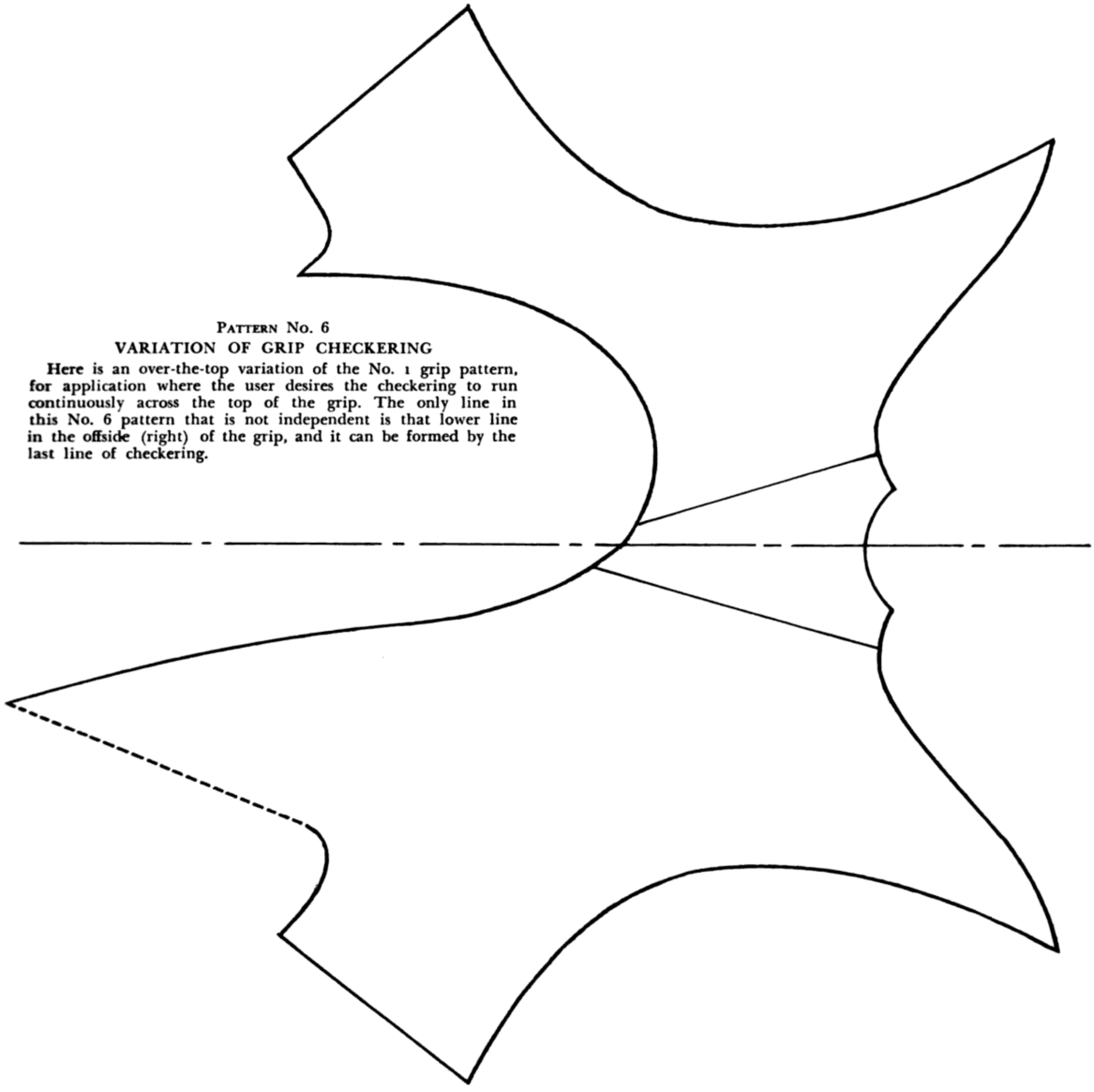


FIGURE 31

The spacer in use. When spacing is completed in the direction now being worked, the cradle will be end-for-ended and the other side worked out. Note how the lines are complete to the outline.

is necessary to recapture a straight line. Within a few spaces the difficulty should be remedied. Actually, if close attention is paid, these crooked lines from just plain cussedness can be prevented.

Continue with the spacing business until all that portion from the master line to the extremity of the panel has been spaced. Turn the cradle around and, using the original guide line, complete the spacing of the panel, that is, completely space the panel with lines parallel in one direction. If you



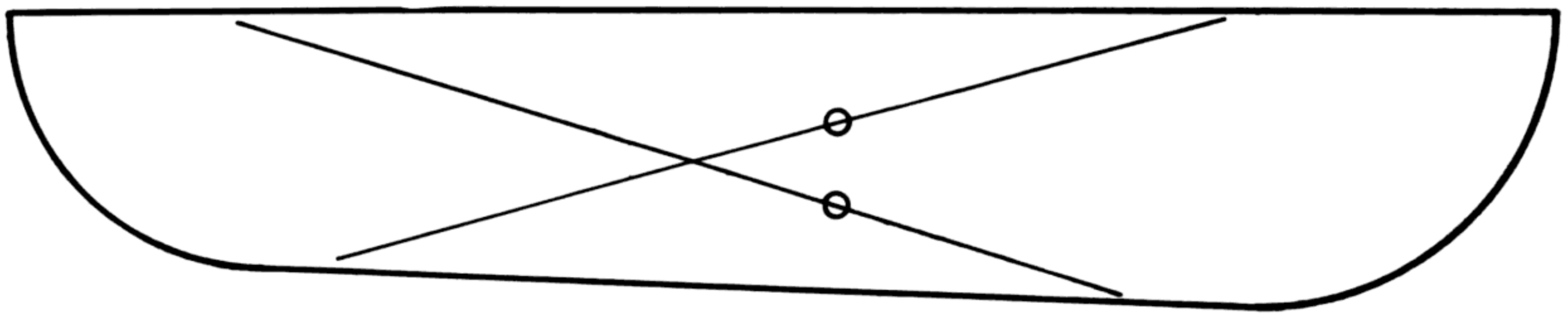
PATTERN No. 6

VARIATION OF GRIP CHECKERING

Here is an over-the-top variation of the No. 1 grip pattern, for application where the user desires the checkering to run continuously across the top of the grip. The only line in this No. 6 pattern that is not independent is that lower line in the offside (right) of the grip, and it can be formed by the last line of checkering.

have difficulty in starting your line, that is the end next to you, directly at the outline of panel, do not try too hard to do so. Not only is one apt to take unnecessary time, but the chances are good or bad, of taking a nip out on the wrong side of the outline. So, wait until the stock is turned around and finish these elusive spots from the other direction. However, do not leave too much to clean up because on contoured surfaces, especially around the grip, trouble lurks in a batch of unfinished lines. Spacing trouble I mean. Sounds silly maybe, but I have encountered it there so I never leave any more to clean up than is absolutely necessary.

Here let me explain why I advised turning the cradle around when starting the second lap. For a right handed person it is best to space from right to left for the simple reason that one can see better that way what his cutter is doing. I have never seen a southpaw checker, but it stands to reason his best bet would be to work from left to right. An ambidextrous person would be mighty handy to himself at this work.

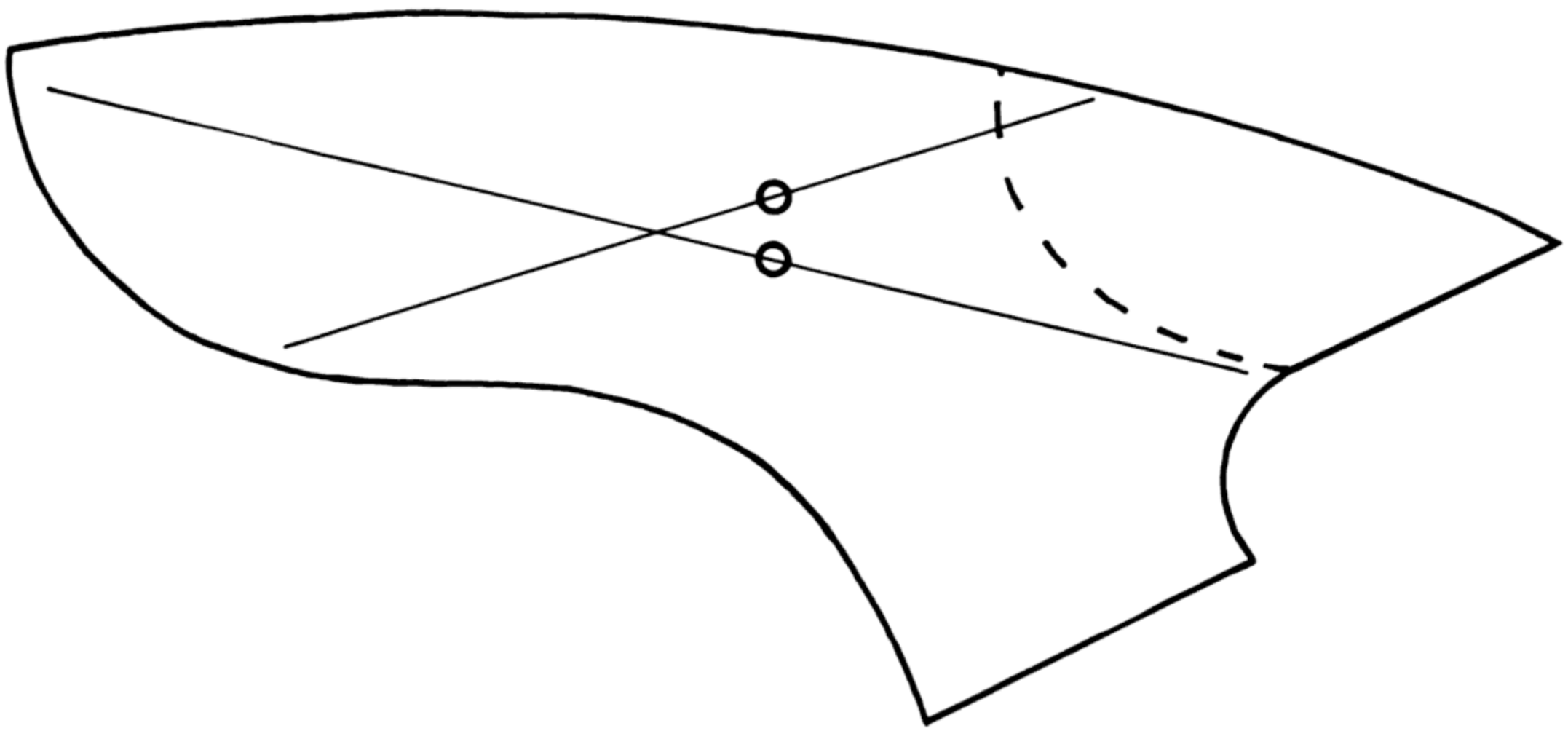


Alternate Pattern for the Beginner

These are patterns for the rifle appearing on opposite page, which illustration shows an actual "first" job, as turned out by Mr. Charlie Faussone, under the directions of author Kennedy.

This is an easy pattern to lay out and to checker. Charlie yelled for something easy for his first try at checkering, so between the two, this pattern evolved. While it is a very plain one, the finished job makes a most pleasing appearance.

After all, it is not the fanciness nor gingerbread that makes for class nearly as much as just plain *good workmanship.*



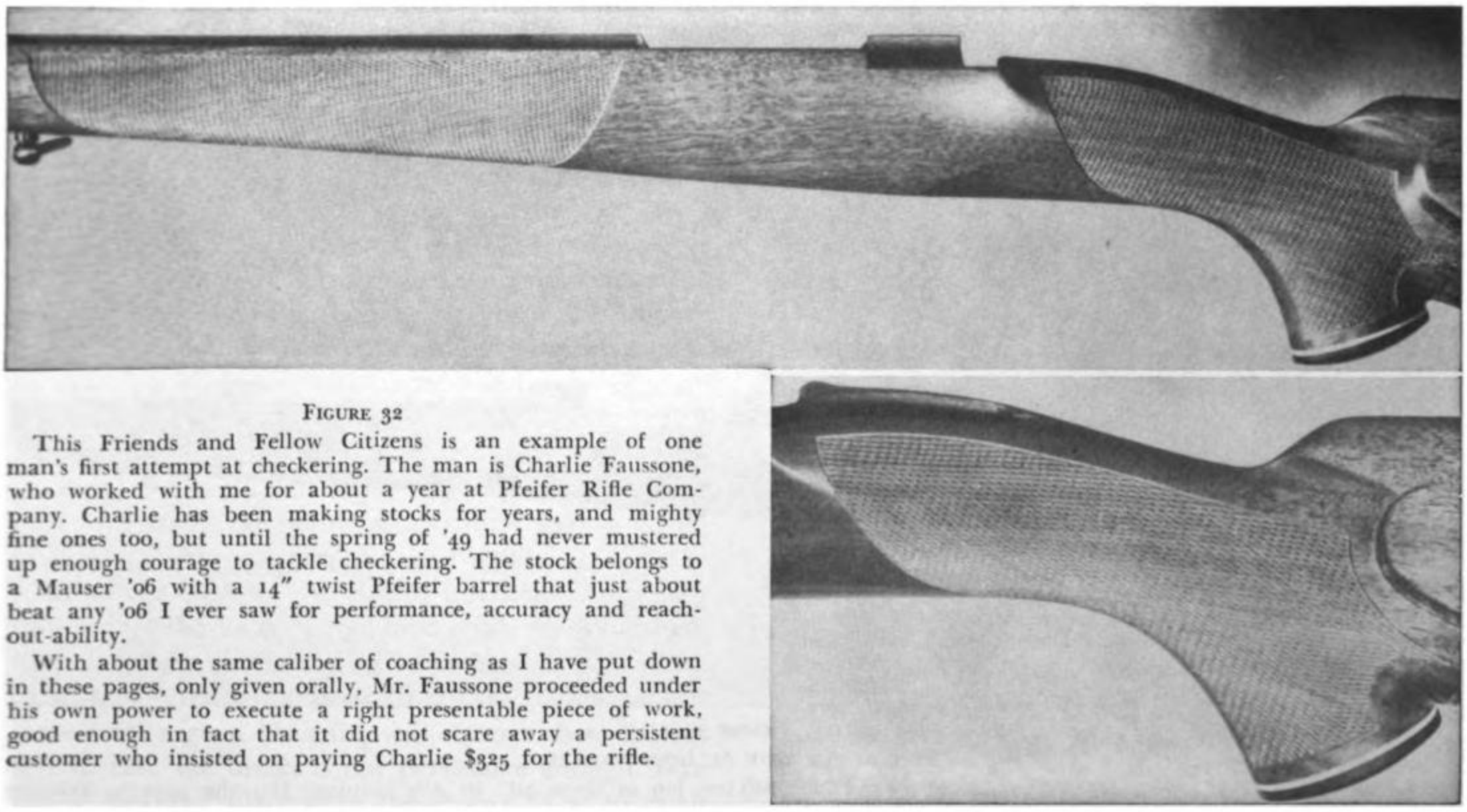


FIGURE 32

This Friends and Fellow Citizens is an example of one man's first attempt at checkering. The man is Charlie Faussone, who worked with me for about a year at Pfeifer Rifle Company. Charlie has been making stocks for years, and mighty fine ones too, but until the spring of '49 had never mustered up enough courage to tackle checkering. The stock belongs to a Mauser '06 with a 14" twist Pfeifer barrel that just about beat any '06 I ever saw for performance, accuracy and reach-out-ability.

With about the same caliber of coaching as I have put down in these pages, only given orally, Mr. Faussone proceeded under his own power to execute a right presentable piece of work, good enough in fact that it did not scare away a persistent customer who insisted on paying Charlie $325 for the rifle.

It is a good plan, whenever possible, to complete the spacing of one direction before starting the cross lines. The reason for this being that in some woods, more noticeably the less hard ones, we are apt to get a crooked line when breaking out of an area that has been spaced into smooth surfaced wood; the same tendency occurs when working from the unspaced to spaced area. This spacing business is really an important one, and do not think it is not. If your spacing is sloppy and uneven, little diamonds here and big ones there, the stage is set for a sloppy job when finished—and Brother that is bad. So keep the lines clean, clear and evenly spaced; your tool will do its part if you will do yours.

Now let us get going on the second half of spacing. To avoid confusion let us refer to the two sets of lines that form the diamonds of our checkering, as the first and second cuts. It matters not which is which, call the first line laid out the first cut and the other the second.

Move the cradle into a comfortable position, remember about getting the forearm lined up and proceed as before. This looks more encouraging doesn't it? Every time a new line is added to the second

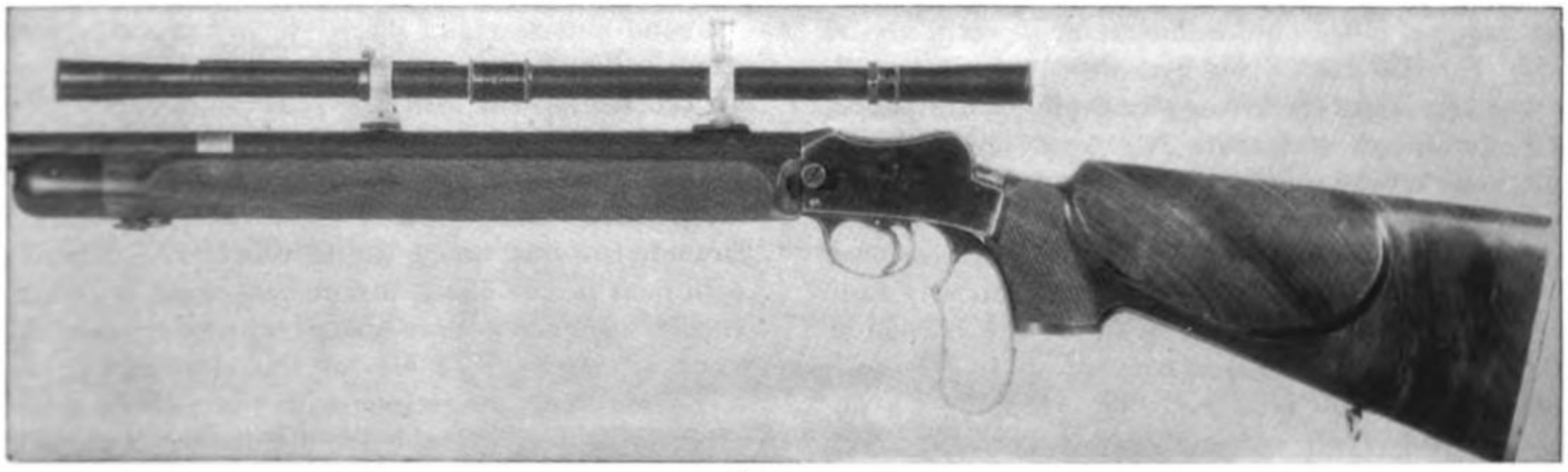


FIGURE 33

AN AL LINDEN BIT OF GUNSTOCKING

Here shown is a B. S. A. Martini action and barrel, after having been restocked and fitted with a remodeled lever by the late Al Linden. We quote Al's caption as he wrote it: "My old standby. Has 'OK. H. M. Pope' stamped on the barrel. Meaning that it was one of a score or so of the B. S. A. rifles that Harry tested by shooting in his machine rest, and then stamped his OK on them. Many a shrewd trader will begin to talk trade when they see Pope's name on these barrels. They will take it for a Pope barrel; this type usually being too stingy to subscribe for the *Rifleman* so they would be able to spot and know Pope rifling by glancing through the barrel and counting the lands."

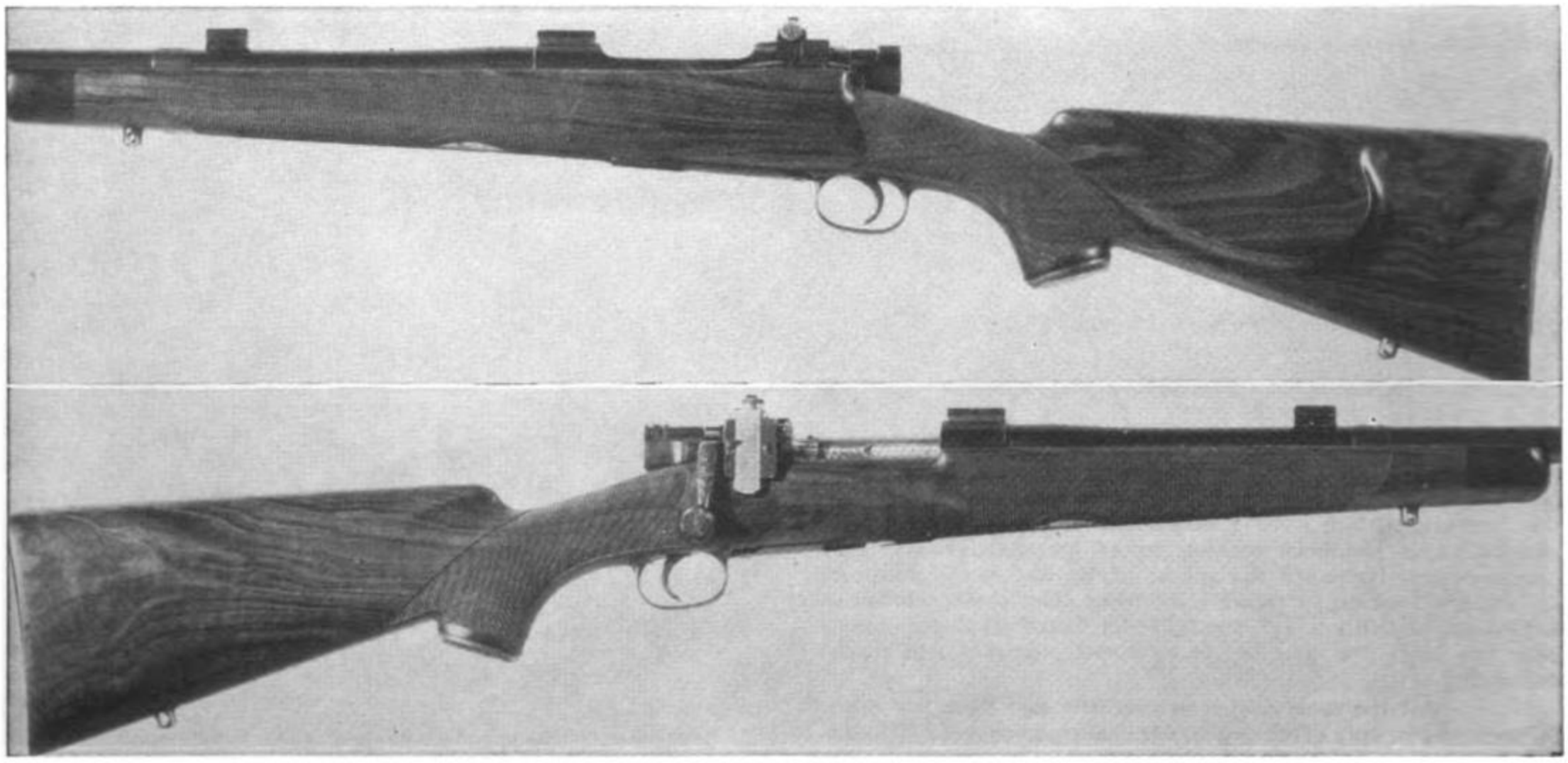


FIGURE 34
ONE OF THE LATE AL LINDEN RIFLES
A Springfield .22 rigged to shoot the .22 Hornet— and "the niftiest job of them all" in Al's opinion. Has the popular Dunton cheekpiece and checkering design. Bolt shank has just enough neat engraving on it to take the plainness off.

cut a litter of new diamonds appear. Proceed until the entire panel has been spaced in both directions.

Before going any farther with the panel just spaced my advice would be to space the other fore end panel. Why? Well now, that is sort of a tough one to answer, but speaking for myself I just feel better off and more settled when I know I have both of the panels laid out and spaced. However, if you are anxious to get that first panel finished do not let any notions of mine stop you, because with the style panel we have started out with there is really no advantage in spacing both panels before going any farther.

I may get called on this, but to me it is still a good idea. For the second pass over the checkering, or in other words for removing the bulk of the wood, use the spacer tool. Sure it is intended only for spacing, but an inexperienced hand can do more uniform work with the spacer than when using a single cutter or the V tool. True, the spacer is slower but this is not a bread and butter job so why rush.

On the second pass, cut the lines deep enough so that the crest of the diamond will be nearly to a point. About now is a good time to hunt up a discarded toothbrush and use it liberally to keep the "sawdust" cleaned out of the work. This is especially necessary when deepening the second cut, as deepening the first cut tends to hide the other lines. It is surprising how much sawdust is made while checkering is being done. Another good brush for this purpose is a small nailbrush with hooks on it that clamp around the fingers. A fellow can just put it on whichever hand he wants to use and wear it; if I can find one I will stick it into a picture.

After the deepening of the second cut has been completed, take the V tool and "point-up" any of the lines that are not full depth clear to the outline. About now you are going to start thinking that those boundary lines need deepening but bear with me for awhile and leave them as they are. You can still see them well enough to tell where to stop the tool.

By now the entire panel should be to the point where a light cut with the V tool will bring the diamond out clear and sharp. At any rate stay with it until they *are* sharp at the crest. If you cannot get a clean fuzzless cut with the V tool, clean-up with a square needle file that has been blunted and bent for the purpose. The Dem-Bart No. 1 fine is the real medicine for this work. For me they will finish cleaner than any needle file or riffler. The difficulty with most needle files is that the edges are not sharp enough to make a clean sharp-bottomed groove. So, if you do resort to a file for this cleaning-up process, make sure you get one with really sharp edges.

Now how does it look? Are the diamonds uniform in size, the angles of their sides uniform and is each line carried full depth to the outline? See that all lines as nearly as possible are the same depth and the angles of the sides of the diamonds are uniform. The angle is controlled by holding the tool at right angles to the surface at all points. Another objective

is clean cut work and if well done the work is so clean and free of fuzz that the figure shows clearly through the checkering. This point is well illustrated in many of the examples shown in this book.

If all is O.K. let us go to work on the outline with the V tool and whatever else is necessary to cut it down to the same depth as the checkering. It is easy to make a clean job of the straight portions but take it easy with the curved parts. Right here you can muff an otherwise excellent piece of work, by relaxing vigilance with those wood removing instruments. Take time to use the knife or the V scraper for the short curves, so as to leave them uniform and clean. A rough, ragged line a half inch long will stand out more prominently than a panel of good checking as large as your hand.

After the outlines are cut to full depth, you will notice that the ends of the checkering grooves where they intersect the outlines, have been dammed up or sort of blinded by wood from the outline cut. In some cases a good brushing will remove these flashes, but in case the brush is not persuasive enough, take the V tool and place it in the groove so as to catch the flash and back up with it. This will remove the unwanted wood without putting a nick in the outline, as might be done if an attempt were made to remove the flash with a forward stroke.

If I were in your boots right now, I would apply a generous amount of linseed oil to the finished panel, let it stand for five to fifteen minutes, then brush it out thoroughly and go out and mow the lawn, chop wood for half an hour or beat the wife and kids. Just *what* you do does not matter, the main thing is to work off some steam, or nervous tension, if you prefer.

Work out the other side of the fore end in the same way as the first. It should be easier, as things usually are with a little experience. I have found that whenever possible a line should be run its entire length at the time it is started. Where spacing, the spindle should be free to turn easily and smoothly so that as one works the stock can be rolled in the cradle, thus allowing the hand to work in a normal position and the tool vertical. Much better results can be obtained

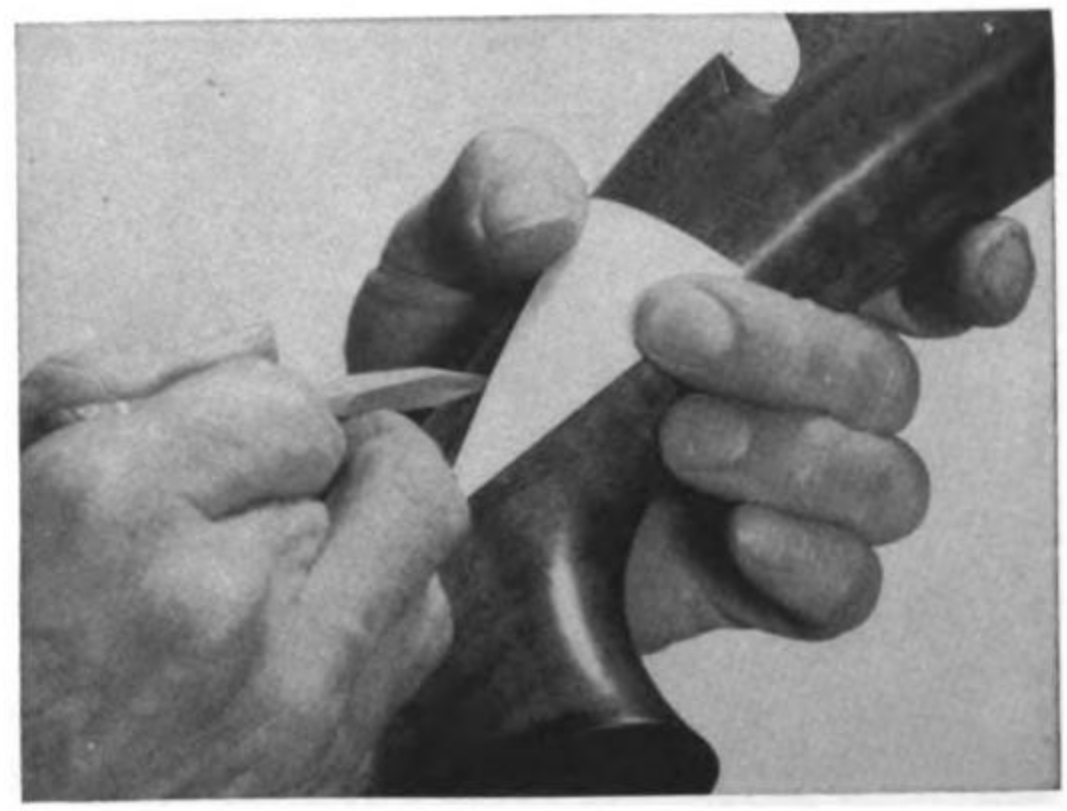


FIGURE 36

Showing a half-diamond template in use laying out the master lines on a Model 70 stock. The half-diamond shown here was a prop made from a business card for the sole purpose of making a better photo (the one I regularly use is made of clear plastic and does not photograph well.)

Also take a close look at that long-pointed, bevelled, pencil that I speak of elsewhere. Even though the diamond lays close to the wood, in this case, that long bevel is beneficial in keeping the working edge of the pencil at the desired angle. *Photo by Bob Emmons.*

by this method than by twisting the hand to follow the contour of the stock. When it comes to ticklish jobs like working out the ends of the lines, where one must have the best of control, then lock the spindle and use both hands to manipulate the tool. Lock the spindle also when finishing the outlines.

Now that the fore end is finished, and by gum it looks pretty good, you have gained a bit of confidence in yourself and your equipment. If any bugs have been discovered in the tools now is a good time to make corrections. Never make any changes in a tool, especially a spacer, in the middle of a panel. Neither is it a good plan to put up with some shortcomings in a tool that can be remedied. So now is a good time to make any changes.

Shift the cradle back to where it pivots under the grip. While the grip is a crankier deal to checker than the fore end, it is nothing to worry about, no worse than the fore end was "way back when" there was no experience at all for a bracer. Due to the

FIGURE 35

A bullgun stocked by the author for Verle Fowler, of Fillmore, California. Note effect of cheekpiece on contour of grip panel. Right-hand panel is drawn back in a long point, as may be seen in other photos. It would take a color photo to do this stock the justice it deserves—I think it is one of the best suigi jobs I ever did. *Photo by Paul Wolf.*

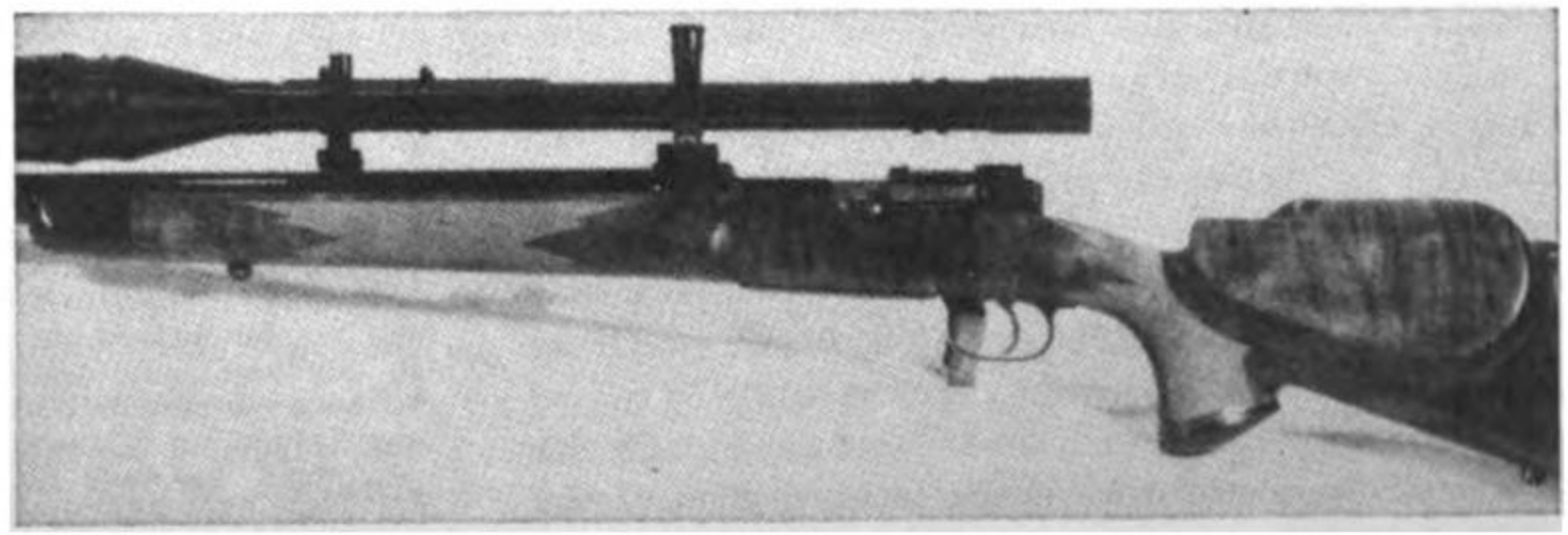


FIGURE 37

Here we see the "special" straight edge in use. Note that the narrow part fits into the trigger guard inlet, thus centering the forward end. The aft or lower end must be centered at the edge of the grip. Note that the pencil is sharpened with a long bevel and that bevel is held at right angles to the flat of straight edge. In this way the lines are projected to the inside of grip, resulting in straight and parallel outlines for the inner edge of the grip panels. If the pencil is canted while in use with this straight edge, the resulting lines will *not* be parallel or straight. It takes a little time to make this gadget but it pays off in a short time.

compound contours of the grip region of the stock, a flat paper pattern cannot successfully be used for laying out the entire panel, though I think it is enough worth while to make one from the full scale pattern and use it with discretion as an aid or guide rather than as an actual pattern.

You will notice on all the patterns in this work, that the master lines are indicated by a heavy black line. In most cases the master lines cut through the panel near the approximate center, while in others one or perhaps both master lines may be the actual outlines of the panel. As a rule it is best to locate the master lines near the center, while peculiarities of some patterns demand the latter method. When tracing a pattern, trace the master lines as well and transfer them to the wood at the same time.

Take a few minutes now and make one of those "gadgets" spoken of a while back, a special little straight edge that will help no end in laying out the inner curve lines of the grip. Art paper or its equivalent will do but .020" to .030" sheet plastic is much better. A strip 13/16"x6" is necessary. Three inches must be narrowed to 5/8" (or the width of your rear tang inlet) symmetrically about center line.

With a soft lead pencil, a *very* soft one, locate the center of the pistol grip at the forward edge of the grip cap and match the center line of the "special" straight edge to this point, the narrow part of the straight edge lying in the tang inlet. The wide part of the straight edge will extend to about or near the rear stock screw hole. Hold the straight edge snug against the inner curve and level crosswise, or shall we say at right angles to the vertical center line of the stock. Have the soft lead pencil sharpened with a long bevel and hold it with the bevel, not the length of the pencil, at right angles to the straight edge. Mark along both sides in this manner, bearing hard enough to get a distinct line, but not so hard as to leave a mark or indented line in the wood. As you can see, the straight edge acts as a spacer as well.

Remove the straight edge and size up the result of this recent strenuous effort. I will agree with you that an extra hand would have been an advantage. Check the spacing of the lines at three or four points. Are they straight? Symmetrical? Since a soft pencil was used, any unwanted lines can be erased and replaced with more satisfactory ones. The inner curve lines can be extended as far forward as desired by gaging along the side of the tang inlet with dividers or by setting a straight edge by eye to parallel the same inlet.

Now lay off a line parallel to and about 3/16" from the base of the grip cap. The length of this

FIGURE 38

Scratching in the master lines on grip panel with scribe and plastic scale. They have previously been laid in with soft pencil and surveyed for straightness and general acceptability. This stock happens to be one of my own, Oregon burl maple given to me by Mr. Beaumont of Coos Bay, Oregon. It is from my .240 Cobra Springfield, just about the ultimate in varmint rifles in my opinion. Of course it isn't as spectacular on ground squirrels as a .22-250, .224 PR or some other hot .22, but for jack-rabbit, rockchuck or coyote it is just about all any man could ask for. The Cobra case is a blown out Swift case necked out to 6mm. My pet load is 48 grains of 4350 behind an 85-grain bullet, giving a velocity of 3675 to 3700 F.P.S. For long ranges the Cobra takes over where the hot twenty seconds get tired.

FIGURE 39

Owing to the fact that the straight edge is clear it is not too clear what is going on. Anyhow the north end of the strip of plastic has a circular section especially concocted for marking the outline over the notch of pistol grip and has three lines scribed below this circle. If one takes a close look maybe he can see these dim lines about the vicinity of the junction of the stock and grip cap; they are used to gage the height of the outlines so both sides may have a faint resemblance of belonging to the same stock.

FIGURE 40

Using that cranky, little, special V tool for preliminary cutting in of the outline just marked in in the last illustration The master lines have been layed in and serious business can soon commence. Personally, I prefer a veiner to this tool, however it is easily made and will do a good job. I used it quite a while before getting wise to the veiner. *Photos by Mark Speer.*

line is dependent on the size and shape of the pistol grip cap or the butt of the pistol grip. It is well to extend this line as far as possible to the rear without going too deep into the depression formed by the junction of the pistol grip and the butt stock. Your own judgment will have to be used here. A little thought and study of the accompanying pictures should make this problem a light one.

Our next move had just as well be laying out a line at right angles to the one just completed, extending from aft end of same due north and circling the notch between the pistol grip and the underline of the stock. This line should begin a true circular curve to the rear at a point that is also dependent on the shape and size of the stock. Try to make the curve and its location harmonize with the curve, if it has a curve, of the above mentioned notch. This curved line is to blend tangentially into the lower master line for this panel.

The forward line of this pattern must be varied according to the type of action being used. For most cases the paper pattern can be used for this line, since there is little other than a flat contour at this point. Keep a clearance of about 3/16" around and parallel to the tang. On most actions the right and left hand forward lines will be symmetrical but not so with Enfield and Remington 30-S and 720 models. See illustrations and pictures of the escape from this dilemma.

The top line coming up now is one of the most variable due to the difference in shape and size of the stocks in this area. However, start at the aft end of that short line following the contour of the tang and follow the pattern given for your rifle as near as is practical. Note that the aft line of the panel follows no particular contour of the stock, therefore it is, so to speak, wild. If you think you can improve on this aft line there is nothing to hinder your imagination. Whenever possible, make all outlines follow or harmonize with some line, edge or contour of the stock.

Very often a cheekpiece will have a decided effect on the top and aft outline of the left hand panel. Figure No. 28 illustrates this point very effectively. In such a case lay out a line conforming with the forward edge of the cheekpiece, following the line of tangency between the regular lines of the stock and the fillet of the cheekpiece. If the fillet has terminated in a step, use this step as a contour guide. Lay out

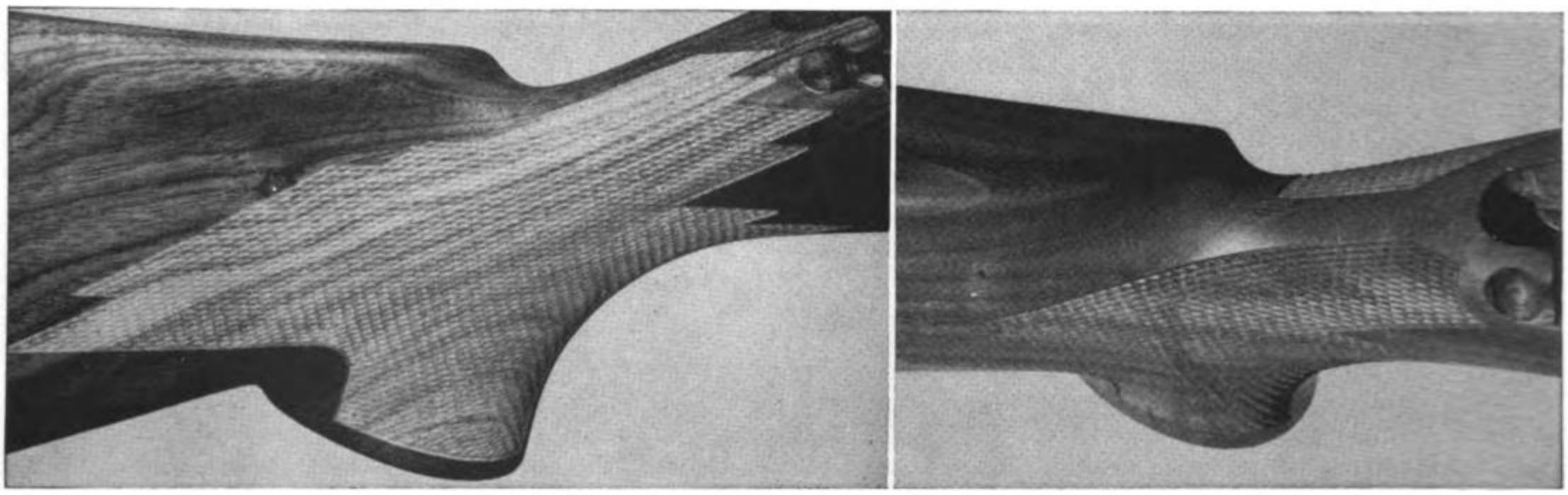


FIGURE 41

A pair of pictures of Enfield semi-custom stocks showing the effects of the unsymmetrical tang on the checkering pattern. Also a couple of methods of treating that effect. *Photo by Bob Emmons.*

the other outlines same as the right side of grip, letting them terminate wherever they intersect the line paralleling the cheekpiece fillet tangency line. The above layout will, of course, throw the grip panels out of symmetry, but so what, the cheekpiece has already thrown the stock out of symmetry in this area. On a stock having no cheekpiece, the panels should by all means be matched. Also, on stocks having those skinny undernourished type cheekpieces (which are O.K. on most iron sighted rifles) the grip panels can be held to a dimension that will enable one to make symmetrical panels.

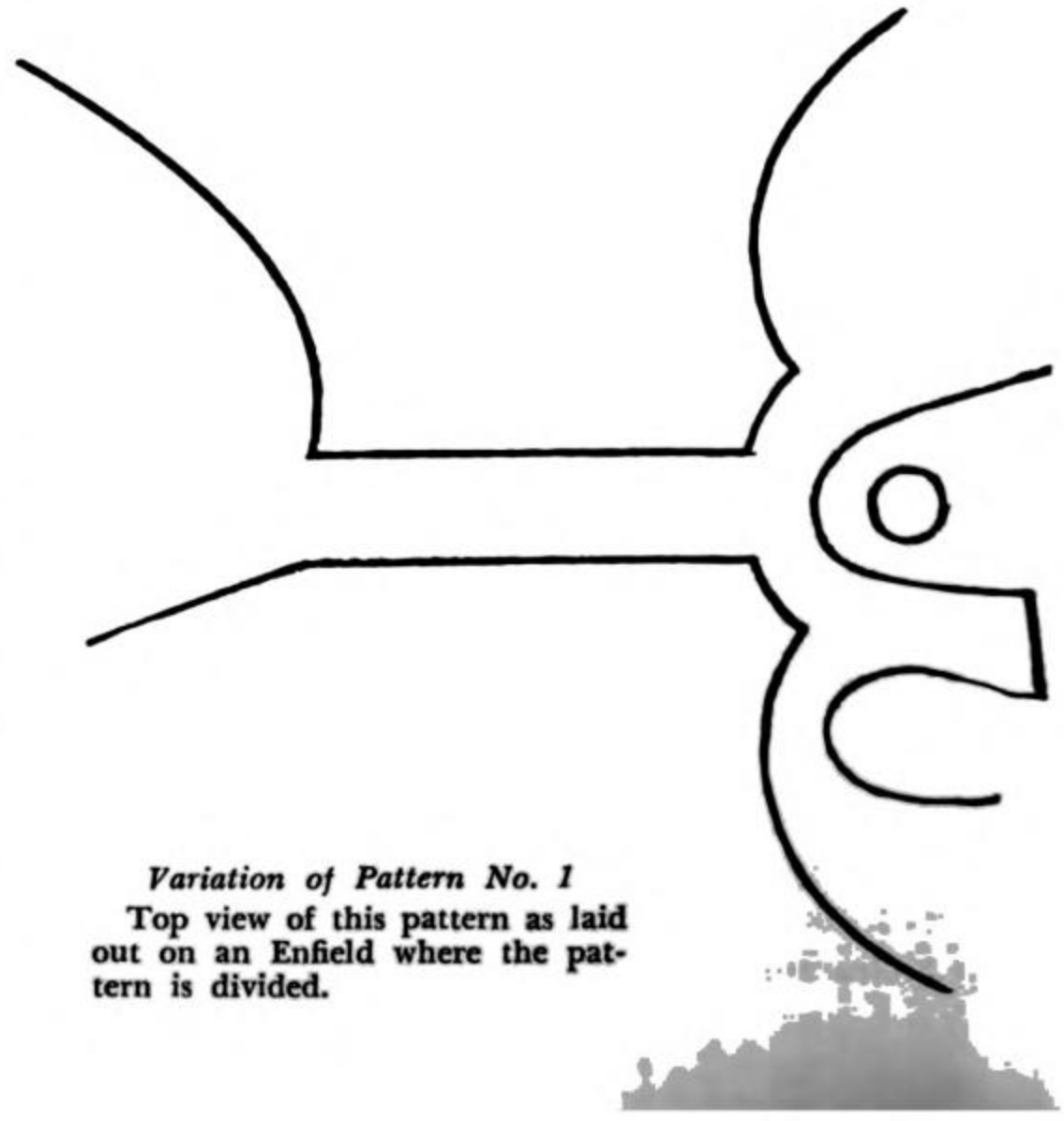
Right here might be as good a place as any to introduce a little kink that can be mighty handy, if the material is available. That is sheet lead, preferably about 1/16" thick. The outline of a flat pattern, as those found in this work, may be transferred to the lead. The lead may then be cut to the line and fitted or molded to the contour of the stock. The grip is the only place where this method really shines, as paper and plastic can be used successfully for the fore end.

When one side of the grip is laid out, the lead may be reverse molded and the opposite side duplicated in a very close degree of exactness. One thing must be remembered though, when the lead is cut to a flat pattern and then molded over compound contours, there are going to be short spots, most noticeably along the hollow of the grip. However, a little help from the straight edge and some general pointing-up will make this method surprisingly easy and successful.

The sheet lead method can be used for copying a pattern for transfer to another stock so long as the two stocks are very nearly alike. No hatful of words is necessary to explain the why of this. The best place to find sheet lead is at a plumber's supply house or if perhaps Lady Luck has her arms about you, at a building materials salvage company.

After the outlines have been V-ed out to half depth, check angle and straightness of master lines. If they are O.K., cut or scratch them in and V out deep enough to follow with the spacer. If your stock is without cheekpiece make the left hand panel the same as the right, otherwise fit this panel to the cheekpiece as in Figure No. 28. All you really do is duplicate the right hand panel minus the chunk removed for the cheekpiece. Of course, for a southpaw shooter this arrangement would have to be reversed.

Start with the first master line and space toward the top of the grip. There is no real difficulty to be encountered, just watch the depression at the junction of the lower edge of the butt and the pistol grip. See that you roll the stock to keep the tool working in a position normal to the contour. When spacing that area below the first master line keep an



Variation of Pattern No. 1

Top view of this pattern as laid out on an Enfield where the pattern is divided.

eagle eye out for spreading lines as you begin to work over into the hollow of the grip. Here it is mighty important to keep the tool normal to the contour or just as sure as shootin' your lines will spread. However, do not get alarmed at the normal dip of the spacer lines into this hollow. As you work in a straight line over the changing contour, things are bound to happen, and one of them is that, when viewed from an angle, your lines are going to look bent as all get out. Well, maybe they are. Anyway they have to be that way, so what? You know they are spaced right so to hell with them—look at them from an angle that makes them look right.

In the grip you will find corners to work into that are harder to get at than were any of those on the fore end. Do your best to work into all corners as far as possible, to the last diamond, let us say. It will take some extra time, but the finished job will smile for it.

Space from the secondary master line in both directions to complete the spacing of the grip. As the forward ends of these lines curve around into the hollow of the grip, watch them! They are as tricky as a grass fat cayuse. Finish each line completely to the outline of the panel, or you are apt to find that if you stop short and then go back to finish out the works, that they will fan out and cause you a pocket full of embarrassment. Spacing the other grip panel is just repetition of the first and from here on the two of them are pretty much a repetition of the fore end. The main difference is that in the grip panels there are a couple of spots that are rather difficult to get at. One of them is along near the aft tang screw and the other is in the lower forward corner of the pistol grip. These spots may tax your patience but keep a stiff upper lip, they will give up if you do not.

It will also be found that it is more difficult to do a good clean-up and finish job on some parts of the outline of the grip panels. Here again take your time and do it right; you may sweat a couple extra pints but when the job is finished you will be mighty glad you paid the price.

When the job is supposedly completed it is a bright idea to look the whole business over from various angles. You are apt to find a line here and a diamond there that will stand a little touch-up. One point that is a bugaboo for a beginner is getting the angle, or slope of all the diamonds, the same. When working over a contour, it is no joke to keep the tool at all times at right angles to the surface, or in the more common term, normal to the surface. A row of diamonds with the angle different from the rest stand out like a "Chic Sales Special" in a fog, and a number of them look pretty bad. Of course you can get away with some off-angles as long as you

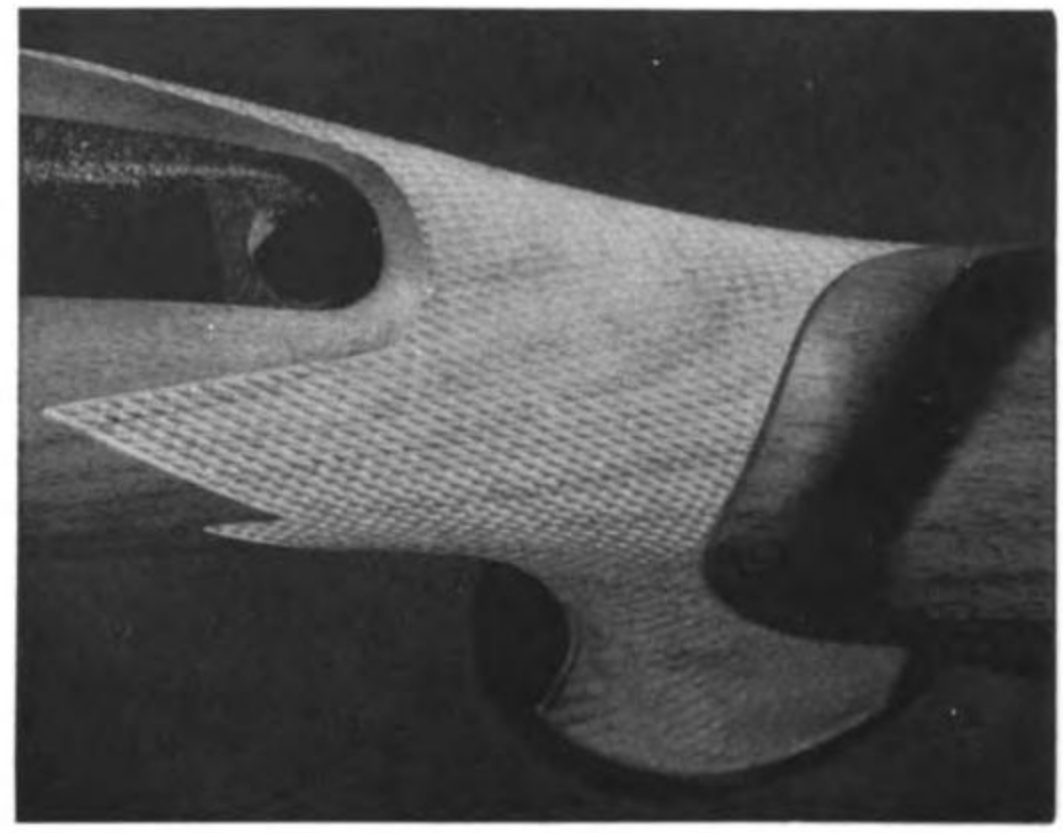


FIGURE 42

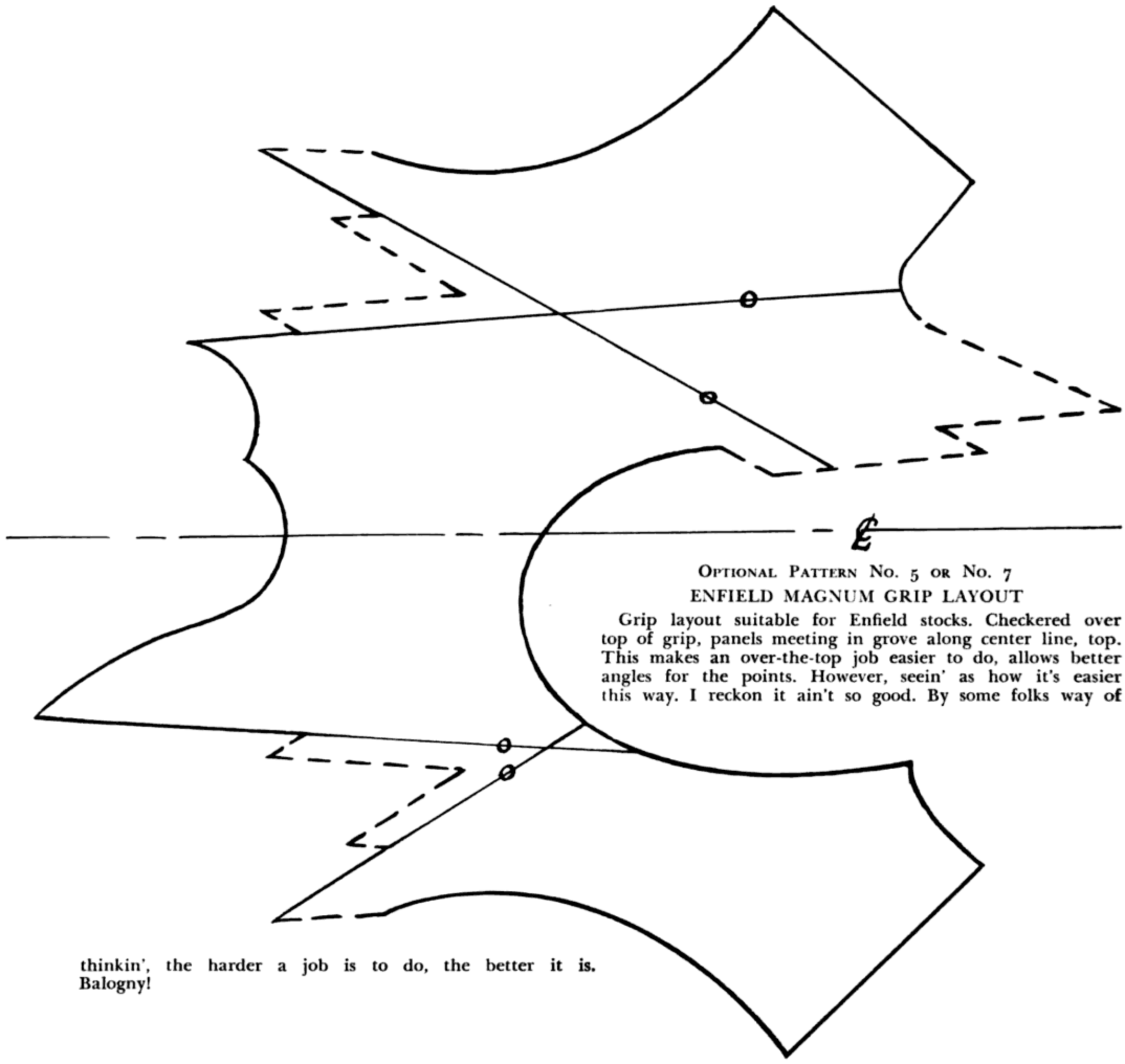
Here is shown a grip checkered over-the-top. The master lines in this case were the outlines extending along the tang to the upper points, located by placing the half-diamond template on top of the grip, point aft and centered. That isn't gravel in the inletting, just some of the dust that Bob Emmons' camera saw before I did.

This is not a custom stock, but a semi that is machined for me by Carl Peterson, of Sun Valley, California to my own pattern. This stock, in plain wood, sells for half to a third the price of a custom stock. Carl is a Swede cabinetmaker from Minnesota, who recently got himself a four-spindle duplicator. After tuning it up to his satisfaction, and making a few additions, he is doing the best machine inletting and shaping I have ever seen. Of course, his prices are higher too, but when one considers the time saved by the more accurate work the actual cost is normal.

do not take any pictures, but a good camera will make bums out of most of us. In the original prints you should see what Mark Speer and Paul Wolfe did to me. However, Mr. Samworth's engravers have kinder hearts (or something) than those two cold-blooded photographers.

As before mentioned, be sure to remove the excess linseed oil from the checkering within fifteen or twenty minutes after application. When the first oil has oxidized another application may be given. Let it stay in the checkering no longer than the first and remove excess, being sure to really *remove* excess. Use a brush for the purpose—a clean paint brush is very good. If any oil is left in the bottom of the grooves it will start right in collecting dirt and curd in general.

There is one little deal that perhaps could have been discussed before going this far, but you should read at least this far before starting to do a scratchin' job on the pet smoker anyway. If your rifle is a Springfield, Mauser, Model 70 Winchester, Remington 721 or 722, or any other rifle having a symmetrical stern end to the receiver, the above described panel layout for the grip is O.K. for any style. However, if your rifle is an Enfield or Model 30-S or 720 Remington, a little alteration will have



OPTIONAL PATTERN NO. 5 OR NO. 7
ENFIELD MAGNUM GRIP LAYOUT

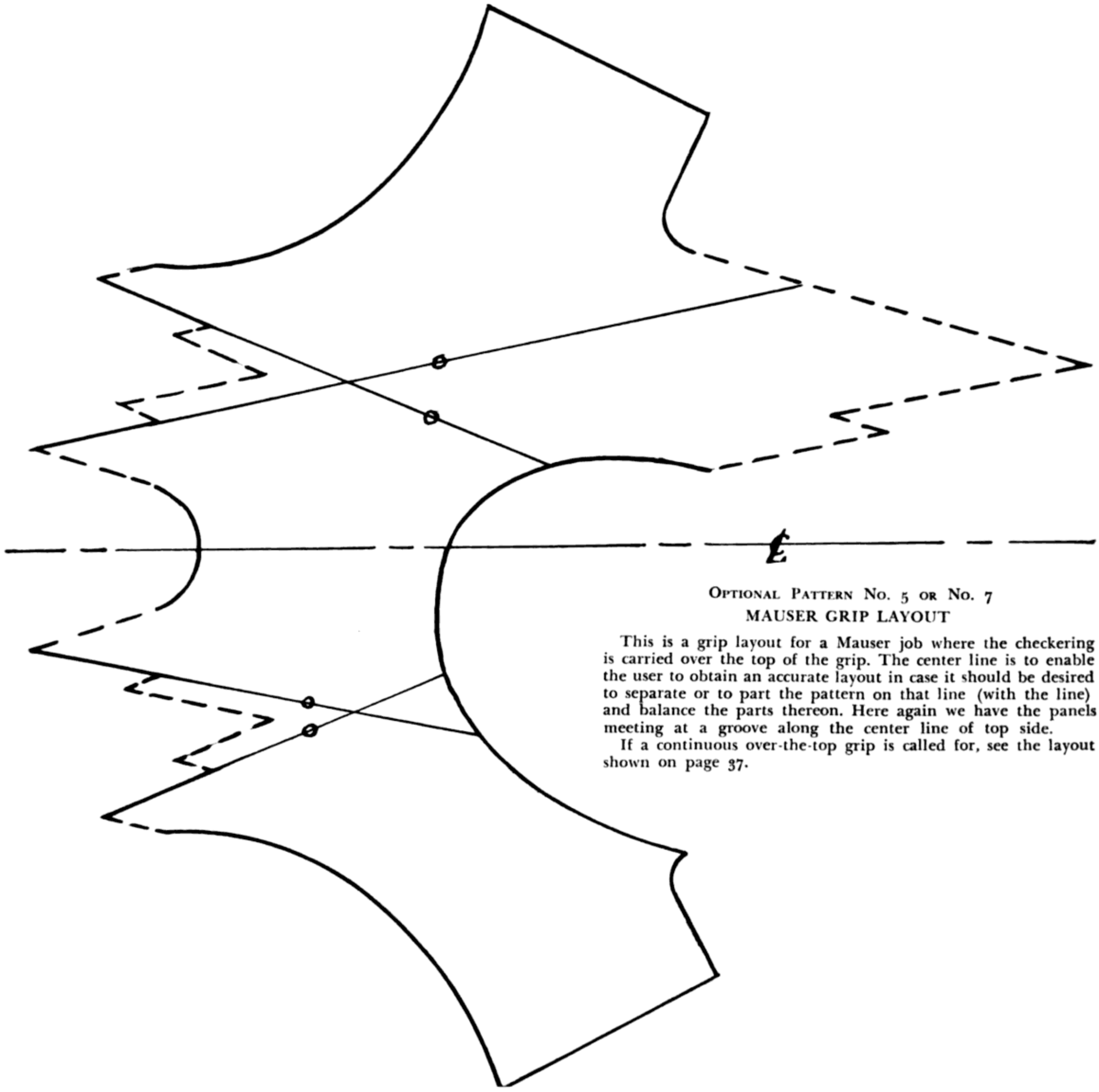
Grip layout suitable for Enfield stocks. Checkered over top of grip, panels meeting in grove along center line, top. This makes an over-the-top job easier to do, allows better angles for the points. However, seein' as how it's easier this way. I reckon it ain't so good. By some folks way of thinkin', the harder a job is to do, the better it is. Balogny!

to be made on the upper forward part of the right hand panel to dodge the rough country caused by the very good but heartbreaking arrangement of the safety. There are a couple of ways I go about circumventing the difficulty, shown in Figure No. 41. The left idea is really the easier to do but is in place only with a point design. For a curved end design, our only out is like the right view. Guage the outline 1/8" to 3/16" from the edge of the inlets for the safety and safety lug. This makes a few more curves, and pretty tight ones to negotiate, but most of us live through it. This method is O.K. for any panel design and the one I use most.

Maybe I have missed the boat entirely for your first checkering job; maybe you have a single shot Hi-Wall, Sharps-Borchardt, Farquharson or some good looking deal liberated from Germany or it might be a scattergun or hog leg. In that case you will find information and patterns applicable to your needs farther on. The fundamentals of checkering are the same no matter what type of arm it is to be practiced on.

THERE ARE OTHER PATTERNS

The pattern we spent so many hours and words on is, I believe, as easily executed as any in captivity. The reason being that practically all the outlines are independent lines, that is, none of them are formed by a line of the checkering itself. To best illustrate that point let us take up a point design pattern—No.



OPTIONAL PATTERN NO. 5 OR NO. 7
MAUSER GRIP LAYOUT

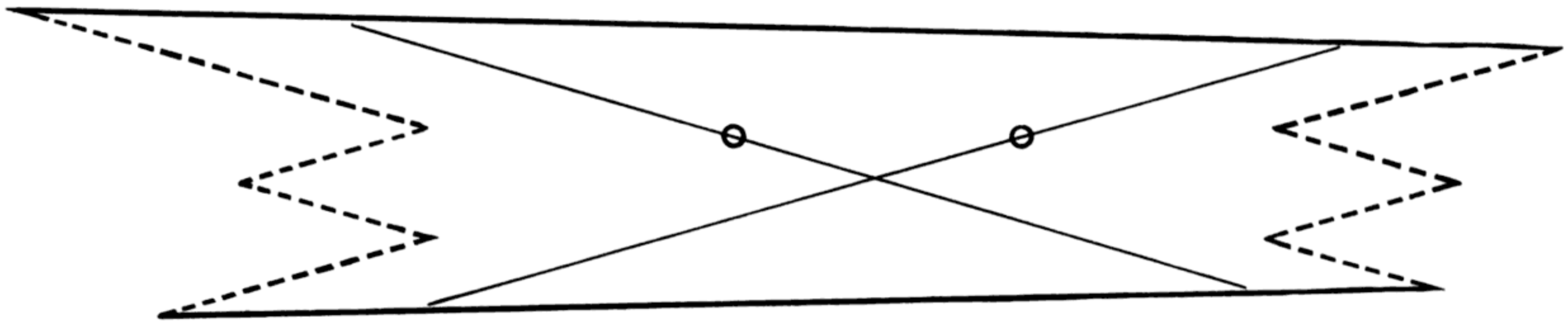
This is a grip layout for a Mauser job where the checkering is carried over the top of the grip. The center line is to enable the user to obtain an accurate layout in case it should be desired to separate or to part the pattern on that line (with the line) and balance the parts thereon. Here again we have the panels meeting at a groove along the center line of top side.

If a continuous over-the-top grip is called for, see the layout shown on page 37.

2, one of the simpler ones—which when well done can feel at home in any company.

My advice is to start with the fore end with this pattern, or any pattern for that matter until some experience has been gained. This fore end can be varied in length to suit the individual taste, 7½" to 8½" takes care of most actual needs. Our master lines are laid out in approximately the center of the panel, as you will find to be the general rule, though not entirely. The advantage of placing the master lines in the mid-position is to divide our spacing distance, thus eliminating as much as possible any chance of ending our panel with off-angle lines. As has been stated before, it is much more important to keep the spacing accurate, thereby maintaining the angles of the master lines, in a point design, than in a cut and dried pattern like No. 1. The point design shows up such errors upon mighty short scrutiny.

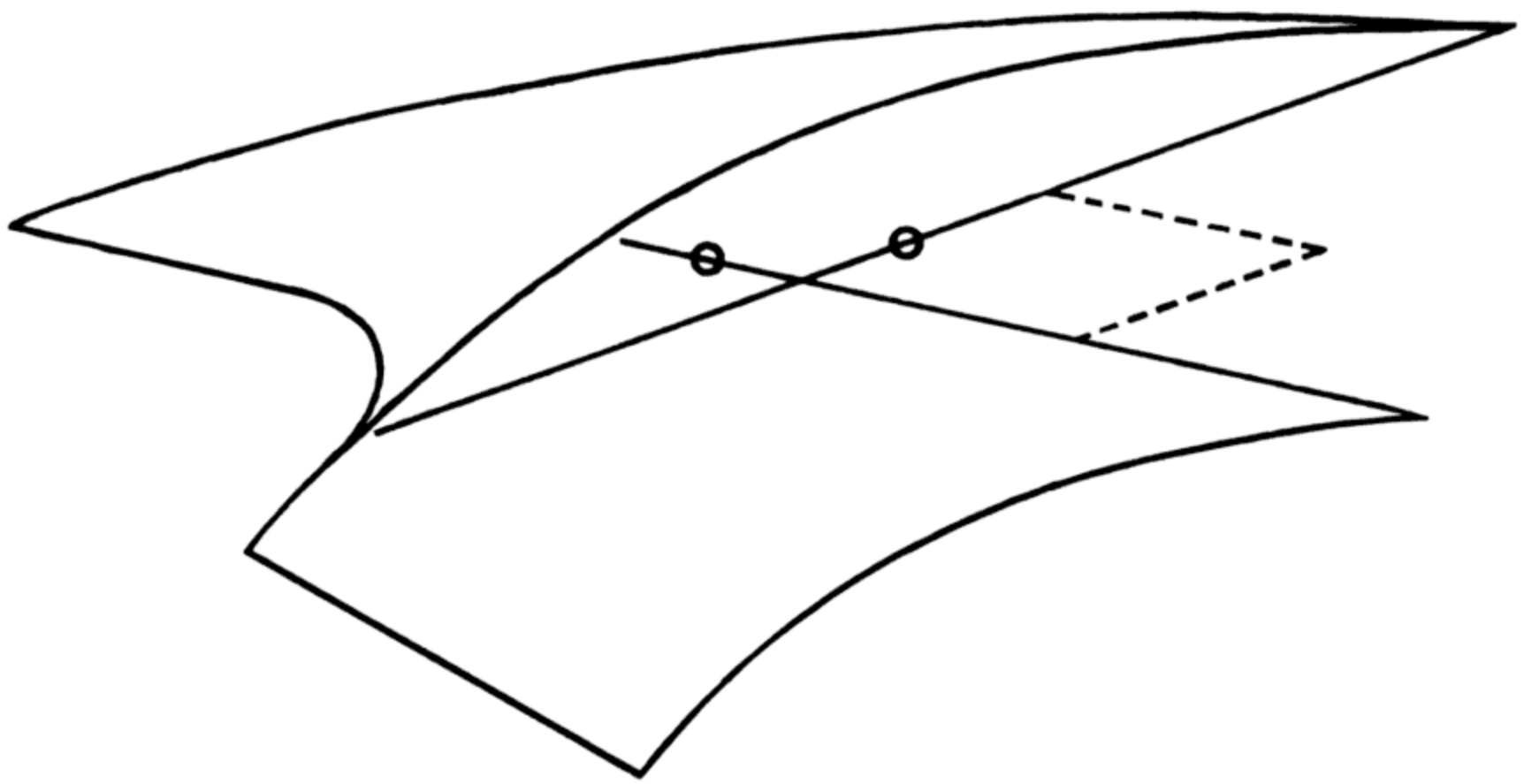
In laying this pattern on the wood, use a soft lead pencil until it is certain that proportions are right, and lower lines are parallel or carrying the



PATTERN NO. 2
FOREARM

Many owners want a point pattern on their guns and this one is just about the simplest and easiest point design the beginner can use. Lay out the upper and lower lines first and then lay-in the master lines in the relative center of where this pattern will be when completed. Then work outward in both directions with the spacing tool and allow the location of the points to be determined by where the last of these accurately spaced lines will fall.

Take note that the points harmonize on both grip and forearm patterns in this design.



PATTERN NO. 2
GRIP

This No. 2 grip pattern is shown in two forms—with and without a "tail." This tail may or may not be used, that is up to you, but I think it is a definite asset to a good looking job. If it is included, eliminate the line we show between the main panel and this "tail annex" when you lay out this pattern.

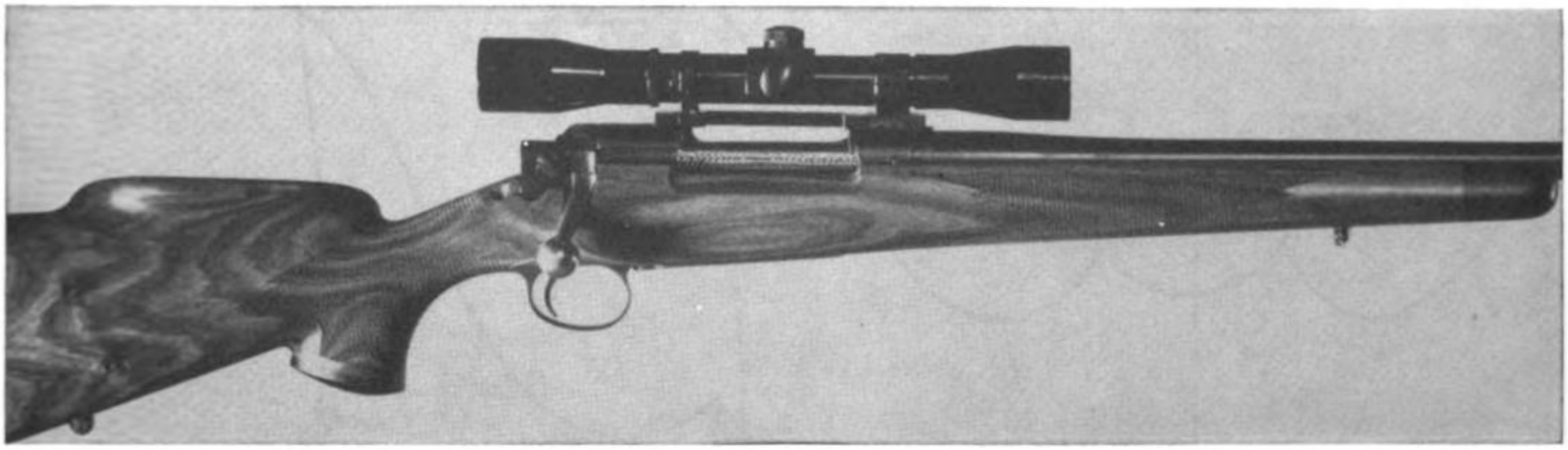


FIGURE 43

A .300 sharp shoulder (28°) built by the Pfeifer Rifle Company and stocked by the author for Audie Murphy. Note how the color of this French walnut shows through the checkering. If the checkering is clean, a less vivid figure than this will show up well.

The first time Audie used this rifle was in a 200 yard bench rest match, for hunting type rifles, in which he took first place with an average of 1.49". His groups ran: 1.146", 1.295" and then he threw a wild one that made his third group measure 2.058". *Photo by Bill Lucas.*

taper of the fore end—either of which is all right. When satisfied with the layout, scratch and cut-in (1/3 to ½ depth) the upper and lower straight lines and the master lines. Start spacing as in Pattern No. 1, and when the end of the straight line is reached, end the space lines at the pencil lines indicating the end of the panel. It is smart to terminate just short of the pencil lines, say 1/16" to 1/8". Space the entire panel in one direction, then run second cut. You will know exactly where to end your second cut lines, but again the old warning, do not overrun. When the second cut is finished, you can back track and finish out those lines held short on the first cut.

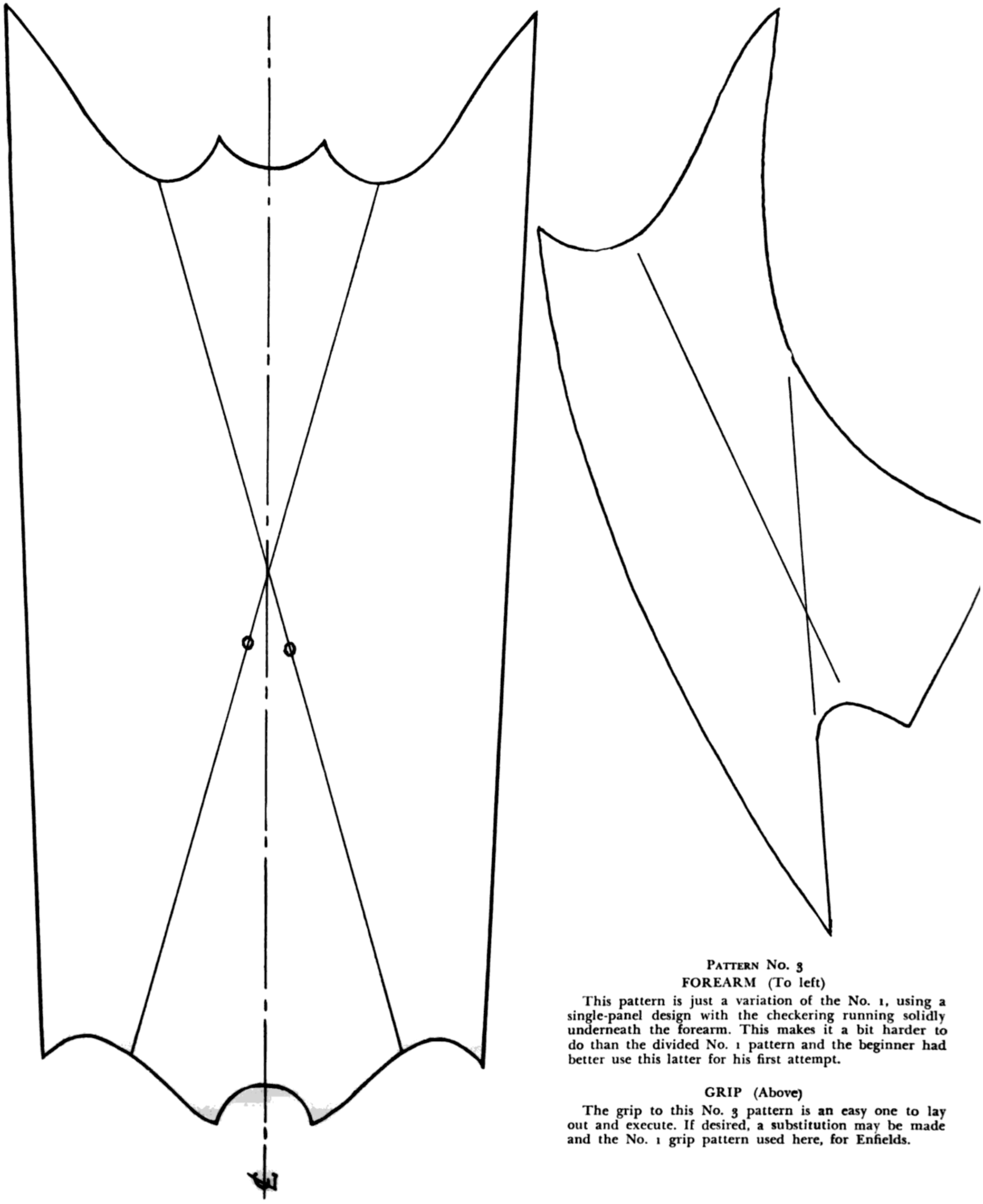
Now in case a gremlin has crept in and you find a first cut line too long to cover with a second cut as laid out, just extend the whole end of the panel enough to cover. Here is where it is wise to layout and go once over *both* panels, that is right and left. In case you have gotten the first panel right on the nose, or pattern, but you have had trouble with the second panel and have had to lengthen it, maybe, one, two or three lines, then the first panel can be lengthened accordingly. And I can say from experience, it is a dang sight easier to make additions on a roughed-in panel than a finished one.

You will notice that the lower straight outline is shorter than the upper. Likewise the small center point at each end is below the vertical center of the panel. This is not just happen-so, it is fully intentional. One more versed in the fine points of art might explain why both lines are not the same length and the point centered, but the best explanation I can give is that it just looks better. Again of course, that is just my opinion. If you think it looks better the other way it will not be much trouble to change it.

The process of completing this pattern is essentially the same as any other; leave your outlines until the last to finish. On finishing the points of this or any point design, do not leave the points blunt or with a bouquet of fuzz in them. Clean the points out good and leave them sharp and full depth clear to the end.

The grip panels of this pattern are no more difficult to lay out than the fore end. A traced pattern can be almost completely transferred to the wood. After it is on the wood, check that part of the outline and the master lines with the layout diamond to be sure the angle is right. This pattern is small enough that it may be, in most cases, laid out symmetrically on both sides of the grip. If the cheekpiece does interfere, only a small piece will have to be cut out to clear. While my own taste leaves a border entirely out in the cold, you may not harbor such a dislike and may even favor one. I believe Pattern No. 2, will bear up under a border about as well as any pattern. If you do decide to use a border it is a good plan to make the first pass with the border tool after the checkering is finished but before the outlines have been cut down to full depth.

The border should be applied only to that part of the outline formed by lines not part of the actual checkering; in this case, the upper and lower straight lines of the fore end panels, the upper and lower curved outlines of the grip and the outline parallel with pistol grip cap. Work the border deep enough that a full rounded bead makes an appearance, devoid of any flat spots. Where the border and an outside line of checkering intersect, carry the outer groove out to a sharp clean point. When working the border around a corner, the easiest way of course, is to let both grooves of the border cross, but to my notion, this is rather a sloppy practice, not in keep-

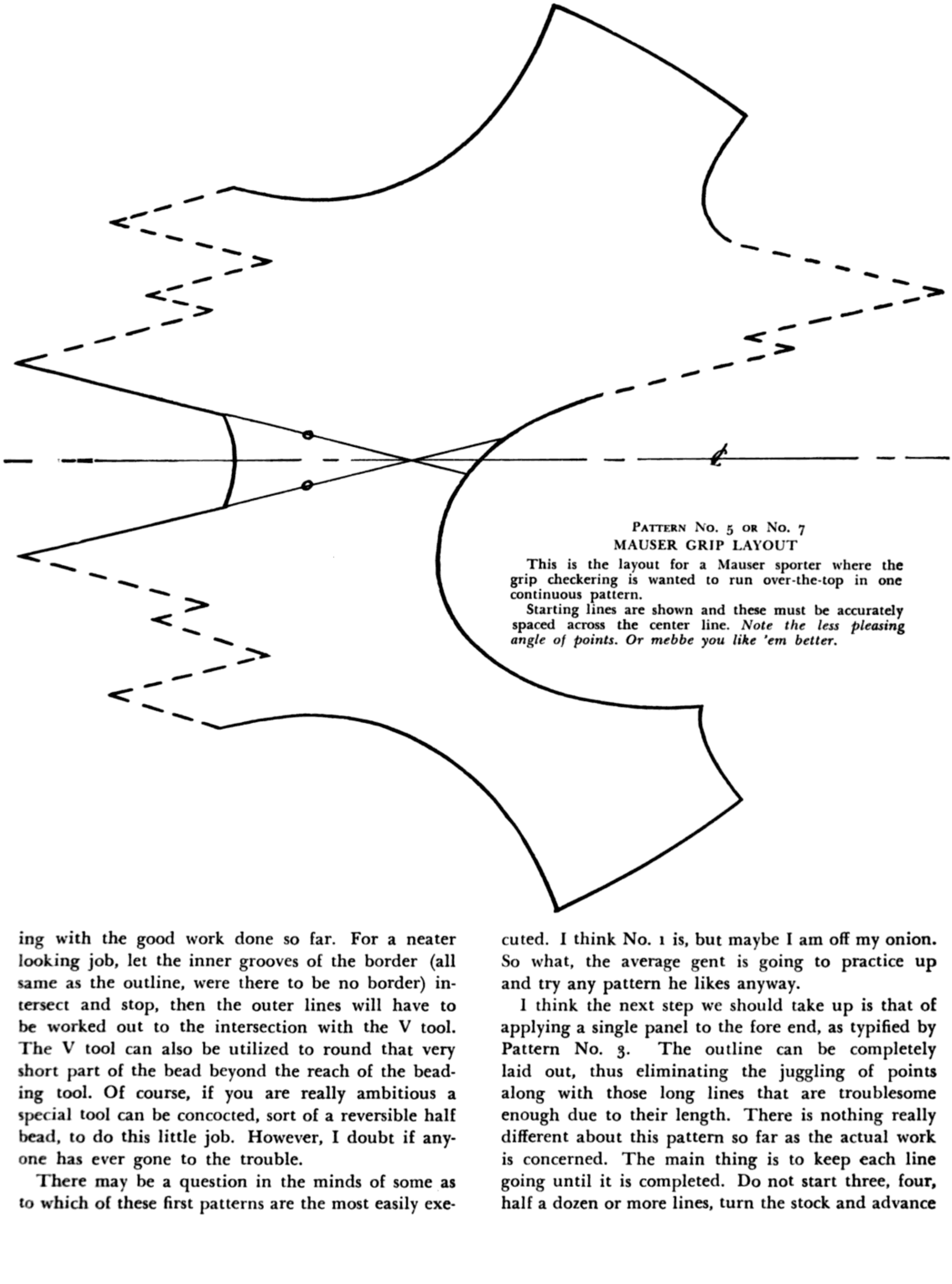


PATTERN NO. 3
FOREARM (To left)

This pattern is just a variation of the No. 1, using a single-panel design with the checkering running solidly underneath the forearm. This makes it a bit harder to do than the divided No. 1 pattern and the beginner had better use this latter for his first attempt.

GRIP (Above)

The grip to this No. 3 pattern is an easy one to lay out and execute. If desired, a substitution may be made and the No. 1 grip pattern used here, for Enfields.



PATTERN NO. 5 OR NO. 7
MAUSER GRIP LAYOUT

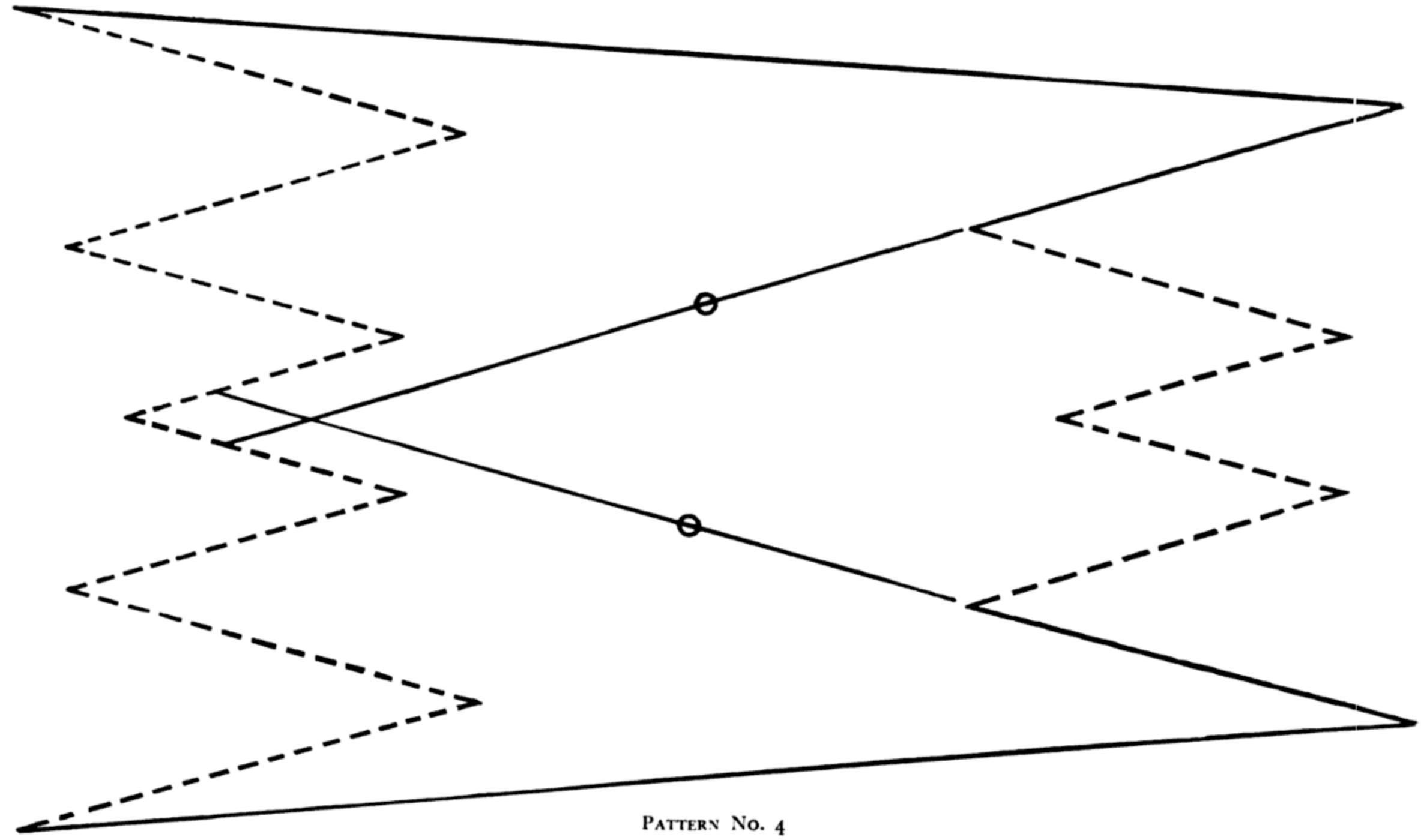
This is the layout for a Mauser sporter where the grip checkering is wanted to run over-the-top in one continuous pattern.

Starting lines are shown and these must be accurately spaced across the center line. *Note the less pleasing angle of points. Or mebbe you like 'em better.*

ing with the good work done so far. For a neater looking job, let the inner grooves of the border (all same as the outline, were there to be no border) intersect and stop, then the outer lines will have to be worked out to the intersection with the V tool. The V tool can also be utilized to round that very short part of the bead beyond the reach of the beading tool. Of course, if you are really ambitious a special tool can be concocted, sort of a reversible half bead, to do this little job. However, I doubt if anyone has ever gone to the trouble.

There may be a question in the minds of some as to which of these first patterns are the most easily executed. I think No. 1 is, but maybe I am off my onion. So what, the average gent is going to practice up and try any pattern he likes anyway.

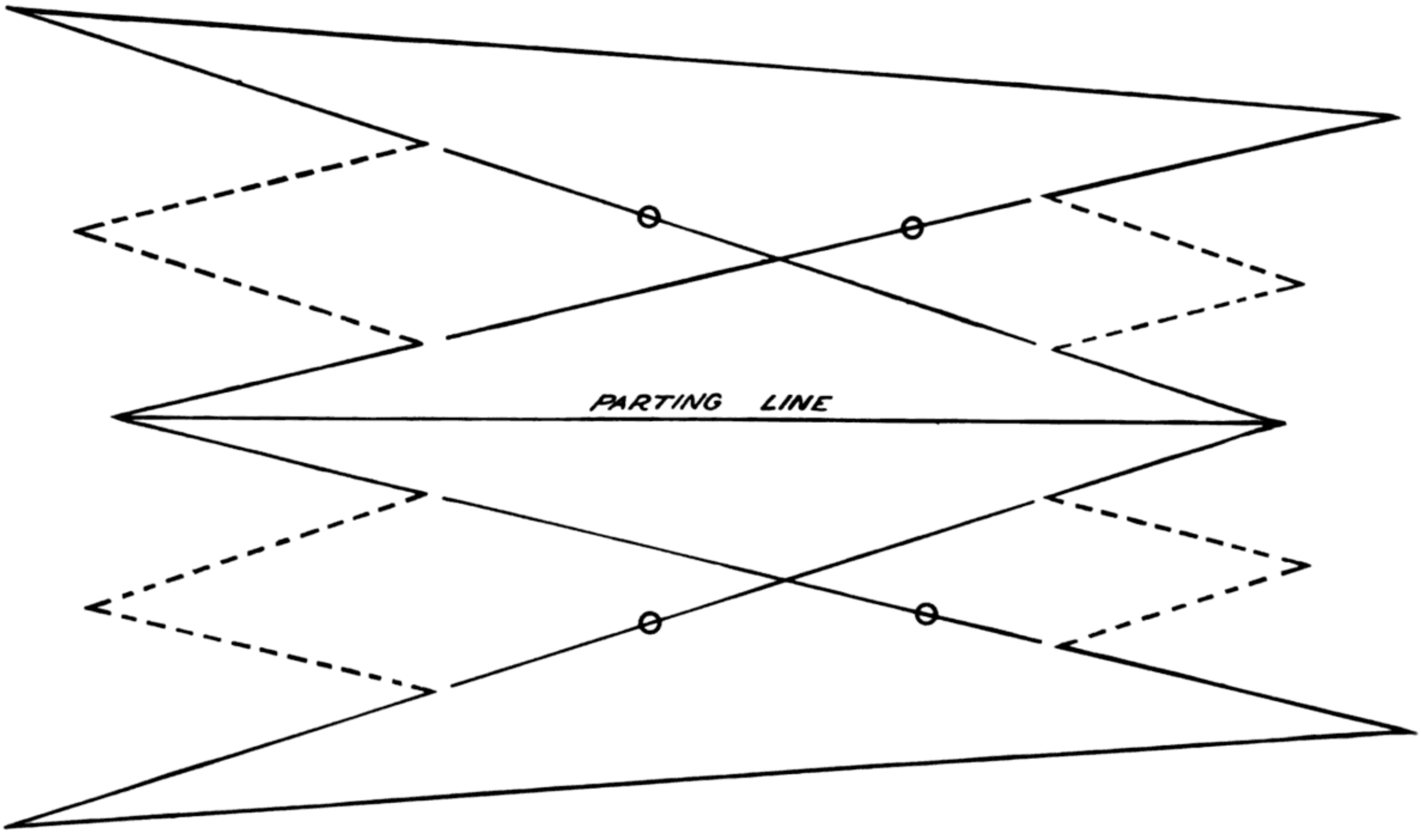
I think the next step we should take up is that of applying a single panel to the fore end, as typified by Pattern No. 3. The outline can be completely laid out, thus eliminating the juggling of points along with those long lines that are troublesome enough due to their length. There is nothing really different about this pattern so far as the actual work is concerned. The main thing is to keep each line going until it is completed. Do not start three, four, half a dozen or more lines, turn the stock and advance



PATTERN NO. 4

FOREARM

Take your choice. Upper is the solid, or under-the-forearm pattern, done in one panel. Lower is the parted, or double-panel pattern and it is quite a bit easier to do than the top layout. Almost any point grip pattern can be used with these two forearm layouts, the No. 2 or any combination you prefer, although to be in harmony a grip pattern with short points between the long ones, such as the No. 5 or No. 7, should be avoided.



them another third of the way, then turn again and complete the batch. That, as I have found from experience, is a good way to get into trouble. And there is one advantage to these single fore end panels extending clear around the stock, that being there are only two sides to it to be finishing against. True the ends total more inchage than with a two panel design, but not more than a third of a side line length.

Pattern No. 4 is a fairly easy point design using a single panel on the fore end. Laying out for this fore end panel takes a bit more of doing than any layout problem encountered so far. So far as the grip panel is concerned it is just repetition of No. 2, so we will not go into that again. So, for the fore end. Assuming the stock to be checkered is of average sporter length, lay out two lines parallel to the upper edge 8¼"long. Let us have it understood that these dimensions are only approximate, because size and shape will make them approximations if we do not.

Now there are about three different ways this layout can be done, maybe more, but why bother with more when three is more than enough:

1: A tracing could be taken from No. 4 pattern and juggled to fit your stock.

2: The lines already laid out on your stock can be transferred to a piece of paper by wrapping around the fore end snugly and tracing with a pencil, being careful to get the full length of the lines and no slips are allowed. Then lay the paper flat and adapt the pattern to fit the length, spacing and taper of your base lines.

3: Or, the pattern could be laid out directly on the wood. However, my advice would be to use method 2, as I believe it is the easier way and surely as good.

All right, the tracing of the base lines are on the table or bench in front of us. We do not just slap our layout diamond down on one of these base lines and lay out our angle, as can be done with a two panel design. Nothing was said about this little deal under Pattern No. 3, because it cannot be so well observed in a pattern of that type. You will notice though, that the master lines of No. 3 are laid out from a center line rather than from a base line. That was for a different reason. You see, if the layout diamond is centered on the base lines, the fact that the latter lie at an angle to each other, would change the angle of the intersection of the master lines, thus wrecking the proportions of our checkering diamonds.

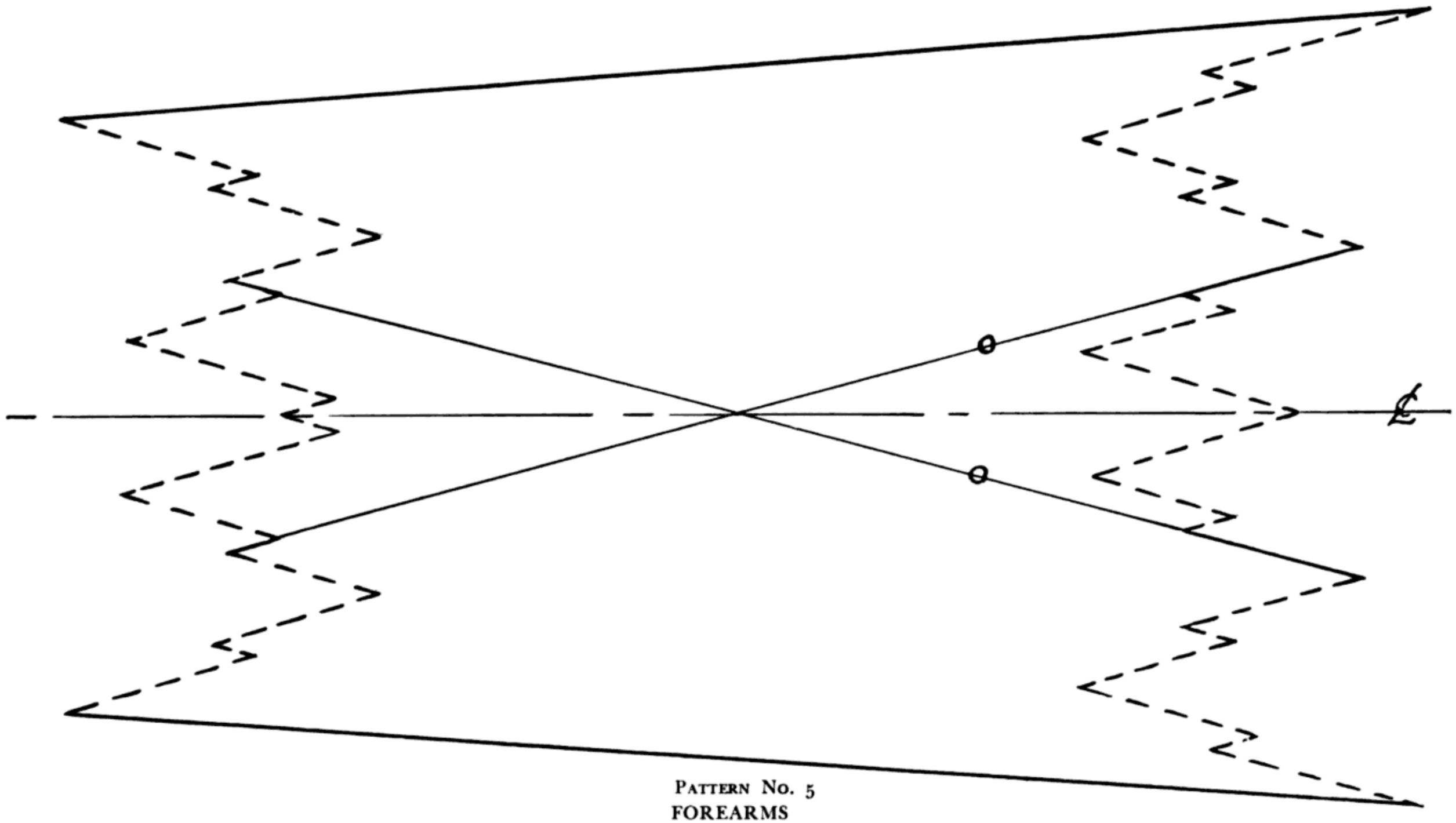
Now to get back to the pattern at hand, draw lightly a center line between the traced base lines, at least as long as the latter. Lay the diamond with long points on center line, the aft point ½" to ¾" forward of the aft end of base lines and mark along the two aft sides of the diamond. Extend these lines to intersect base lines, somewhere around one inch from their forward ends. This point of intersection will vary with the sizes of fore end and also with the length of the panel. One thing is obvious, they must intersect the base lines at points equally distant from the starting point.

Now, we have our master lines, the foundation for the balance of the layout. Complete the layout by adaptation of the given pattern, taking care to keep all lines running in one direction parallel. You will notice that in Pattern No. 4 the points are fairly evenly spaced, are symmetrical and are all within the length of the base lines. Do not try to adapt this pattern to a wider or narrower fore end by simply squeezing it together like an accordion or the angle and proportions of the diamond will be thrown out of gear. If this pattern is to be applied to an exceptionally small or large fore end, a point may have to be omitted or one added. It really does not matter how many points are used so long as the pattern winds up balanced and symmetrical. It is a mighty good plan to lay in, lightly, lines ½" to ¾" apart over the entire panel to act as guides for keeping all space lines straight and parallel.

When the layout looks O.K. on paper, transfer it to the stock by replacing the paper to the exact location it occupied when the base lines were traced. Tape the paper in place and transfer by pricking along the master lines about every inch or so. Remove the paper and with the aid of the flexible plastic scale and a soft lead pencil connect up the pricked lines. Draw in all the lines with pencil and the master lines can be cut or scratched in. Be sure *only* the master lines are scratched in, as the others are reference lines only. It is quite possible that the actual checkering lines will miss the penciled lines.

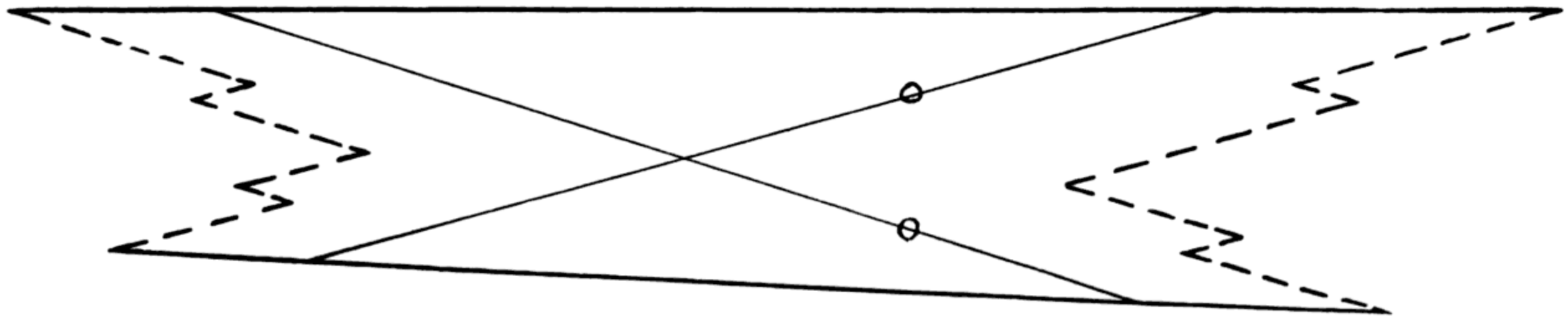
Space the whole pattern in one direction, stopping an ⅛" or so short of the pencil lines. Spacing the second cut will be easier since there are more definite results obtained. You may have to add a line or so to the first cut spacing and you will surely have to extend most, we hope, of the lines left short. In this way complete the layout, bring all the points to a point, lay in all the short lines before starting to work on the plowing operation. From here on it is just checkerin'.

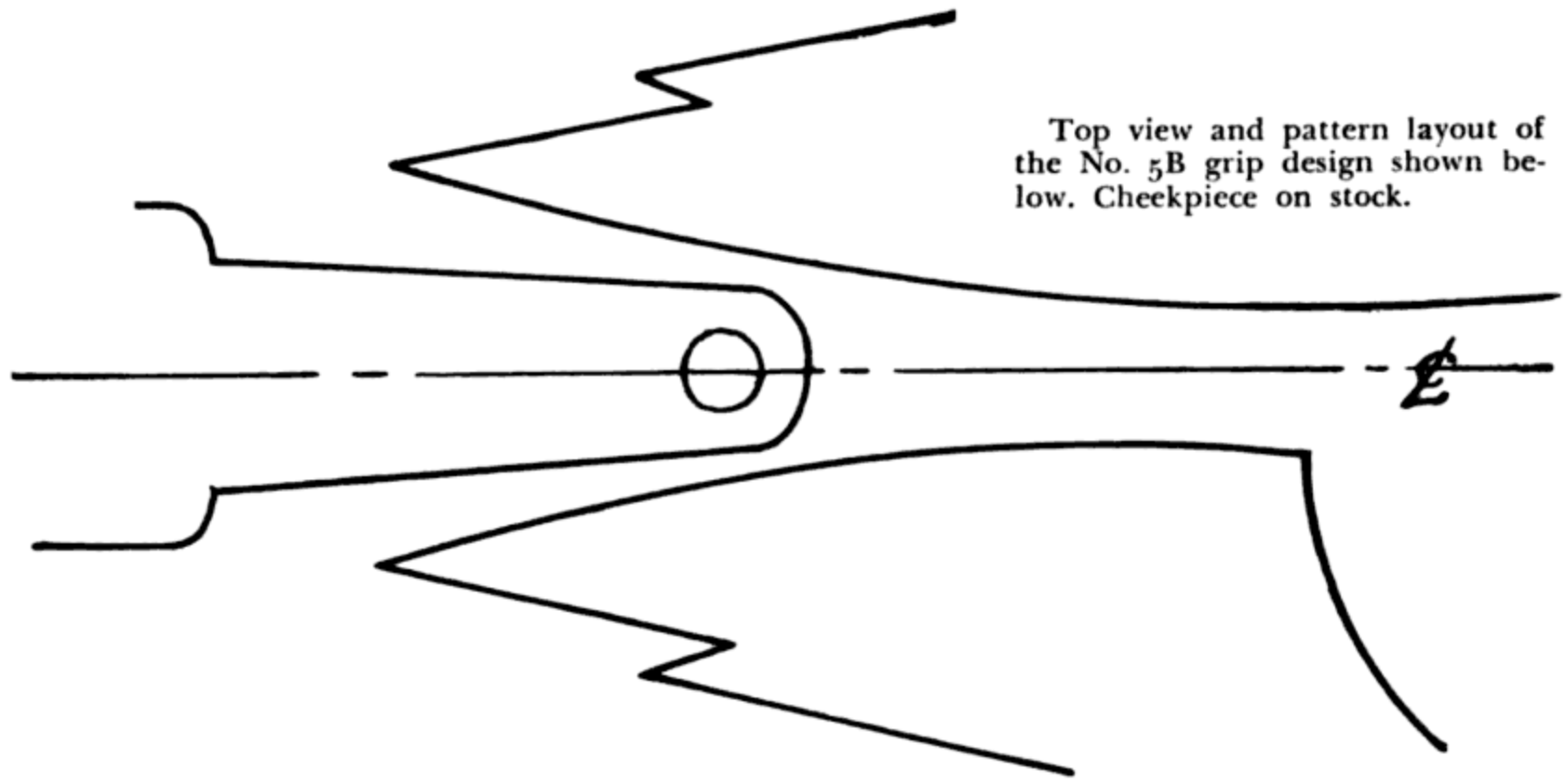
The next one I bring out is a favorite of mine, and apparently of many of my customers, as I think I am safe in saying it can be found on 85% of the stocks I have made and checkered, and a higher percentage of those by other makers that I have checkered. Pattern No. 5 is, so far as I know, about as original with me as any design I use. It is very likely



PATTERN NO. 5
FOREARMS

Optional styles of fore end panels for this pattern, plain but, to my notion, the classiest of them all. Above is the single panel, allround fore end style and below the two panel fore end style. This latter is usually separated by a strip of uncheckered wood on the underside of fore end, from ½ to 1 inch wide, maybe wider on the beavertail stocks. The double panel is somewhat easier to execute than the allround one, shorter lines, fewer points and all such. As may be seen from the cuts, the master lines are laid out in different manners. The double panel may be laid out from the upper outline or base line, but don't try this with the single panel. Here we must start from the center line because (when laid out flat) the converging base lines will raise particular hell if one tries to lay out masters from them. Either No. 5A or No. 5B grip panel goes well with either of the fore end panels on this page.





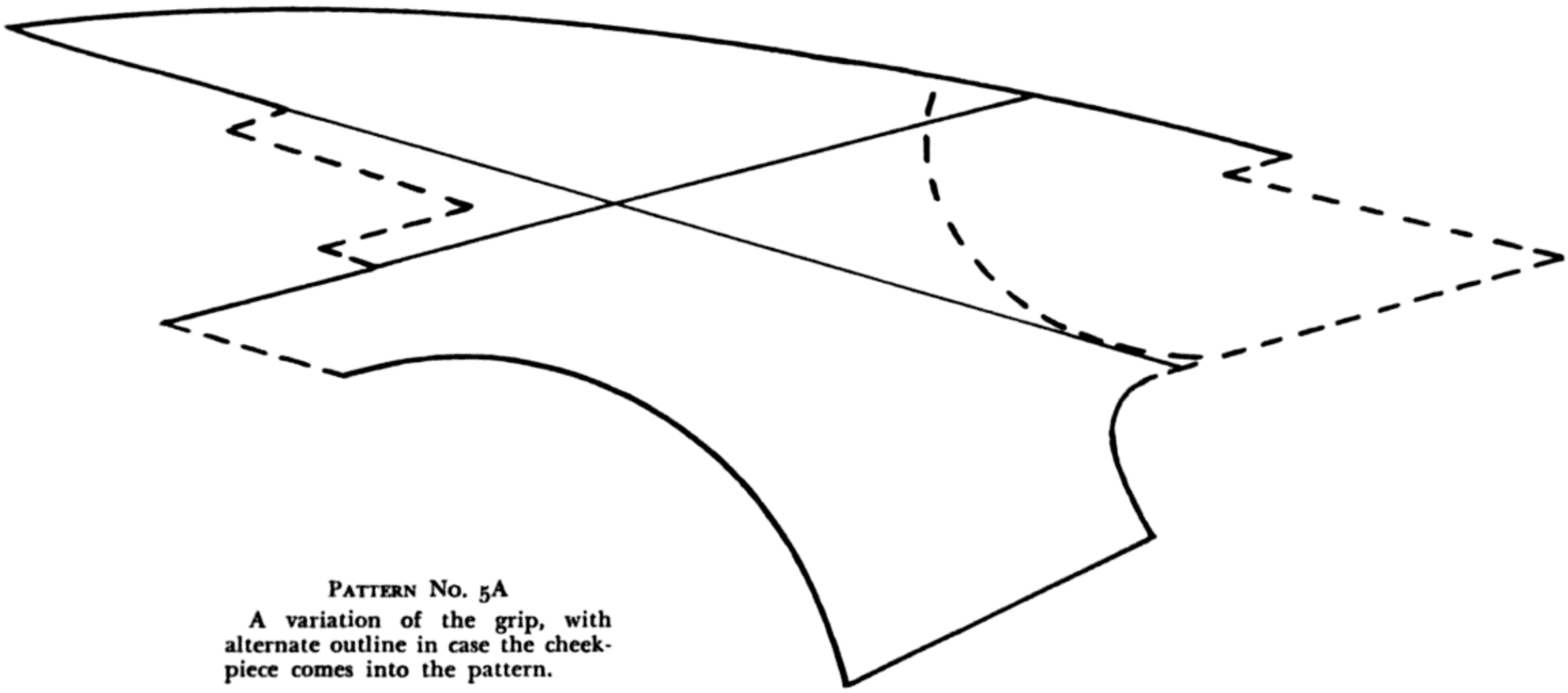
Top view and pattern layout of the No. 5B grip design shown below. Cheekpiece on stock.

that others have made up and used an identical pattern, but I have never come across an example so far in my experience.

To lay out No. 5 beginning with the fore end, lay on the base lines, about 8″ to 8½″ long for an average stock for a 24″ barrel. The lower outlines, as can be seen from the pattern are about ¼″ shorter than the upper line on both ends. I find the most pleasing appearance can be obtained by having the lower outlines nearly parallel or not over ⅛″ wider at the aft ends, and generally 1″ to 1⅛″ apart for the average sporter. Place the layout diamond centrally on the base line and lay on the master lines per dope in Figure No. 30. With a soft pencil and straight edge mark in the outline of the ends of panel or points, taking care to keep all lines parallel to the master lines. For the inner points allow three or four spaces width, three for twenty lines per inch or wider and four for twenty to twenty-four per inch.

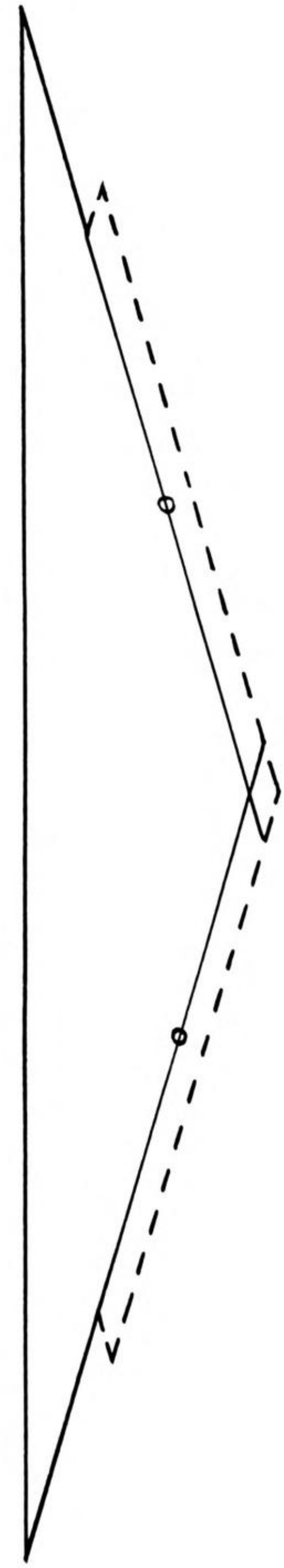
When spacing, it is safe to work up to within 1/16″ of these lines because any discrepancy can be taken care of by adding a line or two on the second cut and then balancing the first cut to get the desired effect. Here again appears the advantage of completing the spacing for both panels before any finish work is done. Special care must be taken with this, as well as all point designs, to keep the lines straight and parallel, because we have some pretty long points hanging out there to the rear, and Brother, any discrepancies loom up like that proverbial two-holer in a fog.

Maybe a point or two on ways to keep those lines straight would not be amiss. I have found that one place to watch is where the space line terminates on the upper and lower outlines. There is a tendency when working away from the outline, when each succeeding line is longer than the last, to hook it in



PATTERN NO. 5A

A variation of the grip, with alternate outline in case the cheekpiece comes into the pattern.



AN INSTALLMENT PATTERN FOREARM

Here is a good forearm pattern for small, light stocks, or for a featherweight job, or in case the owner insists upon having one of those splinter-type forearms shaped on his gunstock. Then, some folks will want the checkering in small doses, in which case this is it.

This is also a splendid design to be added-to later on, as it permits the addition of a number of panels in several variations.

If you are one of those chaps who *must* have results in a hurry, or who wants to know just how good you are with a checkering tool, try this pattern.

I use this as my standard pattern on my semi-custom gunstocks, or in those cases where the customer wants a small bit of checkering.

toward the outline. Just a little of this will cause a fiendish curve by the time a half dozen lines have been added, and the curve becomes longer with each additional line. This causes stubby rounded points. There is also trouble to be encountered, if one is not careful, by carrying the space line out too far on the outline, causing a curve in the opposite direction, resulting in long skinny points just as bad looking as the short stubby ones. The diamonds all suffer from these maladies, becoming either short and fat or long and skinny. So watch closely each line and as it progresses *keep it straight*. If one should become curved and bumpy in spite of you, do your best to correct it before going on, as one line is easier to correct than more and such discrepancies do not diminish but become more exaggerated with each line piled on. Regardless of the pattern used, the above advice is well worth heeding, I bring it out here because it is most important to the point design.

A soft spot or a burl can also start a crooked line, as can a change in grain direction which one is bound to encounter in tiger tail maple or curly walnut. All we can do is iron them out as we make them and here is where that long ungainly V tool shines. It works like a 24" jointer plane as our regular V tool compares to a block plane. Then there's just "natural causes" most of which come under the "how" of how the tool is held and manipulated.

The fore end panels of Pattern No. 5 are really no harder to do than any other pattern, though they may take a little longer. The grip panels are some-

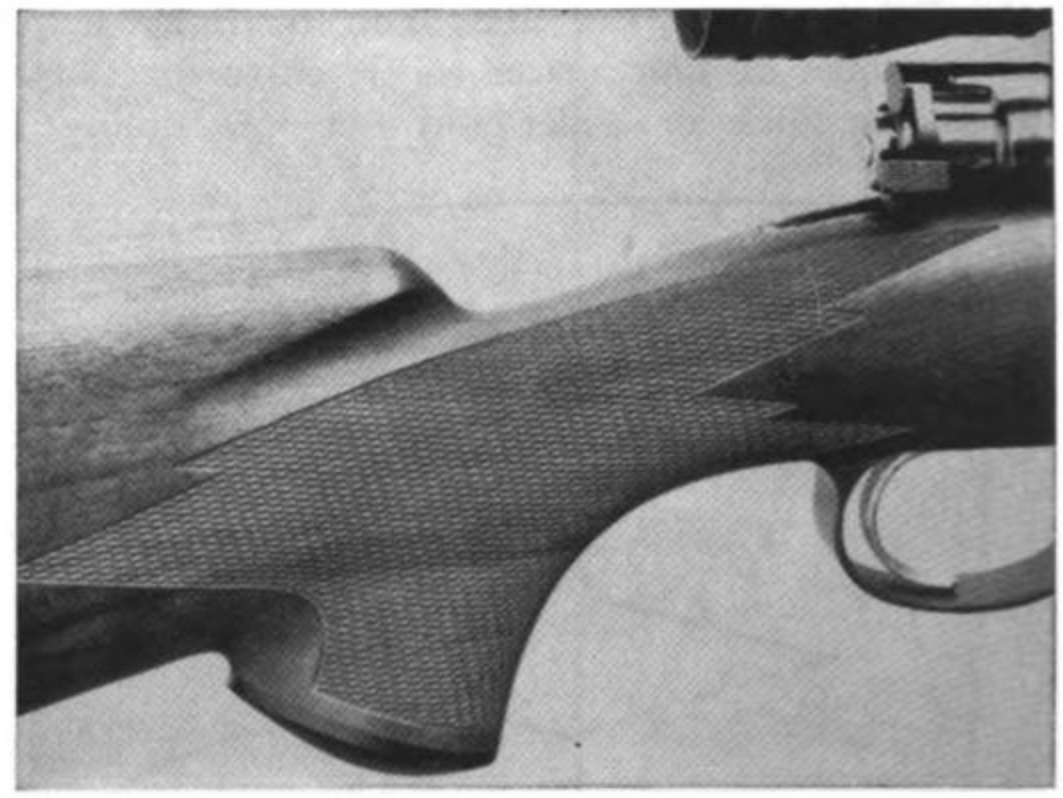


FIGURE 44

Off-side of the grip of Audie Murphy's lightweight .30-06. I'm sort of partial to the racy lines of this panel for these lightweight jobs. Incidentally, the safety is about as neat a job as comes along. There are no screws, pins or springs to hold it in, just a slot that the shank enters before it disengages the nut. It locks the bolt as well as the striker when in "on" position. Shown here in "off" position. *Photo by Bob Emmons.*

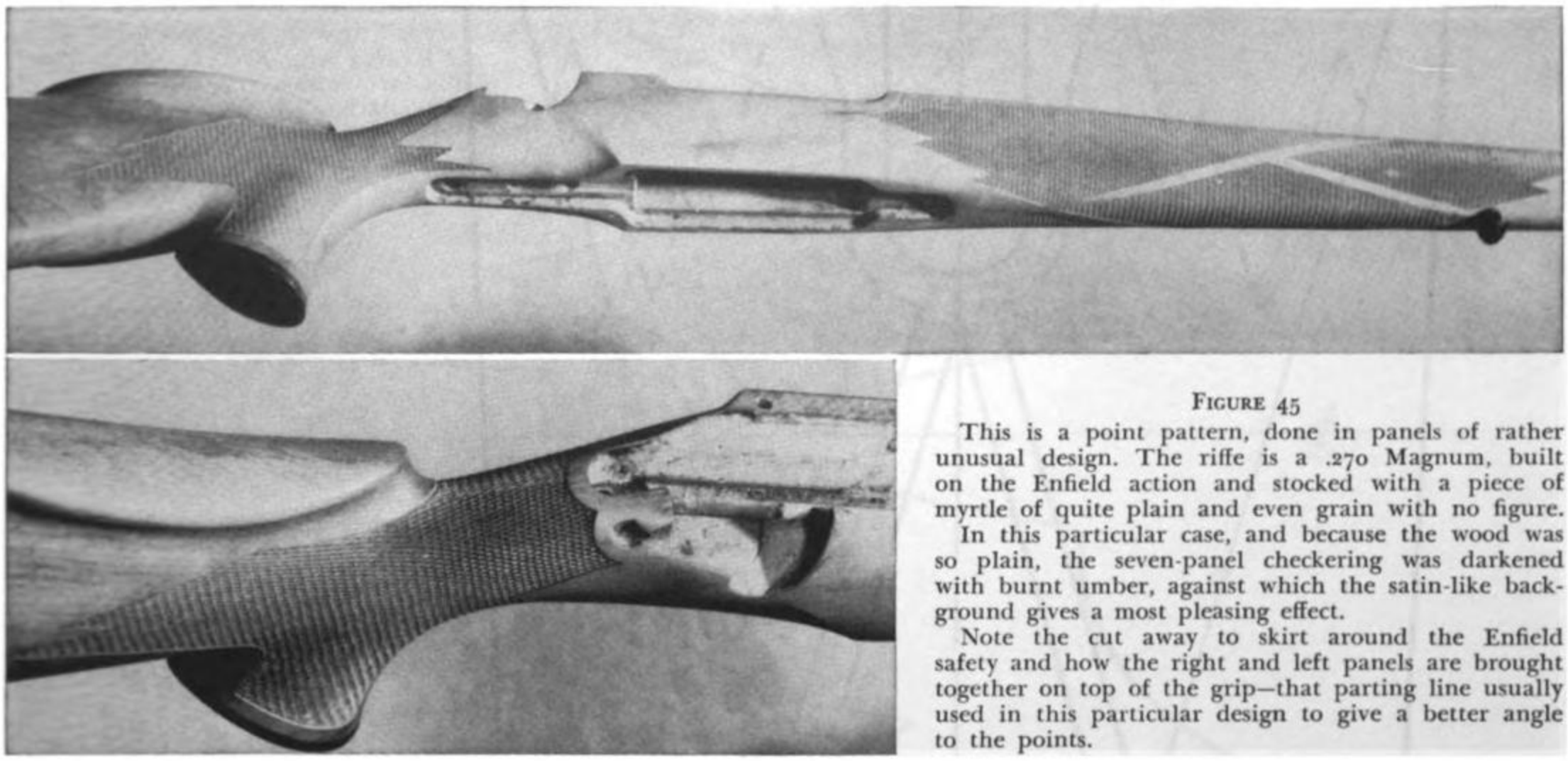


FIGURE 45

This is a point pattern, done in panels of rather unusual design. The riffe is a .270 Magnum, built on the Enfield action and stocked with a piece of myrtle of quite plain and even grain with no figure.

In this particular case, and because the wood was so plain, the seven-panel checkering was darkened with burnt umber, against which the satin-like background gives a most pleasing effect.

Note the cut away to skirt around the Enfield safety and how the right and left panels are brought together on top of the grip—that parting line usually used in this particular design to give a better angle to the points.

what more of a ticklish proposition because there are more variations in grip shapes and there are more points to consider in laying out the master lines.

In laying out the outlines for the grip panel, we are limited to the inner grip lines, those parallel to the base of the grip cap and the short line hooking over the notch aft of the pistol grip. The rest are formed by the checkering lines themselves. The inner grip lines should terminate about even with the center of the rear guard screw. A tracing from Pattern No. 5, including the master lines can be used to good advantage, even though your grip may have more or less hook than the one shown. The main thing is to get the forward outlines and those that nearly (or do sometimes) meet on top of the grip. Proper clearance around the receiver tang is also something to take into consideration, as well as the tail that extends out back of the pistol grip. Lay it all in tentatively with the soft pencil before making any permanent lines. This "mocking-in" can be pretty accurate if care is taken to keep all lines parallel to the master lines. It helps to draw in a few lines with the pencil, parallel to the master lines, about ½" a part. At least a guy knows when he starts to wander and can do something about it before the condition gets too serious. This is especially helpful when matching the upper parts of the grip panels, the parts that look like the devil before daylight on top of the grip if they do not match.

This grip pattern can be varied to include a completely checkered upper grip as is shown in Figure 42. You will notice that the two upper forward points fair into a curved line paralleling the aft end of the tang while a continuous outline extends from one side to the other at the rear of both panels.

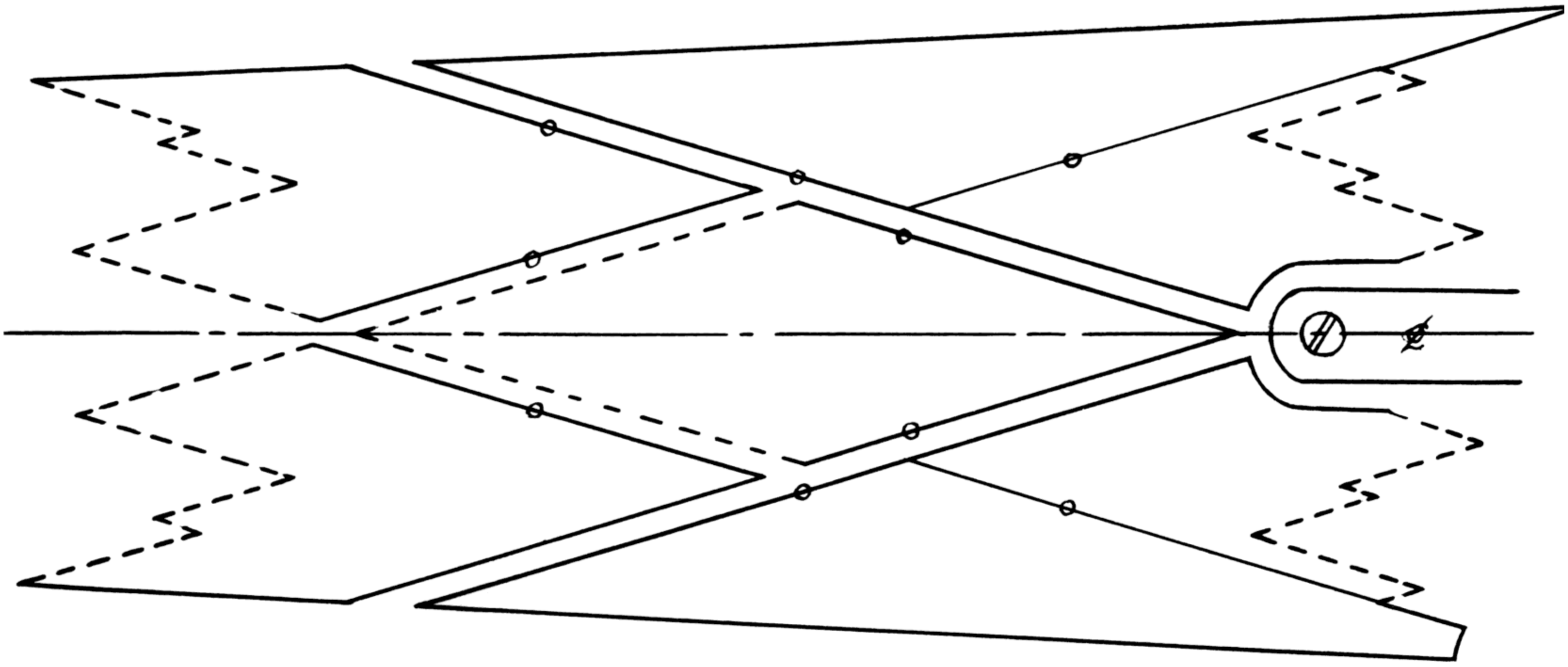
Pattern No. 6, frequently used at the Pfeifer Rifle Company, is one I cooked up while associated with that firm. It is a simple design with all but the aft part of the offside panel of predetermined outline. The only tricky thing about this number is the fact that the grip panels are actually only one, since the checkering is continuous over the grip.

To lay this one out, complete the outline except for the aft of the offside panel and lay out the master lines on top of the grip. This is a good test for one's spacing ability, as it is a long way from the top of the grip to the grip cap and it is pretty easy to wind up with lines not parallel to the master lines. (As before mentioned, the worst sin of getting out of parallel is that our diamonds get out of proportion.) The fore end panels are self-explanatory.

If it is desirable to use a solid single panel for the fore end, an alternate is offered for this number.

The seven panel design bearing the number 7 is, I think, rather a nifty one, especially when done in 22 or 24 lines per inch. Coarser than 22 seems to me to cause it to lose some of its niftiness. The grip is the same as No. 5 but the fore end is a bit more to keep a man awake.

The first step is to lay out the entire fore end pattern with a soft pencil. You may have to make a few alterations from the pattern here given to adapt it to your particular rifle. When satisfied with the layout, space the center panel (diamond) and the forward panels complete. Carry each line clear thru the center and forward panels, hopping over the dividing ribbon. In this fashion it is much easier to



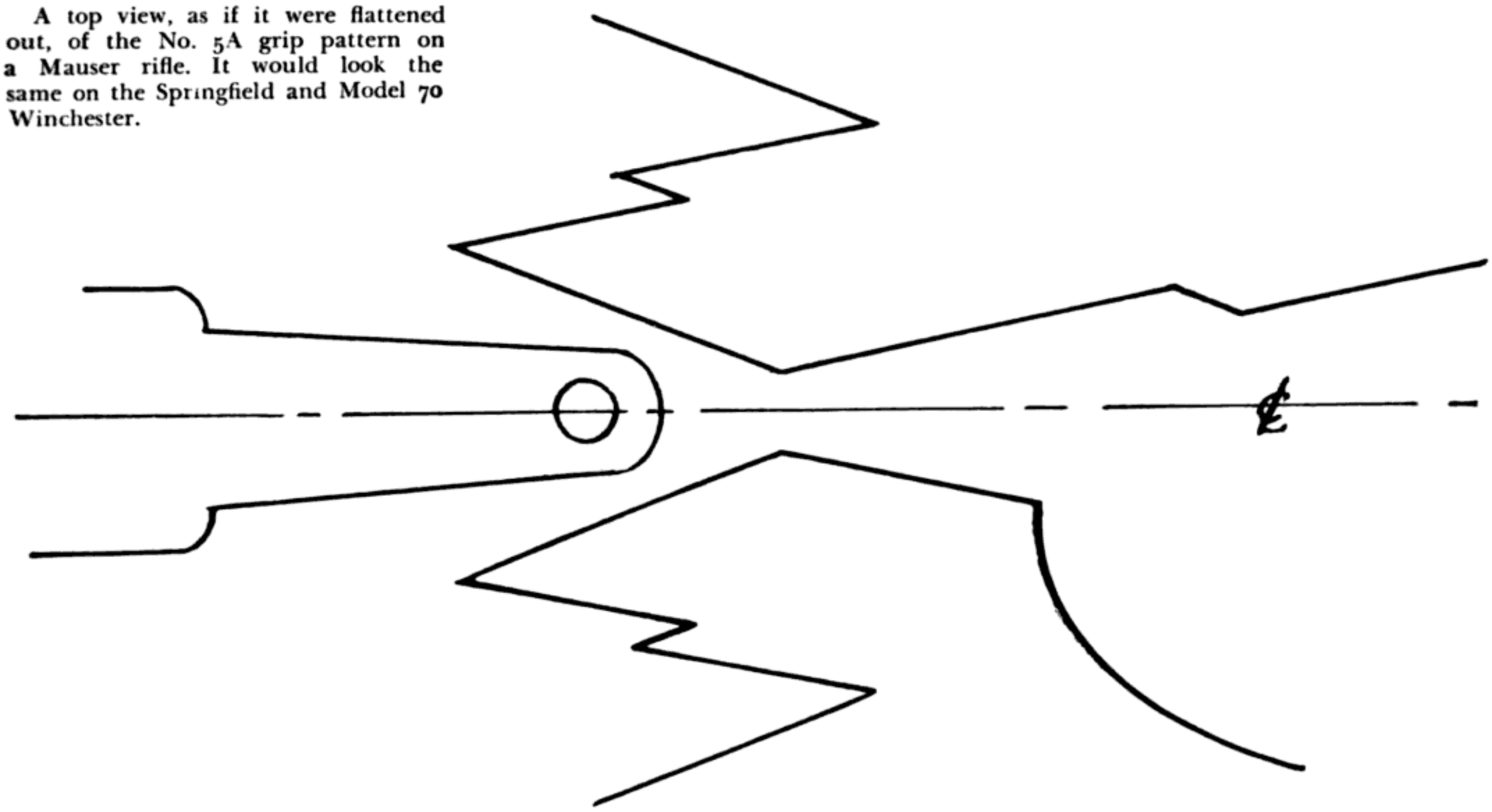
PATTERN NO. 7

FOREARM

This pattern is the medicine for the man who wants *plenty* of checkering on his gunstock. It makes a very distinctive design on either plain or fancy wood. My advice, however, is to use it on good wood, be it plain or fancy. There can be very poor fancy wood—and just as good plain wood—that's a point to always be kept in mind when selecting a stock blank.

Take note of the dotted lines shown above and elsewhere on these point patterns. In all cases, these indicate those lines that should be laid in very lightly with a soft pencil. They are only tentative, these final outlines will actually be determined by where the last groove lies when positiond accurately by the spacing tool. I believe that No. 5A panel goes best with this forend panel.

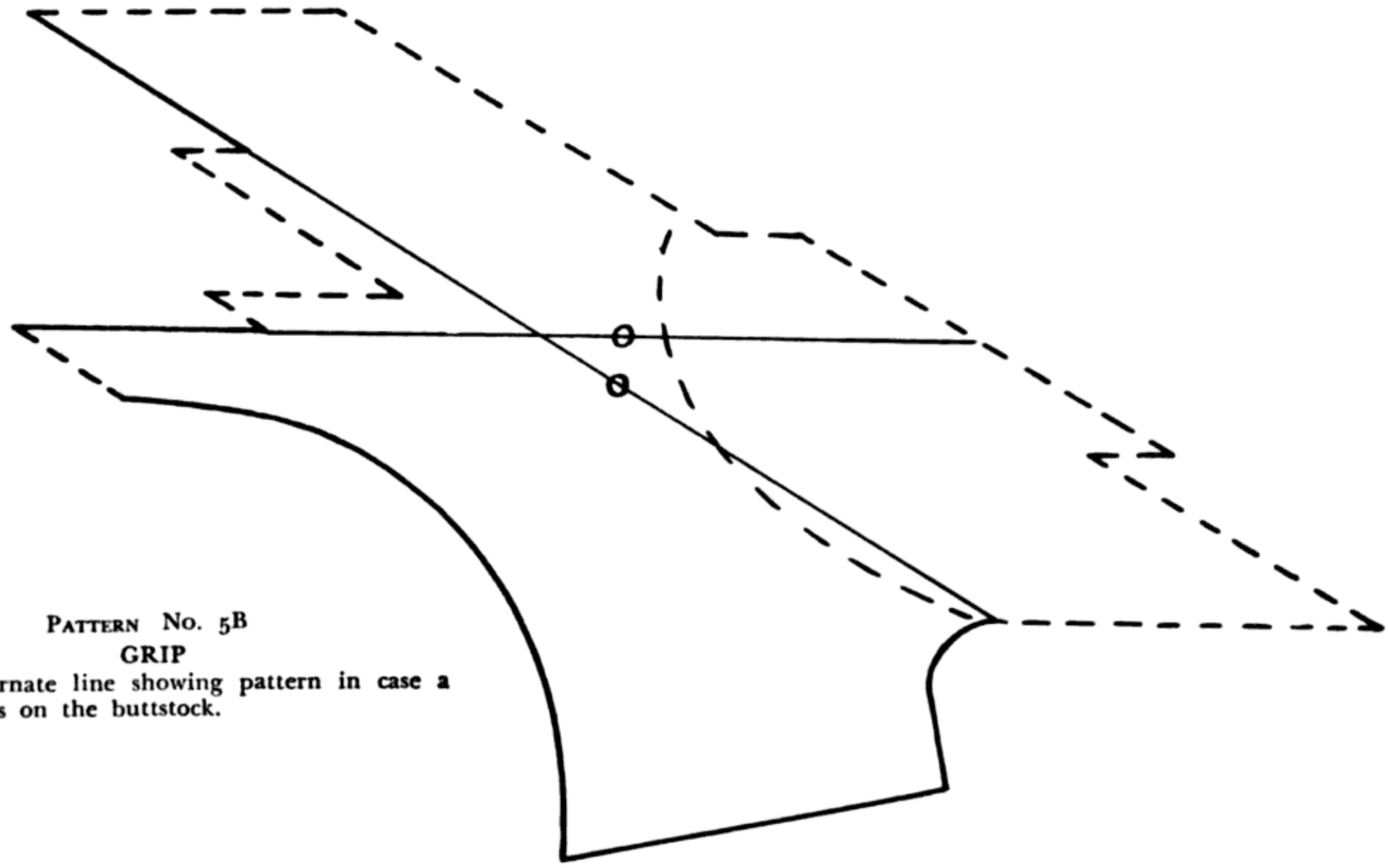
A top view, as if it were flattened out, of the No. 5A grip pattern on a Mauser rifle. It would look the same on the Springfield and Model 70 Winchester.



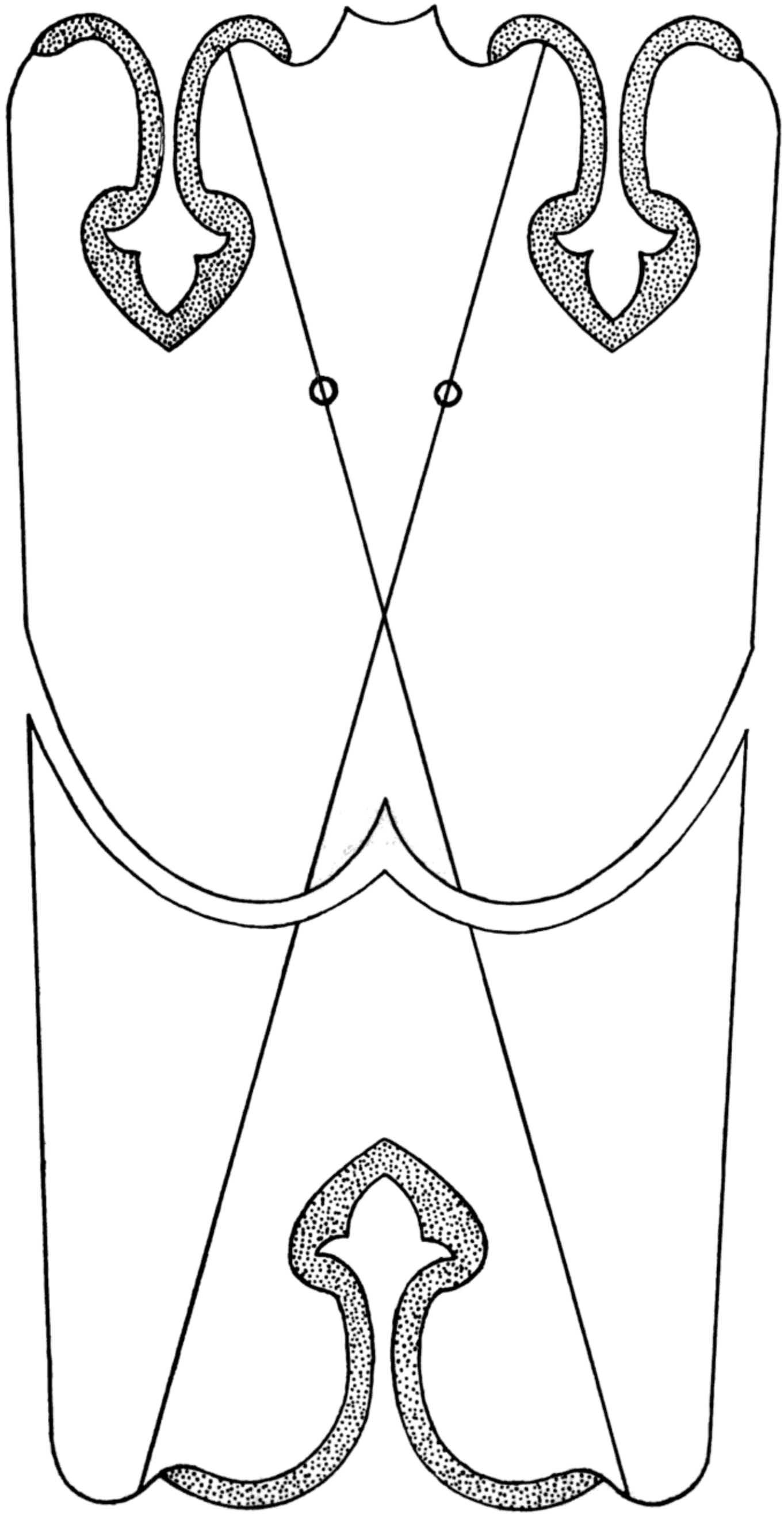
keep the lines straight and matching. A few pencil lines drawn in, parallel to the masters, help a lot with this problem.

Now here, my friends, is a place where perfect spacing is at a premium, for we want this pattern symmetrical about center line, but for sure, or the whole damn design is going to be cockeyed. I speak with authority here because it was not so long ago that I made a mess of this panel and had to scrub the whole thing off and refinish the fore end, while dear Customer was wanting his stock so much. Could not blame him as buck season was coming up *too* fast. It does not really matter which panels you follow up with, I usually do the aft panels on each side before the forward ones.

The pattern shows the master lines for each of these panels, the location on the center panel and forward panels are naturals, but the aft panels can



PATTERN No. 5B
GRIP
With alternate line showing pattern in case a cheekpiece is on the buttstock.



PATTERN No. 8

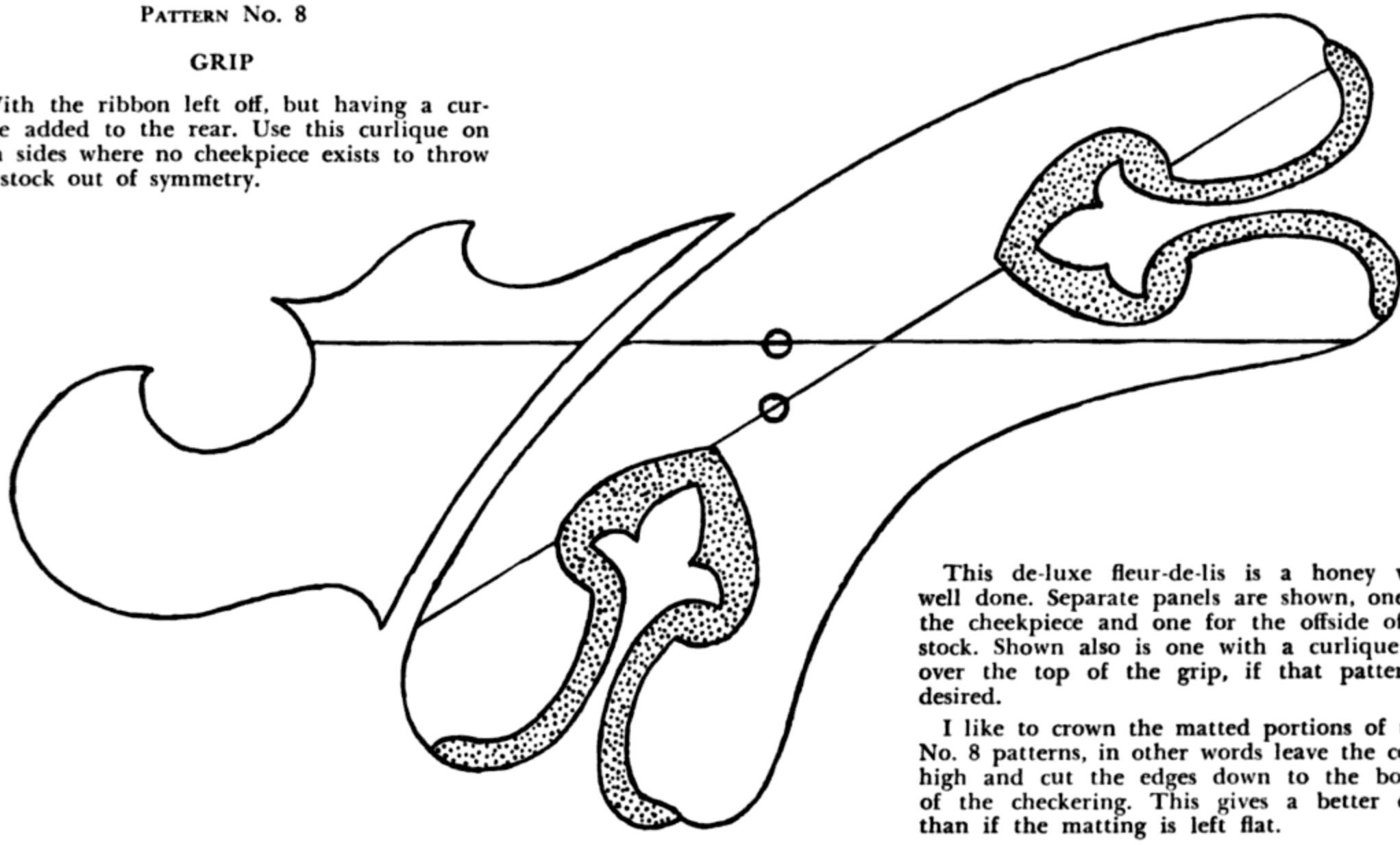
FOREARM

When laying out this panel, be sure to break the base line so as to leave the ribbon open at both ends. The ribbon loses a lot of its "charm" if the ends are closed with a solid base line. Lay master lines thru both the forward and aft panels and space both panels at the same time. In fact it helps to work both panels as one (only be sure to jump the ribbon at all times) in all phases of the work. The goofy little whickerbill line between the two aft fleurs will have to be varied with various sized fore ends. Maybe a different shaped line altogether may fill the bill better under some circumstances. A flat layout don't do justice to this pattern. It's much better on a piece of high grade French walnut makes just about the best setting for any pattern.

PATTERN No. 8

GRIP

With the ribbon left off, but having a curlique added to the rear. Use this curlique on both sides where no cheekpiece exists to throw the stock out of symmetry.



This de-luxe fleur-de-lis is a honey when well done. Separate panels are shown, one for the cheekpiece and one for the offside of the stock. Shown also is one with a curlique run over the top of the grip, if that pattern is desired.

I like to crown the matted portions of these No. 8 patterns, in other words leave the center high and cut the edges down to the bottom of the checkering. This gives a better effect than if the matting is left flat.

stand a bit of discussion. The master line parallel to the center and forward panels could hardly be changed, but one might try to lay out the other from the upper outline. A little thought to the matter will show the fallacy of such action, when it is so much easier and also necessary to lay it out from the first master line.

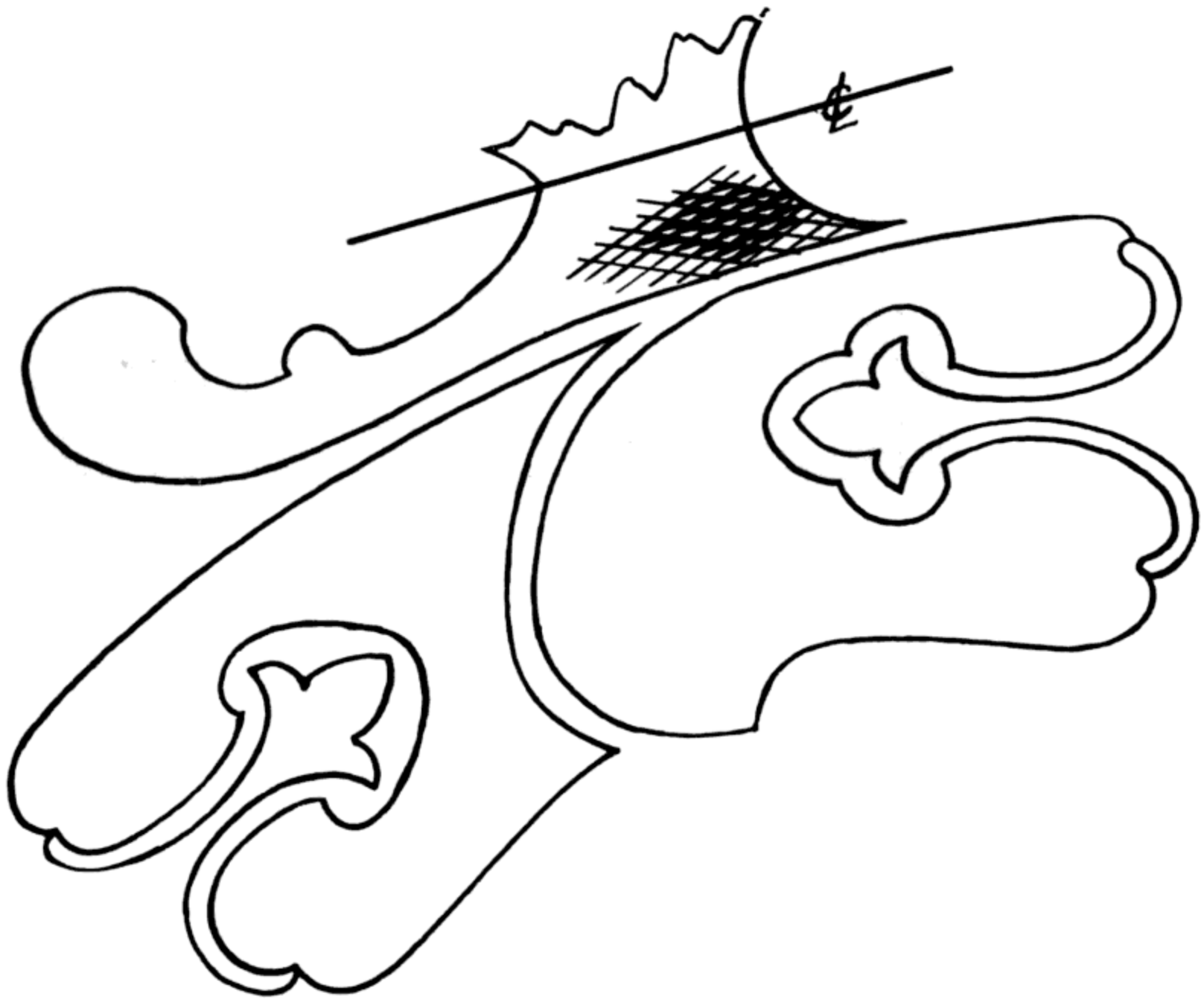
If one has a stock with well figured fore end, I cannot say as I recommend this pattern, because Mamma Nature when she is in the mood can decorate a piece of wood far beyond the puny ability of any man. However, if the fore end is plain and the owner likes checkering, this is a good pattern to choose, providing the spacing tool has been taught to behave.

Pattern No. 8, so far as I am concerned, can be credited to Winchester. At any rate the first I saw of it was on one of Dr. Russell Smith's Model 21 Winchester shotguns. Shortly thereafter Truman Fowler, of Beverly Hills, brought a Model 70 custom grade in to Pfeifer's for a rebarrel job. I wasted no time getting a pencil rubbin' from it and have used the pattern with some alterations. If well executed it is a beautiful design, but must be well done or it looks out of place, like shabby shoes with a fine suit. One change I made was to leave the parting ribbon out of the grip panels. Maybe it is just lack of art in my makeup but it looks better to me without the ribbon. A little alteration was necessary on the grip panels to adapt them to the rolled cheekpiece.

The design is not particularly difficult, it just takes extra care and time to get around all those tight curves. The area immediately around the fleur-de-lis should be relieved and at the edges should be the full depth of the checkering, then when the checkering is finished, finely matted. Lay on the master lines as I have indicated on the pattern. When spacing, carry each line full length of both panels, (but do not forget to jump the ribbon) as is recommended for the seven panel design. I had to learn this the hard way—no need for you to suffer such agony.

Suitable matting tools may be made from a couple of ten-penny finish nails, by cutting off the points and filing the ends square. Then draw a fine mill file across the squared ends of the erstwhile nails in the direction of the file teeth until fine grooves are cut. Turn the nail 90° and repeat until a finely checkered pattern appears. If the file is fine enough, the new tools should be O.K. to use but in case they make a too readily discernible waffle pattern, work them over with a file in a couple more angles until the desired effect is obtained. If you are not too particular about the file, lay it on a solid part of the work bench and play like you were going to drive the nail thru it. By turning the nail three or four times with as many swats of the hammer applied, a pretty good matting tool for the purpose usually results. Now shape the business ends of the two matting tools to fit the sharp corners of the matted portions of the pattern. I have found one triangular with one concave side and one rectangular with one convex side works very well.

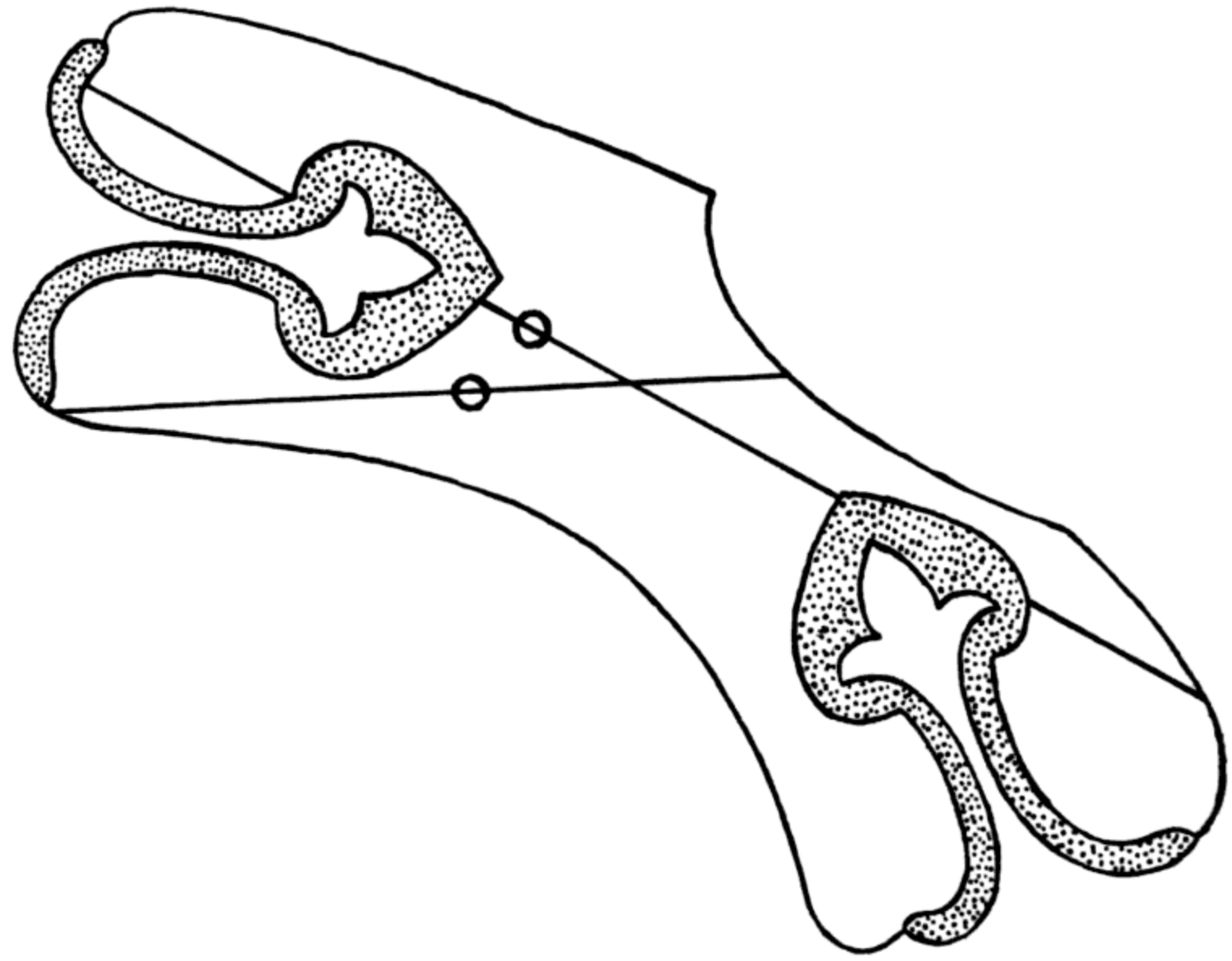
On light walnut or maple, the matted portion can



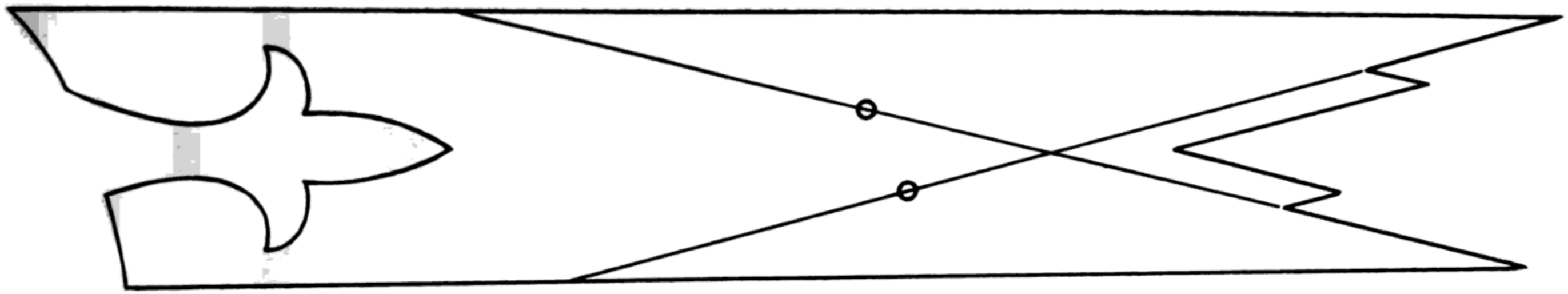
Here gives the No. 8 pattern with everything: full design for grip panel; a ribbon across pattern; and a specially placed curlique which allows the checkering to be run across the top of the grip if wanted that way. In a not-too-difficult manner, what with the design split apart as it is.

be darkened for a fancier effect, but such doings border on "gingerbread" and in my opinion should be resorted to only on very plain wood. What is important is to execute all outline and fleur-de-lis with smooth flowing curves and grooves of even depth and width. Unless this number is well done its benefits are lost, so be sure you can cut the mustard before tossing it a challenge. A plain pattern well done is much desired over a fancy one poorly executed.

The combination fleur-de-lis and point design as illustrated in No. 9 may possibly draw criticism from

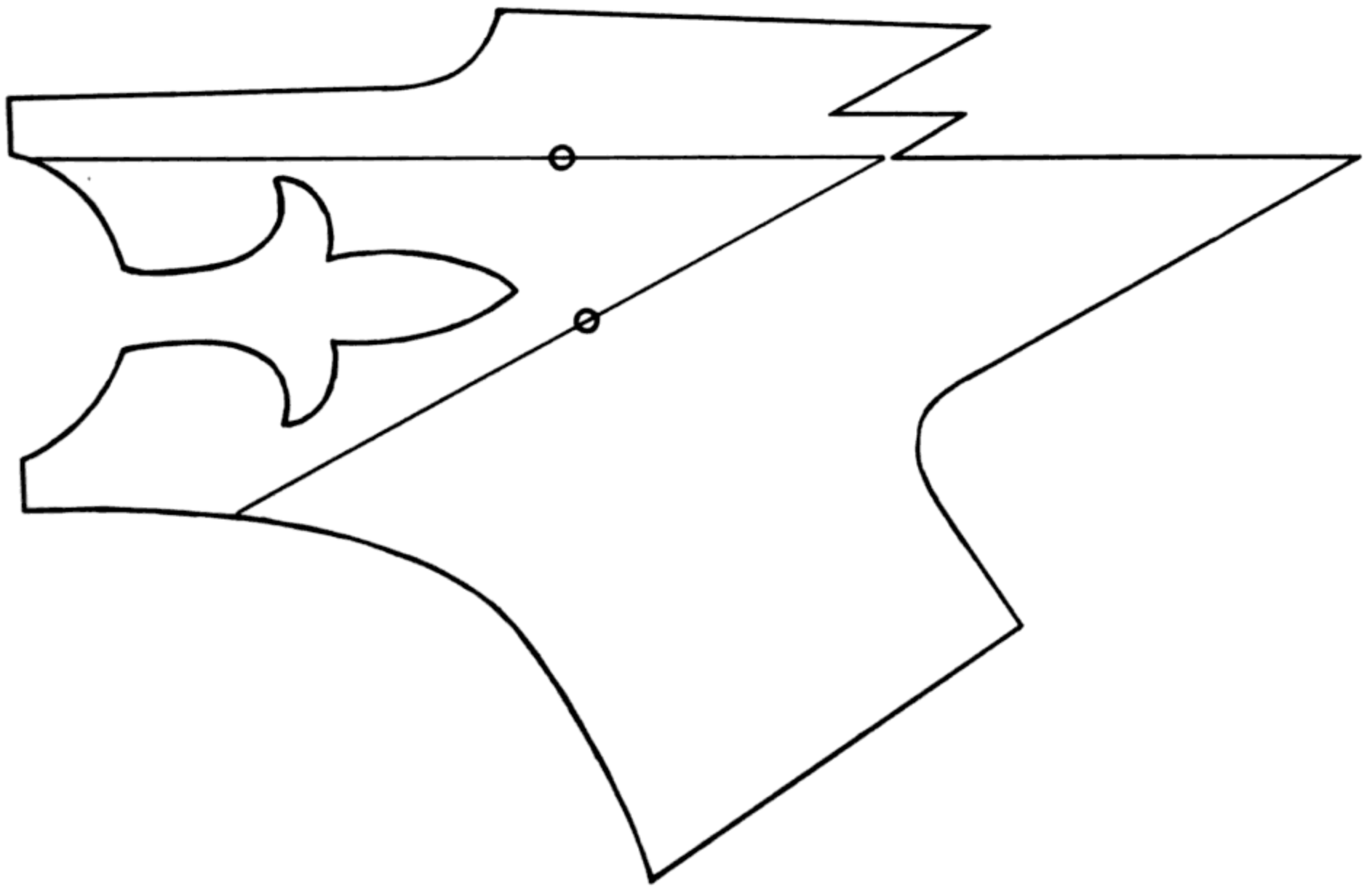


The No. 8 grip pattern for use on cheekpiece side of the stock. With no ribbon across the pattern; many shooters want as much traction as possible for their trigger hand, so here it is.



PATTERN NO. 9

A combination of Point and Fleur-de-Lis design that works well on many single shot rifles where the fleurs can be positioned against the receiver with points outwards. This particular pattern was placed on a Sharps-Borchardt stocked by the author for Lowell Saunders, of Bakersfield, California. There was no cheekpiece, so both grip panels were symmetrical. This is a better fleur-de-lis pattern to start out on than No. 8. Fewer places to get into trouble. The Fleurs are larger and no matting to complicate matters. The aft ends of fore end panels are regulated as to shape by what ever lines on receiver or forearm they must harmonize with. See right hand fore end in Fig. 49, page 52.



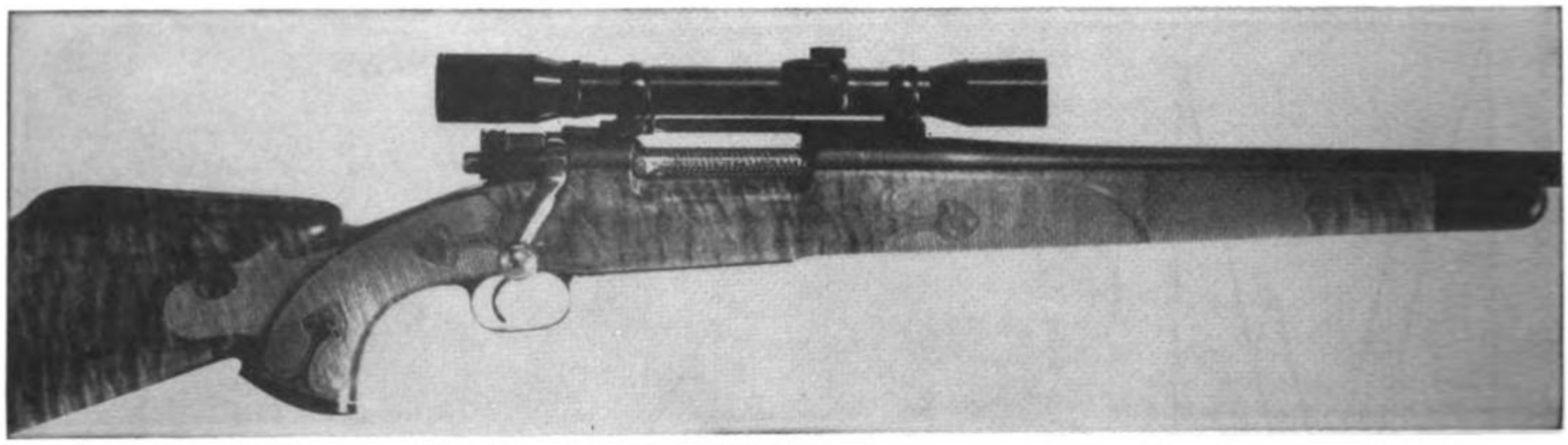


FIGURE 46

A suigied maple job on a .35 Whelen belonging to Joe Pfeifer. This is a good example of checkering pattern No. 8. The checkering cuts through the flame darkening and leaves that portion the natural maple color, which in this case is a light amber. With Sam Mays' classy bolt alteration and damascene job on all bright parts, this is a pretty nifty smoke-pole, if I do say it myself. This bit of wood came from Howard Clark, of Stevens Point, Wisconsin. I've gotten a lot of fine maple from him and hope his supply never becomes exhausted. *Photo by Bill Lucas.*

folks more wise in the ways of art than this "wood-butchin" would-be writer. The late Al Linden told a tale of woe concerning a stock he built for the (also late) Buck Dunton.

It seems that "Ole Skratch" as he liked to call himself, received the stock back from Dunton sometime after its completion, for addition of an ivory spacer under the trap pistol grip cap. Thinking to really doll it up he added ivory diamonds over countersunk stock bolts located just aft of the magazine box. On receipt of the job, Mr. Dunton was irked no end and sent it back to Al as completely ruined, or maybe salvageable by replacing the ivory diamonds with ovals of horn. In Mr. Linden's words, "* * * I felt like an old houn' dog who comes to his master for a pat on head and gets a boot at root of tail."

So if I am ignorant as to good taste in combinations I reckon I am neither the first nor the last so afflicted. The question seems to concern the good taste of combining curves and angles in one pattern. Here again we have a pattern that calls for careful execution. While in this case it is applied to a Sharps-Borchardt it can just as well be used on all types.

In fact there are none of the patterns reviewed that cannot be adapted to any type of rifle or shotgun. I am sorry that I can not dig up one shotgun of my own work to illustrate here.

LIFTING A CHECKERING PATTERN

Some especially admirable checkering pattern can be reproduced easily by anyone with only the aid of a soft pencil and a couple of sheets of paper. I reckon a person with any artistry in their makeup would not resort to this method, but I also reckon there are lots of them just like me and could do a much better job by resorting to the method I will now describe.

Ordinary writing paper is plenty good, the tougher and firmer variety being better than soft pencil paper. Wrap a sheet around the fore end and hold the ends tight over the top side of the stock as in Figure No. 48. A soft pencil sharpened with 5/16" or 3/8" of lead exposed is best, laying it nearly flat to the paper and rub it lightly over the checkered

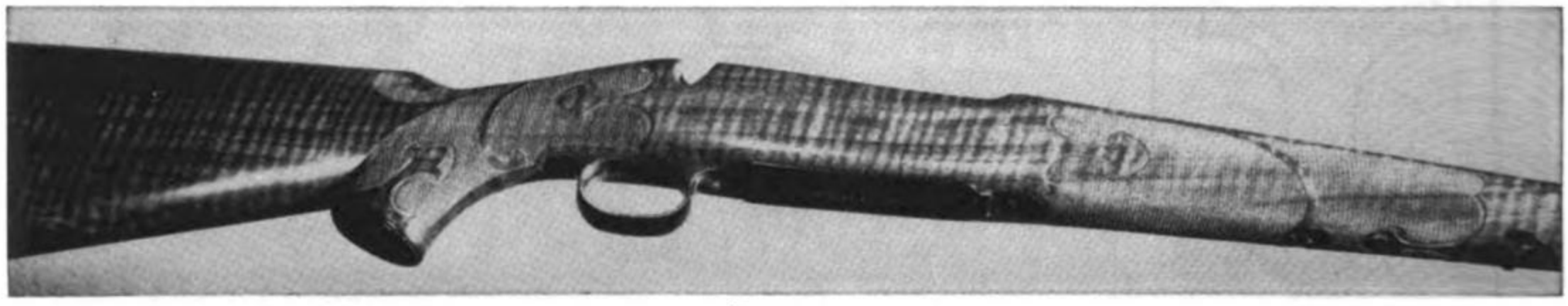


FIGURE 47

A beautiful custom grade factory Winchester stock. Seldom does one run across a piece of tiger-tail walnut as fine as this. Although Mark Speer did a splendid job on this photo, the camera just can't pick up the color of this beautiful wood, which appears very much like Oregon grown black walnut. This is the No. 8 pattern, fixed out with everything; curlique to grip design, ribbons across both grip and forearm patterns, and with the fleurs reaching well into the designs from both ends of the patterns. *Photo by Mark Speer.*

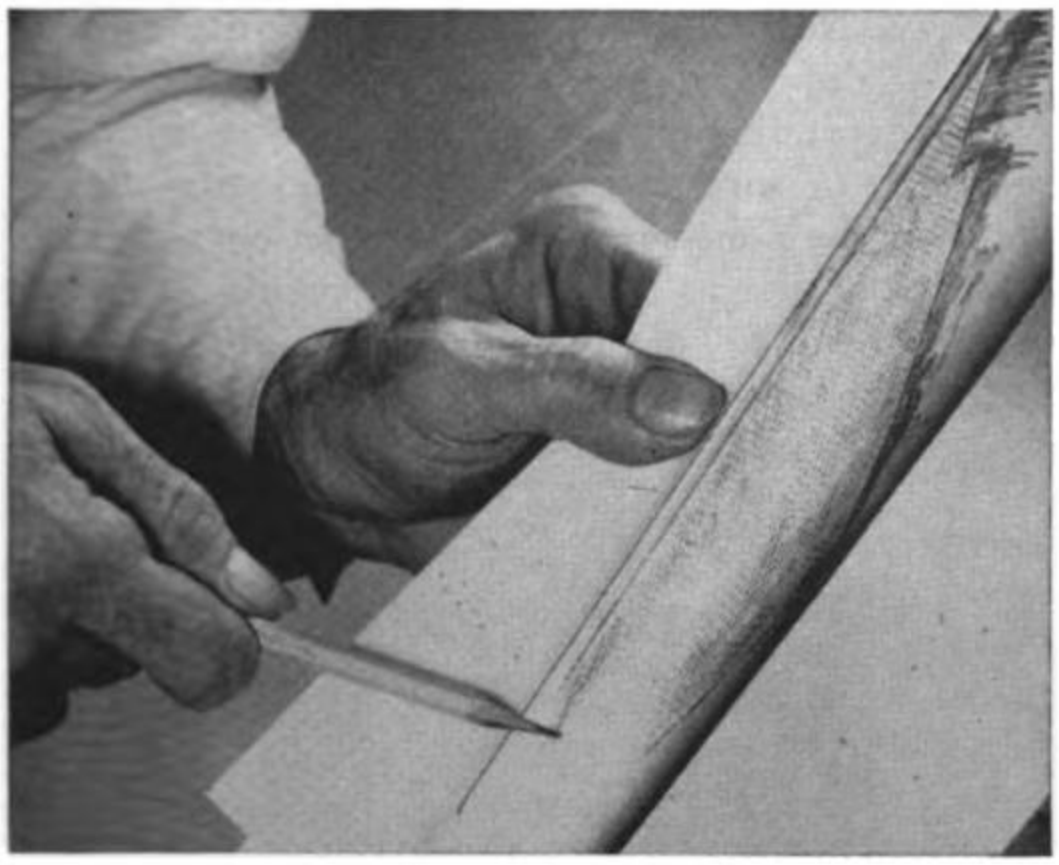


FIGURE 48

Caught in the act of lifting a checkering pattern via the pencil-rubbing method. Here the stock is mounted in a cradle, and both edges of the paper held in the left hand. The sharp line showing 3/16" from the baseline is the edge of the stock; it is always a good plan to pick this line up for reference, along with the pattern. *Photo by Emmons.*

part of the stock. As the blacking process proceeds, outlines will make their appearance in the forms of light lines with checkering on one side and a sharp (or it should be so) line on the other. In case there are spots where the outlines become dim, concentrate a little more on that spot.

Be careful, though, not to bear down too hard with the pencil, because there is danger of rubbing down the crests of the diamonds if they are real sharp or if the wood is soft, or both. It is not necessary to bear hard, just rub in the right places. Artists graphite is good for this purpose; the best results are gotten, I think, by blacking a finger with it then rubbing that finger over the paper. However, if you do not wish to soil your fingers, you may carefully wrap one end of the graphite stick with a Kleenex and apply the nasty black stuff directly to the paper. One great advantage to this method is the elimination of the danger of harming the most delicate of patterns.

This process is nothing new or brilliant, it is just a matter of practical application of childish doodling. Is there anyone present who has not at one time or another taken a pencil rubbing off an Elson's Reader or Elementary Algebra? Or off a coin? All the patterns that I have prepared for this article were taken from actual stocks in the manner described.

As usual we leave the most difficult part to the last. Due to the irregular and compound curves, a piece of paper cannot be "just laid" or wrapped around the grip. Best results can be obtained by laying the gun or stock across a padded bench or table, or better yet if a cradle is available, remove the stock from the iron and mount it in the cradle. Hold the paper in place with two fingers about two inches apart and let the paper roll with the contour. It may, quite likely in fact, be necessary to cut the paper to approximately the shape of the panel, say ½" to ¾" larger all around, to keep from tearing it in some of the most difficult spots, such as the inside of and the top of the grip.

After lifting the pattern from a grip panel it can be readily understood why transfer of a flat pattern of that part directly to the wood just is not done.

SINGLESHOT, LEVER AND TROMBONE ACTIONS, SHOTGUNS AND PISTOLS

Our chatter has been pretty much confined to bolt action rifles, the reason being that far more bolt actions are rebuilt and restocked than any other. However, many singleshots, especially Winchester Hi-Walls and Sharps-Borchardts are rebuilt to handle such modern cartridges as Zipper, Wasp, .224 PR., .220 Saunders-Krag and others. Very fine and safe rifles can be made from these old actions, fine enough that they deserve the best in metal work and stocking. A good checkering job enhances the beauty of such a weapon just as much as to a bolt action job. The same goes for semi-auto, lever and pump action rifles and for pump, semi-auto, single and double barreled shotguns. And do not let us forget the handguns. Restocking a handgun is beneficial for looks improvement as well as holding ability.

Singleshot rifles as a whole differ in but one respect from bolt actions when it comes to checkering. The same patterns may be applied to the singleshot with but very little alteration, that alteration as a rule being to the grip panel, brought about by the close proximity of the uncovered receiver. However, of the popular actions only the Ballard and Martini offer much difficulty, the Ballard leaving room for nothing much but a little trim.

The two-piece stock of the singleshot has to be handled a little differently in the cradle, since both pieces are too short to fasten by ordinary methods. For fore ends I have rigged a gimmick from a piece of 2x4 about two feet long, (see Figure No. 23). One end is left full width but, starting about two inches from that end, 1¼" was slabbed off both edges, leaving the center about 1¾" x 1". The small end was rounded off to ride in the tail-stock cup, and with the wide end held in the butt-clamp, the gimmick is mounted in the cradle. One edge is rounded and tapered so that a fore end can be fitted and fastened to it with a wood screw thru the fore end mounting screw hole. This makes a good solid holding fixture and may be rotated or locked in position same as a sporter stock.

Singleshot butts offer more variation in mounting in the cradle. Those with through bolt like Borchardt and Martini mount easily by whittling down about three inches of a ¾" x 10" dowel until it will fit snugly into the hole in the action end of the stock. The full size end should be rounded smoothly so it will turn easily in the tail-stock cup. For the Borchardt, the dowel will have to be flattened for ¾" beyond the rounded part to fit the mortice. By clamping the butt in the regular manner with the end of the dowel in cup, a good solid mount is obtained.

Winchester Hi-Wall, Farquharson and Hepburns, which ordinarily do not have through bolts, require a little more preparation. The same size and length of dowel is O.K. but instead of rounding it down as was done for the Borchardt, now it must be flattened on one end and fitted to the tang inlet, preferably the lower one. A 10-32 screw of sufficient length will hold the dowel in place. Be sure to use a block of hardwood, fibre or metal under the end of the screw that bears on the stock itself. The regular stock screw is usually quite a bit larger than a number ten screw, and without a proper washer the wood around the hole stands a good chance of being crushed.

Lever action stocks, also of the two piece type, must be mounted separately. The Model 99 Savage may be mounted same as the Borchardt, both for fore end and butt. Winchester lever actions, and the Marlin lever action, have fore ends that are little more than shells. The simplest method for mounting them in a cradle is to remove the buttstock from the rifle, leaving the fore end in place. Wrap the muzzle of the barrel, and the magazine where they are full length, with adhesive tape (not friction tape or any tape that has stickum on both sides) so that a sort of a ball is formed there, completely covering the iron. Fold a rag and wrap it around the tangs till the butt-clamp will hold it firmly, when the muzzle is held by the tail-cup. This type fore end can also be mounted on a dowel, but I like the other method best. The Winchester '95 is an exception to the rule of Winchester lever actions; the fore end for it mounts best like the singleshots. Mount the butts for Marlin and Winchester lever actions as prescribed for Winchester Hi-Wall.

Checkering patterns for the last mentioned rifles are little different from singleshots except with the straight-gripped models. In such cases the panels must be generally straight and may be brought to meet under the stock aft of the tang in the manner of straight gripped shotguns. Outlines usually follow the contours of the tangs.

Trombone rifle stocks may be handled practically the same as lever actions. Fore ends are best mounted on a wooden dowel rod, the butts mounted with a piece of dowel in one of two ways previously discussed, depending on whether it is attached with outside tangs or with through bolts. Checkering designs apply in the same manner as lever actions. Many of the carving designs shown are particularly adaptable to the "handles" of trombone action rifles and to pump shotguns.

FIGURE 49

Two of Frank Hemsted's many fine singleshots. There are, left to right: .220 Saunders Krag (rimmed .22/250, made from .30/40 Krag brass) and a .25 Krag. Notice how, on the latter, the forward outlines of the grip panel and the aft outline of the forward panel follow contours of the wood or iron. Hempy has more singleshot wildcats than any one man I know of, Hi-Walls and Borchardts being his favorites, several of which have fallen to my lot to stock. *Photo by Bob Emmons.*

SHOTGUNS

Let us divide shotguns into two types, the pump and semi-auto, call type A; the over-and-under double, the side-by-side double and the single barrel call type B. Fore ends of type A guns are a rather fragile shell when not assembled to the iron. They can be mounted in a cradle on a wooden rod or assembled on the iron with butt removed. Wrap up both ends as with the lever action, and if a little care is taken there is no need to damage the finest of blued finishes. Butt stocks of the through bolt type can be mounted as before mentioned for that type of stock.

Guns of this type lend themselves to various checkering patterns, especially the fore end since as a rule there is lots of them. As with other guns fore ends vary in size; the large or skeet style is by far the most prevalent in custom-made stocks. Some prefer a finger groove, in which style the checkering is usually kept below the groove. Smoothly-contoured fore ends can easily be checkered right up to the edge, same as a bolt action stock, and here as a rule, there is lots of fore end to cover and plenty of opportunity to get in some fancy licks. Almost any of the designs shown in this book can be applied to one of these guns with only minor alterations.

Type B gun fore ends, whether regular or beavertail styles are best mounted on the same gimmick as the singleshots. There is nearly always a hole through which an attaching screw can be used. The forward ends of many of these butt stocks are fragile when off the iron, so one is safer to mount with only the barrels, fore end and trigger guard removed. Wrap the end for mounting in tail-stock cup and seal the action against entrance of dust with tape or, what I have found best of all, "latex bandage."

Some of the most graceful checkering patterns I have ever seen have been on side-by-side doubles—could be because I just admire that type. Straight-gripped guns usually have slim grips, hence long racy panels meeting under the stock aft of the tang. Pistol-gripped guns may be paneled much the same as pistol-gripped rifles.

It might be mentioned here that much more exotic blanks may be obtained for the money, for shotgun and other two piece stocks than for bolt actions.

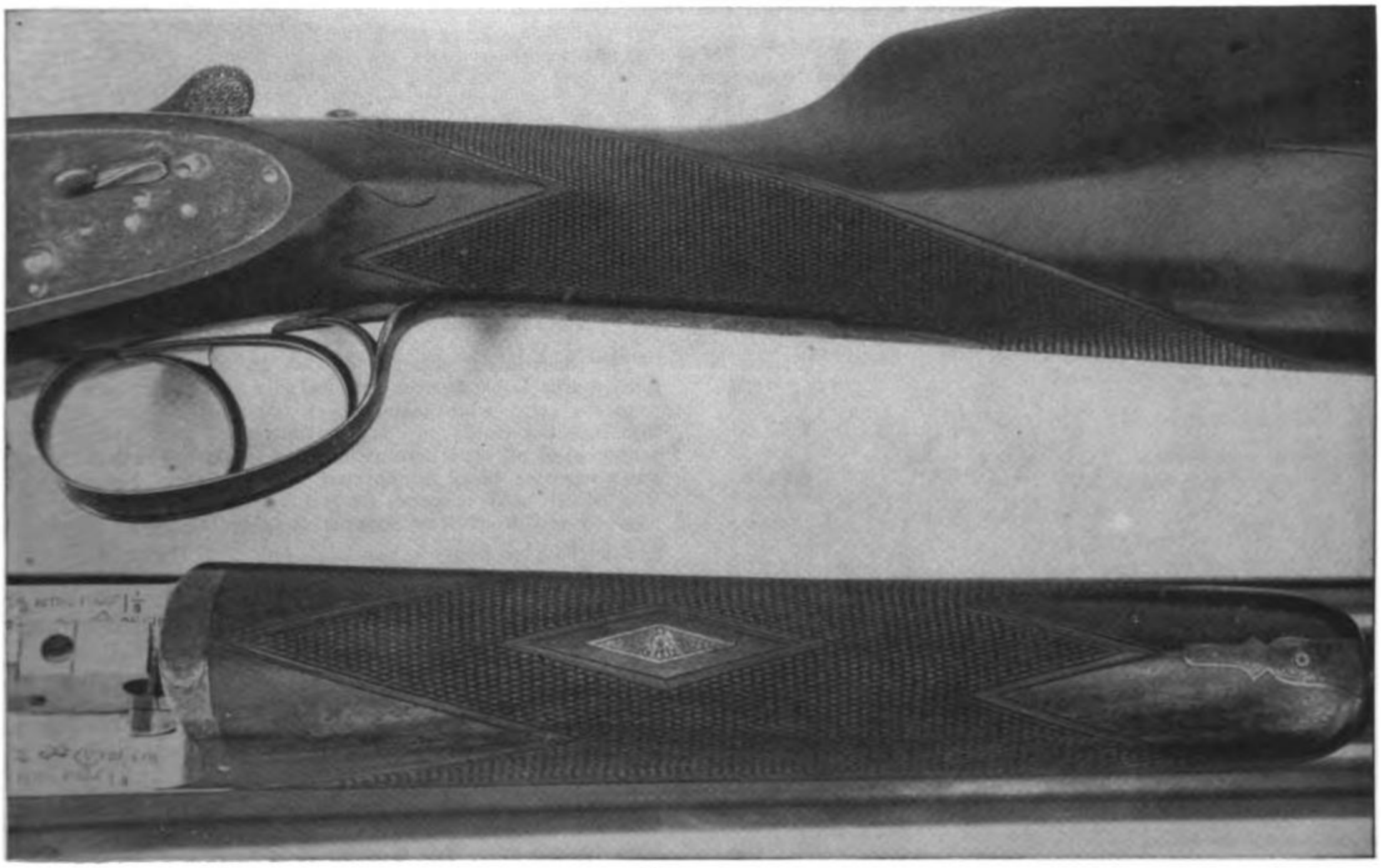


FIGURE 50

A fine Holland and Holland double shotgun belonging to Dr. Earl J. Thee, of Beverly Hills, California. This stock is checkered with flat type checkering of about 22-lines per inch. The grooves are not as straight-sided as some I have seen, yet the diamonds have a definite flat on top. As with most straight-gripped doubles, the checkering meets underneath aft of the lower tang—and if you will notice, there is no parting line, indicating that the master lines were laid out to meet or cross this area. The wood in this case is Circassian walnut with nice coloring which the camera did not pick up, since we were concentrating on detail of checkering rather than the stock itself. ***Photo by Bob Emmons.***

FIGURE 51

My pet handgun—a .357 Magnum New Service Colt. Stocked in balsimo, a very hard oily breed of cocobola (I think). This is just a plain 20-line checkering job adapted to the shape of the grips. While I'm not normally a south-paw, my handguns are stocked that way. As you may have noticed from the close-ups showing my hands at work, my right-hand trigger finger is just a bit too short for handgun use, although it percolates O. K. for rifle shooting. *Photo by Bob Emmons.*

Reason being that the short pieces used for butts and forends can be cut from much smaller portions of highly figured wood, pieces of stump and crotch burl that would be absolutely useless for the one-piece sporter stocks. Neither are we so concerned with grain layout that is necessary for maintaining accuracy. I do not mean that grain layout can be forgotten, but the requirements are just less restricting. Occasionally a bolt action blank comes along that can hold its own with any two piece blank, but as a rule, buck for buck, the shorts have the nod.

FIGURE 52

An HDM Hi-Standard which I stocked south-paw in balsimo wood. Here the panel outlines follow the shape of the stock. The only variation is on the right hand side where the upper outline follows the thumb rest. The naked diamond on the left hand side breaks the monotony of solid checkering. Since the thumb rest throws that side plum out of symmetry, a corresponding uncheckered diamond would either have to be lowered or it would have been dubbed off by the top outline, making matters worse. So I figured the fewer sins the better—and left it out. *Photo by Bob Emmons.*

HANDGUN GRIPS

In the vast majority of cases, pistol grips are flat on one side and may be screwed or clamped to a piece of timber mounted between the butt-clamp and the tail-cup. For this purpose I use the same timber that served for mounting singleshot and other separate fore ends, fastening the grips to the flat sides of the gimmick. As with any stock, when mounted this way they may be turned and tilted to any desired angle. However, the old model Frontier and some of the cap and ball models have one-piece grips which shy away from mounting in a cradle. Just leave the grips on the gun and hold it in the best way you can. I remove as much from the barrel as can be removed and hold the gun by the barrel in padded vise jaws. Quarter-inch cork sheet makes good jaw padding and is safe from scratching if kept clean. However, never twist a blued barrel in a vise as long as there is *any* pressure, no matter how well padded. The least it can do is wear the blue unnecessarily, and is quite likely to scratch the barrel, no matter how careful one may be to keep the jaws clean.

FIGURE 53

The fleur-de-lis pattern applied to a handgun stock. I bought this Lahti for the sole purpose of stocking and photographing, and while about it I removed the lanyard loop and shoulder stock spur. It's a darn good gun, probably the strongest of all semi-automatics. I've heard tell it will handle 9mm machine pistol ammo that will take other pistols apart. The wood used is prize Oregon walnut scrap from a rifle blank I got from Roy Schaefer, Eugene, Oregon. *Photo by Bob Emmons.*

Checkering for most handguns is more a matter of utility than with other types of arms. Of course, it can be decorative as well, but the main idea is to checker wherever the hand comes in contact with the grip. I have never had anyone ask for checkering in the thumb rest, but maybe it is done.

Point designs are just about out of the question here. A fleur-de-lis works well where there is room and a ribbon is quite often used. An uncheckered diamond may be left in the center of a panel to break the monotony of an otherwise solid panel.

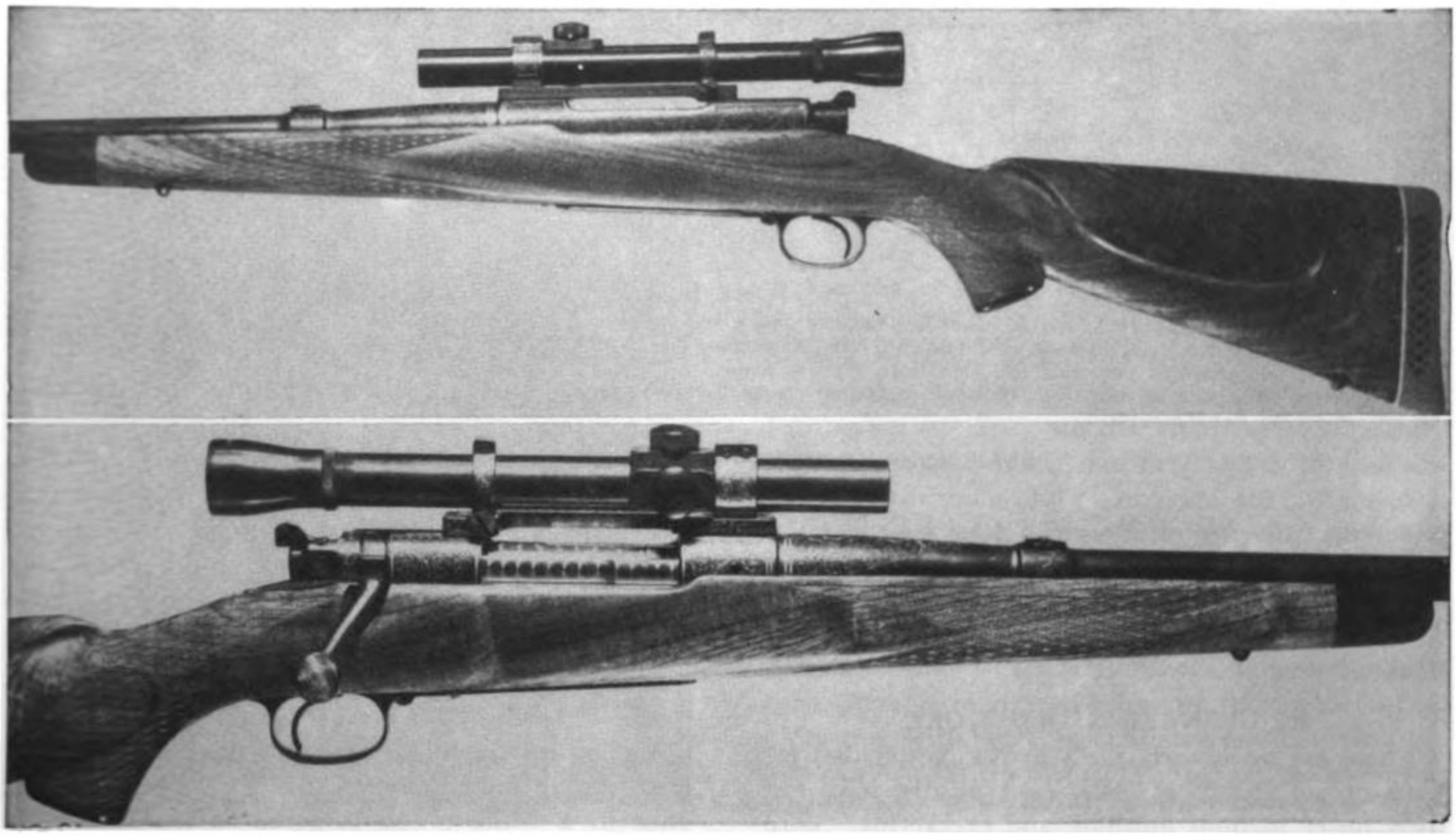


FIGURE 54

Showing what can be done with a factory rifle by a bit of remodeling. This was a top grade Winchester Model 70 rifle in .30-06 caliber. Engraved with gold ornamentation and with engraved Redfield Jr. scope mount to carry the Lyman Alaskan scope.

Remodeled, checkered and finished by Leonard Mews—but retaining the factory stock, which was a fine piece of feather flame American walnut. Leonard trimmed down the stock from grip to tip and altered the factory cheekpiece by reversing the curve and running it into the comb.

Forearm and grip were then worked over with 1 x 2 French checkering in 13 by 26 line dimensions—using one of the Lightning patterns for forearm and a modification of his curved patterns for the grip.

Both appearance and feel of the rifle were improved by this remodeling. A bit of study and forethought will effect a similar improvement on most factory stocks.

CHECKERING THE FACTORY STOCK

More than one man has had a yen for some checkering on a factory made stock that escaped from the plant without that decoration. Many of these stocks are of good quality wood and will take checkering very well. One of these stocks may be stuck in a cradle and given the business without any further ado; however if a man is going to the trouble of doing a checkering job, he just as well might go to a bit more trouble and preparation.

Most factory stocks are finished with an application of filler and one of varnish or lacquer. This finish makes for little more than a cheap appearance—in nearly all cases being applied to the outside only, with the barrel groove and action inletting never getting a smell of any kind of sealer. It must be O.K. though—the big outfits do it—maybe us custom stockers who seal the inside as well as the outside are all wet.

Anyway, to get back to this checkering job, take off the varnish via the varnish remover method. In this way a lot of the filler can be lifted out of the wood, making it easier on the checkering tools. It will also bring most of the artificial coloring with it, leaving the wood as Mamma Nature made it, which can not be improved on by man and his phony colors. A stock that has been stained always looks the part, and many have good natural coloring that is covered by stain. Nicely colored wood does not need stain and plain wood is not improved by it. Of course if you do not agree with me do not get mad. I am just giving vent to my scorn for artificial coloring of wood which apparently is not shared by all.

After sufficient sanding to remove any blemishes the stock should be sponged, because even if practically no wood has been removed a good crop of whiskers will sprout. If these whiskers are removed with sharp new sandpaper it is unlikely that more than two spongings are necessary. If dull sandpaper is used, the whiskers are just rubbed down and will keep on coming up until they are removed.

Use your pet formula for an "oil" finish and when it is considered complete proceed to checker as with a custom stock. One of my very first checkering jobs

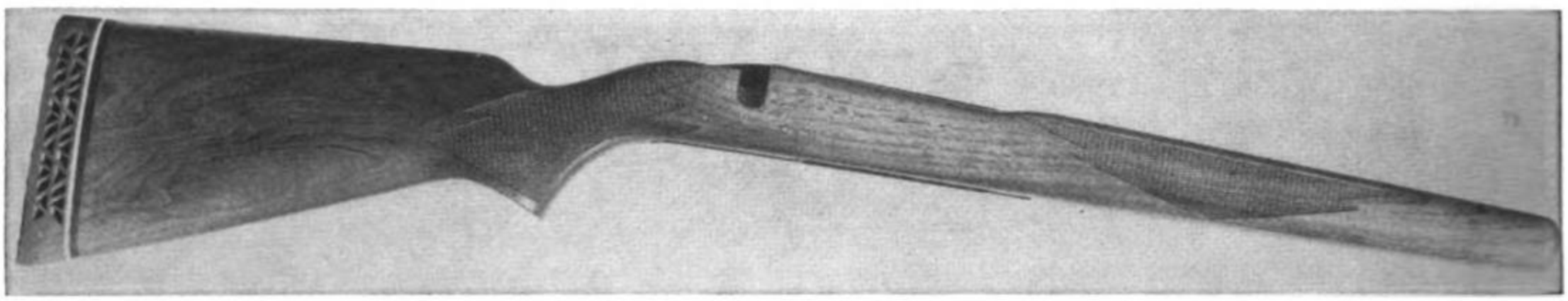


FIGURE 55

A factory Remington 721 stock that has been oil finished and given a moderate application of checkering. The owner, Chet Behring, of San Fernando, California, hand-finished the checkering by giving it a couple of passes with a hand tool after it had been laid out and machine cut with the Dem-Bart Electric tool.

This gives a little idea of what can be done to factory stocks by giving them a good sanding and oil finish and then a checkering job. *Photo by Bob Emmons.*

was on a Model 54 Winchester whose owner brought it to me for the operation while more than slightly under the influence of firewater. A week or so later, when he remembered where he had left his rifle, he came to get it and was quite astonished to find it checkered. Oh yes, my deliveries were a bit better in those days!

REJUVENATING OLD WORK

There are many nice stocks in circulation that for years of use and in as many cases misuse, have lost their luster in both finishing and checkering. Since refinishing has been pretty well covered in other works, I will stick to the checkering angle.

Unless some of the checkering has actually been removed by scraping or gouging it is quite likely that it has become filled with oil, dirt and curd in general as much as it is worn down—as in the case of the stock in Figure No. 3. So about the first thing to do is scrub out all accumulation from the grooves.

Lacquer thinner is good for this purpose, carbon tetrachloride is better, either being used with a stiff brush. A small brush is best, a toothbrush preferably, because the brushing should be restricted to the area within the panel outlines. In many cases it is necessary to scrub awhile and move on to another panel, then return and scrub some more. Oxydized oil and dirt do not give up so easily, especially after 20 years or better in the process.

Importance of thorough cleaning is two-fold. In some instances only a good scrubbing is all that is necessary. Not that the checkering would necessarily be as good as new, but do not forget it is not a new stock and if the original is passable it is more desirable than "new" work. Then if the job is to be recut, a tool will run much truer in a clean groove as well as stand less chance of causing trouble from gumming up.

If the grooves are definite enough to follow with a V tool, it is wiser to lay off the spacer, because the chances are too slim of matching the space. Use the V tool just as would be done after a new job was spaced. If it is necessary to respace, I would recommend removing the old checkering entirely and starting all over. If it is desirable to preserve the old outline there is no objection whatever in doing so, cut it deep enough before removing the old checkering so that it will weather the process. Lay out master lines to co-ordinate with any natural lines that show in the outline and proceed as with a new job.

CORRECTING SPOILED WORK

Maybe this should be read in a dark corner, or at least quietly and to ourselves. The fact remains that once in a while a job is going to get so royally screwed-up that it has to be undone and done over again. The reason for speaking so bluntly on this matter is that it has happened to me.

When something goes wrong with checkering that calls for a re-do, about the only thing one can do is remove the wood that is blighted and refinish. About three years ago I was doing a seven panel job and had a case of "blight". When spacing out the diamond on the underside of fore end, which masters the whole fore end pattern, the forward point of the diamond wound up about 1/16" off center. Little as this sounds it made a mighty big bobble, too big to let pass. So after decorating the atmosphere with several shades of blue, I grabbed my Limey spoke shave and removed the lousy layout.

As a rule botches that require such drastic remedies are in the spacing, or at least develop before the checkering is down to full depth. One thing that must be remembered, is that local scrubbing will not do, since that would cause unsightly irregularity to the surface. If removal of sufficient wood affects the symmetry of the stock, the same amount should be removed from the opposite area, whether we like it or not. (This is a good argument in favor of spacing both opposite panels before further completion.)

Then too, some accident while working on a stock may call for the above discussed treatment. Stocks have been known to be dropped with no other damage than the ripping off of a bunch of diamonds from the checkering. Like the time the wind came awhipping over the Verdugos and caused a finished

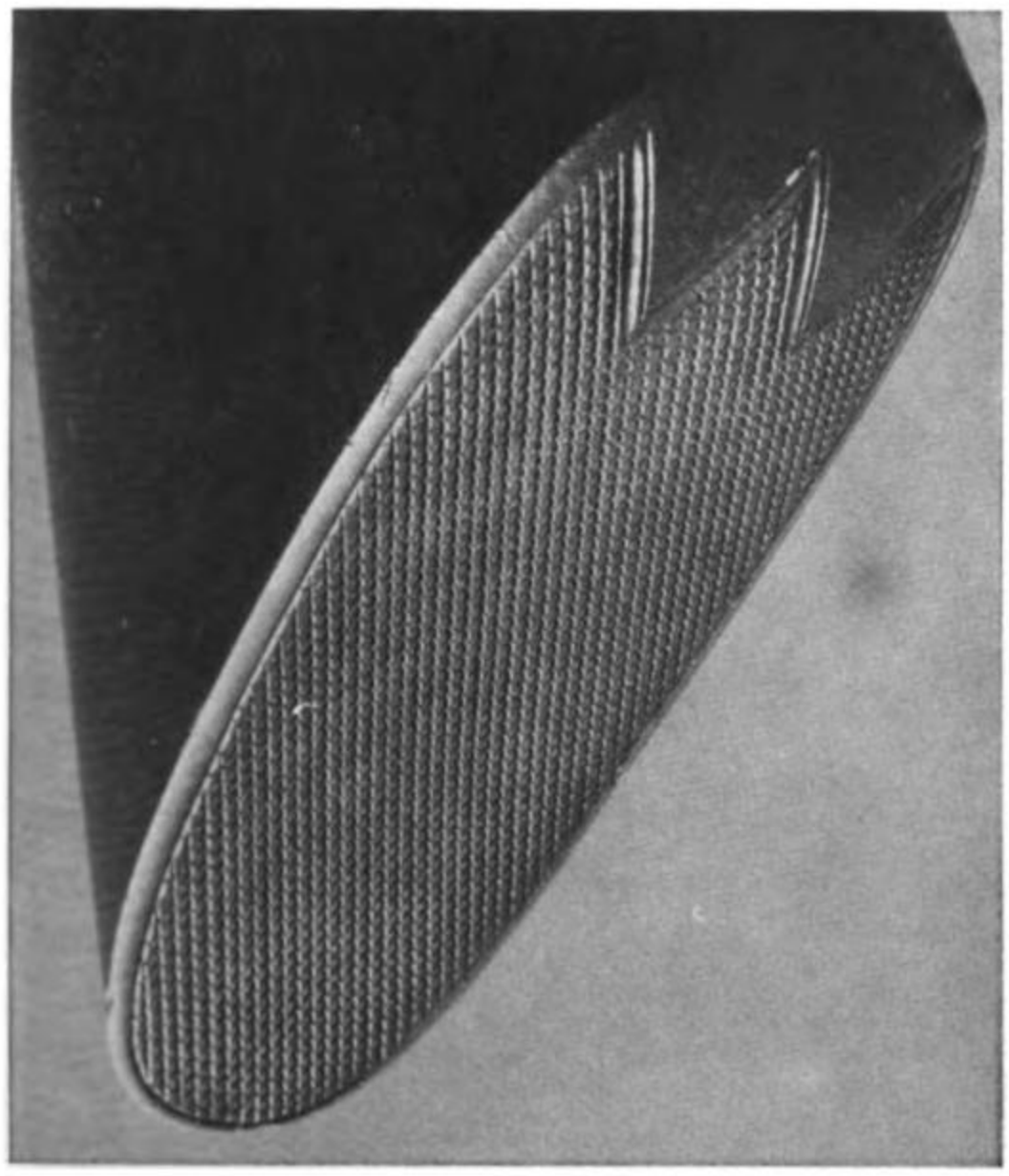


FIGURE 56

The butt of Dr. Thee's Holland and Holland double. No butt plate. Checkering is in the flat English style, matching grip and forearm. Only on the best of woods is such a thing as this feasible, for any but the best would chip too easily around the edge, especially at the toe.

stock to be knocked off a high rack, down at the Pfeifer Rifle Company. I do not know how many things it bounced off, but it sure lost a lot of skin; it was more work to repair than it was to checker it in the first place. Then there was the gent who was loading a deer on a cayuse with his rifle slung over his shoulder. I dunno why he did not lay the rifle down. Anyway the cayuse kicked at somebody but only connected with the rifle. Why the butt was not kicked plumb off I will never guess; just about a quarter of the checkering was wrecked on one grip panel and a chip out of the comb. A little reshaping and some surgery on the comb and that rifle was ready for another horse.

Checkering Over a Wundhammer Swell

It might be good to say a few words about checkering over a Wundhammer swell. In case that term is not understood by all, reference is made to a swell on the right hand side of the grip of a rifle stock. See Figure No. 57. They are not such handsome apparitions but they sure do feel good when made to fit the hand.

The location of the swell is such that it usually falls under the master lines naturally. At any rate it is a good plan to finagle both lines, if possible, right over the top of this hill. The reason being that there is more territory to space over the top of the swell than there is above-and-below or fore-and-aft of it.

Starting with these straight master lines, all spacing can be kept straight by keeping an eye, and straight edge if necessary, on each line made. It is likely to be necessary to spread the lines a trifle as the swell is descended. Such slight spreading as is necessary will not be noticed if it is equally divided over the critical area.

The suigied maple, fleur-de-lis job, Figure No. 46, has a moderate Wundhammer swell. As it happened the lower fleur-de-lis lies just about on the high spot of the swell, and helped a lot to take care of spacing problems, no spreading of lines being necessary.

I do not know whether Louie Wundhammer was the originator of the bump that bears his name, but that being as it may, it seems to be quite unanimously credited to him.

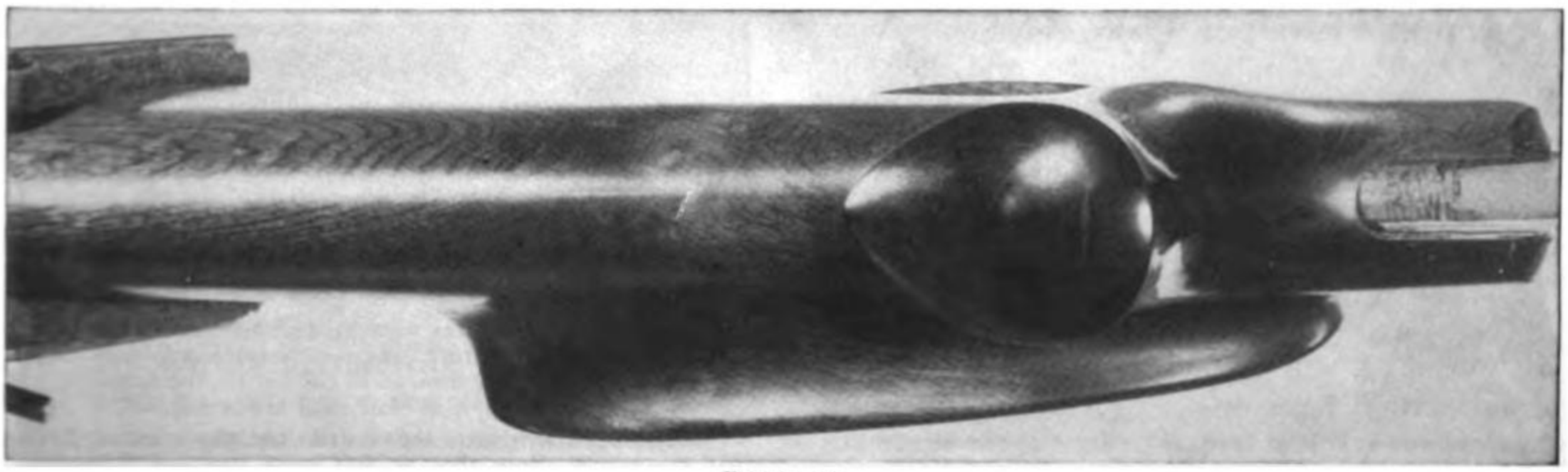


FIGURE 57

The purpose of this pix was to show a Wundhammer swell. It is from my heavy .224 P.R. Hi-wall. It also shows method of mounting Hi-wall and other through-bolt type stocks in cradle. Oh yes! *This* Hi-wall has a through-bolt, notice the short lower tang, top one being same length. Cropping the tangs and holding the stock on with through-bolt let me make a very close pistol grip. This is the butt that goes with the laurel fore end. I don't know what the proper name for this wood is, but I do know that when I put some borings from this butt into Charlie Faussone's smokin' tobacco he just about went nuts tryin' to figure out what was in it. It looked so much like his *Half-and-Half* that when it was turned out on a sheet of white paper, even I couldn't pick out the particles of wood.

STYLES OF CHECKERING

The most common and popular style of checkering is the sharp or nearly-sharp-crested diamond type that we see on practically all American and most European arms. There is little need to further discuss this style since it has been the subject of the foregoing pages.

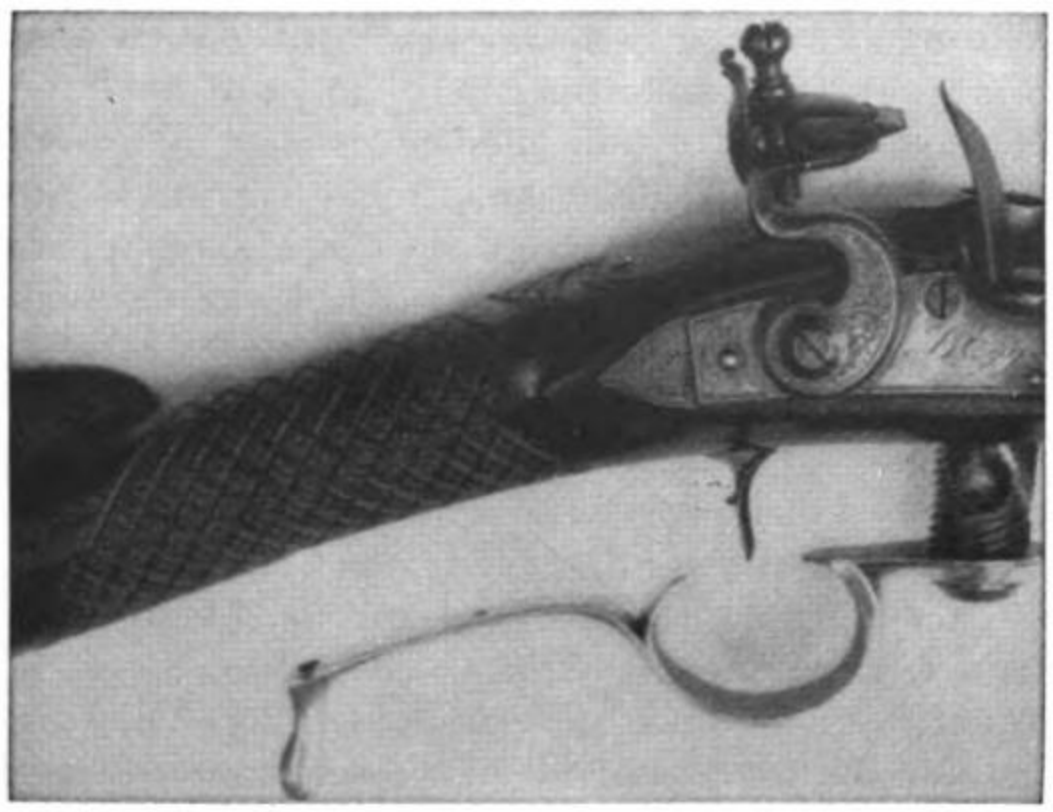


FIGURE 58

EARLY ENGLISH CHECKERING

A splendid example of early English checkering is shown on this specimen of the famous Ferguson breech-loading flintlock rifle, a sporting model made by Durs Egg in 1777.

At this period, the English makers were just commencing to include checkering on their pieces, although this form of decoration had been common on the continent of Europe for some years. These early English attempts were often more a means of embellishment than of utility and the checkers were large in area as shown above.

On this Durs Egg rifle, these large checkered squares are scored lightly into four smaller equal sections, each having a dot punched into its center. The decoration is further embellished with a bit of carving done in relief, and in excellent taste, on the foretop of the grip. The forearm is not checkered.

English Flat Checkering

This type of checkering is to be found on some of the finest English-built double rifles and shotguns. I have seen a Farquharson or two and a Frazier checkered this way, but have never seen a bolt action rifle so done, though it would be strange if it has never been done. I have not seen many English-built bolt rifles.

The flat checkering consists of nearly straight-sided grooves spaced usually 20 to 22 per inch and about .025″ depth. A well executed job shows no evidence of any vertical taper or draft to the grooves which are clear cut and fuzz free. The tops of the diamonds are the original surface of the stock and little evidence of checkering is noticeable to the hand. I can not quite savvy the object of flat checkering, though one point in its favor I must concede, namely that the stock may be sanded lightly for refinishing without damaging the checkering. On the other hand it

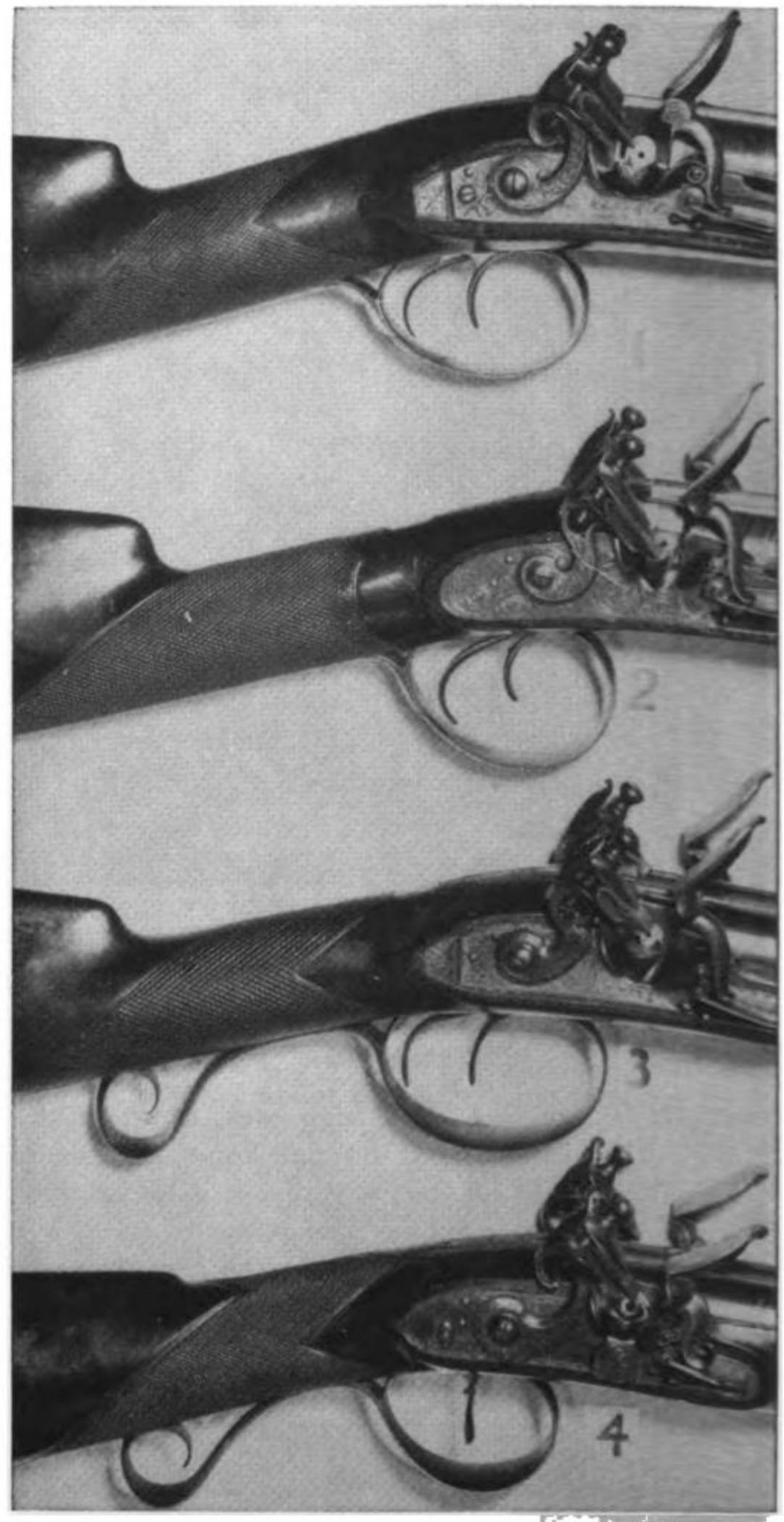


FIGURE 59

ENGLISH FLAT CHECKERING

Above illustrates four English flintlock "fowling pieces" of the 1800-1820 period. The top two are London guns; No. 1 is by John Manton and No. 2 by Purdey, both leading London makers of their day. The No. 3 is by Brummitt of Warsop and the bottom No. 4 is an Irish piece by Pattisson of Dublin.

At the time these pieces were made, the custom of checkering the grip of the stock was well established, but only a few gunmakers had got around to checkering the forearm. The carving of the stock, by this time, had about stopped.

This illustration clearly shows well-done examples of English flat checkering. Note that at this early day the "diamonds" are almost square. The checkering on the John Manton gun runs 16 to the inch, the grooves are made quite shallow by means of a U-shaped tool, and the tops of these diamonds are appreciably flat with a top area of about twice the width of the groove.

The Pattisson gun, shown at the bottom, is outstanding in that it is an early example of the single-trigger action—the two locks being fired in succession, left barrel first.

affords no better grip than a smooth stock and it is worse than the common type to fill with oil and dirt. Figure No. 60 shows a tool for flat checkering.

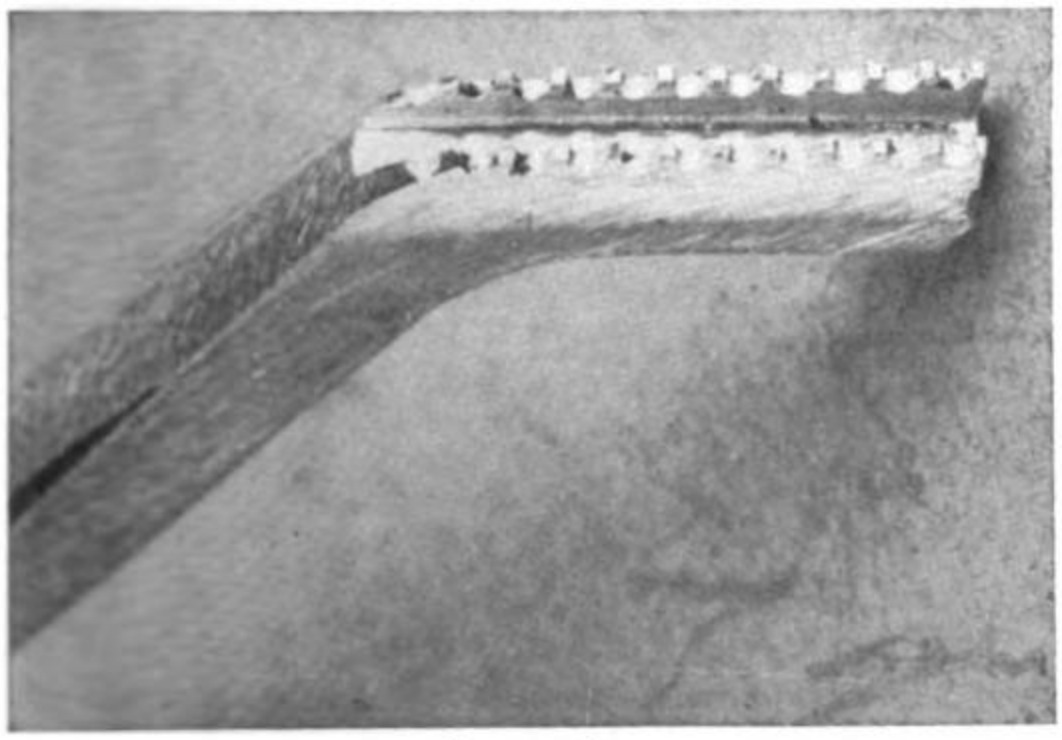


FIGURE 60

Bob Emmons sure made a bum out of me in this pix! Looks like this tool for English type checkering had been made with a dull horse rasp. Well, it *was* a quickie, but it does do the job. The square groove down the middle was roughed out with a sharp hack-saw blade and smoothed with a flat needle file. Teeth were spaced with a 32-line metal checkering file and finished with a three square needle file.

Skip Line

The skip line or French style as some stockmakers call it, is pretty much what the name implies. A look at the close-up photo tells the story quite plainly. The stock used for these illustrations is one of my own, a fine piece of French walnut from a light weight .257 Roberts with concealed magazine and Krag trigger guard. This is shown on page 102.

The basic spacing here is 20 per inch, my favored spacing, with double width or 10 per inch skips, which are alternated with each four rows of small diamonds. The results are rather unique in that we have not only regular checkering interspersed with a flat topped diamond four times the usual size and sharp crested rectangles the size of two regular diamonds, but the effect of a diamond eight spaces each way, with a flat top diamond in each corner. By looking at the pattern from one end or the other it appears as though the regular checkering was nested in between ridges formed by the king-sized diamonds and the rectangles.

The tool for spacing the skips is made the same as any other spacer except that it spaces only half as many lines per inch as the spacer used for the basic work. Figure No. 9-(10) shows a cross section of my own skip spacer. It is not necessary to have the flat space between the teeth—a deep V groove is O.K.—it just happens to be the way mine is made.

I have found that vigilance must be closely maintained in this style to keep the grooves the same depth

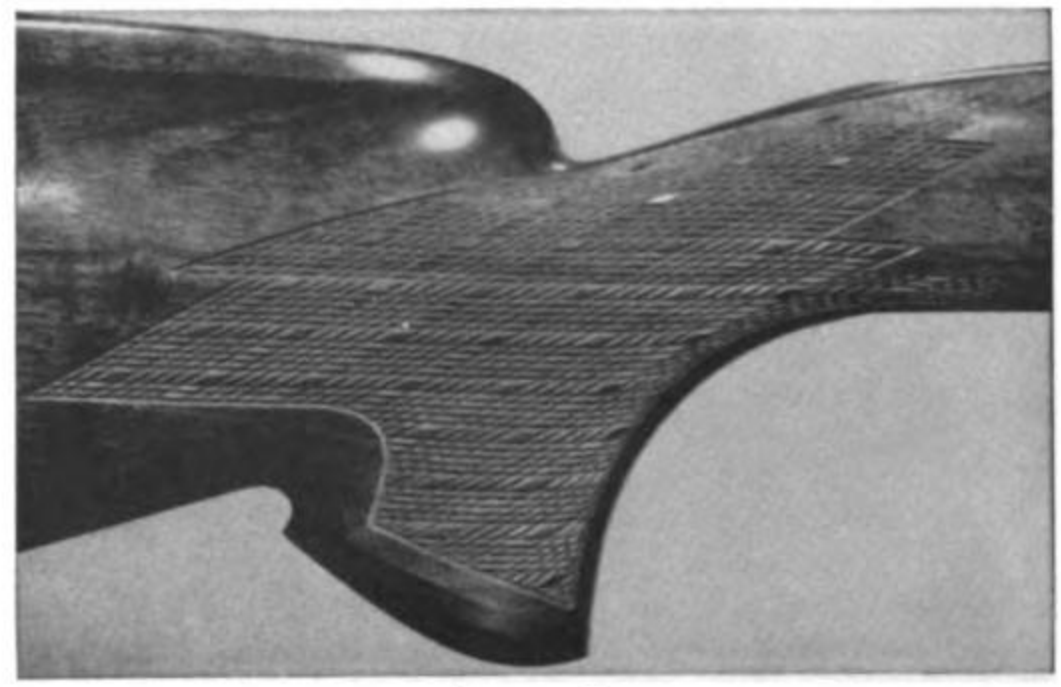


FIGURE 61

A closeup of the off side of my skip-line checkered Roberts. Close examination will disclose a botch in this panel; it's not a nicked outline, runover or bad line, but a definite miscombobble. Can you find it?

by the large diamonds and rectangles as by the regular diamonds. If we go blithely on our way, working hell out of the V tool, we may find that we really do have the small diamonds in a valley by the time the rectangles have been brought to a sharp crest. This is due to the greater side surface resisting the action of the V tool.

Another thing to watch is the change in spacing. In other words, do not go to sleep as I did on the job illustrated and space only three lines between skips; see Figure No. 61, close-up of right hand grip panel. Once the wrong slash is made you are sunk—just grin and admit the butchering—because one line

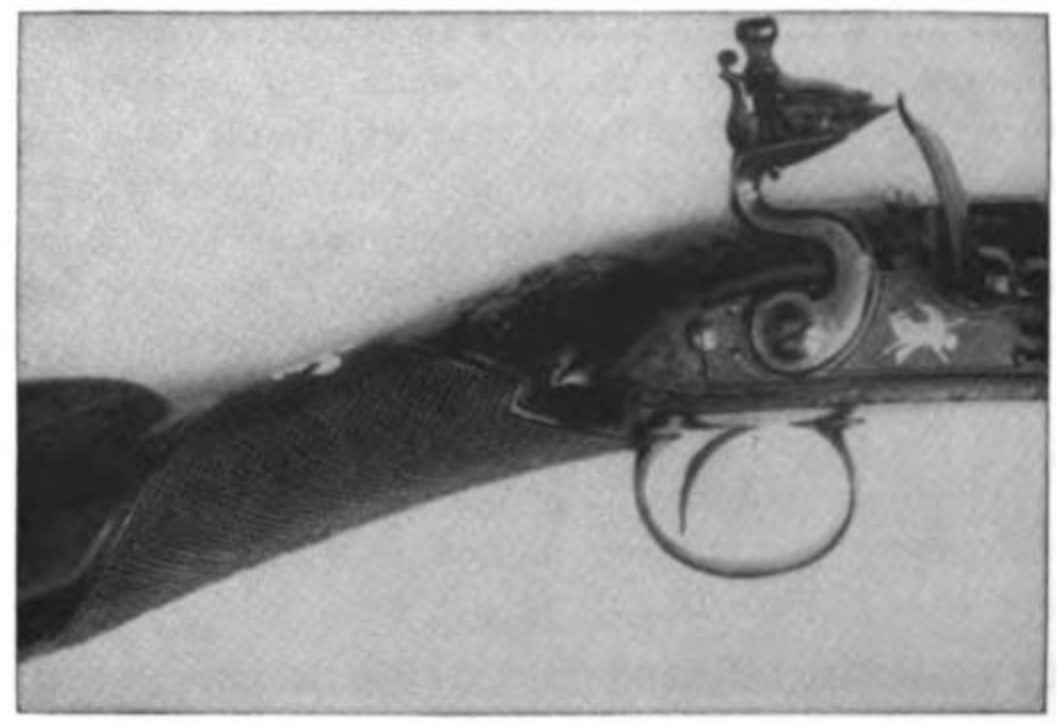


FIGURE 62

ENGLISH CHECKERING AND DECORATION

An outstanding bit of gunmaking is shown in this rifle, also made by Durs Egg. This famous maker operated in London from 1750 to 1820 and the gun shown above is a presentation piece that he made about 1800 for the Prince of Wales.

This flat checkering is almost square and the pattern is enclosed in a raised border. A bit of relief carving enhances the grip top and the piece is further embellished with several gold inlays on the wrist, lockplate and top of barrel. Altogether, quite a fancy bit of gunmaking but nothing exceptional for a first quality gun of its day.

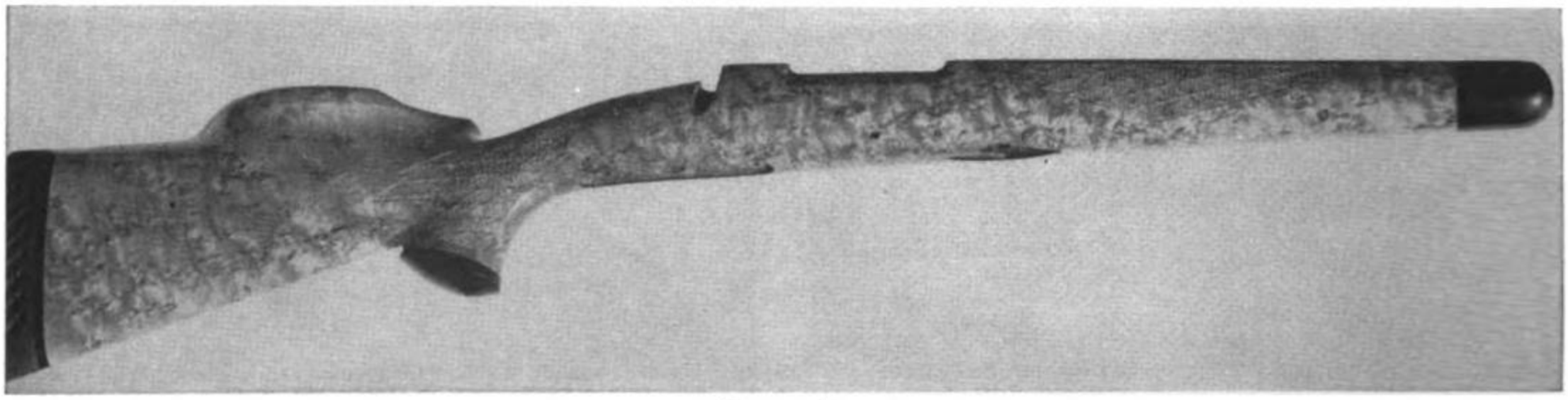


FIGURE 63

The stock from Lucille May's .257 Roberts. The way those birdseyes stand out one would think they were warts, but really fellas, it *is* smooth. Checkered with skipline style in a pattern I use a lot for small stocks. Spacing is 22 lines per inch with 11 per inch width skips. This stock is a show piece, but it doesn't stop Lucille from takin' it out into the piney woods and sage brush hills to trim a mule deer buck down to her size, which, by the way, is purty small. Notice the high cheekpiece, unusually high for a sporter, but that's the way the gal wanted it, and judging from the way she can use it, I reckon that cheekpiece is right.

too few or too many can not be changed without making a worse mess than mis-spacing. And it is just as easy to run in an extra line as it is to short one. My advice is to be wide awake when spacing this style and go into solitary confinement while working.

The skip line style can be used with any number of variations and patterns. I use the four regular spaces between skips because, to me, the over-all effect is more pleasing, though I have seen jobs with two spaces between that were mighty nice. Leonard Mews usually spaces his jobs in the latter manner and his work is tops. I really believe however, that an even spacing should be used, that is, two or four or maybe six on a large stock. I have never seen a six spacing used—I am just picturing it in my little mind; maybe it is a lousy picture. Anyway, I know two and four spacing is O.K.

As far as I can see there is no special "right way" of positioning the large diamonds, just so there is some method or symmetry that will result in opposite panels coming out alike. About the only rule I use is to space two narrow spaces on each side of the master lines and go on from there. This does not mean that the points will necessarily be the same (in a point design); it all depends on how far the points are carried from the other direction.

The time required to do one of these jobs usually runs about one and one half times that required for the same pattern in the regular style.

CHECKERING CHARACTERISTICS OF DIFFERENT WOODS

There is not a great deal to be said on this subject, but a few words might give a man an idea of what to expect in the way of wood behavior as he contemplates doing a checkering job. All of the following observations are the result of my own experience, using sharp, well-designed tools. I am not going to cover all woods but those only that have fallen victim to my tools.

Walnut. Since walnut is by far the most popular wood it heads the list and will be divided into several types. Perhaps an authority on woods will disagree with my way of typifying walnut and others to follow, but as I have said, I am just going by my own experience as a stockmaker and not as a scientist. The most common in this country is of course the American black walnut, which has several variations depending, as near as I can tell, on location and growing conditions. The denser specimens of this wood checker excellently; by that I mean it cuts clean and is easy to run and maintain a straight line on. The softer grade of this variety is hard to checker in that it fuzzes and has a nasty habit of trying to lead a tool astray. The later difficulty is caused by the guiding side of the spacer getting side-tracked by a large open pore in the wood and the fact that the soft wood does not afford firm support for the guide.

Circassian or French walnut. I have seen little difference in these two woods so far as checkering is concerned. They are both splendid woods for the purpose, mainly because they are fine and firm fibered. Seldom is a soft piece encountered, which has often led me to wonder whether there is any soft French or Circassian, or if only the better quality stuff is imported to this country, or if I have just been fortunate in meeting up with the better grades. I suspect it is a combination of the two latter reasons. Anyway these two woods are on the top of my list for nice checkering.

Oregon walnut. I have never been too sure about this breed of nuts, so I wrote to Roy Schaefer, of Eugene, Oregon for the low down. Mr. Schaefer is a dealer in fine stock wood, cuts, cures and blanks some of the finest in the land and I will take his word for the story behind Oregon walnut. Mr. Schaefer says, "Oregon walnut is just ordinary black walnut and English walnut grown in Oregon, all being planted by the early settlers. However, growing con-

ditions in that state have done something to the wood to make it outstanding in beauty and texture." Under the checkering tool, either the English or black walnut supplied by Mr. Schaefer is a real pleasure to work. This wood is one of the easiest to checker, cuts clean, makes a sharp, strong diamond and its color makes a fine background for the finest and most intricate patterns.

California-grown walnut. Includes black, English and what I have been told is a cross of English and black. The quality of these woods depends, as with others, where it is grown. Much California walnut has been irrigated and grown fast, making it coarse grained and soft, and lousy stuff to checker. On the other hand I have worked up some mountain-grown California stuff that could stand in any company. I recall a stock I made for Frank L. Richards, of Placerville, Cal. He furnished the wood, grown near El Dorado. That was about the hardest walnut to which I ever put a gouge. It checkered beautifully, and was itself one splendidly colored and figured specimen.

Incidentally, that cross between the English and black walnut is called "Claro walnut" out here on the Coast.

Maple. Two types of this wood have come my way, the Eastern rock and the West coast maple. The former is very hard and usually checkers very well. Occasionally a blank of the whitest of the variety is inclined to fuzz, but the fine texture helps overcome the difficulty. The amber colored wood, I have always found to cut very clean. While the West coast maple is usually much softer and lighter in weight, it is fine textured and is not bad to checker. The checkering will not stand the knocks as well in this wood as the Eastern or hard maple but it does make a beautiful stock if well grained.

Oregon myrtle. Any of this wood that makes a good stock checkers well. Any myrtle I have ever encountered that was other than air-dried was not in the "good stock" class. The fine silky texture of this wood makes it easy to lay out straight lines and keep them straight.

Rosewood. While rosewood is usually rather coarse grained it is so hard that it checkers well and holds a sharp crest. It is clean to work and no fuzz trouble is encountered. Several varieties have come my way, all of which were nice to work with.

Wild cherry. A fine grained wood much like maple to work but cuts even cleaner. It checkers very clean and sharp and holds up well under wear. One of the best woods to checker.

Cocobola and Balsimo. As far as I can see, the growing location of these woods is the greatest difference. They work alike and checker the best of any wood I ever tackled.

African blackwood. This is a very hard, fine wood used mostly on stocks for grip caps and fore end tips. However, I have made a couple of pairs of pistol grips from it and checkered them. It is plenty hard and due to its high oil content, checkers clean and beautifully and wears very well.

Mesquite. Mesquite is rather coarse and is often full of sand, making it very hard on checkering tools. The wood cuts clean though, due to its hardness. It is O.K. *if* the tools hold out.

Zebra wood. Only one of this breed ever fell to my lot. My customer wanted a 25-line job which did not turn out so good because of the open grain characteristics of that stick. Maybe some of it is better, but that specimen did not endear its strain to this woodbutcher.

Purple Heart. A very hard wood that checkers nearly as well as balsimo.

Koa. Maybe koa is a fine wood but to checker it is not so hot. The one stock I made of it was plenty for me.

Birch. The harder specimens of birch checker very nicely, but the softer ones are rough. Fuzz.

Monkey Pod. This wood has another name, but I can not remember it. Comes from Hawaii and if I had my way it would never have come. Two of them under my belt and I just hope that is all; it is beyond a doubt the orneriest stuff to work and checker that I ever encountered.

There are other woods used for stocks but they have never come my way, so I can give no first hand information on their checkering characteristics. As to the grade of checkering, that is fineness of line, one cannot say that "this" or "that" wood will carry a finer checkering than some other. It depends entirely on the texture and density of the individual piece at hand.

However, right here may be a good place to blow off some steam about some of the curd that is being sold to unsuspecting amateurs and some would-be pros. This curd falls under two main categories, plain cheap stuff and ersatz fancy stuff being sold at fancier prices. Mainly here, I refer to walnut because it constitutes the bulk of our stockwood. The former is usually straight grained, colorless and soft, the softness of it being the worst feature unless it is coarse grained as well. It sells anywhere from one to five dollars a blank and would be no bargain at 15 cents because, figure it as you like, making a stock is a damned lot of work and it is the height of something or other to put in all that work on a piece of worthless wood. It nicks and scratches easily, will not take a good finish, and will soak up water like a sponge even if you have done your best to "waterproof" it. Much of this grade of wood has

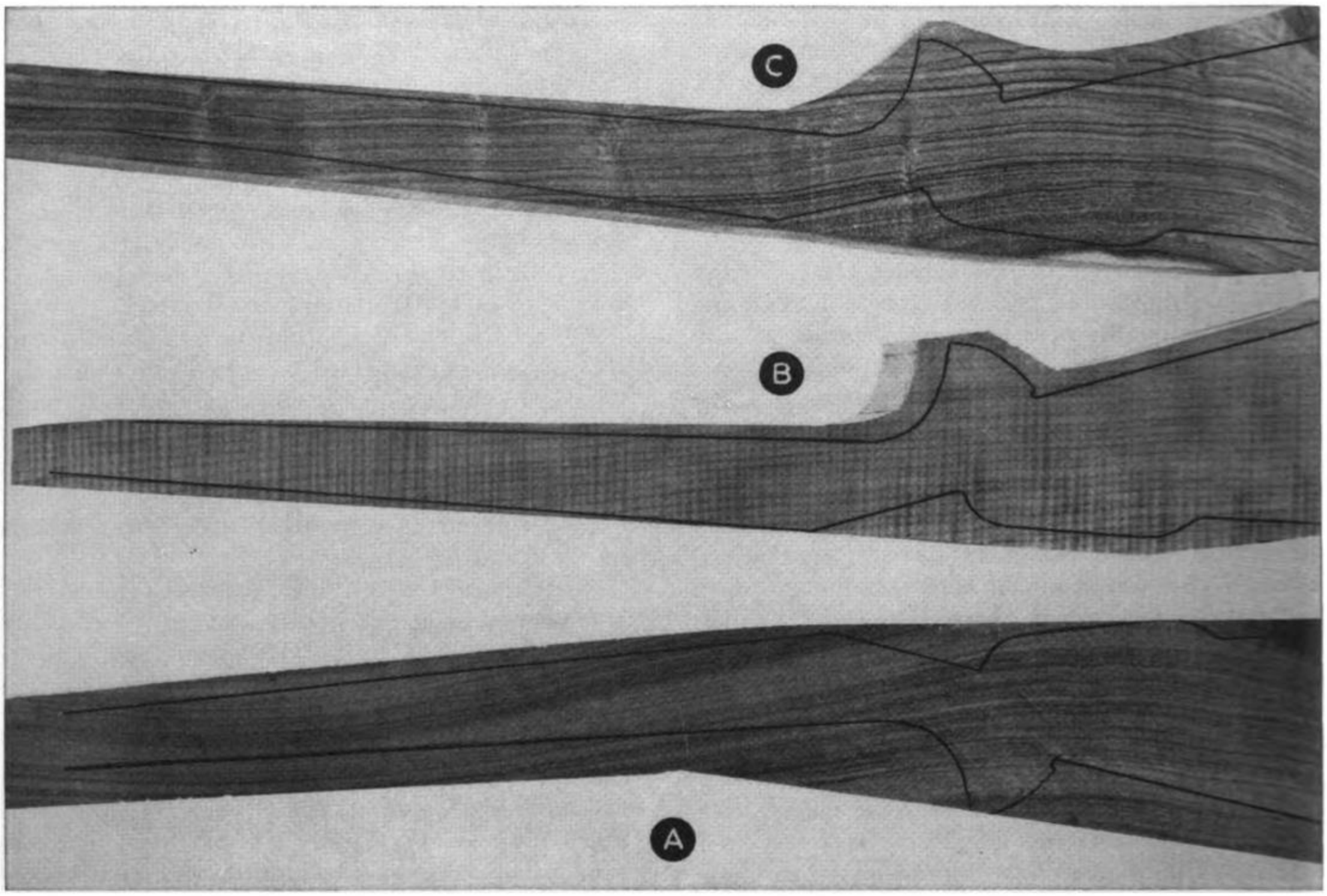


FIGURE 64

This group of stock blanks and that on opposite page shows the bad, the good and the excellent.

A. Good grade of French walnut but a *lousy* layout. Note how the grain takes a dip in the fore end and runs up hill in the grip. It's the grain in the grip that really makes this a bad one, even though the toe is excellent.

B. Shows a well laid out, straight grained blank of tiger tail maple. Had the grain been more nearly parallel with the underline of butt it would be better.

C. A blank of mesquite showing perfect fore end and grip grain. The upsweep in the butt does not make for the strongest toe in the world, but it's pretty hard to get everything in one stick.

been poorly laid out with the grain angling off toward Jones' in the vertical plane or maybe running down hill when it should run up, giving a bad forearm and a worse grip.

Another very common trait of cheap wood is the presence of sapwood. This is the wood that was alive and carried the sap before the tree was cut. Sapwood is usually softer and always lighter in color and very plain, although of course, sapwood can show up in any grade of wood if the gent who lays out and cuts the blank is too mercenary, which, unfortunately too many are.

It is in the fancy wood where the suckers are really taken, because a stick can look beautiful and be worthless. In other words a fancy blank is not necessarily a good one, and a very plain blank *can* be a very good one. These beautiful blanks are quite often the result of the cutter not knowing his business or being money mad and cutting for the mostest rather than the bestest. Or maybe the lumber should have been made into furniture, for many a fancy plank just does not have a good stock blank in it because no spot can be found in it where the grain is right for a gunstock.

One time I got a shipment of wood from Portland, Oregon, that cost from $20 to $40 per blank, most of it over $30. The wood was beautiful with a capital B—it was dense and close grained, that stuff with red, black, orange, grey and brown that would make a wood fancier drool to his knees. Out of 12 or 14 blanks I kept two, the rest being so cross-grained or with burl in the wrong places that they would not even make good singleshot blanks. The only sporter blank in the lot worth keeping was a fiddleback that wound up on a .270 Model 70 belonging to Jerry Knight, who is head of the gun department of Kerr's, of Beverly Hills, California.

About two years ago I stocked a Springfield for

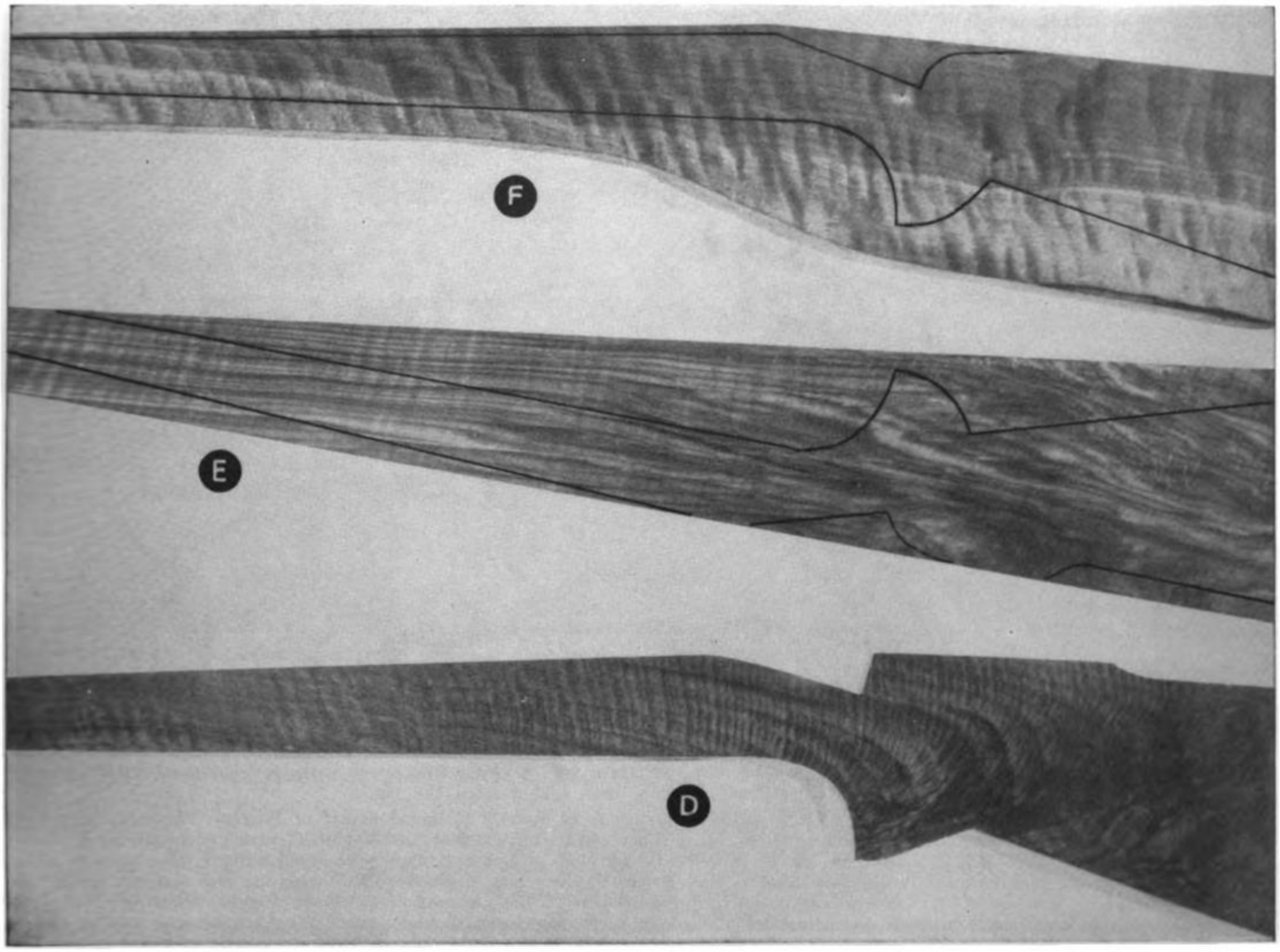


FIGURE 65

D. In this one of California walnut we do have just about everything a man could ask for. A superb combination of fiddleback and burl that has caused many a gunnut to drool clear to his knees. Very good in the fore end and excellent in grip and toe. This blank I cut early in 1946 from a big quarter-sawed plank. It was immediately sealed for slow drying and has been babied these five years. I have turned down several offers of one hundred bucks for this stick.

E. This is a tricky one, a $40.00 stick from Roy Vail, of Warwick, New York. At first observation it would appear that this stock is laid out wrong, but look closer, those watermarks are very deceiving. When I received the blank, someone had laid out a stock pattern according to the watermarks. The actual grain slants opposite from the watermarks in the butt and grip, and as it is laid out in this pix is very nearly ideal. This blank was recently made up for Neil Tilton, of Beverly Hills, California, for his Model 70, .220 Swift. It was a pleasure to work and checker this stick.

F. A beautiful stick of American walnut, layout O.K., but with a streak of sapwood that is heart-breaking. This blank came from a middle-west house that advertises long and loud its famous merchandise. An example of what not to get stuck with. *Photo by Emmons.*

a customer who furnished his own wood. I do not know where the wood came from but it was beautiful at a little distance. It was light and porous, so soft that I could sink my thumb nail into it 1/32". Too bad it was ever cut into a stock blank.

So far I have spoken of walnut. I recall a stock I built a few years back from Oregon myrtle. The customer brought that blank into my shop just bustin' with pride over the "priceless" piece of myrtle he had obtained. It was very striking in appearance, and I sort of envied the guy until I picked up the blank—damned near bumped the ceiling with it, it was so light. While the grain was O. K. and the wood close grained like most myrtle, it had been water cured and was softer than poplar and lifeless or brash like a weathered dead twig. He insisted on making it up and carried it away just as happy as a kid with a mongrel pup.

Another thing to keep an eye on is French walnut. I say French because the condition has come to my attention only in that wood. I have seen a number of blanks of very fine wood that were cut wrong because they were laid out by the water lines rather than the actual grain. Usually the water lines and splitting grain follow the same lines, but quite frequently they do not. If a blank is cut large enough, or just plain wedge shape, the stockmaker can cut out the stock as he sees fit, but in the major-

FIGURE 66

Three of the nicest light weights I have had the privilege to stock; either is capable of grouping in 1¼" angle with ease.

Top to bottom, a 7½ pound .30-06 saddle rifle built for Audie Murphy, America's most decorated G. I. of W. W. 2. Originally it was iron sighted, has a 20" barrel and a stock of very fine French walnut, all the figure of which the camera did not catch. This '06 really bucks and bawls, but lays 'em in a minute of angle from a bench. Barreled by Pfeifer Rifle Company, scope is a Stith 4X with Tilden mounts, installed by Custom Gunsmith Service. Checkered with my standard $25.00 custom point design. The action used is a Mauser that Audie personally liberated from the Nazis.

Center, a 7¼ pound .257 Roberts belonging to Lucille May, wife of Sam May, barrel maker of Custom Gunsmith Service of Sun Valley, California. The action is a standard F. N. with the receiver ring cut down to "Karbiner" size. Twenty-two inch Pfeifer barrel, Stith 2½X on Redfield Jr. mount. Stock is an outstanding piece of birdseye maple, checkered with skipline pattern which does not show up too well in pix. While this wood is very dense, lightness was attained by hollowing the fore end and boring out the butt as much as possible. Weight is also dissipated by dispensing with the conventional Mauser trigger guard and magazine and substituting a Krag guard with a steel diamond shaped inlay for the forward action screw. The magazine is just a well in the wood, no box is necessary and yet perfect feeding has never failed. It is a good plan to leave a shoulder of wood in the well to contact the shoulder of the cartridge, thus protecting the bullet points as well as the forward end of the magazine well. Five ounces is saved by this method, and cleaner stock lines result. Five ounces may not sound like much weight, but in building the light ones, one must grab an ounce wherever available.

The lower rifle is for my dough the honey of them all, a light, 20" Pfeifer barreled .257 Roberts built on a '98 "Karbiner" action with bolt alteration by Sam May. Weight 6¾ pounds with Stith 2½X scope on Buehler mount. That mount throws the scope too far to the rear, and I'll bet that by the time this is printed there will have been a correction made on that matter.

The stock is Oregon burl maple which is much lighter in weight than the Eastern maple, yet is very fine grained. It is fine wood for featherweights and, as in this case, can be very beautiful. This stock is also hollowed in fore end and butt, and utilizes the concealed magazine and Krag guard. This concealed magazine cuts the total capacity to four shots in the lightweights, but so far no one has kicked about the ammo shortage. I reckon the lighter weight leaves 'em more energy for good holding. (Just now thought of that one.)

The checkering is skipline in a three panel fore end design called the "Installment" pattern because part can be done now and the rest later if the owner feels need of it or suddenly hits a jackpot and feels a more aristocratic job can be afforded. The fore end pattern was brought back farther than usual on account of the fore end being on the short side. Then it also centers right above the owner's usual left hand position.

The latter rifle was originally built and stocked for Lucille May, but the cheekpiece was too low, so the B. E. job was done up for her instead. Thru some intricate trading, the little smoker came into possession of the Pfeifer Rifle Company in whose display at the Denver N.R.A. Convention it was shown. Christmas of that year (1949) it was presented by the company to Doris Waltman, who at that time was in charge of the P. R. Co. office. Only recently did she break down and allow me to checker it and now wonders why she ever hesitated.

ity of cases imported wood is cut so all-fired skimpy and with so much drop it makes a man pull his whiskers to get anything but a featherweight out of it.

Just recently I got a blank of French walnut from a dealer in New Jersey. It was a $40 stick and a beauty, dense, well water marked and cut into a generous wedge. And lucky that it was, because the hombre who laid it out had been fooled by the water marks, there being between 15° and 20° difference in their general direction.

You will see that the grain in my skipline checkered Roberts is far from being ideally grained, but a skimpy blank kept me from doing much about it, but then it cost me only $10. Even so, I have seen

many $25 to $35 blanks that were no better for grain layout.

Another place where we find many fancy bums is with mesquite. Mesquite, for the main in this country, seldom gets over twelve inches in diameter and I know of many stocks being cut from trees that were no more than eight or ten inches in diameter and crooked as a politician to boot. (Politicians never die, they just smell that way.) Consequently many are poorly grained and that, along with inadequate curing, makes for an ungood gunstock, albeit they are flashy as all get out.

Not that mesquite is not good wood; what I am saying is that most of it being used for stocks should have been used for fireplace logs as far as a good stock is concerned. I have made a few mesquite stocks, but they lack the flashy appearance of the ones I have in mind, because I rustled up larger trees, a minimum of 14" and a couple that measured 18", and they lack the flashy grain and color of the small trees. The screw bean mesquite, the hardest and best for stockwood ranges from quite a dark red, through pale red and pink to a reddish yellow, while the sapwood is bright yellow. Most have dark streaks following the annular rings. I may get called on this description of mesquite colors because there is a lot of it I have not seen.

Many blanks are being sold that are far from ready-to-make into a stock for lack of proper seasoning, even though the wood is basicly O. K. It is not easy to tell when a blank is fully dry and unless equipment is available for testing a lot of guess work is bound to creep in. For several years I have used a Moisture Register to determine when my wood is dry.

However, since the average person has no access to such a device, the best bet to determine the dryness of a blank is to weigh the blank when acquired, on a sensitive scale, then hang it in a good drying place and weigh it every couple of weeks or so to see if and how much weight it loses. When the shrinkage slows down or nearly stops it is a fair indication that the stick nears minimum moisture content, which for stockwork has usually been considered around seven to ten percent. Some claim lower, but I wonder if they ever had any way to really determine just what moisture content they had?

After stock blanks have gone through my air dryer, I like to set them back on the rack to normalize for a month or so before they are made into a stock. By normalize I mean come up to the same moisture content as the average atmosphere will keep them. Seems to me it is better to make a stock from a blank after it has been normalized than to make a stock from a blank of seven percent and have it normalize to 16 or 18 percent, (this is about normal for the San Fernando Valley in California), after it has been made into a stock. However, if the stock is going to some drier climate it would be advantageous to catch the blank at a lower content.

So, when buying or selecting stock blanks, keep a few of these points in mind. Just because a blank carries a fancy price tag is no saying it is good and yet a very good stock can be made from a fairly low-priced plain blank. Look for density, proper grain direction and, if possible, complete seasoning for a good stock. Demand *all* this plus fancy grain figure and color for a fancy one. The accompanying photos may help to illustrate some of the visual indications of a good stock blank.

And while I'm in the griping mood I may just as well get another big beef off my chest and, my friends, this one really bites me. That is, about the way this word "custom" is kicked, battered and tromped in the barnyard litter.

On said word, as used in our work, Mr. Webster says, "Made or done to order; as, custom clothes." In other words, made to an individual's specifications or needs.

Therefore, if a stock that is cut to finish shape on an eighteen or twenty-four spindle duplicating machine is "custom" I think someone should tap Mr. Webster on the shoulder and ask him "What gives." Even though it is finished by hand it is, except perhaps for length of pull, exactly like dozens of others that have rolled off that high-speed production machine.

I'm not talking of the product of the big factories, but of some gunmakers and stockmakers who like to call their product "custom." Sure, I have a line of machine-made stocks, differing within each style only in length of pull, but I sure as hell don't call 'em custom, I even drop my eyes when I speak of them as *Semi*-custom. If my production was big enough to call them "production" stocks, that term would be far more fitting. Neither do I ask "custom" prices for these stocks, the prefix "semi" goes there too.

THE MOISTURE REGISTER

My carcass is racked with a shudder as I look back on the number of hunks of wood that I have bent into a rifle stock without knowing more of its moisture content than the seller told me or what my guesser told me. Not that moisture content alone is all important, since a certain amount of age is also required, but moisture content is something that *can* be determined, thus leaving us one less unknown.

Moisture content can be cut to a low point without knowing *exactly* what it is by precision weighing

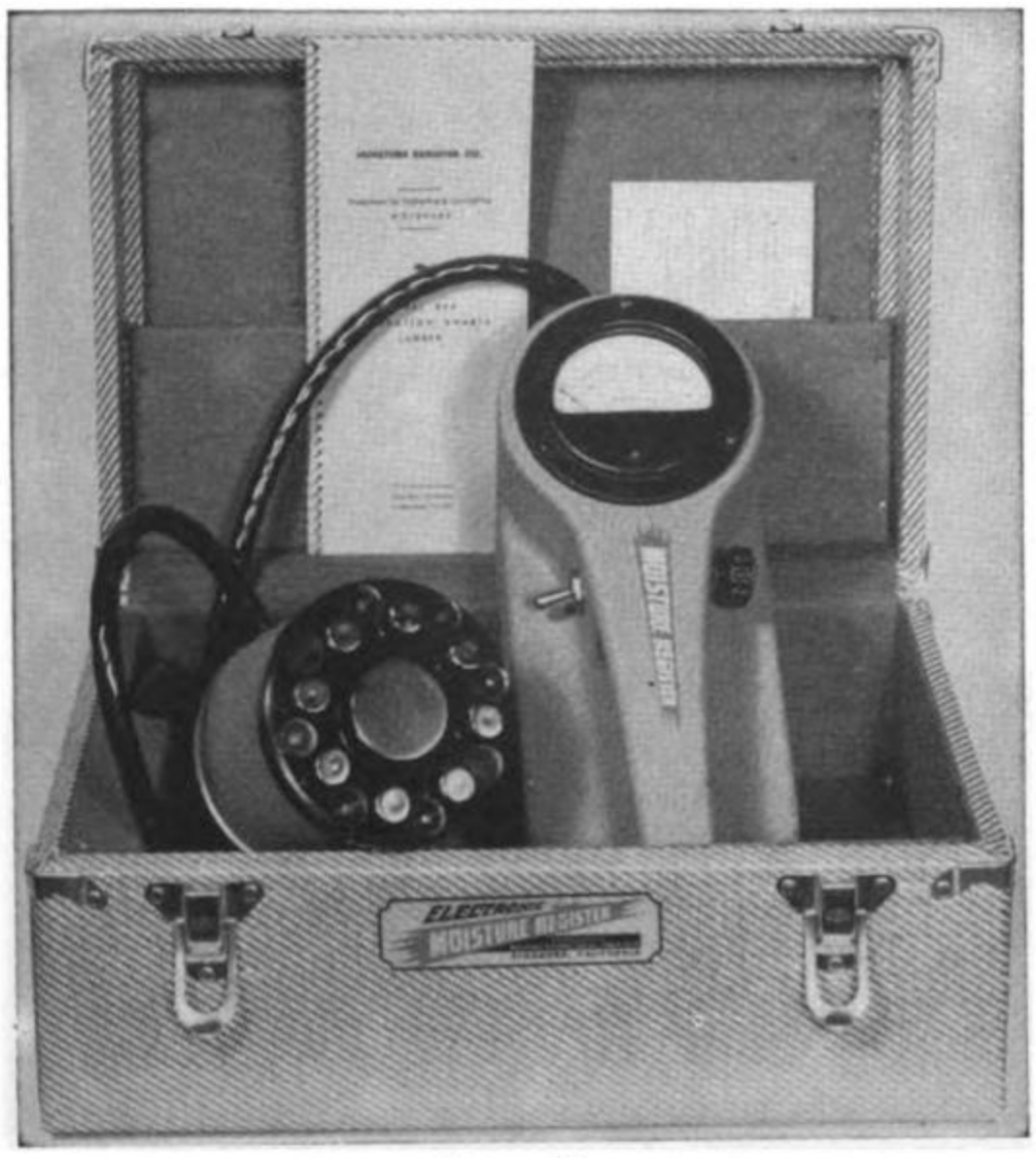


FIGURE 67

The Moisture Register as it comes from factory for $148.50. Note the needle resting against the pin at the left. This is normal position of needle when the current is shut off. Photo By Bob Emmons.

and drying, this method requiring time and at best being on the rough side. Until I learned about the Moisture Register and put out good dough for one, I did a lot of guessing at the dryness of my wood, even though I did weigh and dry and weigh some more.

The Moisture Register is made by the Moisture Register Co. of 1510 West Chestnut Street, Alhambra, California. The illustrated model sells for $148.50. Accompanying photos will describe its outward appearance better than I can with words. Inwardly, I am somewhat stumped even though I have the company's literature which describes it in detail, too much in fact to set down here and, also in fact, so much that, with my less than limited knowledge of electronics, it befuddles me no end.

Anyway, the Moisture Register is a non-destructive (no pins or rods to be driven in wood), rapid and direct reading radio frequency type of meter. The electrodes, eight polished, spring-loaded buttons grouped around a larger central button, and radio frequency measuring circuits are contained in one unit connected to a second assembly which contains the indicating meter, batteries and controls.

To operate, the unit containing the meter is held in one hand, the electrode unit in the other. The toggle switch is thrown to "on" position and the button on opposite side is turned until the needle comes to rest on the red dot. This adjustment allows for any fluctuation in battery output. Then the electrodes of the instrument are brought firmly in contact with the specimen to be tested. The electrode is actually a calibrated electrical condenser in which the wood being measured replaces the air as the insulater, and a measurement of one of the insulating properties (dissipation factor) of the wood is made in terms of moisture content of the wood.

This method of measurement, as well as the calibration of this particular design of instrument, has been based upon the curves of the important dielectric properties of over 60 varieties of woods measured under laboratory conditions, and as far as possible, according to A. S. T. M. specifications. This instrument measures from 0 to 25% moisture content, being unique in that it covers the range from 0 to 5 or 6%, a range very difficult to determine by any other method. Only two or three seconds are required to make a test.

With the instrument is supplied a calibration reference chart for converting meter readings to moisture content for the variety of wood being tested. Since different varieties of wood will give different meter readings while being of same moisture content, the conversion chart is necessary for computing the accuracy of which the instrument is capable.

FIGURE 68

Here we see the Moisture Register in use, giving a meter reading of eleven. Photo By Bob Emmons.

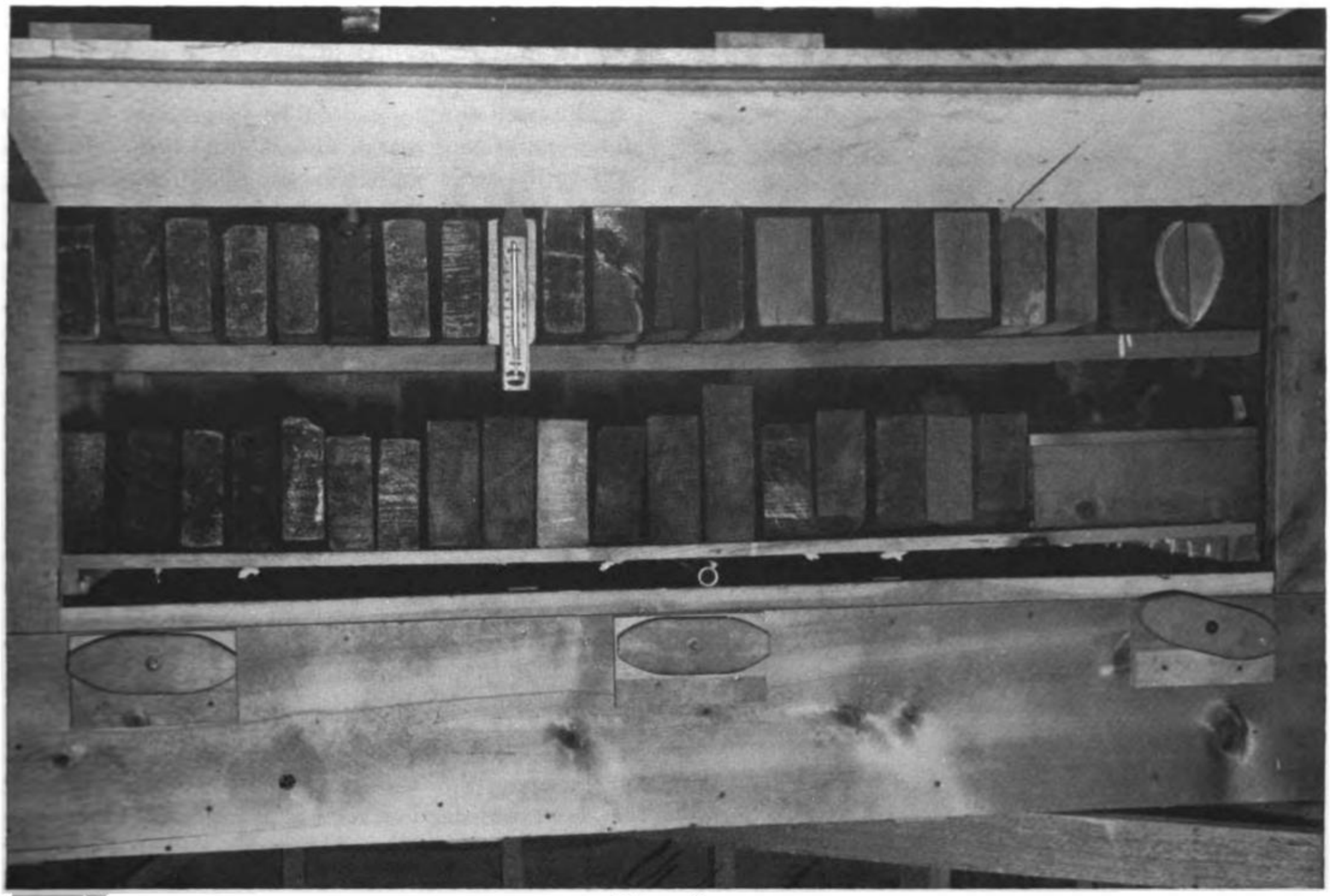


FIGURE 69
The author's wood dryer shown loaded up with a full capacity of gunstock blanks.

I don't know how many will agree with me, but I maintain that wood can be *too* dry. Yep, I hear the howl of protest, but look at it this way. Let's say we chuck a blank or blanks into the dryer and bring 'em down to 5% or lower. This at least is low enough to suit most cranks. As soon as the stick comes out of the dryer and in contact with the atmosphere it is going to start picking up moisture and will continue to do so until it is the same as the average of the atmosphere. Right? In the San Fernando Valley the normal seems to be 16% to 18%, as indicated by checking dozens of blanks.

Now, what would be the advantage of hauling a stick out of the dryer and bending it into a stock while the moisture content was around 5%, just to have it rise to 16 to 18% *after* it was made up? We damn well know that the best varnish and oil finish won't keep it at 5%, nor will any of the supercolossal highly advertised finishes selling at six bits a drop! So why not make the blank up at as near the atmospheric value as possible? In this also, the Moisture Register is invaluable.

The dryer I speak of is a box 4′ x 4′ x 6′ framed affair I made for myself and is shown above.

DRYER FOR GUNSTOCK BLANKS

Figure 69 shows a shot of my wood dryer loaded with stock blanks and a box of forend and grip cap material. The dryer is 4′ x 4′ x 6′, made of 2″ x 4″ frame covered with ½″ Firtex. The door and frame are ¾″ pine, lined with Firtex. The lower shelf is solid pine, covered underside with asbestos, with 4″ airspace fore and aft. The upper deck is just a pair of two by fours. Combined capacity of both shelves is 40 to 50 blanks, depending on thickness. There are a couple small holes bottom and top to allow some air circulation. However with the Firtex walls I doubt if this circulation is necessary, as I believe the Firtex will pass off the moisture fast enough.

The handy thermometer hangs as shown, except when blanks are being juggled. The temperature is usually held at about 125° F. unless the wood has too much moisture in it to risk so much heat. Too fast drying causes surface checks and internal collapse.

At the time this picture was taken, the heating element, six 100 watt lamps, was burning, but the intensity of the flash bulbs make them look dark. The heating lamps are located on the floor of box, out

of view of camera, and may be reached thru the opening between the lower shelf and lower edge of door frame. Heat is reduced by eliminating the necessary number of lamps.

There is nothing automatic or scientific about this arrangement, but it does the work for me very nicely, and at very small cost.

FINISHING FORMULAS

Tom Samworth asked me to give some formulas for stock finishing, so, recommended solely from the standpoint of the man who closes out the job with the checkering, I'll just get under the plural wire with a couple.

The best finish in my estimation is a combination varnish and oil finish applied as follows: Cut one part Bar-Var (Sillers Bar Top Varnish) with one part pure gum spirits of turpentine. To the finished sanded stock apply as much of this mixture as it will absorb in 15 or 20 minutes. Anything standing on the surface after this time had just as well be wiped off. Let dry for at least 12 hours, then apply a thick coat of Bar-Var, uncut. Allow to dry another 12 to 15 hours and in most walnut, as well as any open grained wood, give a second thick coat of straight varnish.

When the last application is dry and hard, buff off the surplus varnish (all that above the surface of the wood) with a soft rag buff, eight or ten inches in diameter, rolling at around 1750 with no compound of any kind—just a bare rag buff. Too much speed causes burning, too little causes more work, both results being horrible. This buffing should be done across the grain and don't buff too hard or too long or all the varnish will be pulled out of the pores. After all, this varnish is just an impregnator and filler, its purpose to give us as hard and moisture repellent a surface as possible. Notice I didn't say "moisture proof," repellent is the best we can hope for from *any* finish. When a moisture proof finish *is* concocted I sure want to know about it. I've spent money on many so-called "moisture proof," "water proof," and the like finishes and I'm still looking for one.

After the buffing is completed, let the stock stand if possible another 12 hours. Then sand with 320 grit wet or dry sandpaper, wet with a mixture of one part of turps and one part *boiled* linseed oil. Cut strips of sandpaper one inch wide and fold into a pad 1" x 1½". As the exposed surfaces become useless, fold them face to face and turn inside, exposing two new surfaces. This way we keep the pad at its original thickness and the used surfaces do not touch unused ones, causing them to become dulled. A thinner pad may have to be used in the smaller curves and fillets, but keep it thick as far as possible, thus effecting a floating action that gives a smooth and regular surface, regular at least as to the finish dry sanding left.

This wet sanding should be carried on until the filled pores and wood surface are level, which in ordinarily dense walnut means about one hour per stock. However, that time will fluctuate according to how hard the victim works, how well he uses his head in manipulating the sandpaper, and, of course, by the buff. It may be found that there are spots where, through too hard buffing or too little filler (varnish), another application of varnish will be necessary. In such cases it is best to feather the edges of the varnish so that the surrounding area will not be damaged when the "spot" is sanded off, for sanded only it should be, not buffed.

For those who have no buffing facilities, apply varnish as before mentioned, but sand after each application of straight varnish. I think it is easier this way than waiting until all the varnish is on and then sanding. When sanding between coats, wipe the stock with a turps rag to remove all the linseed oil possible. Linseed oil in the varnish results in a softer finish.

After the stock is impregnated, filled and wet sanded to satisfaction, remove as much of the sanding oil as possible and hang it up for a couple days for further hardening; a week is better if time permits. Actually all we've done so far is to seal and fill the wood. For a real classy finish let's resort to the old time honored top dog of stock finishes, Linseed Oil.

There is linseed oil and then there is a crud called by that name which may actually contain some linseed oil. To be on the safe side use only *boiled* linseed oil put up in sealed cans by reputable houses. And, my advice is to keep raw oil as far away from your stock as possible.

The most satisfactory linseed oil I have found is prepared by George Brothers, of Great Barrington, Massachusetts. It is especially prepared for stock finishing and is put up in handy two ounce bottles, at one buck per bottle. A larger amount would be impractical because it oxydizes so fast. In good drying weather, a very good finish can be obtained in two weeks, an excellent one in a month.

It is best applied by hand, with a mixture of elbow grease and a hot palm. You may go to the table with dirty hands, but for cripes sake wash 'em before hand rubbing a stock! If the elbow grease disappears before the linseed oil, wipe off all surplus oil with clean soft cloth. Use only enough oil to give a very light film over entire surface of wood. If it can be rubbed dry that's a good deal, don't put any more on for a couple more days. There is nothing more

disgusting than a sticky stock caused by applying the oil too fast.

For those who want a straight linseed oil finish the G. B. (George Brothers) oil is out in the lead. The first application should be cut with one part of pure gum spirits of turpentine or mineral thinner for better penetration and drying. Follow up with straight G. B. oil, applying by hand 'till the pores are filled and a suitable finish is attained. This finish will be slower to execute than the Bar Var—G. B. Oil finish and will not be as hard or moisture resistant, but for those who prefer an all-oil finish, it can't be beat. But lay off commercial fillers and give the oil plenty of time to oxydize.

This bartop varnish I speak of is Siller's Bar-Var—an alcohol, acid, water and whatnot proof varnish expressly made for finishing bar tops. I like it for a stock filler because when cut with one part turps it makes a fine impregnator, dries over night, and is ready for another coat of full strength varnish next morning. One application of the impregnator mixture and two coats of 100 proof usually does a first class filling job. Maple and cherry require only one application of the full strength varnish. Any good spar varnish used in the same way will give good results.

So, that's all I have to offer in the way to stock finish formulas. There are many others, but I'm a poor hand at advising the use of anything I would not use myself.

Well, I guess it is about time I was canning the chatter and letting the ambitious lads get to work—that is if they have been patient enough to read this far. At any rate I hope that no one will consider his time wasted and that one or two ideas may have been picked up that will be helpful in the pursuit of the subject just covered.

Again I say, I have not attempted to tell anyone "the way" to do it, merely "a" way. No doubt there have been statements that made you rear up and snort in disagreement, but remember I am writing from my experience and personal opinions.

Other stockmakers whose work is shown in this volume will express opinions which differ from mine and advise methods that differ. Even if those opinions and methods are exactly opposite to those of my own advancement, it should arouse no wonder as to who is right or who is wrong. It is merely an indication of different methods and thoughts which work successfully for different people.

There is one little deal that I think I should tell you all about, it might even be called a confession. Way back in about 1944 when I got Nos. 1, 2, and 3 of Al Linden's booklets on stocking from Mr. Samworth, I also tried to get No. 4, and the following year sent him the dough for it again, only of course to have it returned. So . . . I dunno, . . . you tell me. Is it a joke on you fellows or on me that I wind up writing the book myself, that I tried so hard to buy?

NOTE OF APPRECIATION

To Tom Samworth goes my first and biggest hand, for it was he who not only got me started in this work, but encouraged, pleaded, cajoled and even used dire threats to get me to complete the work after it was started. Bill Hutchings is also high on the list since it was he who was at the bottom of the whole idea of getting me involved. No less credit is due my wife, Madge, who not only converted pages of my scarcely legible longhand to a neatly typewritten manuscript, but put up with a healthy side order of pure cussedness resulting from my venture into the field of literary endeavor.

My deepest appreciation to those stockmakers who so freely submitted their work directly to me, namely Lenard Brownell, Sheridan, Wyoming; Verne Juenke, Santa Monica, Calif.; Keith Stegall, Gunnison, Colorado; Walter Strand, Beverly Hills, Calif., Hal Hartley, Lenoir, North Carolina; Chas. Faussone, Los Angeles, Calif.; H. Dean Driggers, Liberty, Missouri; Bill Watkins, Glendale, Calif.; and Mr. N. Hungerford, Beverly Hills, Calif.

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To Photographers Paul Wolfe, Bill Lucas, Mark Speer, Bob Emmons, and Wilbur Mangold.

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If anyone who has been of assistance in this work has been slighted in this acknowledgement, let me assure him it has been entirely unintentional and due to bad bookkeeping and poor memory on my part.

MONTY KENNEDY.

PART 2

Random Observations on Stock Woods and Stocks

By

Tom Shelhamer

That versatile substance—wood—is one of Nature's finest gifts to man. In its multitude of varieties and widely differing attributes it is superior to any other material for many purposes. This is particularly the case with the stock of the sporting rifle. Guns for special use are sometimes fitted with crude stocks of plastics or skeletonized metal, but these are mere makeshifts.

For many purposes a wide variety of woods will serve, but for the more exacting ones only a few, or perhaps only one, will answer. For instance, when the longbow was the principal weapon of the English foot-soldier, bows were sometimes made of ash, or even elm, but the only real bow wood was yew. It was always in short supply, and costly, so substitutes were perforce used. And similarly, many Irish harps were made with sounding boards of red sallow (sally-tree), although mountain spruce is the only perfect wood for this particular job.

So it is with gunstocks: many woods are used for this most exacting purpose, but the peer of them all is European walnut—not for nothing named *Juglans Regia*—the royal walnut. The forests of the entire world have been searched and not a few woods found fairly suitable, but they are one and all substitutes. The necessary attributes of perfect stock material are light weight, strength, ability to "stay put," and last, but by no means least—beauty. Many woods possess these in varying degrees but are lacking in some particular. The usual substitute woods used in this country are native black walnut, eastern sugar maple, Oregon myrtle, wild or black cherry, and Oregon red maple.

Several of these, principally black walnut in its various sub-species, myrtle, and red maple, are second to no woods in the world for beauty. I would consider American walnut the second best of all stock material. It is reasonably light in weight, and fairly stable. But it is much more "splitty" and brittle than the royal wood. The pores are too large and numerous to allow of a really fine checkering job. They are often in groups of three or more, and if such a group lies at the base of one of the small pyramids that make up checkering, it is very apt to fall off. The loss of even one at once puts the job in the second class. When the late Rex O'Dell worked out the fancy pattern that has been my favorite for twenty years, he planned on running the "diamonds" crosswise in the center forearm panel, for contrast. The first job went on an average piece of American walnut, and the said panel was nearly bald by the time I finished it, so we hurriedly changed that detail. With European walnut one can, with a sharp chisel, take a shaving off across the butt of the blank that can be flexed several times before breaking. With American walnut the result is a handful of chips. On taking the stock off a high grade English or German double gun the inletting appears to be cut in metal, so clean and sharp are the various mortices. Yep, I know part of that is workmanship, but the wood is largely responsible.

Highly figured Oregon myrtle is very lovely. It is lighter and softer than walnut, dents easily, and is not too strong. It does, however, checker beautifully, as the pores are microscopic. But a plain piece looks and works a lot like Michigan white pine. Beautiful, but not very practical.

All the above goes for Oregon red maple, plus the fact that a highly figured piece is invariably full of flaws, and few stockers love patching.

Eastern sugar maple, sometimes called hard or rock maple, is liked by many, but I have often wondered why. In the curly and birdseye types it is very hard to work, and while a perfect job of inletting it can be had, it takes twice as long as it does in walnut. The books give the weight of hard maple and walnut as about the same, but any experienced wood-worker knows the maple is considerably heavier. And it is too light in color to appeal to most gunners, so it is usually darkened by various means to something approaching walnut color. It is "allergic" to gun oil, and contact with the bluing salts now almost universally used will turn it to brown mud over night. I have made a good many stocks of it in days gone by, but since I have grown old and—let us face it—crabbed, I decline with thanks. The wood is very strong, and checkers well, so if you like it, you have my blessing.

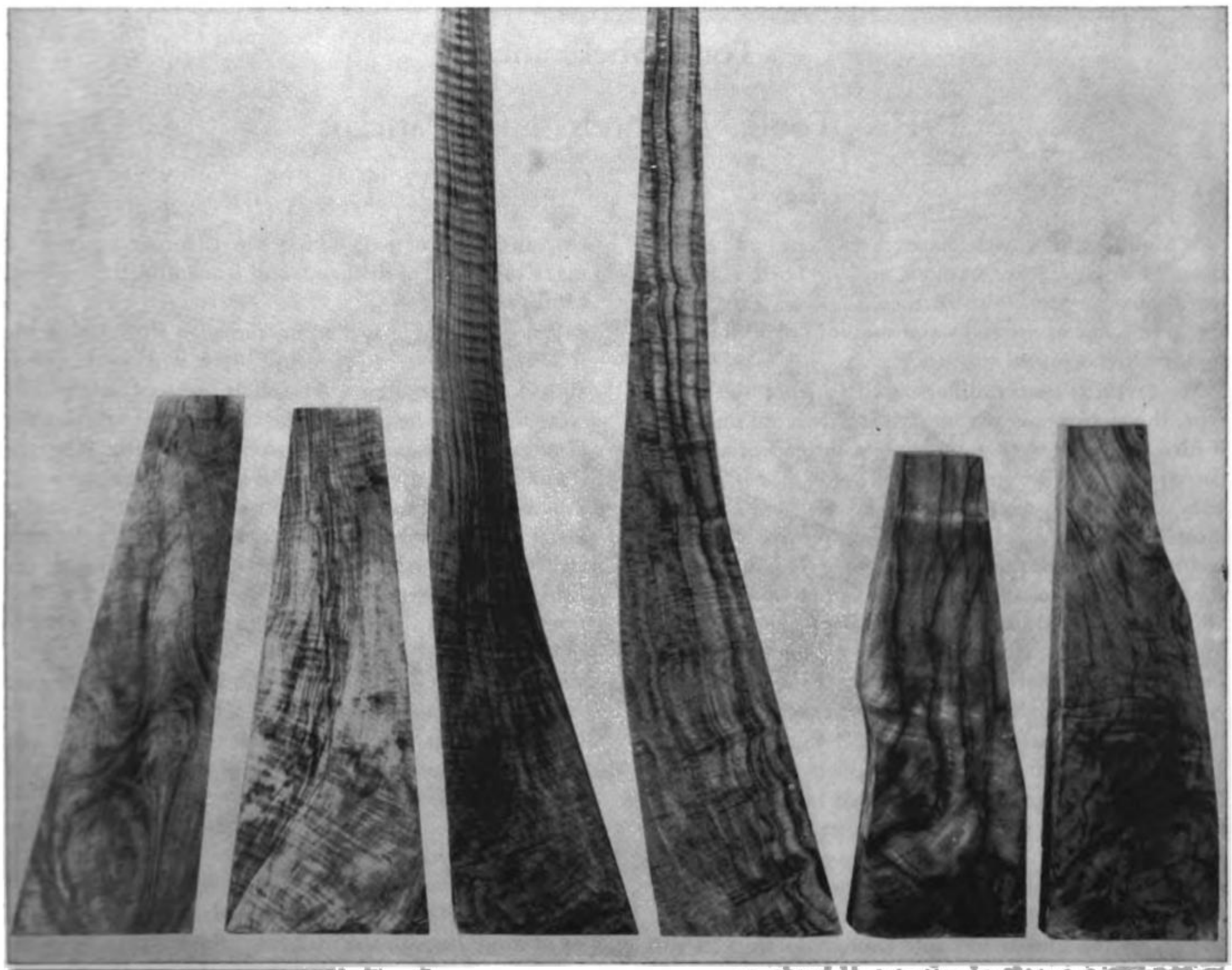
Wild cherry, or black cherry, as it is sometimes called, is a fine cabinet wood, and makes very good stocks. But the trouble is—it jest aint purty. At

least I have never run across a piece that had any figure, although it does sometimes have a bit of curl.

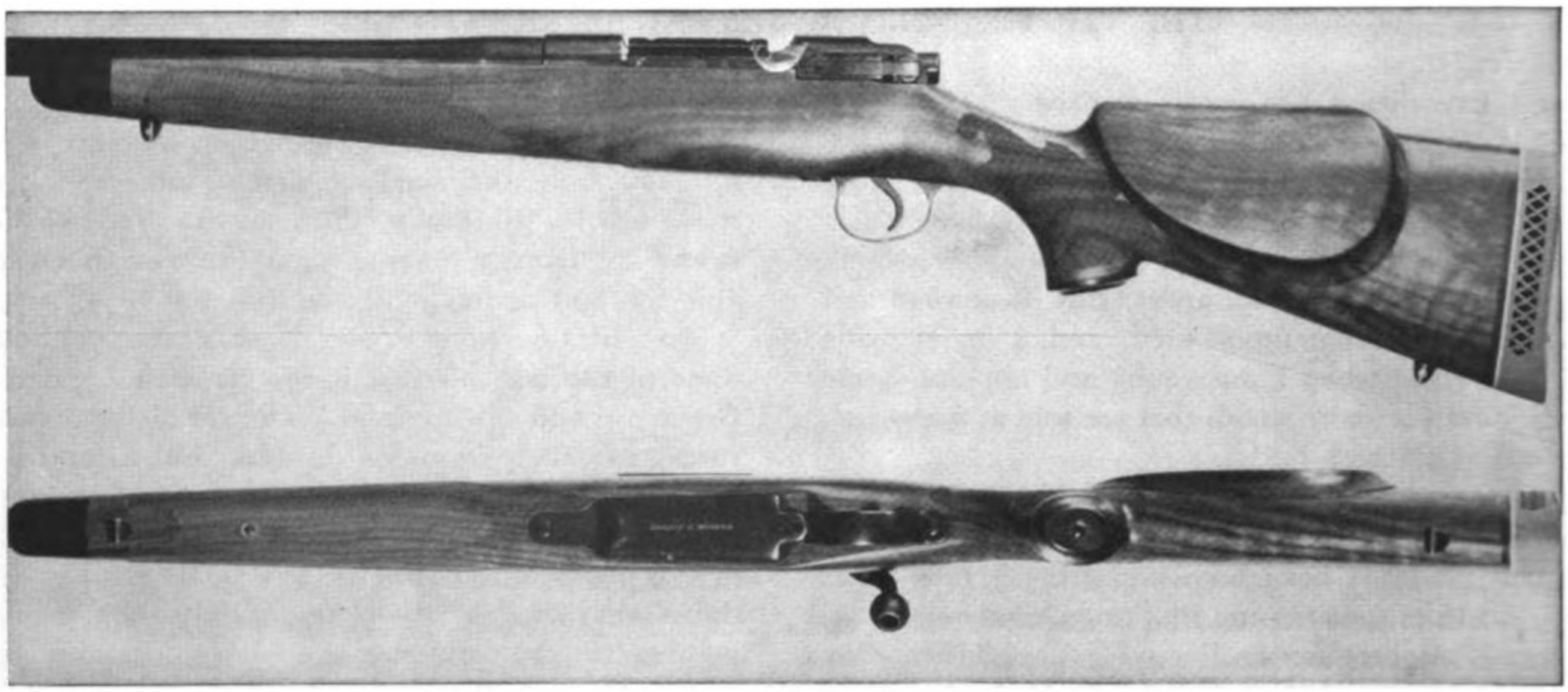
There are many other woods that will make fairly good stocks. Hawaiian koa and Australian blackwood are sometimes beautiful, and work fairly well, but are hard to get. Both are acacias. Rosewood and mahogany are sometimes used, and I have made stocks of them when I was young and hopeful. Some of the dozen or more woods that are sold as mahogany are not at all bad.

European walnut has all the desirable attributes, and only one drawback: it is very hard to get in the best grades. I have been importing it in a small way for thirty years, and nothing I have ever attempted has been so productive of headaches. One can now import plain wood by the carload, and at low prices. But most of the highly figured wood goes into veneer, where it will bring in the most money. Any piece of this choice material big enough to make a decent "flitch" of veneer is at once sliced up, and only the small "nuggets" are made into stock blanks. Naturally, short blanks for two-piece stocks are more numerous than the long ones suitable for bolt action jobs, and cost less.

Most of this wood comes from France, although some of the best pieces I have ever seen I got from Germany and Switzerland. The French manufacturers use such terms as de Lux and Grand Lux freely, but the blanks seldom live up to the description. The top grade is Exhibition, and to rate that in my book must be really good. The photo below shows what I mean. But I can get only about a dozen per year in the long size; the short ones are much more plentiful. Naturally they are expensive, but they are the very last word, and a stock made from one is a lifetime prized possession.



Here are a few Exhibition grade blanks such as I furnish. Stocks made from these will need no fancy checkering designs—but I have little luck trying to tell my customers this. They want the works.



Tom Shelhamer

His Tools, Methods and Patterns

We gunstockers each have individual, and sometimes peculiar, ideas, methods and preferences in going about our work and in the following lines I will try to tell you of my tools and methods of using them in the checkering of gunstocks.

My favorite spacer differs a little from the usual type, the teeth being pyramidal. It cuts more smoothly if filed crosswise with a square file instead of a three-cornered one. The more obtuse angle has less tendency to tear the wood fibers. The file should be almost microscopically fine for the best results. American walnut will seldom take a check finer than 20 lines to the inch, and the usual kind works better with 16 to 18. Imported walnut will take a finer check, and 22 looks very well; but fancy patterns having small "peninsulas" of checkering should have 24 to look well. And until you can do fairly well with the small check, you had better pass them up.

The finishing tool I evolved myself some 25 years ago. No one makes it for sale, as it has to be sharpened from time to time, and most amateurs have trouble doing it. The tool is simply a hand-cut file, although I do not harden it. No steel tool will long retain a keen edge in wood, as there is enough silica to take it off, and if left soft enough to work it can be recut in a couple of minutes. If hardened, it will last only a short time longer, and must be annealed, cut, and rehardened, taking ten times as long. So I make them out of drill rod, and leave it in the natural condition.

When the angle is filed on the edge with a fine file it is ready to cut. A 70 degree face will work better and look better than a 60. Catch the tool in the vise close up to the head, with the latter laying on the top of the vise jaw, and don't worry about marring the shank, for if it gives under the hammer you are sunk. Use a small cold chisel, the smaller the better, and a small ball peen hammer. A tack hammer works very well. Set the chisel, *which must be very sharp,* on the face of the cutter, holding it with the thumb and first finger, and with the heel of the hand resting on the top of the vise. Tap the chisel lightly, lift the chisel with the fingers only, letting the hand remain on the vise, move it toward you, and slide it back until it touches the lip raised by the first cut. Tap again, and repeat until you have cut the length of the face. The harder the blow, the deeper the cut, and the higher the burr raised, which automatically spaces the cuts. A little practice enables one to cut a very respectable file, and to vary the coarseness. A reasonably large check will allow the use of a fairly coarse file, while 24 or more lines to the inch must have a very fine one.

With one side cut, turn the tool over in the vise, and with a small slip stone remove the small ends of

the teeth which project over the uncut face, otherwise they will interfere with the chisel. After cutting the second side, bevel off the ends of the tool slightly, so they will not mark the farther edge of the border line. Then just touch the ends of the teeth with a small Arkansas stone, to bring down any tooth that might be a trifle high. Be careful with this, as it is easy to overdo, in which case the tool will not "take holt."

You are now ready to go to work. Don't crowd the tool—it takes five to seven times over to finish to sharp points. And don't get in a hurry; it takes time to do a good job. It takes me a full day to checker a stock with a plain pattern, and nearly two for a pattern like No. 3. A couple of hours work will dull the tool, when the teeth must be filed off and recut. Don't put this off, or you will regret it. The front tooth on either tool gets the most work, and dulls the soonest, whereupon the tool has a tendency to "scoot" across the border, which leads to much profanity. A sharp tool is much less likely to do so.

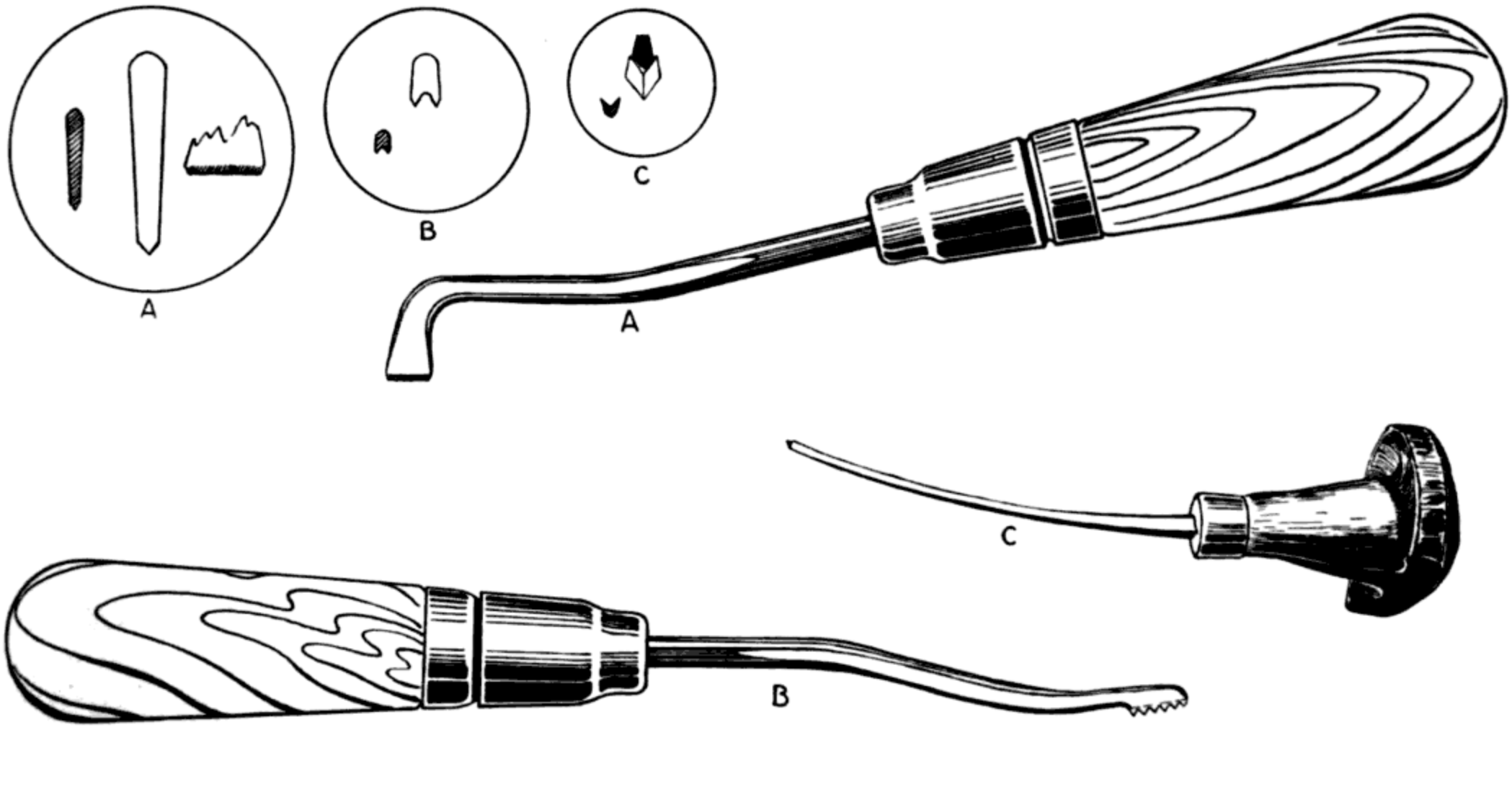
Until you have sharpened the tool many times you will frequently fail to get a free and smooth cutting edge. In such case don't try to get along with it, but file the teeth off and recut. It only takes a minute or two.

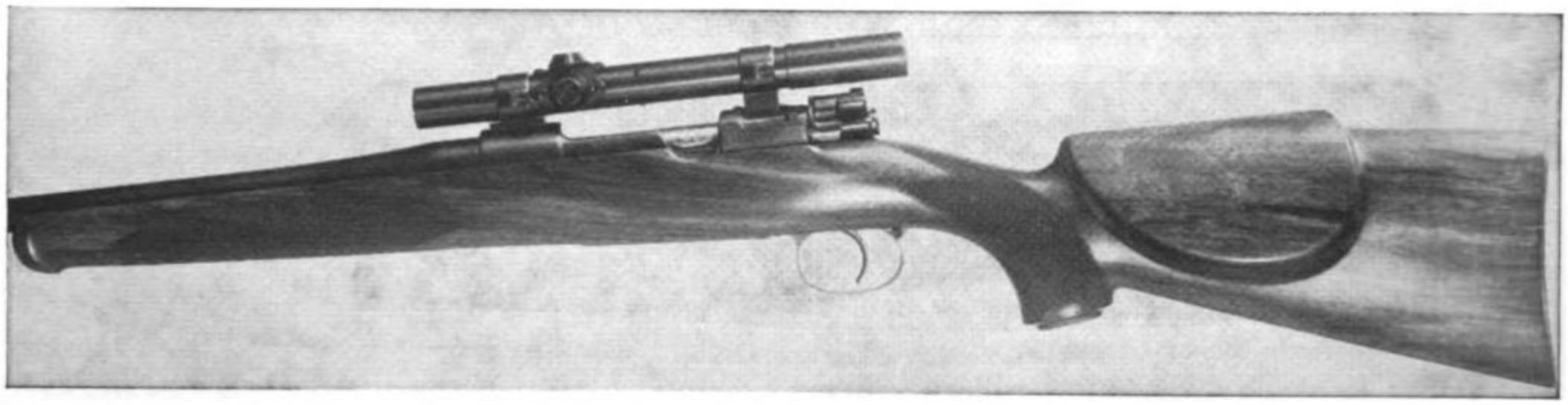
That is all there is to it. As in billiards, the rules are very simple, but you can work at it a long time before attaining near-perfection. After all the years I have spent stocking I still make mistakes, and am still learning.

Nearly every one who uses guns likes checkering on the stock, and many try their hands at making it. Occasionally you find a sportsman who says he gets along all right without it. Sure, sure—and we can get along without upholstering on chairs and butter on bread, but who wants to?

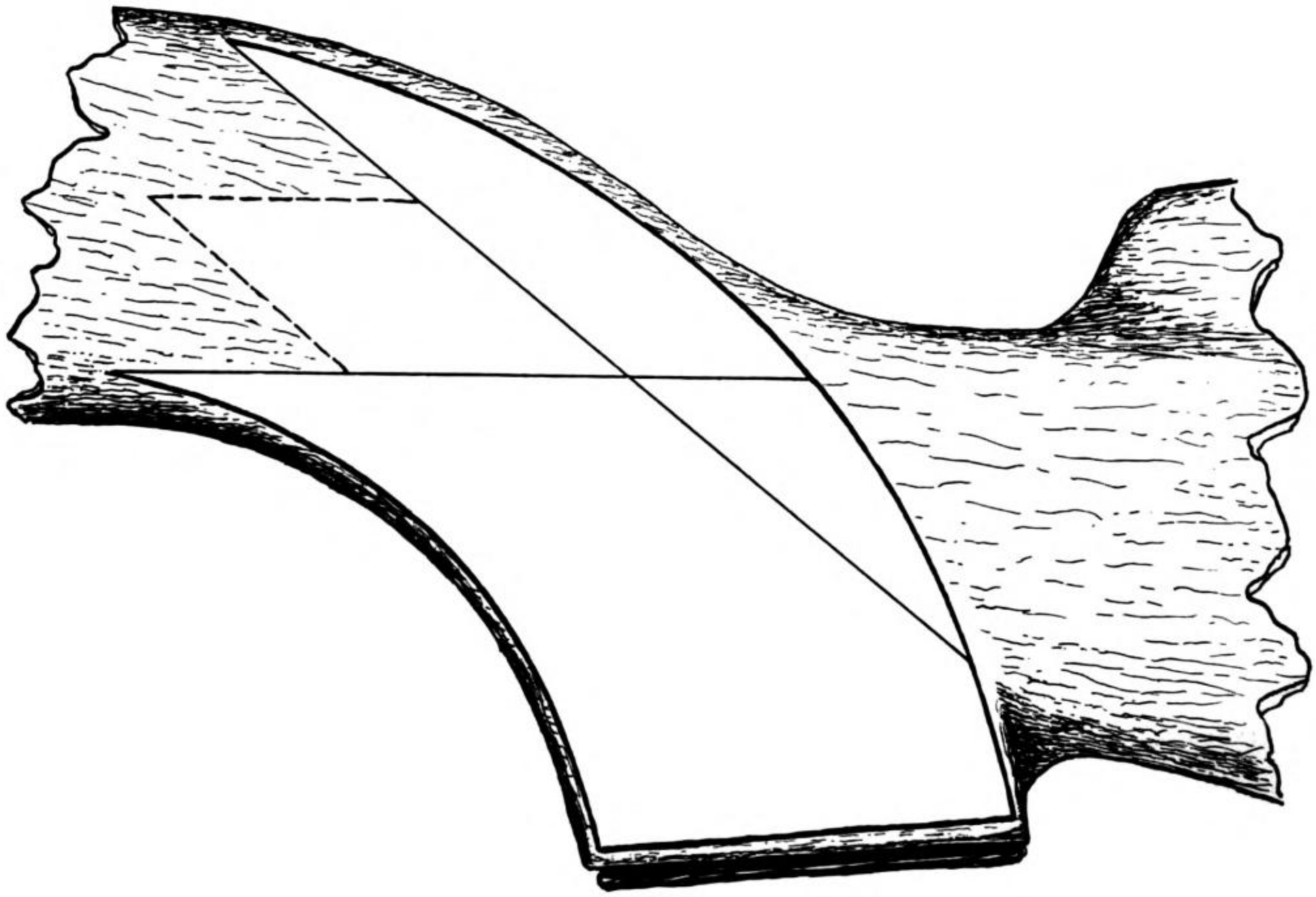
Remember to keep the checkered area large enough for the hands in shooting position, but no larger. To checker a lot of the stock where it is not useful is redundant, and so is an over ornate design. The plain job well done is the mark of a workman.

Tom Shelhamer
Dowagiac, Michigan





A Beginner's Pattern from Tom Shelhamer



"Here is a simple pattern I occasionally use, and it is one not likely to get the beginner into trouble. It is an angular pattern and the outlines, except for the curved borders for the pistol grip, are straight. They are largely formed as the work progresses, and to look well must be fairly symmetrical. The solid lines in the drawing show what is scribed on before starting with the spacing tool—the dotted ones are formed as the spacing goes along.

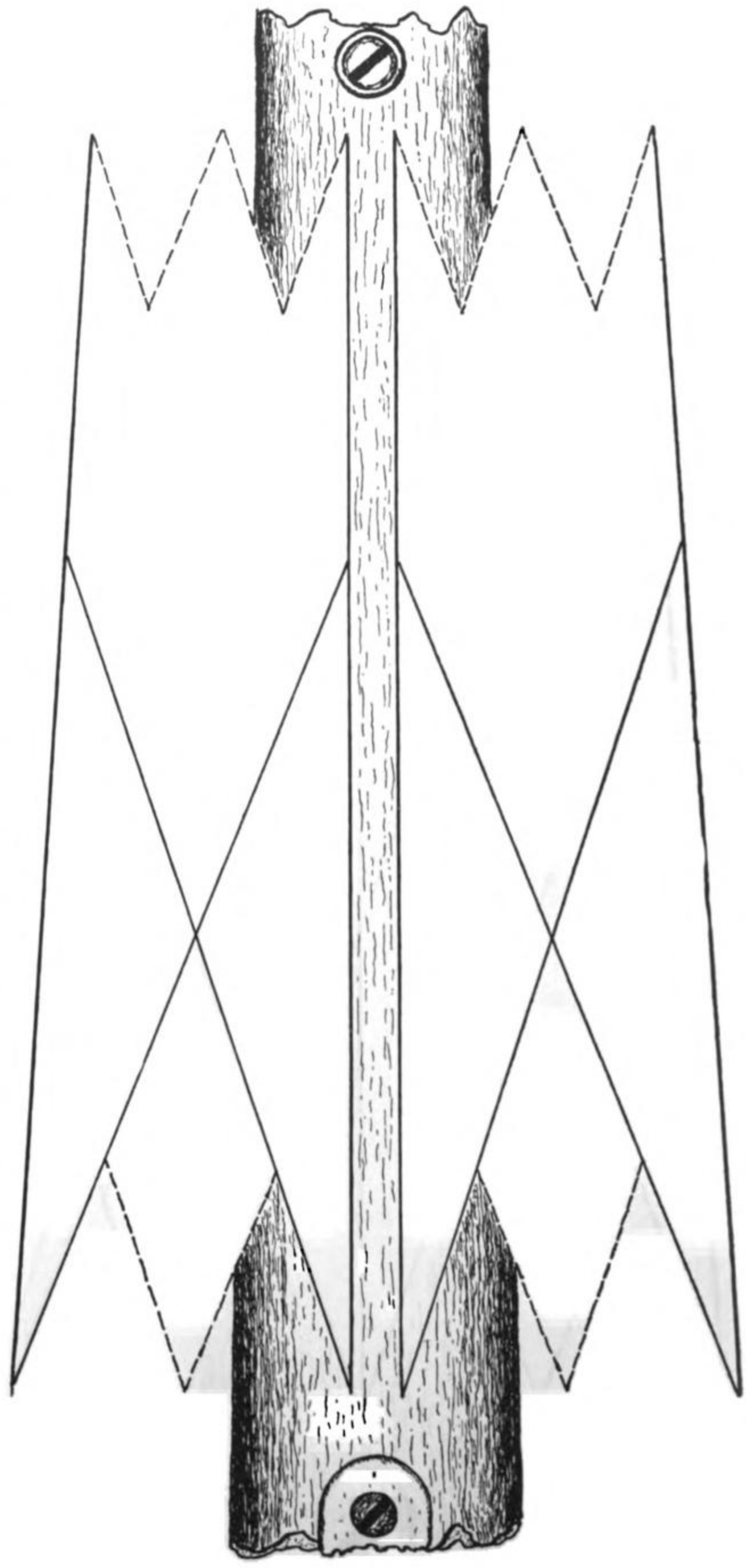
"I call this my No. 1 pattern, and it is no trick to lay out the pistol grip or the outside, lengthwise lines on the forearm, but the master lines spiraling around this forearm often give trouble to a beginner. I have read of several sure-fire ways to start it right, some of which are not so hot. One scheme is to drive in pins at the ends, stretch a thread between them, and then tap this thread to make a groove in the wood. This would be fine if the forearm was cylindrical, which it seldom is. Otherwise the thread takes the shortest course, like a navigator sailing the Great Circle. Another is to cut pieces of cigar-box, or some similar thin material, to fit over the forearm, and then run the line along this. But this is also wrong, as the line spiraling around the forearm is not straight in any one plane.

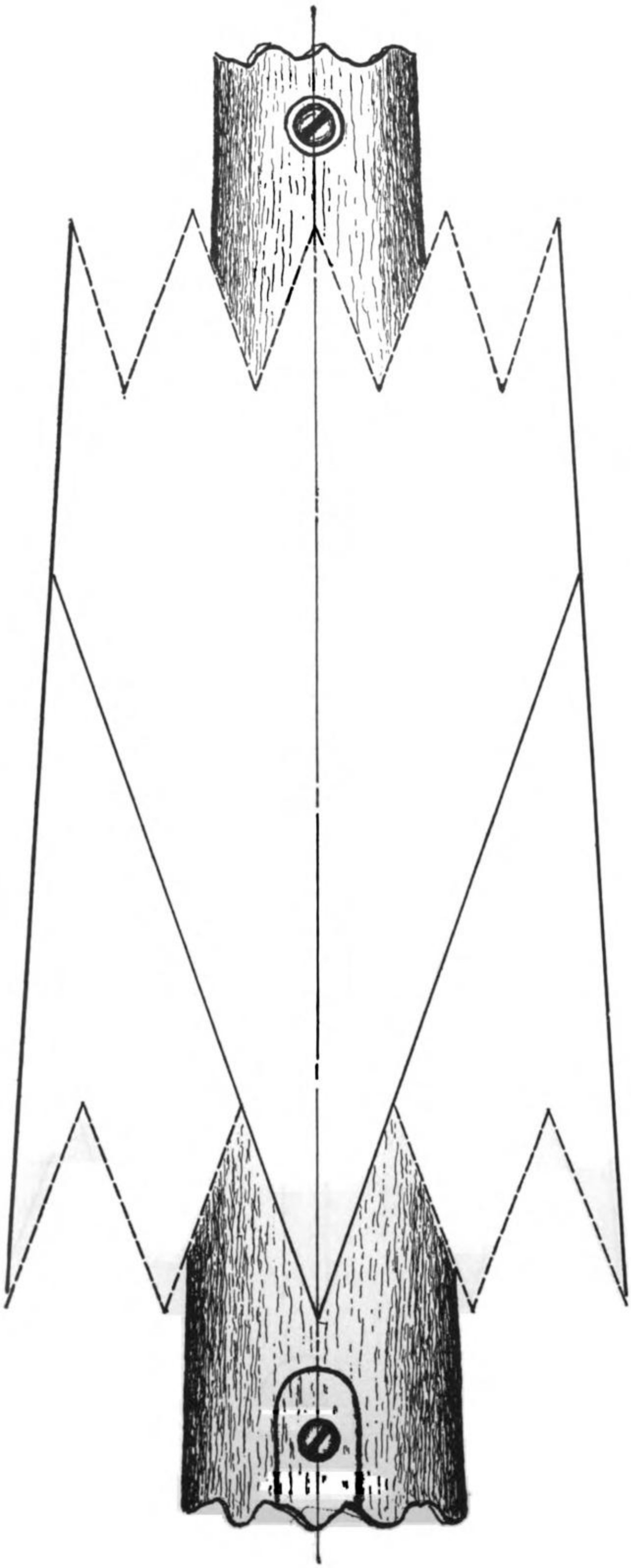
"The easiest and best method to start this line right is to bend a piece of stiff paper or Bristol board around the forearm, and scribe the line along this. Be sure, of course, that the edge is straight, preferably a card cut at the factory or by some printer. This method gives the very best compromise on any kind of a forearm.

"Lay the dotted lines out carefully with a grease pencil, such as is used for marking glass or china. These marks can easily be rubbed off, leaving no trace, while any lead pencil mark leaves a faint groove on the polished wood, which does not erase worth a cent.

"It takes me the better part of a day to do this pattern.

"This No. 1 pattern will look better if a border line is run around the pattern after it is otherwise finished."





Tom Shelhamer's Favorite Pattern

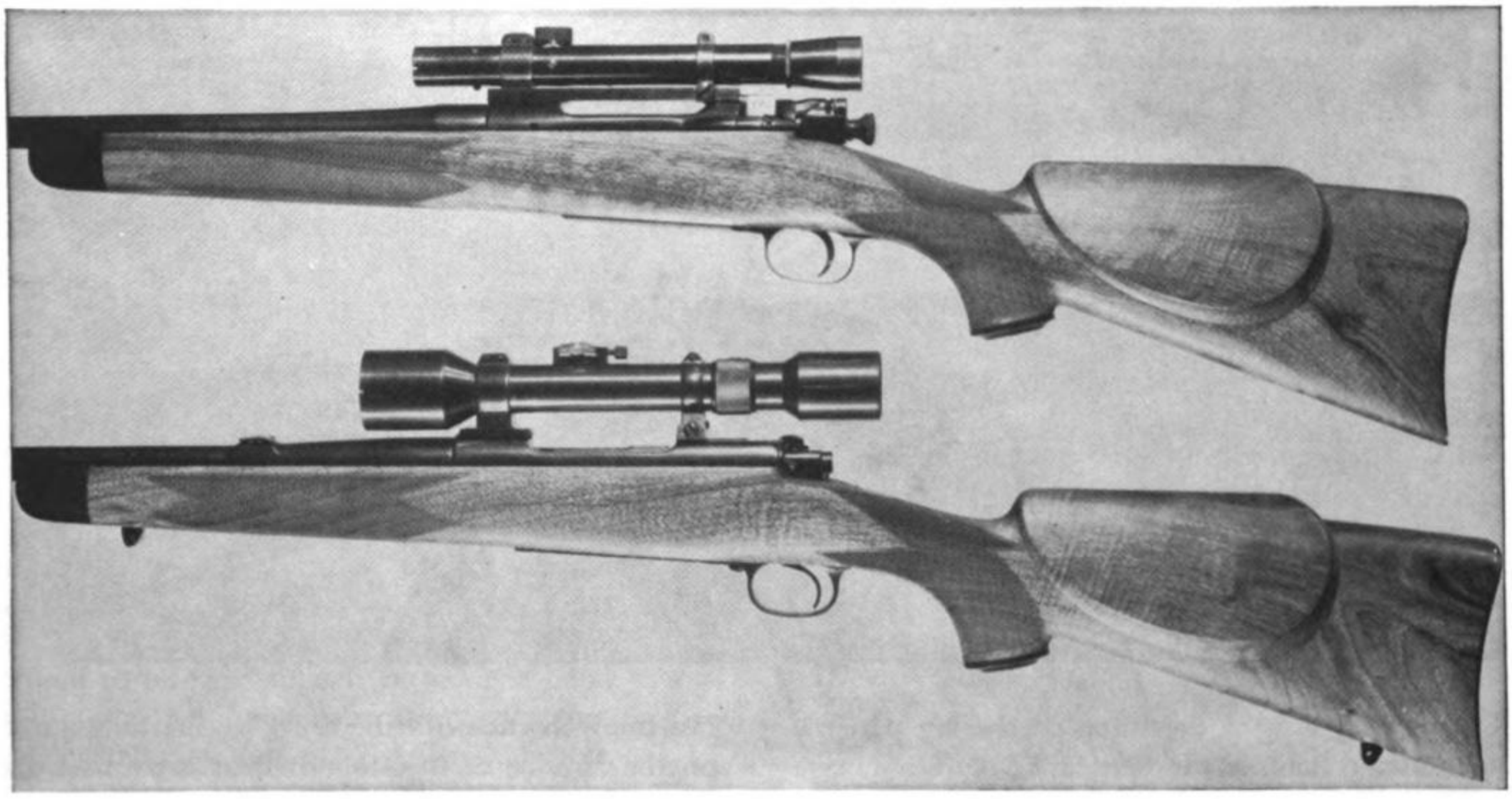
"This pattern, which I will here call my No. 2, is my favorite, and I generally use it unless the customer has other ideas. It is a bit more difficult than my No. 1, and requires considerable care.

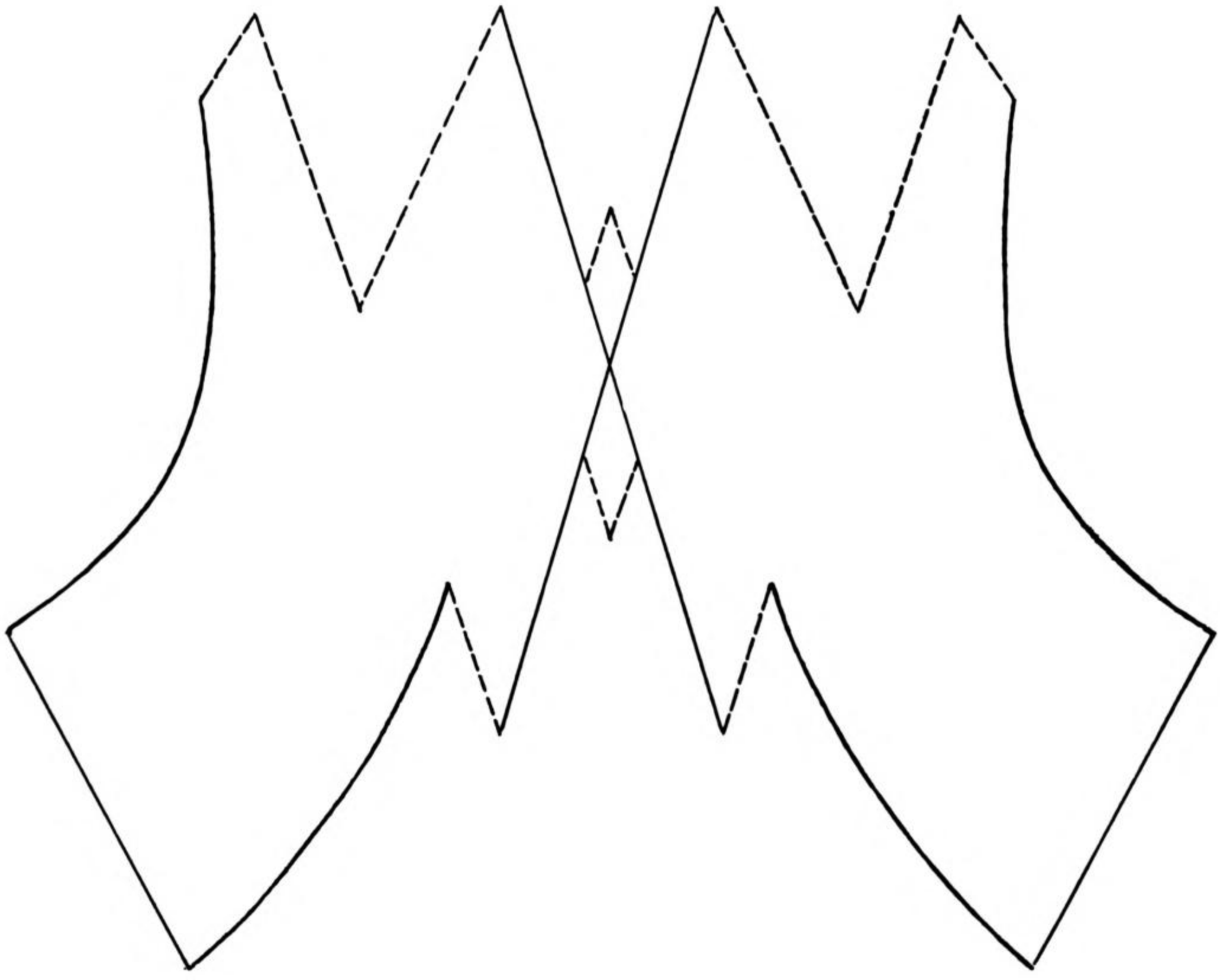
"This pattern starts on top of the pistol grip, and the master lines make an 'X' there. Sketch them first with the soft pencil, and squint down them from end to end, and from each end, correcting until they look in order. Then run a pen knife blade lightly down each one, and use that to start on with the spacer. This No. 2 forearm is much like No. 1, except that the lines are longer and not so easy.

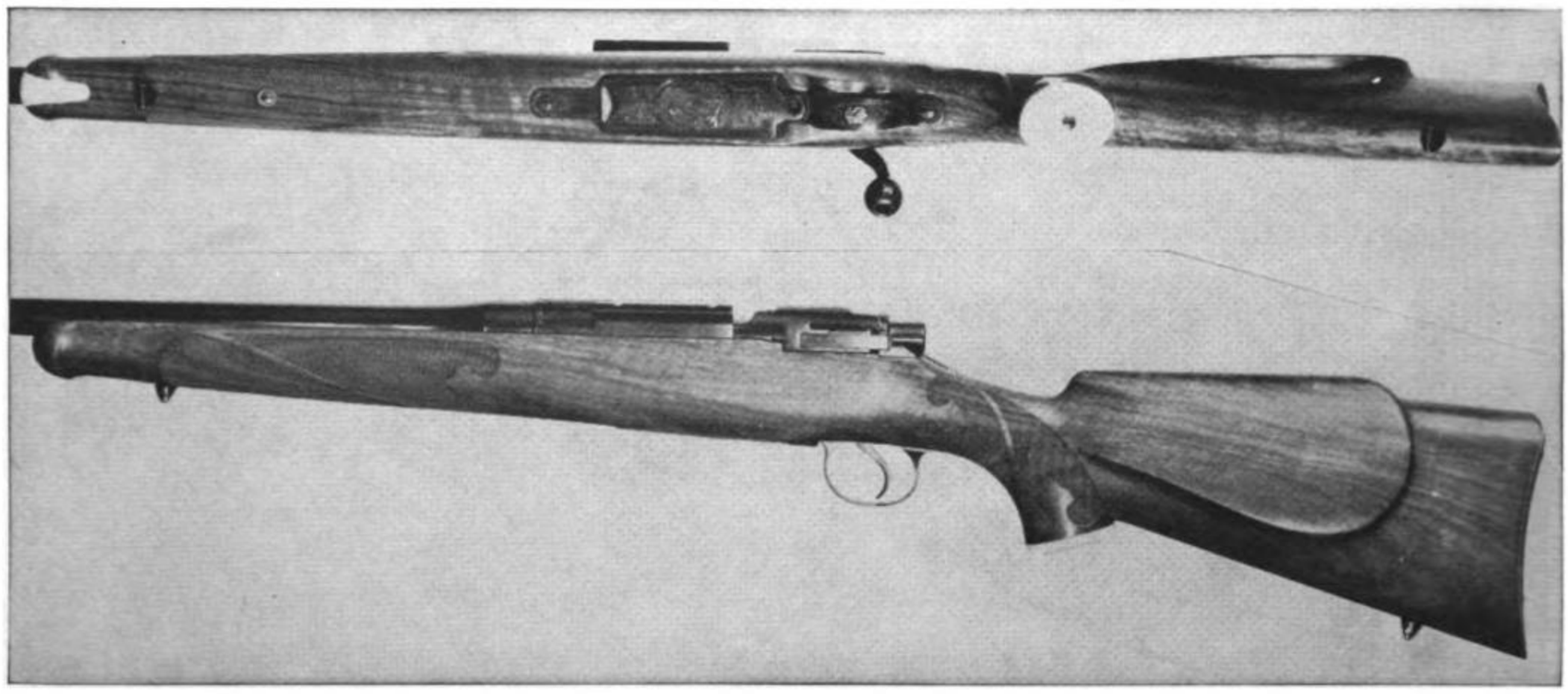
"In checkering any pattern, I am assuming the presence of a checkering cradle of some sort to swing the stock in, otherwise you will not get far. Set the stock up in this, and start cutting with the spacer along one of the master lines. Stop about 1/8 inch ahead of the dotted line forming the end of the pattern, and when the entire pattern is laid out, finish these to the best appearance. If you cut clear out, you are sure to find that you have gone too far with some line, while if you stop a considerable distance short of the line marking the end of the pattern, you are apt to develop a 'squeeze' or a 'spraddle' when finishing them out.

"It takes me just about a full day to checker this No. 2 pattern on the gunstock.

"Like No. 1, this No. 2 pattern will look better if a border line is run around it after it is otherwise finished."





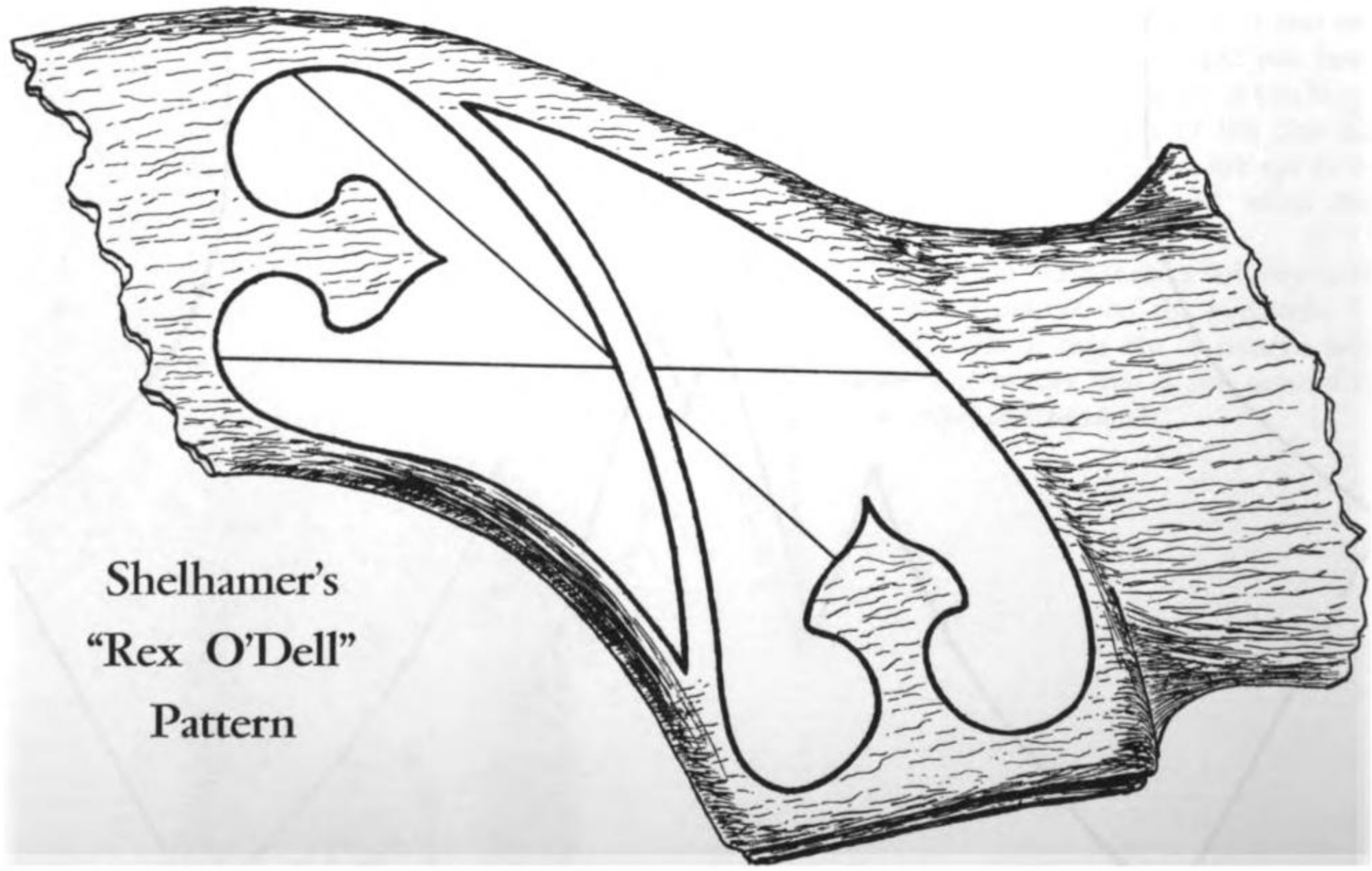


"This, the No. 3 of the three checkering patterns I am showing here, is the best fancy pattern I have seen, but it makes even an experienced workman extend himself and the beginners had better pass it up. It was originally worked out by Rex O'Dell.

"This pattern is composed entirely of curved borders, so we just lay it out complete, you then checker clear to these borders. When you reach one of the ribbons, take a small pair of dividers, set them to the width of four or five lines, and run one leg in the last line you cut, with the other leg marking another on the far side of the ribbon; then space back from the new line to fill out. No border line should be used with this pattern.

"Don't rush this job. It takes me nearly two full days to do this particular pattern.

"These three checkering patterns I have given here are very attractive and satisfactory, and after thirty years of scratching on gunstocks are about the only ones I use any more."



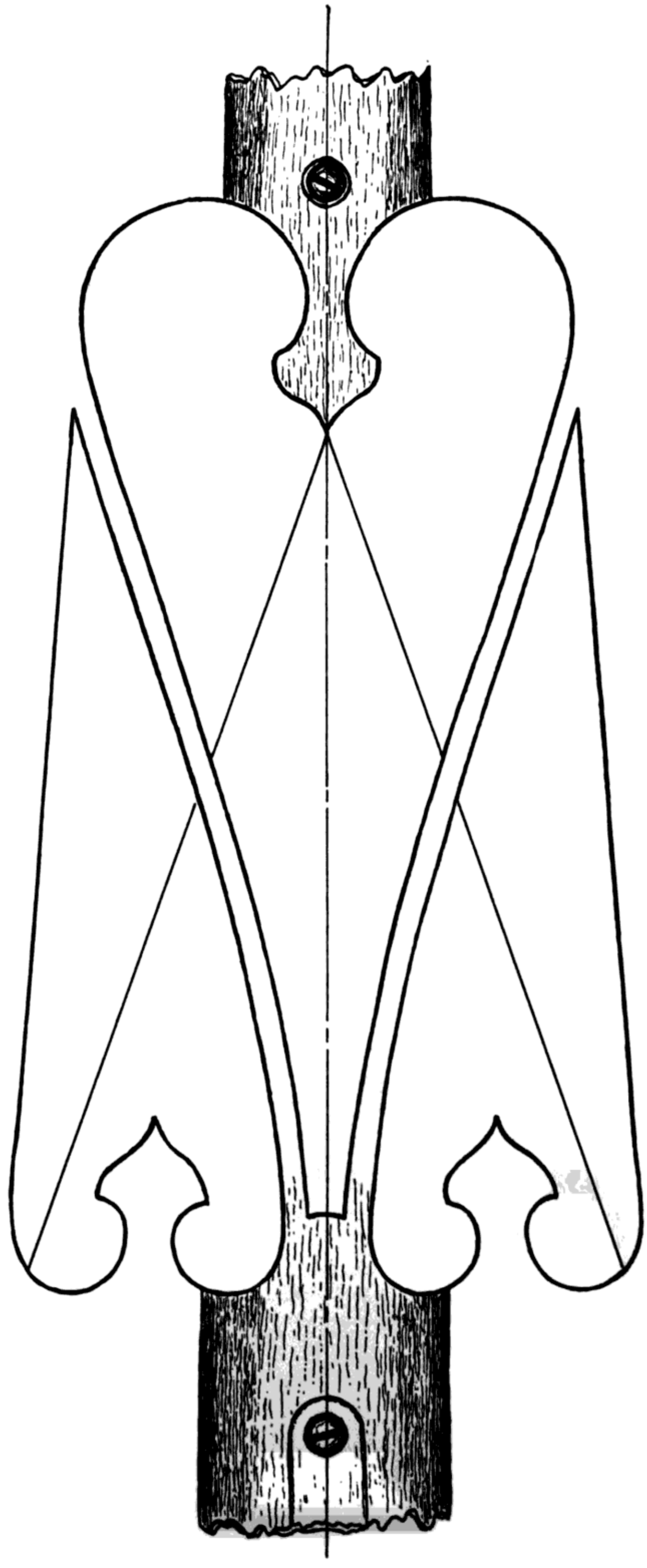
Shelhamer's
"Rex O'Dell"
Pattern

"Although many writers of late years have belittled the oil finish, it remains the best possible one for really fine stocks. About a year ago Jack O'Connor wrote for my opinion on this, saying that everyone but the President of the United States had lately taken a crack at it. He stated that it had always given him the best of satisfaction. I answered him at some length, although I would not care to quote the entire letter here. I was a bit warm under the collar at the time, having recently read that oil finish was a myth, and similar drivel.

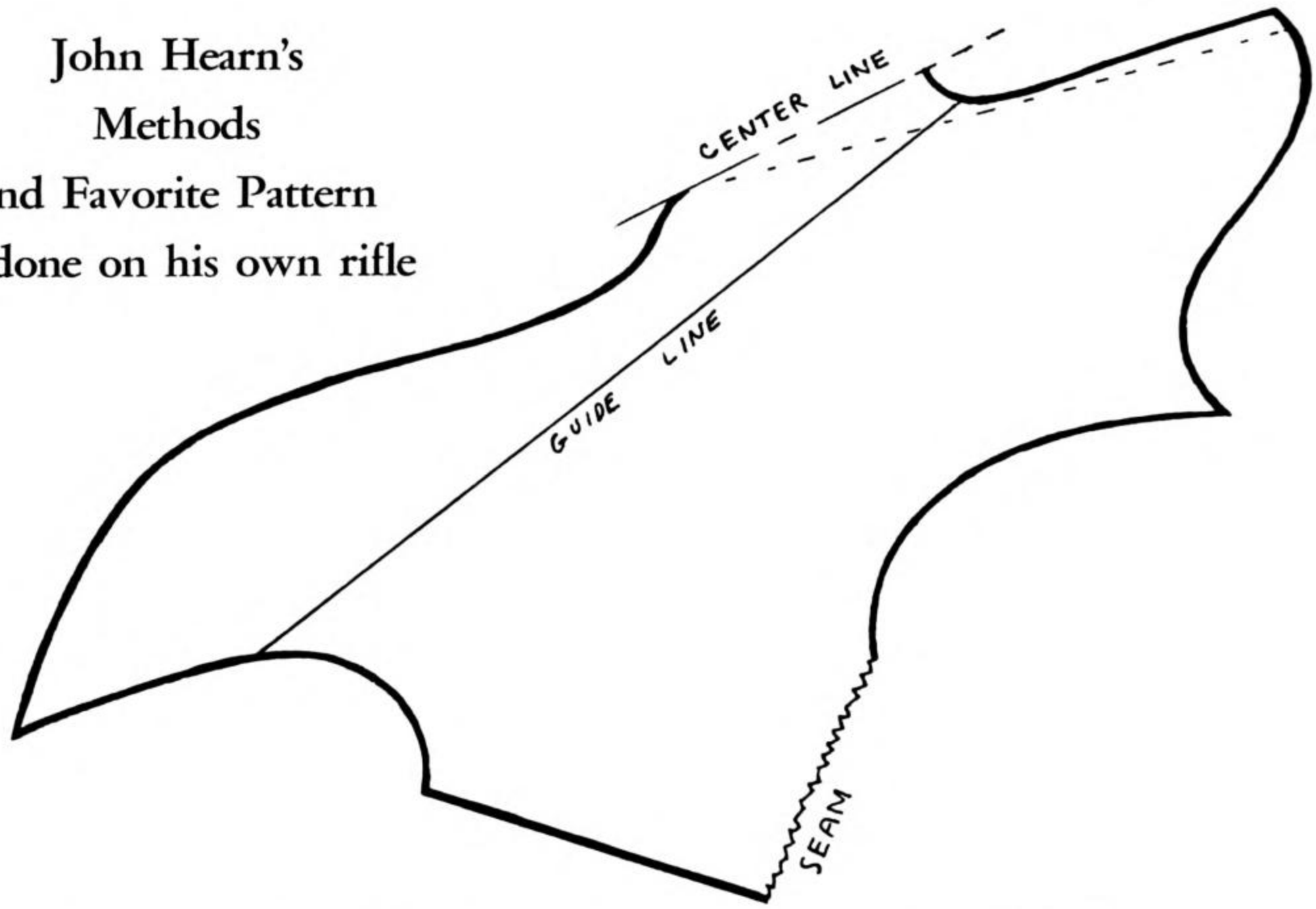
"It used to be very difficult to attain a good oil finish, and few knew how. Now, however, with the superb oil put out by Geo. Brothers, it is much easier and quicker. This oil gives results in hours instead of days, and its wonderful speed of drying is due not to what is added, but to what is taken away. In other words, the non-drying parts of the oil are removed. In fact it dries so fast that the preliminary coats should be thinned at least half with cigar lighter fluid. This is a purely mechanical thinning; there is no chemical union. The combination goes into the wood like gasoline, penetrating very deeply. The lighter fluid evaporates in a few moments.

"The principal objection to oilfinish is the desire for the fast buck. It takes more time, work, and know-how than many modern finishes. I am not talking about a finish obtained by a good carpenter job of 'sandpapering' followed by an enthusiastic soaking with paint store linseed. What I refer to is the real McCoy—the most beautiful, and with intelligent care the longest lived of all stock finishes."

Tom Shelhamer,
Fairwood, Dowagiac, Michigan.

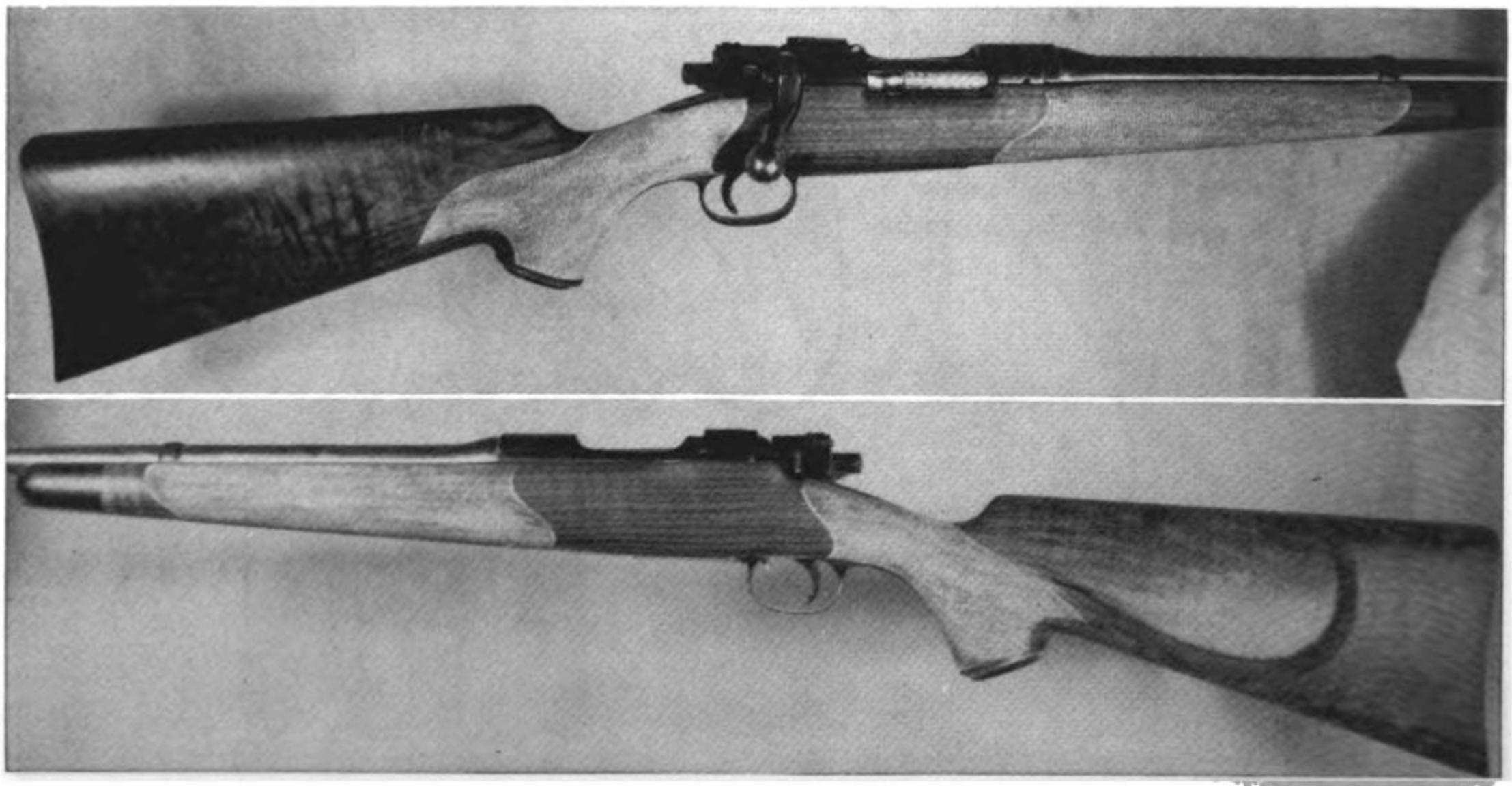


John Hearn's Methods and Favorite Pattern as done on his own rifle



This is an attempt, through words and pictures, to show how to checker a rifle stock as *I* think it should be checkered. Wherupon everyone says "who does this guy think he is?" and they are probably right. But, for the benefit of those who may be interested, here goes:

To begin with, this rifle which is under discussion began its life as a military Springfield, and its history as such I do not know. However, I do know that Roy Dunlap, of Tucson, Arizona obtained it and did some altering of said Springfield to the tune of shortening the action a half inch or so (I don't know exactly) and he also slicked up the trigger and put a very smooth, hinged floorplate release on the shortened magazine. All in all, it was a very



neat job, and the magazine just handled the standard .250/3000, a good caliber for our native deer.

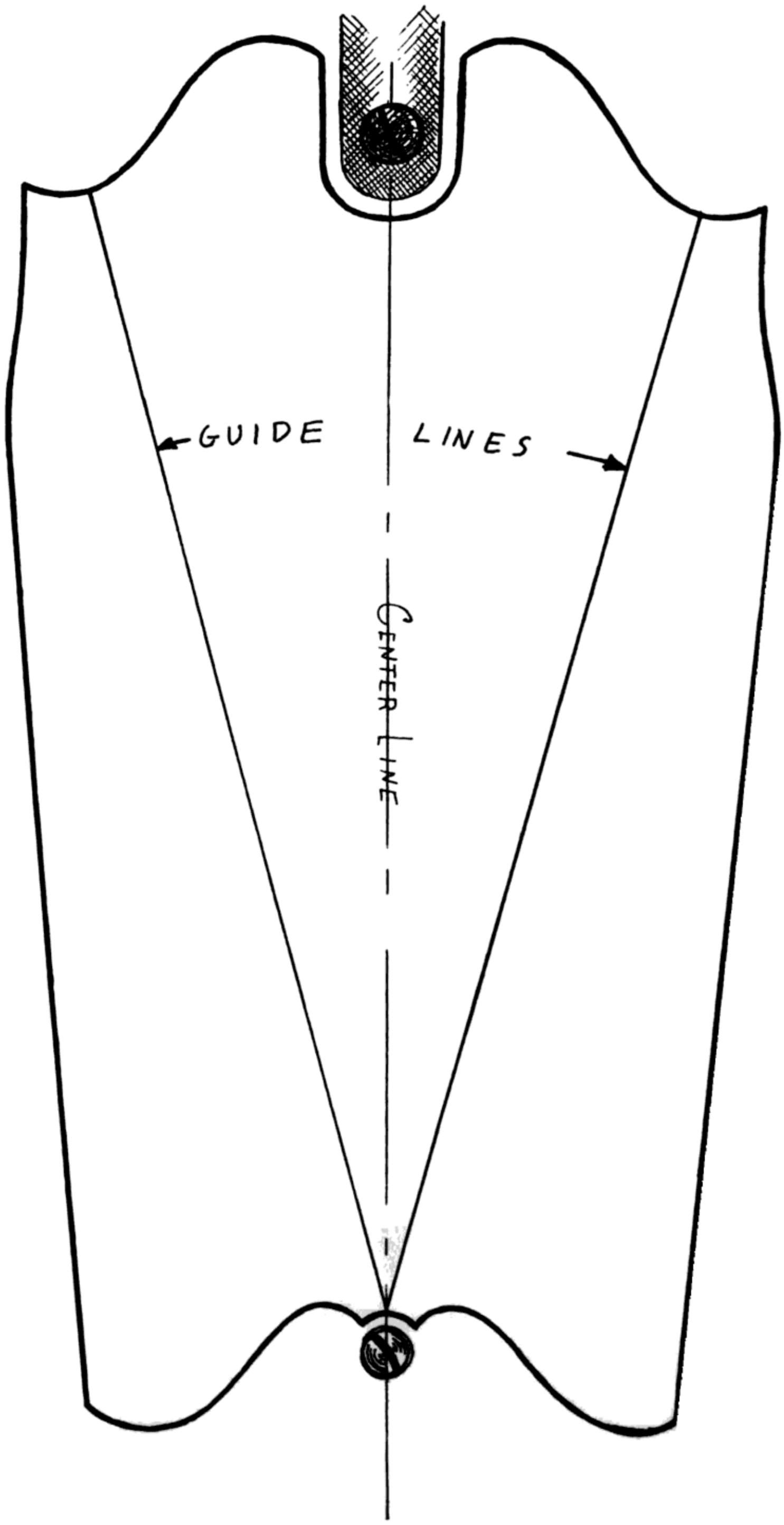
I decided that with a short and lightened action like this, I would keep my eye out for a nice piece of light wood and work up that lightweight I've always been going to build. I had a twenty-two inch lightweight barrel in .250/3000 caliber put on the action, and I obtained a super grade piece of French walnut, which was exceptionally light in density and then I was all set. The result is a nifty handling sporter weighing, without scope, exactly 6 pounds, 7 ounces, probably the lightest job I have ever done.

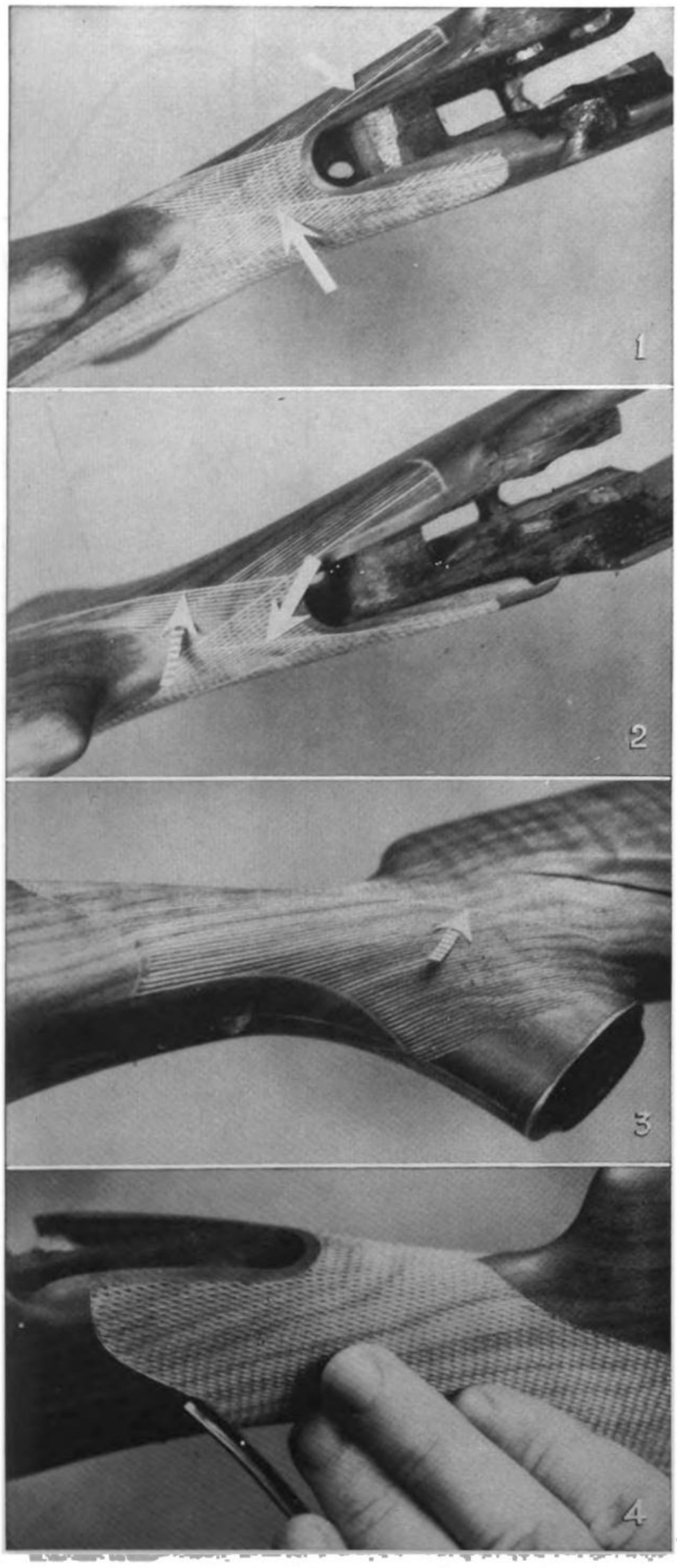
I now will get to the point—the checkering pattern. I have my personal opinion of what a top flight checkering pattern should look like. I will not go into the problem of designing patterns here, as that is a matter for the individual's taste. I suppose there is really no completely new pattern around today. All of them encompass something that has been done before in whole or in part. For my personal opinion, Leonard Mews is probably the most original stocker around today. I have done several "different" patterns, some used in this book, but unless the customer has a particular pattern, I use whatever I think is appropriate. I do not work from any standard templates, as no two stocks are the same, but I draw freehand on the stock. However, I may make a special template for a special job, as I did for this one.

My idea of a good checkering pattern is one in which the design used is carried from the pistol grip to the forearm. I have seen some "fancy" stocks, with all sorts of acorns, leaves, and the like on the forearm and then a skimpy two-piece pattern put on the pistol grip, or vice versa, which looks rather silly to me. I also like two-piece checkering, which means over the grip, and all around the forearm. I do not go for "gingerbread," carving and the like, although I did think it was quite the stuff when I first started some years ago and did several.

As a result of these opinions, I came up with the design used in this series of pictures, which may seem almost plain to some people, but to me is a dignified pattern, in keeping with the quality of the wood and workmanship.

So, assuming that the stock is in the checkering cradle, we start at the pistol grip. The first thing to do is to draw the general out-





line of the pattern on the stock. For this purpose, I use a yellow or white wax pencil which can be rubbed off the finish, and which will not mark it with grooves that a regular pencil makes; then also, it can be followed better.

After the pattern is drawn, the guide lines are next. These lines are shown by the white arrows in Picture 1. You will notice that the angle formed by these two lines is the exact shape of the diamond desired. These lines must be drawn exactly the same on each side of the stock or the diamonds will not be the same. I do this by drawing a line straight down the top of the grip, in the same line as the bore. Then I use the template shown in Picture 6 which is exactly half the angle of the diamonds I use, this I place on the grip along the guide line, and I draw a line on each side and, where the two meet, there is my desired angle. Do not cut these lines in the stock.

Once these lines are on, then I use another method to check the layout. Take another piece of shim stock, from which the templates are made, and which is one-half inch wide and about three inches long. Place one edge on the inside of the guide line and roll it over the grip. Then draw another line on the far edge of the template. This is the line shown by the striped arrow in Picture 2. The white arrow, showing the guide line, with the parallel space in between these two lines. Now, this line is the *first* one cut into the stock with the layout tool. By repeating this on the other side of the grip, there are now two guide lines cut into the stock.

By following these guide lines toward the top, you get the diamonds laid out over the top of the grip. By continuing around the left side, you will get the effect shown in Picture 3 which still shows the guide line (striped arrow) which has not been carried around and under on this side.

It can be seen that when first laying out the lines in 3 that it is best not to go too close to the border line. This allows a little room for matching the sides, run-overs and evening up. Actually, in Pictures 1 and 2 around the narrow edge, I have already cut the final border, but I do this very lightly at first, then, when I have the diamonds deepened and shaped, I cut the final border in as in Picture 4. After which I carefully finish the diamonds to a fine point, shown in Pictures 7 and 8. Which brings up a point—I like this narrow border along the edge of the metal because it shows that I knew

and meant to stop at this line. I believe this is much better workmanship than the kind that runs right into the metal. It can be shown to best advantage in Picture 4.

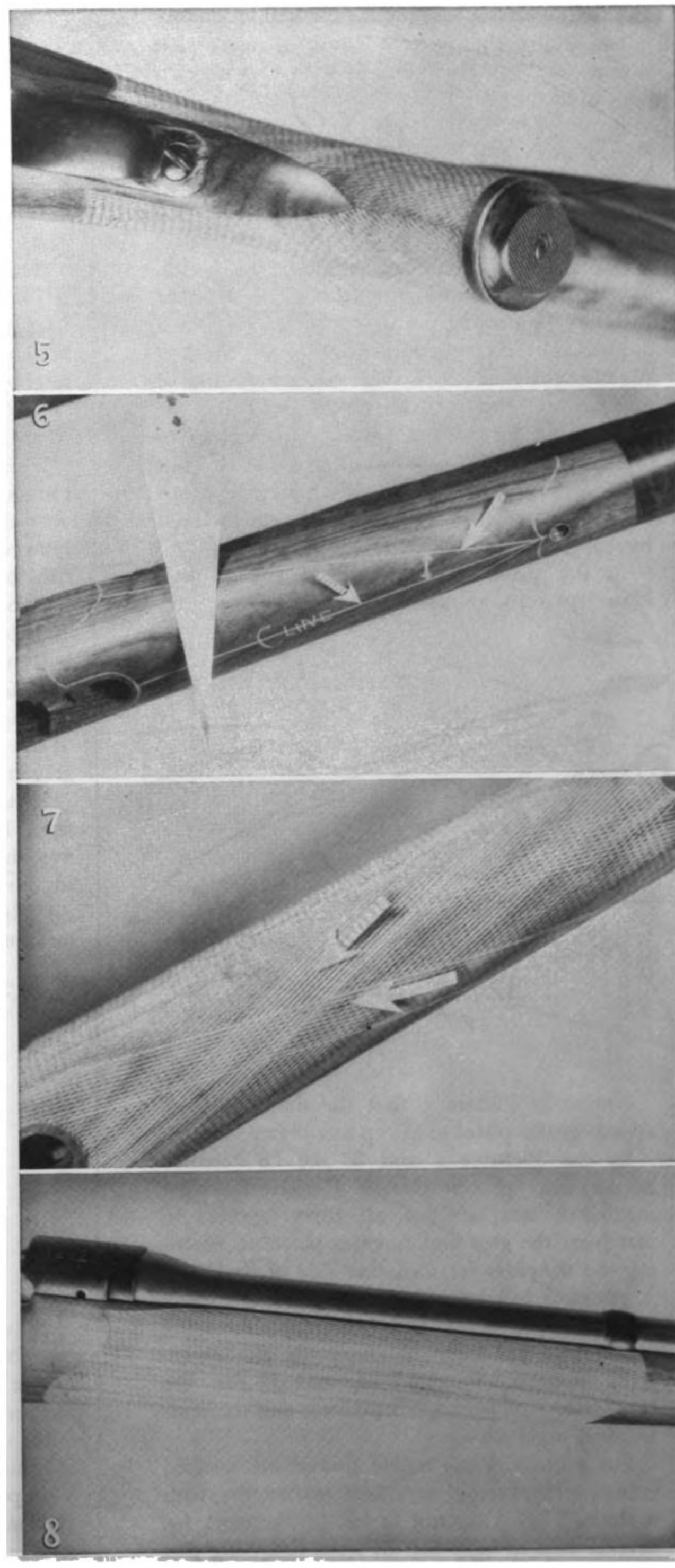
While looking at Picture 3, notice what the curve of the stock does to the straight lines of the pattern, yet, if a straight piece of shim stock is placed along these lines, it will show that they are straight.

It can also be seen here (Picture 3) how the checkering lines merge together in a seam down the middle of the grip. *This is the only way* that the checkering can be carried all the way around, as is shown in detail in Picture 5. By taking a straight edge (shim stock) and laying it across one of these lines, it can be seen why checkering cannot be run together both over the top and under the grip.

The forearm comes next. This shot of the forearm in Picture 6 is taken before any lines were cut into the stock. It shows the center line, indicated by striped arrow, drawn through the center of the front tang screw, and through the barrel band screw. Then the template, shown laying against the stock, is placed against this line in the position shown by the angle arrow (up & down). Then, the guide line is drawn in (white arrow). This gives one side of the diamand. The template is turned over, and the operation repeated, and both the guide lines are on the stock and the diamond is the proper shape. By checking where the two guide lines extend on both sides, one can be sure that they are on straight and the diamonds will be in the same line on both sides. This is very important on angle patterns, as the diamond shape makes the border.

My template shown here is made of thin brass shim stock and is very flexible, and as such can be bent around a curved surface, yet still not stretch out of shape.

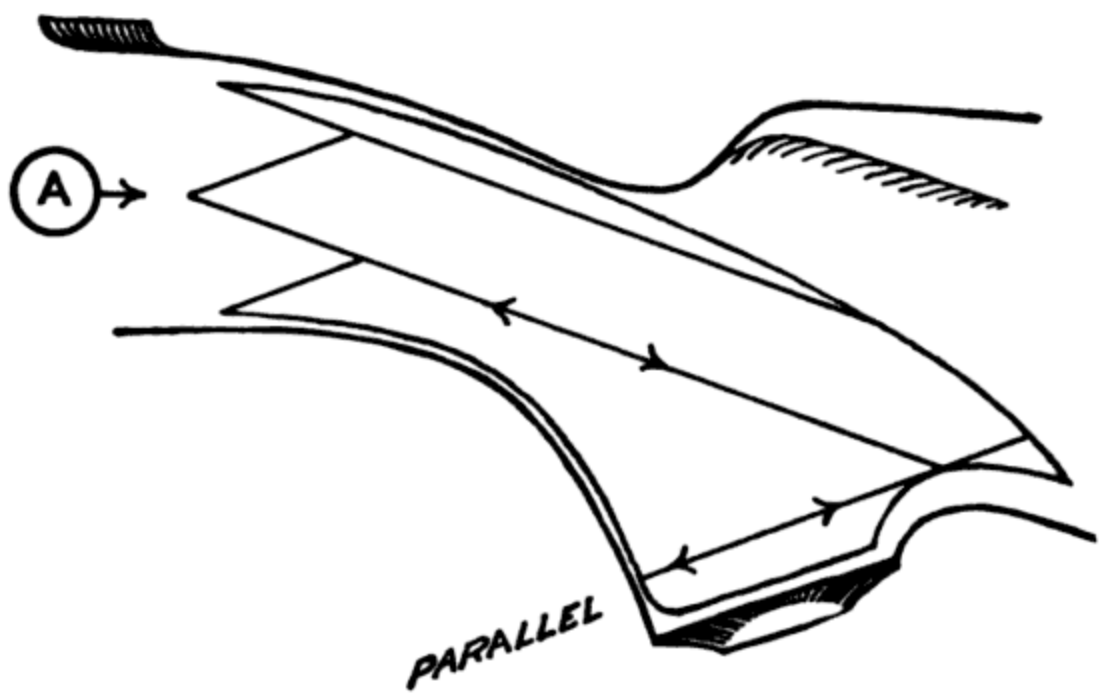
In Picture 7 I have attempted to show all three phases of actual checkering operation. In the area above and below that marked by the uppermost striped arrow, can be seen layout work only. This is what it looks like after the layout tools only have been used. In the two paths indicated by the two arrows, are shown the way the stock looks when the deepening tools have been run over the lines one way (running in the direction of the arrows). Then, as a climax, in the diamond pattern to the left of the arrows, and I think standing out in this picture, is a patch where the two deepening lines have crossed. I used a fine finisher to put



the points on the individual diamonds. Picture again shows the narrow band of wood left around the magazine tang, to coincide with that on the pistol grip.

Picture 8 shows the completed forearm, before the oil was applied. In this case, I ran the top line exactly along the contour of the barrel and the result is the little dip in the line back at the receiver ring. I tried to emphasize the long straight line border along the barrel, against an exact one-eighth inch as in all other metal-wood meeting points.

Here is a point worth mentioning. In checkering a pistol grip where there is no intention of going over the top, the guide lines may be drawn parallel to the pistol grip cap. This allows for very balanced angles in the forward border of the pattern, but this pattern can not carry over the grip. The difference can be seen by comparing the sketch below at point "A" with the pistol grip picture of the "Mystic Maze" pattern, shown on Page 91.



Notice in Picture 3 that the diamond lines approach the pistol grip cap at different angles.

In the Pictures 4 and 8, the "S" shaped border can be seen clearly. I used the same cardboard template for all three borders in matching the grip and forearm patterns, reversing the template for the other side of the stock.

The two full length photographs were taken before the oil finish had been applied to the checkering. In order to emphasize the checkering pattern, flour was sprinkled into the checkering, the photographs taken, and the flour brushed out.

For a finish, I use boiled linseed oil brushed into the checkering, and then matted dry with a cloth. Then I try not to handle the stock for several days to keep the oil from collecting dirt and scum in the valleys of the checkering.

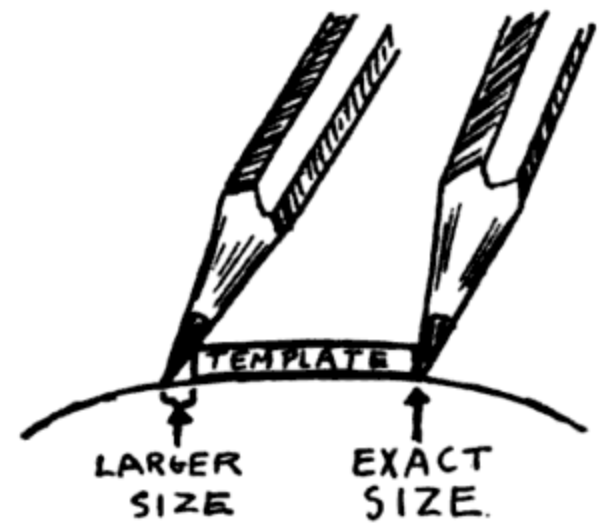
On the opposite page is shown a copy of a Linden job which I worked out for Colonel C. C. Pratt, U. S. Army. All the specifications were furnished by the Colonel and this included the checkering pattern, which he picked from a Linden pattern sheet. This is a .270 caliber, mounted on a Model 70 action. The scope is a Zeiss of about 2½ power mounted on Echo mount and an alternative Lyman 48 has been fitted also.

This stock is a good piece of French walnut, and the wood has been faired out and filleted around this Lyman sight a-la-Linden as told about in his No. 2 booklet on Gunstock Shaping—and it surely does a mighty good job of removing that very botched appearance that most iron sights leave when they are mounted on the left side of the receiver.

This checkering job is 24 lines to the inch, and I will not take much time in explaining it as the pattern is very similar to others which are shown in this book. However, I modified it somewhat to the extent that it runs over the top of the grip and meets in a neat seam underneath—and this meeting line has been both helped and shortened by the fleur-de-lis design worked into the bottom of this pattern.

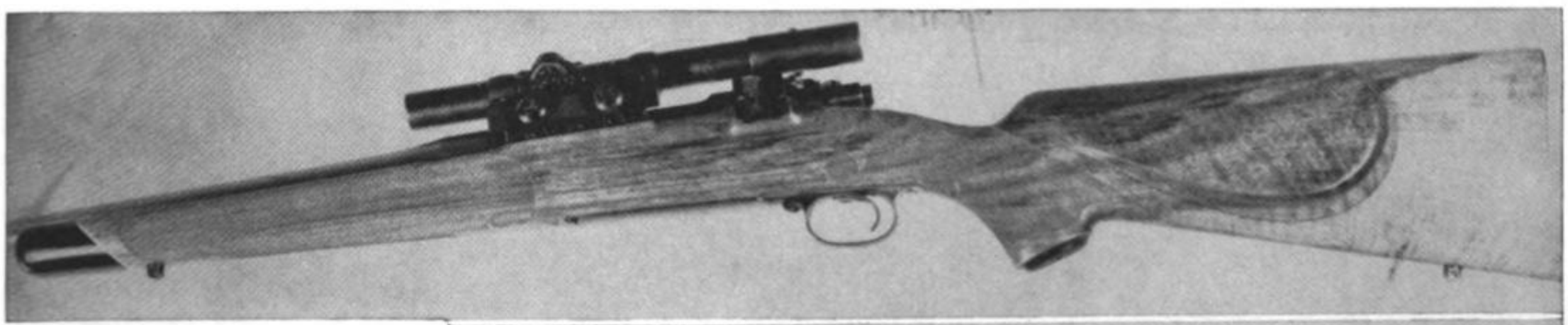
This is a point worth mentioning. If the seam is run too high up the pistol grip, there occurs a squaring off of the diamonds as you get closer to the top of the pistol grip curve. I find that half-way is a happy medium.

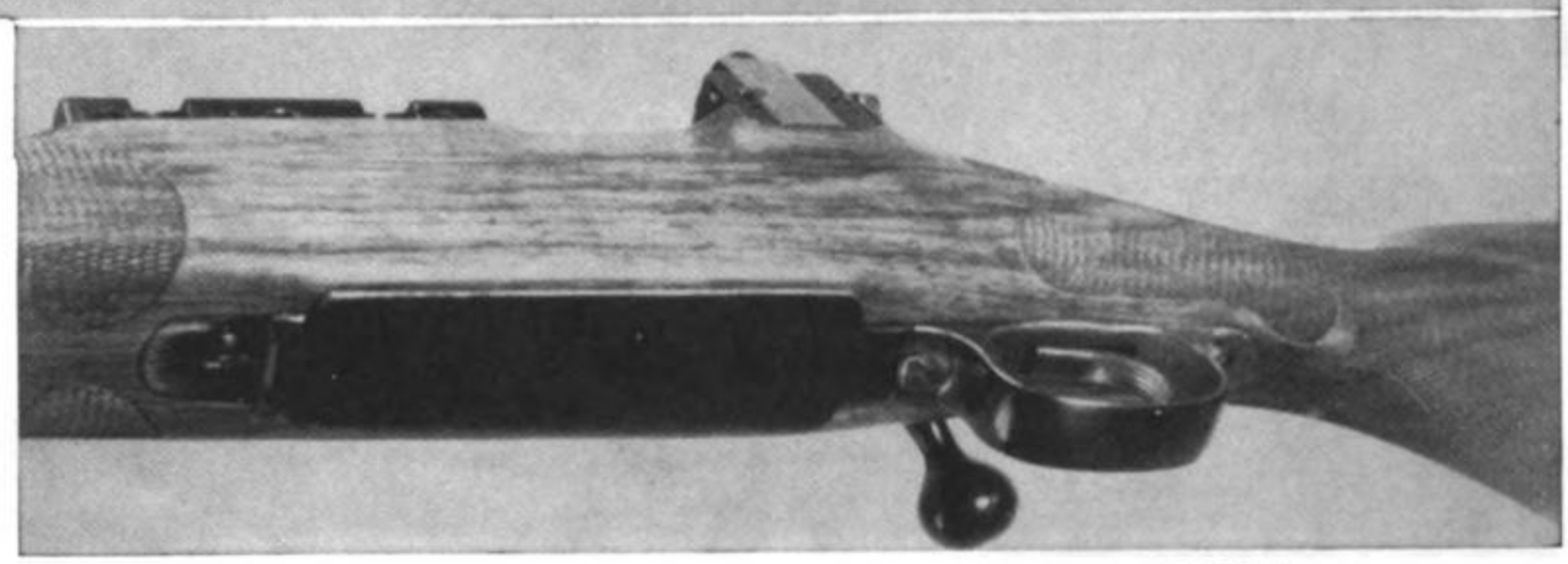
In using the fleur-de-lis figures in a checkering pattern, I made a template from heavy cardboard, and was able to use this throughout the pattern, but allowing for difference in size by tracing very closely or tilting my pencil outward, and thus expanding the size of the leaf on the stock.



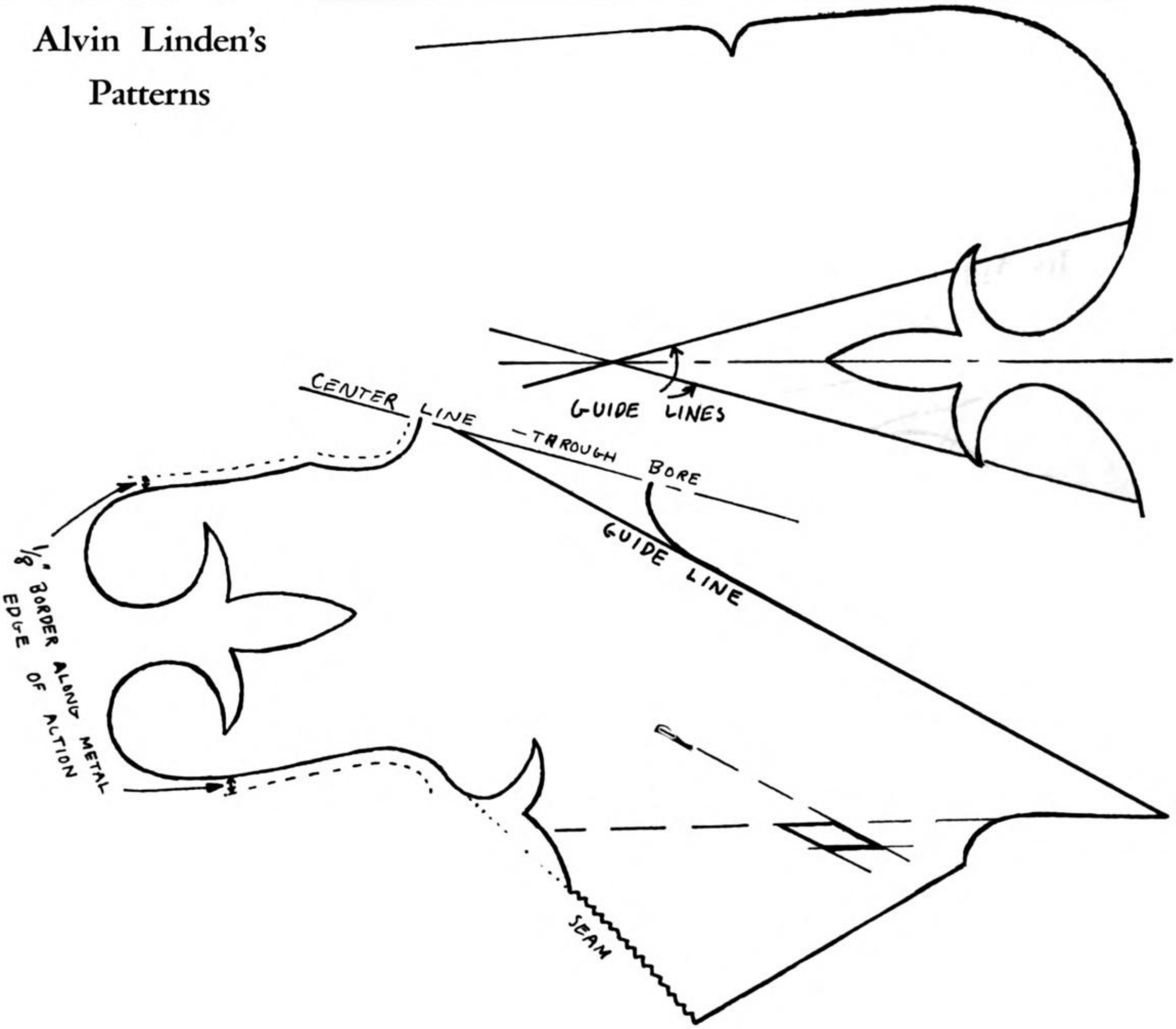
This is a trick which helps to save time on an intricate job like this.

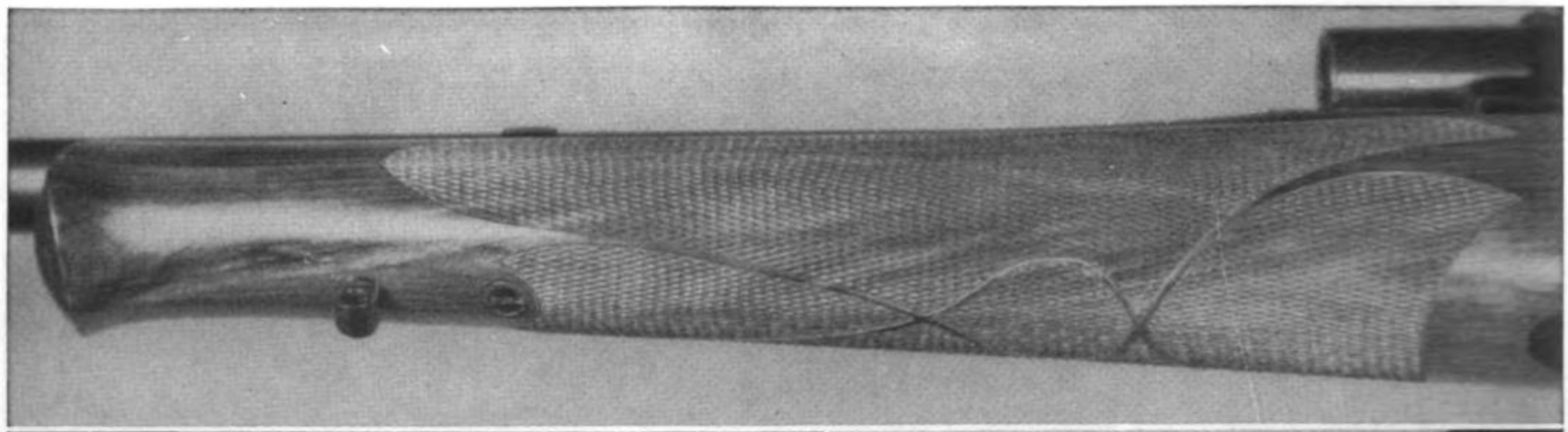
The variations along the top border of the forearm are an example of how to give a little different look other than a straight line border. These were penciled in, and as the checkering progressed, cut in by the V-shaped carving chisel that I use in this work. There are many such modifications which may be used similar to these to avoid a straight line or to fancy up a plain pattern.

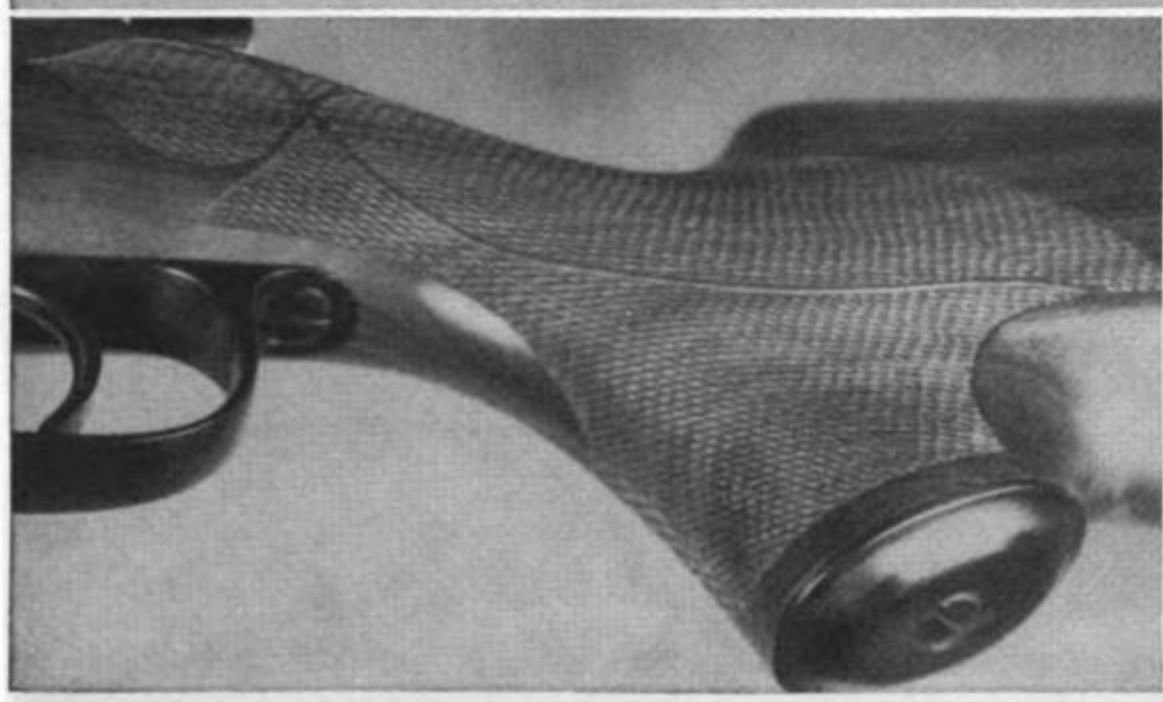


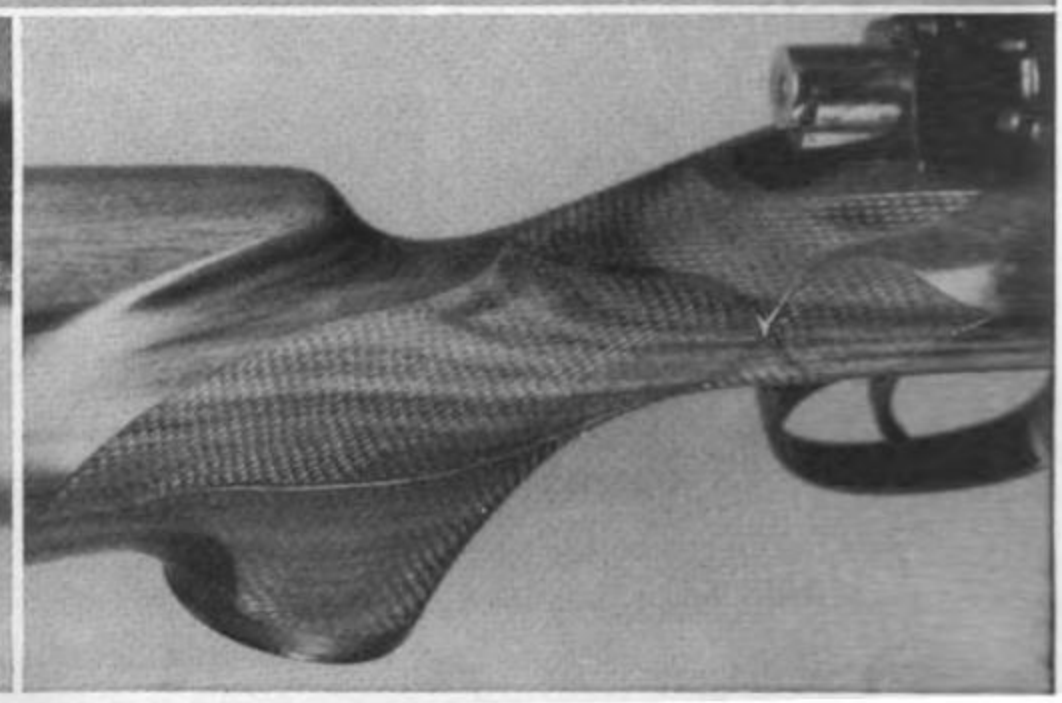


A
John Hearn
Adaptation
of one of
Alvin Linden's
Patterns



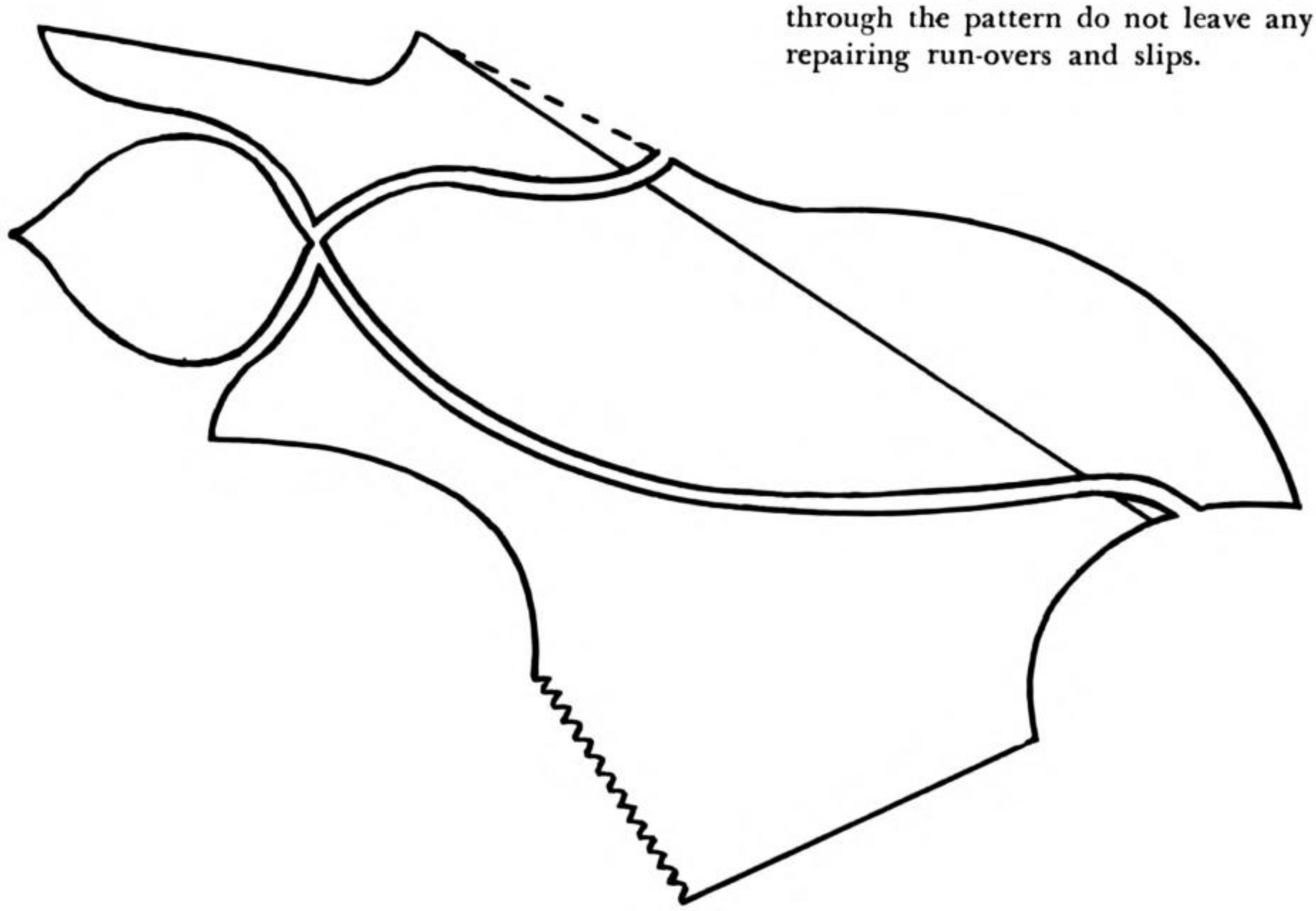






John Hearn's Trey of Spades and Its Application to the Gunstock

This pattern is a deceptive one, and much more difficult than it looks. Difficult with regard to time required, that is. I would not recommend it to the amateur or to one who wishes a fast job. The one-sixteenth inch bands through the pattern do not leave any room for repairing run-overs and slips.

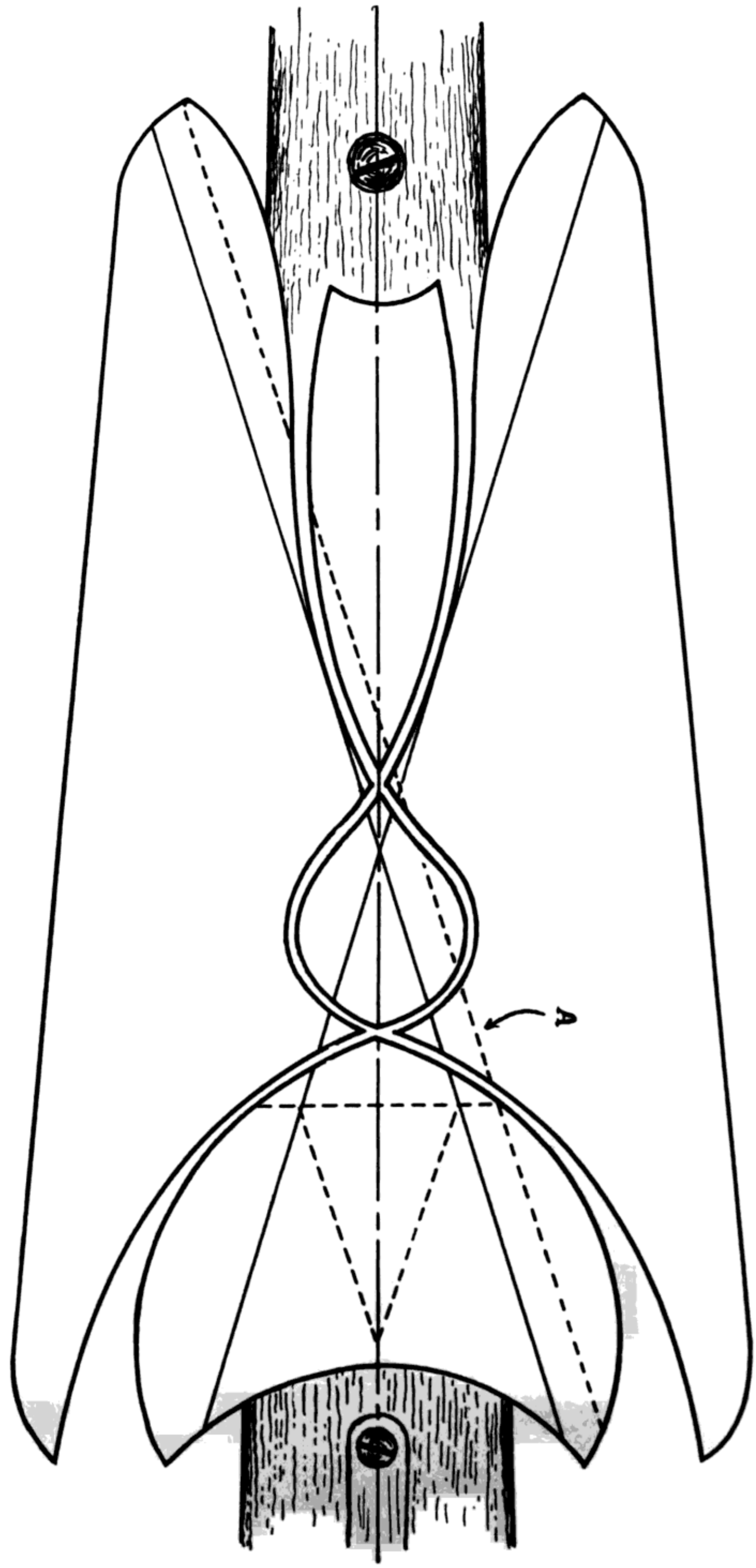


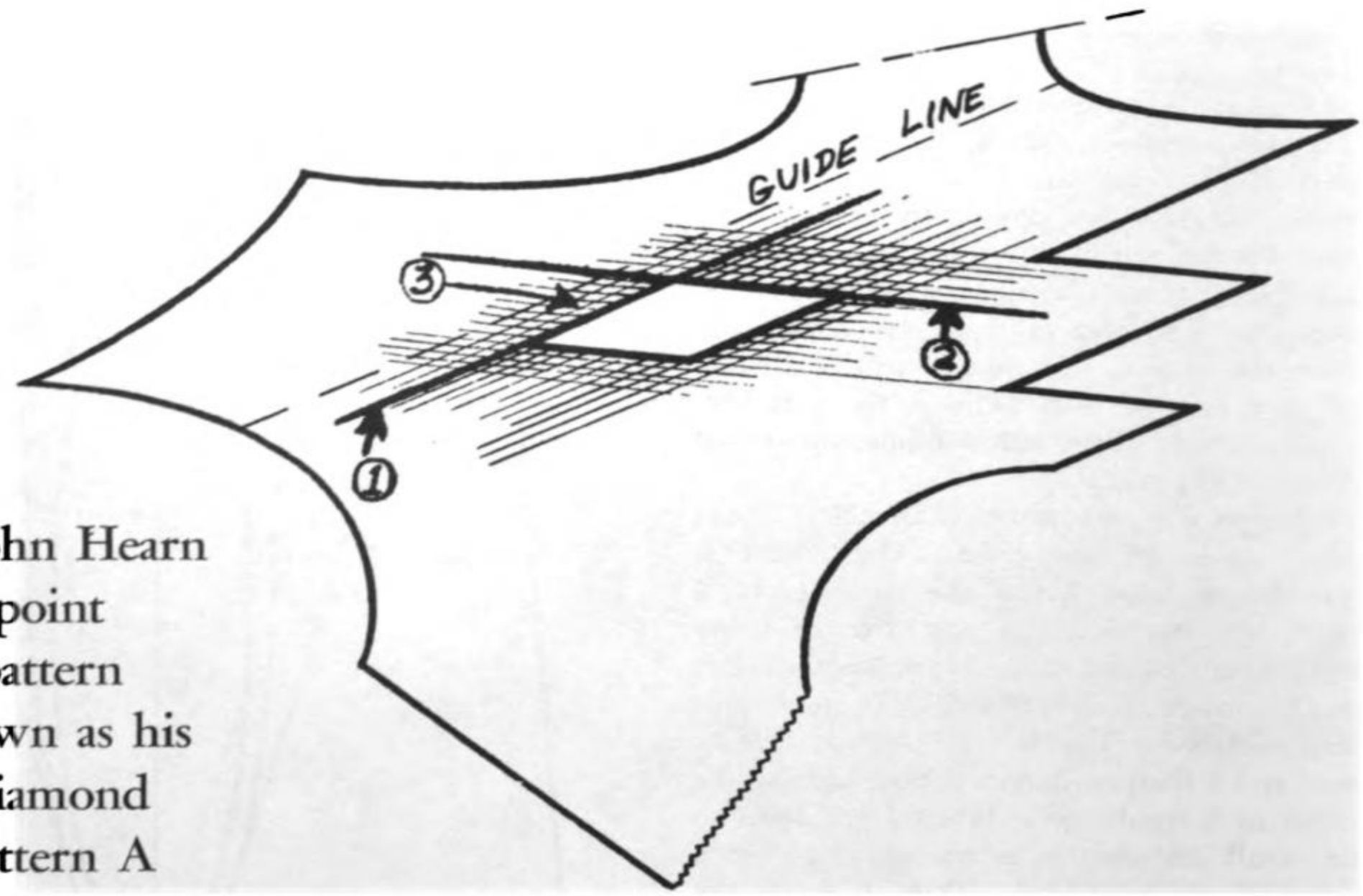
This one should be started at the pistol grip in the usual manner, running the proper shaped diamonds over the top of the grip. Now, following the guide line down into the lower section: Do not run all lines out to the edge, or go too deep at first, because corrections may be necessary. The idea is that when one looks across the pattern, each section will be in line just like rows of corn. This is the part that is so hard to do as you follow around the curved section of the grip.

I lay out this pattern with a Dem-Bart layout tool, double grooved cutter. One cutter is smooth, the other has a saw tooth edge. I prefer this two-blader to the three or larger that I have seen and tried. Then, when all lines are in order, I deepen with a home-made deepening tool. This tool gets a good deal of wear and I sharpen it several times during the course of a regular job. When I get down to the small sections, it is necessary to use a V-shaped carving chisel. Then I finish the diamonds with commercial finishers (Dem-Bart). I have experimented making my own, but the ones they make are inexpensive and seem to hold up much better than my own, so I don't bother making any more. I also like their new 'S' blade, a very small finisher blade about one-eighth inch long. This has been needed for some time in my estimation; it is ideal for small corners.

On the forearm, the story is the same. Take care that each row is continued on the other side of the raised strip. I use a strip of brass shim stock as a guide, and check about every ten lines or so to see that the lines are not wandering. One might wonder how the lines can wander, but when using twenty-four lines to the inch the depth of the grooves can cause a variation from one section to another, as you move around the pattern. As you come to the edge of the border the tool is slowed up, and the cutter rides higher, and the end of the line tends to bend toward the lines just marked, or away from the cutting side of the blade. In an ordinary pattern, out at the edge, this does not matter much, but when it is planned to pick up the lines again on the other side of the raised strip, it is cause for concern.

I have drawn line "A" on the forearm pattern to show that one line of checkers goes through six different parts of this pattern.



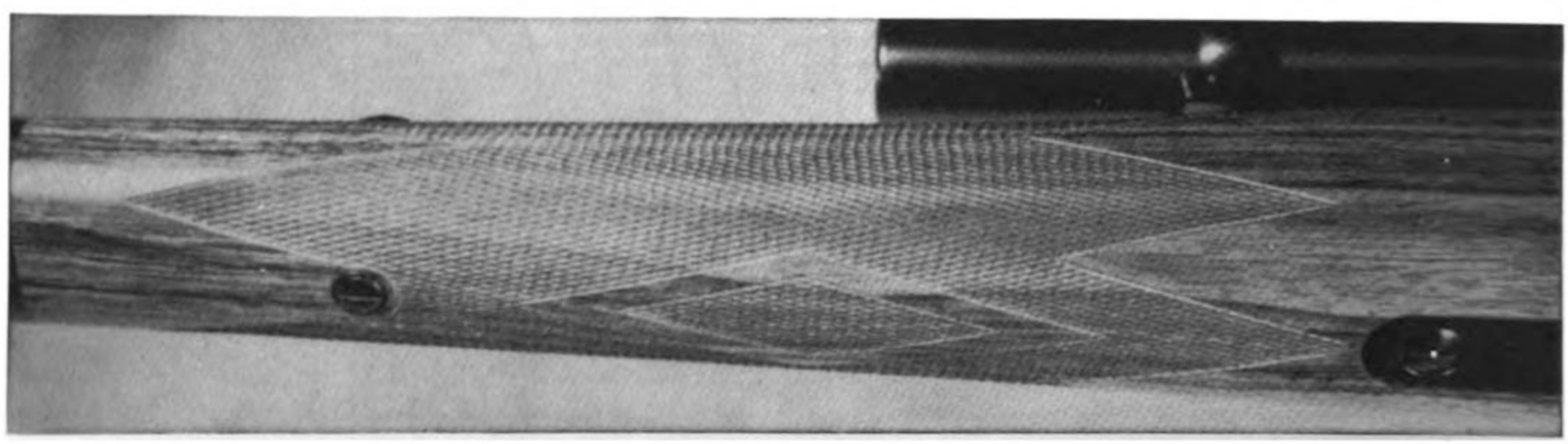


A John Hearn point pattern known as his Diamond Pattern A

The three preceding patterns I have given are what I call fill-in patterns. That is, the outside borders may be drawn on the stock, the guide lines applied, and then the whole is filled-in, though not quite so simply as it sounds. However, there is the other type of checkering—the angle pattern, which is what the basic factory job is, with the borders added.

Here is how these angle patterns are done. Basically, it means that the lines which form the diamonds also form the border—fore and aft at least. Diamond Pattern A is an example of this checkering. The pistol grip is my standard pattern, over the top and seam under the grip, but to dress it up a bit, I left a raised diamond on each side of the grip. There is no real difficulty with this, but care must be taken to insure the same amount of spaces or diamonds on each side of the raised wood. Merely running a line across is not enough. I start from one side line which extends through the grip (1) and forms one side of the diamond. Then I run the layout lines down on the other side to line (2) and I have two sides of the diamond laid out. At this point I use my one-half inch template strip and laying it on one of the lines already in (3), depending on how large the diamond is to be, I draw in the other sides. Then the rest of the layout lines are applied, but I don't run up to the edge of the diamond until I have checked and counted my lines along each edge of the diamond. I have seen days when I was careless and they did not come out the same. This gives two results, either the big diamond is lopsided or the lines of checkers are larger or smaller than the rest of the pattern. The remainder of the pistol grip is done as any other one.

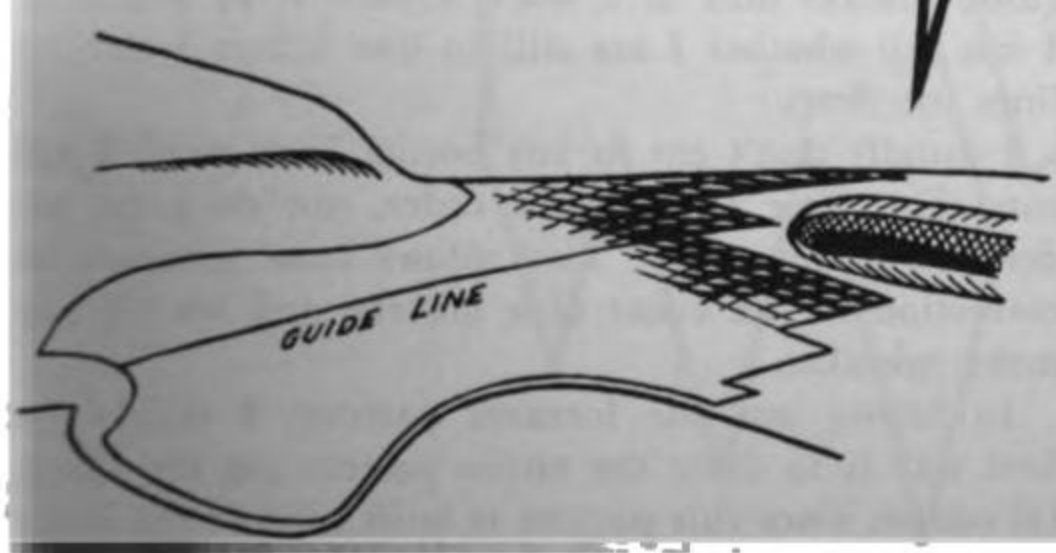
The borders of the forearm of this pattern are completely formed by the diamond lines. In

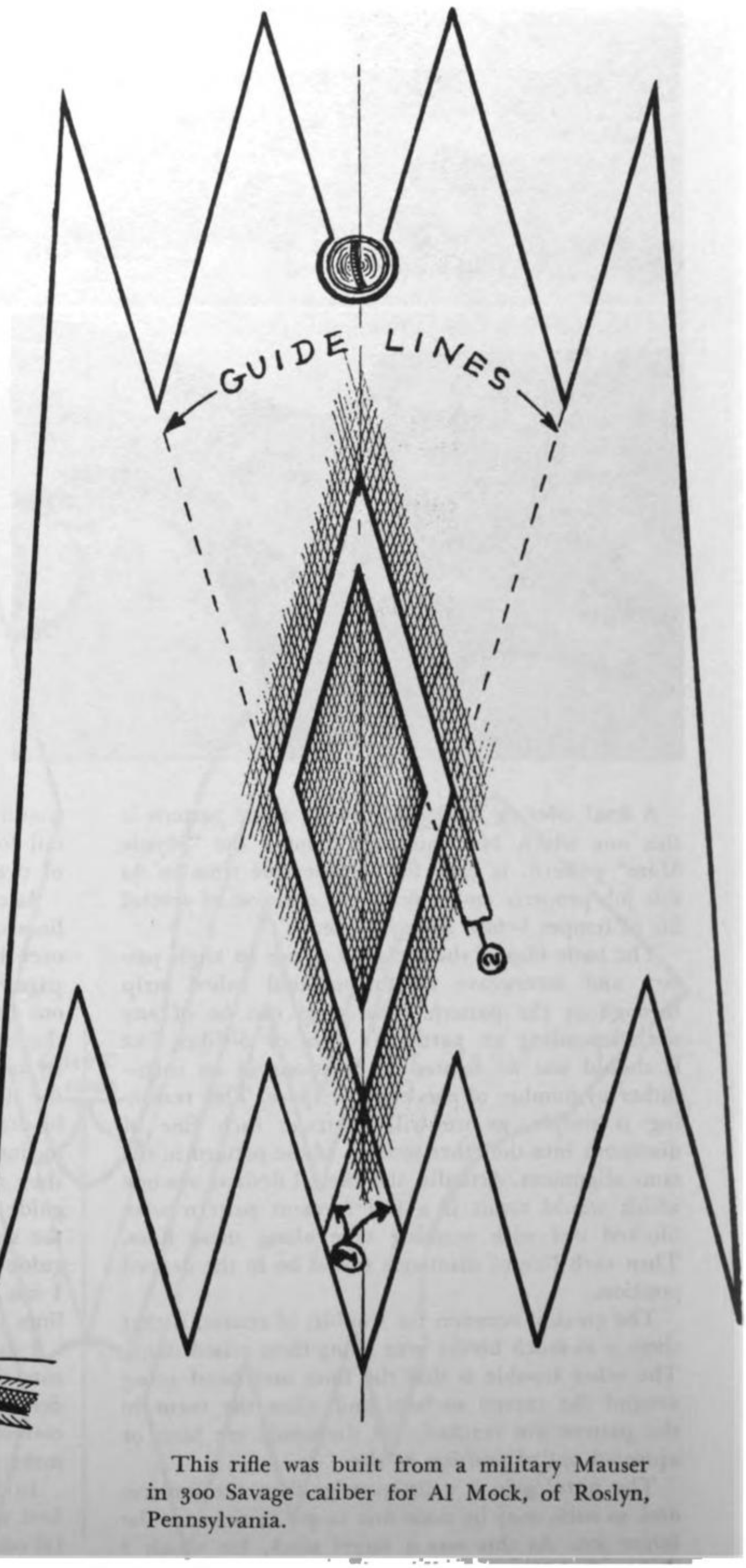


this case, however, I left a section of checkering enclosed by a diamond of raised unchecked wood. This is started in the same way as the pistol grip except that the two sides of the same end of the diamond are laid out first (1). Then the raised strip is carefully measured off, (this should be an exact number of diamonds wide (2), so that the checkers line up inside and outside the big diamond). By drawing the angles carefully, the rest of the diamond can be drawn on, and then working on the lines both inside and out, the big diamond, lay out the rest of the pattern again, not finishing the lines completely against the raised strip. After the pattern is in lightly in the vicinity of the uncheckered wood, go back and check the straightness and continuity of each line through the pattern, then cut the final edges in when all is found O.K.

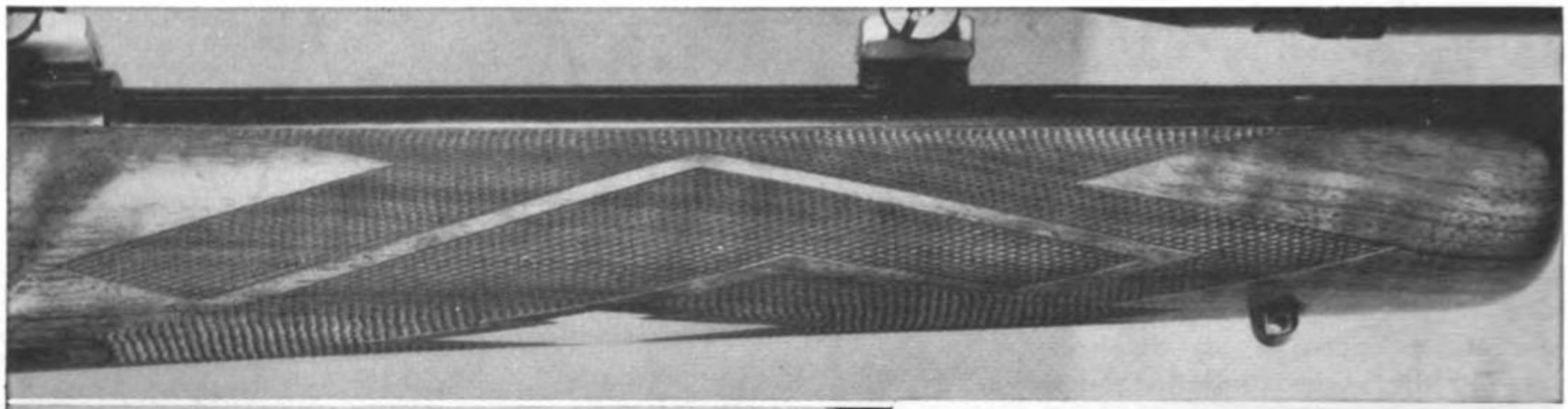
It has been called to my attention that the raised diamond on the pistol grip may be utilized as a Wundhammer swell. That is, the diamond may be predesignated on the right side of the pistol grip and a bulge of wood left there that will fit into the palm of the shooter's hand as he grips the rifle. This would give a diamond that would be in heavy relief, and would not only be ornamental, but serve a practical purpose as well.

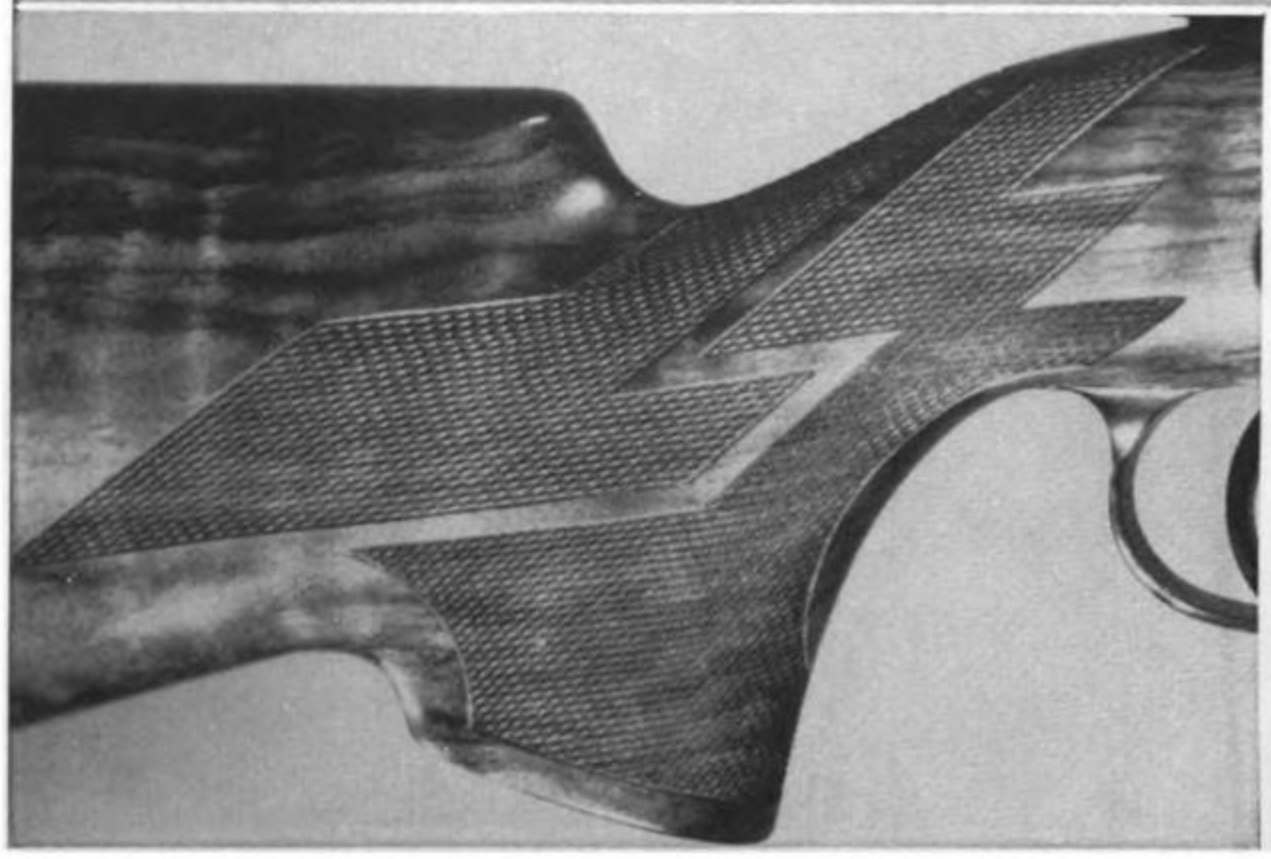
When doing a pistol grip, I usually use a pointed design over the grip, but I seem to have a yen for borders that run along the metal edge. Most of the patterns in this series are of this nature. However, a diamond point design is what my basic layout lines form. Simply by not carrying the checkering over to the border, the result will look something like this:





This rifle was built from a military Mauser in 300 Savage caliber for Al Mock, of Roslyn, Pennsylvania.





The Mystic Maze Pattern by John Hearn

A final offering in the way of an angle pattern is this one which Mr. Samworth named the "Mystic Maze" pattern. It calls for considerable time to do this job properly and may be the occasion of several fits of temper before being finished.

The basic idea of the design is to use an angle pattern and interweave an uncheckered raised strip throughout the pattern. This strip can be of any size, depending on particular likes or dislikes, but it should not be figured in fractions of an inch—rather in number of checkers per space. This reasoning is simple, as we will continue each line of diamonds into the other sections of the pattern in the same alignment. Actually, the effect I desired was one which would result if a full forearm pattern were blocked out with masking tape along these lines. Then each line of diamonds would be in the desired position.

The greatest occasion for trouble, of course, is that there is so much border area along these raised strips. The other trouble is that the lines may bend going around the curved surfaces and when the turns in the pattern are reached, the diamonds are bent or squeezed out of position or size.

The pistol grip is a little easier than the forearm and, as such, may be done first to get in tune for the larger job. As this was a target stock, for which I designed this pattern, I used a wider strip than I would use on a sporter, because I had a full beavertail forearm to cover. So, I chose a four line width of twenty-four inch checkering (roughly 3/16 inch).

As can be seen from the pattern drawing, the guide lines on the pistol grip are laid out as in any of my over-the-top patterns. I tried to explain this on page 82. The top half is one piece and may be laid out first. The difference in the two sides is because the left side followed the contour of the cheekpiece. By taking a half-inch straight shim and laying it on the lines already on the top half, the lower lines can be drawn on in proper alignment. These can be kept in line by checking every eight or ten lines to see that they are not straying. I place the shim on the first guide line, and draw on a line on the other side of the shim, which is a parallel line. This gives me a guide marker and as I work toward it or reach it, I can tell whether I am still in line before I cut my lines too deep.

I usually don't cut in any border lines until I am sure that these are in good order, nor do I go too deep with my cutter. This allows some measure of correction in the event of a mistake and we all can make mistakes.

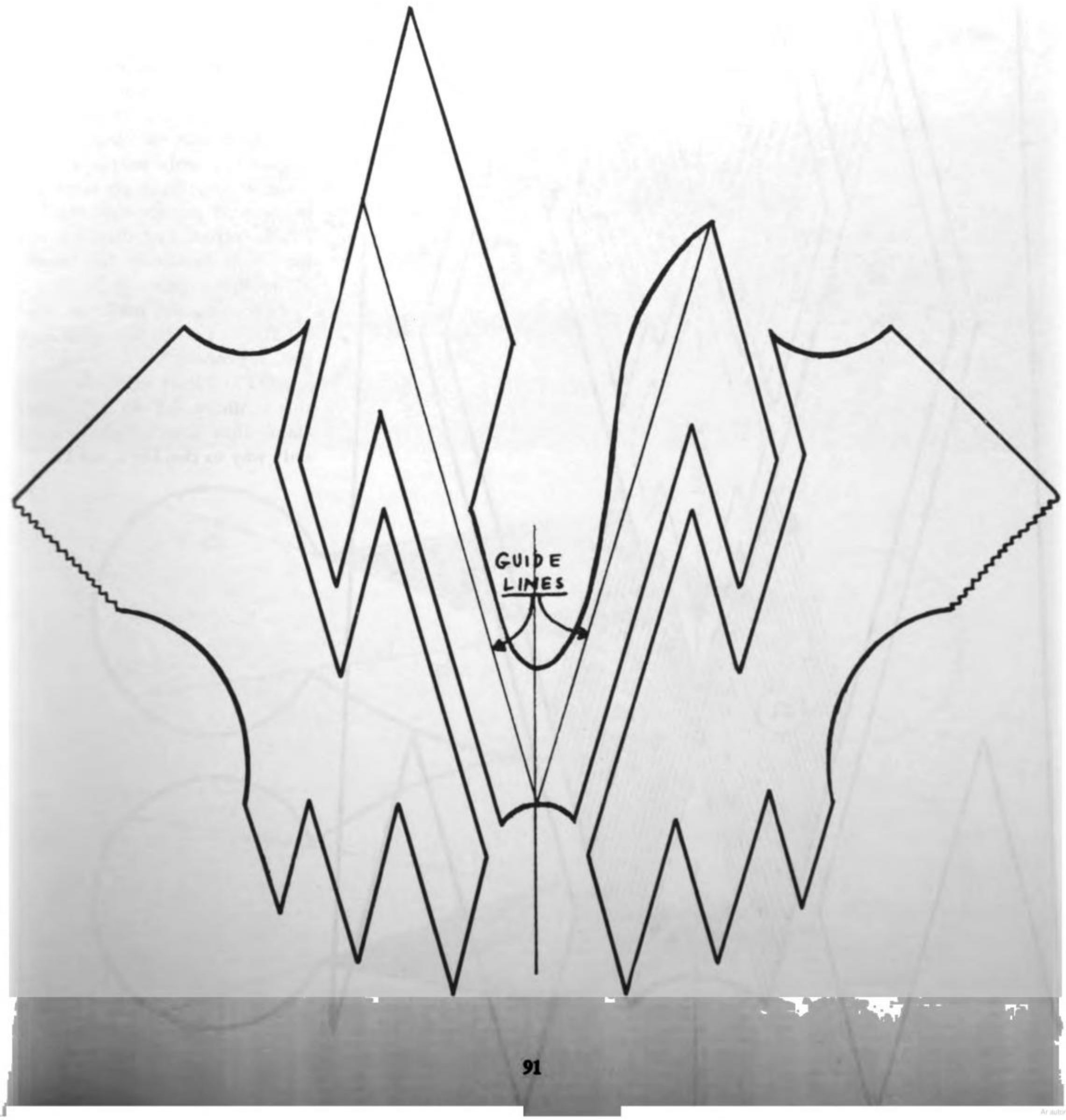
In laying out the forearm pattern, I think the best way is to draw the entire pattern on the stock. Of course, since this pattern is built around the inlay in the stock, this is the keystone to the diamond

shape. So the guide lines must parallel the edges of this inlay. Draw in guide lines (A), then cut them into the stock *lightly,* I would advise, and don't go right to the edge of any strips or borders until you have progressed a good ways. When spacing this first guide line, be sure it is an exact number of diamond spaces from the inlay because the main idea is to make all the rows of diamonds line up through the pattern, and this is very important.

Now, very carefully, commence to lay out line working outward from the guide lines in the direction indicated by (B). Do this on both sides, and stop when you reach the forward edge of the inlay. Stop here and check the diamond angle, then draw in the lines (C). This gives you the guide lines for the inside key of the pattern, also the side of one raised strip at (D). Then fill in the section indicated by arrows and shaded sections, always working from the center outward.

When this shaded section, forward of the inlay, is in, as on the pattern, then the basic elements of the pattern are completed. Then work forward and finish the inside dovetail section.

The outside portion is the easiest to lay out, as



the lines all follow over from the sections already in. However, this means that you must be very careful to make the lines stay in file. At this point, too much has been finished to start getting careless, so work carefully and use the shim often to check the continuity of the lines.

The small corners of this pattern, as with any other pattern, may be done with a V-shaped carving tool instead of the checkering tool to avoid runovers.

This is about the world's worst pattern for runovers with the checkering tool, as it is practically impossible to repair a gap in one of these raised strips. The only solution is to go slow and don't go near the edges until you are sure the layout is correct, and then cut the diamonds in slowly but surely along these edges.

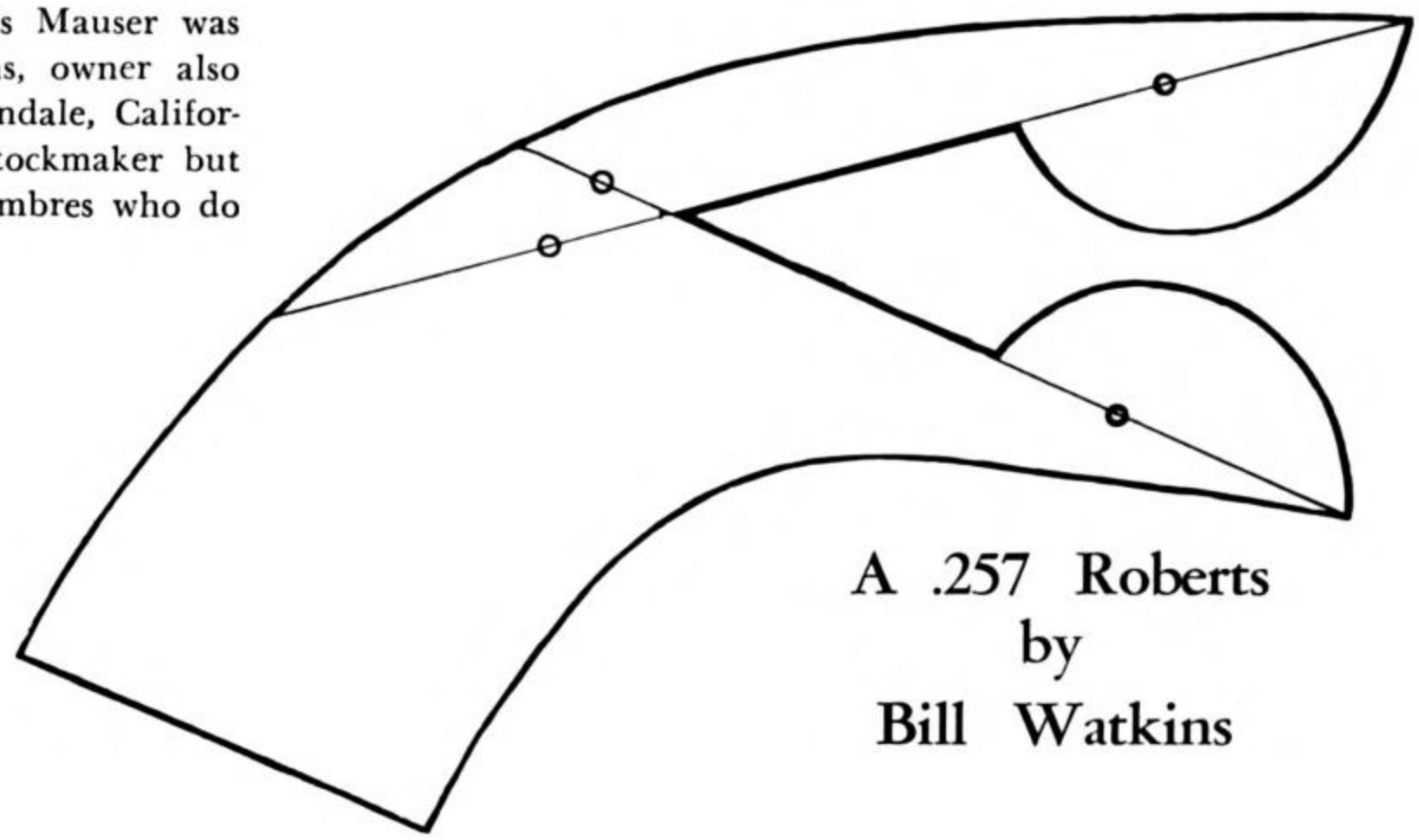
This stock was made in 1950 for Dr. Russell C. Smith, of Barron, Wisconsin.

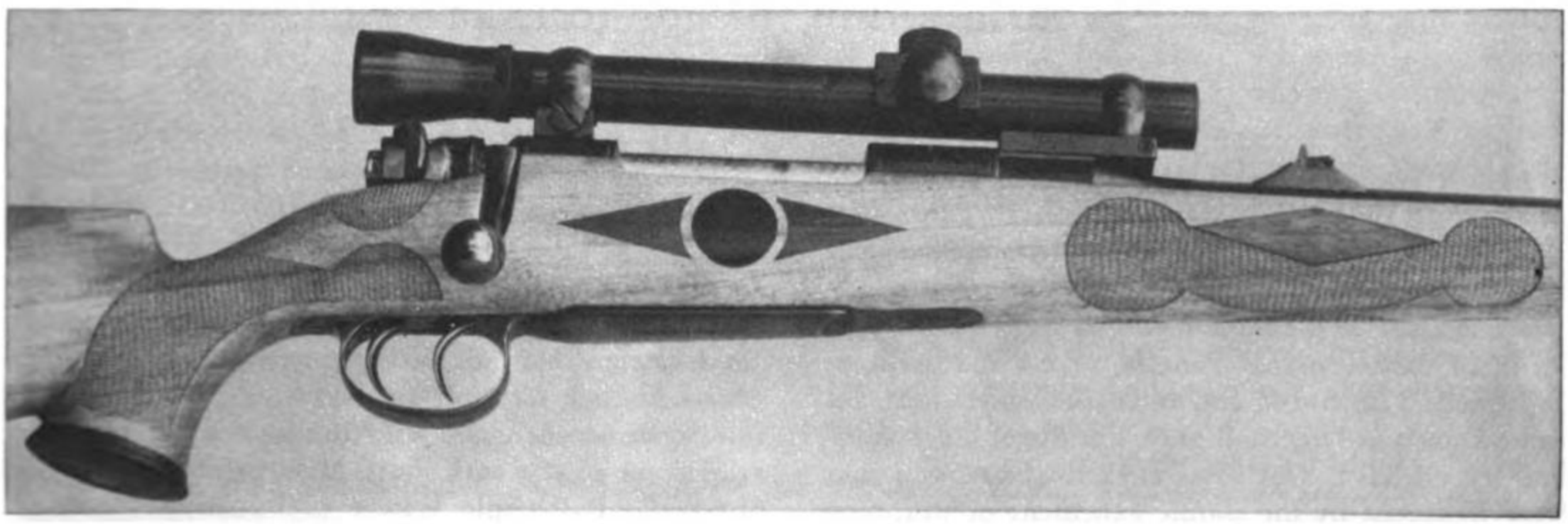
NOTE: Please remember that this is the way I do it. I don't claim that this is the best or only way to checker a stock.

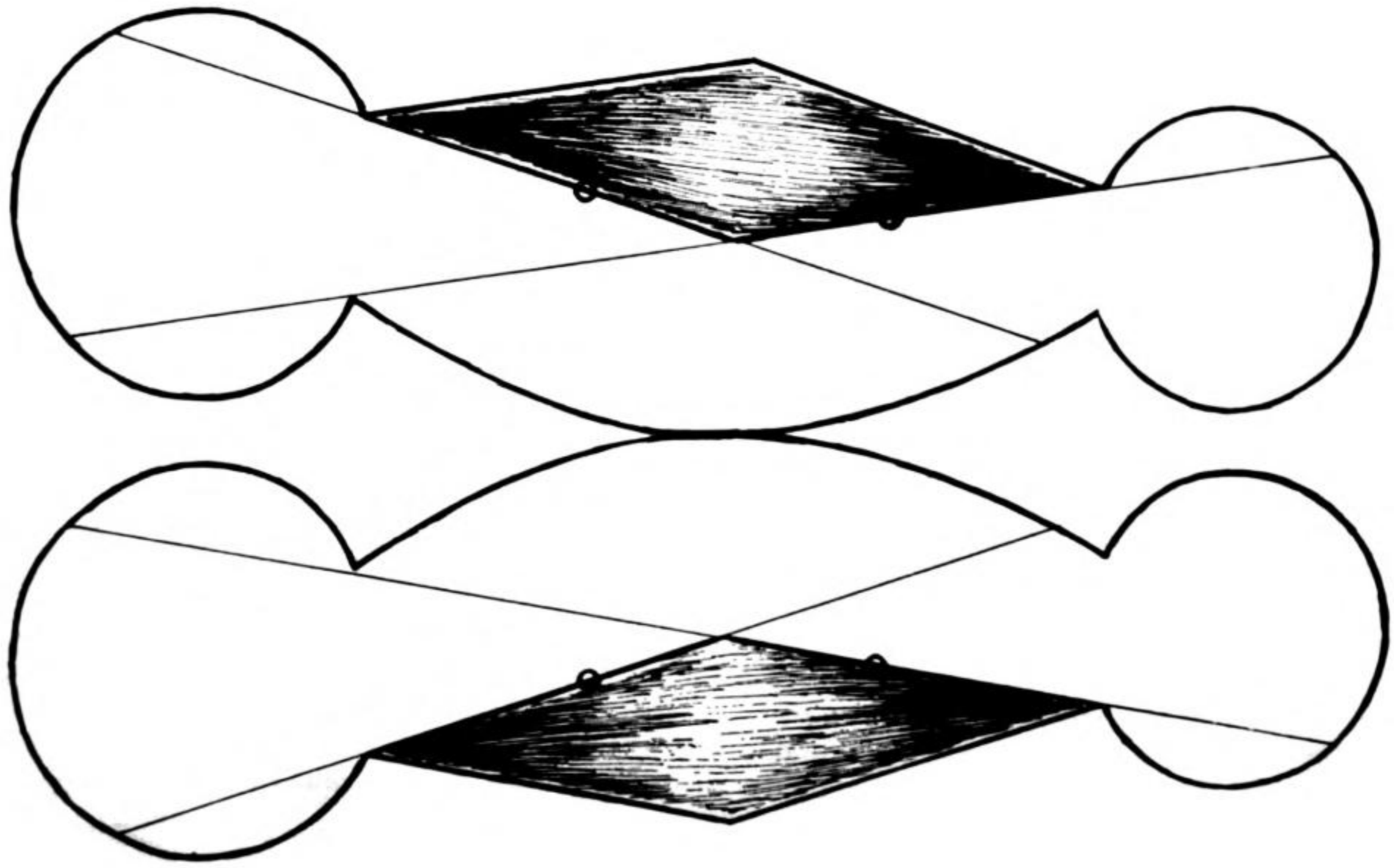
A .257 Roberts by Bill Watkins

This light weight .257 Roberts Mauser was built by its owner, Bill Watkins, owner also of the Sportsman's Lodge in Glendale, California. Bill doesn't call himself a stockmaker but he can show up a number of hombres who do bestow that title upon themselves.

The checkering panel is easy to lay out and easy to checker since the only straight lines in the outline are the master lines. If one chooses to eliminate the inlay in the forend, a straight line parallel to top of forend can be substituted. For best appearance I think it should intersect the circles same place the points of the diamond do.







Rock Maple Stock Blanks and the Tiger-tail Finish as furnished in the gunstocks of Hal Hartley

Almost two centuries back, and until the middle of the 19th century, the better American gunmakers produced a rifle of superb beauty with a one-piece stock of hard maple—rock maple, some called it—running clear to the muzzle and having a continuous series of darker streaks running across the grain of the wood. This finish, and often the wood itself, became known as "tiger-tail grain" or "tiger-tail maple" and legend has it that those attractive narrow streaks were produced by the simple expedient of wrapping the shaped gunstock with a layer of tarred rope, then igniting one end of the rope and letting it char and burn its windings into the wood.

Well, as the fellow said "That sounds all right and it makes a good story" but it just does not work out in practice and we advise the reader against trying it out. However, gunmaker Hal Hartley has, for some years now, been making gunstocks of rock maple with a tiger-tail finish that is the equal of any early American rifle. If you doubt this statement, take a look at the two examples of his work shown here.

In the following paragraphs, Mr. Hartley tells where and how he gets his maple stock blanks and explains how he puts this tiger-tail finish to them.

"As for the maple I use—I get it locally. The trees that are curly and hard seem to grow mostly above 2,500 feet elevation. Only a very small proportion are figured. I expect I have checked 1,000 trees and not over 25 of them were suitable for gun stocks. I get around to a lot of saw mills and ask the men to be on the lookout, but I do not get many suitable trees. Most of the curly trees that could be gotten out with any reasonable expense have been taken. Several of the finest trees I found were so far from a road, and in such a rough place that I had to cut the tree in 38" blocks, then split it in sections small enough to carry on my back. I did this with the tree the stock shown above came from. I got 54 blanks and carried them all of three miles thru the mountains. It took most of ten days.

"Some people claim they can spot a curly tree by the shape of the bark, but I doubt this. Some of the finest figured maple I have ever seen had straight bark. Many of the trees I tested had twisted, knotty bark, and were straight-grained. The only way to tell is to chop into them, and you only have to go thru the bark. If the tree is curly it will show where the bark joins the wood. Maple does not have a sap section, such as oak or walnut, and the wood next to the bark is as hard as it is near the heart. The trees I have found showed better curl at the bark and the figure played out as it got closer to the heart.

"I found a tree once that had a beautiful figure and it ran thirty feet high and right out to the twigs. The tree had been struck by lightning and was dead. The wood was not fit to use as it was beginning to rot. It almost broke my heart. It was not far from a road and would have been easy to drag in to a saw mill. There might have been 300 blanks in it.

"I like to let maple air dry at least five years and then have it kiln dried. Lenoir is a large furniture manufacturing center and there are some of the most up-to-date kilns here. I am lucky in having a gun nut that does my drying. I like to air dry walnut as long as possible, six to ten years if I can. I believe

when it air drys slowly the grain shrinks and closes the pores, and it makes tougher wood. If it is kiln dried before the wood shrinks it leaves the grain and pores open. The wood seems to be lighter and brittle too.

"I use a blow torch to scorch maple. Fire brings out the figure better than any stain I have ever used, and I've tried all I ever heard of or read about. I like to sand the stock smooth and get out all marks, scratches, and such. I use No. 3 paper for the first sanding and then use No. 6. I use fine steel wool to finish it up with. Then I raise the grain, as I would to whisker it. Then I fit the metal parts in the stock and get ready to scorch it. With the 'whiskers' standing up it seems to scorch quicker. I like to have the flame intense and do the scorching as quickly as possible. There is less chance of warping the wood around the thin parts of the action if it is done quickly. Care must be taken around the sharp edges and around the cheek piece or they will be burned. It is a job to get the wood scorched evenly and usually I have to sand some spots more than others. Sometimes the first coat of finish will cause some spots to show up darker. These must be sanded some more. I like to use four coats of linseed oil to bring out the grain.

"Of the commercial finishes I have used I like the Mashburn finish best. I do not use filler on any stock. I keep rubbing on and sanding down the finish until the grain and pores are filled. After the finish is built even with the surface I apply four or five more coats and rub the final one down with a felt block and rotten stone and oil. A finish usually takes 30 days on maple and 40 to 45 days on walnut. After the finish is completed I finish doing the checkering and brush in a coat of sealer. A little work with the buffing wheel on the grip cap and fore end tip completes the job.

"It is best to lay out the checkering pattern before the scorching operation. The wood is white and it's then easier to see the pencil lines. Since there are no two stocks shaped exactly alike I usually draw the design without a pattern. It is as easy to draw it on the wood as it is to make a pattern and then draw it on. A French curve and a piece of flexible steel are almost necessary. I like the diamonds to be three and a half times as long as they are wide and I have a template to lay out the master lines with.

"After the stock is completely finished I do the checkering. It would be better to do the checkering first if the finish could be kept out of it, but there is no way to keep the finish from working into the edges of the design and gumming it up. So, there is nothing else to do but leave the checkering until the last, and be mighty careful not to run over the edge with the tool. It's mighty hard to cover up a 'run over.' The checkering on a Sporter stock usually takes about 12 hours.

"Once in a while there will be spots in maple that show a tendency to 'fuzz up' under the checkering. When this happens I brush on a coat of du Pont's Household Glue and let it dry. This hardens the fuzz and the tool will cut it smoothly. Some times two or three applications are necessary. A few times I've run into this fuzz problem, on walnut, when I never did get it smooth. It doesn't always happen on the poor grade of wood either.

"This thing of bringing out the grain in maple has been a problem of mine for years. I have tried about everything I could think of or read about. I've tried different acid formulae recommended by Howe and others, but all these failed to work. Most of them ruined the wood, and none gave me what I was looking for. There are some expert wood finishers in Lenoir, and I expect they know about as much as the next one about stains and their use on wood, but they can not mix up anything that will give the results that flame will. The stain will show nicely in one position, but by moving the stock so the light will hit from a different angle the pattern, or figure will almost blank out. It will not do this if it has been scorched. It would be much easier to rub on some stain and get a nice, even color than to scorch with a torch.

"I have a piece of tin with a handle on it to use in the scorching. One side is half-moon shape, one is scimiter shape and the end is square. With this tool I can cover, or shade the edge of the cheek-piece, or most of the sharp edges that will burn too quickly. Another way to protect the edges is to have a damp cloth handy and rub these edges before using the flame. The dampness will keep them from burning before the surrounding areas are scorched. Each piece of wood is an individual case and has to be handled as such.

"With the flame a 'roaring' blue I hold it about four inches from the wood and move it across the stock, never lengthwise, and I keep it moving. To stop will nearly always char a spot. Move the flame across a spot fairly rapidly until the wood begins to darken and the grain begins to 'come out;' then move it just fast enough to keep the figure showing.

"To me it is a fascinating thing to watch the curls, bars and stripe form under the flame. The parts that turn darkest are nothing but the edges of the end grain of the curl, or twist. The smooth part of the curl is harder and darkens more slowly. When a stock is properly scorched and finished there will be areas of deep brown and a light tone, or yellow.

"There is a look, and appeal about a properly made and finished 'tiger' maple stock that no other wood has, and it has been that way since the first flint

lock guns were made in this country. I've worked with some beautiful walnut wood, and I like it, but to me maple is tops in beauty and durability.

"A 2½ grain permanganate tablet mixed in 1 ounce of water makes a good solution. It's a cut and try problem though, since it will react in different ways on different wood. I rub on the stain and then polish it with a flannel cloth. If it isn't the shade I want I run on more, or rub it down with fine steel wool. By applying the stain and rubbing it with steel wool you will be able to blend it in with the scorched part.

"It is impossible to take a blow torch and scorch a gunstock without burning some spots more than others. These spots must be sanded down to the same shade as the general color. The first coat of finish will always bring out some spots that will be too dark, and they must be sanded again.

"Some people like a mottled, or spotted appearance, but I like the 'tiger' stripes, or bars to show up the contrast. A scorched and properly finished tiger maple stock will look three dimensional. I have never been able to get stain to show this effect as well as flame will.

"Once I had a severe case of poison ivy on my legs and was using a solution of permanganate of potassium crystals and water; this solution was a purple color in the glass, but it had turned my skin a deep brown. I had been fooling with stains on wood and decided to try this potassium on maple. So I smoothed up some blocks and sanded them down slick and hard. Then I raised the grain as I would to 'whisker,' and applied the potassium. It showed up pretty well. So I tried different strength solutions and different amounts of coats on different blocks. This has given me the nearest to a flame color of any stain I have used, and I now use it around the cheekpiece and on the sharp edges where the torch would burn the wood away too much. After the scorching and touch-up staining I use No. 6 fine sandpaper to smooth up the wood and to get it as nearly an even shade as possible at the time. The wood, if it is hard maple, and it should be, will be almost glass smooth and the 'sealer' coat of finish would not even stick to the surface. So I warm the stock with the torch and then dampen it again. Then I use the torch to dry the wood as quickly as possible. This does not raise the grain much, but it will help some and the 'sealer' will penetrate a bit. After the 'sealer' dries, which will take about 24 hours, I apply three coats of stock finish, letting each dry thoroughly. Then I sand the finish down to the wood. The finish left has a good 'hold' on the wood and what few pores there were are now filled.

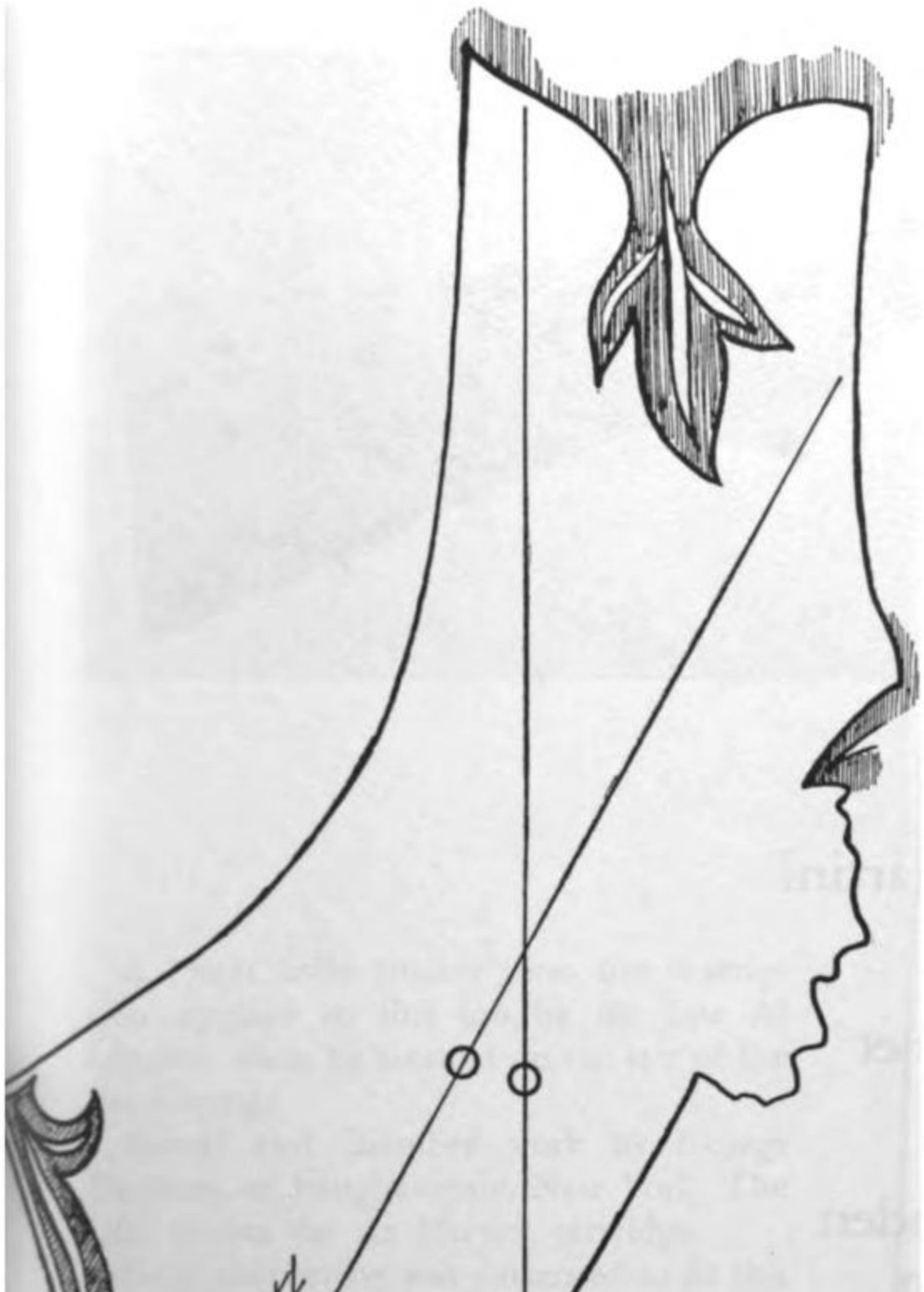
"Now I can go ahead with the finish, which usually takes two to three weeks. In the winter time, or in damp weather, I use a drying cabinet. In warm weather I like to hang the stocks in the shade where the air can circulate. It takes 10 to 15 coats of finish on maple, each one sanded down, and the last one rubbed with a felt pad and rotten stone. Walnut takes more coats and time, depending on the size and depth of the pores and grain of the wood. For several years I used duPont's Penetrating Wood Finish, but they came out with a new formula and I could not get a satisfactory job with it. I cannot find any of the old formula and for about a year I have been using Marine Spar Varnish.

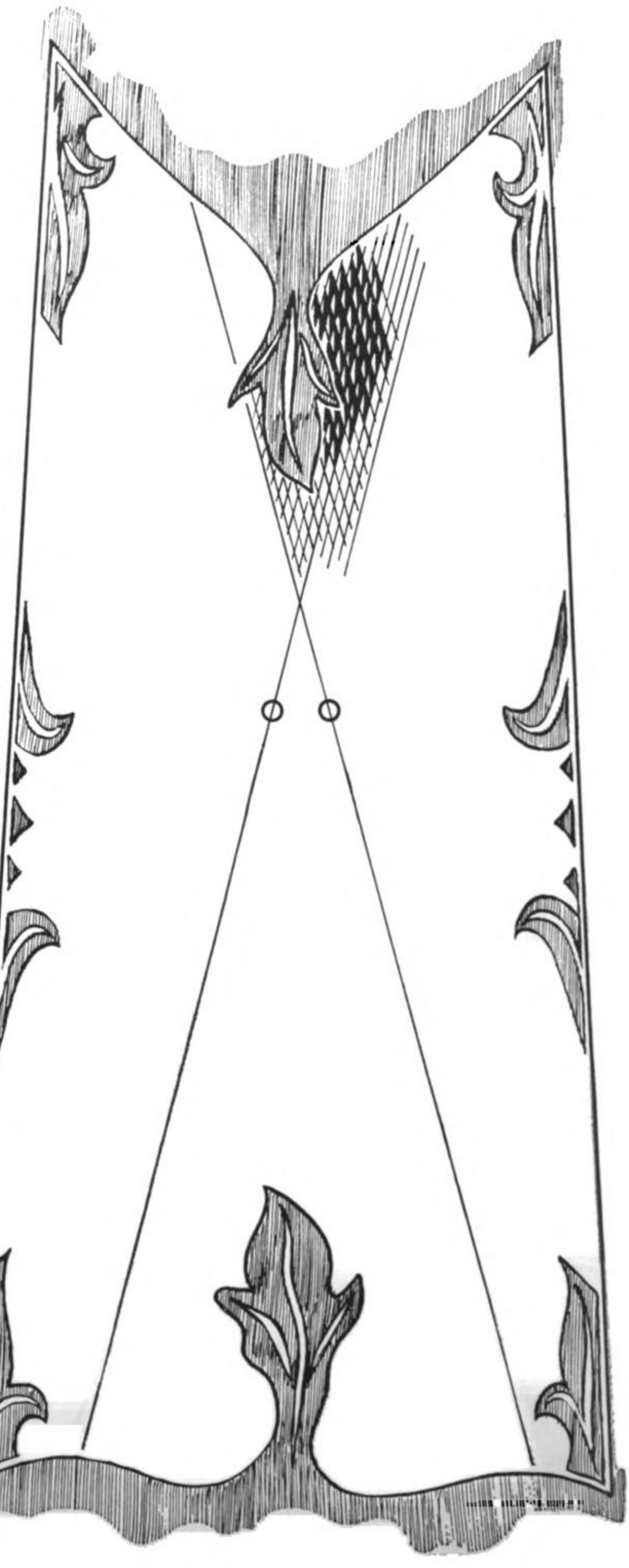
"I have found that it will not do to mix finishes on the same stock. Use the one all the way. You cannot use one for a few coats and change to another. They do not often stick together. Maybe some day I will run on a finish that suits me. I keep trying and looking—and hoping."

HAL HARTLEY

"The two guns shown belong to Ralph Heberling, Spartanburg, South Carolina. He has a room full of guns, and he uses them, too. The Hi-side is a Kilbourn-Hornet. The scope is a Weaver 330 with a Litschert attachment.

"The Win. 70-270 has a 'scope with three Lee dots. I don't remember the power, but I shot a 13/16" 5-shot group at 100 yards from a bench rest when I restocked it. Heberling claims he uses it in preference to his "Varmint" guns when he goes after woodchucks. He does a lot of reloading for his guns and he uses a 130-gr. bullet in the 270 for 'chucks. He told me he could kill 'chuck regularly at 300 yards when he could get a prone rest. He can do it, to."

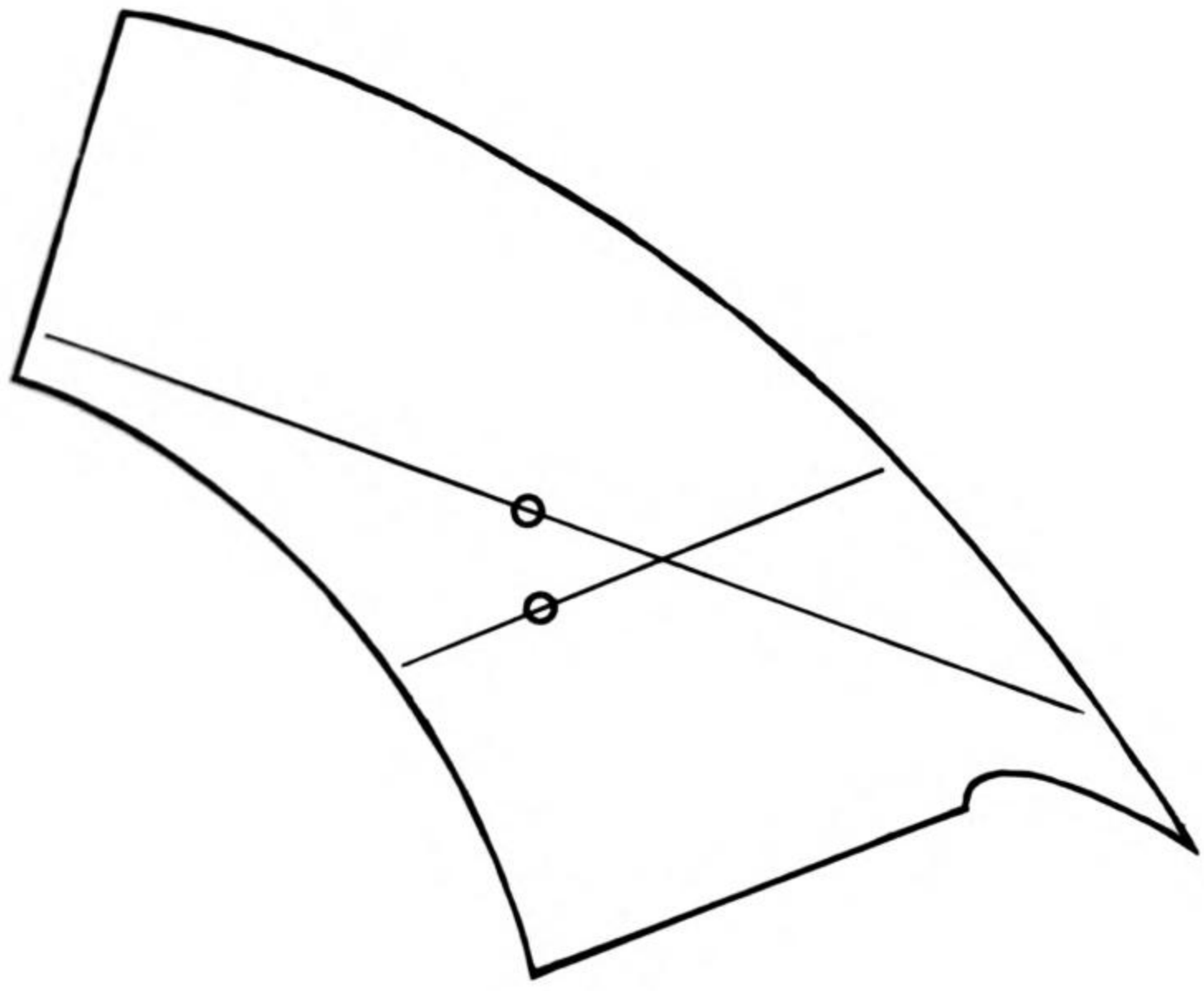


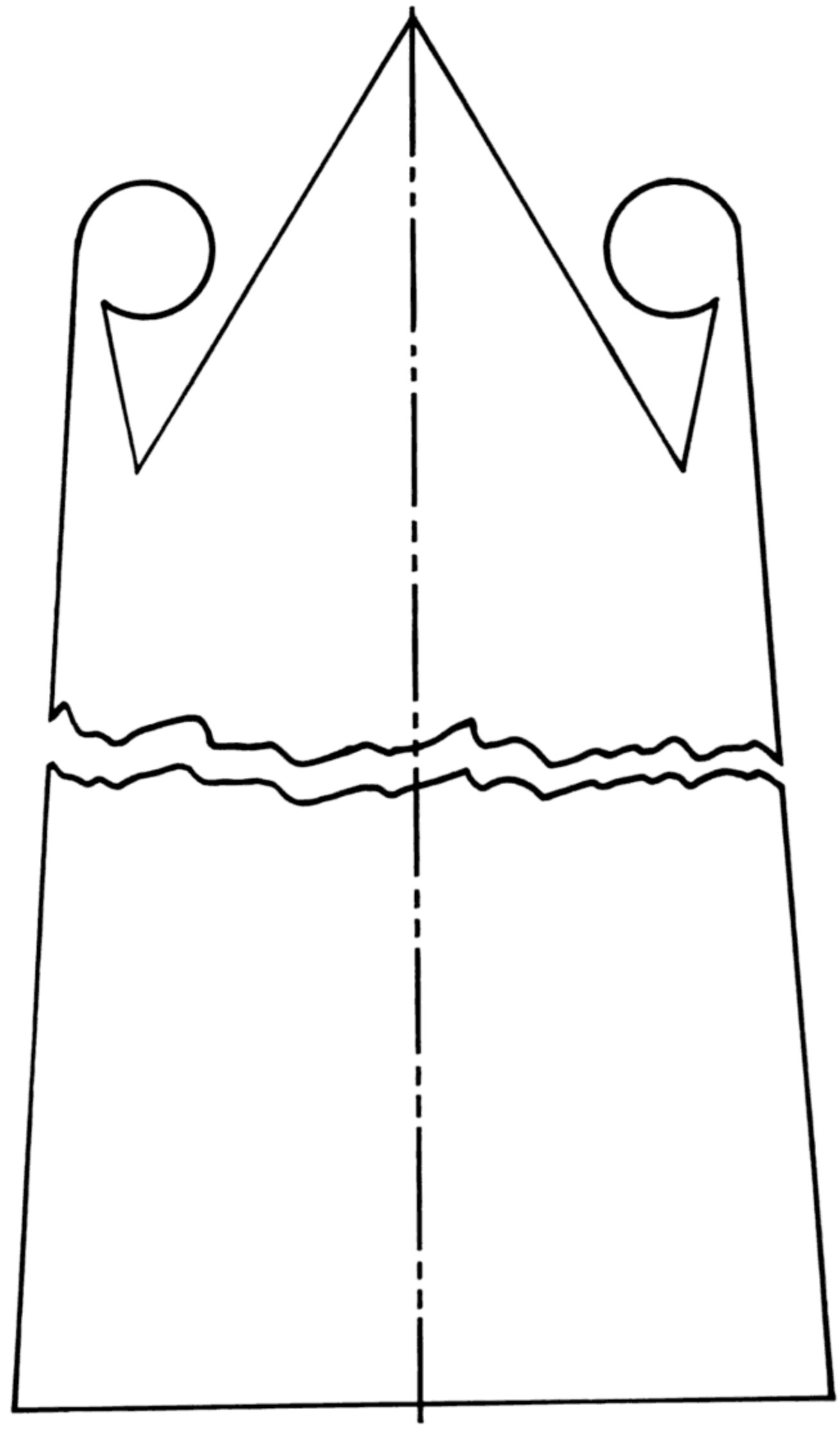


Here is a design which is a bit different from the so-often-used fleur-de-lis—which is why it is shown.

This is a simple yet very handsome pattern for the gunstocker who can do "yust a leetle bit" of carving in addition to his ability to handle the spacer and V tool. It is one of Hal Hartley's special patterns and looks mighty nice when done right.

A
Greener Martini
in
.22 Hornet
by
Alvin Linden



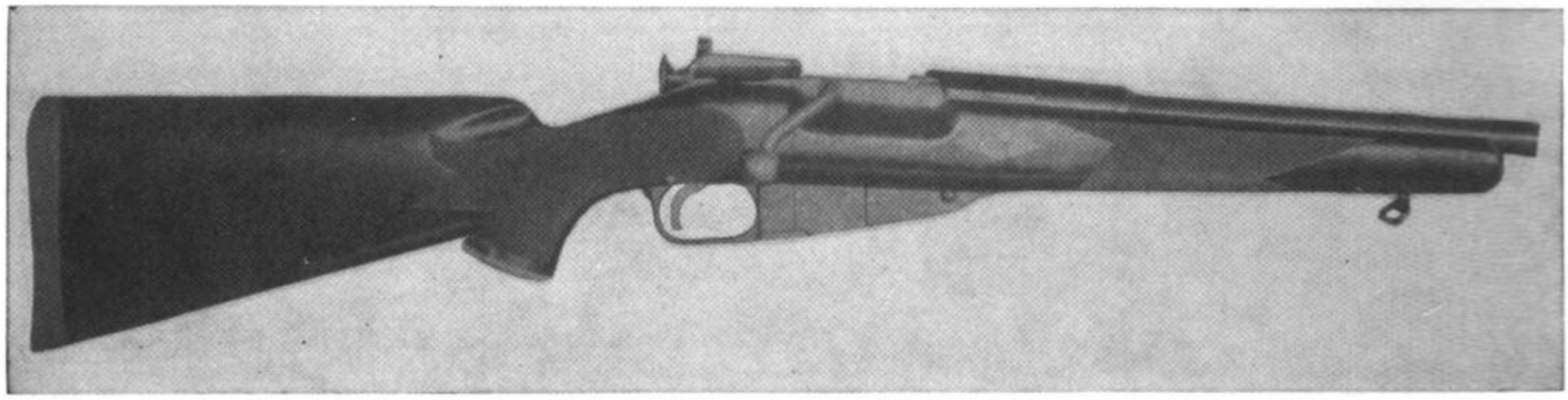


A "neat little trinket" was the description applied to this job by the late Al Linden, when he cleaned up the last of the checkering.

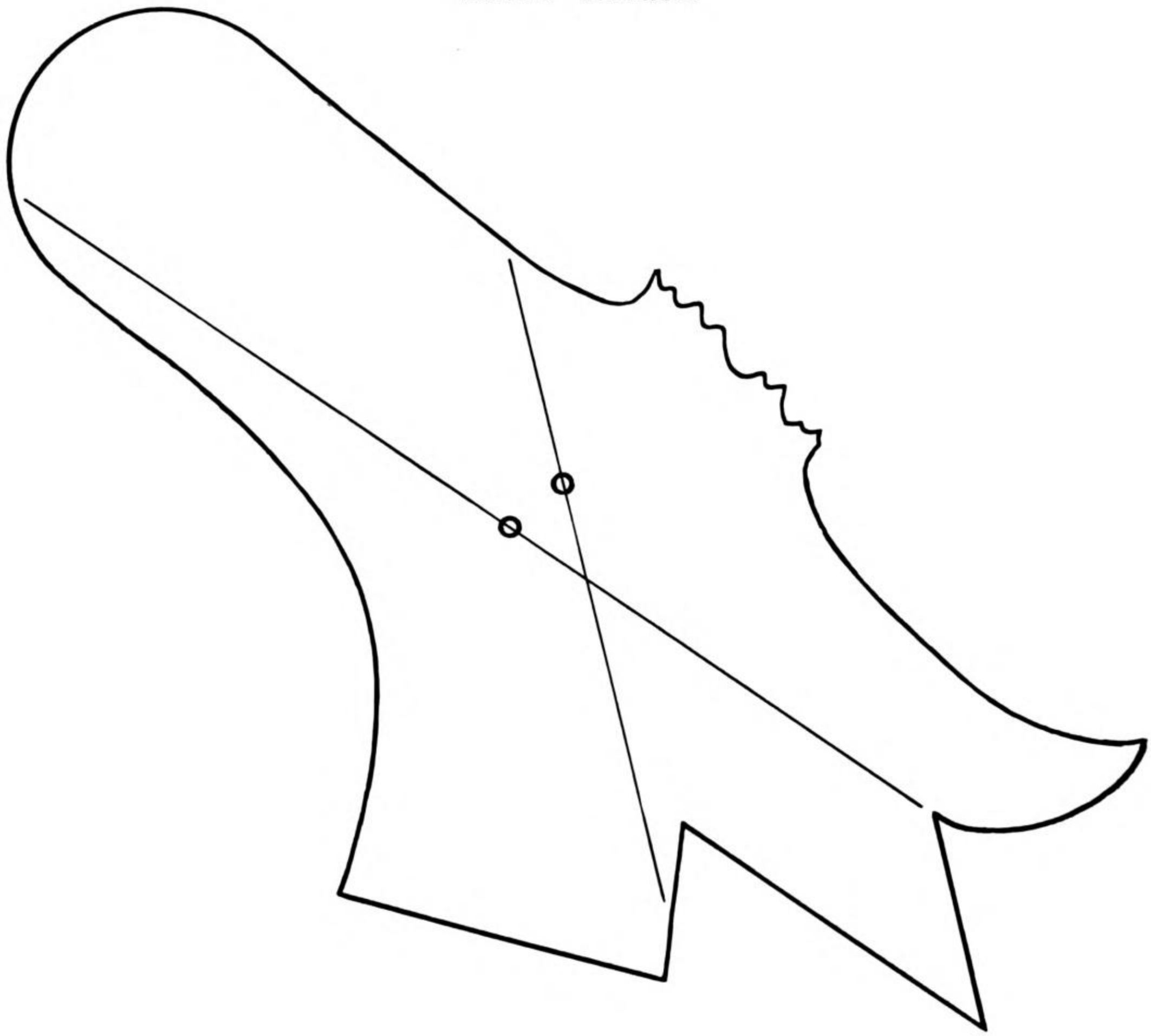
Barrel and chamber work by George Sheldon, of Poughkeepsie, New York. The rifle shoots the .22 Hornet cartridge.

Grip checkering was patterned to fit this peculiar type of action. The forearm pattern is a simple one that can readily be stretched out to fit any length of forearm.

This rifle was built for O. A. Austin, Madison, Wisconsin.



A "Three Line" Russian Rifle
remodeled by
Alvin Linden

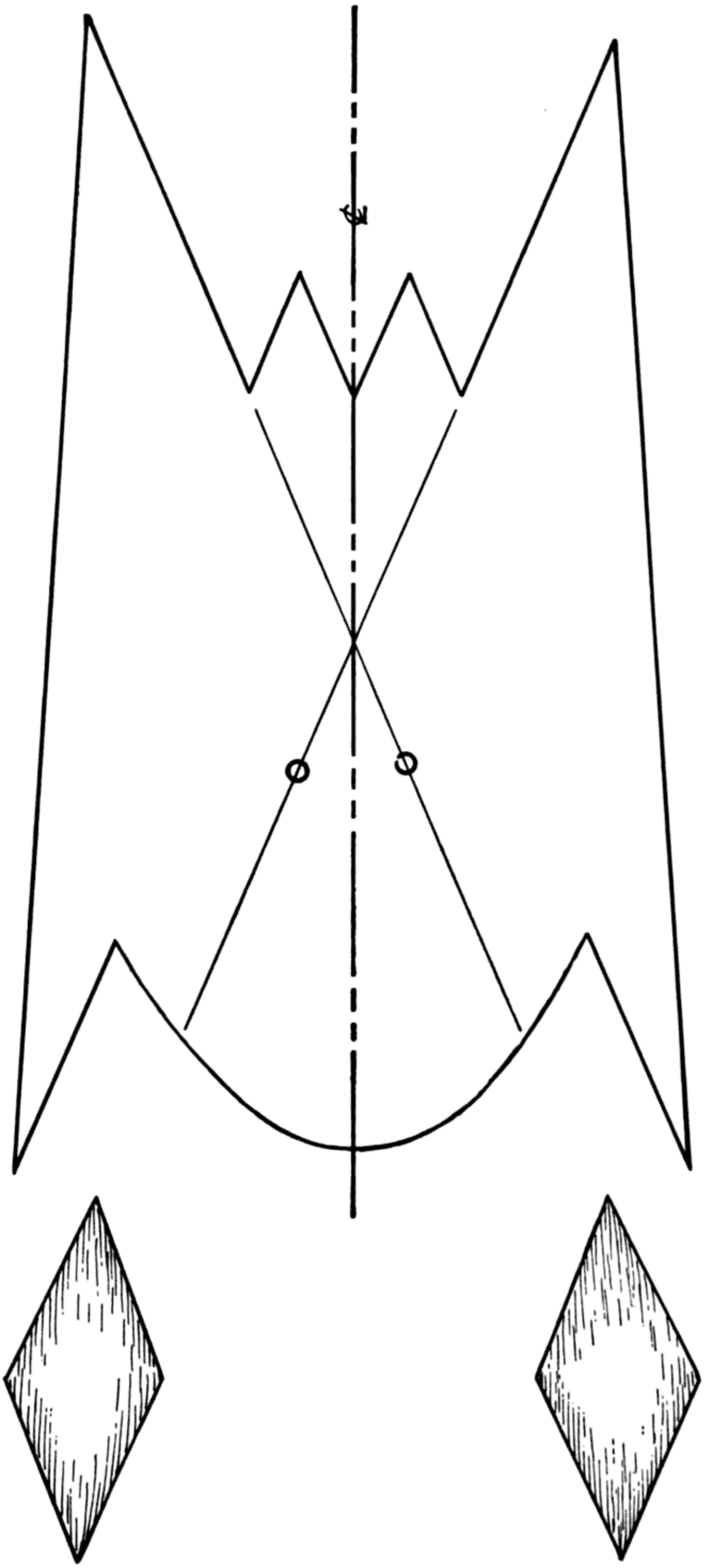


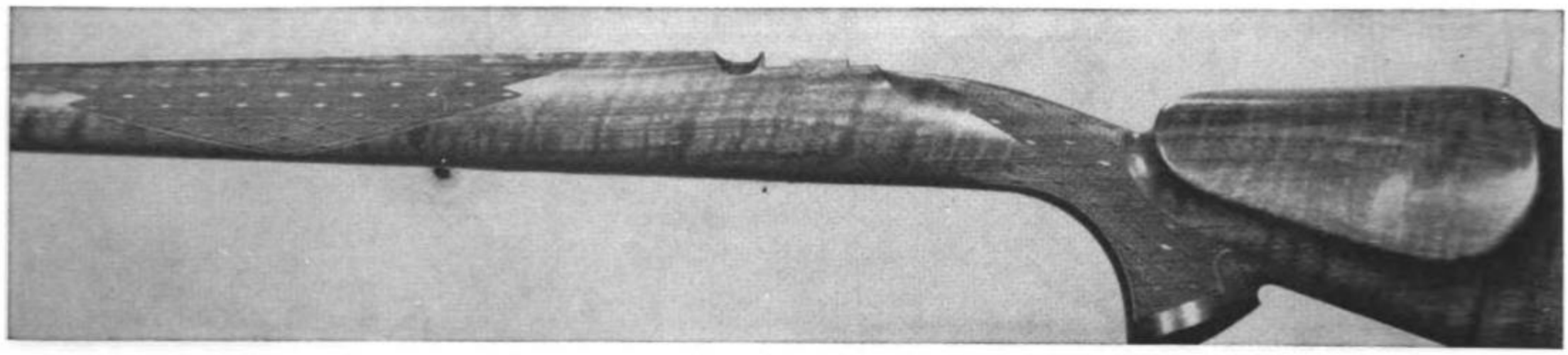
These "three line" (7.62mm or .30 caliber) Moisin rifles are commonly known as "Russian rifles" and were sold by the thousands to members of the N. R. A. after World War I. They made up into rather nice sporting rifles when remodeled by a qualified gunsmith. Here is shown one after being worked over by the late Alvin Linden, who wrote:

"This is the last 7.62 Russian Moisin that I remodeled and restocked. It belongs to Linus Carlson, up in the northern part of Alaska. Rumor has it that Linus killed a Kodiak with it, but took care not to let the b'ar know that it was being shot with something smaller than the .375 H&H or the .505 Gibbs.

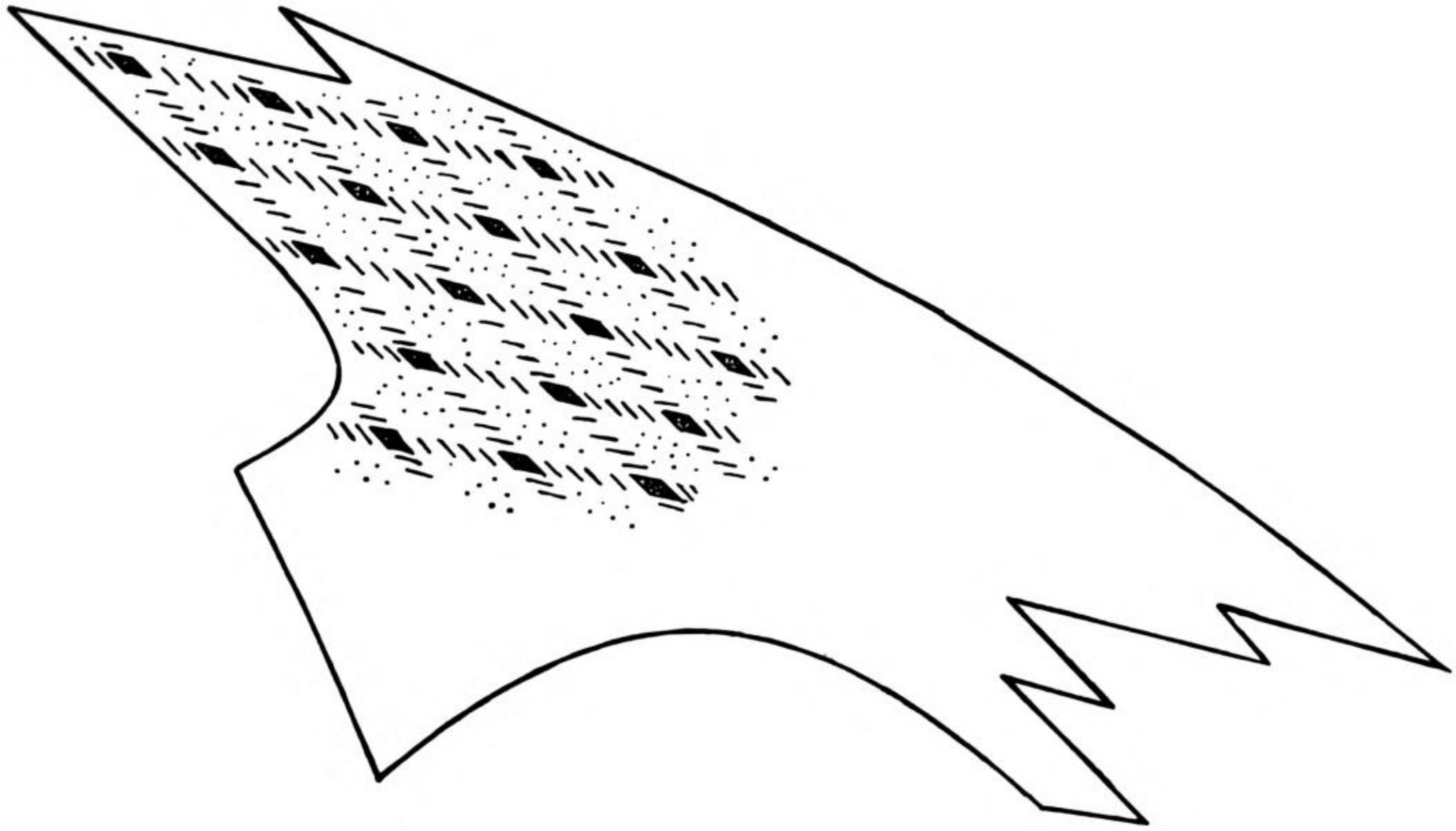
"There is only one thing *wrong* with these rifles—we can't buy them 'brand new and in the original cosmoline' for three dollars and thirty-four cents ($3.34) 'no packing charges on obsolete rifles.' Nor is it possible to buy a case of sealed 7.62mm ammunition (1,000 rounds in the case) for $4.00, plus freight from Benica, California.

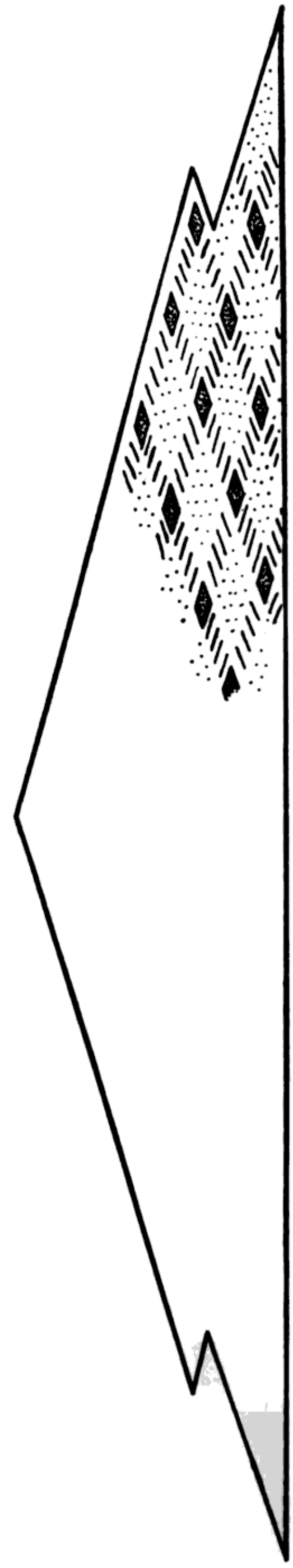
"This extravagant waste of surplus rifles and ammunition was bemoaned by the anti-gun fanatics and those who had private axes to grind, but of all the bread Uncle Sammy has thrown, and is throwing, on the waters of Time none has brought greater returns in training young lads to shoot *real* rifles."



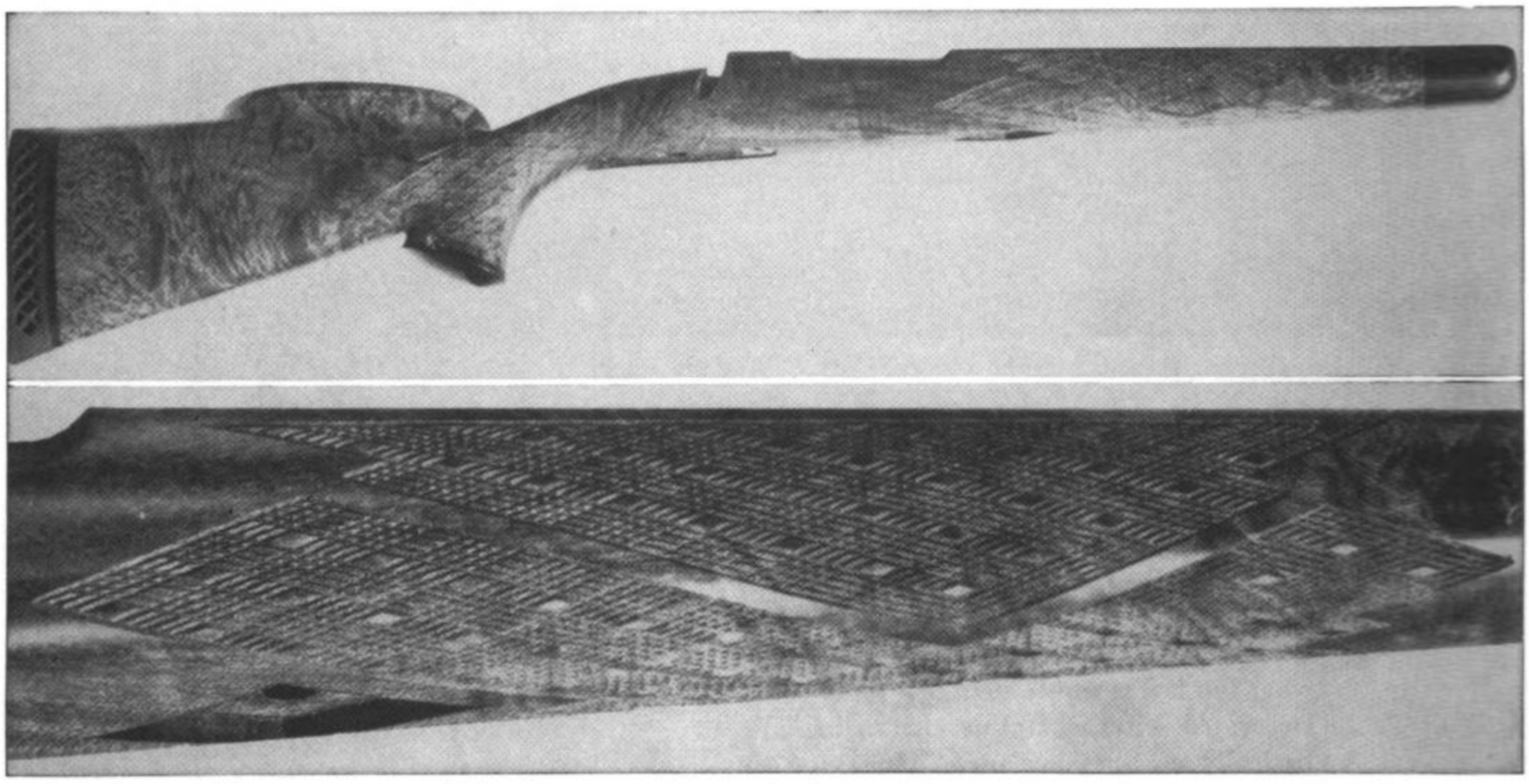


A Skipline Job
(or French Checkering)
from
Monty Kennedy





The stock from my light-weight .257 Roberts. The wood is a pre-war Mitchell Bosley blank I got for $10! (a reminder of what ten bucks would do a few years back). Decorated with a skipline checkering job, basically 20 lines per inch. The skips are double spaced or 10 per inch. This is a fine hard piece of wood and was a real treat to checker. The iron that goes with this stock is a commercial Mauser action that I had Chas. Crowe, of Lawndale, California, shorten for me several years ago. Stocked with concealed magazine (just a nest for three cartridges in the wood with a neoprene bumper at the front end) and a Krag triggerguard.

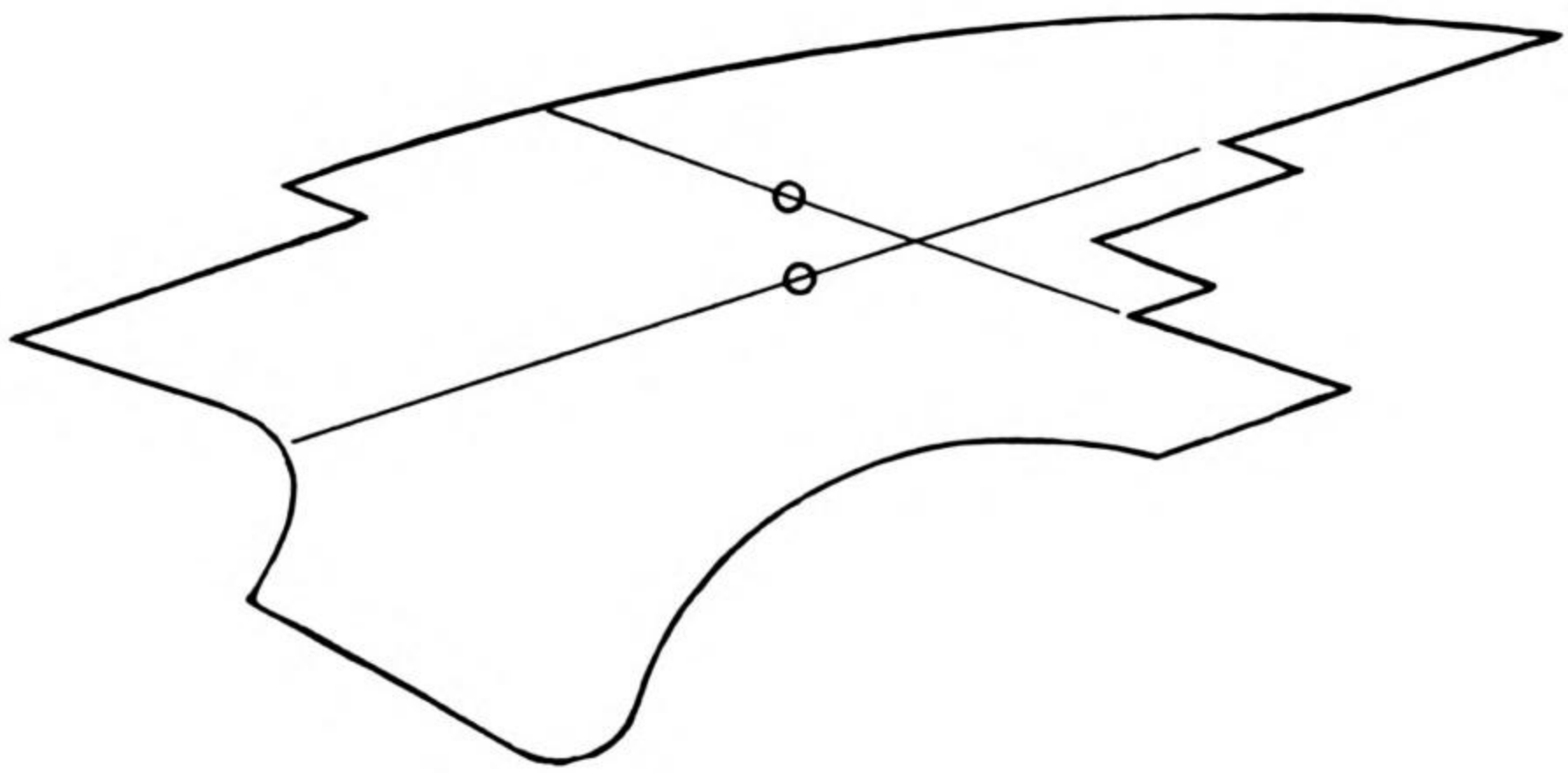


A .257 Roberts

Checkered with the No. 10 Pattern

by

Monty Kennedy



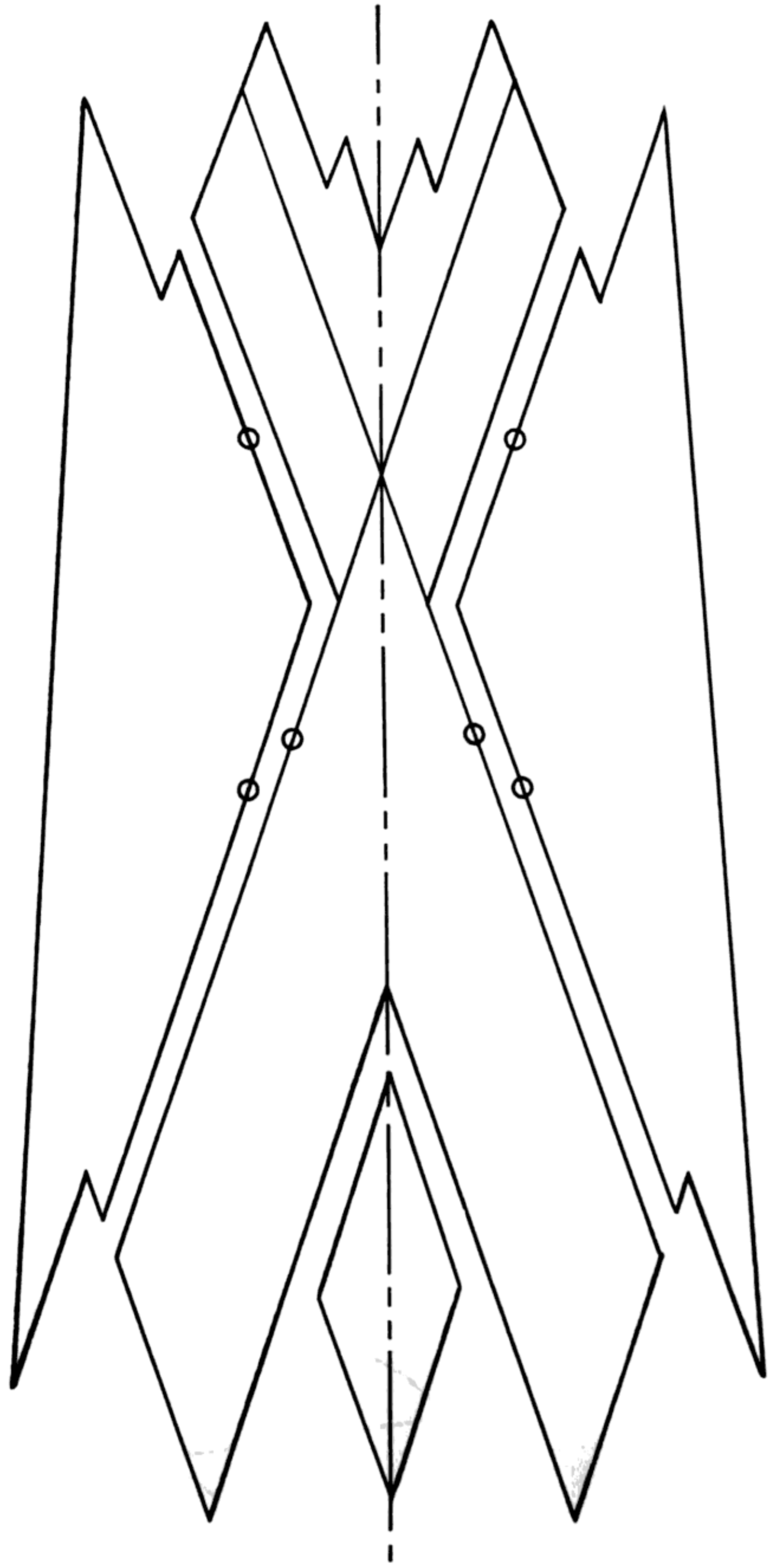
The Number 10 or what I call my "Installment" Pattern. An odd name for a checkering pattern, perhaps, but there is logic in it just the same. You see, if you happen to desire, or think you might desire, a full checkered fore end but have not the time or the energy to do so immediately, yet want some scratchin' right off the bat, this is a pretty good one. The two side panels may be done and the center panel added later, or vise versa. Don't know just why one would "vise versa" though, the side panels will best hold their own alone. However, the master line angles must be laid out from the center line rather than base lines, otherwise the whole angle set-up would be haywire.

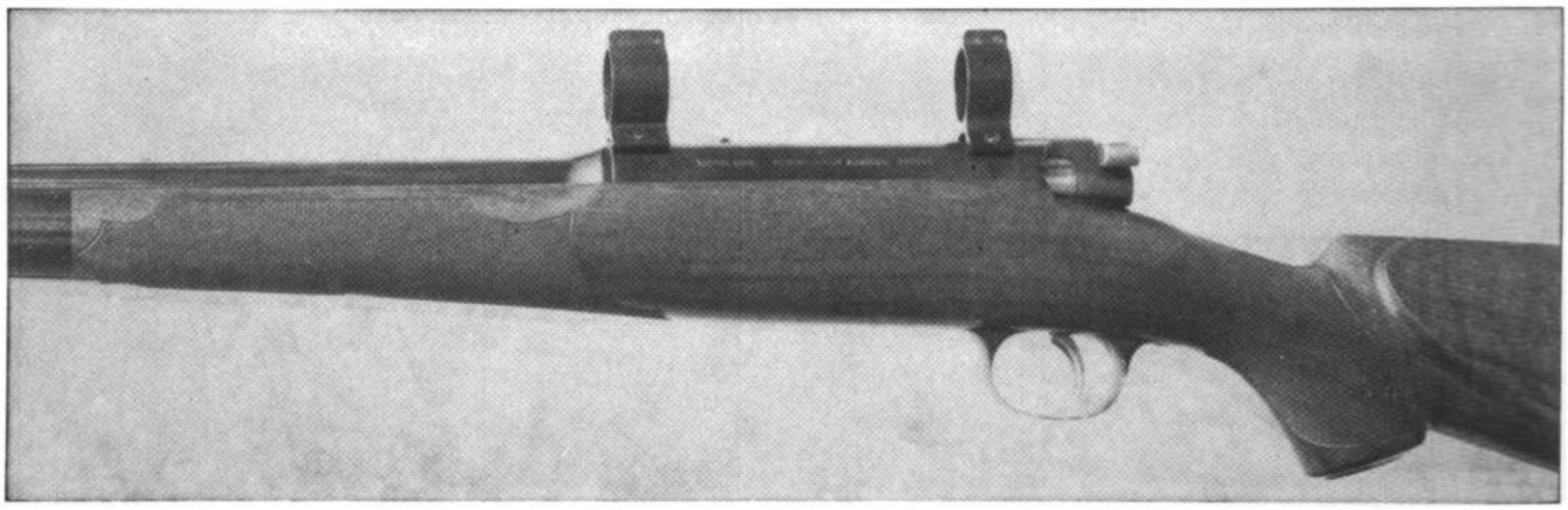
In this particular case the master line angle was slightly altered to make the checkering coincide with the angle of the diamond shaped escutcheon for the forward receiver screw, making the diamond have a 1-to-3 proportion rather than the usual 1-to-3½. Spacing here is 22 lines per inch, the skips being the equivalent of 11 per inch, the ribbons separating pattern being ⅛ inch wide. Fore end panel placed farther aft than usual on account of shortness of stock and to fit owner's reach. Over three years elapsed between the time this stock was made and checkered.

Here is another case where very careful and precision spacing pays off, in order to bring about a symmetrical pattern, The grip panel is just a regular standby of mine. Seems like I have no initiative here, see this pattern and you've seen most of 'em.

This is the stock from Doris Waltman's .257 Roberts, one of the lightest and most beautiful stocks I have ever made.

The "diamond" shown at rear end of this forearm pattern happens to be the steel escutcheon for the front receiver screw.



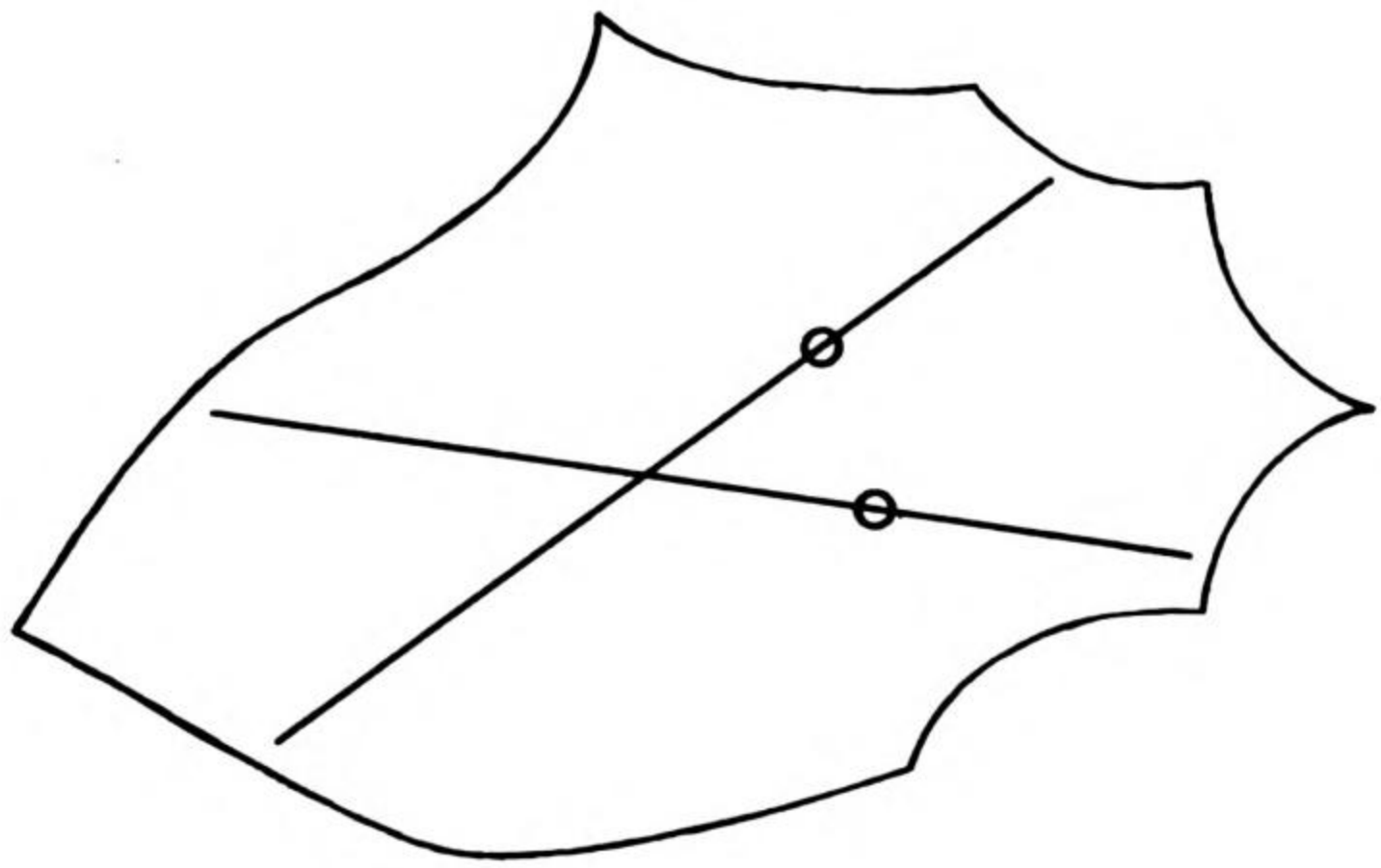


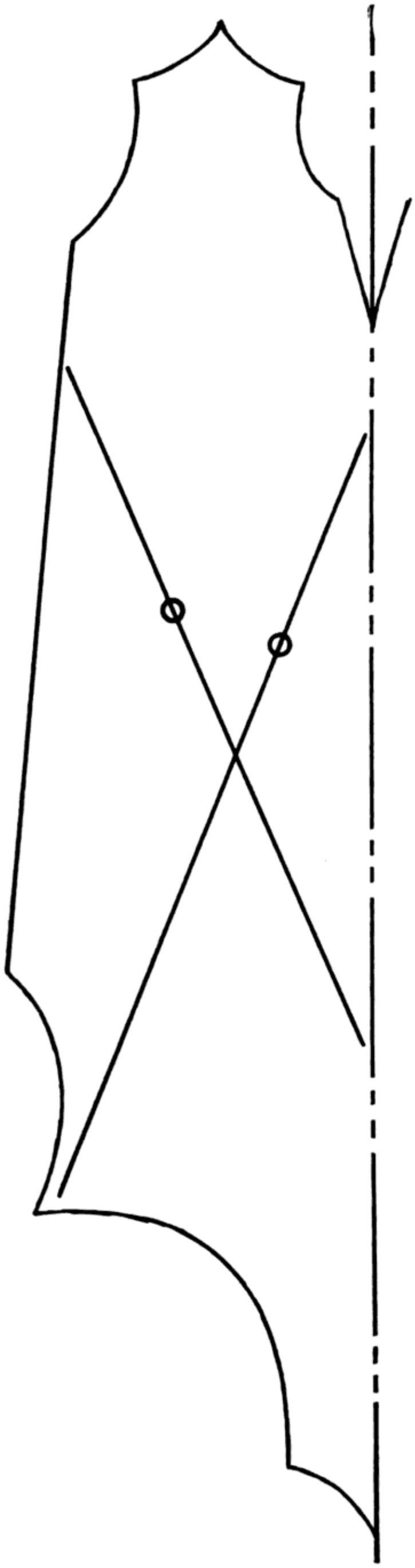
Single Shot Krag Rifle

Restocked and Checkered

by

Kerr's





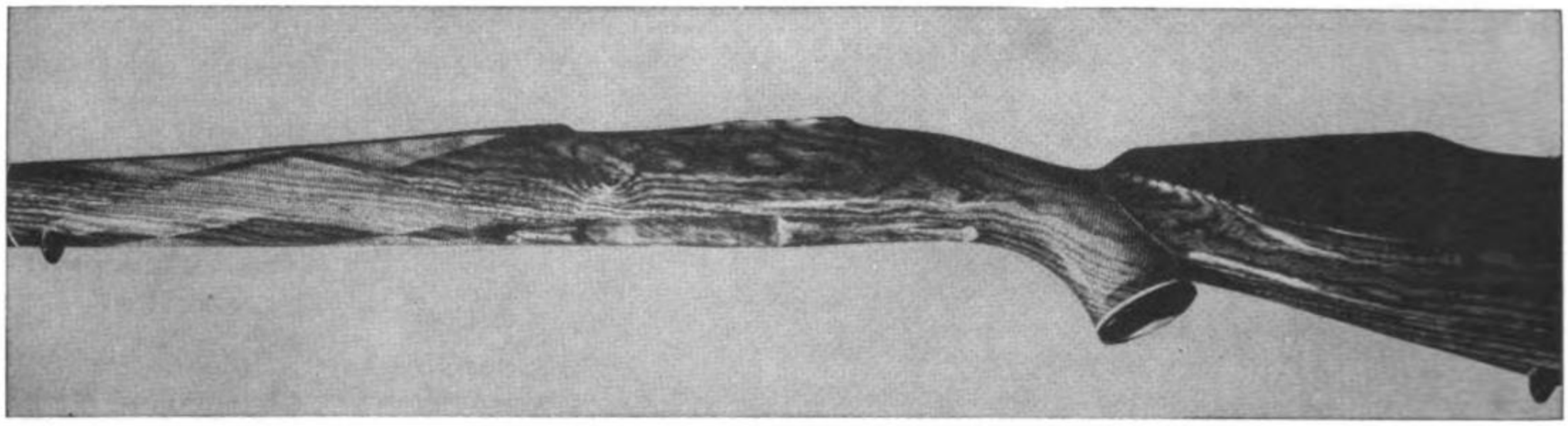
A single shot Krag .224 P. R. Sporter stocked and checkered by Mr. Hungerford, of Kerr's, Beverly Hills, California. The fore end panels meet at a center line on the underside, having worked from a pair of master lines for each panel. The grip panels are of unusual shape, separated by a quarter of an inch on top of grip and about 5/16" at the closest point on the underside.

No bolt handle alteration is necessary on the Krag for mounting scope, but a slight change was made in method of anchoring extractor; the usual dual diameter pin that ties in the extractor was removed in favor of a screw that is removeable from top side. This allows removal of bolt from receiver without molesting the scope or mounting. The Weaver top mount is a good one for the Krag on account of the clearance in the aft ring over the extractor.

All the magazine has been removed from this job to make for light weight and smooth lines. This rifle is capable of 1" angle accuracy.

This rifle had been originally built for Pann Mallas, of North Hollywood and barreled to the P. R. while I was at Pfeifer's. Pann swapped it off and in the process of running it down I traced it to John Garner, of San Fernando and wound up by trading John out of it for myself. Gun Nuts are the damndest traders, wors'n horse traders I think.

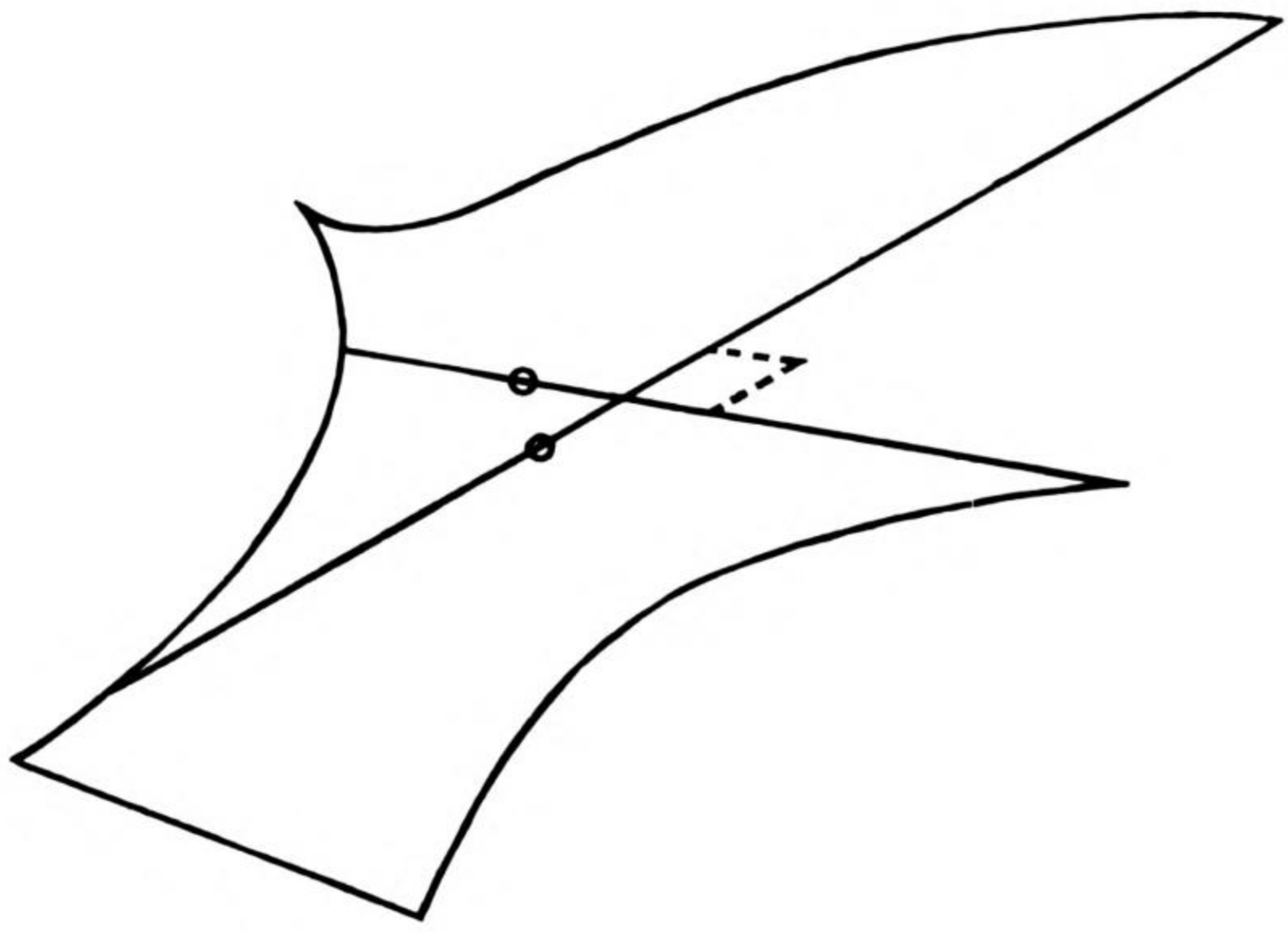
Monty Kennedy

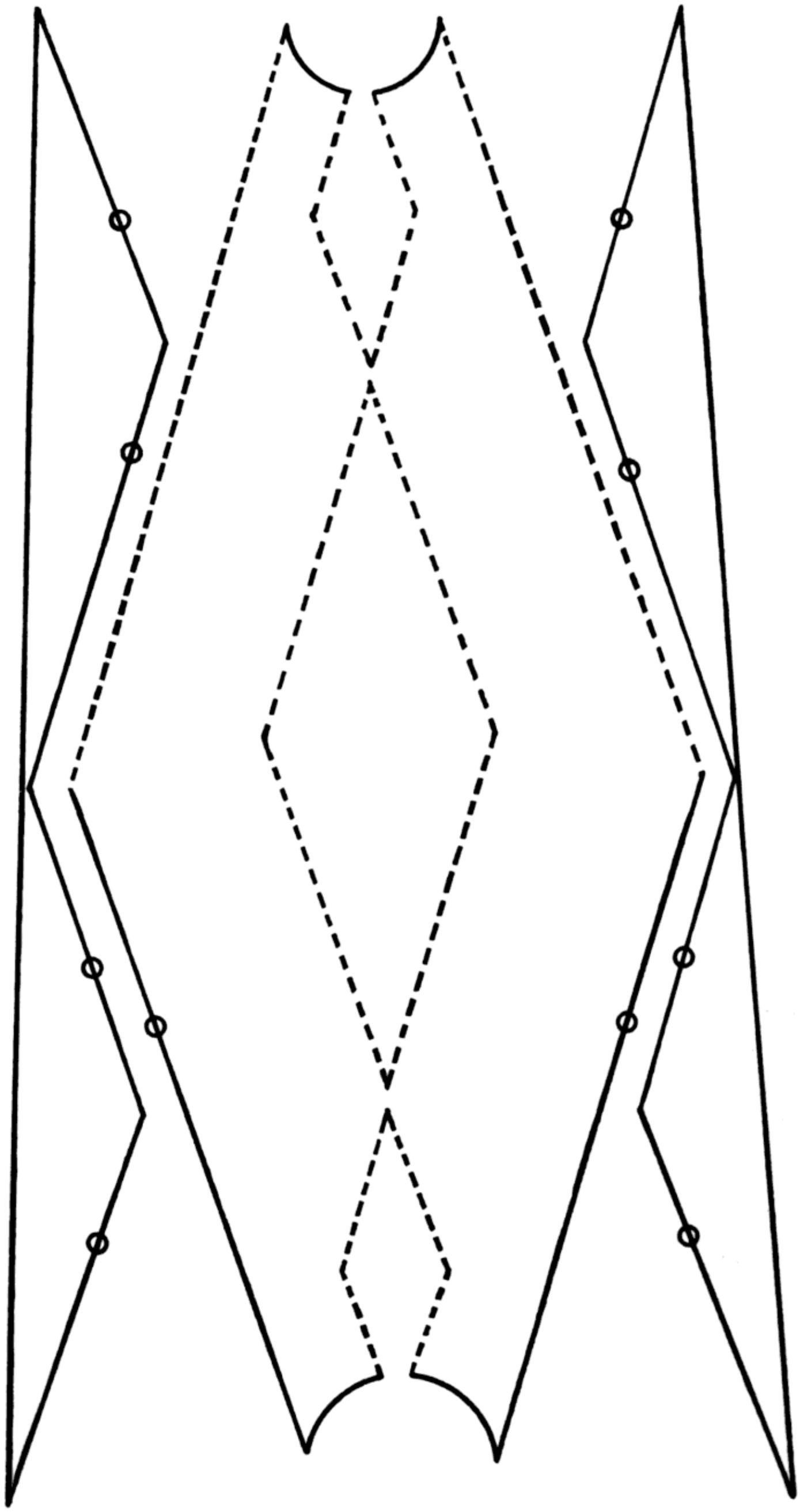


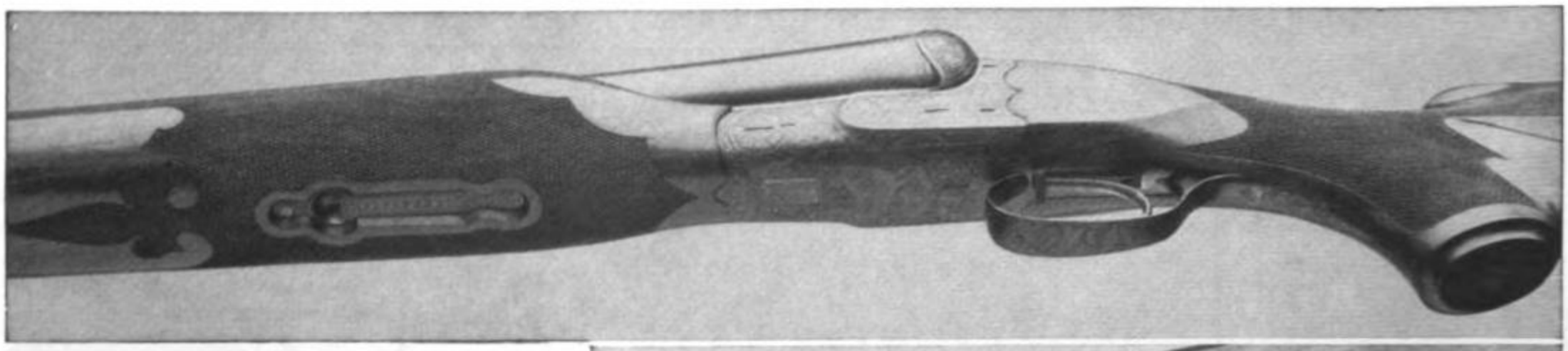
A Panel Job in Rosewood
By Leonard Mews

This South American rosewood job was made and checkered by Leonard Mews and belongs to Joe Landon of Southern California. There are actually six panels of checkering on the forearm, making a total of eight panels on the stock. Leonard's checkering is usually about 24 lines per inch and is neatly and artistically done. And there are many woods easier to work than S. A. rosewood, both for whittling out a stock and checkering. I'll bet $4 against a broken down shotgun that Leonard was glad to get the deal finished.

Monty Kennedy

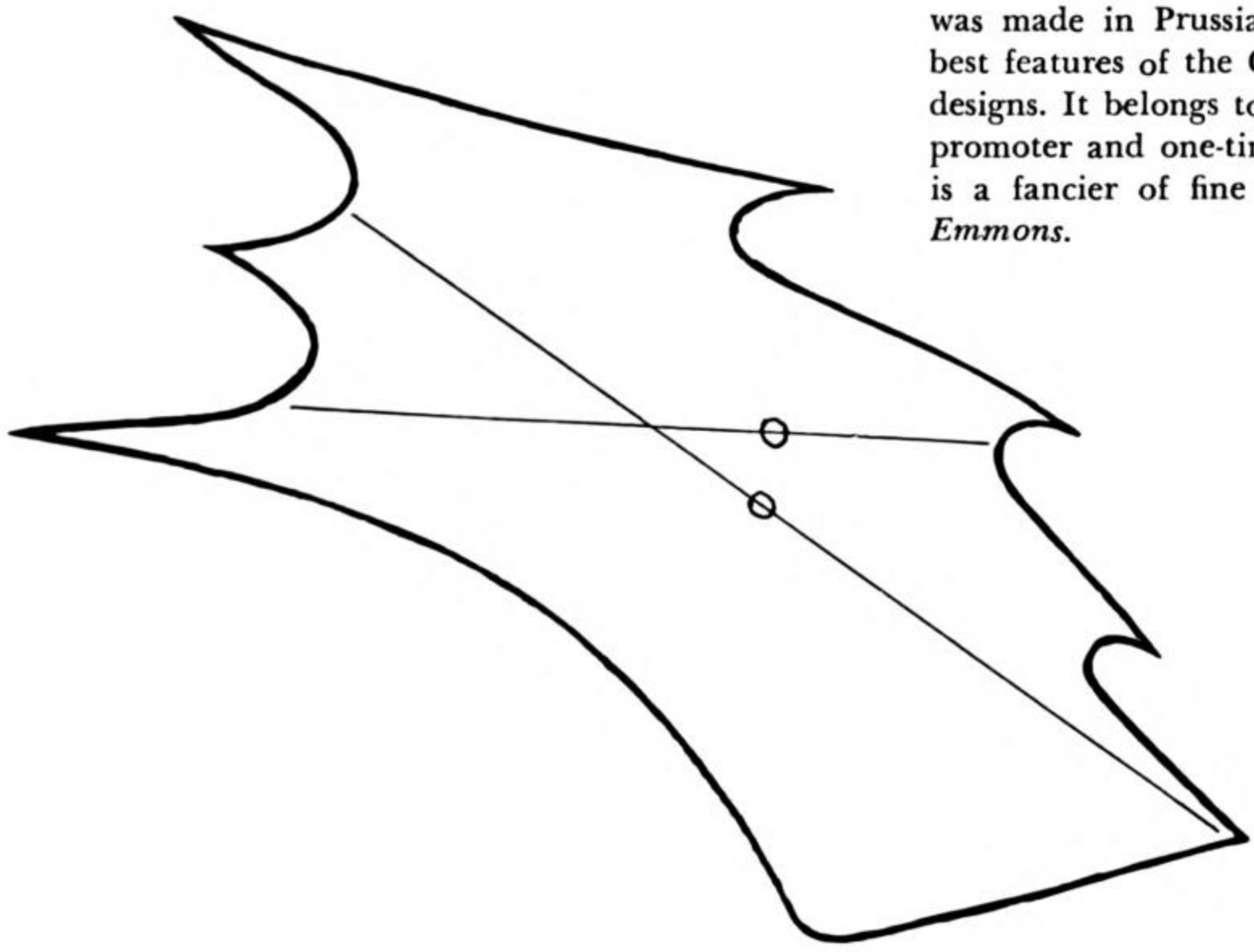


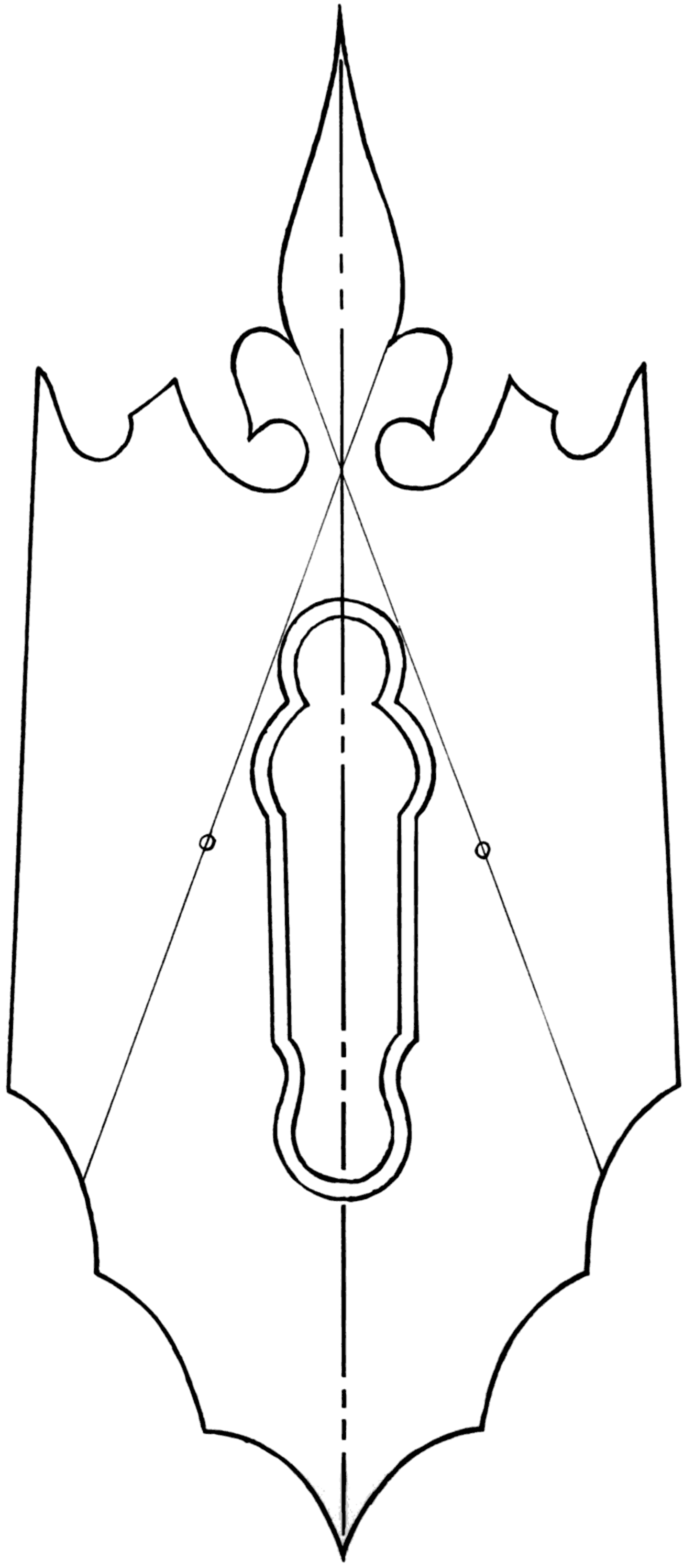


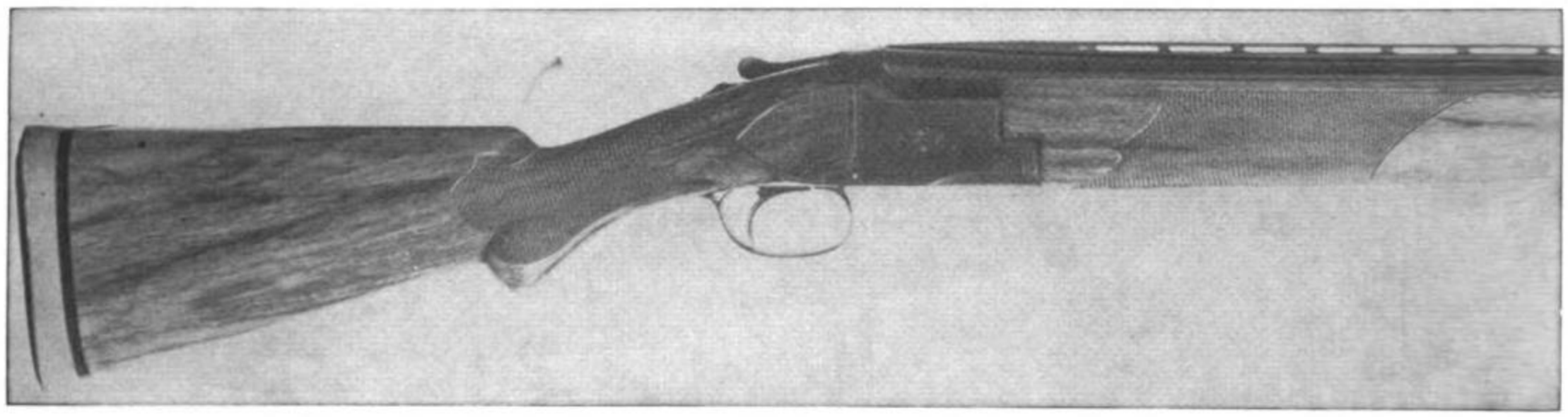


A
Sauer
Double Shotgun
from
Kerr's

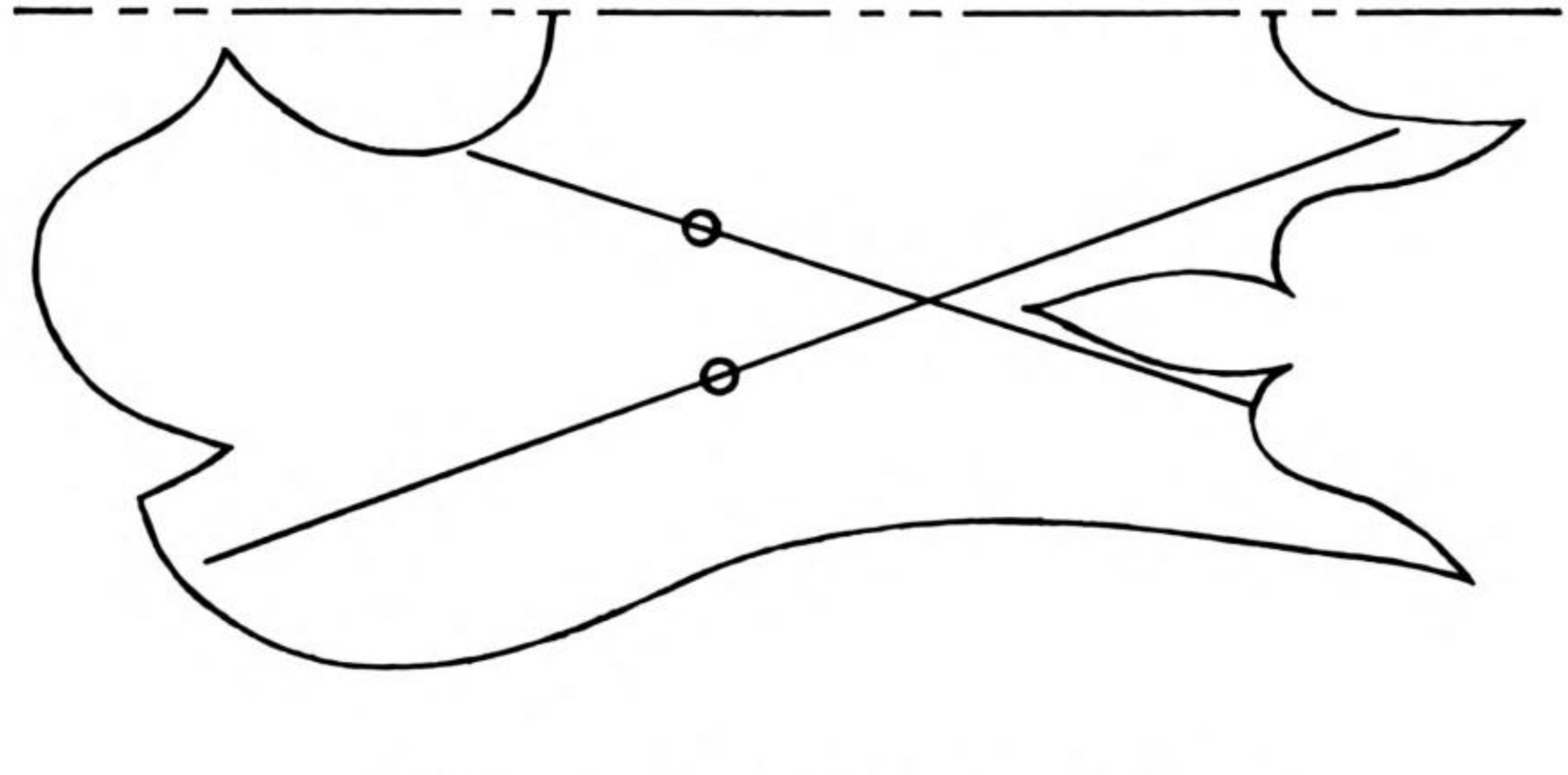
Walter Strand, stockmaker at Kerr's, of Beverly Hills, California, restocked and checkered this J. P. Sauer and Son double gun. Walter tells me the gun was made in Prussia about 1905, and combines the best features of the Greener, Anson-Deely and Purdy designs. It belongs to Hugh Nichols, now a wrestling promoter and one-time wrestler himself. Mr. Nichols is a fancier of fine guns and dogs. *Photo By Bob Emmons.*



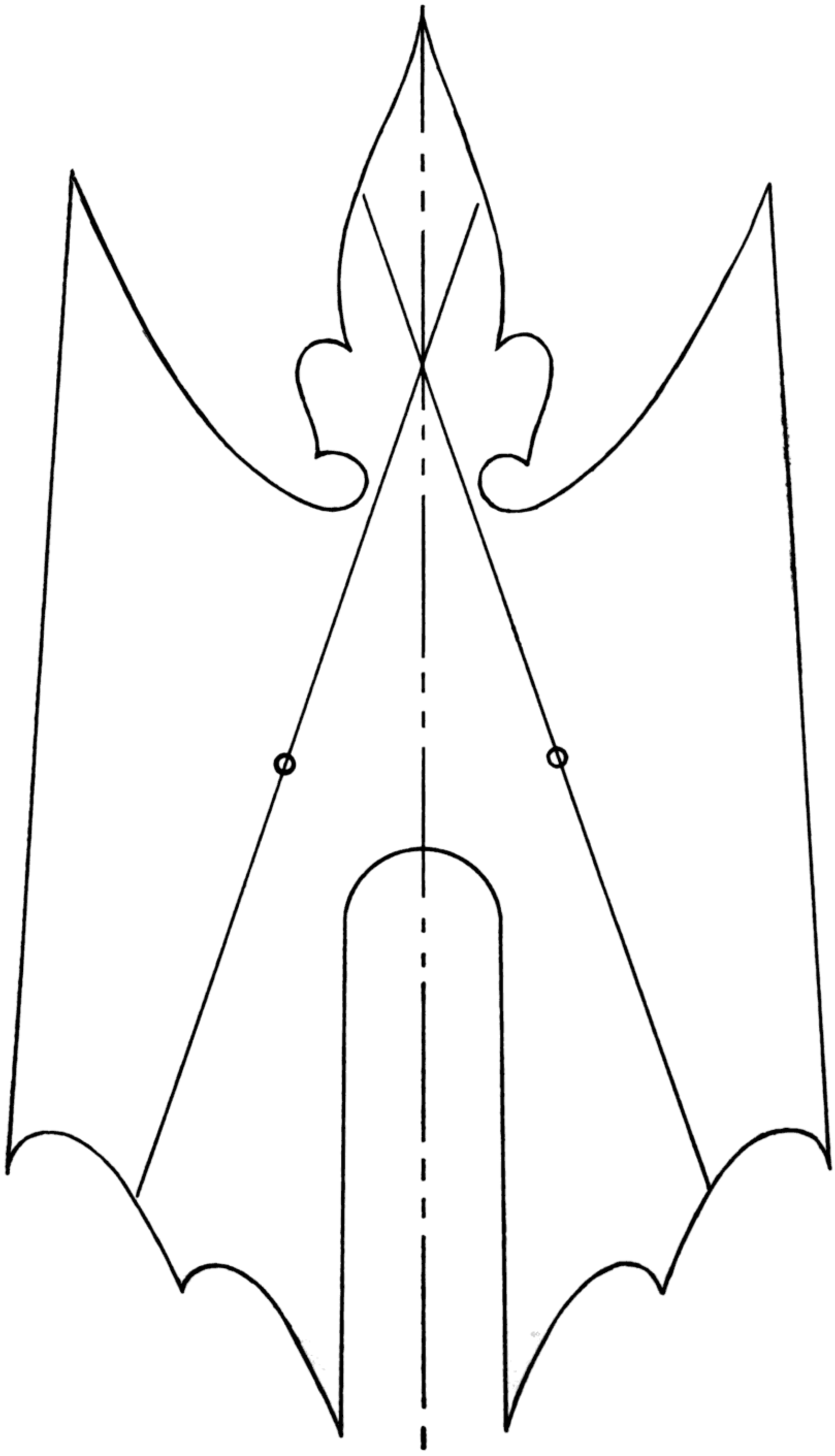


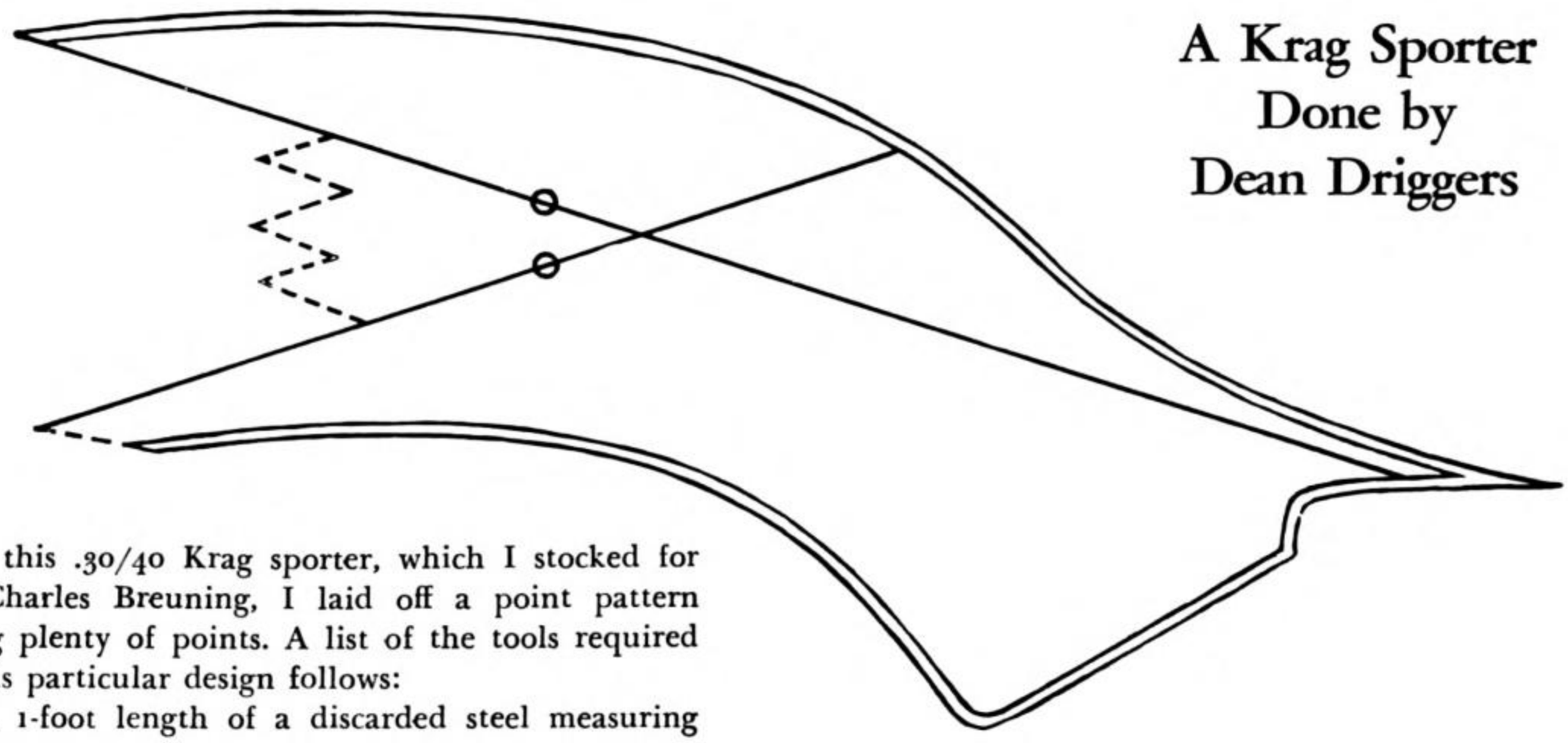


An
Over and Under Browning
by
Kerr's



An over and under 12 gauge Browning belonging to Jerry Knight of Kerr's. This was originally a heavy trap gun until Jerry had Walter Strand, also of Kerr's, trim it down to skeet lines and give it this rather unique checkering job. This gun is a beautiful pointer and one of Jerry's pets. Checkering is about 21 lines per inch, proportion of about 1 to 2½.





A Krag Sporter Done by Dean Driggers

On this .30/40 Krag sporter, which I stocked for Mr. Charles Breuning, I laid off a point pattern having plenty of points. A list of the tools required for this particular design follows:

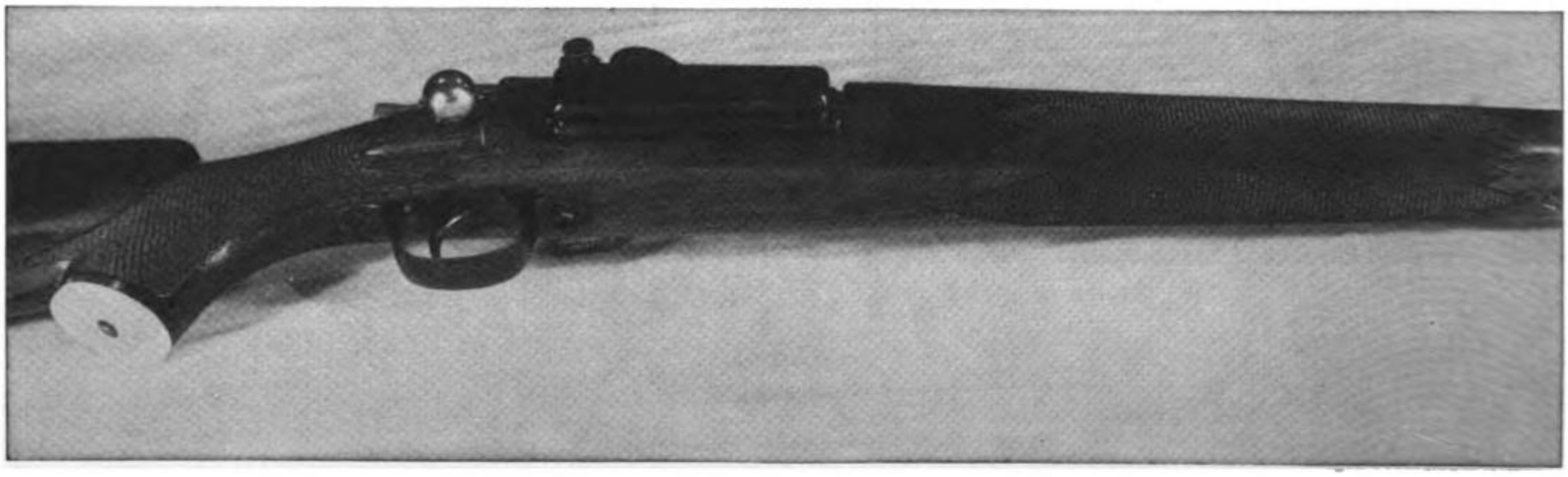
A 1-foot length of a discarded steel measuring tape
Good sharp, pointed scribe
Three-square needle file, curved on the tip
Checkering tool and V shaped gouge
Border tool
Stiff tooth brush
Handful of No. 3/0 steel wool
Linseed oil
Flexible plastic diamond—30 to 35 degrees

FOREARM: Probably the best way for the amateur to lay out this design would be to make a template. When transferring it to the wood prick small holes through the paper into the wood, then it is a simple matter to scribe your lines with the piece of measuring tape.

When I begin checkering the design, I first go down the outside line of the point on the underneath side with the small needle file then start using the checkering tool. The best type of tool to use is the one with three rows of teeth; with this tool you can follow two lines, cutting with one and, if proper care is taken, it is easy to keep your lines straight. Be sure and go over the design completely before starting your cross checkering, and always go the full length of the design as this will also help to keep the lines straight. As the border is reached, work very carefully and come up only to the edge of the line. After a little experience you will be able to complete the grooves to their full depth and will not require much cleaning out. Another thing is to keep the dust blown away, as this greatly interferes with your vision. When crossing the design take great care not to pull out any of the diamonds.

When the design is completely finished, you are then ready to put the bordering around it. It is a good idea to take the small needle file and go around the outside of the design with it, as this will form a guide for the border tool. Be sure not to over-run the ends of the border, in fact it is best to do the tips with a small V-shaped gouge.

GRIP: In checkering the grip, there is very little difference in procedure, except that you will ex-

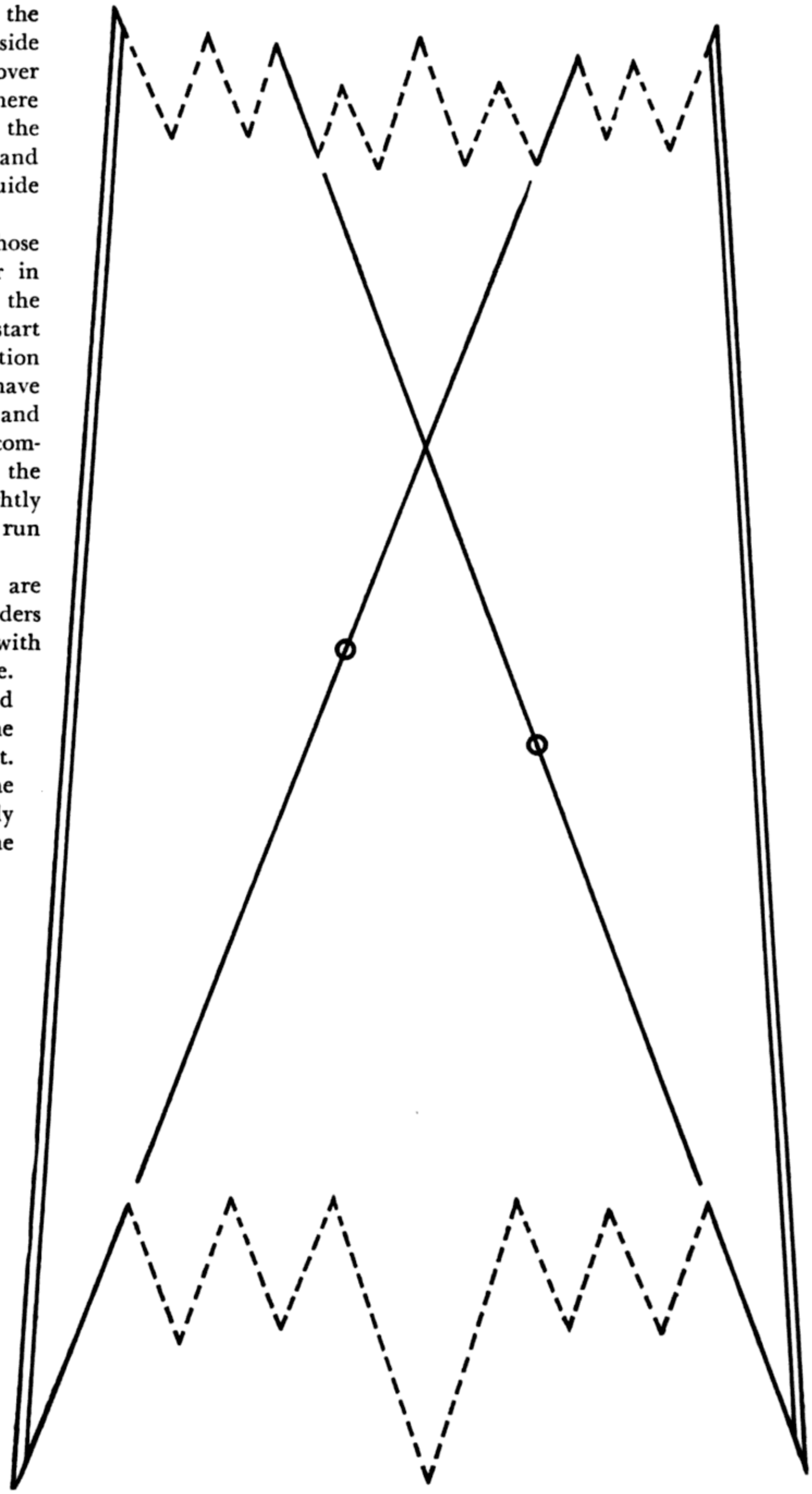


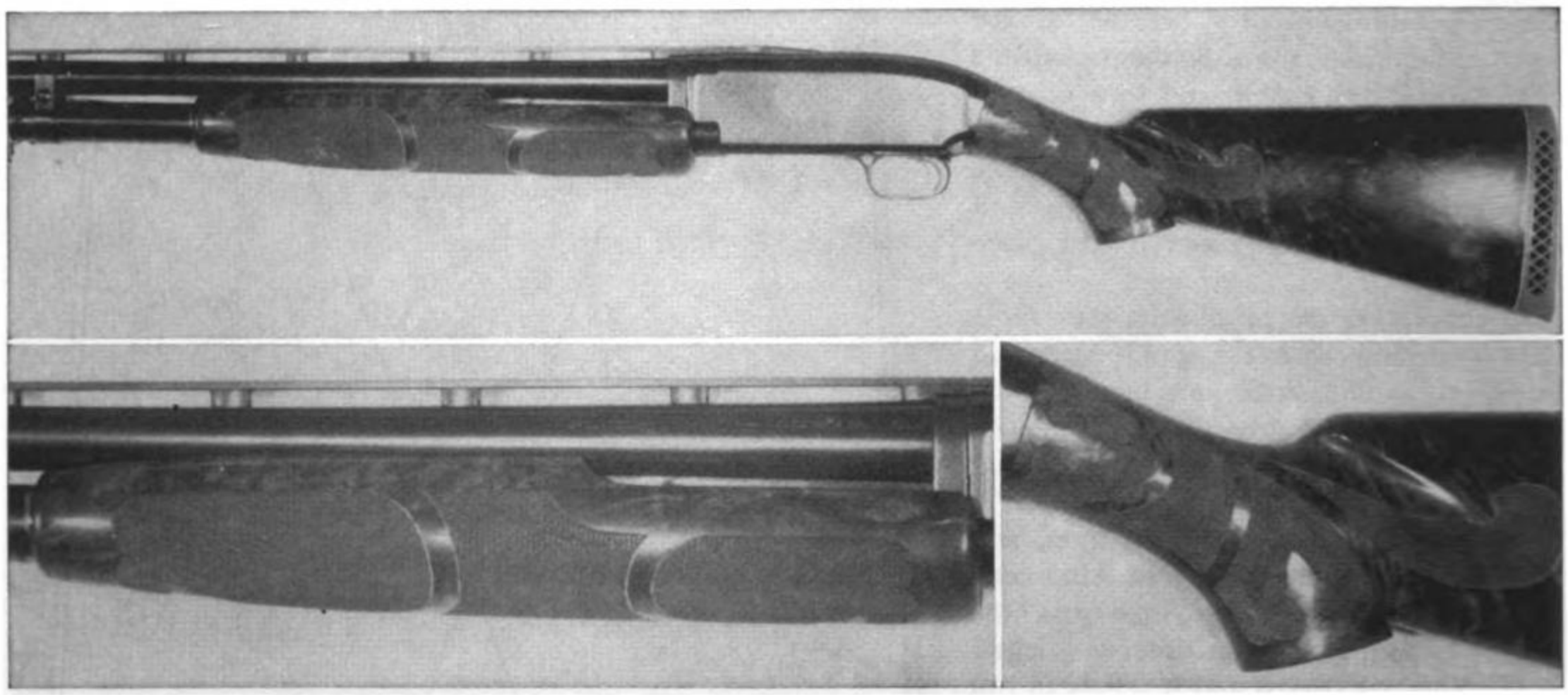
perience more difficulty because of the more pronounced curves. Scribe the outside of the pistol grip design and then go over it with the small file. Now here is where you use the plastic diamond. Lay the diamond in the front of the design and trace the outline; this gives you your guide lines.

In checkering the pistol grip, start those lines that flow with the gun first, or in other words the lines parallel with the grip. After completing this course, start your cross checkering. The curved portion is where your difficulty starts; you will have to checker one way for a few lines, and then turn and go the other way. After completing the entire design, you run the border around it, the first time very lightly as the lines are curved and it is easy to run off.

Now that both forearm and grip are completely checkered and have the borders on, you clean up. Go over the edges with the needle file and the V-shaped gouge. Then take a small bit of steel wool and go over the entire design, sharpening the points up and cleaning the fuzz out. Brush all remaining dust out with the tooth brush. Now rub oil, preferably linseed oil, into the checkering and the job is done.

H. DEAN DRIGGERS.



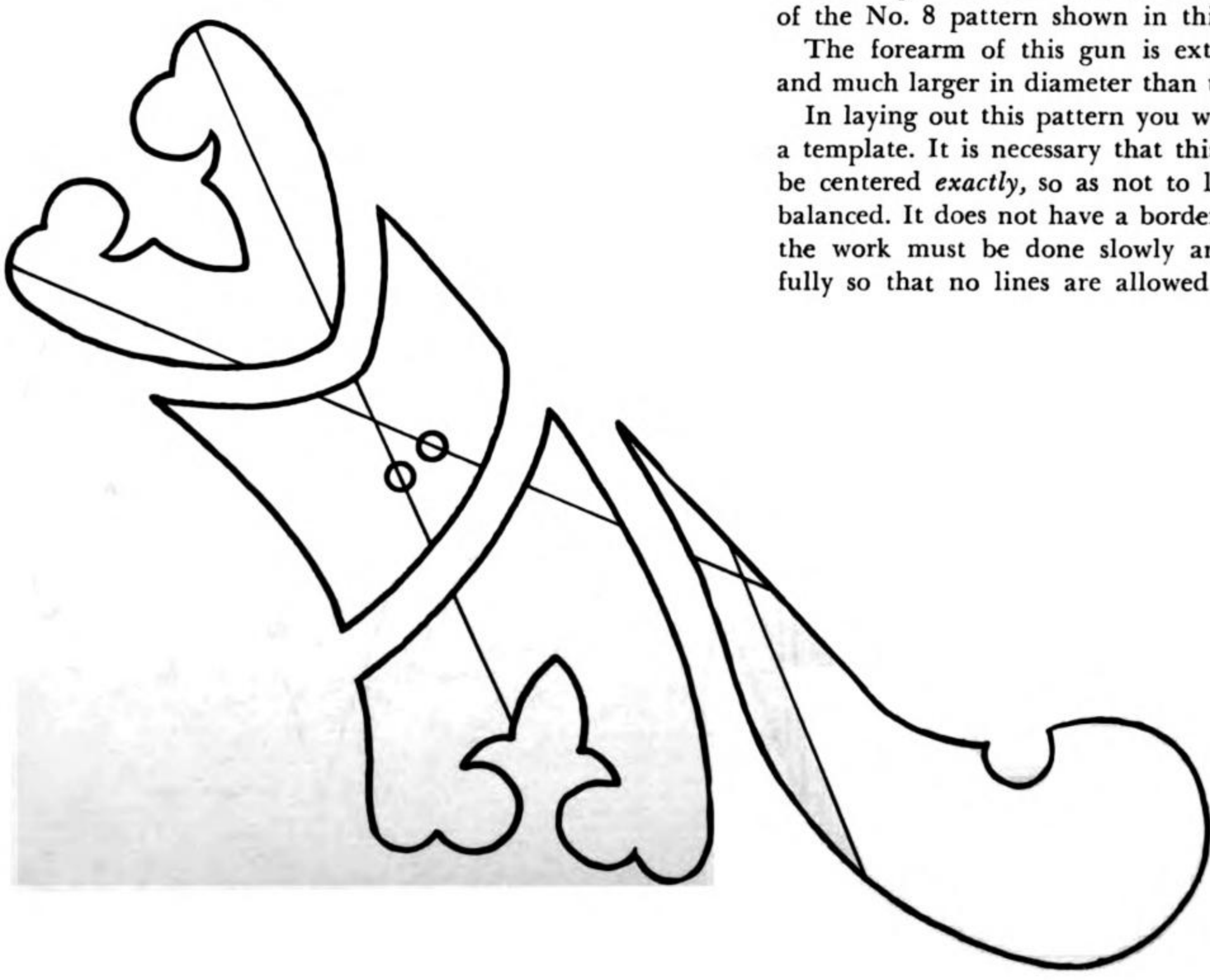


A Pump-Trapgun Job done by Dean Driggers

This is my favorite pattern when it comes to working on a shotgun stock made of the correct grade and figure of wood that should be used. One of the Middle West's leading young trapshooters came to me with such a job and we worked out this design, which is similar to one of Winchester's best patterns and also an elaboration of the No. 8 pattern shown in this book.

The forearm of this gun is extra long and much larger in diameter than usual.

In laying out this pattern you will need a template. It is necessary that this design be centered *exactly,* so as not to look off-balanced. It does not have a border, hence the work must be done slowly and carefully so that no lines are allowed to run

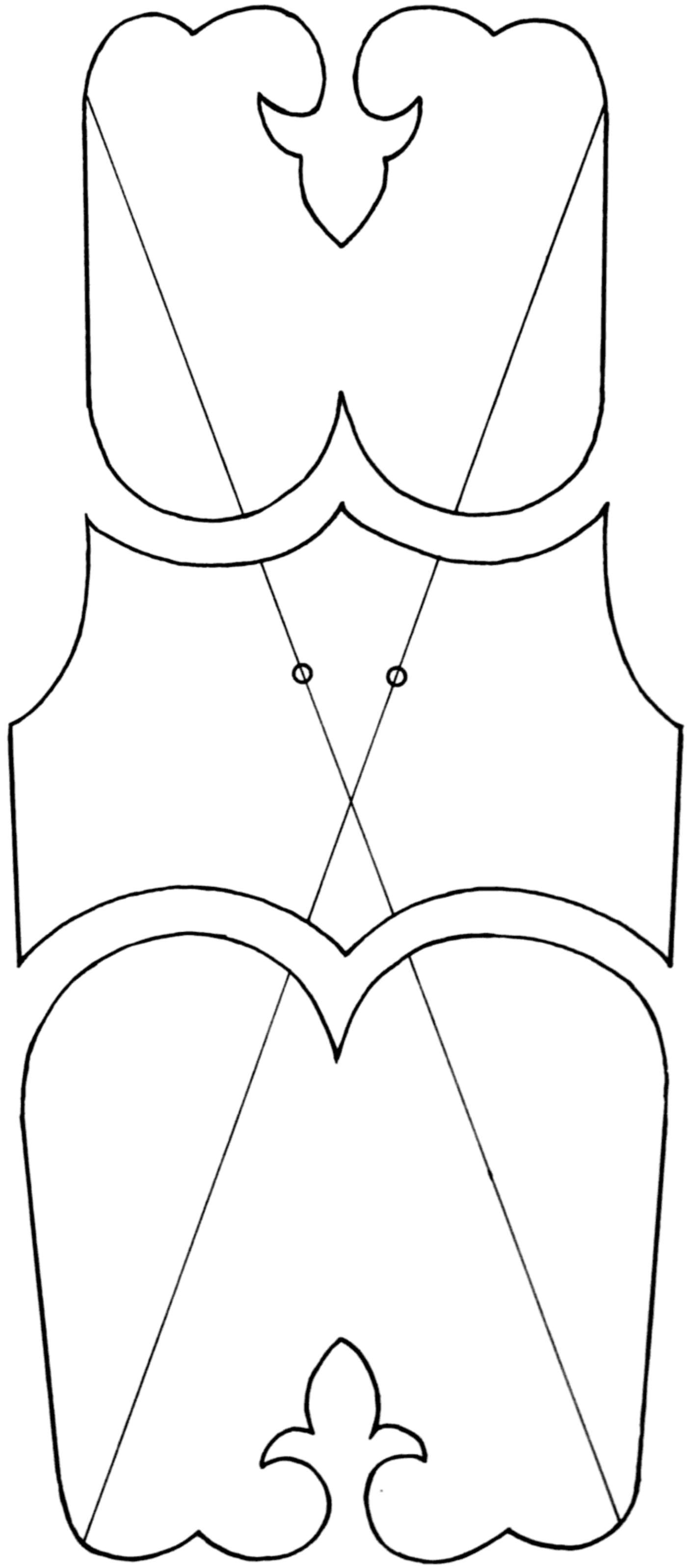


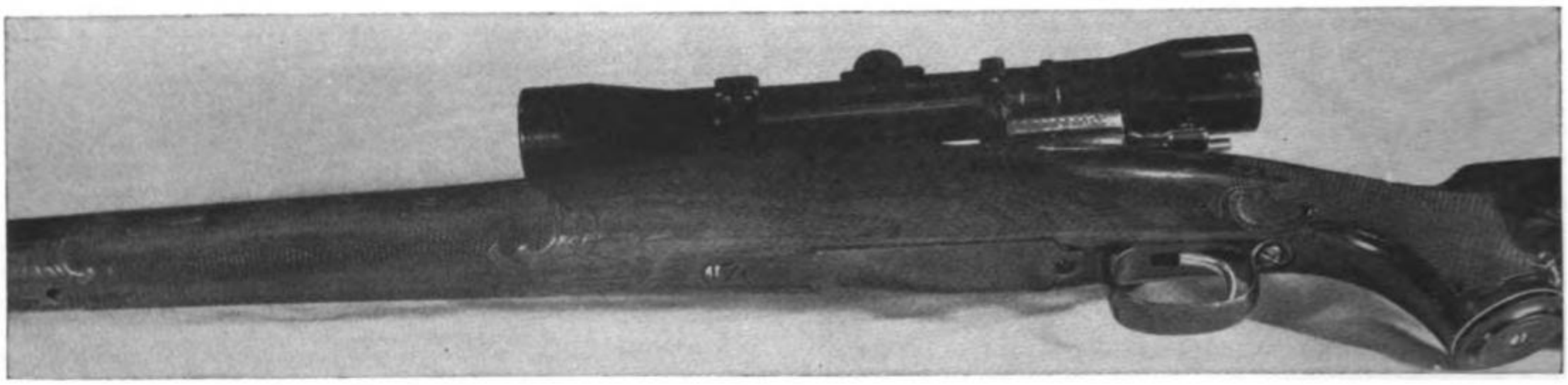
over. The job is not too difficult to accomplish but you *must* have patience.

Small checkering looks much better and only takes a little more time to put on. When checkering 22 to 24 lines to the inch and using good sharp tools, there isn't too much cleaning out to do, because the checkering is not quite so deep. My system is to checker the gun twice—the first time to lay out and keep the lines straight, the second time to deepen them. This makes the cleaning out process much easier.

The foregoing statement that I checker the pattern "twice" may need a bit of elaboration. I do the job once to get the lines straight and to fill in the pattern correctly. The second time I go over the checkering, I do so to deepen it to bring the diamonds to a point; this second going-over may take several sawing motions to get the lines deep enough, in fact on some types of wood it almost invariably takes going over a third time, but on most wood twice will be sufficient. Then I clean out my checkering by using a bent triangular file of the small variety, a riffler, and a small V-shaped gouge.

I might also speak about that checkered curlique which runs back under the comb. I do not run this portion of the pattern back too far nor high enough for the checkers to meet the face; it is put in the cupped-out portion of the flutes and in no way hinders or annoys the shooter. The other day, I made a special trip to see Marshall Wolfenbarger, the owner of this gun, and get his opinion on this point—and he assured me that this checkering does not bother him in the least as it does not touch his face. But this is a point to be taken into consideration, as some shooters may cheek their gun in such a manner that they contact the side of the stock excessively—in which case the curlique had best be left off, or else positioned so as to run underneath a cheekpiece.



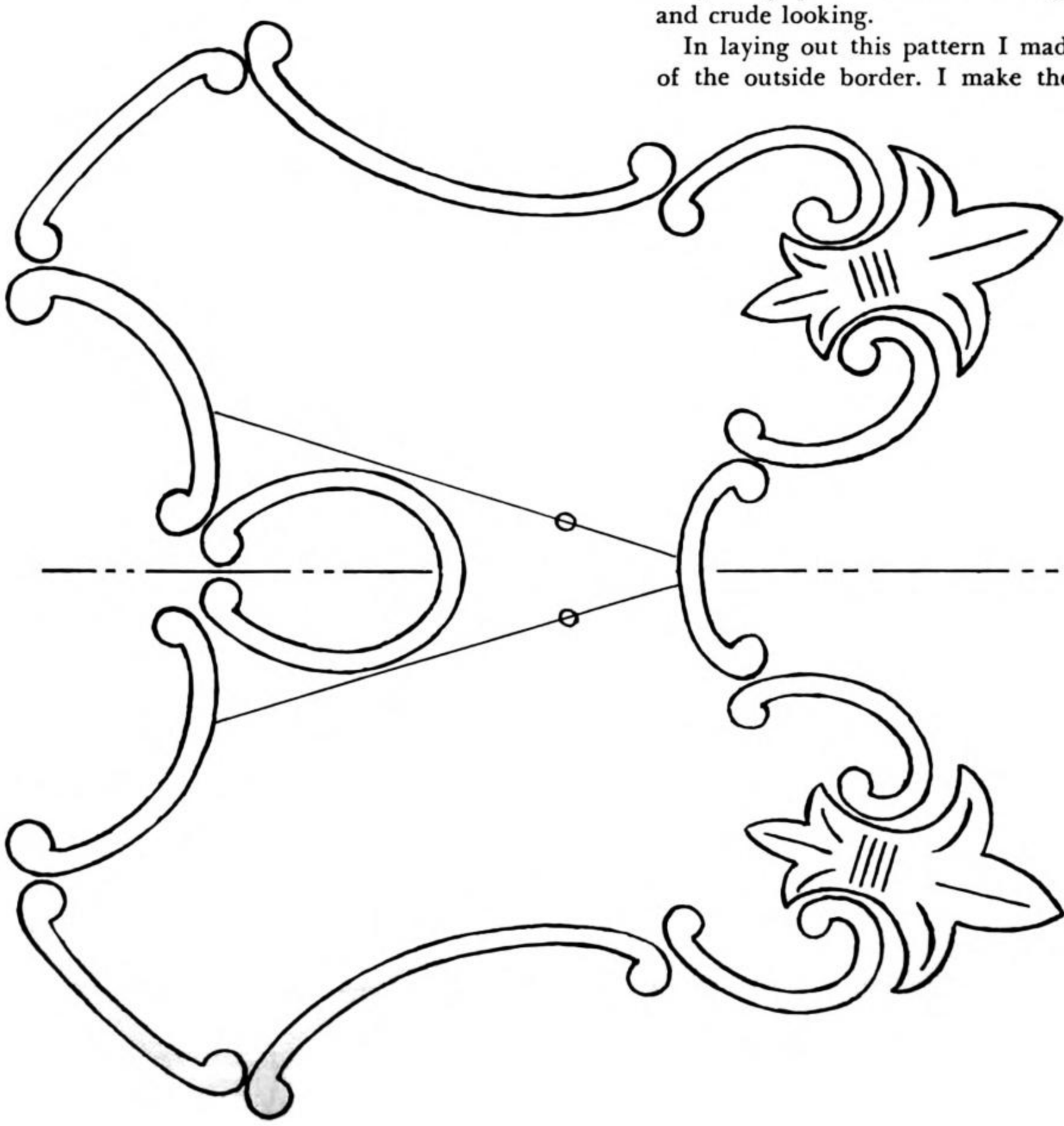


A Combined Carved-Checkered Fleur-de-Lis Pattern from Dean Driggers

Most of my checkering is of the plain variety and the number of lines to the inch is usually 22 or 24. Occasionally, however, someone wants a gun built up that is unusual. This design is in accordance with the idea of one of my customers. It is built around the Fleur-de-lis.

This pattern is difficult and is not recommended for beginners. It is not easy to keep the roll border true and full. Unless it is done carefully using special tools it will be gouged, rough and crude looking.

In laying out this pattern I made a template of the outside border. I make these templates



from a file folder. After tracing the pattern on the stock with a curved three-quartered needle file and a glass cutter I used a pair of draftsman dividers that locked to get the same spacing on the border by following the outside line. You will find that you have a great deal of free hand carving to do around the knob ends. For deepening the lines I used a veining tool. On the sharp curves use either a chisel or gouge that fits the contour, or deepen it with a skew chisel, then use a fish tail to work the sides down.

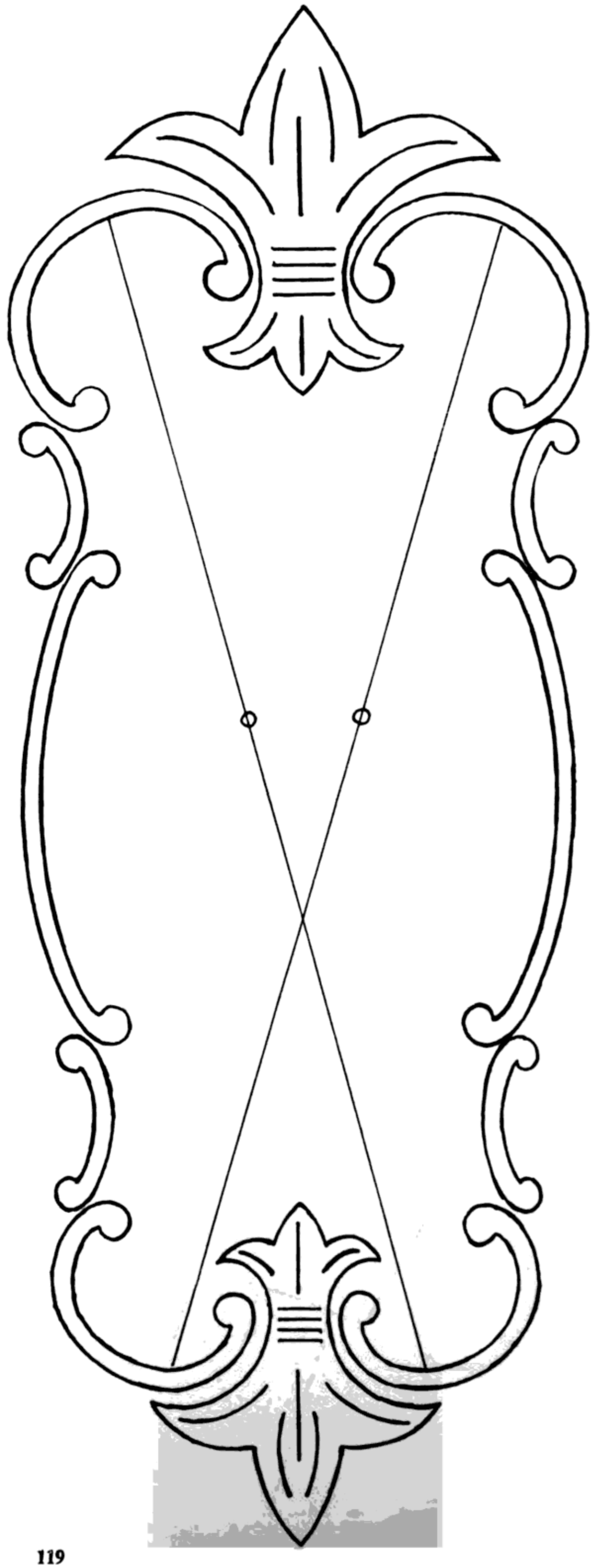
It is imperative that you keep your tools razor sharp at all times to avoid small nicks and to leave the wood smooth in order to eliminate as much sanding as possible.

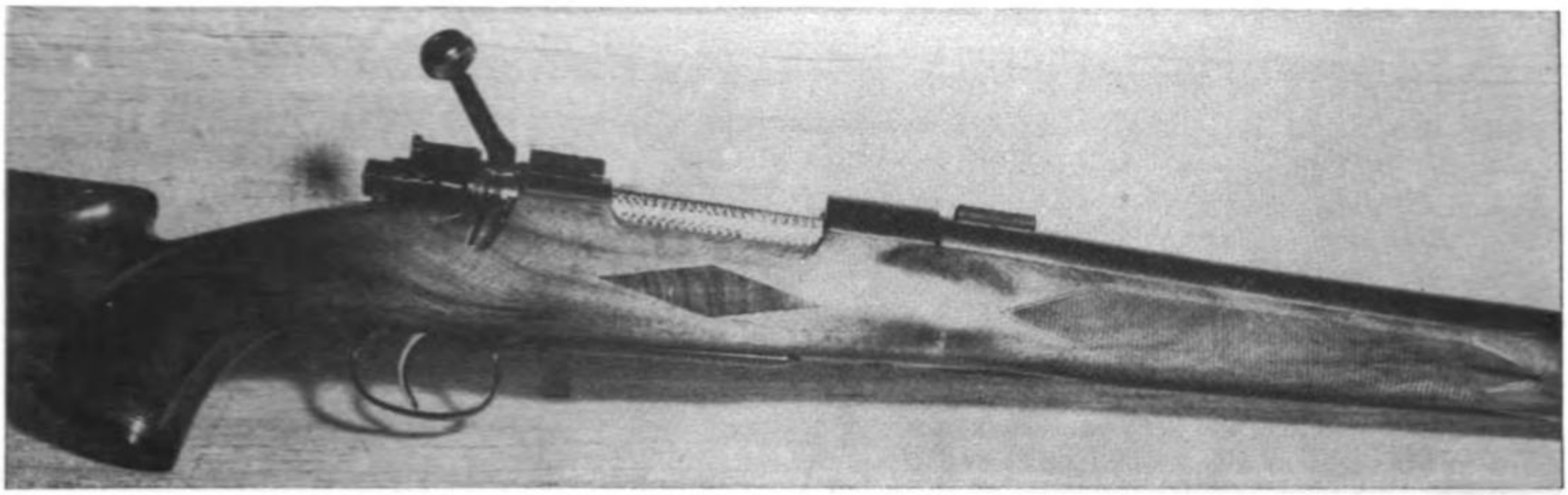
It is impractical to make a template for the pistol grip so the pattern has to be put on free hand.

The checkering is the simple part. In laying out checkering, I draw a line directly through the middle of the design. I have made-up diamonds of thin plastic in degrees ranging from 33 to 40. These are approximately three inches long and are used to set up guide lines by placing the points on the centering line. I use pieces of steel measuring tape to trace my lines. The smaller steel tapes, about 3/8 inch in width, are best. In making the stock, if you measure from the barrel trough to a center line on both sides to be certain these measure the same it will eliminate uneven sides and checkering designs.

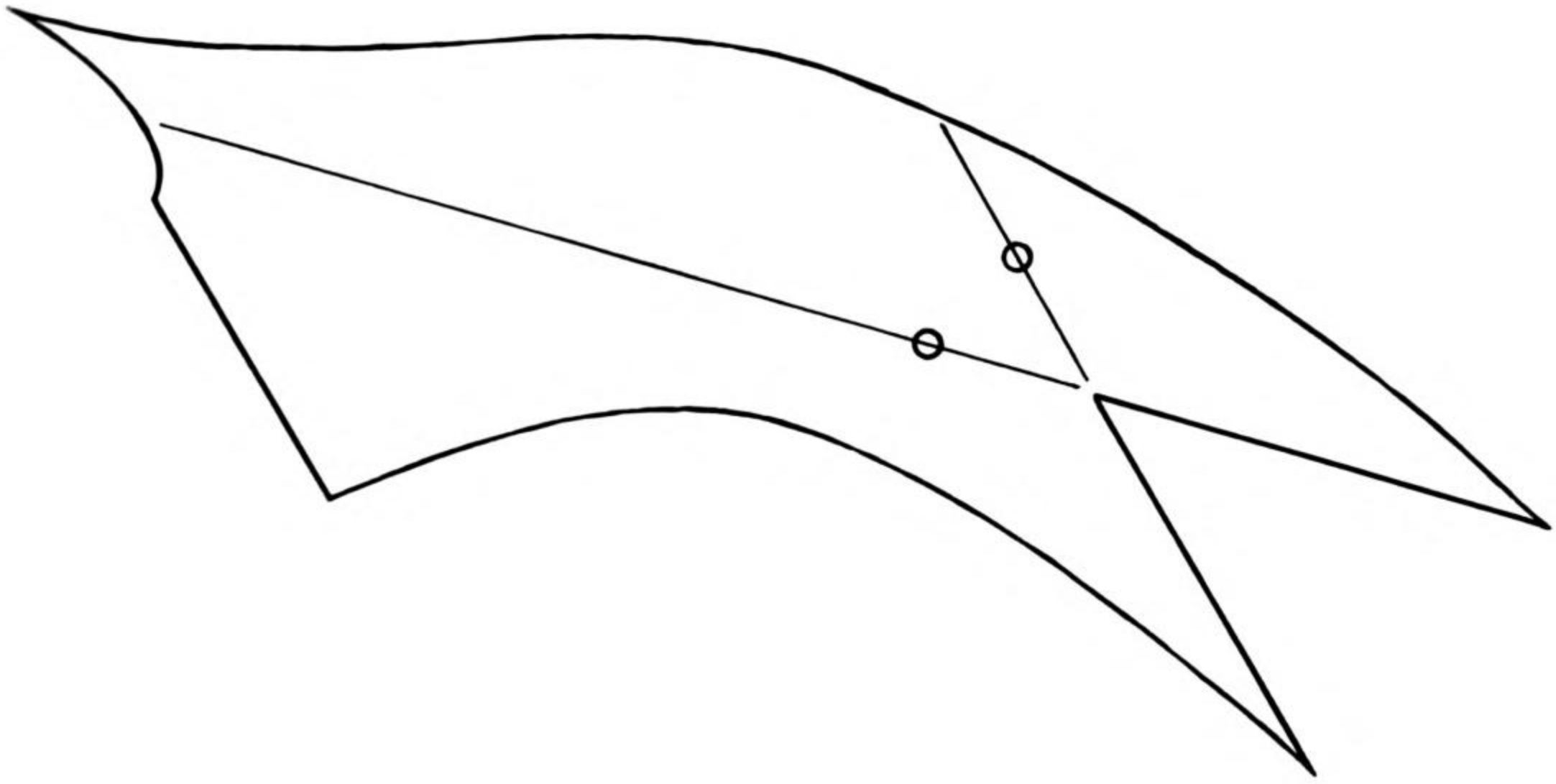
When checkering up to an abrupt line, where no border tool can cover up, a run over shows how much care was taken. You can checker up to this line and then clean out the ends with a V tool which leaves the diamonds sharp next to the border. This particular gun has 20 line checkering.

In the preliminary shaping of the stock for this type of pattern, I do not leave an excess of wood to allow for the combined checkering and carving, as the normally level surface is what gives the checkering the depth perception that greatly enhances the beauty of this job. Actually, if you cut the diamonds to where their points are the same height as the wood you still have approximately the same outside contour but you get the illusion that the checkering is set in. It is a further pleasing effect when you break the checkering with narrow spacers, which give you a bridge-like effect.



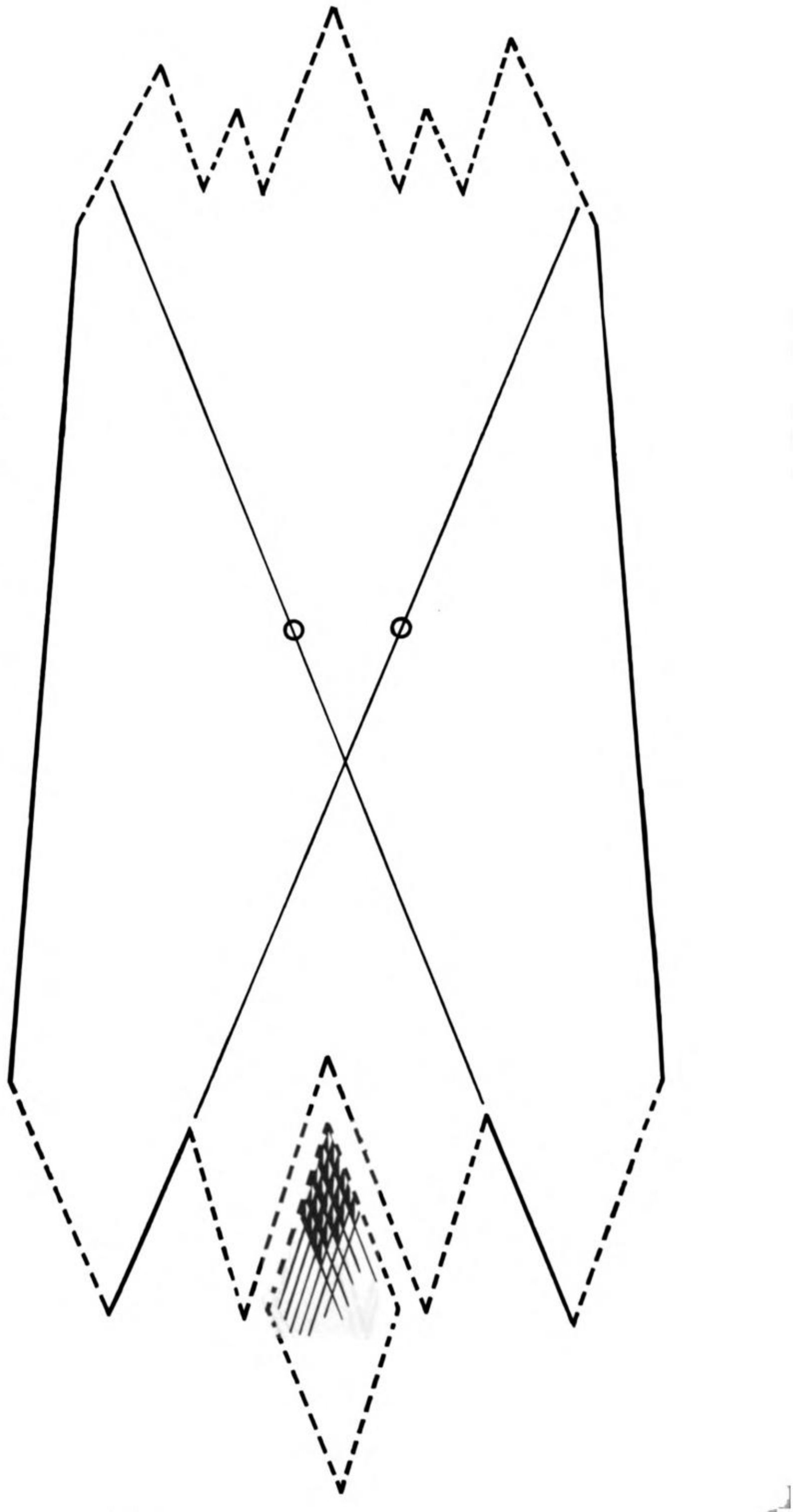


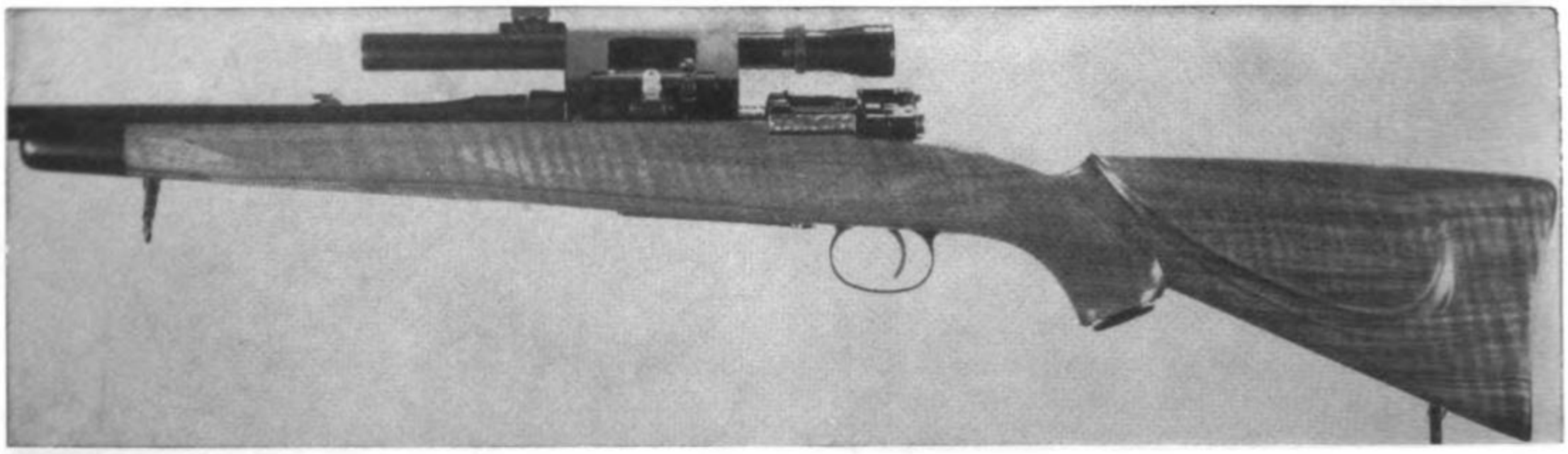
A
Short Action .224 Mauser
Stocked and Checkered
by
Arnold Juenke
Santa Monica Gun and Rod Shop



A model 98 short action, .224 ICL Marmot, varmint rifle. Stock of Oregon myrtle made by Arnold Juenke, of Santa Monica Gun and Rod Shop, of Santa Monica, California. Grip is checkered with a panel on each side and the fore end a single solid panel.

Note the contrasting inlays over magazine panels, which harmonize well with this point pattern. The diamond included on forearm design is optional and can be left out, if not wanted, with no harm to this pattern.

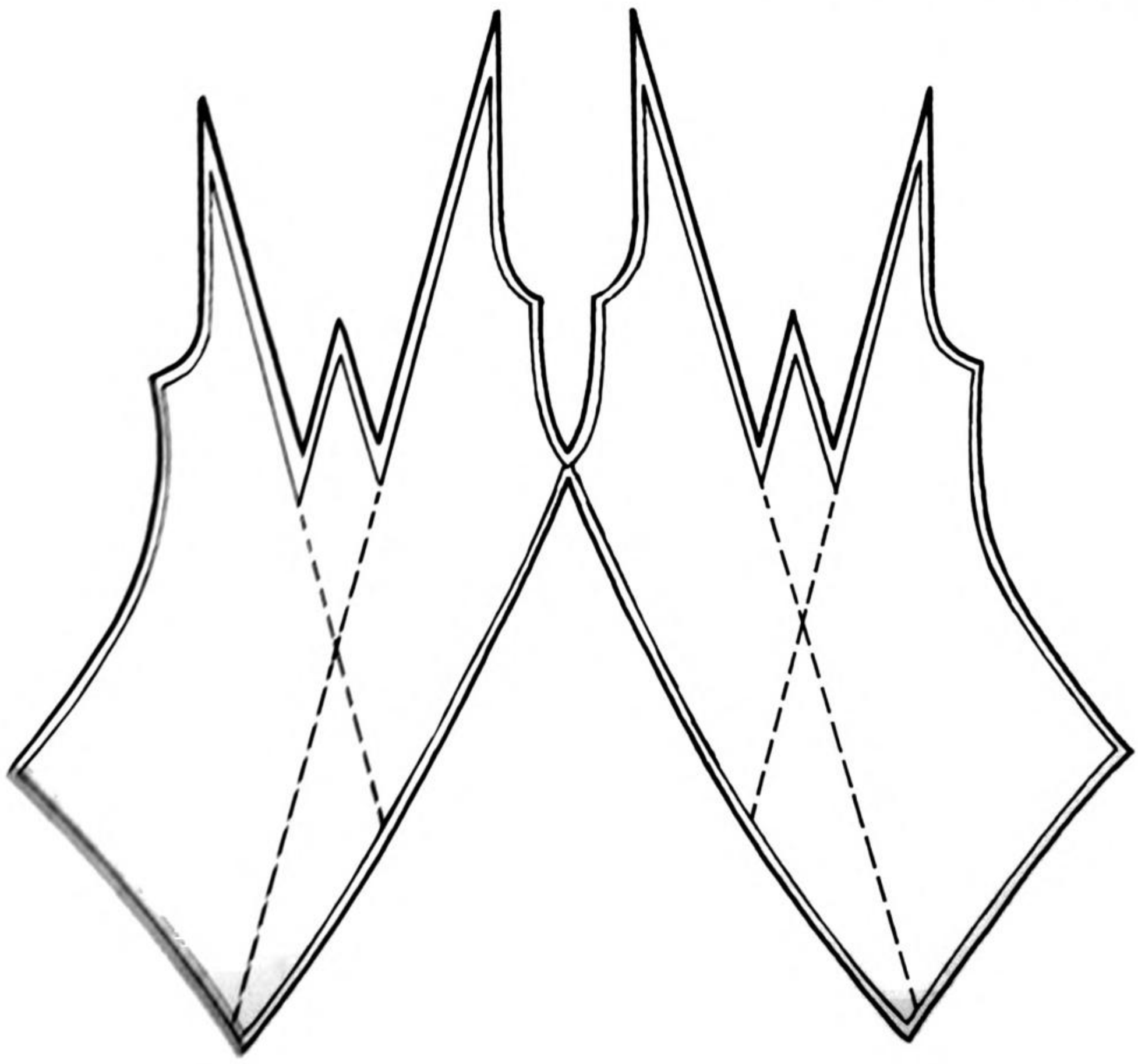




A Bob Owen Design as done by his student Edgar L. Warner

Here is an exceedingly neat point design, with plenty of points both long and short, that was laid-off by Bob Owen, the gunmaker who has had so much to do with the lines and design of our present-day sporting rifles. His one student, Edgar L. Warner, who stocked this rifle, writes:

"On checkering, both Bob and myself have adopted a type covering plenty of



area, giving more regard to good marksmanship rather than fancy curves and scrolls. We both agree with Tom Shelhamer that a plain job, well done, is far superior to elaborate designs. A good plain job looks more 'gunny' (curves belong to females and furniture). Another of our pet peeves happens to be inlays; we just do not like them and feel that they do not add anything to a beautiful piece of wood.

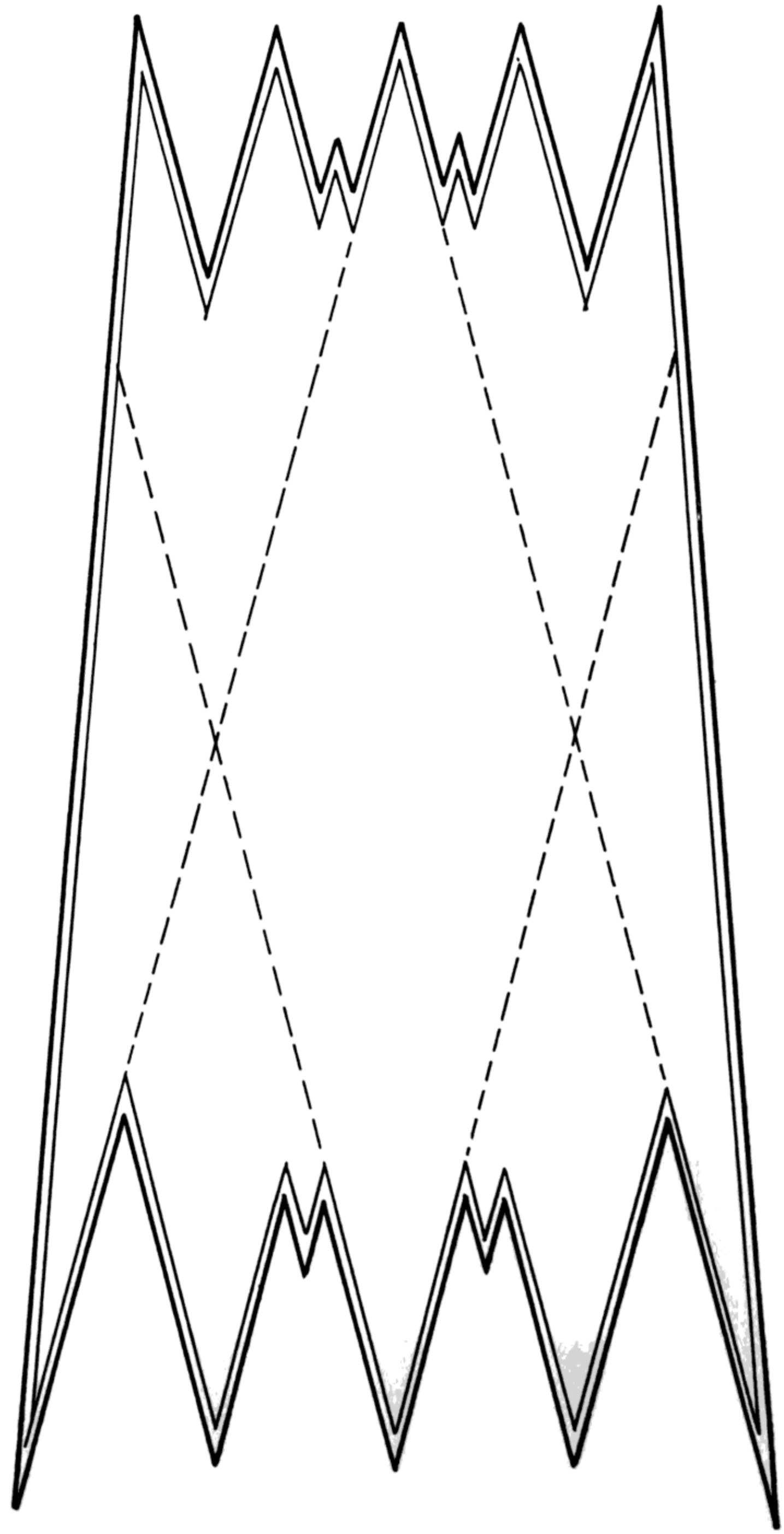
"Most of our stocks are made from French walnut; it is usually denser and less likely to warp, and as a rule checkers cleaner than domestic walnut. I also find it much easier to do a nice clean job of inletting and finishing in general than with domestic wood.

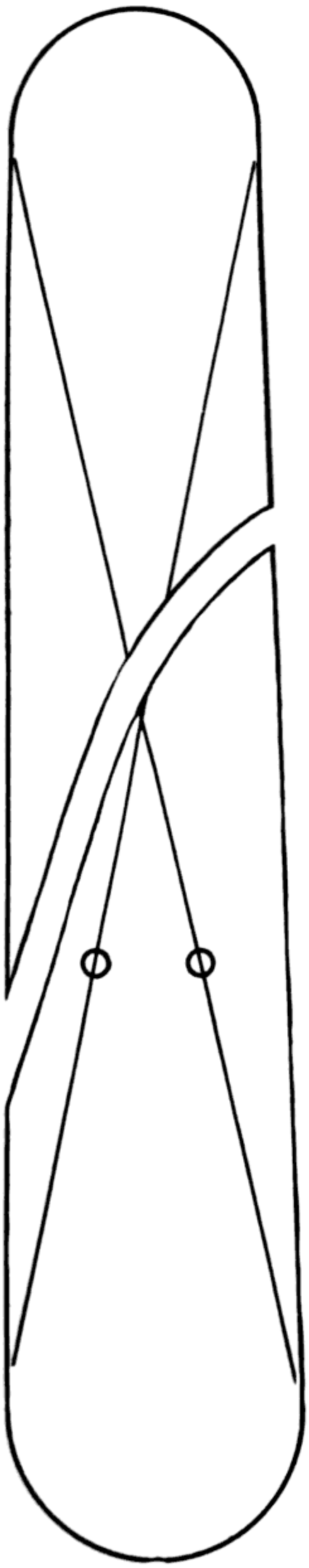
"On our checkering of French walnut we use mostly 22 lines, which we think makes a very nice looking job. American walnut, being of coarser texture, has to have 16 and 18 lines, unless it happens to be a piece which is very dense in which case a slightly finer checker may be used to good advantage.

"On the rifle shown here, the comb just clears the bolt, making it useable for both scope and iron sights. And the cheekpiece is a real Stock Crawler's Special, you can get up as close as is safe with this or stay back, as you wish."

Lay out the top line along each side carefully. Then strike in lightly a centerline for this forearm pattern and lay-off the master points from the two sets of base lines established from this centerline. Note that the four short points lie along the bottom of this forearm; these are all that are necessary and to add four more on the sides will spoil the looks of this pattern. Let well enough alone.

This grip design is an over-the-top pattern that the beginner can try with some assurance of success. It only looks like it runs over—and this joint will be an easy meeting point to make. The two grip panels can be done individually and separately and when neatly joined will give a job second to none.





The Freeway Pattern

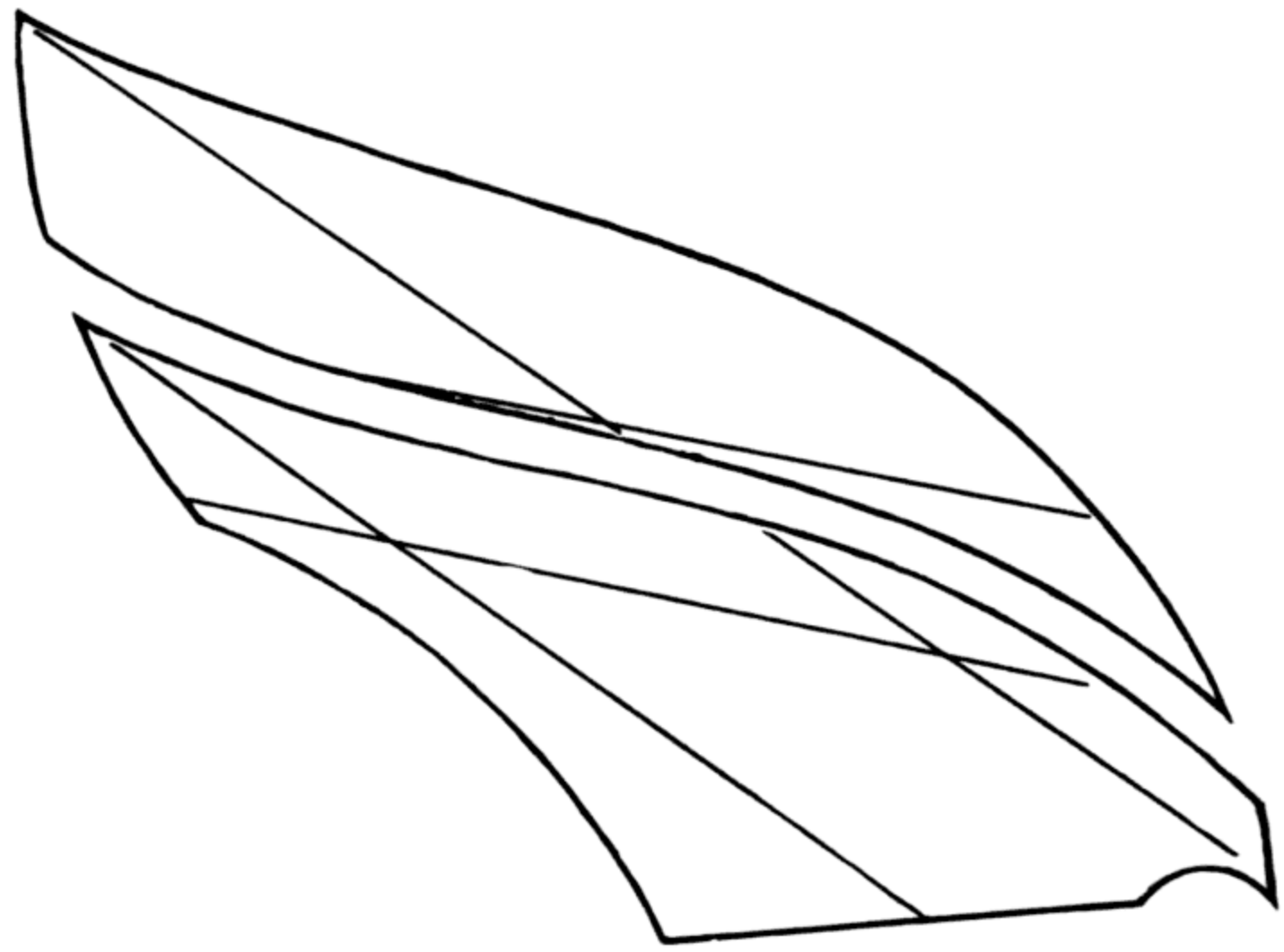
as done by

W. R. Hutchings

This is a very simple fill-in pattern to lay out and an easy one to do—once you have learned to stop the tool in time.

Oh what a difference those ribbons make to the looks of the pattern when done with no over-runs or nicked edges. The width of the ribbon can be varied, within reason, to meet the ideas of the owner or to fit the checkering ability of the stocker.

It might be a good idea for those who are trying their hand for the first time on a ribbon design to lay out those ribbons a bit on the wide side and to scratch-in all border lines *very* lightly. Then do the checkering. Should it turn out, as it probably will, that more than a few nicks and over-runs are present, the width of the ribbons can be decreased and the outer borders increased a mite, presenting an opportunity to *more carefully* extend all lines. After which, new and deeper borders can be cut in with a V tool, this time covering up all bumped spots—we hope.



Das Schnitzelbank und der Werkzeug of Herr Mews

Here is a handy animal that is just the critter to ride when there is checkering to be done. If the weather is fit, out on the porch is the place to work, provided it has a roof. There you get side light, which is a *must* for this job. Working under a low-branched shady tree is also good, but sunlight sparkling through skimpy branches will drive one crazy—I tried it under the eucalyptus and pepper trees in Sun Valley, California. The shady side of a building or, if early or late in the day, anywhere. For a real swanky rig, hoist a lawn or beach umbrella over your schnitzelbank.

I stress these benefits of working outdoors because this is the only way I know of to get out of the shop for a while and still be able to meet delivery schedules.

My checkering bench is designed and constructed so that it may be toted around a bit and placed where wind, weather and light are in the proper combination for pleasant and accurate working. It is made from 1¾″ thick sections of glued-up door material and consists of a combination vise, cradle, bench and seat, 21″ high by 40″ long; the top is 12″ wide at the "butt" end but narrows down at the front to give knee room. The one-piece legs, or ends, are band-sawed from a piece of this same 1¾″ door material, front leg 20″ wide, rear 14″. These legs could be made from lighter ¾″ or ⅞″ cupboard door stock, if desired. Bottoms of the legs flare out and back a few inches—just like on an old wooden wash bench.

Mounted on the front end is a 4″ machinist's swivel-base vise, with quick-action clamp. This vise is bolted to a wooden block 6″ high. One of these Yankee Toolmaker's vises, with 2″ jaws or larger, and with swivel base, would work all right. But the real ticket for this and other gunsmith work is that 5″-opening vise sold by the Will Burt Company, Orrville, Ohio, for $9.95 FOB there. Extra bases for this, and also for the Yankee vise, can be obtained and the same vise used on another bench.

This Will Burt vise has two holes through it, one vertical and one horizontal, fitting the round mounting stud on the base. This enables instant mounting of jaws up or lying on either side. Tightening jaws also tightens swivel; most simple and quickest of all. Jaws are deep and smooth-faced.

Masonite jaw protectors are fitted to my vise as it has narrow, knurled faces; this allows cradle ends to be pivoted up or down, with jaws tightened up

moderately enough to hold the cradle securely and it also permits cradle ends to be "swapped" quickly, although most vises can be rotated for the full 360 degrees.

So mounted, a solidly bolted vise will hold the cradle more securely and rigidly and with less jiggle than some of these make shift swivels, trailer hitches, or some ball-and-socket affairs. Another advantage of having a conventional vise mounted on the checkering bench is that it can be used for many other operations besides checkering; sanding stocks; rubbing down, in, or off finishes; making inlays and fitting them in the stock; in fact any of the "lighter" vise jobs. And the bench can be carried outdoors or to any desired place in the shop.

The weight of a person straddling this light schnitzelbank will hold it down solidly; thus it is a bench of light weight easily moved around, yet it is rigid enough for practical use. For this same reason, I make my checkering cradle light in weight, which allows easy manipulation, end swapping, removal from the bench, and suchlike.

My cradle is made of lightweight 2 x 4, with 5/8" square steel L brackets sliding in a groove in the 2 x 4. The front bracket has a cup which receives the wooden dowel rod that is screwed into the barrel groove in the forearm of the stock. The rear bracket has a 3/4" length of 1/4" steel peg screwed in; this peg fits in a suitably-sized steel tube that is brazed to a sheet-steel clip about 3" long and 1 7/8" wide, which latter has its edges bent down over the sides of the gunstock for 3/8", forming a shallow U clip. This U clip fits over and squeezes a rubber pad just enough to stay put—and it definitely does not mar the stock or finish. Cardboard shims allow adjustment for all sizes and shapes of steel buttplates, although for Niedner buttplates a steel bar reaching across both screw holes permits longer screws to pass through both bar and Niedner plate and hold everything together. A 3/4" length of tube with a 1/4" hole is brazed on this bar to mount in the cradle, same as clip mentioned. These various holders allow running the sanding block, polishers, and suchlike, clear to the end of the butt, as they should travel, and you can sand or polish with the plates and pads in place, and have something right at hand to move the job around with and not have to finger the finish.

By leaving the dowel rod extending 2" or so beyond the tip or front end of the forearm, and having a 1/4" hole through the rod, the stock can be handled without touching the finish, can be hung up to dry, or carried around with more comfort of mind and still no fingerprints.

I am planning out and now working on an improved cradle having a brake on the butt end to lock tight and yet give various tensions desired.

KNUCKLE AND VISION AIDS

Clear and sharp vision is a top requirement when it comes to checkering and I have learned that one of the greatest aids to the eyesight is an Edroy Magni-Focuser—a magnifying glass fitted to a headband and worn like a pair of spectacles.

Not all gunstockers care for this contraption, but I like it fine and make much use of it. This gadget comes in different powers but it does not pay to get too much magnification; the higher its power the shallower the field of focus, and depth and flexibility of focus is of more importance than a lot of magnification. A little magnification goes a long way; I have found the No. 3 size to be just about right for all-around purposes. You can get this trick from Edroy Products Co., 480 Lexington Ave., New York City.

For light, I use a "Flexo," sold by the Art Specialties Company of Chicago. "Dazor" also makes a good one. These adjustable, jointed-arm, fluorescent, bench or desk lamps can be pushed, twisted, raised or lowered simply by moving in the desired direction—a feature much needed in checkering. In case you prefer the ordinary Mazda type of light bulb, an adjustable photo-flood reflector is fine. Even a drop-cord arrangement from the ceiling will do, provided it is shaded from the eyes.

It is important that the sawdust be kept brushed out of the checkered grooves as they are being formed. For this purpose, I have found there is nothing quite so good, or as handy to locate when you need it, as one of these nail-polishing brushes sold to the women at the cosmetics counter of the five-and-dime stores; the brush with the upcurled ends which enables you to hook it over the back of your fingers just like a pair of brass knuckles. With this gadget in gear you can flick off the dust after every few strokes of the tool—and never think about it.

VEE PLOW OR SHEAR CUT SPACER

Here is a type of tool used for years by Bill Staege, of Ormo, Wisconsin, and by some other gunsmiths. It is a spacer which plows out a V groove in one long curling shaving. With this tool, properly shaped and sharp, the user can cut to full depth in one pass should he care to do so, but as with any tool it is always best to leave a little to even and true up things; one extra pass is often enough after this V plow has cut its excelsior-like shavings.

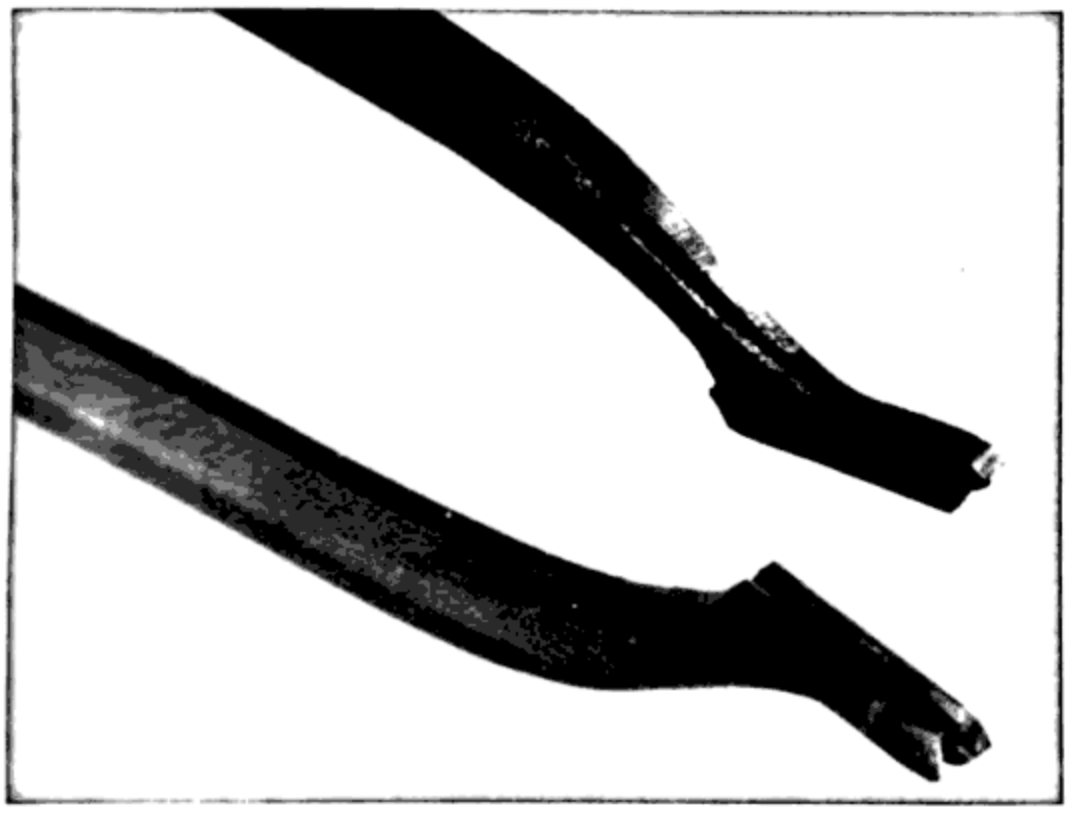
This V plow can be depended upon to cut a very straight line in favorable wood such as English and French walnut, however, no tool can be depended upon to cut a perfect line, straight and uniform, in many grain structures.

The virtue in this V plow lies in its straight, not rocker-bottomed, cutter. This causes it to run very straight and with good, easy control, even in some twisted and curly grain structures. It will stay in the

groove and it will not root out diamonds and splinter or tear things up in general.

The actual cutter blade is a V chisel, or parting tool, and its front cutting edge is on a slant with the top projecting out forward of the bottom—giving it a shearing, downward cut. This is the secret of its clean and fast work, with no fuzzy edges.

This V plow can be made of drill rod or any hardening tool steel of 1/8" to 3/16" diameter. Harden only the cutting edge and harden it hard; do not draw temper; then stone to a very keen edge. This



edge should not be too thin—about the same taper as on a carpenter's tools will enable tool to stand up in hard, burly wood, birdseye maple and the like. The shearing cut of this forward-leaning edge causes it to cut rather than to push through the wood. I have never broken a cutter on this tool.

Some users find it hard to sharpen this tool properly so it will cut right. It requires a Barrett needle file, or a slitting needle file with one side ground smooth to give the necessary cutting edge. No standard file has a sharp enough edge or corner to get down into the bottom of the V. A file with one safe edge makes it easier to get the V edge evenly sloped; at that it is a tricky job. Finish with a No. 6-cut Swiss file to a sharp edge and stone after hardening.

A matched pair of these tools is mighty handy—a right and a left. I have such in my double-head tool. It also is nice to have one which cuts backwards, by pulling, as it enables cutting the lines backwards to the starting border. I keep a double-head tool handy that cuts in both directions; this enables me to carry an unfinished line through from either end, and with only a twist of the tool to bring the proper cutter or spacer into position. A V chisel generally is used to clean out the lines close to the border, this V plow does that while spacing, and the straight bottom lessens the chance of overrunning the border by riding over it as the conventional tool so readily does.

The illustration above shows this V plow shear cut spacer held above a mirror and then photographed. Observe the details of its cutting V blade and the straight "run" of the guide and spacer.

Tool Handles and Checkering Tool Control

What I am about to say now should be of greatest interest to those gunstockers and checkers who make their own checking tools—but it may also induce some of you readers who purchase certain makes of the commercial tools to put different handles on them.

The true-running, ease-of-handling, non-hand-cramp qualities of a good checkering tool are, in a great way, due to the size and shape of its handle. For best results, the length of this handle should vary in accordance with the size of the hand of the operator—a 3 1/4" to 4" over-all length of wooden handle being about right for most spacers and single line checkering tools, depending upon hand size.

Included in the group of hand checkering tools which I show with this text you will notice a curved "rocker bottom" single line tool whose handle is fitted with a rubber crutch tip, slipped over the end of the handle; this I consider the least tiring grip; with best control of any tool I use. It gives one a 1 1/4" to 1 1/2" diameter knob of a size to fill the hand properly and comfortably, but is not too big. This ball-and-socket fit in the hand "allows" the tool to follow a line, as the push is on the rear end of the handle and the down pressure from the fingers is on the front of the handle, on the ferrule, or perhaps on the shank of the tool. Most of the commercial handles are too long and with not enough knob to them. We checkerers need a tool more on the type of those used by steel engravers.

Try out or use the knob type of handle on the little V chisel shown at the bottom-left in the illustration of my tool assortment. Tom Shelhamer shows this same tool and handle on Page 73. With this tool you can really clean up the lines at the borders, and in corners and the like. This "engraver's" type of handle can be made from a wooden drawer knob, or a bit of dowel rod fitted with rubber crutch or cane tip; for years I used such a tool with the handle made from a boy's old wooden top—the kind boys spun years back by wrapping twine around it and throwing down on the floor in YO YO style; you seldom see them any more these days. This "top" handle made a hand-filling grip, I can assure you that. A total length of 4 1/2" to 5" is sufficient for this V chisel; and have the blade small in diameter—mine is but 1/16" or so at the end.

This bent shank, or offset, V chisel is a very handy tool to have, and with the rubber tip or drawer knob as shown it handles very neatly and deftly.

I expect to soon have a form cutter to turn out these knob handles for my own checkering tools and thus have them really uniform.

The Tools Mews Considers Necessary for Checkering

Here shows what the successful gunstock checkerer wears, uses and needs (?). These are the conventional tools which I have scattered about the schnitzelbank, or within reach, or draped on or around the person when I start on a checkering job. Starting in at the lower left-hand tool and going clockwise in a circle:—

No. 1 is a bent V chisel with engraver tool handle. This tool is sharpened on the short curved bevel, to cut sharp radii.

No. 2 is a straight 3/32" half-round gouge, used to run round grooves of English and Rabbit Track checkering on up to borders.

No. 3 is a 1/8" V chisel, with long straight bevel, used to follow straight lines and to clean out grooves at border.

No. 4 gouge, is segment of 3/8" circle, cuts-in small curved edges of patterns. Has curved front edge.

No. 5 gouge, segment of 1" circle, same use as 4.

No. 6 is a double-vision, double-action cut, single-line cutter or deepening tool. Has 40 teeth per inch.

Top-center is a curved, triangular, clear plastic template made in 3 1/2 to 1 ratio for laying out master lines for the checkers. That scribed center line is a great help.

Now shows a piece of Flex-rigid steel tape, with Scotch masking tape on the hollow side plus a thin coat of rubber cement. Electrical rubber tape on 2" of one end, which anchors one end while lining up the other.

Next is a 1" width strip of clear, grip-curving celluloid with scribed center line and same at 1/8" and 1/4" from edges and ends.

You are now at the tool with the rubber crutch tip on its handle. This is a curved single-line cutter, gets at awkward spots and this handle is tops in my opinion.

The next is that long-cutter headed jointing tool fitted into a sharp-bend shank. Single-line cutter. This de-kinks lines, cut straight border and master lines and is used for extending points out from the pattern.

To the left of the knife is a 2-line spacer, double-action cut. Note the knobbed handles on these last three tools, which are just about the right length. Saw off ends of handles to make them 3½" to 4" long, they will then fit your hand.

Two knives come next; the first one is to deepen and/or widen scribed lines and layout lines so the deepening tool may readily follow and stay in the line. The round-ended one, with cutting edge about the size of a dime, has a keen edge all around the blade and is for "rolling in" a pattern outline or for putting a straight line across any contrary piece of wood. Note knob ferrule on this rolling-in knife which helps prevent fingers from slipping down on the blade.

Standard scriber and dividers come next; these are for laying out curved outlines and the dividers are used continuously for spacing off tentative "check up" lines across ribbon patterns.

The double-edge, bent, round riffler, or round file is in No. O cut and is used on Rabbit Track and coarse English flat checkering. You get these from Frank Mittermeier.

Knuckleduster brush in foreground, and the black, two-eyed thing on its right is my No. 3 Edroy Magni-Focuser which I like very much and make considerable use of.

Oh yes! At the top left are two walnut "test blocks." Made by Mews to check spacing; or after sharpening tools; or when working out a new style of checkering or pattern. These are "must" equipment and the beginner had better learn to make use of them right from the start.

The Mews Turret Head Checkering Tools

I now show and describe a line of modern "Turret Head" checkering tools that will save time, energy and insure more peace of mind on the part of the user. In fact, these tools will also help "Save the Job."

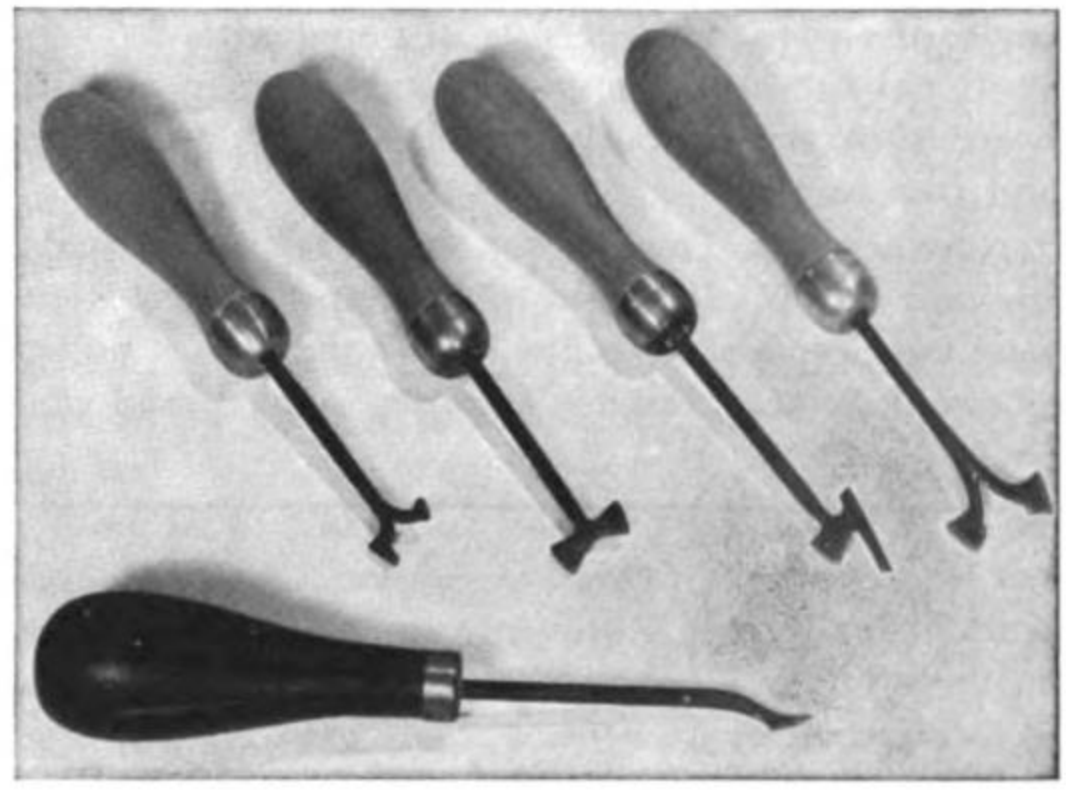
These double headed tools, shown in the illustration, can be had in any kind of combination, depending on the job for which they are required and can be made up in cutting combinations of wide and narrow lines, such as are almost a necessity for French checkering patterns in which two different cutters must be alternated.

This turret head is IT for those spacers having one smooth guide, such as the Dem-Bart, or my Shear Cut; one can have a pair of Right and Left matching cutters at instant call to work, and shift them without breaking the rhythm of having to regain the necessary delicate "touch." And this type of tool in the hand will save much swapping ends of stock and cradle.

A turret head tool will enable you to keep your wits about you in better shape and to help keep your eyes on the lines and your mind on the count; there will be less reaching around and moving about hunting for a different tool.

But—as there is at least a tiny bit of good in every evil—I might as well admit that this occasional straightening up and changing position does revive circulation in blood and air lines; is a good time to blow nose; and one can revolve and spin the eyes a bit to uncross and straighten them. In the large shops I have often been "revived" when a gun was unexpectedly test fired into the box in the corner. WOW!

The illustration used at the beginning of this talk shows Mews momentarily uncrossing eyes and straightening up for a full breath.



Above illustration shows a few of the many combinations possible with Mews' "Secret Weapons" turned out for French and other checkering problems—his new Turret-Head checkering tools.

The tool on the left is for spacing French checkering; 2-line, 13 per inch on one side while the opposite cutter holds a 3-line 26 per inch spacing head. This tool is used for 1 x 2 and 1 x 3 French checkering and cuts on both forward and backward stroke. Is handmade; teeth filed in with a No. O pillar checkering file which cuts 32 lines per inch.

Second tool from the left is a tomahawk-headed, reversible tool with Dem-Bart, right and left, smooth guide, spacing cutters pinned in. This same holder works well with any combination of single and double-line cutters.

Third from left is a similar tool, but with a handmade, long, jointing type, single-line cutter. Cuts either push or pull. Keeps lines cut to borders and de-kinks lines that go wrong on grips and on hard and soft spots in the blank. A Dem-Bart 2-line spacing cutter is pinned in on opposite side.

Right-hand tool has a pair of Brownell's detachable cutters pinned in; this frame was made for

the shorter Dem-Bart cutters and is a bit too short to hold these Brownell cutters solidly.

The tool at the bottom is a conventional handle fitted with the V plow shear cut spacing tool.

Tool Kinks

When it comes to making straight edges for laying out the master lines and pattern outlines the real McCoy can be made from a length of Flex-Rigid steel measuring tape. This, as you probably know, is not a flat ribbon of steel but is slightly curved inward along its length.

The inward curve is what makes this tape made to order for our work, as it wraps itself snugly around when laid diagonally across the stock. Its two edges firmly contact the stock; the arched center flattens down somewhat and puts pressure upon those edges. Thus, your scriber or pencil will not try to creep under the edge, as it persists in doing with the conventional flat rule, transparent scale or strip of cardboard such as previously recommended. Saves sweat and cuss words.

Now here is a Top Drawer Secret. When you make up your supply of straight edges from this Flex-Rigid steel tape, remember to line or pad the hollow underside with Scotch Masking Tape or Scotch Brand electrical tape, plastic backed. Have it wide enough so it extends past both edges and then you can accurately trim them flush with the steel edges. This helps prevent the rule skidding out of place—it also *prevents* your marring the polish or finish in case you did not lay out your pattern while grain-raising. This padding on the straight edges surely does make it easier to hold them in place; furthermore, you will not require those pins to hold the edge in place—on the finer checkering these pin holes show on the finished job; I have often plugged them with wooden slivers. Since I started using these curved straight edges I have stopped using the pins.

Now—here is a Heap Big Secret that is too big to keep in our top drawer. I make my own strips of transparent plastic in widths from 3/12″ to 1″, with plenty of in-betweens. My material supply source is a tightly rolled sheet of clear plastic, bought years ago for auto side curtains, which has long since taken a permanent set. Any tightly rolled-up sheet of plastic can be given a suitable set by a soaking in hot water and then dunking in cold water. Cut out your strips lengthwise and you can have transparent straight edges, layout diamonds, or any kind of templates curved the same as the Flex-Rigid steel rule—or even more so.

Spoiled Work and Its Salvage

By Leonard Mews

This discussion on "How to Save It" can very well be the most useful information in the whole shebang —because accidents *do* happen. Just look at all the body and fender shops. They sure do!

Let us first talk about saving the checkering that has been spoiled by blinking at the wrong time; by the light fuse blowing out; or maybe just the last of your patience having blown out.

Or, maybe you were working without a checkering cradle to hold the stock or, if it was a rickety and shaky affair, your tool went off on an exploring trip. (I know a very good gunsmith and gunstocker who engraves, carves and checkers his stocks by holding them on his lap while slouch-sitting on a daybed, working under a floor lamp. This is conducive to a few slips.)

I have started off quite a few folks as gunstock checkerers, both men and women, and one soon has to learn how to save their day and their self-respect as checkerers. Usually their first troubles are caused by grabbing the tool in too tight a hold and attempting to "steer" it instead of just pushing and letting it follow the line.

These lines that wander off, spraddle out or run together, together with kinks and crooks in the spacing, are likely to be common on the first few jobs. Try to catch them in time, before you have gone too far along, then take a fairly long knife blade with its end not too curved-up; lay its edge *where the line should be,* press in a little with the edge and then cut in a ways. Then, move over a wee bit to one side, 1/64″ or so, and cut out a narrow V groove. Same way that you used to cut girl's and your own initials in tree trunks and on desk tops back in the days when your whiskers were soft and fuzzy. Then, a long "jointing riffler" (such as is shown in Figure 11, Page 9) or any deepening tool will have something to follow—and you straighten out the line. The knife blade—pressed, rolled or tipped in—does not follow the grain of the wood as a checkering tool "hankers" to.

The knife is one of the most useful and essential

tools for checkering. It will cut where you want it to, across the difficult grain. Learn to "roll" the edge into such grain by lifting the handle and pressing the curved edge into the wood. I have one knife made for this express purpose; it has a hemispherical end with *sharpened* edge all around, with a diameter about that of a dime—this blade will roll a line in almost anywhere. For the long, straighter lines I use a longer, fairly straight edge, with not too much rocker-shape to its *sharp* edge. This stipulation "sharp" must apply to *any* knife or chisel used in gunstock checkering or carving.

A multi-blade jack knife will set you right up in business. For the curved outline of patterns, underside of grips, any except straight lines, the knife blade will cut across a bowed line and give your V tool, spacer, or what-have-you something to follow.

I use an assortment of knives in my work. Very thin-edged ones for layout work and for the first cut on bad grain and the like. Then, after everything checks out O K, I use a thicker, blunter-edged blade to enlarge the groove so the tool will follow it easily. In this same manner, curved gouges and carving tools, used to press in lightly, are indispensable when it comes to starting off with the fancy stuff, to get nice, clean curves, bends, radii and such.

A good assortment of these bench knives with special edges can be made by the gunsmith. Take old hacksaw blades and break off a piece about seven inches long, grind one end to the shape of edge you want, then hone properly and fit a handle. This handle may be anything from a wrapping of some stout paper on up to a riveted and checkered pair of grips. An old or broken power-saw blade will give you some really wide and assorted edge variations.

Now back to our spoiled checkering. Of course, you most likely thought of filing down the bad spot in order to remove some, or most, of maybe all of the mess, in order to have a chance to form new lines in proper places, in cases where the bobble is in just a small area, or the work is in a practically finished state. This can be done at times and is preferable to doing over the entire job, or in a situation where the stock is already too slender to thin it down any more by removing the entire pattern.

Possibly the bad spot can be removed and a piece of matching wood inlayed and then checkered. I have seen it printed where the writer suggested drilling a hole big enough to remove broken-out diamonds, or "crushed diamonds" and then glue in a round plug; I have often seen this done in repairing and finishing gunstocks but it is a poor method as the outline of the plug always shows through.

For a good looking repair to a bad, or heavily damaged, job of checkering, cut out a diamond-shaped area, cutting the outlines in the bottom of surrounding checkered grooves. Lay a piece of paper over the cavity and rub finger, preferably dirty, over the paper in order to get an accurate impression of the cavity. Make this paper into a template, check carefully, and then cut from it a matching piece of wood for the inlay—and have the grain matching too. Taper "plug" slightly and glue it in under clamps. Let it harden and set. Then dress it down flush with surrounding area and checker over it. Even if only a fairly tight fit, the joint should be invisible. I use this method to repair spots that are badly dented, beaten down, or scraped off through hard use.

In case you have no suitable scraps to match such a patch, or no wood lying around the joint anything like that used in the damaged gunstock, stern, harsh measures are called for. Remove buttplate from the gun; drill a string of small, deep holes down into the center of the butt and "toe them in" to meet at the bottom. There is your patching wood. *What?* The gun has no buttplate, it is a checkered butt. HA! HA! In this pitiful case, about the only thing left is to sneak on a metal inletted plate someplace on the gun—and sneak out the necessary piece of wood from underneath and thus save the checkering. You actually have a serious job of facial surgery in hand and must have an ounce or so of flesh from some other part of the body.

Now, let us take up the *correction* of a very common kind of work spoilage—runovers. Well—enlarge the pattern; if a point pattern add a line or two; which is the best reason I know of to keep your border or outline cuts *very* shallow until the last minute of finishing the job. (Beginners go back and read that over again.) If you must run over, do it in line with the grain, then you can fill-in the nicks with shellac—shellac stick colored to match and melted in. Then it will look like another pore in the grain? But these run-overs are across the grain, you say? My my! Fill up the gashes at least. Maybe you can file or sand down the area, then raise the grain and refinish.

Now let us discuss the art of checkering when it is used to cover up and salvage bobbles of a different nature. Checkering can be used to conceal any crossbolts which may be put through the grip sections of either rifles or shotguns, pump or doubles, which may have been fitted to hold together cracked grips or grip necks split through recoil. Fit bolt neatly but sink ends below surface; plug depressions with matching wood and then extend the points of the pattern to cover. Should the side panels of a shotgun be through-bolted, checker them out with a suitable shaped panel pattern.

Remember, as I stated previously, a round plug will invariably show through, unless the wood is very dark, or unless you can stain the surrounding area a little, or else stain the entire pattern. In light colored wood, such as maple, myrtle, mesquite and the like, a round

plug always shows through on these you simply have to set in a diamond of the same angle as forming the diamonds in the checkered pattern and then space your added lines so they cover up the joining edges of the inlay.

Kinks such as these I have just mentioned are useful to repair and refinish some of the beautiful but badly scarred and banged-up firearms brought back from Europe by our returning servicemen.

The more powerful bolt-action rifles, if not properly bedded and tightly fitting behind the recoil lug, and also if not properly relieved in rear of tang, will often split the wood at the top of the grip, or crack out a few unsightly chips by recoiling back on a piece of wood the grain of which does not lie properly at this point. I have repaired stocks badly blemished by recoil action such as this, by cutting out an undercut, dovetailed-edged, wedge-shaped patch, then sliding it into place from the front or muzzle end and then checkering over it—often increasing the grip pattern so that it ran over across top of grip, or else putting in a checkered panel between the separate side panels of the grip.

The old Sedgley Springfield sporters often had a three-cornered triangle at the rear of the tang, finely checkered with a line starting from each side where the curve commenced and running back for about an inch until the sides met; these were master lines which established the form of the diamonds. The triangle then was filled with fine 28 to 30 line checkering running clear to the tang with no border.

By putting this ornamentation on a new stock and undercutting the wood reaching to the tang, leaving a thin almost feather-edged shelf at top to close the gap, or rather to cover up the gap underneath, the happy owner saw no signs of splitting or beating up. Then, when recoil finally commenced shoving the tang back, this finely checkered shelf edge would crumble and give at the edges, due to already being cut about through to the checkering. Which was one reason why that fine "26 to 32 line" checkering was called for. Still, no stock splitting showed.

Some try to eliminate this splitting and still not have a noticeable gap show, by fitting in a buffer of soft rubber which compresses when the tang is driven back. The best way to entirely eliminate this splitting is to properly bed the recoil lug when inletting the stock blank, either by a close and solid bearing against the wood or, in the case of a cartridge of heavy recoil, by a metal cross-bolt fitted through the stock with the recoil lug bedded solidly against this bolt. This recoil bolt can be recessed under the surface of both sides and its ends plugged with matching wood preferably with diamond shaped inlays for plugs, proportioning them to the ratio of the checkering diamonds and then checkering over them with a matching pattern which hides all seams. Extend the checkering a few lines over the plug or fancy it up a little by adding a few points, and you will hide the inlay completely. Those little diamonds in the checkering are often worth their weight in diamonds to conceal things and yet decorate them at the same time.

Not all bolt-action rifles suffer through the tang splitting from recoil. A rifle not fired very much is not going to move back to any extent. A small caliber or a rifle of light recoil, can be held down by the action screws and good bedding. However, I have repaired many rifles from the best gunshops that have been shot extensively with .30'06 and similar heavy cartridges; mostly Springfield and Mauser actions. The Winchester 70 and Remington 721 models have recoil lugs of larger area and they give much less trouble from split grips.

Now back to this matter of Salvaging a Spoiled Checkering Pattern: Why spoil it in the first place? The reason the checkering tool runs off the track is . . . because *you* did not use short enough cutting or filing *strokes* as you advanced the new line; or else the nose of cutter was buried too deep; you know the rear of cutter must stay deeper in groove than does the nose.

The nose is the secret. So . . . to remind *you* to make the checkering tool behave, just imagine your cutter is a hound dog's nose on a foxy old fox's trail and keep that nose a-working on that trail. As the going gets difficult a hound advances slower along the trail and sniffs and snuffles faster, so as not to lose the track.

Moral of story is: Keep nose of tool working right and do not over-run the trail.

Your tool shank must be straight; if bent sideways it makes the cutter a chronic trail-jumper.

Do not bury nose of tool too deep.

Do not lean tool toward uncheckered area, as this lifts the guide of tool out of its groove.

On home-made tools: If they wander, a light touch with a fine India or Arkansas stone on sides of teeth will even up high teeth and the cutter will track better. Do not overdo the stoning or the tool will not cut very fast, which probably was its trouble in the first place. It needed *resharpening*.

A Wisconsin Rifle
by Leonard Mews

Here is a product of Wisconsin, made up several years ago. The stock is made of Wisconsin walnut, with its pores filled with Wisconsin varnish. Its lines follow the design of the late Alvin Linden. The job was done by Wisconsin's Leonard Mews who checkered the pattern with a Wisconsin made tool formed from a John Deere farm implement—which piece of rusty machinery also furnished the ½" steel rod from which the sling swivels were made.

The action is a standard, military Gew. 98, to which is fitted a .270 W. C. F. barrel with the lucky 13" twist. This rifle is a heavy one, weighing 10½ pounds with its 27½" barrel which is fitted with a Noske 4x scope slung in an original George Turner mount—which Ackley later modified and made. The Mashburn trigger is set back in the rear of the guard—it had to be cut off and then be welded on again so as to set this far back.

Both comb and heel have the same drop but the rear of the cheekpiece is raised ⅜" higher than the front. This lets the stock "run away" from the shooter's face as both comb and cheekpiece recede during recoil. It also drains the sweat forward from the shooter's face instead of pouring it back and down into his shirt collar, as the drooping style of gunstocks will do. A White Line recoil pad was curved in hot water until it gave the proper shoulder-hugging fit.

The checkering is a slightly modified version of one of Linden's patterns and is a design that fits in well with his styling of stock. The grip is an out-right point pattern, often used by him, but as Al often said and wrote "There's nothing new in the world, it's all so old it's new to some 'authorities.'" The forearm design used is a sort of cross between a point and a panel pattern, mostly the former; it is also often referred to as a "ribbon pattern."

This particular style of pattern can be varied in many ways and yet look practically the same. It is a form of checkering well liked by most riflemen as, to use some of their adjectives "it gives the gun a racy, sharp, neat, high-class look."

Before doing one of these original "personalized" patterns it is always best to look the situation over carefully, and then again and again, before beginning to work on the gunstock, as it can easily end in various situations—all bad.

For those new to doing one of these beribboned, broken-area patterns a good way to lay-out such on the stock is to cut a piece of paper to the size of the desired overall design. Get the centerline on the paper to center with the centerline on the stock. Occasionally one will find a stock with a lop-sided forearm, in which case a little stingy cheating to one side or the other is indicated. The important thing is to accurately center the master lines and points of the design along the centerline and yet have both sides alike—or look that way anyhow.

A supply of transparent strips of sheet celluloid or plastic, preferably clear, in various widths is the thing to have at hand at this stage of the job. Get sheet stock about 1/32" thick and *accurately* cut it into long, parallel strips 3/16"—¼"—5/16"—⅜"—½"—⅝"—¾" and one inch wide.

Such gages, templates, rules, or what you may call them, are invaluable when it comes to laying-out the "ribbons" in these panel patterns—and they are of even greater use in checking up the checkering, as it progresses, and making certain that your rows of diamonds will end up at least in the vicinity of where you intended to leave an uncheckered ribbon. Then too, you should use them continually, in the wider strips, to check your spaced lines and make certain that they stay parallel.

Getting back to the paper pattern; this can be glued in place with Tri-TIX rubber cream glue or with any of the various artist's rubber cements. The advantage of such adhesives is that after they have

served their purpose they can be rolled off easily under the finger tips.

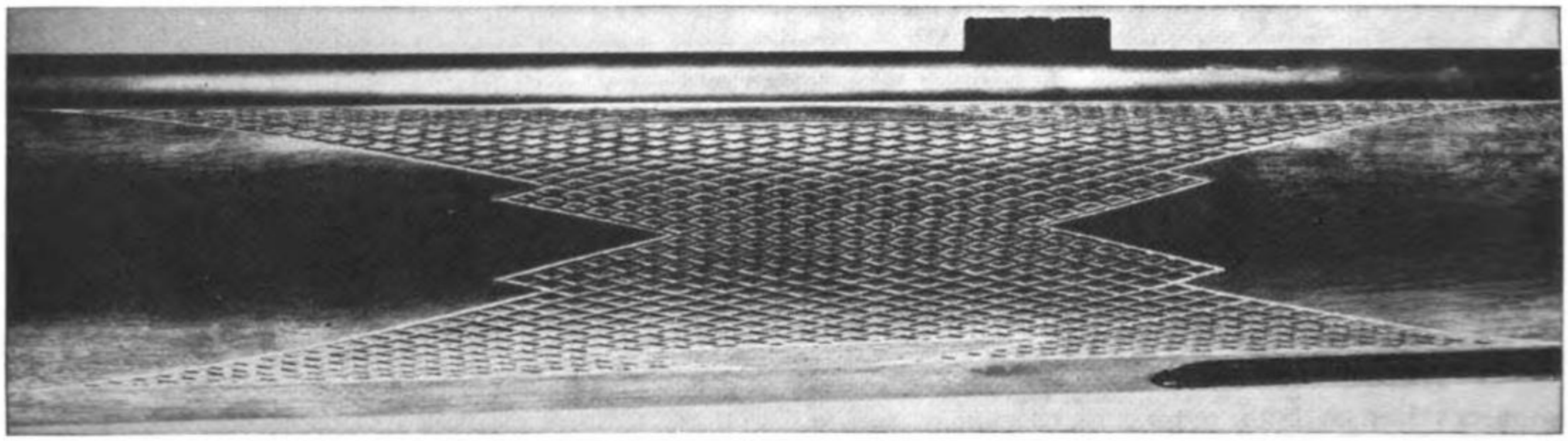
Incidentally, I often lay out my checkering patterns tentatively, before the finish is applied to the stock; sometimes about in the middle of the grain raising operation, when the stock is sanded smooth and before the final fine sanding or two which will remove all pencil mark depressions, experimental scribing and the like.

When the paper pattern is laid out and glued in place, the master border lines are cut in with a knife, right through the paper, then the check-up lines are also cut in, but not so deeply. Or, if you prefer to lay out the pattern directly on the stock, use a china marking pencil, a 6B or, if you are *very* good at it, a faint scriber line.

Using the 5/16" or 3/8" celluloid strips, continue scribing lines across the design, legible but *not too deep* and *stop* all lines about 1/16" or more—usually one width or a trifle more of the spacer used—*short* of where you intend to intend to stop when all is finished. This gives you a chance to even things up in case of lines fanning out or squeezing together at one end or the other. With these *faintly* indicated check-up lines coming up against the spaced lines every fourth or sixth line of diamonds you can "gee" or "haw" your spacer and come out with a happy ending.

These panel-and-point designs look best when made with 3¼ or 3½ to 1 ratio proportioned diamonds—as do most other patterns. Checkering is composed of diamonds, as it is spoken of, so why compose it of squares and thereby lose all of that snappy, pinstripe suit look? So stretch them out just right, but do not overdo it.

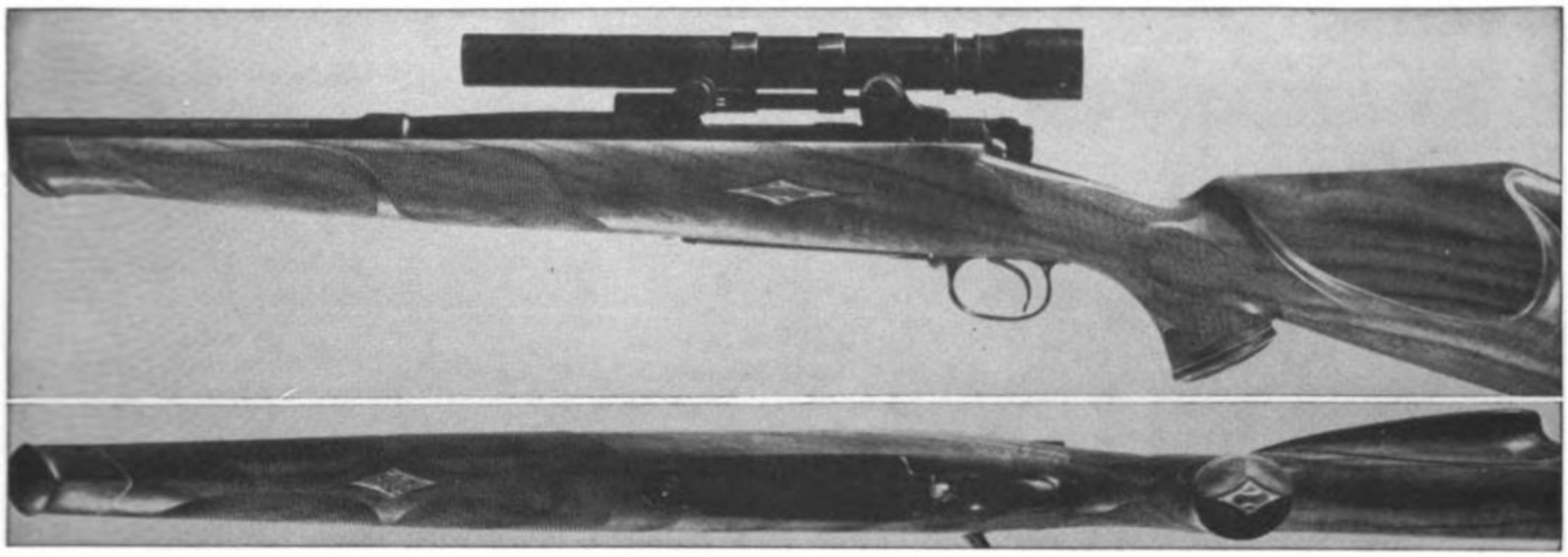
Many times in the past, when my rifles were standing in the rack at some rifle range, alongside of other checkered jobs, some gun lovers and gunstocking hobbyists would comment "Lots of 'em checker stocks but few make them look like anything. Look at Mews' long, racy points and diamonds with all points in outlines ending in sharp points. Nothing square or blocky looking about his checkering." It really is easy to get that look if you will just *stretch 'em out right.* There, boys, is a "secret" worth the price of a set of books.



Flat Top or English Checkering
As Done by Leonard Mews

This is an example of round groove, flat top, English type checkering, as done by German descent Leonard Mews, on a United States-made Remington Model 37, with French polished American walnut stock. My 10-ring Special (ain't in X-ring class yet)!

A 14-lines-per-inch wide spacer, used for French checkering, spaced these lines; this spacer cuts a narrow knife-cut line. Then a bent round file, or riffler, "Grobet" brand, sold by Frank Mittermeier, was used to deepen these cuts and to widen them. This formed a half-round groove—durable, not too rough on the hands, and a checkering that shows the original polish on top of the diamonds. And which will not wear down on its "points."



The Buck Rogers Rocket Pattern from Leonard Mews

This is a Winchester Model 70 action fitted with a .300 H & H barrel and stocked in curly California Claro black walnut that resembles the best European walnut in its grain structure and with coloring ranging through all shades of brown from gold to almost purple; this coloring being so pronounced that many observers do not take the stock to be walnut.

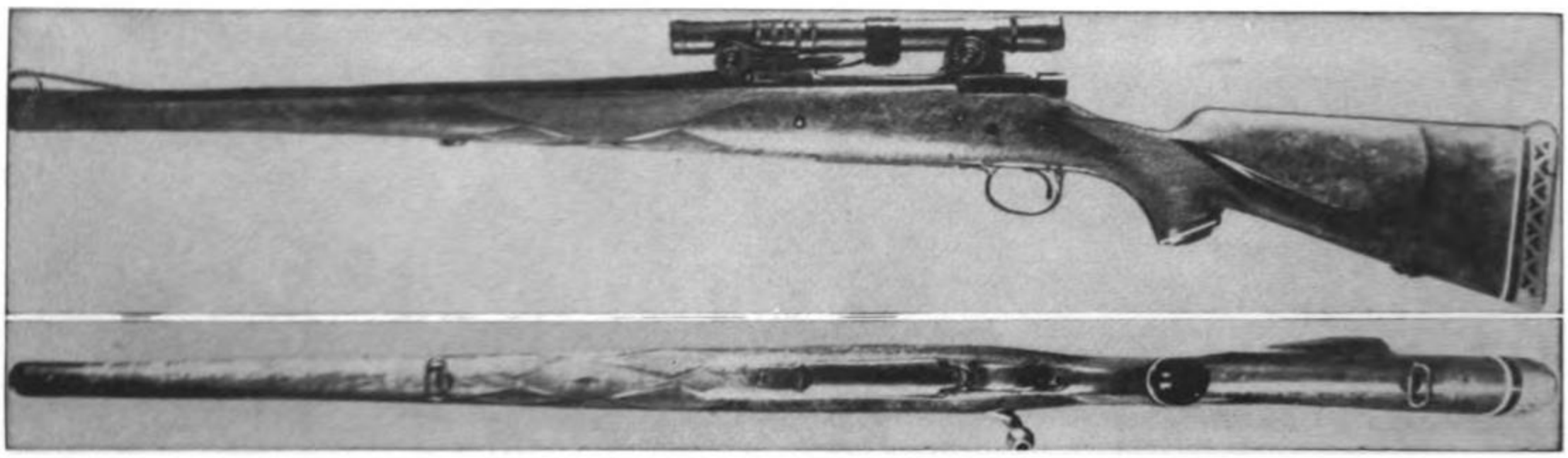
Amaranth has been used for the grip cap, inlays and the schnable forearm tip. White spacers of .010" thickness have been used under grip cap and forearm tip. Inlay centers are .018" sheet gold 10K sweated to steel backing which is shaped to match contour of stock, the one on grip cap being rounded considerably. Gold is deeply engraved with border and fill-in designs in corners and points, and with the owner's name—Dr. Russell C. Smith, Barron, Wisconsin—engraved on largest inlay on right side of buttstock and stockmaker's name on forearm inlay.

Niedner checkered steel buttplate. Bolt stop release button was built wider by welding and given a rounded, slanted curve, then finely checkered. Magazine release button also checkered and then both were gold plated along with trigger and safety. Bolt and extractor were engine turned by Gartman Custom Gun Works, bolt handle and knob polished bright. Trigger guard fully streamlined by narrowing guard bow at bottom next to stock and tapered front to rear. Floorplate rounded off to its thin edges, which makes it look and feel as though it is inletted into the wood.

This stock has a forward sloping comb to minimize recoil and gain comb height without seeming to. Grip cap to trigger measures 3¼" Stock is oil finished. Bausch and Lomb variable-power scope and mount. Checkering is 24-lines to the inch.

The forearm pattern is same as used on the Curvaceous Blond. The grip design is shown below.

The ribbon running across this grip checkering pattern shows a sort of double-pointed spearhead effect. On some jobs with this same pattern I have the ribbons raised and rounded slightly with the center spear heads highest, kind of embossed like, this puts in a sort of fancy Wundhammer swell on both sides of the grip and fills out the trigger hand very nicely.

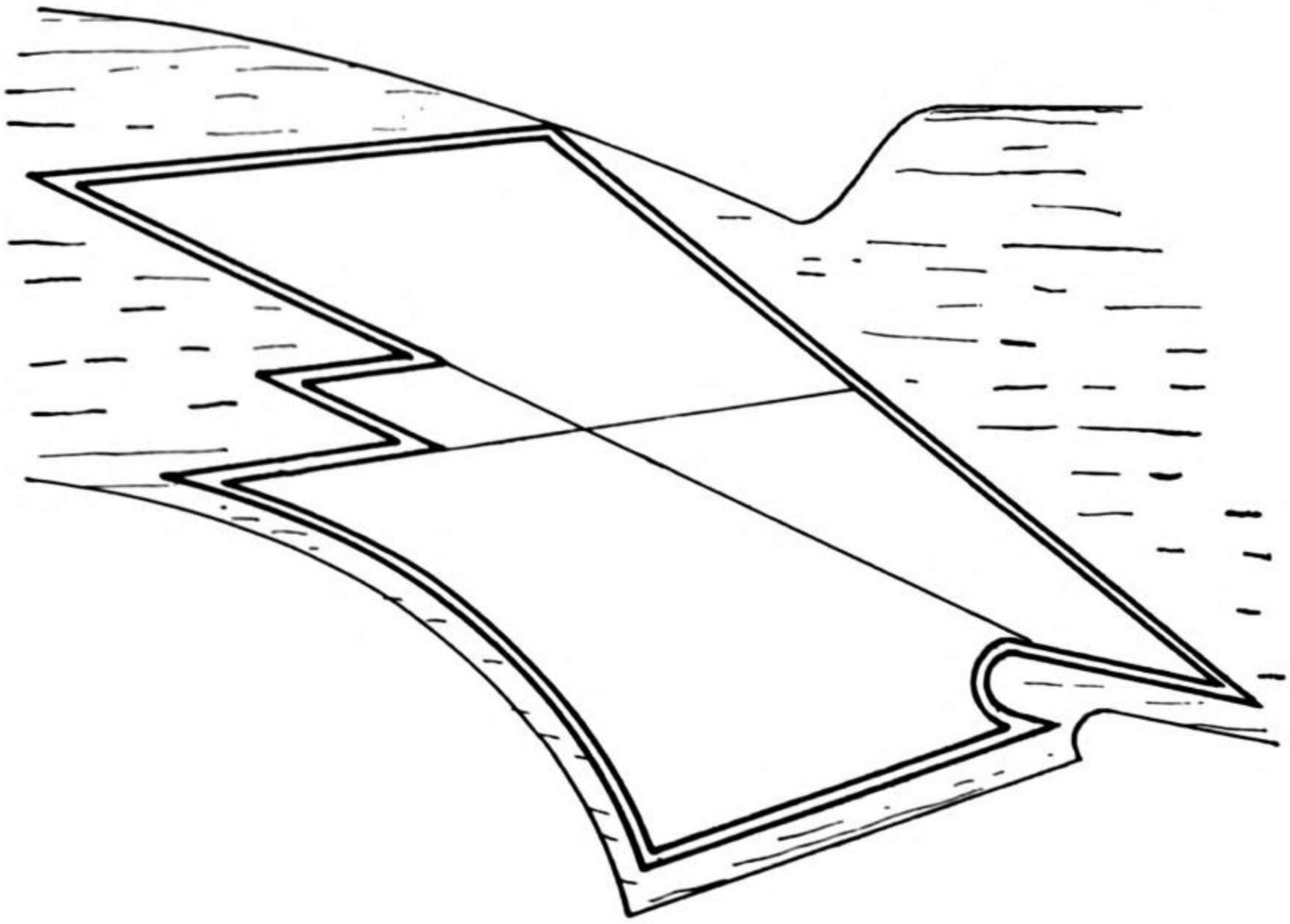


Deerslayer turned out by Leonard Mews for Vic Plantico

Here is a special purpose mid-air rifle, designed for striking down the bounding buck in mid-air—which it has done every year, also several black bear bearing off into the brushy haven.

This rifle is built to point and handle like a shotgun. When finished in 1944 it was taken to Ripon—Wisconsin's famous annual running deer shoot, two shots fired at 113 yards. Five different competitors asked to try it and all five won each time from a six-man team.

The gun was originally designed and built for receiver sights; since then a Stith Master mount fitted with a Leupold Stevens scope has been added, which do not add to its trim, lean raciness. However, since the original sights were a bit high, to give straight-line recoil possible with this high comb, straight stock, the scope lines up very well and the rifle still hits with the same deadliness on quick snapshots.



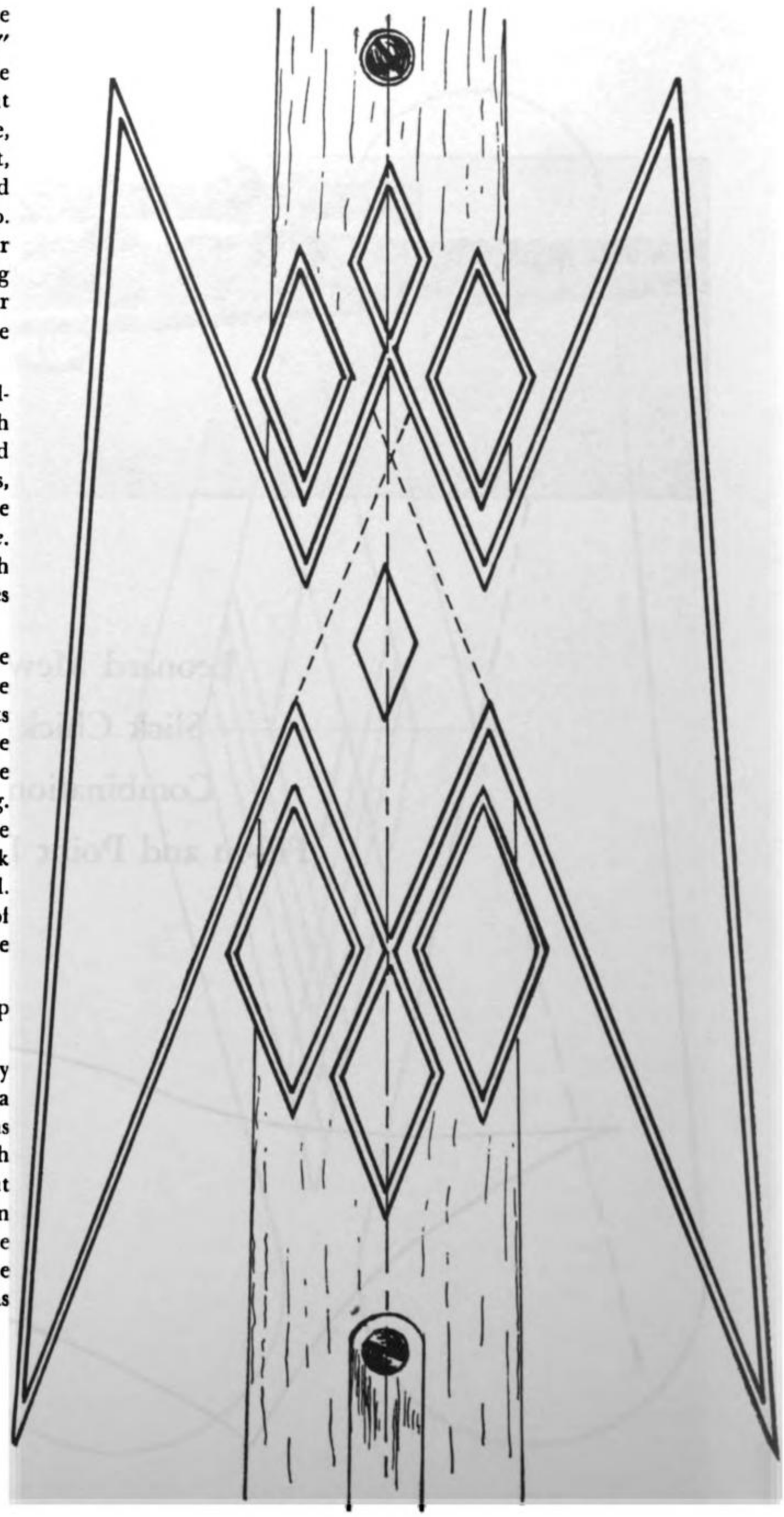
The action is a 1917 Enfield, with the service barrel dressed off and drawn down in its full 21" length. A cock-on-opening speedlock. Magazine box welded to the lower tang and side rails cut off. Stoeger steel grip cap. Mews one-piece, skeletonized (or ventilated) ramp front sight, with its band having a lug on the bottom and tapped for screw holding on the steel cap-tip. Rear left side of receiver is cut off just to rear of bolt stop screw—the bolt stop spring being shortened and curved around belt stop at rear gives a Mauser effect of sorts to the otherwise dumpy, overfed-looking Enfield receiver.

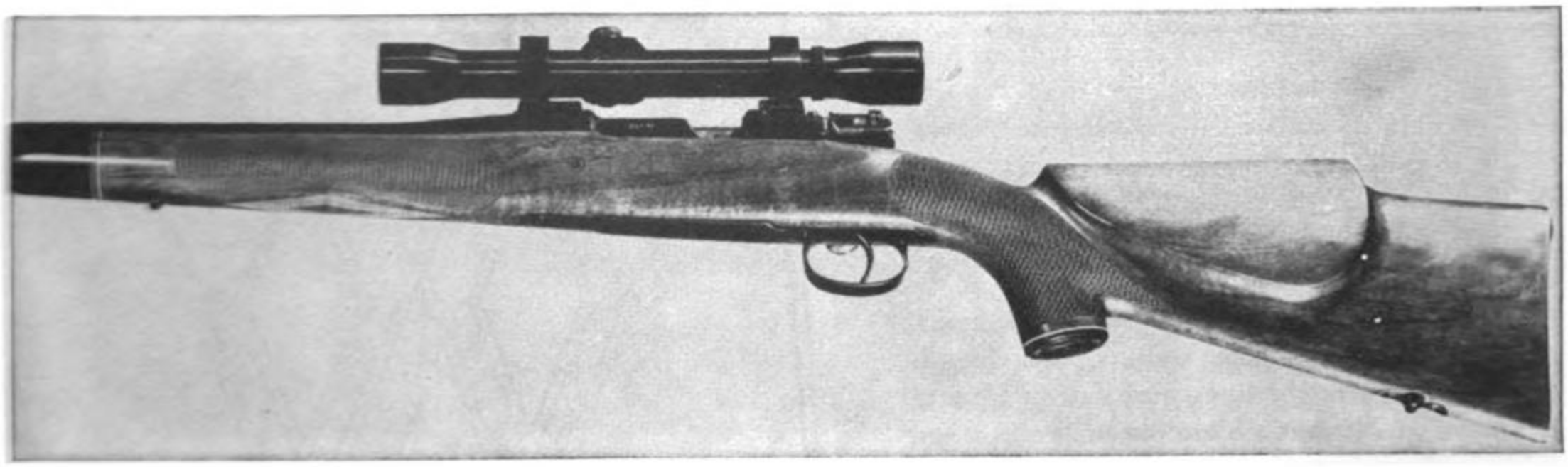
This Wisconsin-grown and Wisconsin hand-hewed-in-Wisconsin black walnut, full length stock is not all straight lines, and slab sided, and flat bottomed, but has a blending of swells, lines, angles and curves—anything having all these and looking so nice could only possibly be a *she*. Anyhow, *she* is a good looking job, although this stock has a pull of only 12½" which gives the butt a close, cramped look.

The two stock bolts were insisted upon by the owner, so black and white plastic plugs were inlaid to cover them up. These two crossbolts do give a thin, light stock far greater resistance to splitting from rough handling, or from the gun falling over when leaned against something. Of course, a poorly inletted stock will also be split from recoil but a properly inletted stock without crossbolts will not be split by recoil. (Of course, the largest magnums are a mule of another color, for them a gunstock should be well ironed and bolted.)

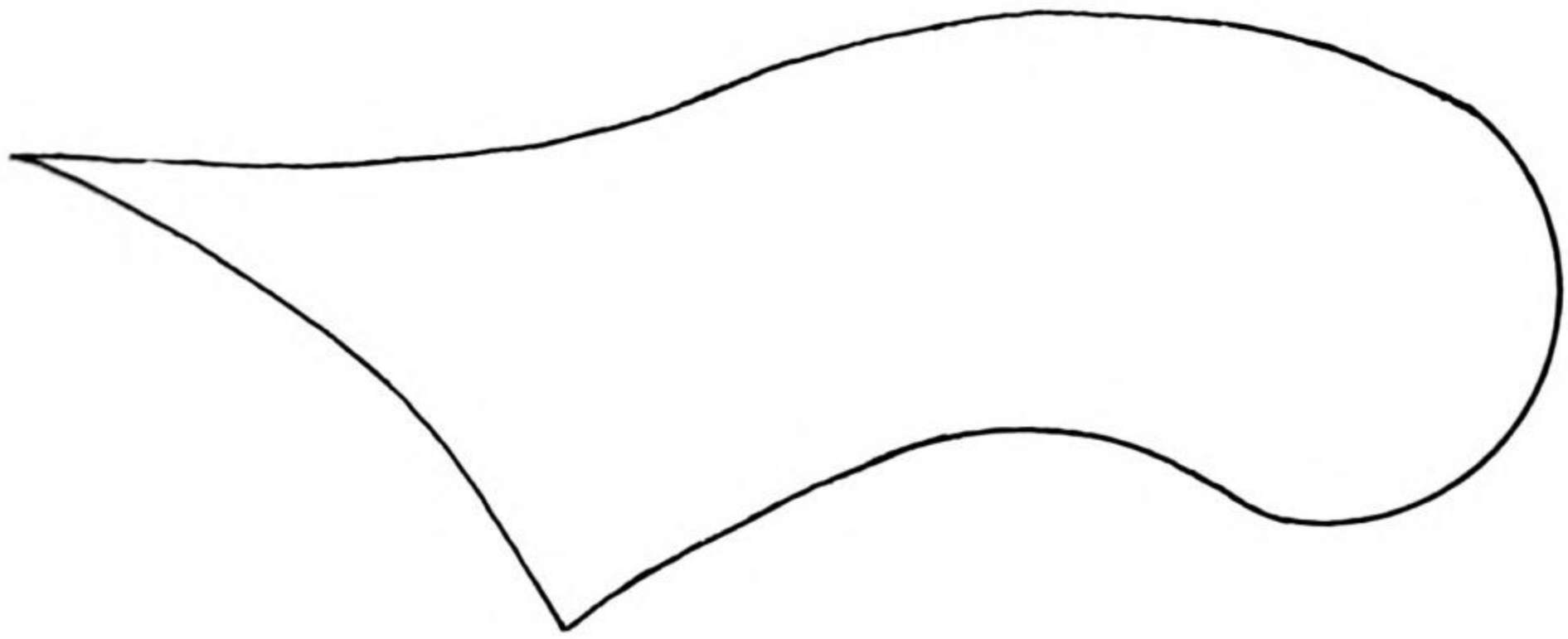
This grip pattern is joined on top of the grip by a corner of each side pattern meeting.

The forearm is checkered in a 9-piece family of diamonds and half-diamonds. It really is a 7-unit pattern, as the two large 3-sided sections and the large bottom central diamond with island in center are tied together with about three lines of checkering plus a border line on each side to give some semblance of unity to the "mess"—which word may also well describe the final condition of the gunstocker after he has completed this piece-meal pattern.





Leonard Mews'
Slick Chick
Combination
Fill-in and Point Pattern

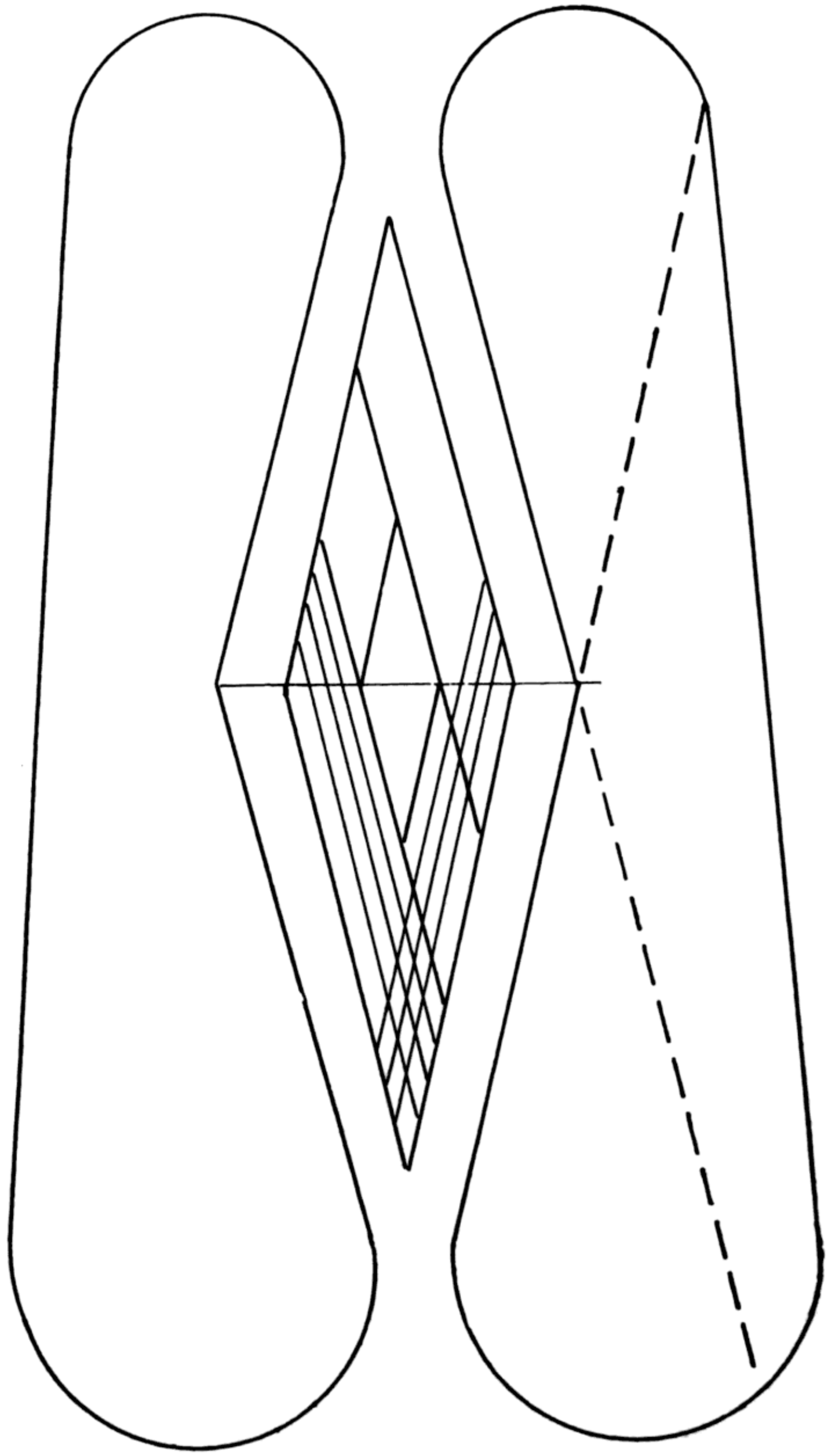


Elmore G. McDermott, gunsmith of Ripon, Wisconsin, built this .257 rifle from a semi-inletted Bishop stock. The scope is a Weaver K4, in Stith dovetail mount. Winchester rubber gripcap and steel buttplate with their Q. D. swivels and 2-screw bases.

The checkering was done by Leonard Mews and he personally worked out this rounded-end pattern. This design is liked by many because of its unfactory made look of neat simplicity and the smooth, easy blending of contrasting curves, angles and straight lines. The design authorities will try to tell us that such an inharmonious combination is all wrong —but it does not look so here, does it?

An advantage of this broken-up pattern is that although it runs clear around the bottom it does not appear to chop the forearm in half, as solid checkering does. A further point in its favor is that the job of checkering can be done in small doses, with the bottom diamond put on later in the season should opening day catch you with the job unfinished. A metal inlay can be worked into the bottom diamond, or left out, as desired—the pattern looks good either way.

This particular job was checkered 18 lines per inch, in a 3½ to 1 proportion of diamonds.



Notes on French Checkering

by

Leonard Mews

This glamorous, textured style of gunstock ornamentation has character in plenty—a fact to which all characters seem agreed. To some, it looks like embroidery work; to others like plaid weave cloth; some have the belief that such checkering is covered with a veil. It has been called Scotch checkering because of its Scotch plaid effect. Skip checkering is the term used by a few gunmakers. However, all the old German born and trained gunmakers that I have talked with tell me that it is *French* checkering.

When viewed from an angle, as part of a checkering pattern always is due to the stock being rounded, this French style of ornamentation does have an embroidered effect. On some jobs, those on which I did not "spare the 'orses," the narrower lines were given a few extra passes with the V tool, a treatment which sunk these lines below the wider ones, giving a sort of bas-relief, waffle-weave or diamond-grid effect—a finish which really gives the pattern texture and contrast. This, of course, adds to the work and naturally calls for a higher price but it does increase the gripping qualities of the gun—and this is a good time to settle that question in the minds of some of you readers.

Any of the versions of French checkering which I describe and illustrate will give the user a rough, non-skid effect without the abuse to the hands that some standard, coarse, sharp checkering does when gripped under the influence of a tight gunsling. Best of all, this hand-gripping quality lasts longer than with the sharp-pointed diamonds, and it really gives traction in the same manner as do lug-grip tires; the flat, reinforcing bars of the 8 to 14 or 16 lines of flat, nearly square-sided sharp corners stand out from the finer, sharper-topped lines and "take holt."

These coarse, flat diamonds each have four sharp, square corners digging into your hand instead of the one sharp, pyramidal tip of the finished, standard diamond. This gripping quality is increased by deepening the finer lines in the pattern with that extra pass or two of the V tool, or even with the spacing tool if you use a type that will space and finish at the same time.

It calls for more—and more careful—work but I tip the deepening or the V tool away from the wide lines in order to make the large diamonds as straight-sided and the flat tops as large as is possible. This gives more non-skid effect—due to the square-top corners—and, too, contrast is added to the pattern.

As these wide, rugged, flat diamonds get the most

and the first of the wear and rubbing-down given to the stock, the finer, pointed diamonds of the pattern wear many times longer and keep their clean, sharp appearance for a much longer time than similar fine lines will do when used alone as in ordinary standard checkering. The larger, flat tops keep polished bright and give added contrast to the protected, sharp lines, which appear duller. The stock finish, being completed before the checkering, stays on these flats and appears bright and shiny. Even the simpliest, plainest pattern looks rich and dressy with French checkering, due to the textured appearance. It is a pattern within a pattern.

When executing French checkering in a "point" or what I often term a "fishtail" pattern, the best appearance usually is obtained by having a few, or even only one, of the finer sharp lines on the outside of the pattern; this gives more contrast between the checkered and the uncheckered portions and seems to make the checkering look finer.

I first used this French checkering only on the point type of pattern, and the several foreign jobs I had previously seen it used on were all of this type of design. I often wondered how it would look if used on a curved border, fleur-de-lis, and similar design, patterns but was of the opinion that it probably was only suited to the point patterns. The day finally came when I tried it on a design of curved outlines—what John Hearn aptly calls a fill-in pattern—and I was more than pleased with the results. One such design is the Curvaceous Blond pattern a few pages further along in this book. And to date, no one of my customers had thought French checkering a bit out of place on such patterns.

Now that I have undoubtedly sold you on French checkering, or you would not have read this far along, here is the manner in which it is done.

French checkering is merely a combination of fine and coarse lines. Due to all the lines being of the same depth, that depth of the finer lines is not sufficient to bring the diamonds formed by the coarser lines up to a sharp point. Thus we have a combination of sharp-pointed, top finished, fine diamonds alternating with flat-topped diamonds of twice their width, or thereabouts.

The combinations and the variations of fine and coarse diamonds are unlimited. The width ratio can be 1 to 2, or anything one takes a notion to, just as long as there is a difference. Some designs call for a 1 to 3 and even a 1 to 4 ratio; this last would mean that there are two to four lines of 20 to the inch, of pointed-top, sharp diamonds alternating with one line of anything from 5 to 16 to the inch flat-topped diamonds.

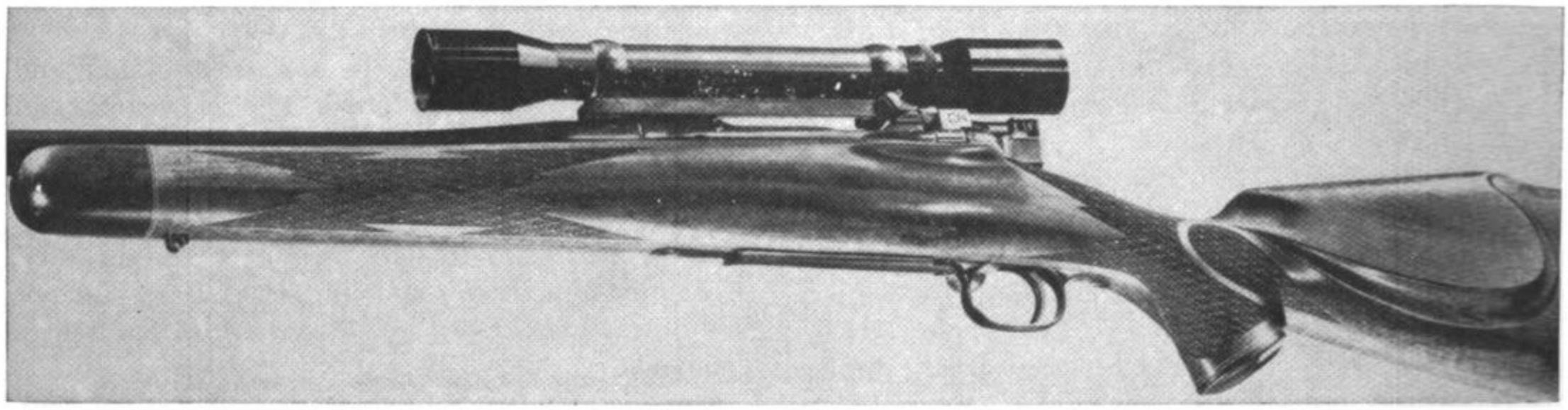
Any contrasting combination of lines can be used, but as a general rule one tool half the width of the other is used. This forms a balanced contrast.

Where that delicate, lacy effect is wanted, I have used a 15 and 30 line spacing, in a 1 to 4 ratio. This looks fine indeed, but it calls for the best of hard wood in the stock blank and careful handling of the gun after delivery. It is really intended more for show pieces than for a hunting arm, but, as mentioned before, such checkering is far more durable than any regular 30-line checkering would be.

A 13 by 26 in a 1 x 2 or 1 x 3 mixture is a combination I have used quite a bit. This has been well received and it is fine enough to look well in even fairly small patterns or on small gunstocks. The illustration below shows this in 1 x 2 ratio.

A very coarse type of French checkering in a rather small or short design does not look well as there are not enough contrasting lines to give that textured, well-knit look inherent to this type of checkering. The general effect is to make the checkered area look even smaller than it is; small areas call for fine checkering.

The stockmaker who tries his hand at odd mixtures of this French checkering, or in combinations new to him, will do well to first work out his idea, ratio or weave on a scrap piece of wood, in an area the size of his intended pattern, and then see what he has in hand. He may not have that "oomph" that he intended to get.

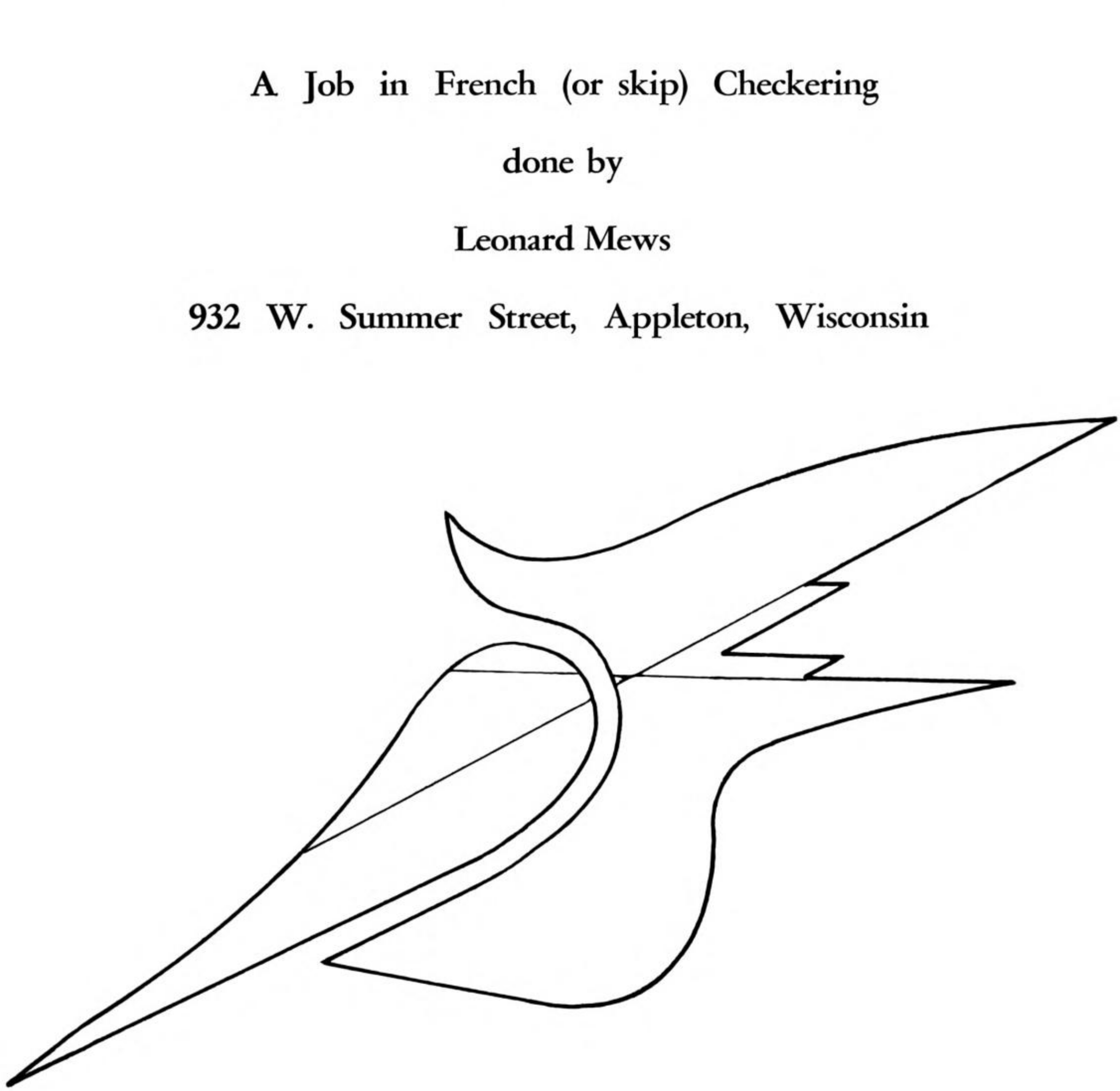


A Job in French (or skip) Checkering

done by

Leonard Mews

932 W. Summer Street, Appleton, Wisconsin

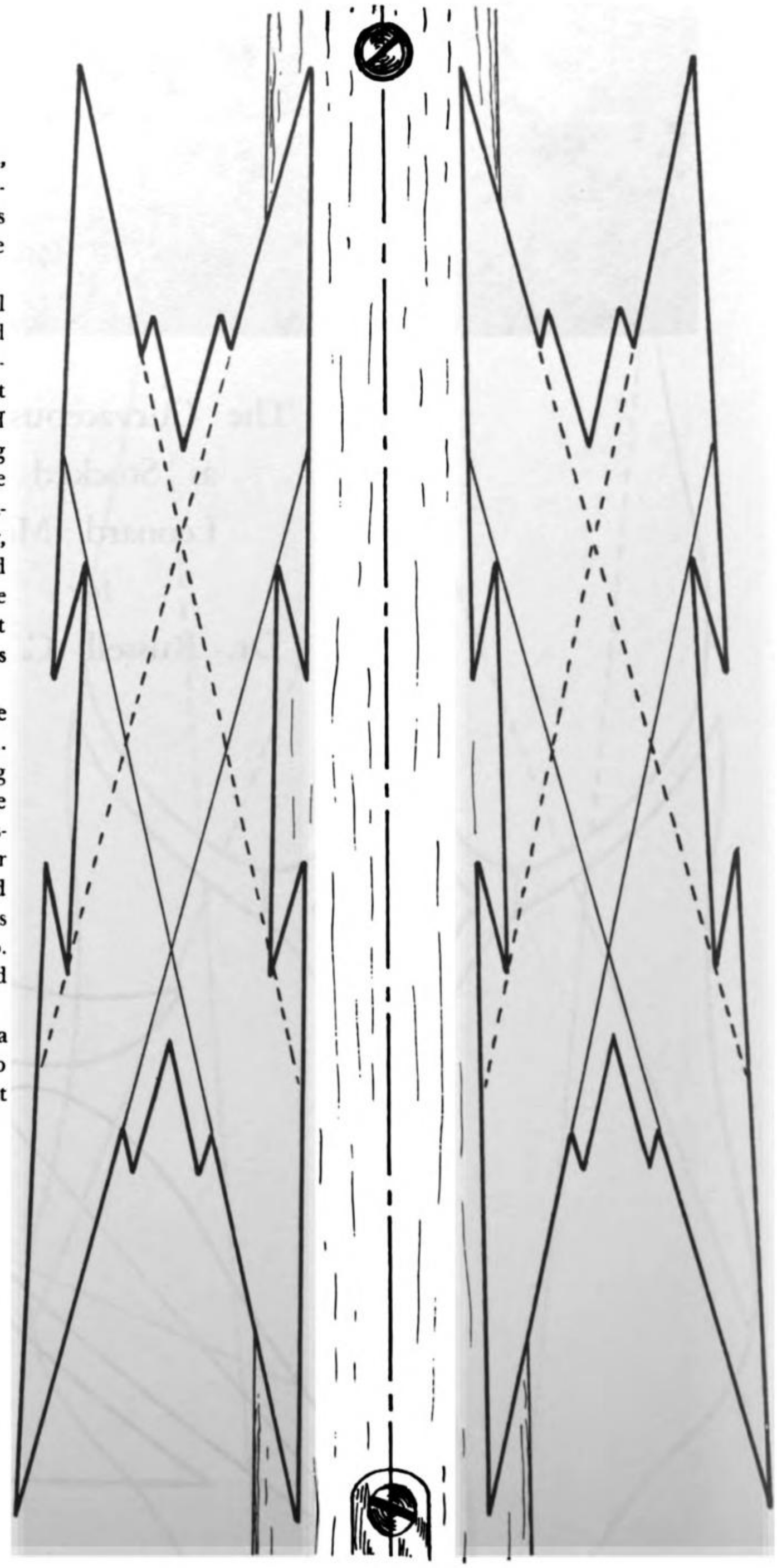


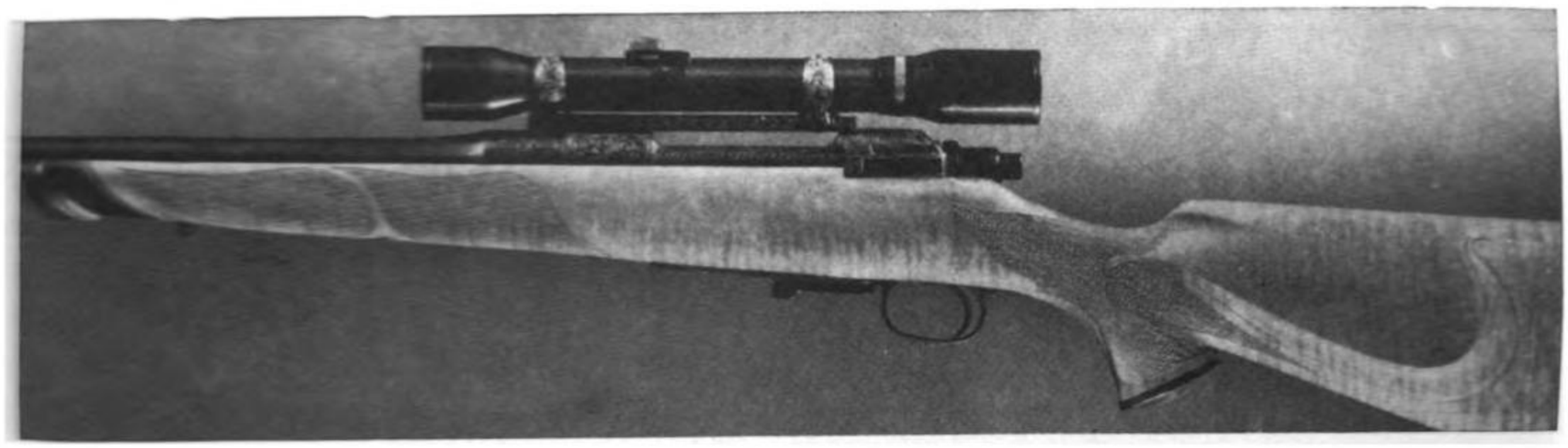
Here is a fine bit of California Claro walnut, with colors ranging from light to dark and having this coloring and shading running in streaks and in a hit-and-miss pattern regardless of the grain.

This rifle has a 24″ Weatherby .270 barrel with 12″ twist fitted to a 1903 Springfield action. The scope is a Unertl Hawk in a Buehler mount without any adjustments—the exact setting having been arrived at by grinding off the base until it pointed right. Besides being very neat in this already neat mount, this gave an absolute tinker-and fiddle-finger-proof setting. However, in the opinion of ye gunstocker, the connecting base bar between blocks should have been cut out, making this a two-piece base for further lightness and neatness. (But in this establishment the customer is always right—sometimes.)

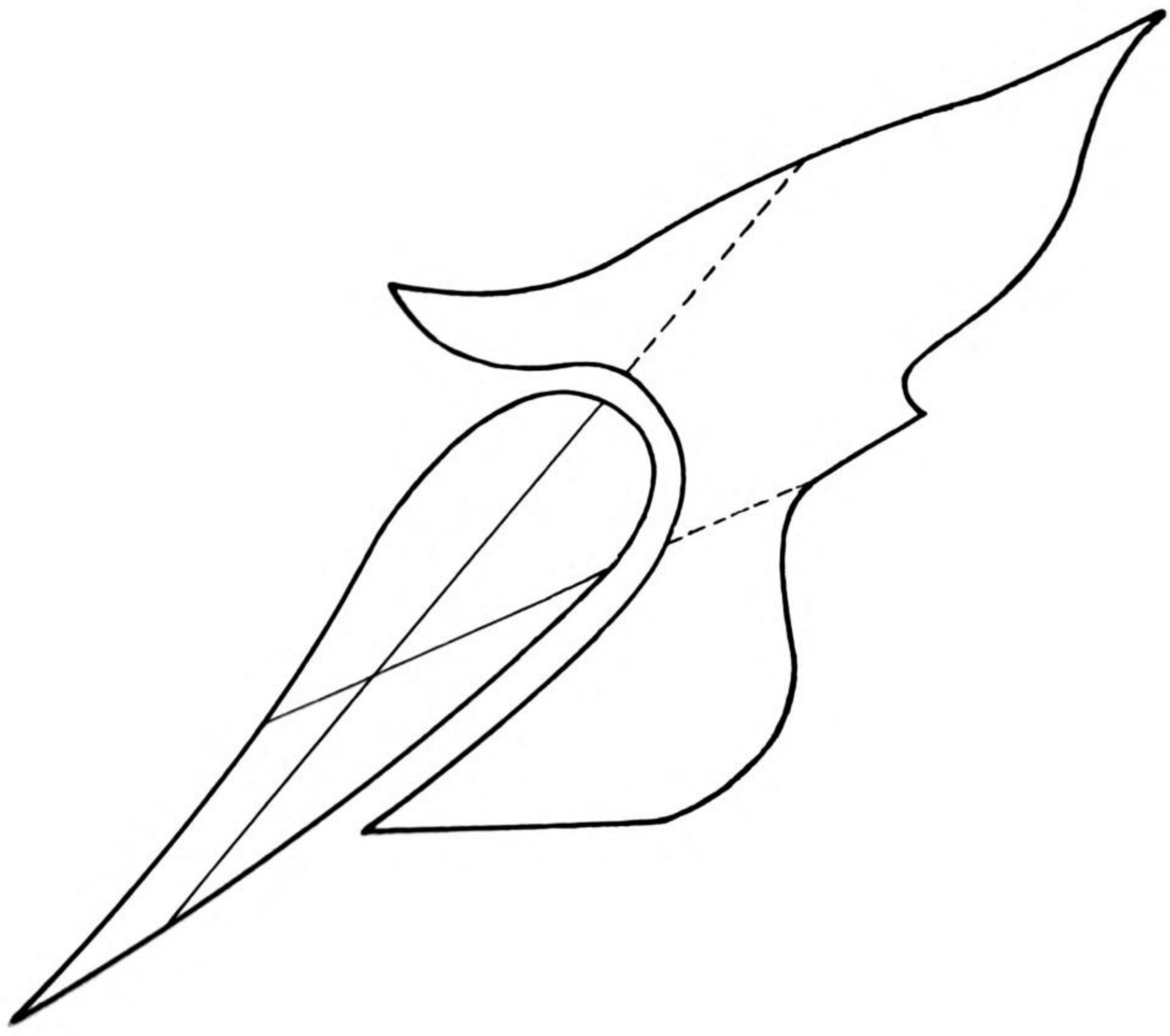
This stock has a forward sloping comb, the .270 cartridge being one of considerable recoil. Ebony grip cap and tip, the latter finishing out a rather full, pear-shaped forearm. The grip cap has a diamond-shaped inlay of birds-eye maple which is scooped out on the four concave sides leading up to the raised diamond center. Checkpiece is thick and flaring and its forward end runs off into the top of the grip. Grip is 3⅜″ from trigger. Conjar goldplated trigger and Jaeger Q D swivels.

Checkering is the French or skip type in a 1-to-3 ratio—three rows of 28-line diamonds to one row of 14-line, the latter not being brought to a point.





The Curvaceous Blond
as Stocked by
Leonard Mews
for
Dr. Russell C. Smith



This is an Enfield 1917 action, fitted with a 26" Pfeifer barrel chambered for the .300 H & H cartridge. Receiver in rear of bolt stop has been cut away a bit. Rifle has been stocked with curly maple having amaranth or "purple heart" streamlined schnable tip and grip cap, and with inlays having gold centers.

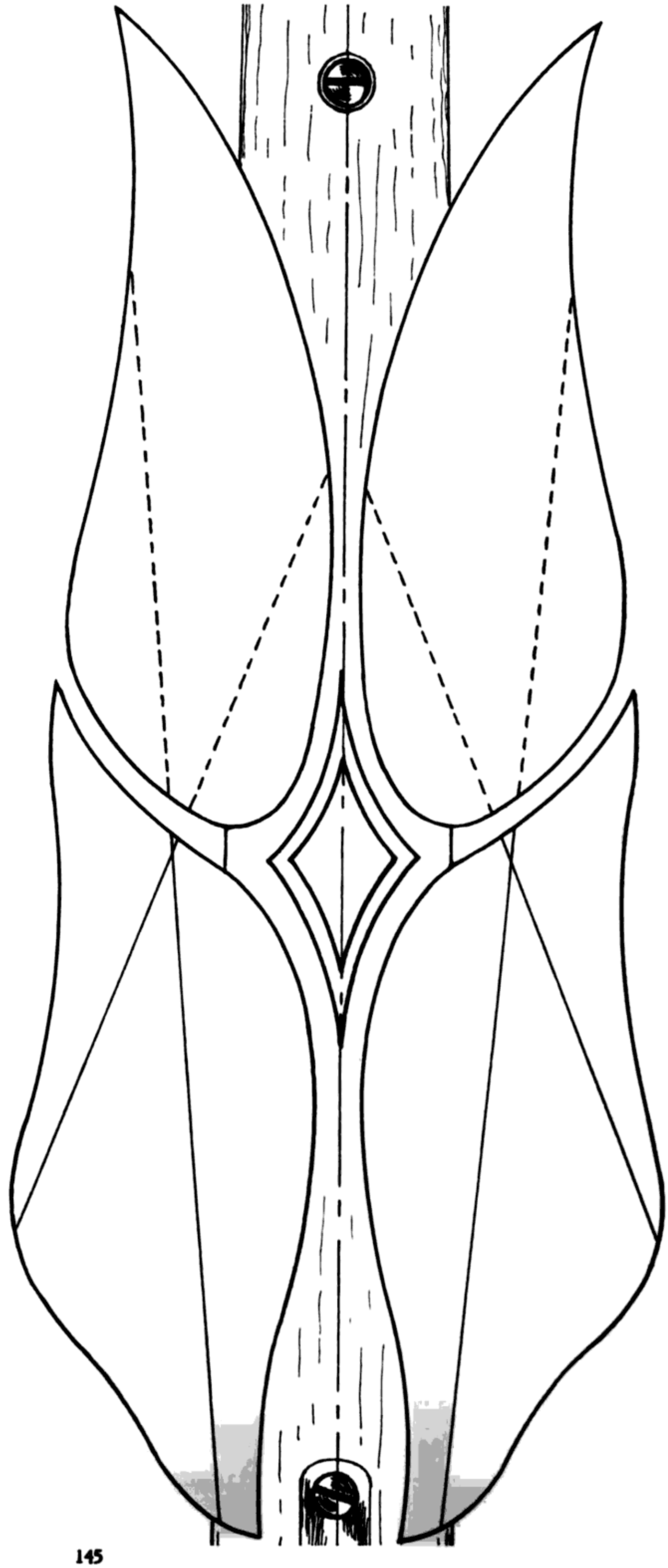
This forearm is a swelled taper with its lines faired out to the racy schnable tip, the latter being joined on a curve with .010" white plastic spacer between tip and forearm. This curved tip naturally suggested a curved checkering pattern to match, with said pattern combining properly with the inlay and nameplate on forearm bottom. The checkering is well anchored and actually appears to be held on by a net or mesh covering—which appearance is given by 1 x 3 French checkering, of 14-line flat-top diamonds alternating with three lines of 28 to-the-inch sharp-pointed diamonds.

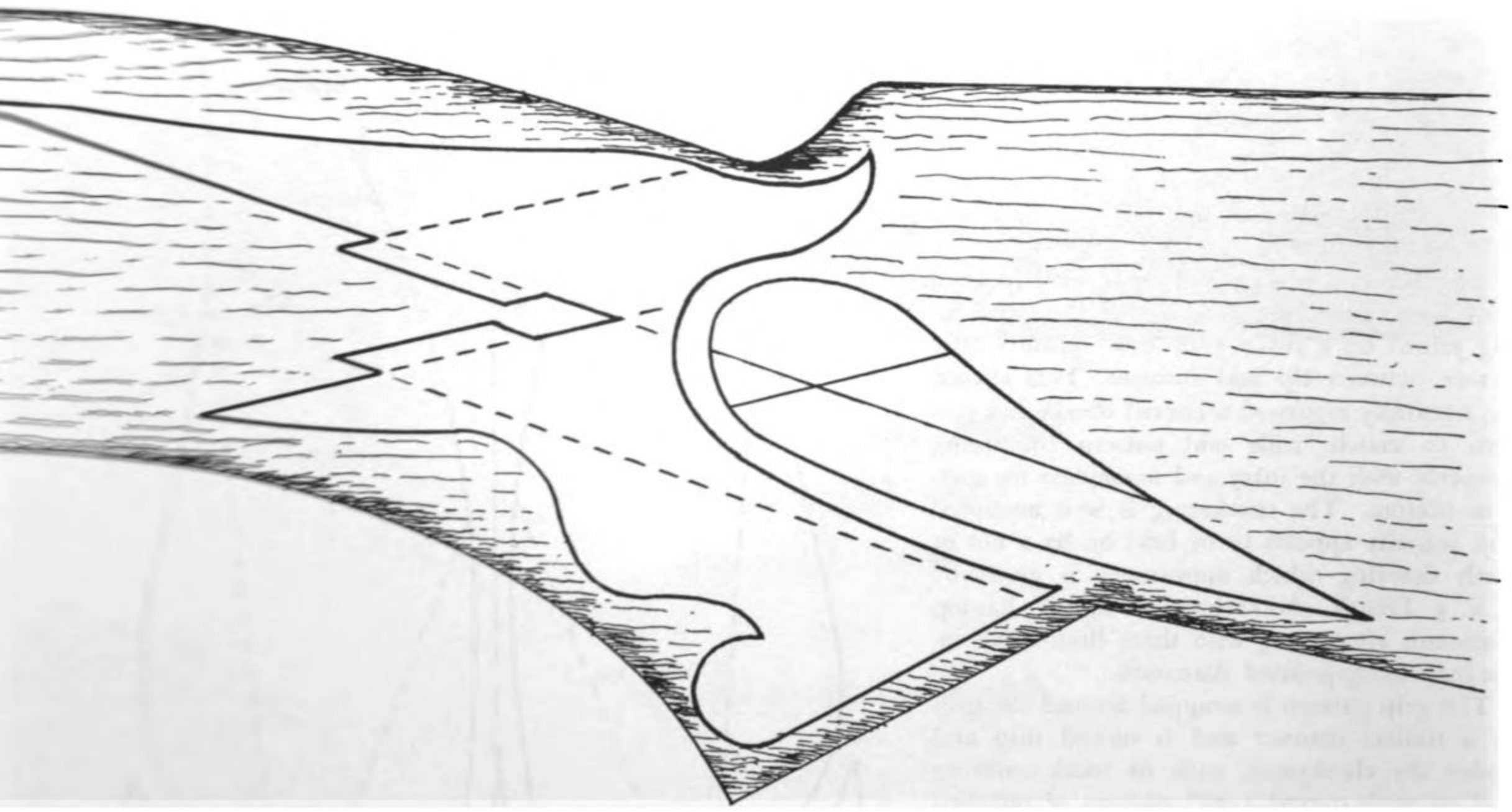
The grip pattern is wrapped around the grip in a similar manner and is tucked into and under the cheekpiece, with its mesh covering tied on with curved 3/16" ribbons of polished maple. Yet this elaborate looking design covers only where the hand grips in shooting the rifle. This grip checkering is a combination of curved outlines and points and it wraps around the grip within one-quarter inch or so of the bottom, giving decoration to the underside of the grip with checkering where the fingers touch it —a sort of finger groove effect—incidentally, the checkerer must also be in the groove to work out this bit of fanciness.

This entire stock design, with its checkering and inlays, is a collection of curves, with a few pointed lines included to break monotony and for contrast.

This grip cap, with its engraved gold diamond-shape inlay, is one of my own designs which I seem called on these days to make on just about every job I do. The diamond-shaped center is raised and the cap scooped away on four sides on a long sweeping curve.

Butt plate is steel, with trap. Jaeger swivel studs. Unertl Hawk 4x scope in a really fully-engraved Buehler mount. Springfield 1903 magazine with hinged floorplate. Gold plated Canjar trigger. The bolt and extractor were engine turned by Gartman Custom Gun Works and the extractor then gold plated—now that is really "frosting the frosting."

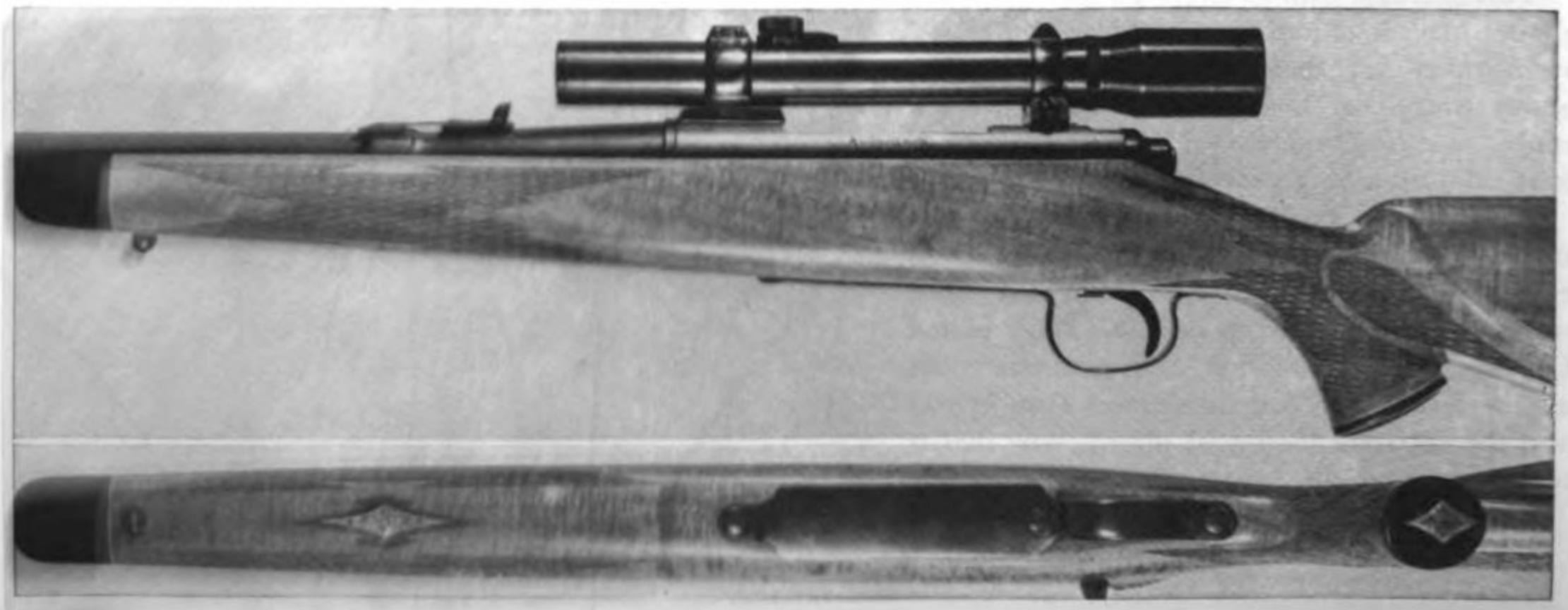




Leonard Mews' Modernistic Fleur-de-Lis Pattern

This Remington 721 rifle was restocked in California Claro black walnut for a short, solidly built man, hence it has a 12-inch pull with pistol grip just 3¼" from trigger. The stock is trimmed down as thin as possible, with a short forearm—sometimes the stockmaker does get a break in his checkering and in this case there were a few square inches less to be worked over.

This pattern is a version of my lightning design, which most everyone seems to like. It has a sort of modernistic, angular fleur-de-lis on each

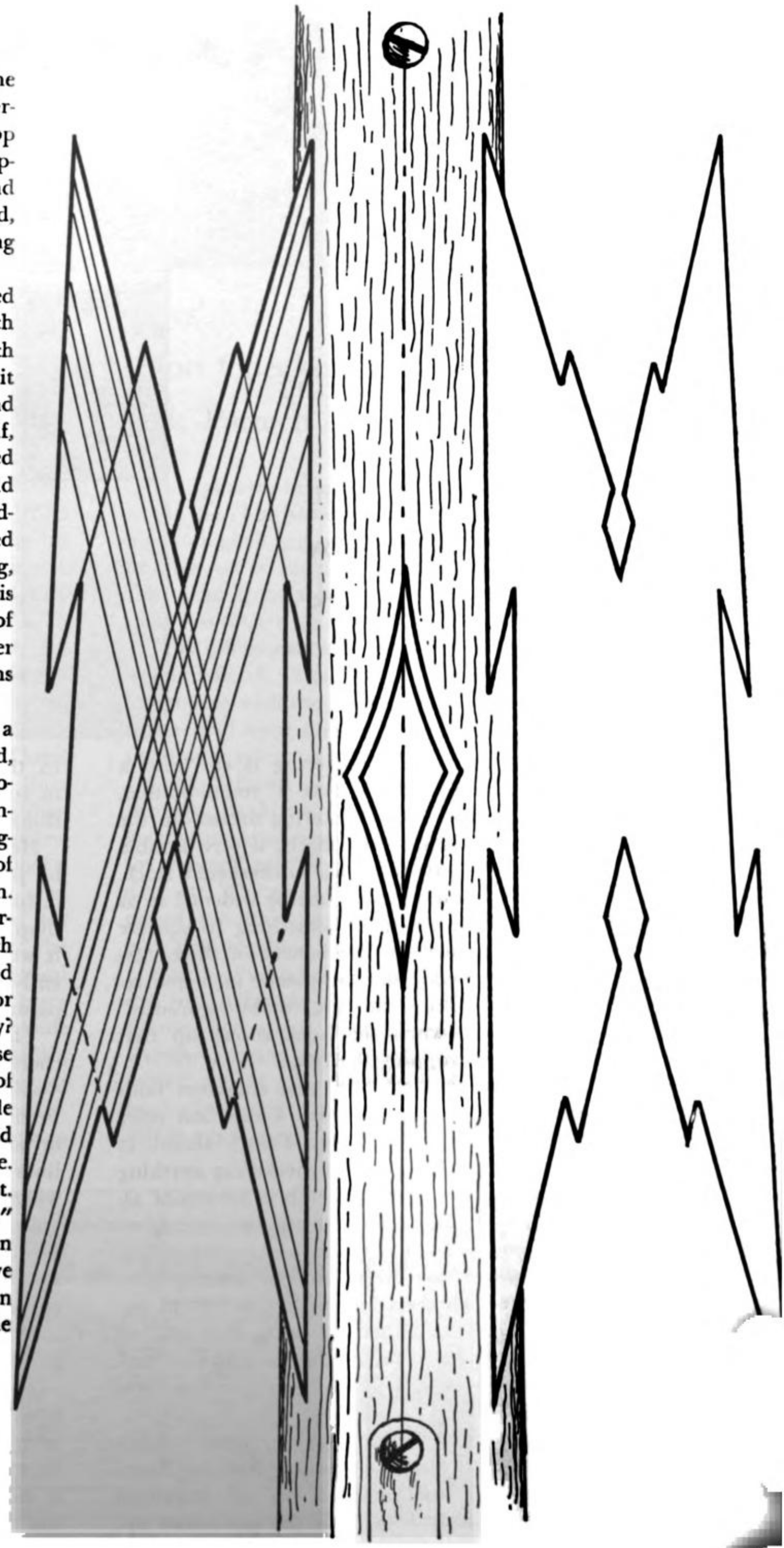


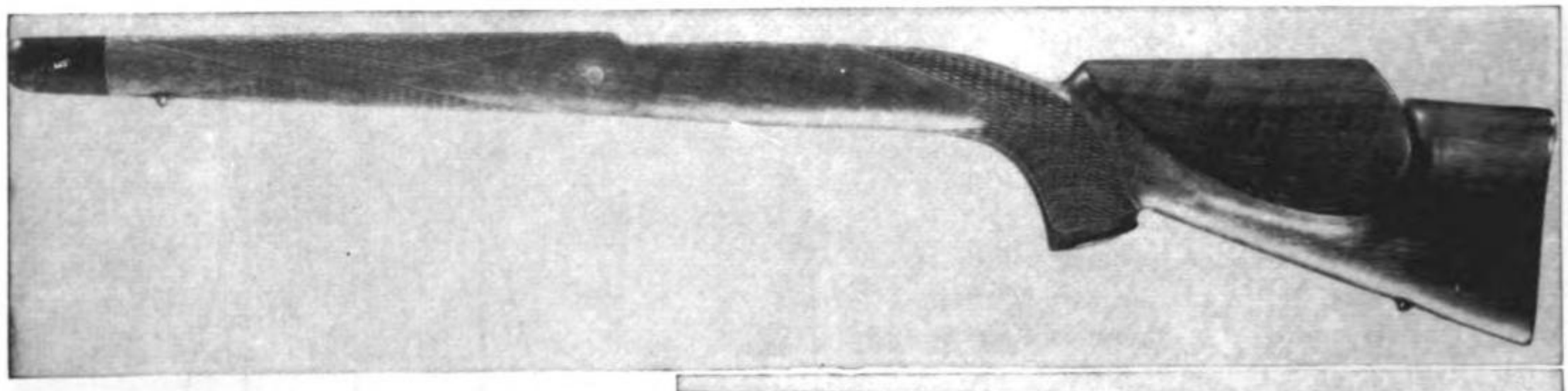
end of the design, these being formed by the checkering lines as one goes along. The checkering is 13-and 26-line spacing, one line of flat-top 13-to-inch alternating with two lines of sharp-pointed 26-to-inch diamonds—other widths and combinations of widths can be used if desired, such as 10- or 12-line flat diamonds alternating with anything from 18-line or finer.

This particular forearm has a multi-pointed diamond inlay of African blackwood, which frames a 10k gold inlay inside of it, upon which the owner's name has been engraved plus a bit of border and fill-in engraving in points and side corners. This type of name plate sells itself, and most customers prefer to have it located here rather than on the grip cap or on the old and customary place on bottom of the butt midway between grip cap and toe of stock. Placed upon the forearm, it fills in between checkering, adds a bit of variety, color and sparkle to this otherwise long and rather monotonous limb of the stock—sort of like the way a fancy garter does to other kinds of long, well-turned sections of limbs—yep, sure does on some.

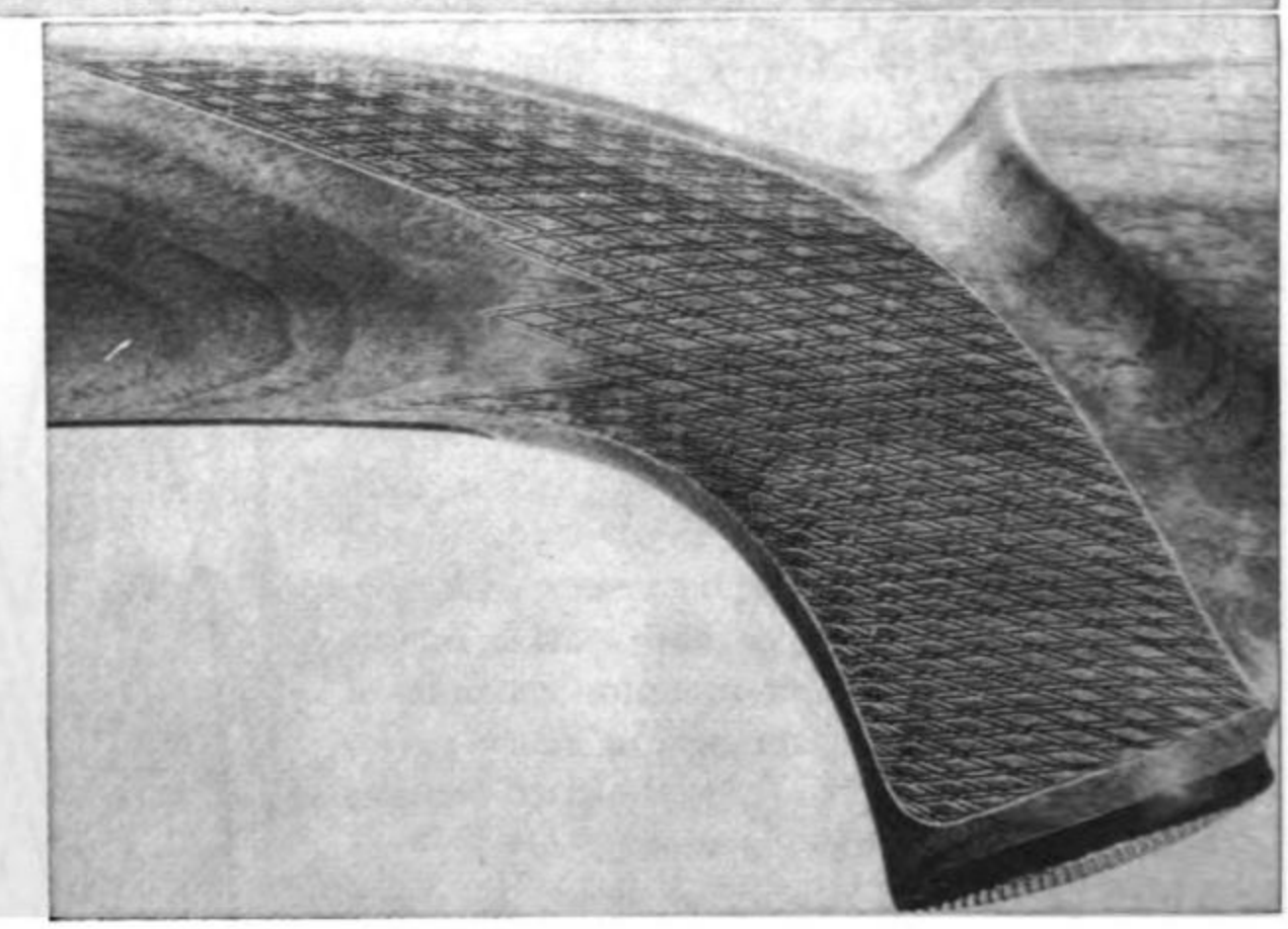
Which is another reason, at times, to use a broken-up pattern rather than an all-around, one-piece design which can be almost as monotonous as an uncheckered forearm. The broken-up design may be particularly adapted to fitting-in along with a particularly well-figured piece of wood having some nice grain for decoration. We all know that the most bewitching, glamorous stockings are those coarse mesh affairs which hide so very little, the kind chorus girls and burlesque queens wear. Well, why hide all or most of anything's natural beauty—if it has any?

There is one more advantage in having these metal inlays in the bottom of the forearm of one's rifle: Some folks handle and use a rifle so that the forearm gets bumped badly and scarred up considerably, even with average use. Particularly when shooting from a car or rest. But this gold inlay, which is soldered to a 1/32" steel backing, can take quite a beating—then too, maybe that bit of precious metal will serve to remind the owner to use a bit more care in the handling of this gun or rifle for which he laid out so much perhaps hard-earned gold.





English Checkering with a French Accent as developed by Leonard Mews



The old English "flat" checkering is cut with a round-bottomed tool, which cuts a round-bottom, straight-sided groove. Such checkering dresses up the stock, shows up the wood quite nicely, is very durable and gives a better grip than an uncheckered stock.

If desired, this round groove can be widened so as to give the flesh of the hand something to squeeze into—this is mentioned for the benefit of these city-bred frontiersmen who, like the patent medicine requirements before taking the shot, "shake vigorously" to such an extent when the buck shows up that they are afraid of dropping the rifle.

Here is a type of checkering that combines both the French and the English styles. I can best refer to it as English checkering with a French accent. It is the simplest possible way to do checkering anything like the French style as it is merely a system of alternating lines of different width, in this case illustrated by 13 and 30 lines to the inch.

The stock shown here was made by another gunstocker—I merely checkered it with this hybrid nationality of ideas as another excuse to tack on one more item in gunbuilding for the customer to consider and possibly be billed for; not many like their cake without frosting!

This job requires *rhythm*. Cut one line—lay down tool— grab other width tool—cut one line—lay down tool—snatch other tool—and so on ad infinitum until the job is finished—or until you get mixed up. In this latter case, the best procedure is to count to 100 instead of to the usual 10 before saying anything—as plenty is waiting to be said at first breath.

Here is one job that is best done *alone*—meaning by yourself—and where there are no distractions—influencing customers—characters—or otherwise in the shop to break the rhythm. Here is a situation where it would be well to use checkering tools with differently shaped handles, or differently colored and painted handles, or both combined.

The job shown here can be cut with standard checkering tools. Or it can be done the way I did it —with a narrow spacer sharpened so as to cut nearly vertical on both sides and the center to the usual 60°, or 90° angle if you prefer, so as to bring the smaller lines up to a sharp point or edge. This leaves the wider, flat line with quite straight sides.

If a deepening V tool is used, I tip it away from the large diamonds in order to keep them more square-sided. This is not necessary if one uses a steep-angle spacer.

This is a fairly fast way to checker a stock but it requires great care in execution, as perfection of one's work is what gives this slight-checkering type of ornamentation its neat, snazzy look. The job shown here winks the loudest at you when it stands placed in a row with other variously checkered stocks—from a short distance it really is a standout—sort of like the gal with the shortest skirt in the bunch.

Leonard Mews'
New Deluxe Combination Checkering
in the Rabbit Track Pattern

Major Helm C. Hussner owns this 1917 Enfield foundation for a .219 Wasp bench rest rifle. The barrel is by Bob Wallack--it is a heavy one, the entire assembly weighing 17 pounds. Stock is of California walnut, inletted by Mews, shaped by Hussner slightly assisted by Mews—but mostly the Major's ideas as to shaping. Dayton Traistor trigger. Single shot, no magazine. Purple Heart grip cap and large multi-point diamond in forearm bottom. Everything to typical huge bench rest proportions.

So—for this special job we worked out a special kind of checkering that is in keeping with the heavy lines of this rifle, a type that is nice to look at, that is durable, easy on the hands, and that will take considerable of a beating and still retain its lines and looks.

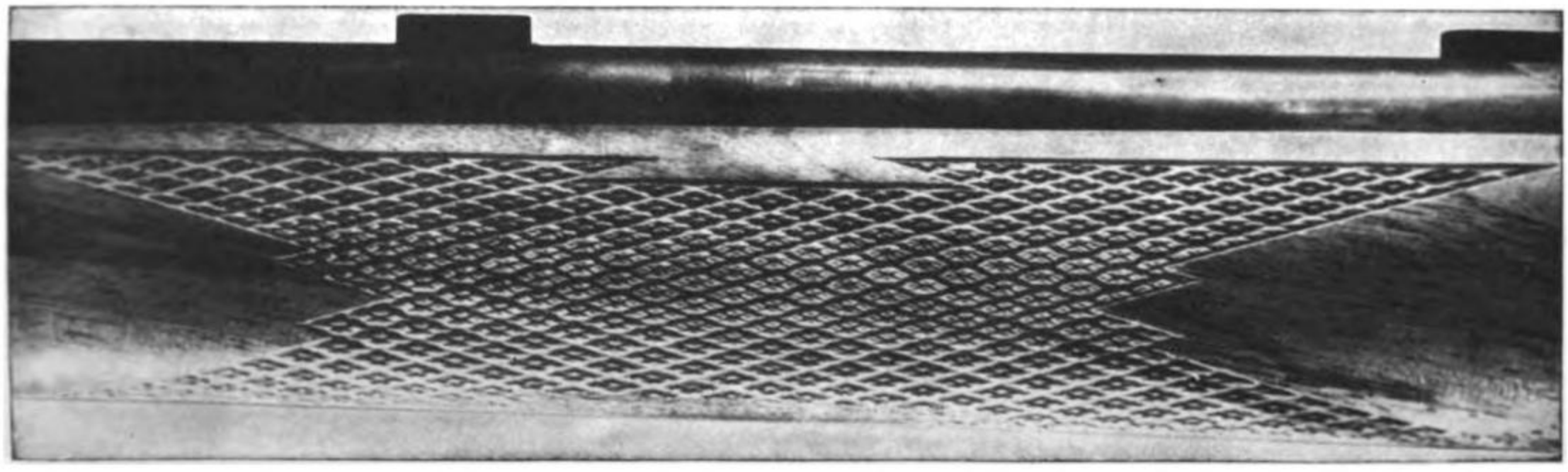
This coarse version of Mews' checkering as seen here was made by a 14-line spacing tool used for French checkering, which cuts narrow, deep lines. The entire pattern is spaced thusly. Then, a bent round file, or riffler, of "Grobet" brand, was used in *every other* line, cutting out a round groove 3/32" wide and about 1/32" deep; making a sort of oval, not exactly a half-round groove. This left a cluster of four flat-topped diamonds between each wide groove.

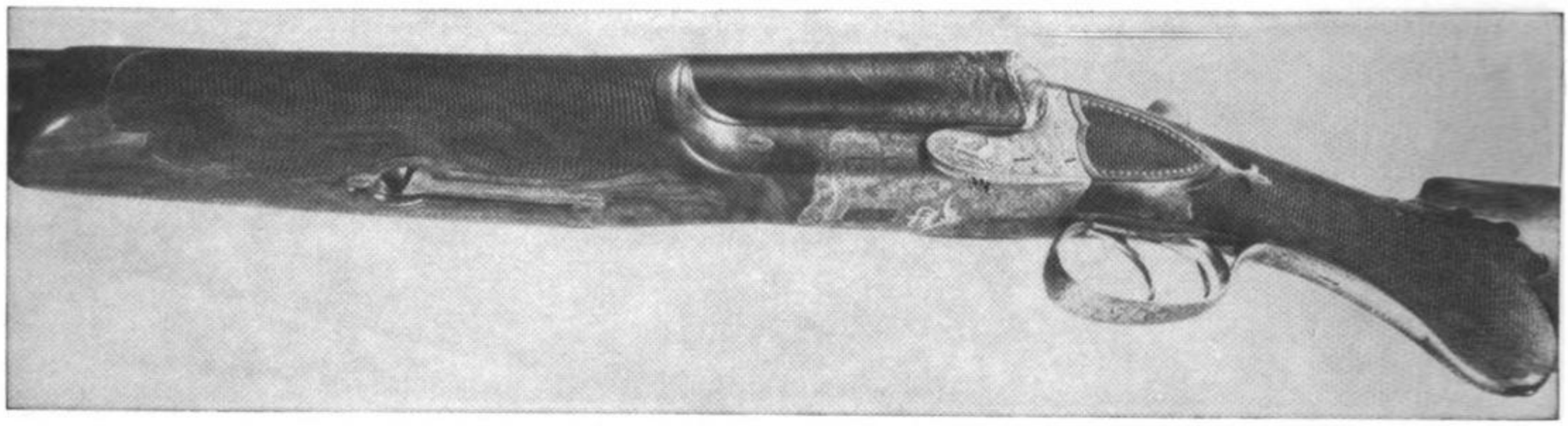
This really is French 1 x 2 checkering in reverse, a round groove being where the flat-top diamonds would be. The shallow lines make durable checkering, very good gripping qualities and are not uncomfortable on a long, breath-holding, squeezing-down aim taken from a bench top—the kind you take for those less than 1' of angle groups.

This job is coarse-lined. For a lighter or hunting weight rifle 16, 18 or 20 lines per inch would be more in keeping with the lines of the piece. Still, some customers will want these coarse diamonds once they see them on a rifle.

Look fellows! This particular job was rushed through the Mews' factory to get photos in time to meet publication deadline for this book. So, do not enjoy yourself too much gloating over the nicked borders, etc. The actual job looks 999½% perfect to the naked eye—only specialists like you and me would ever find anything wrong with it.

Fact is—I've taken about all the ribbin' I can on this job. After the entire staff of the Mews Firearms Factory had spent hours and hours in trying to determine a fitting name for this new super-pattern the owner of this rifle steps up and sez "Call it rabbit track checkering—that's what it looks like." So, I guess this is our Rabbit Track Pattern.





A Good Shotgun made better by Leonard Mews

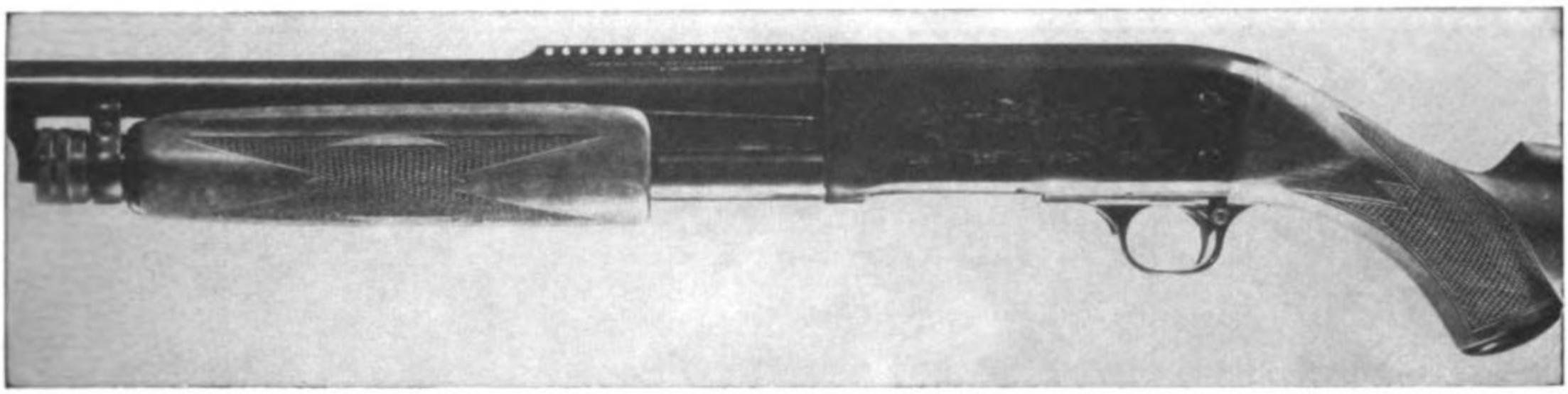
This Chas. Daly 12-bore Diamond Regent grade double gun originally was built with a silver type fore end—then fitted with the handfilling and beautiful beaver-tail shown above, the new fore end being both deeper and wider than the original.

Leonard Mews worked out a pattern to match the grip design—yet it is one which readily can be varied to fit on almost any double fore end and still show some of the wood should the figure and grain be suitable for naked exposure.

The latch housing is set into the wood quite deep, with terraced rounding sides.

Engraving is quality stuff, with birds and crown done in gold, in relief. That grip "caplet" that you see is a cute little affair of buffalo horn, set into the wood.

This perfectly made and most beautiful gun was owned by George Puth, Appleton, Wisconsin's nationally known trapshooter.



Shotgun Fore Ends and Odds and Ends

by Leonard Mews

Above is shown an Ithaca 37 after being refurbished a bit and then refitted with an extension fore end by Leonard Mews. He has taken his Lightning pattern and whittled it down to fit, without covering up the entire fore end and having it look like a machine-knurled tool handle.

In fact, this factory pump gun has been converted into a really special custom job. The rear fore end retainer ring was reduced in diameter and then fitted inside the new handhold, so the wood could be cut out to neatly clear the receiver when pulled back; this permitted the extension to be made to same diameter as regular handle instead of the billet of stovewood usually furnished.

Then the finishing touch—a heavy one—was put on the rib. Look at it—and through it—what is left of it. Morris K. Swenson, the owner of this gun, always had a yen for such a rib after reading Bob Nichols' article on such alteration in *Field and Stream,* but he always shied off at the last minute when it came to saying "yes" to the gunsmith. He finally weakened for a moment in the presence of Leonard Mews and before he could again change his mind Leonard had the solid rib off—all but what you see here. The ventilating holes are graduated in diameter, in keeping with the barrel taper—Leonard claims they come in handy for shot size gages at times.

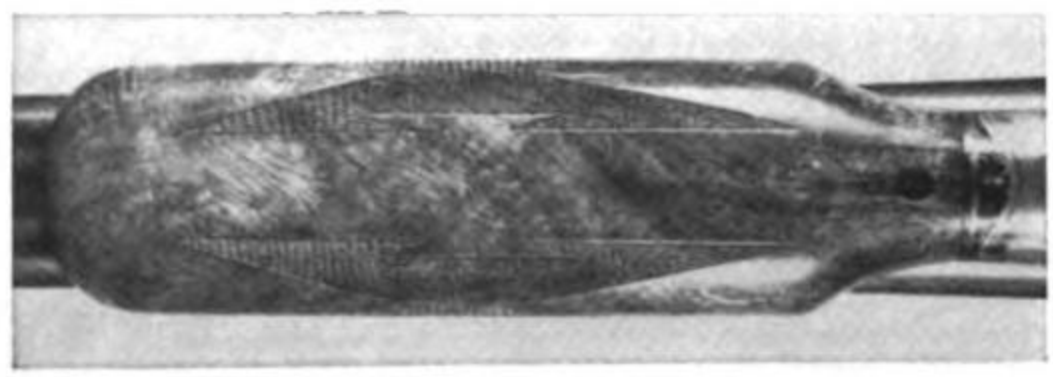
The bottom line of the buttstock was raised 3/8" at rear of gripcap so as to make a straight line from toe to joint at rear of trigger guard, then 1/2" was cut off bottom of grip. The grip sides were thinned away a bit but side panels were left to fair off into the receiver. This slimmed out and lightened the stock and gave a much neater job. What checkering was left on the grip was added onto and changed to a different outline to match up with the fore end pattern.

It's still an Ithaca 37—even though it may not look it.

* * * *

Below is shown a beavertail fore end made for a No. 2 Ithaca double and using this same Lightning pattern for the checkering. This beavertail is trimmed down as thin as possible and follows the contour of the barrels.

The wood is a selected piece of tough and dense Wisconsin walnut of a beautiful reddish color and with striking flame grain. Consequently, the checkering pattern was proportioned and sited to cover as little as possible of this natural beauty. It is always possible to pick up a really beautiful and striking piece of wood for so small a job as this one called for. When found, the beauty of such a piece should not be completely covered up with the checkering, in fact the small blank should be so laid out and fitted as to permit the checkering to cover up the plainer surfaces and thereby enhance the natural beauty which is left exposed and bare of any ornamentation.



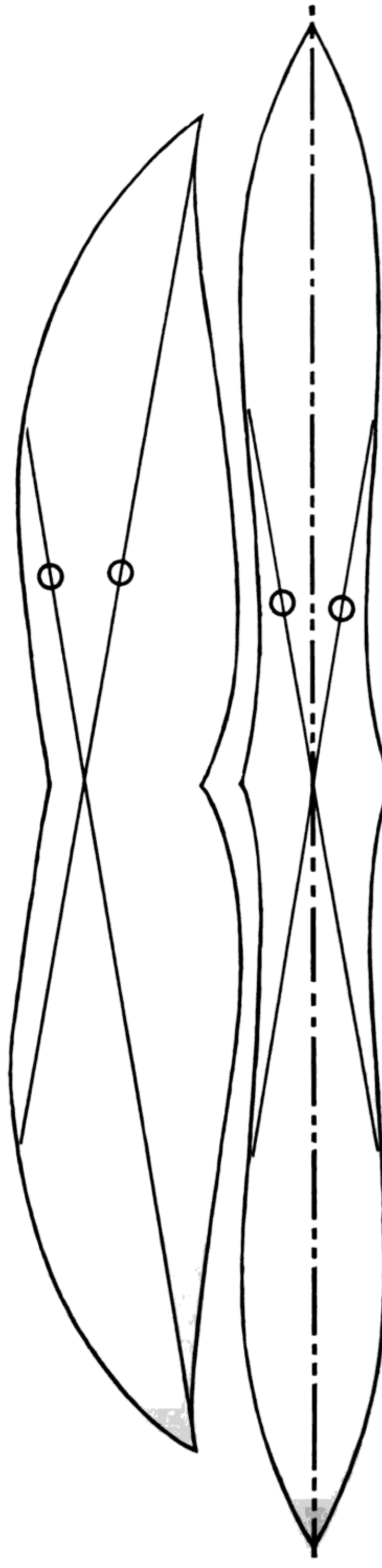
Bill Hutchings' Wings Pattern

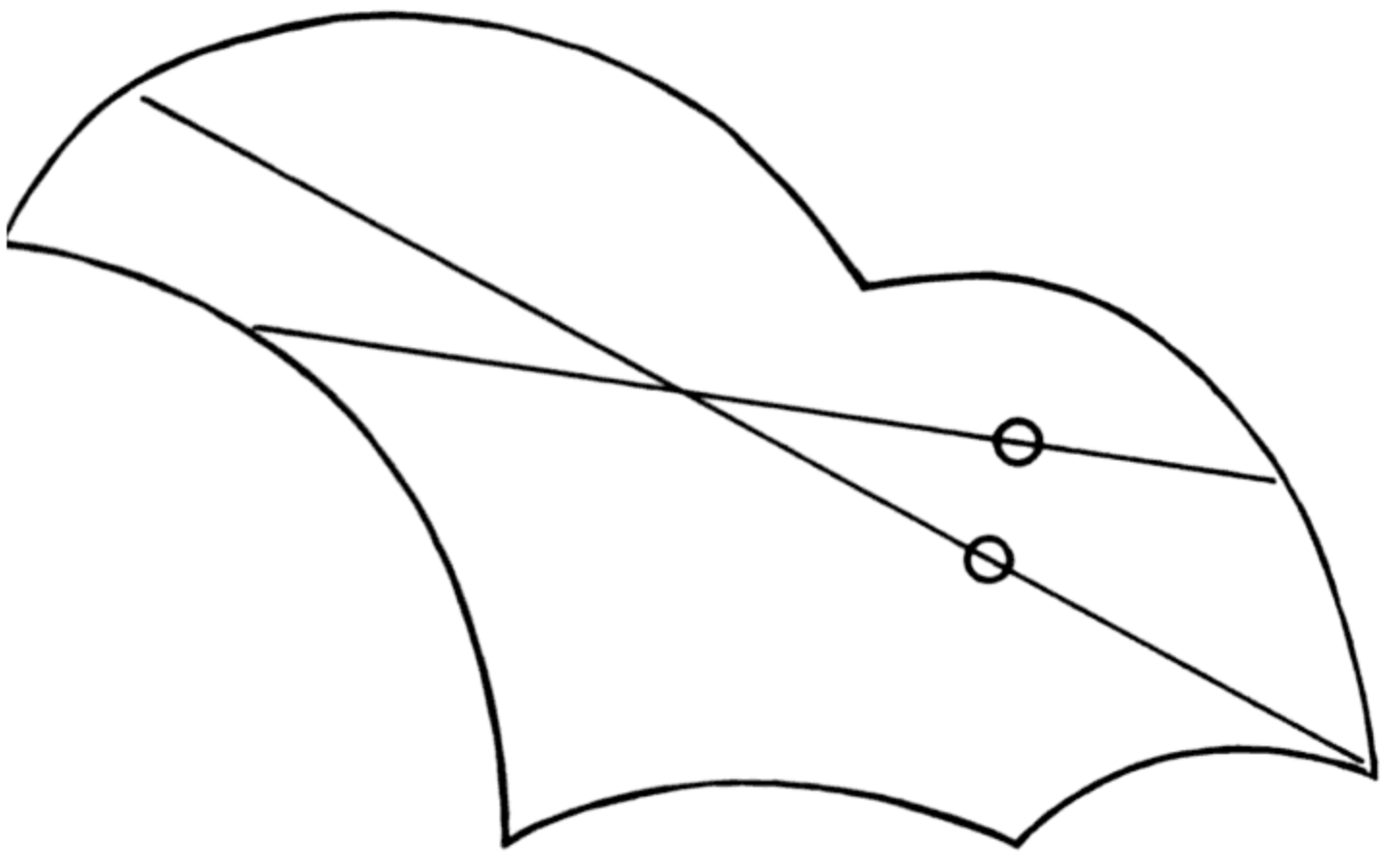
W. R. Hutchings, 4504 W. Washington Blvd., Los Angeles, California, worked out this "wings" design, one which definitely makes a pleasing impression when put on the wood.

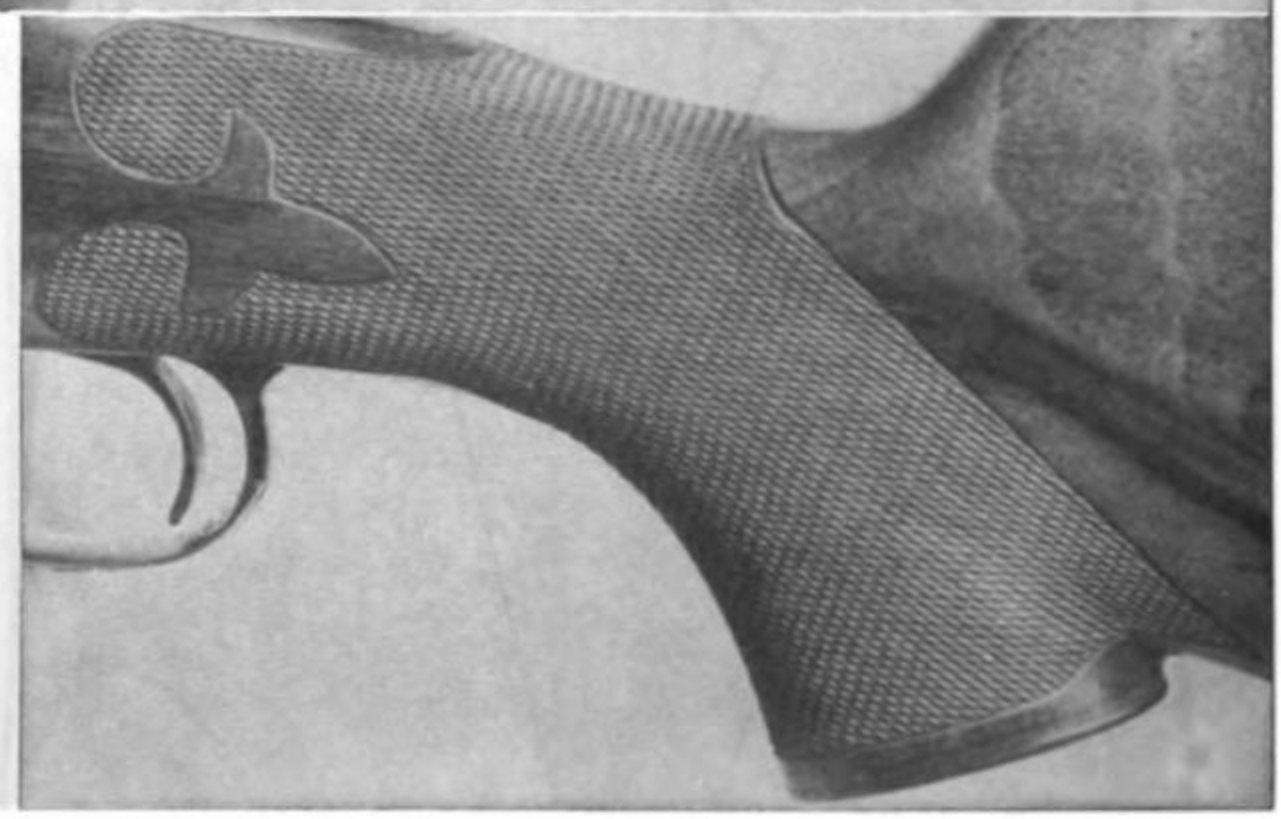
Our pattern tracing shows but one side of the forearm pattern, plus the bottom panel. This last can be put on or left off, as customer wishes. If included, locate pointed ends exactly on the center line of forearm bottom. Spacing between the bottom and the side panels can vary according to width and depth of the stick; or this center panel can be spread out a bit for more complete coverage of the bottom.

This is a fill-in pattern that is easy to do and one that looks mighty nice when finished. Can be done on the installment plan, if necessary.

Sorry we can not show a photograph of this job on the wood, but the customer walked this gun right out of the shop as soon as the dust was brushed out of the last panel.



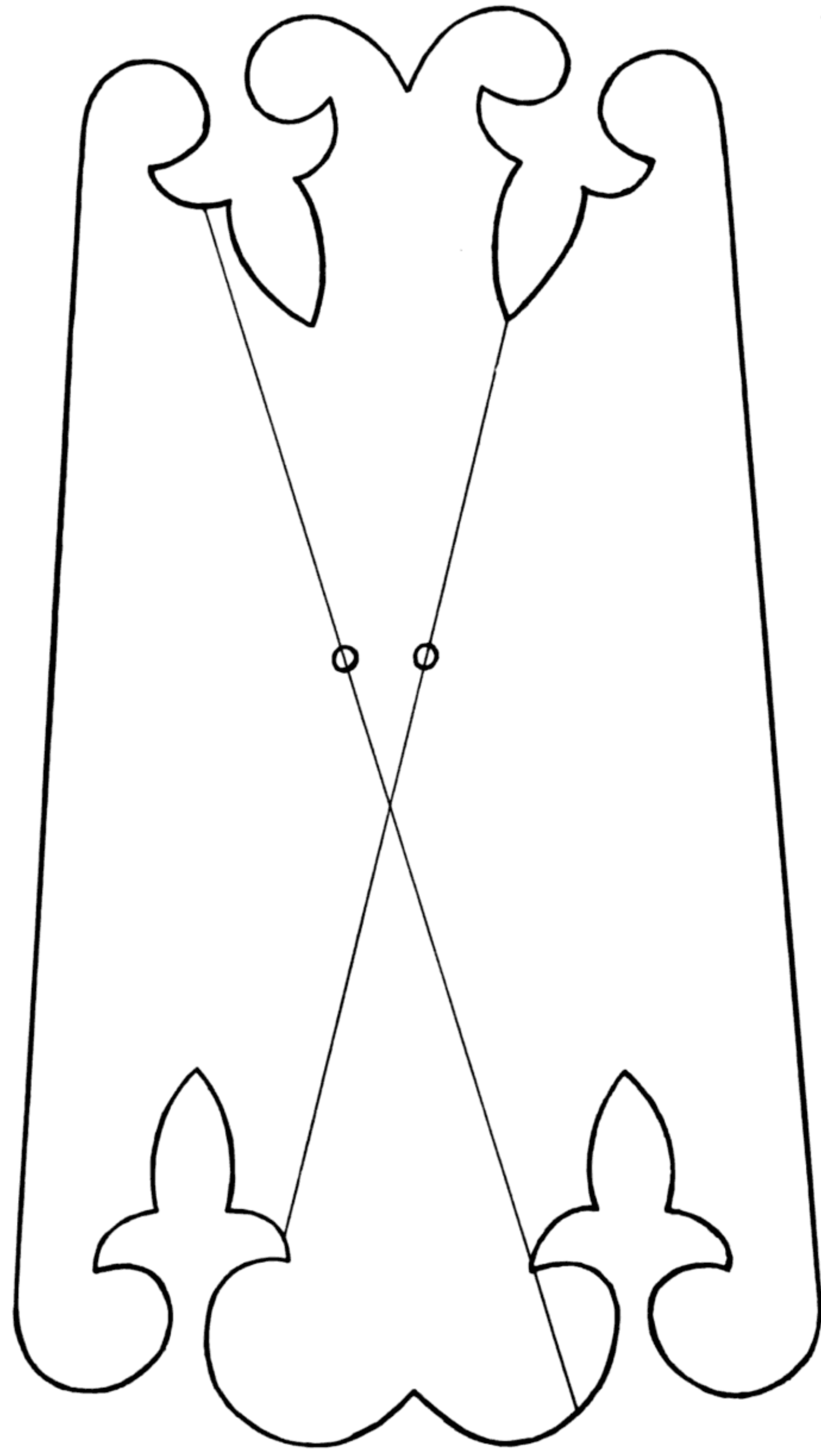




The Methods, Tools and Patterns of Keith Stegall

The No. 8 Pattern, shown and described in detail in the forepart of this book, is an exceedingly popular and much used pattern throughout the country—and is subject to innumerable variations and slight changes in general. These designs are universally known as "Fleur-de-Lis" patterns.

Here we show two variations of this handsome pattern, as worked out by Keith Stegall, the well-qualified Colorado gunmaker. The upper illustrations show Stegall's variation as turned out in a 3-panel forearm design, sited and shaped to encircle the forward sling swivel, with parting stripes running forward to bottom against this swivel. That name plate diamond let into the bottom is optional with the customer. The pistol grip illustration shows this fleur design as worked out to fit the cheekpiece side of the gunstock—the opposite side may be run out into a longer bit of a point if wanted that way.



The lower illustration shows another of Stegall's variations of this fleur design, and the two patterns given on the following pages are of this variation. The grip design is quite different from the one shown at top of page 153, and is rather hard to do, in fact there is nothing easy about any of these fleur patterns. Keith's working technique on these two variations follows, although he writes here only of the design shown in the lower two illustrations on page 153. He draws in his patterns by hand, using only a template of the fleur for tracing off, and puts in all other lines by hand and eye or rather by hand and scale, Keith Stegall now writing:

""This is my version of the Fleur-de-Lis pattern, and when I get it put on the stock as it should be it makes a beautiful pattern for any gun. I start this pattern by putting a center line down the bottom of the forearm with a grease pencil and then, using a template of the fleur, I trace it in very lightly on the rear end of one side of the pattern. With this first leaf traced in its proper position I do a bit of close measuring and figuring and then trace in the fleur on the opposite side of the forearm—this close measuring is done so as to position both fleurs in the same relative place on the forearm and I caution the beginner to go slowly and carefully here as the correct positioning of the entire pattern depends upon getting these two rear fleurs in like positions.

"Exacting measurements are taken from both top line and center line of the forearm so as to position these two designs correctly and to enable the remainder of the pattern to position properly.

"After both designs have been drawn from the template, and checked for exactness of position, I then go back and strengthen their lines with a medium soft lead pencil.

"Now move the template to the front end of the pattern, say an inch-and-a-half or so from the back of the forearm tip, if a tip is used. I put this fleur pointing downward a bit and position it where it looks right, then sketch around it carefully and then carry the design to the opposite side and locate it with the same close measurements that I used on the rear end of this forearm pattern.

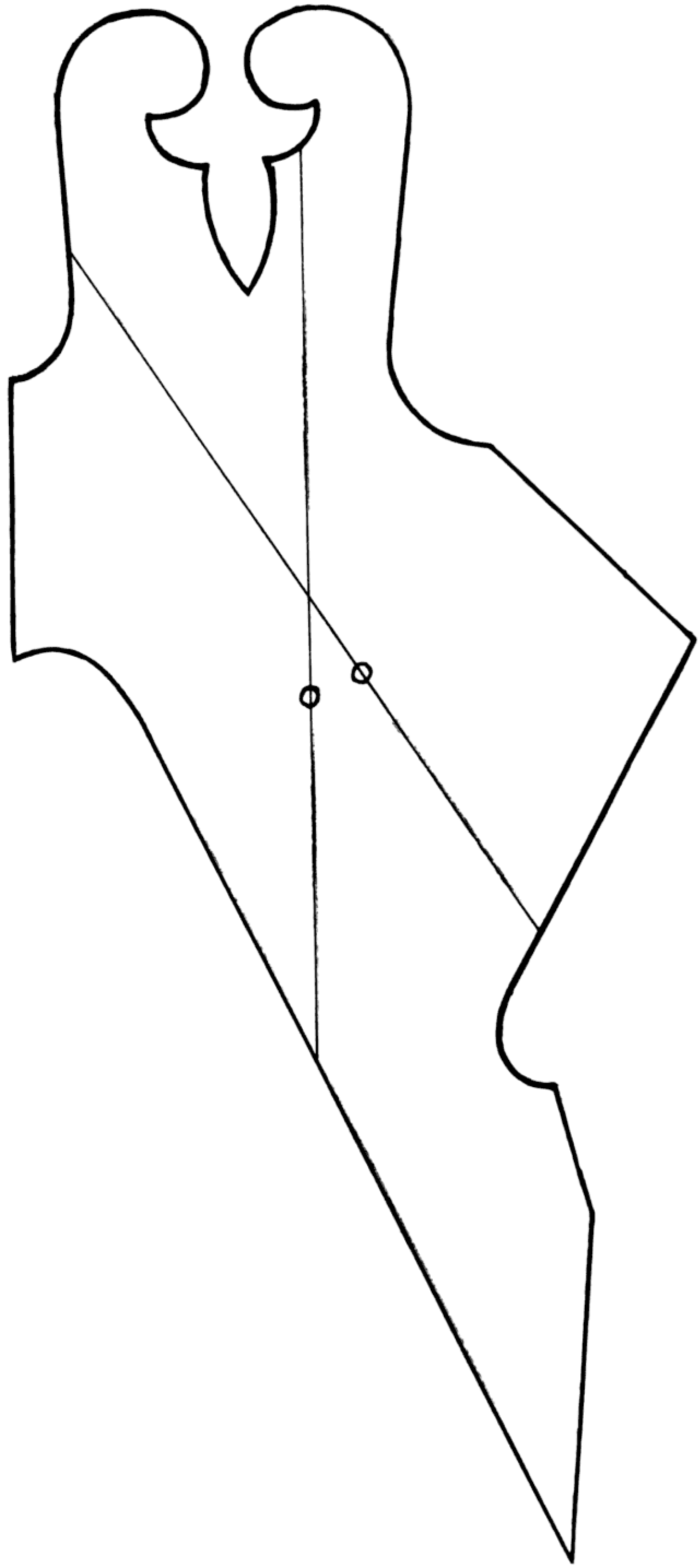
"After these four fleurs are located correctly and traced in, I make my top border lines, but do not draw them in to full length. Be sure and measure carefully on these as to the depth wanted down from the top line of the forearm and get them the same on each side. I then get out my compass and strike off the curved lines at the ends of the pattern, using the same radius for each corresponding curve. Of course, the front end takes a smaller radius.

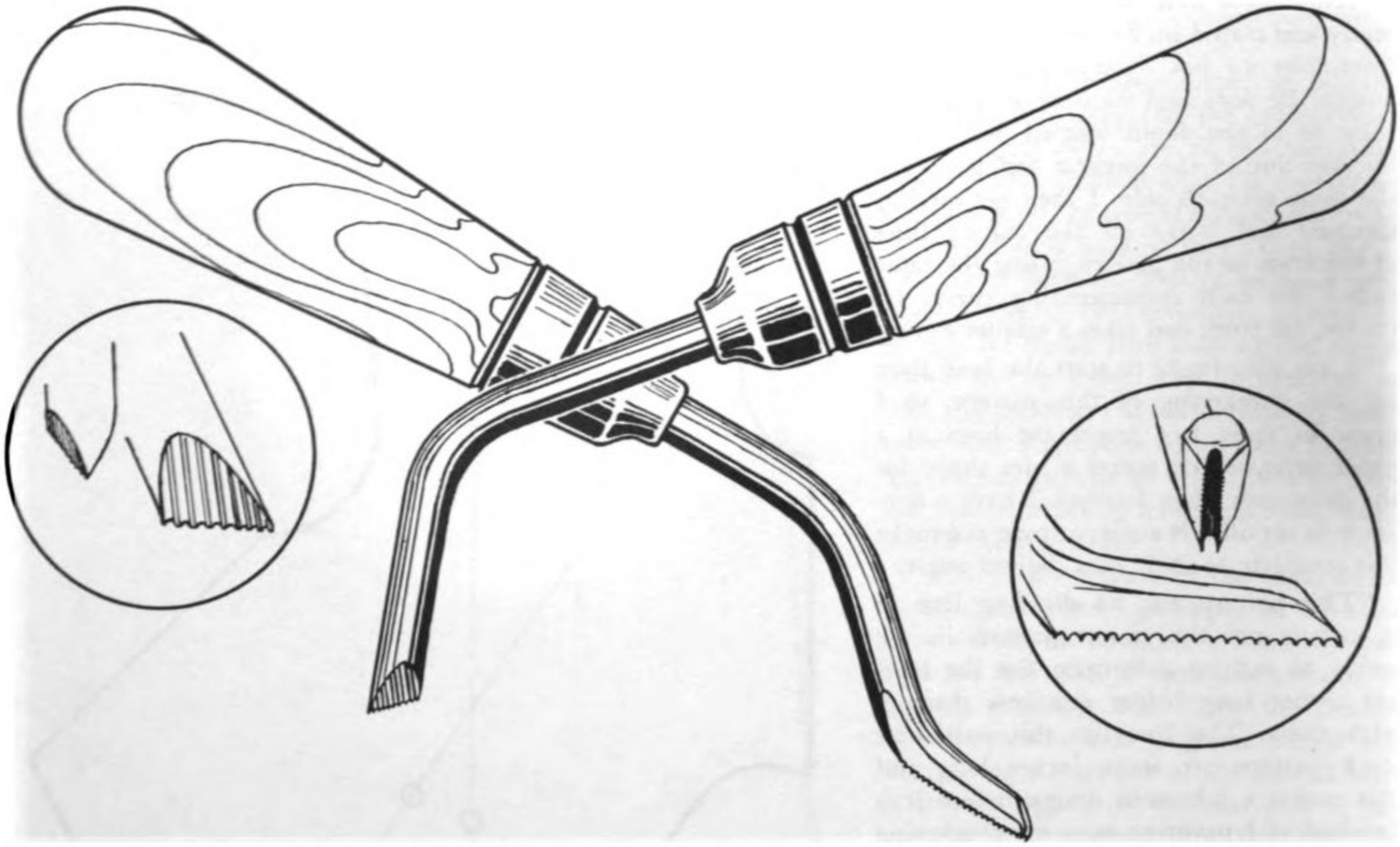
"I am now ready to start the base lines for the checkering of this pattern, so I draw in these two important lines at a 3-to-1 ratio, which makes a nice shape for the diamonds when finished. I have a template to lay off this angle; anyone can make this template to their own desired angle.

"This pattern has no dividing line in it and is not the easiest pattern in the world to put on a forearm, for the lines are rather long before one gets through with them. The lines on this particular stock pattern are seven inches long and this makes a laborious design before it is finished as I never go over my checkering less than five times.

"I am now ready to put the design on the pistol grip of this stock, so put the leaf template on the grip and draw around it with the grease pencil and then look it over carefully to see that it is exactly as and where I want it. If it is right, I then strengthen those grease pencil lines with the soft lead pencil and take the necessary careful measurements to insure the pattern being positioned uniformly on the opposite side of the grip. The compass is used to make the curved lines on the forward portions of this design and I have the lines come down on the bottom to about 3/16" from the triggerguard. As the entire under portion of the grip is going to be checkered, I make the line come down under the grip and meet with the opposite pattern at the center of the under part of the grip. When I have done this on each side, I put a dividing line along the under portion of the grip, as I cannot bring it completely around on this particular pattern.

"The top of the grip can also be checkered, so I make the curved lines at the top to come up to about the same distance from the tang and let this line follow the curve of the tang all around the



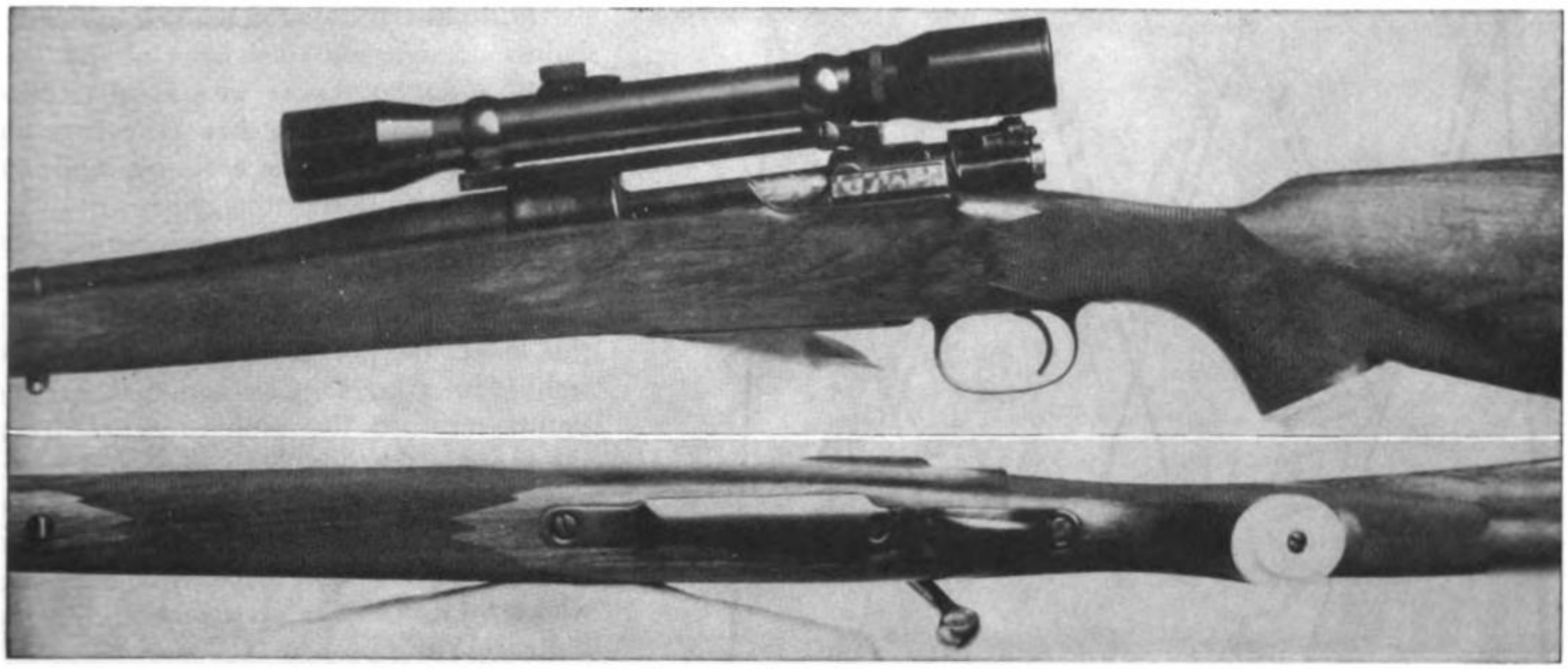


top of the grip. I also put a dividing line here, as this design is so large that I do not care to undertake to run the lines up and over the top. This can be done on a small pattern very nicely, but on a large pattern such as this I prefer to have them come out to a meeting line.

"I now put the border lines on the bottom of the grip and since this pattern comes out in back of the grip cap and I checker the under part of the buttstock behind the grip, I have to make these border lines quite long. On the cheekpiece side of the stock, I follow the lines of the cheekpiece to a certain extent, and let the angle of the checkering, or the checkering lines, make the border lines at this point. The grease pencil is used to bring this angle down from the base lines and by the exercise of great care they can be made to come out all right.

"I use single border lines and put them on with a little file tool, also make the fleurs with this same tool. This fences in the checkering and gives me something to work to all along on this pattern.

"I make my own tools out of 1/4" rod. My spacer is made by bending to the proper shape and then using a hacksaw to make the dividing line for the teeth. I then take a 32-line checkering file and file the teeth to the depth of the teeth in the file, and then file them to the sharpness that I must have—and the sides are paper-thin on these teeth but they are then sharp enough to cut properly. It could be that no one but myself can use this spacer, but it works properly for me and I can not use any other commercial tool I have yet seen. I make my V tool of this same size rod and shape and end to the same angle as a 3-cornered file, with the front end of the teeth to be lower than the back end. This makes it cut faster and it will stay in the groove much better."



A Point Pattern

by

Keith Stegall

When it comes to a point design, here is a favorite of Keith Stegall's—and one he worked out himself. It calls for quite a bit of work, the grip pattern being somewhat more of a job than is usually the case with the conventional point designs.

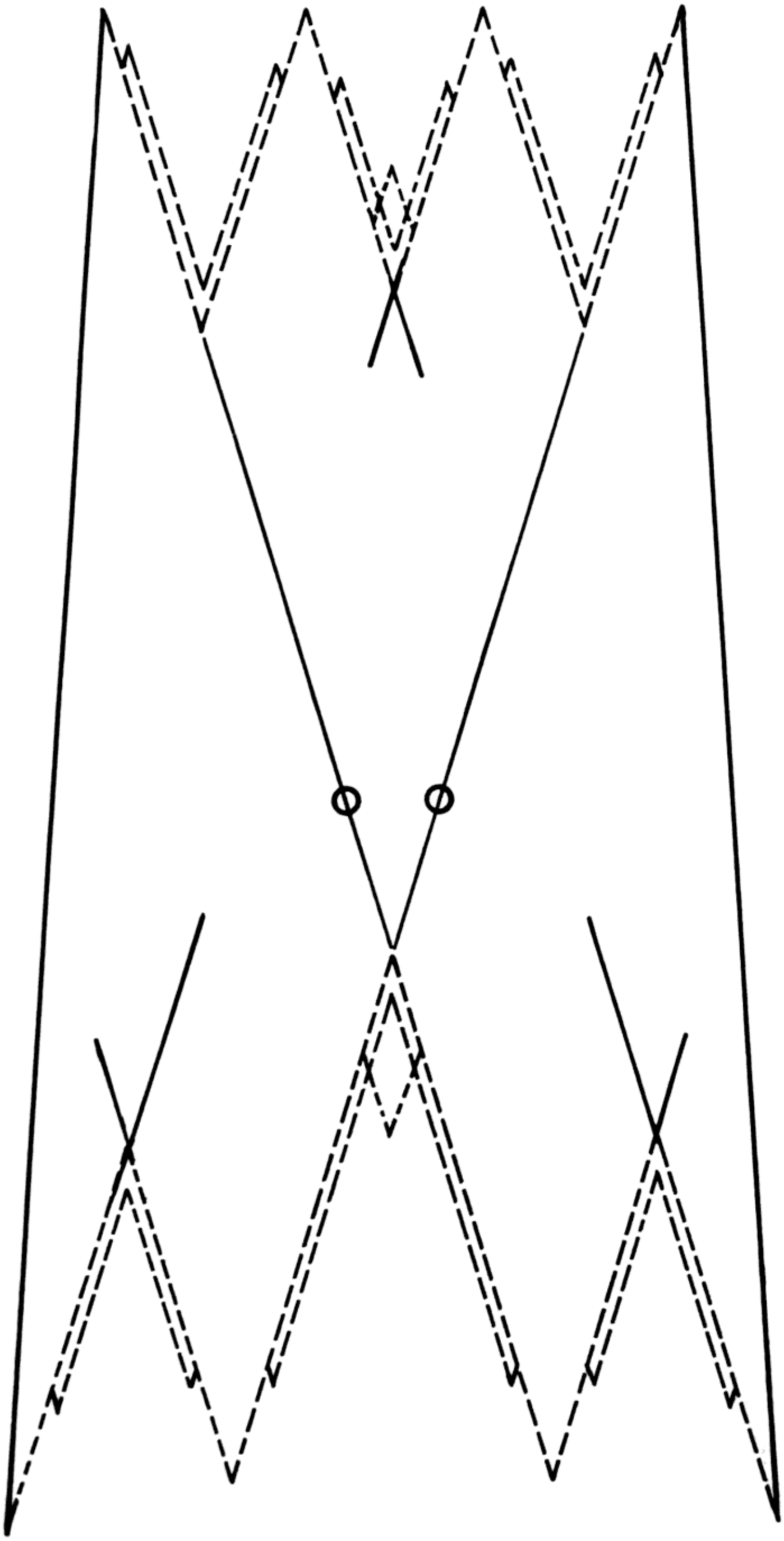
Like the previous Fleur-de-Lis pattern, this one runs considerable of a ways to the rear of the end of the pistol grip cap and this brings up a point of ethics—as well as a point of design—which we may as well write about here. The artist-chappies will tell us that Keith Stegall got these two patterns mixed up—that the rear ending of these grip patterns should each be shifted over to the other—that he has his curves and points mixed badly and that the round ending to the tail on this grip design should always and only be used with the fleur pattern, and vice versa. Well, mebbyso? It all depends upon what the customer wants—and sometimes upon what the gunmaker thinks he ought to get. However, in either case, this bit of strung-out checkering will impart nice, long, racy lines to your gunstock and whether they harmonize or not is a horse of another color.

In discussing this 5-point pattern, Mr. Stegall writes:

"There are many, many patterns of checkering, some good and some better, but a beautifully executed point design is tops in my book. By being beautifully executed, I mean to have the lines perfectly straight and with the actual checking lines making the border and points *as they should.*

"Many factory jobs, and most first-tries by beginners, are the ones you will encounter where the checking lines do not form the points and borders. You can examine some of the jobs that come from the factories, some of which are on expensive shotguns, and you will note that it looks as if the borders have been put on first, with the hopes that the checkering will fall right into it as it should. Or, possibly, they feel like the Irshman's bull—and just don't give a hang.

"On the forearm, the only border lines used, separate from the others actually formed in the process of the work, are the two lines at the top of the forearm, on each side.



"This pattern is one that I call my "Five Points" design and it is one of my favorites. I do not know why I call it the 5-point, for it actually has 11 points on each end of the forearm design and six points on each side of the grip.

"I put the center line down the bottom of the stock and then use a template to get the pattern spaced about as I want it; this makes the points come out just about right. However, I make certain that the points measure the same distance from the top on each side, both front and back, and then lay off the base lines. I next draw in the top border lines but do not draw them full length *until* I am sure where they will join up at the ends with the checkering proper.

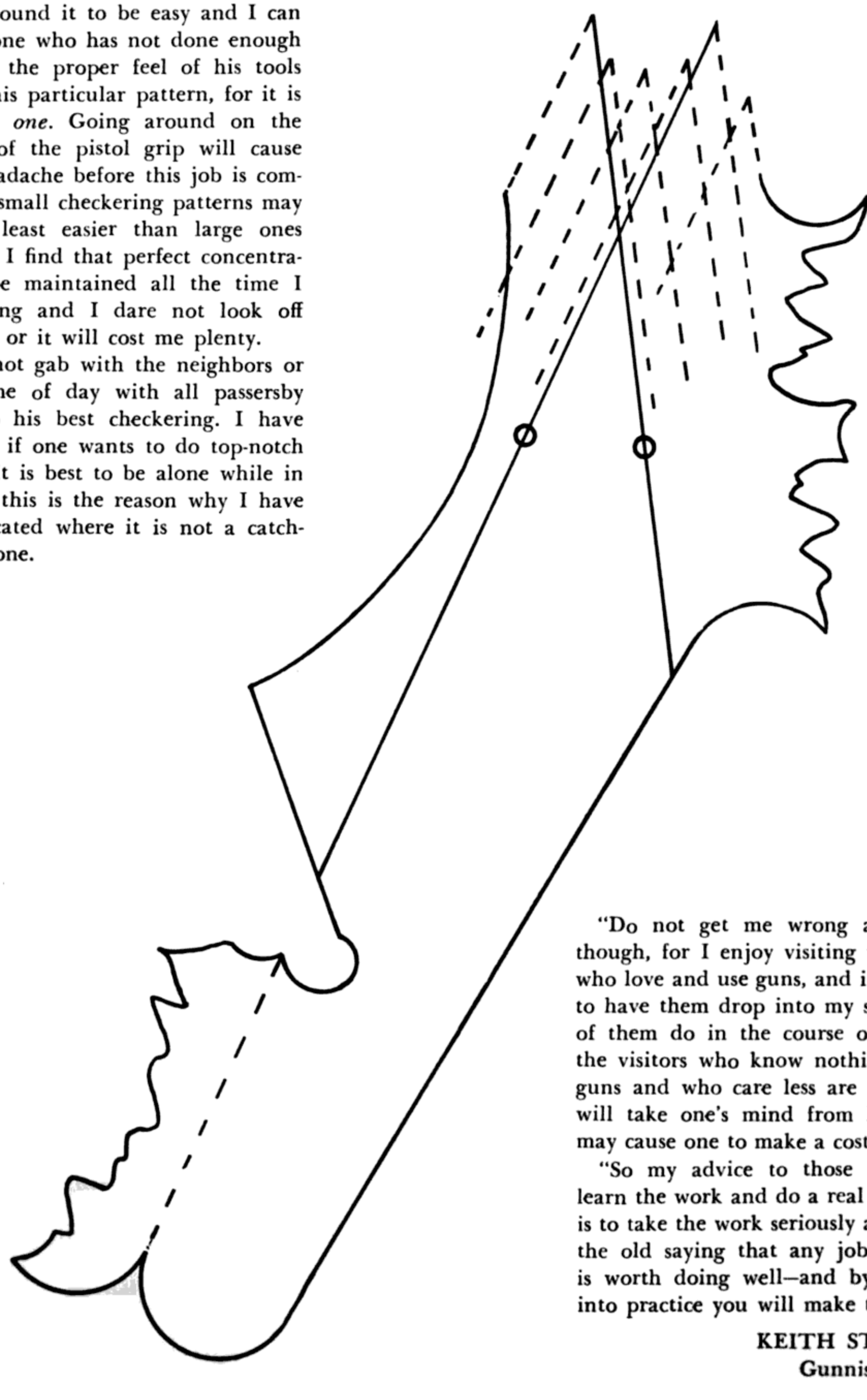
"The two top lines are the only border lines that one has on this design, as the actual checkering makes the other borders. Although it may strike the reader that this is a simple pattern, it would be well to study it out carefully for some time before attempting to do it. After careful study it can be put on right and it makes a beautiful design. I do not make a border to any of my checkering, so this point design fits right into my style. This is another large task of checkering before it is finished.

"On the pistol grip, this pattern has six points. The points are measured carefully for distance from both top and bottom of stock and since this pattern goes up over the grip the border lines are made in contour with the tang; the back border lines are laid off carefully and these also come back behind the pistol grip and meet on the bottom of the buttstock, where this particular pattern has a curved line at the back to come down on to the bottom.

"This job does not have the under side of the grip checkered, so this leaves off a lot of headaches as it is much easier to bring the design down the sides than to go under with it. However, there is plenty of checkering here and lots of little diamonds to be made with the 24-line spacer.

"Some few years back, I read an article in *The American Rifleman* where the author told how easy checkering was. I have never found it to be easy and I can caution anyone who has not done enough of it to get the proper feel of his tools not to try this particular pattern, for it is *not an easy one*. Going around on the under side of the pistol grip will cause plenty of headache before this job is completed. The small checkering patterns may be easy—at least easier than large ones such as this. I find that perfect concentration must be maintained all the time I am checkering and I dare not look off for a second or it will cost me plenty.

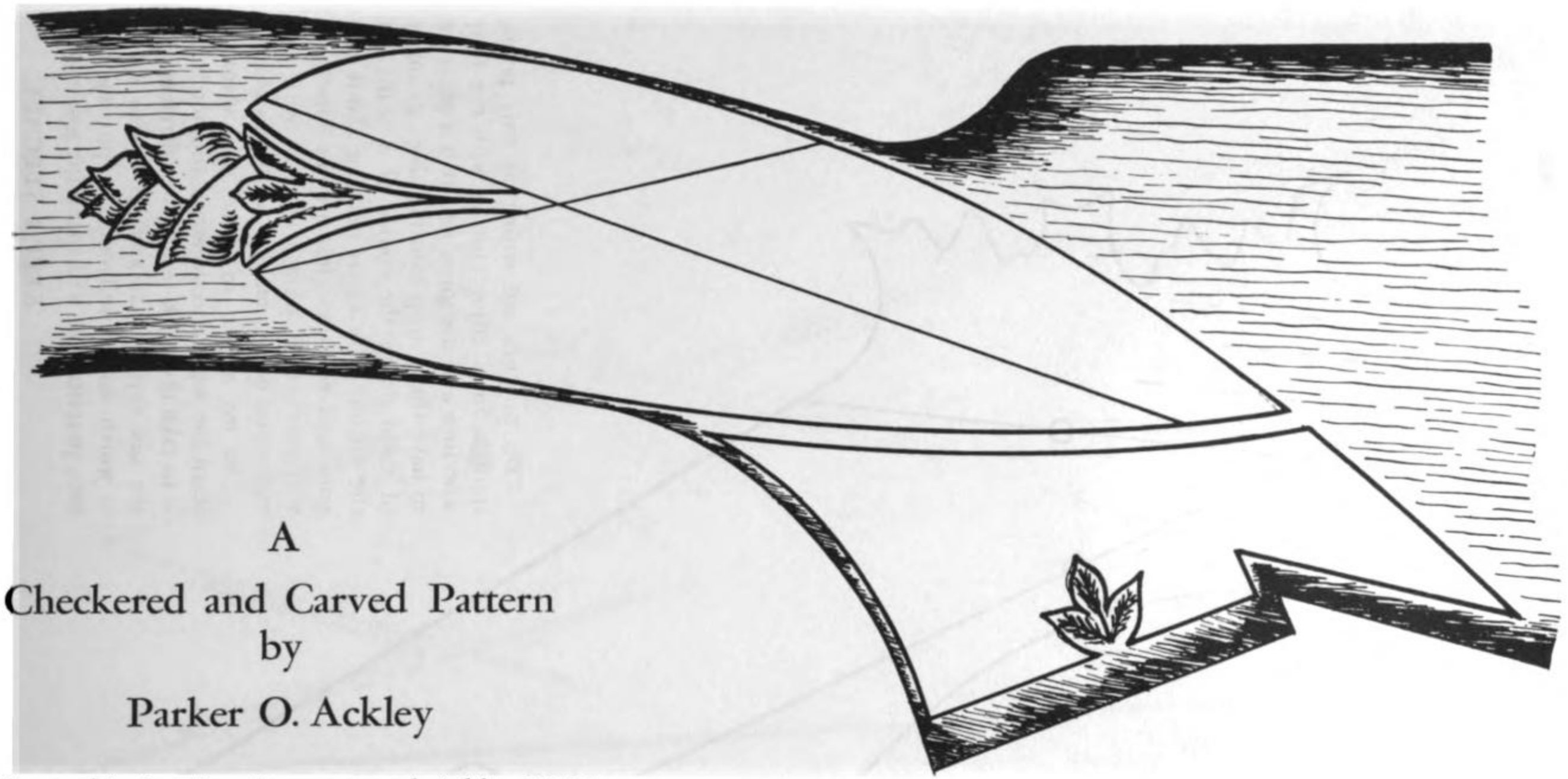
"One cannot gab with the neighbors or pass the time of day with all passersby and still do his best checkering. I have learned that if one wants to do top-notch checkering, it is best to be alone while in the process; this is the reason why I have my shop located where it is not a catch-all for everyone.



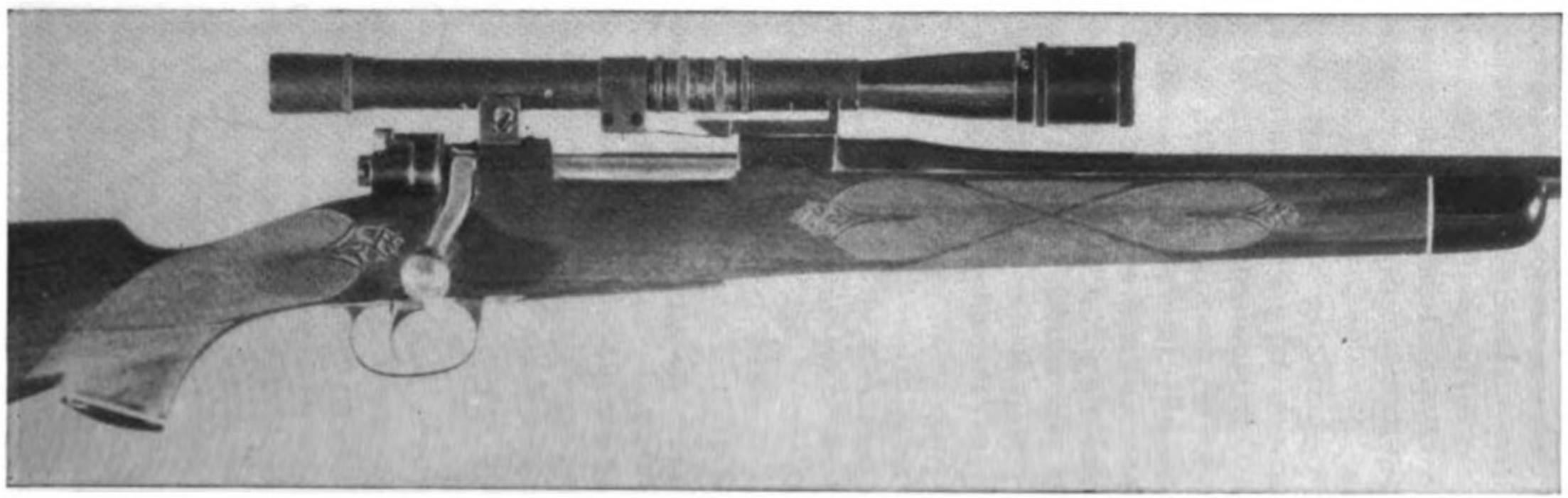
"Do not get me wrong at this point, though, for I enjoy visiting with the boys who love and use guns, and it is a pleasure to have them drop into my shop, as many of them do in the course of a year. But the visitors who know nothing about fine guns and who care less are the kind that will take one's mind from his work and may cause one to make a costly mistake.

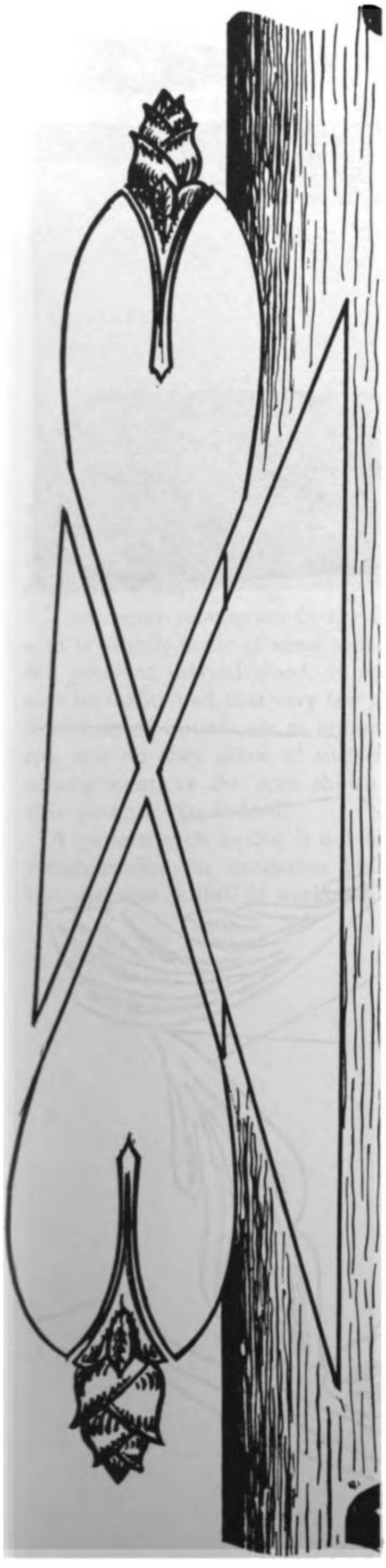
"So my advice to those who want to learn the work and do a real top-notch job is to take the work seriously and remember the old saying that any job worth doing is worth doing well—and by putting this into practice you will make the grade."

KEITH STEGALL,
Gunnison, Colorado



Easton Engineering Company and Ackley Division
Box 1074, Salt Lake City, Utah



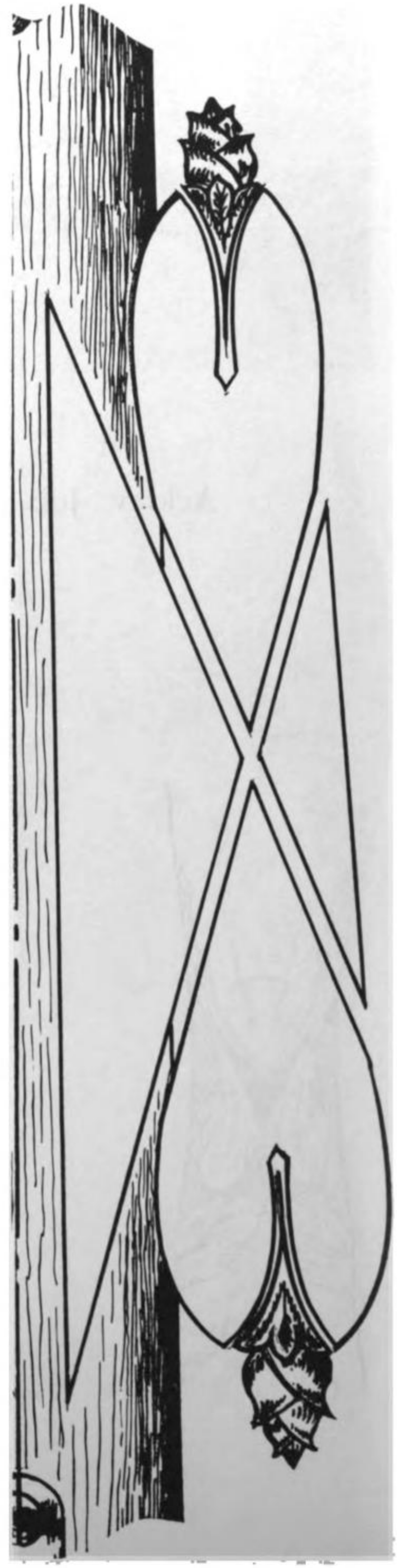


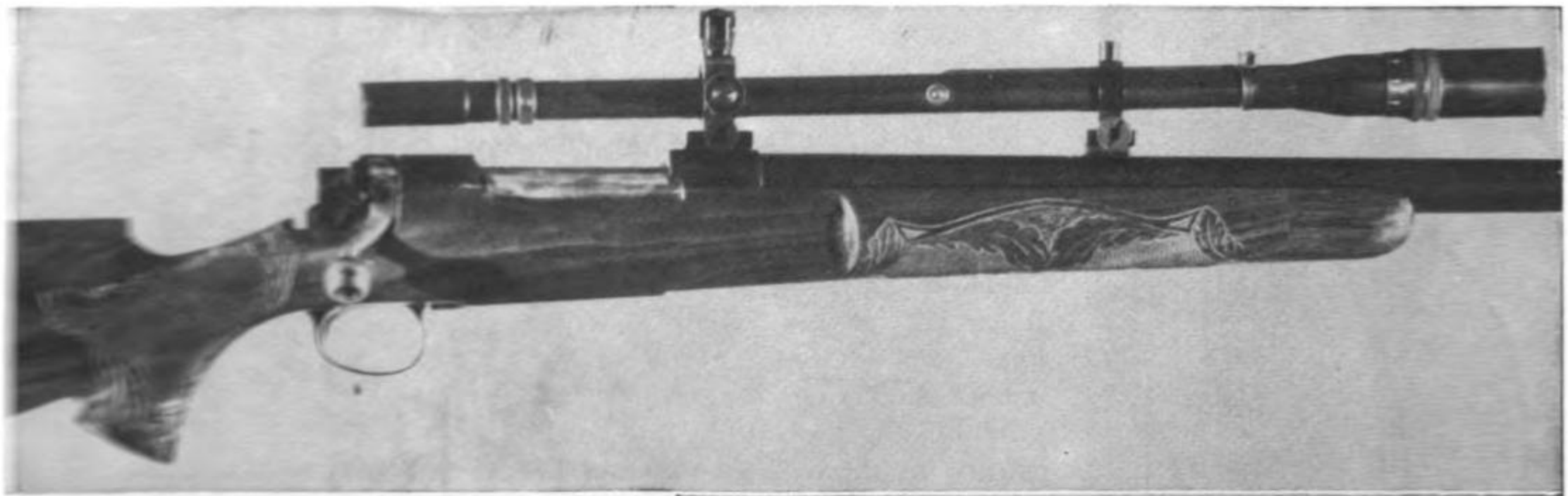
This is a pattern that was used to a great extent on the better grade of guns turned out by P. O. Ackley when he was located at Trinidad, Colorado. It is a job for the advanced gunstocker, as the design is somewhat involved and requires ability at both checkering and carving.

By dividing the pattern into small patches, as shown here, the stocker must go to additional care to avoid over-runs, but such designs do away with the difficulty of continuing the lines around the cylindrical portion of the forearm and yet keep them straight. This is a serious obstacle to some workmen. Besides simplifying matters in this respect, such divisions can also create a pleasing appearance.

There are several methods of laying out these lines—probably one of the best is to use a flexible piece of Bristol board or plastic. There are now available many types of cheap plastic rules, or sheet plastic, which can be cut in the form of a straight-edge; this works very well, being flexible enough to allow itself to be bent around the stock and take any form the stock may have and still maintain a straight edge.

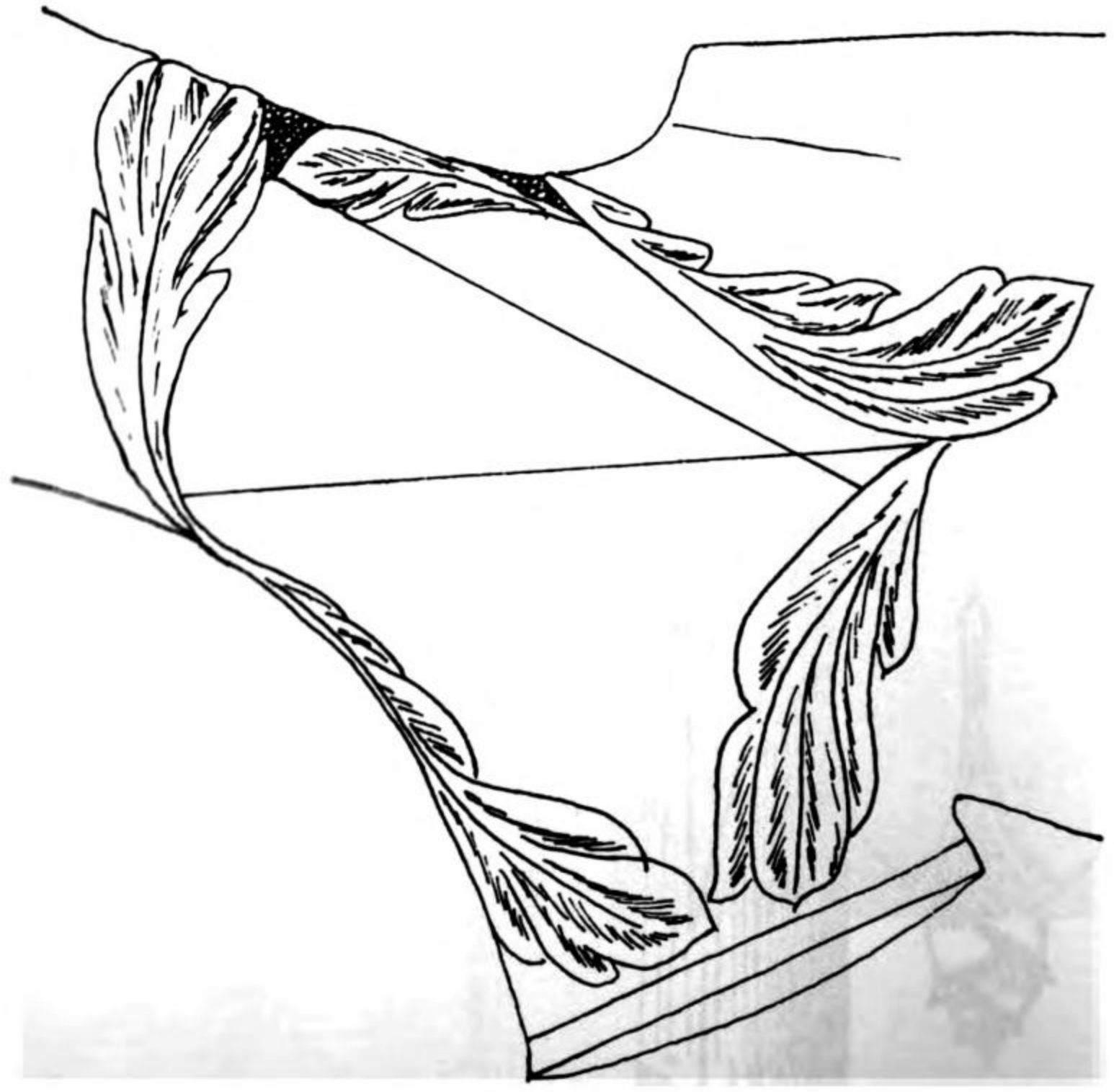
Another method commonly used at the Ackley plant was to cut the pattern out on a piece of paper, exactly as it is to be on the stock, then accurately locate this pattern on the grip or forearm and stick it fast with rubber cement. Then mark around it. After the markings have been made, the drawing can be peeled off and the cement rubbed off by rubbing the fingertips over the surface.

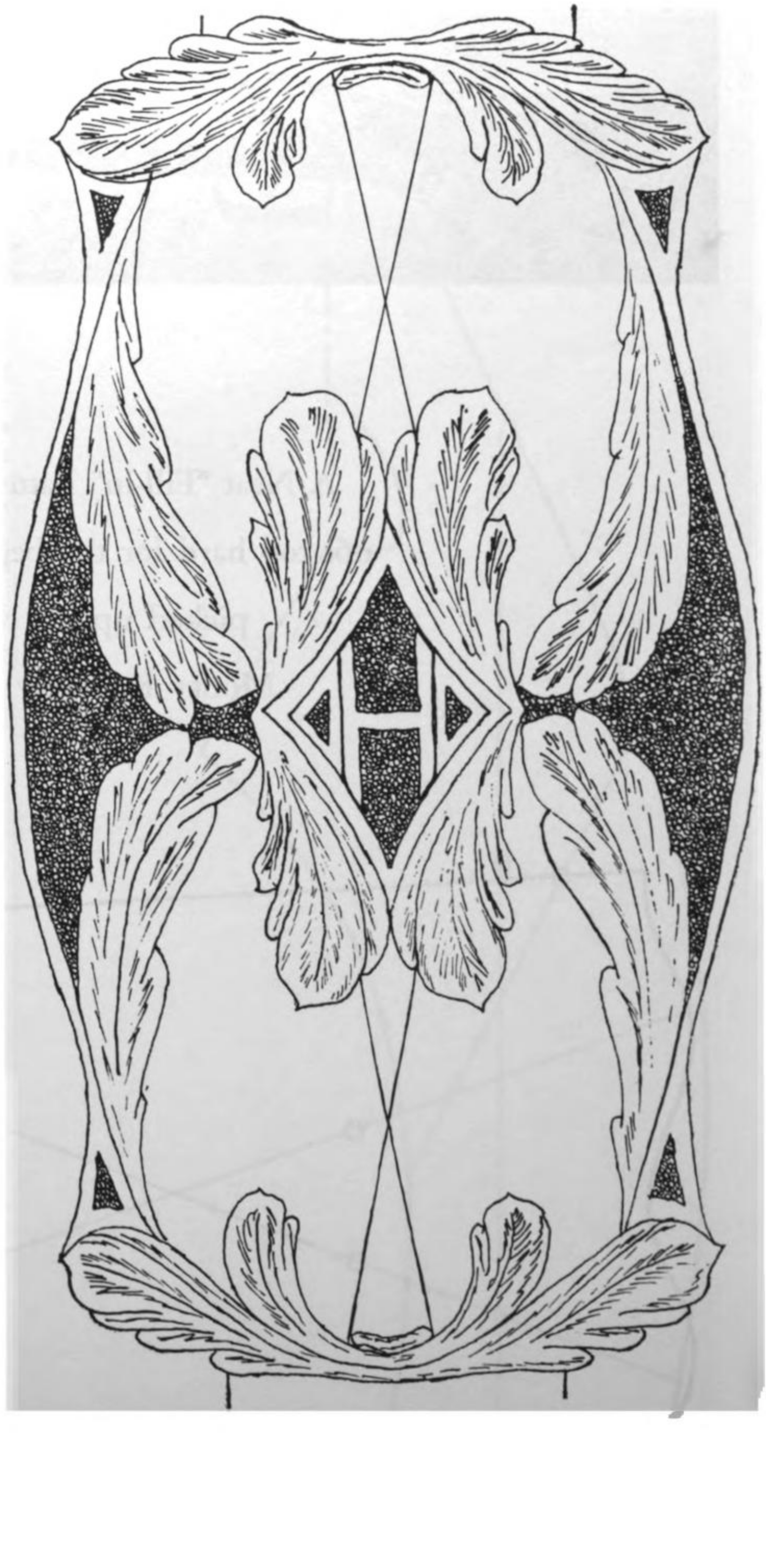




An
Ackley Job

Checkering - Carving - Inlay

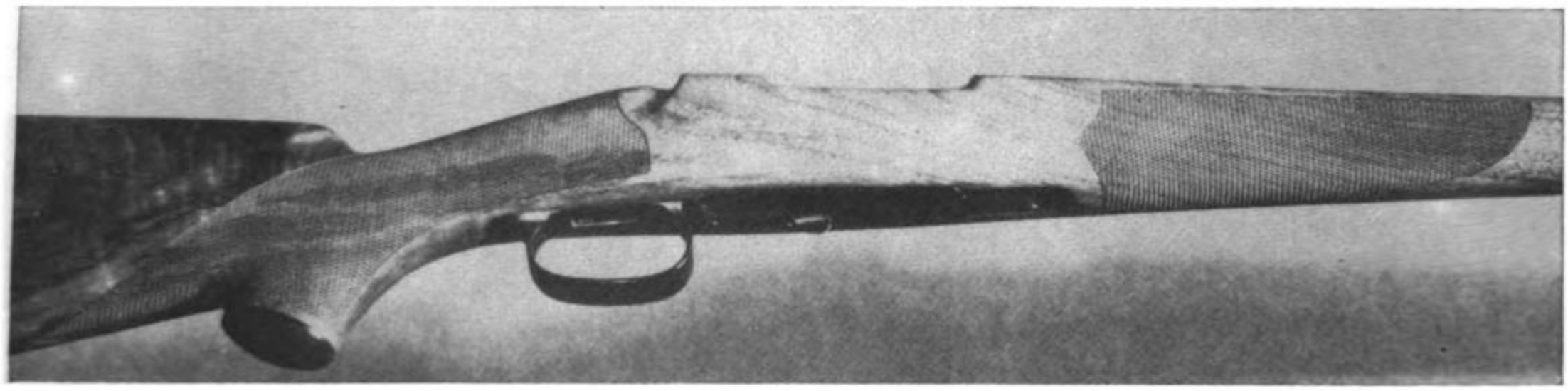




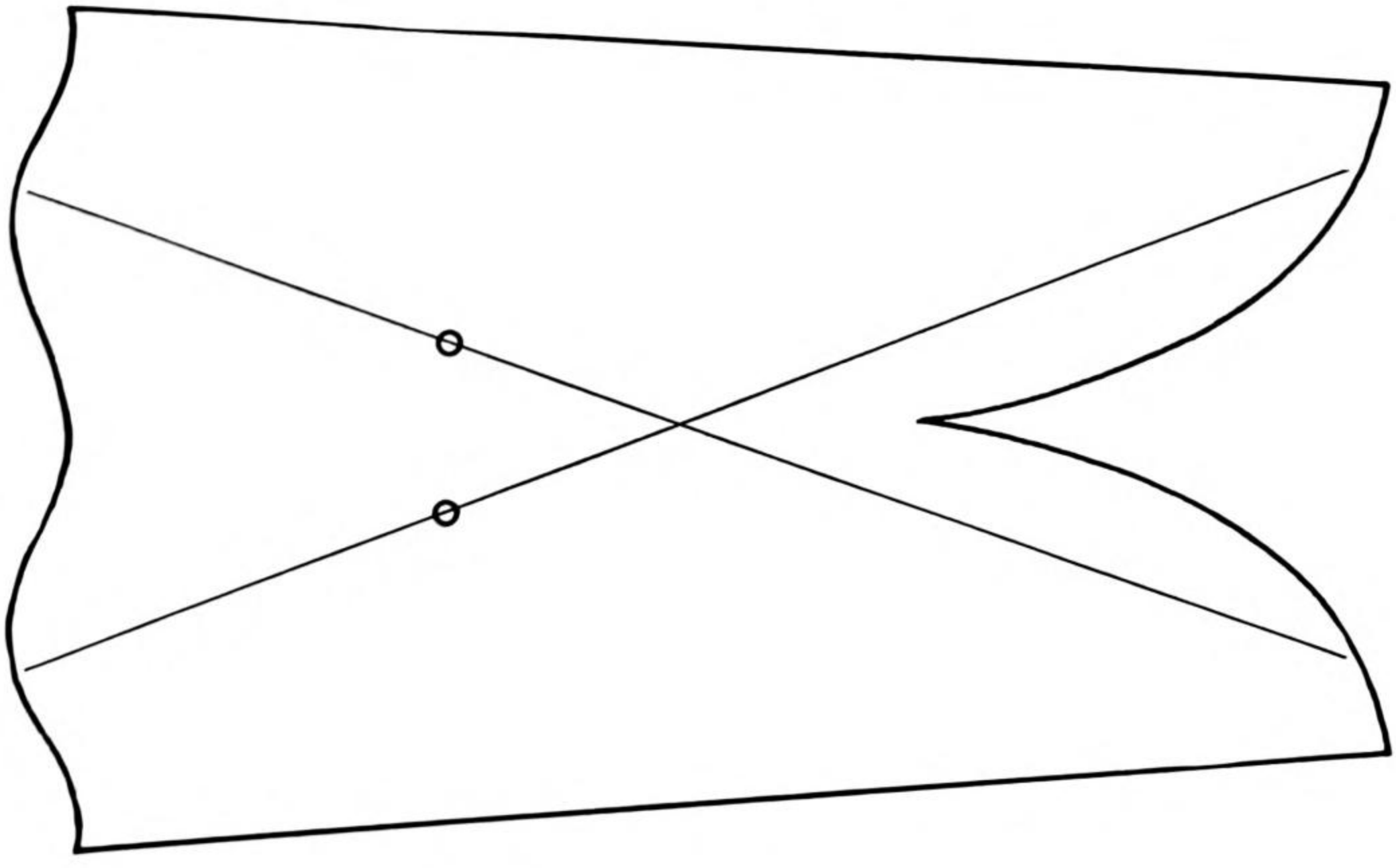
This is one of the fanciest patterns used by Mr. Ackley. It is a regular leaf-carving design that includes a *small* amount of checkering and some stippling work.

The center monogram in the forearm is usually made of some contrasting piece of inlayed wood. It might also be mentioned that very few combinations of initials are as symmetrical, nor do they allow of such neat arrangement, as the ones shown on this pattern. No indeed!

A pattern such as this is not to be recommended for execution by any but the most skilfull of workmen.



A Neat "Fill-in" Pattern
not too hard for the beginner
picked up by
Monty Kennedy

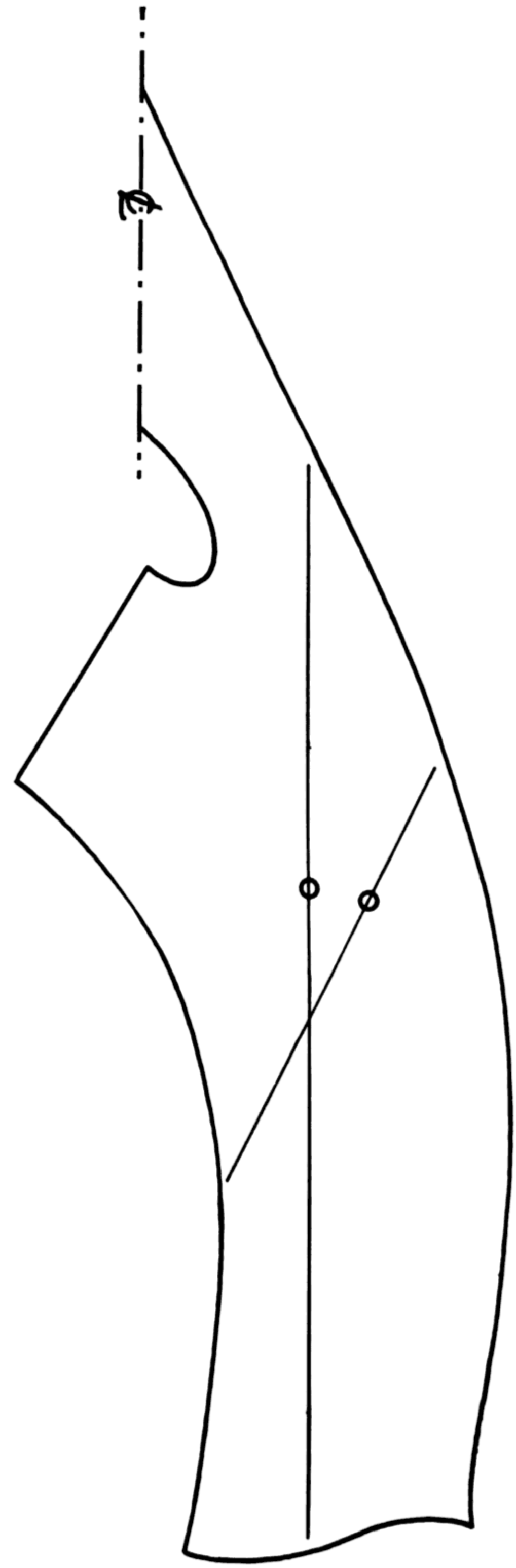


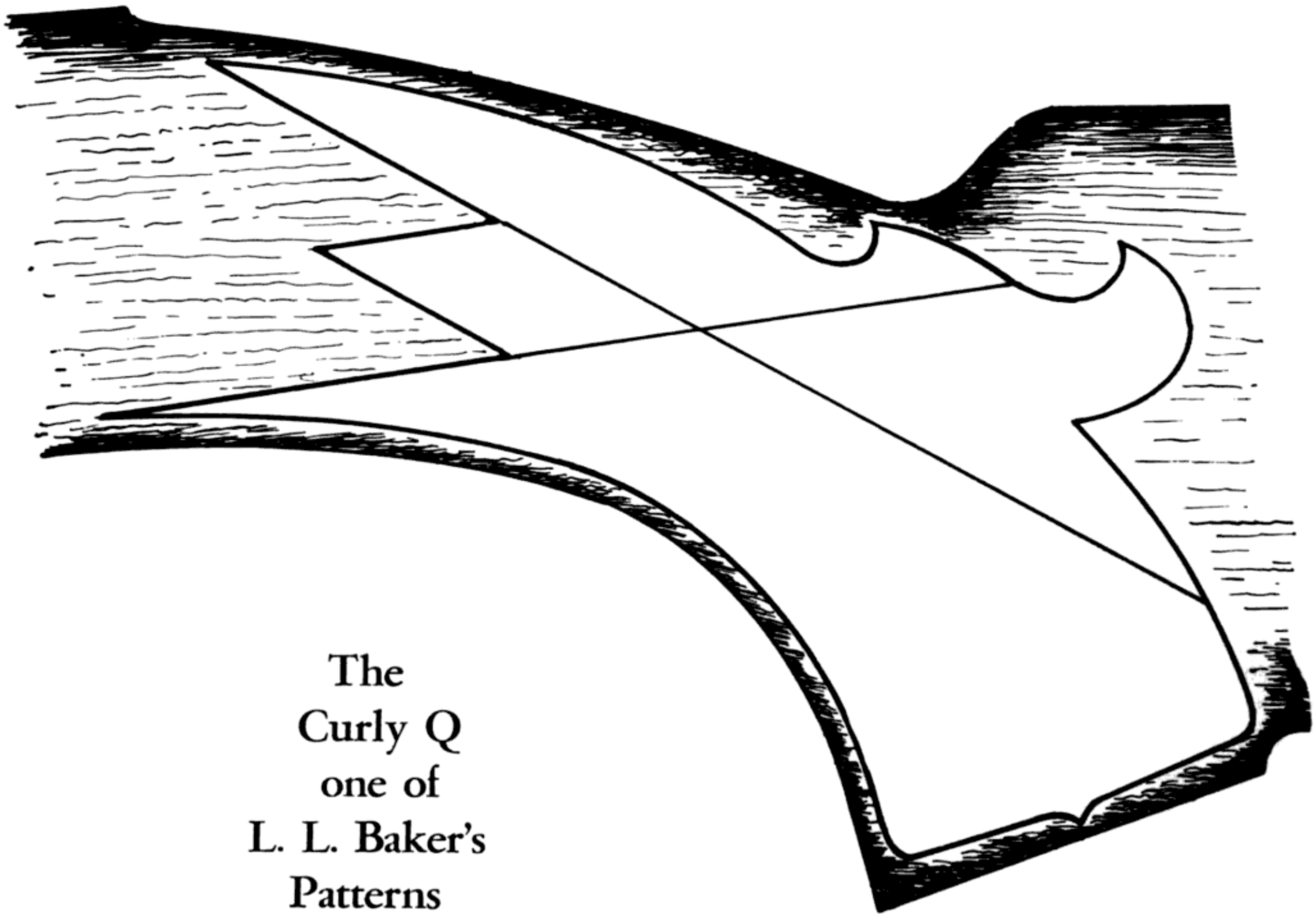
The pattern shown here is from a rifle owned by Doctor Thee. don't know who stocked or checkered it, but it is a mighty nice job of stocking and an excellent job of checkering. It is about 20 lines per inch, very clean, sharp and straight of line.

This forearm pattern would be a good one for the beginner to start out with in his first attempt to carry the checkering around and under the forearm. There is not so very much checkering actually running around the curved surface.

The grip pattern is quite a bit of a job to do right, viewed from the eyepoint of the beginner. However, there are a number of other grip patterns shown in this book that will match up perfectly with this forearm design and which do not run back underneath the butt stock. Some of these patterns run over the top of the grip, which would also go well with the forearm pattern used here.

Since the original printing, I have learned that this stock was made by Chas. O. Sisson, of Great Bend, New York.





The Curly Q one of L. L. Baker's Patterns

Here is a nice pattern, not at all difficult to do and yet not plain. Just now I do not remember where this pattern came from but I think I must have copied it from another stock. In my notebook of checkering patterns is a label on each pattern as to where it came from, but on this page there was no such information.

The Curly Q portion of this pattern can well be cut out of thin cardboard or celluloid and then traced around onto the stock. The rest of the pattern is drawn free hand, with the assistance of a flexible rule and your 36° pointed triangle. On the pistol grip section you may use a thin-bladed knife and cut around the entire outline of the pattern, except for the small point in the center of the W portion. Draw this point very lightly and cut up to the lines as you progress with the checkering. After scoring around the pattern with the knife go over the scoring with the single V cutter.

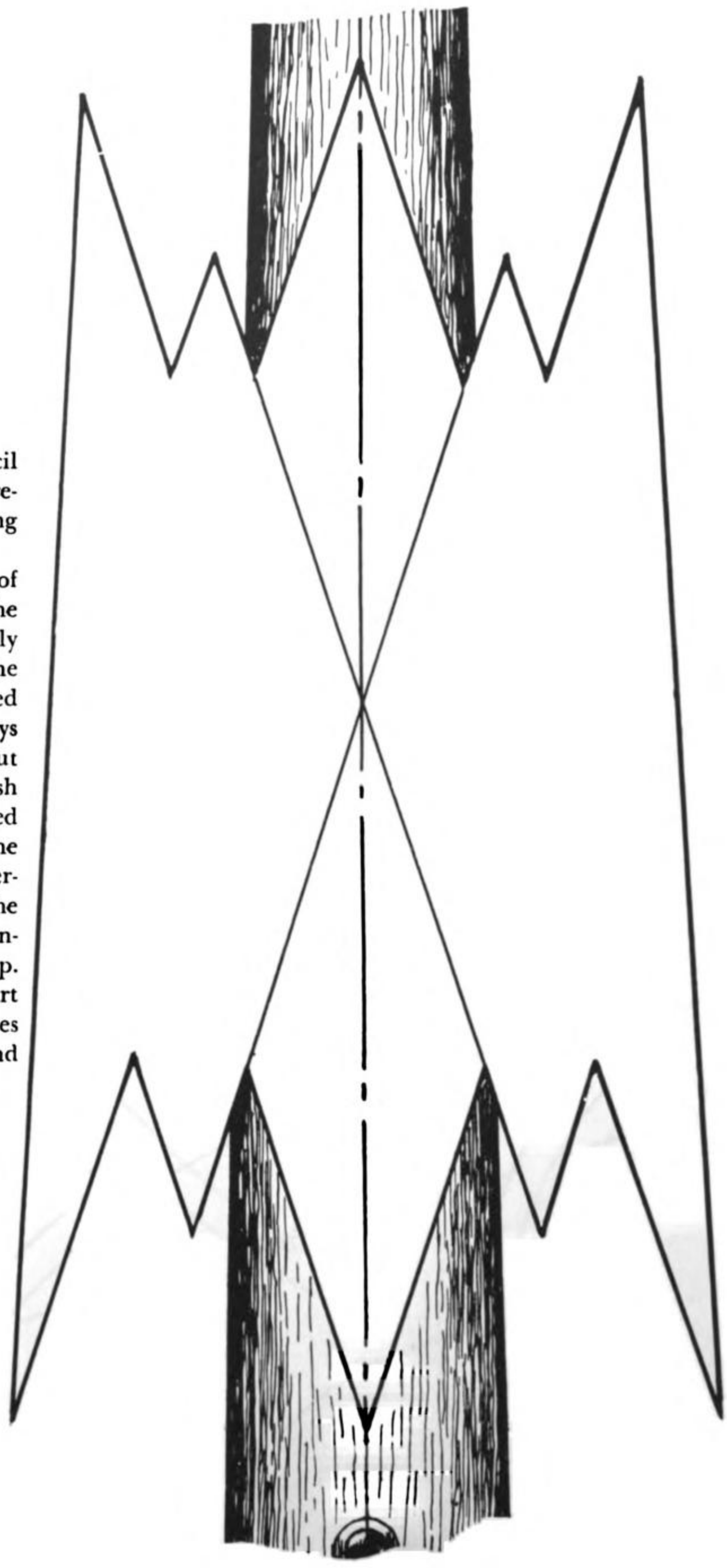
There are no special instructions for this pattern. You should ease up to the edges very carefully, as this pattern looks well without a border. And care must be used to cut the Curly Q portion, use a short small cutter and be sure that the curves are true, with no breaks or blemishes, and pleasing to the eye.

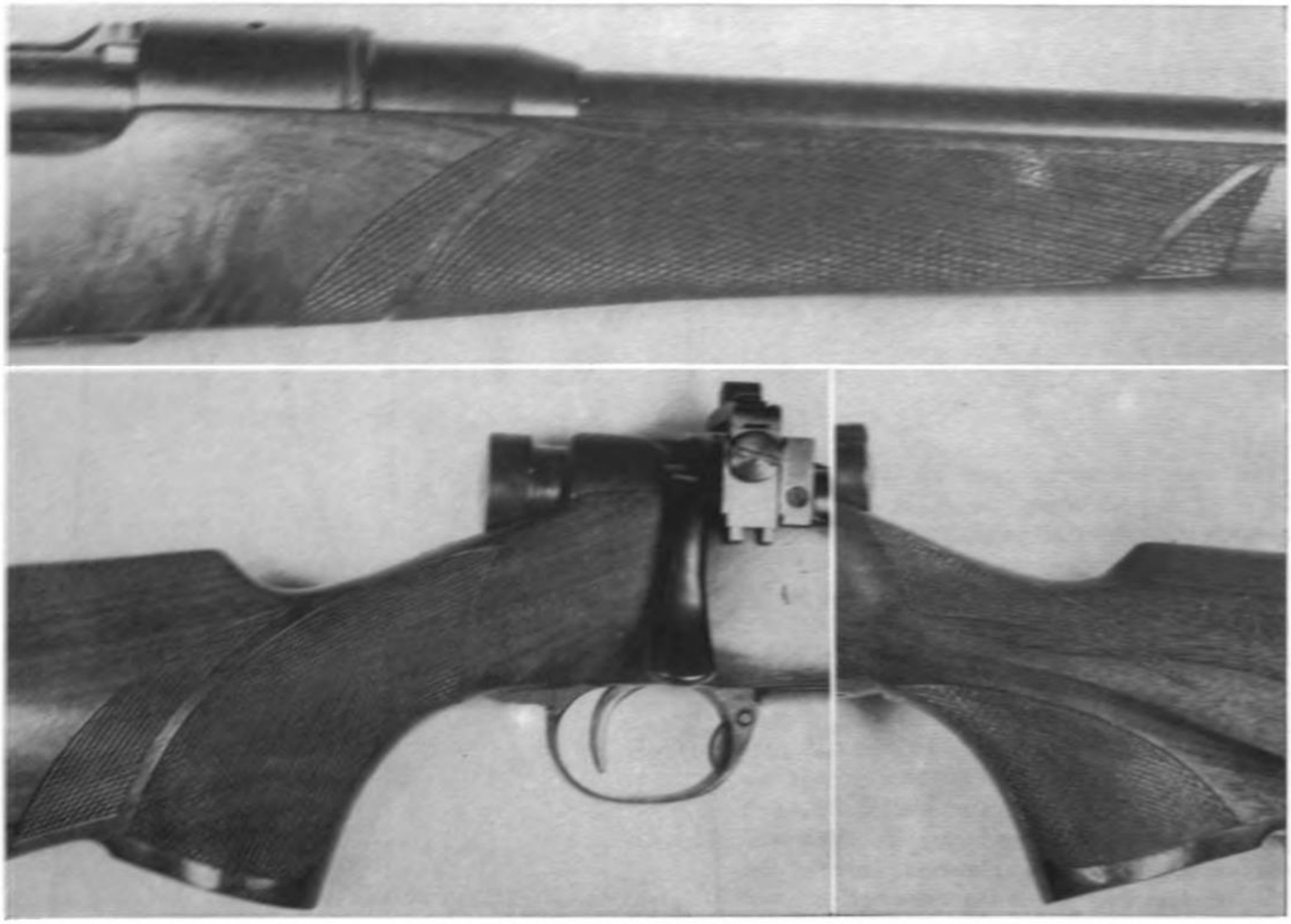
I would like to emphasize here the importance of laying the master lines out on the flattest surface available on the pattern. By laying them out on the flattest surface the master lines are started straight much more easily and then can be continued straight all across the pattern, eliminating to a great extent one of your biggest troubles.

The forearm pattern is easy to lay out. *Lightly* draw a center line on the bottom of the forearm. Using the celluloid triangle with the three-to-one (36°) point, sketch the two points which form the middle points of the pattern. Next draw the two top edges, parallel and about 3/8" or 1/2" down from the top edges of the forearm, then fill in the rest of the points. Draw lightly as none of the forearm pattern edges are cut in

until your checkering runs up to the pencil lines, thus positioning the edges. Check frequently to see that your lines are running straight and parallel.

I have noticed among my students that one of the things hardest for them to control is the tendency for the checkering lines to gradually assume a bend which follows the curve of the pistol grip. Some of the students have argued that this cannot be helped. In the old days checkering lines were often deliberately laid out this way; I have seen a number of old English pistols in which the checkering lines followed the curve of the grip. However, most of the English flint and percussion rifles had checkering made up of straight lines and this is the preferred method today. It does require constant watching that these curves do not develop. Your master lines are laid out straight to start with and you must frequently check your lines to see that they continue to remain straight and parallel with each other.





A Piecemeal Pattern sent in by Leighton L. Baker

This pattern is a little different than most. It is the creation of Delmar Beavers, a gunsmith friend of mine. He sometimes amuses himself by drawing up large numbers of new checkering patterns and carving designs.

Better have a French curve handy for laying out the pattern, both for the pistol grip section and the forearm section. It isn't particularly

hard to lay out and after it is on the stock in pencil you may cut around the entire edge with the knife and checkering tool. Then you will find that it was easier to lay out than to checker. Those extra little, sharp corners give plenty of trouble and you will need a lot of patience and care. The checkering tool must be a little, short affair to get into those corners. If you are not an expert checkerer it may be a good idea to leave the strips around the sections wide enough to accommodate a border. This pattern looks best without a border but you may well need one to cover a few slips.

If your wood will allow it, fine checkering is best on a sharp corner job like this. With more lines per inch, making smaller diamonds, the checkering is not cut so deep and it is therefore easier to get into the corners of the pattern without cutting into the edges.

The checkering on the stock here illustrated was done by Andy Babirad, formerly of New Jersey, while he was a student of mine. This was one of Andy's first attempts on an actual stock, he had previously checkered a few practice stocks and psuedo pistol grip sections.

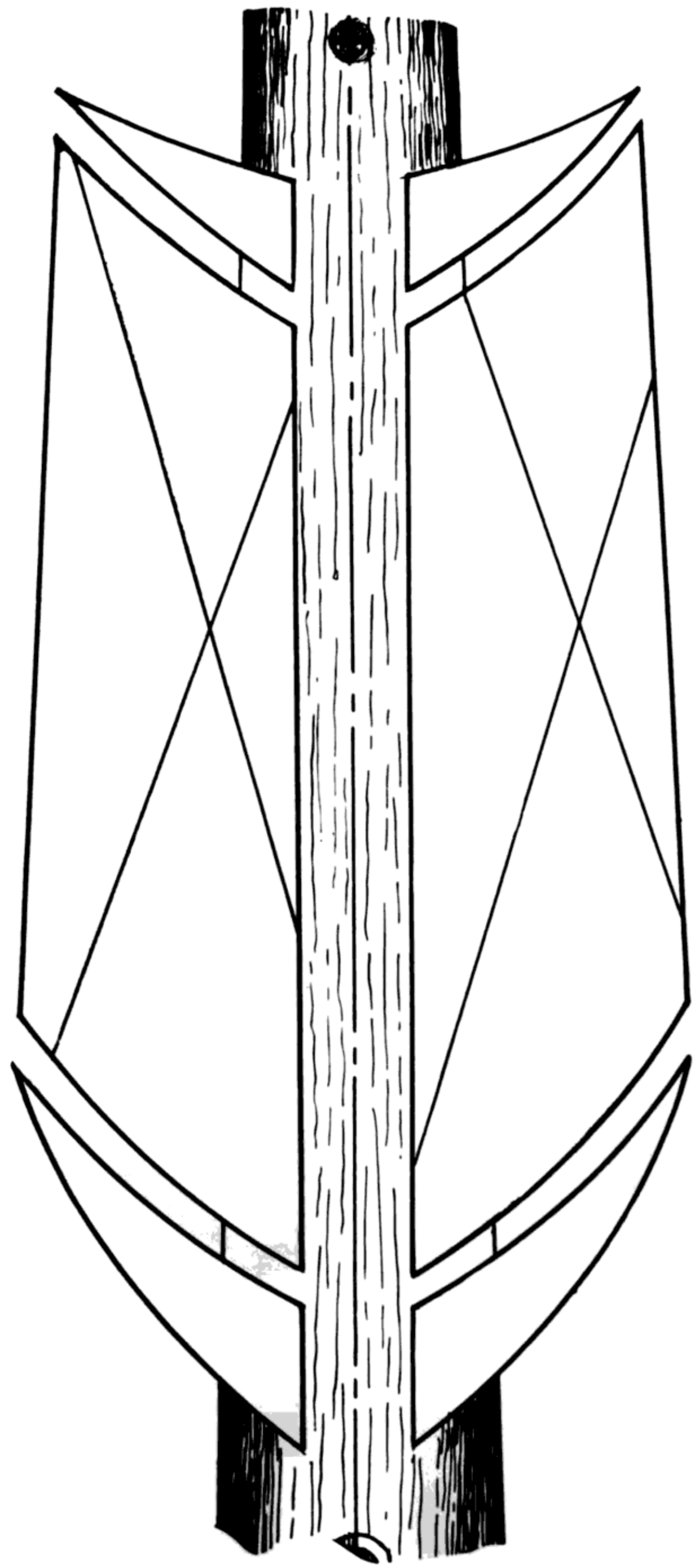
It may be well to call attention to a few errors which are noticeable in this checkering job. Other beginners are likely to make the same mistakes on a pattern of similar style. Breaking up a pattern so that there are several smaller segments does make it more difficult to execute.

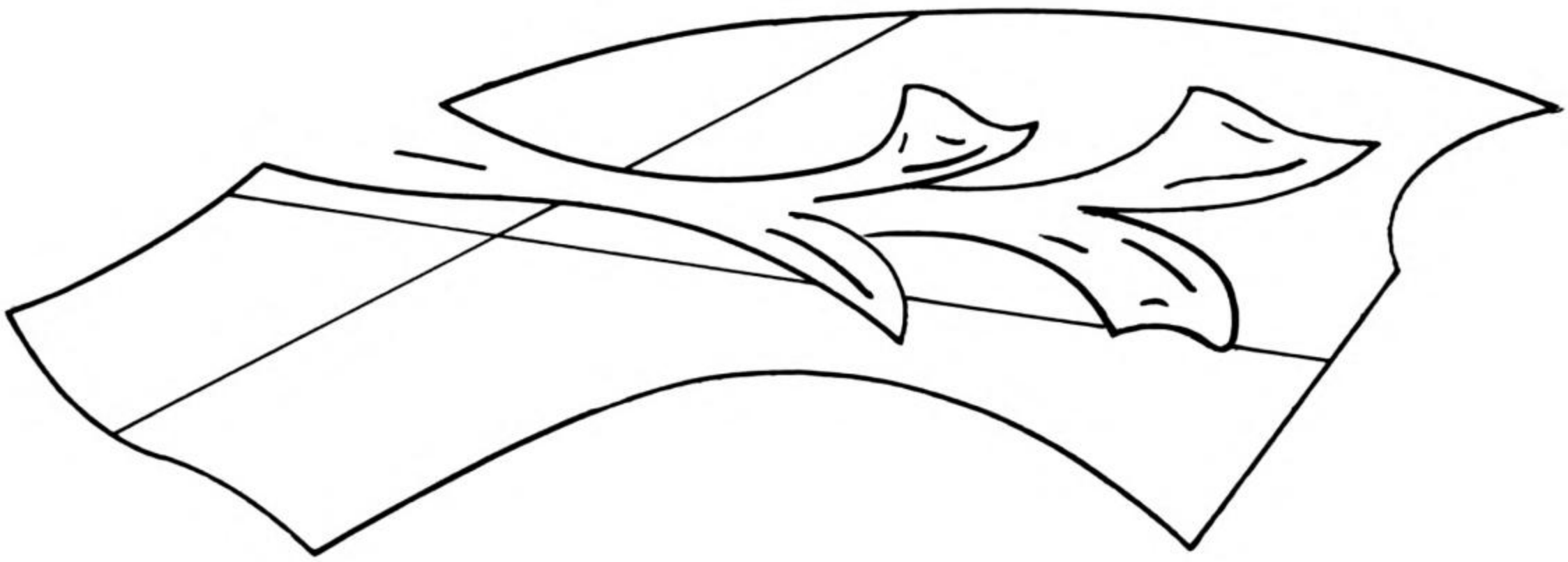
In the forearm of the illustrated rifle Andy failed to keep the checkering lines of the two small sections running in the same direction as the lines in the larger center section. These lines, in all sections, should run in the same direction, and be a prolongation of each other.

In a few places along the curved edges of the pattern Andy allowed his oblique lines to also curve, thus changing his 3-to-1 diamonds into 2-to-1's or even squares at these points. The checkering lines should run straight in all portions of the pattern.

Also in a few places the checkering tool cut across the edges of the pattern. This is difficult to control in the small narrow corners. These slips can be done away with by beveling the wood which borders the pattern. With a sharp thin blade cut this bevel into the border line of the pattern, thus cutting away the feathers left when the checkering tool slipped a little over the edge lines.

All in all, this was a very good checkering job for a beginner. Andy has improved since this job, is no longer a student, but is now a gunsmith in our A. W. Peterson Gun Shop and does a good deal of our custom stock work.





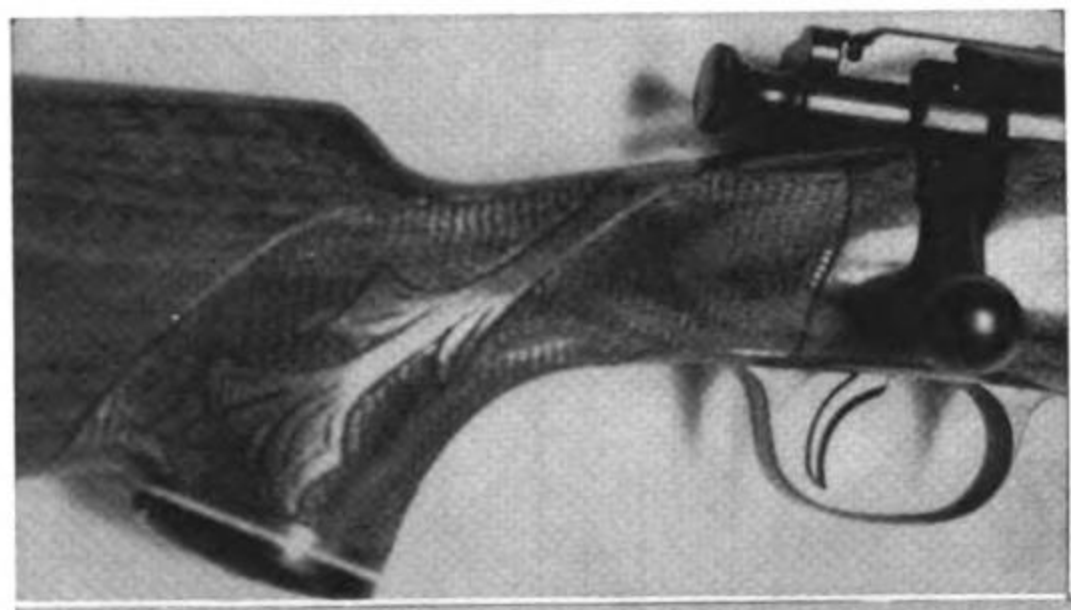
Leighton Baker's Down South Special

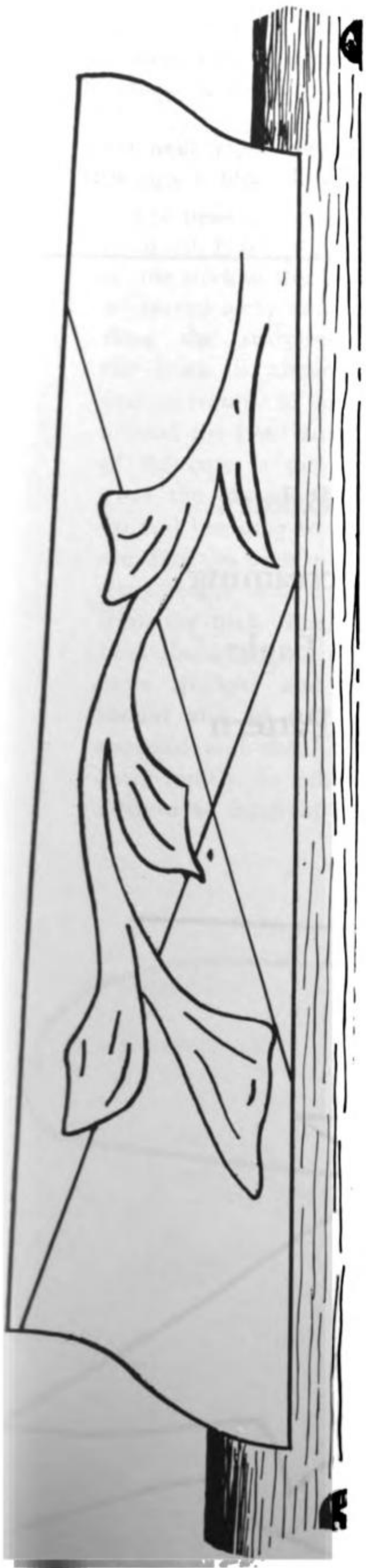
Here is my baby, my pride and joy, my Down South special. A simple little design which when properly done is very attractive. This is a combination of carving and checkering or, if you prefer, carving and stippling. It isn't difficult to do, but then you may also find that it isn't difficult to spoil. Carving, in itself, is not any harder to do than checkering, some people think it is easier. But when you run a carved design thru the center of a checkering pattern it leaves a lot of sharp corners and odd shaped edges which require care to checker into.

You will need a few small carving chisels beside your regular checkering tools to complete this pattern. As good as any which I have used, besides my home made chisels, are the Miller Falls sets #106 and #107. These are small carving chisels, one set has six chisels in a cardboard box and the other has five chisels in a wood box. The #106 set has regular chisel type handles about 3¾" long and ⅞" in diameter, the #107 set has stub handles shaped similar to large dresser-drawer pull knobs. Take your pick and the price is very moderate for either set.

The first step is to get the pattern onto the stock. Draw the pattern outline first, then put in the leaves and buds. This can be readily done by tracing the design thru a piece of paper correctly positioned on the stock or by making a cutout pattern to trace around. This pattern, either of thin celluloid or cardboard, can then be kept for future use.

Take a sharp, thin-bladed knife and score around the pattern and, holding the knife at an angle, cut around the design so as to make a bevel cut around the edges. Now use the veiner, the chisel with the small round cutting radius, and cut around our design, letting the inside edge of the veiner follow the cut we





have made with the knife blade. Make this cut with the veiner about 1/8" deep, then sharpen the edges if necessary and true up the outline with a sharp knife blade.

The background should now be removed or lowered. It isn't necessary to lower it to the bottom of the veining lines but the surface level should be lowered about 1/16". Remove this wood with any suitable-sized flat chisel, being very careful to leave a smooth surface. Then with small pieces of sandpaper smooth up the wood so that it will be in proper shape for checkering or stippling.

You now finish the shaping of the leaves and stem. The veins in the leaves may be shown by making a cut on each side of the vein with a V-bottom veining tool. Slacken up on the cuts as you come near the points of the leaves. The leaves look well if they are slightly dished out on each side of the veins. This is done with a curved gouge. However, all leaves do not need to be shaped the same and it is well to shape some so that the center of the leaf is higher than the edges, which are cut down quite close to the bottom.

You are now ready for the checkering which is done in the conventional manner. Go completely around the pattern with the single V cutter first, then cut your master lines and carry on. Use a strip of flexible shim stock to check to see that your lines are straight and parallel. Use a short cutter to get into the confined places around the leaves. Take it easy and go carefully.

It's mighty nice when finished.

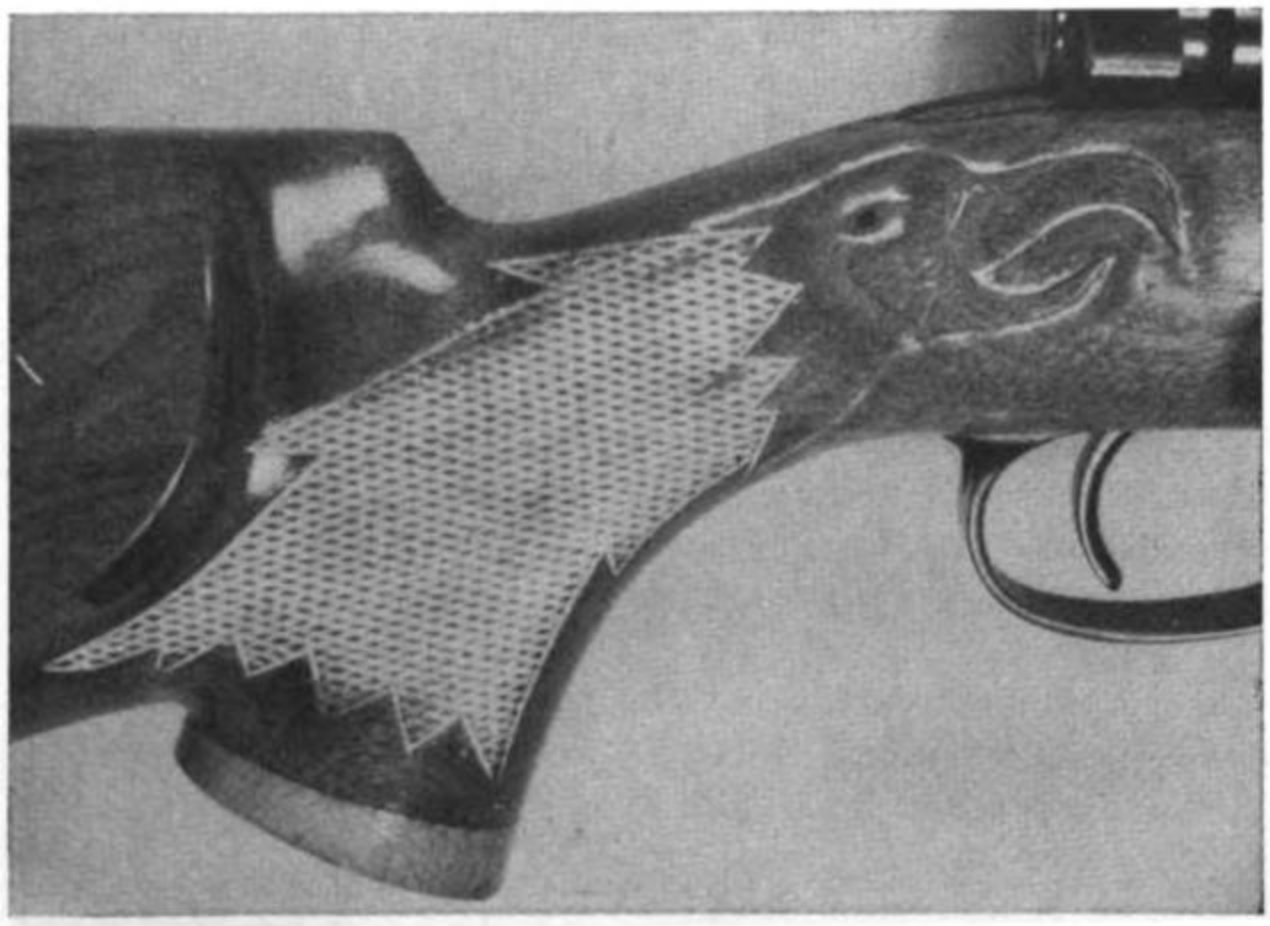
You may wonder how come a gunsmith from Denver, a mile high up in the air, ever decided to name his favorite checkering pattern the "Down South Special." So if Friend Sam will allow it I will sneak in just a little history. After the war I had a place back in the sticks, on Bay Lake Road, near Groveland, Florida. I was gunsmithing, and raising chickens, and do ing a little farming; but gunsmithing took most of my time and all of my interest. So, in the desire to gain more knowledge of gunsmithing we packed up one day and jeeped out here to Denver. Did learn a lot too and was soon offered a job teaching the subject, and kept on teaching it for three years. Only expected to stay a little while when we came out here, and always hankered to get back as quickly as possible.

Of course I looked up the famous old Peterson gun shop as soon as we arrived. Old "Axe Handle" had recently died but Roy Peterson and Fred Writer were there and I got ac-

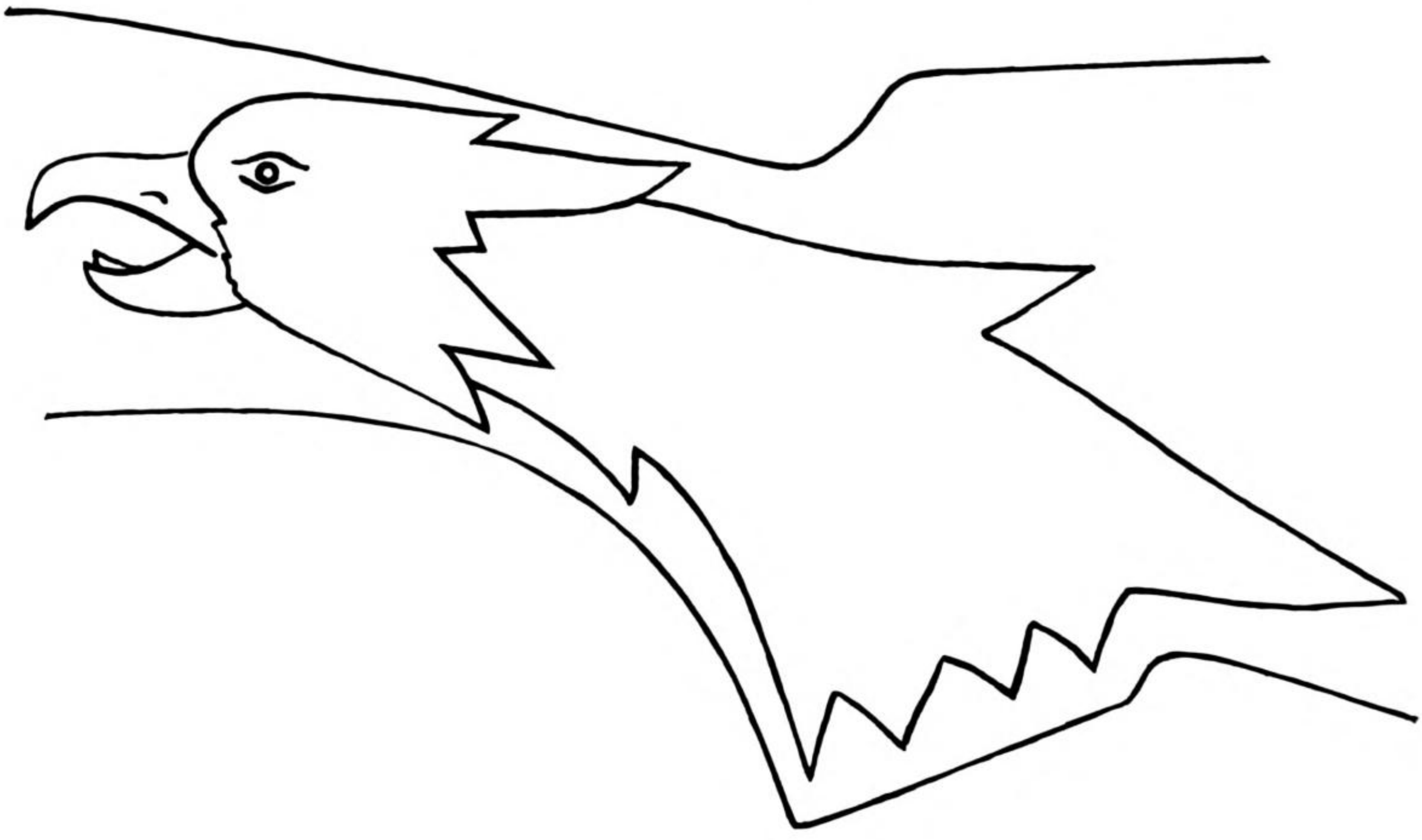
quainted. Roy's health was not good and when it was impossible for him to operate the shop any longer he asked me if I would like to take it over. Shortly afterwards Roy died and here I am, still in Denver. We have tried to build the shop up, enlarging both the facilities and the services, and have moved to a much larger and better nearby building at 1443 Larimer Street.

So many gunbugs asked us to teach them gunsmithing that now we have a small number of students taking a complete course here in the shop, and now that we are in the new building this portion of the enterprise is being expanded in size and scope.

Well, Florida seems further away than ever, but if I wake up on a still night I can still smell the jasmine.



Baker's Screaming Eagle Pattern



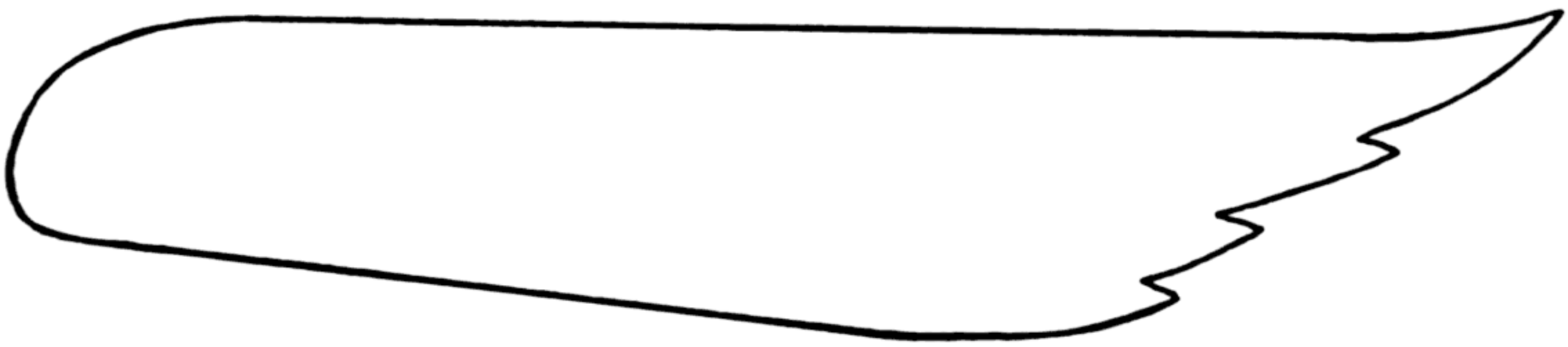
This is an attractive pattern that is different, and it will provoke comment whenever displayed. The idea just popped into my head one evening and it didn't take long to draw it out for the pistol grip. However I did have quite a time figuring out an appropriate design for the fore end, finally ending with the simple but attractive design as here illustrated.

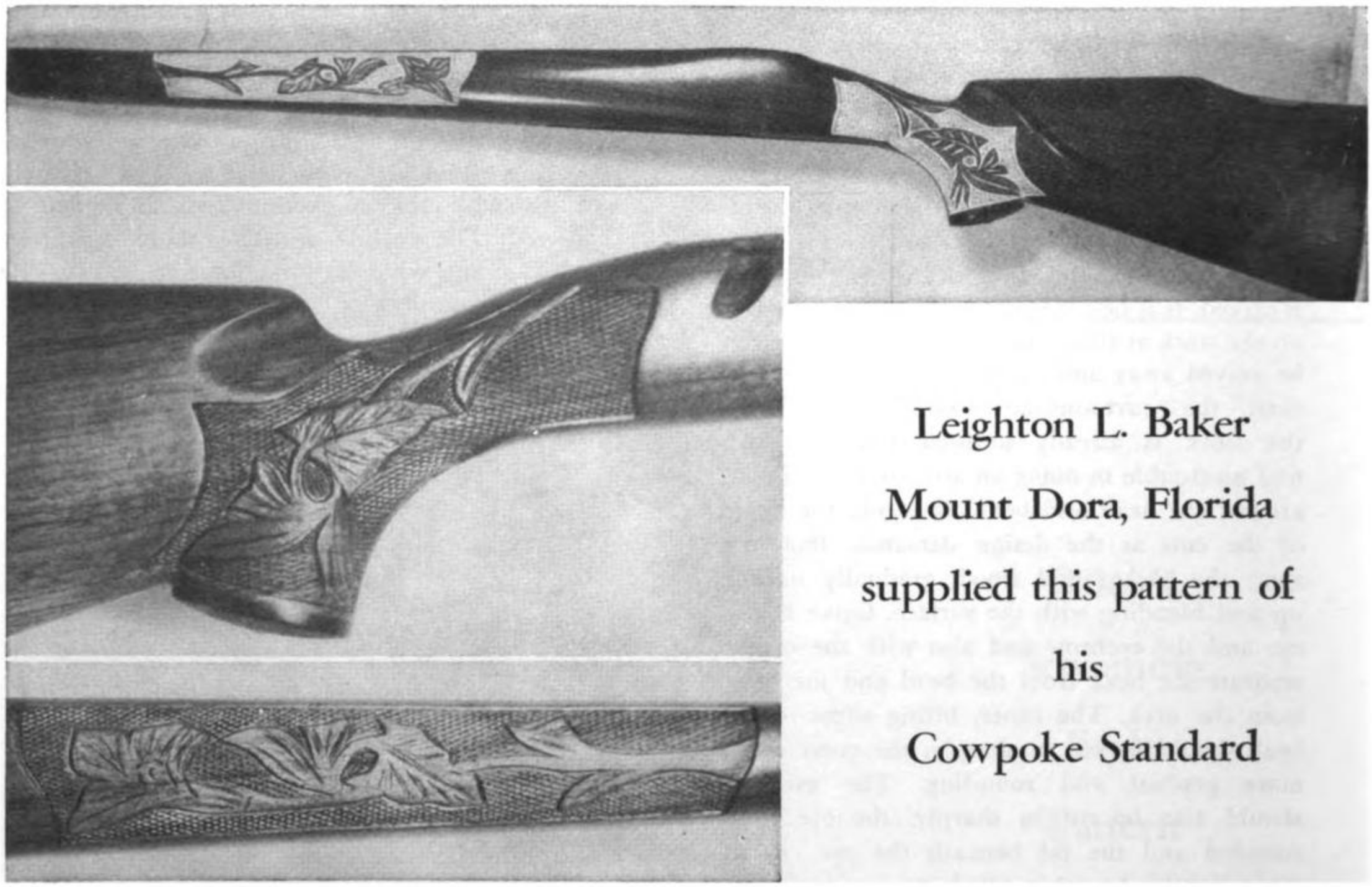
The head of the eagle, with his beak and eye, is carved. It is best if you can leave enough wood on the stock at this point so that the outline can be carved away and the head left a bit higher than the surrounding wood. However if the stock is already finished you will still find no trouble in doing an attractive job. Carve around the head and beak, changing the angle of the cuts as the design demands, then cut away the background wood, gradually sloping up and blending with the surface. Carve in the eye and the eyebrow and also with the chisels separate the beak from the head and the head from the neck. The inner, biting edges of the beak should be cut in sharply, the outer edges more gradual and rounding. The eyebrow should also be cut in sharply, the eye itself rounded and the lid beneath the eye cut in more lightly. In other words we are trying to achieve as much of a three dimensional effect as possible. Carved "in relief" as a professional woodcarver would express it.

The neck of the bird is outlined deeply with the checkering tool and then checkered. Remember, there is no border, so do not overrun your edge lines. The fore end design also is neatly outlined with the checkering tool and then checkered. The outline or edge should be cut quite deep and wide, both on the fore end pattern and the pistol grip design, as this will set the design off better as well as making the checkering easier to do.

This left-hand stock was built and checkered by one of my gunsmith students; Ray Westwood whose address is c/o C. A. Young, East Yosemite Ave., Manteca, California. Westwood is now back home, at the above address, and is another of the far too few who are a credit to the gunsmithing profession.

You will notice the artificial appearance of the checkering in some of my stock photographs. This is because flour has been dusted into the checkering to create greater contrast for the photos. If you try this little trick use the plain, old fashioned flour, not the prepared mixtures. These are somewhat sticky, more difficult to dust evenly into the pattern and then harder to remove. Believe me, I do not cover my checkering with white paint.





Leighton L. Baker Mount Dora, Florida supplied this pattern of his Cowpoke Standard

"Here is certainly one for the book," said Samworth, "but there is just one thing I want to know—does the guy also wear a hand-painted necktie to match?"

This pattern was designed for a fellow who wanted his gun stock to match his belt and revolver holster. You don't run into those kind very often, anymore. You don't even see any genuine cowpokes anymore, except when they flock into Denver for the big Stock Show each winter. But you know, occasionally some fellow wanders into the shop and wants to buy a "genuine cowboy gun." So, to get back to our hero, "No, Mr. Samworth, as I remember he did not wear a necktie at all. But his boots might have matched, I didn't notice."

Well, this pattern is a pretty thing and when transferred to a rifle stock will be a joy to behold and a pride to own. I wouldn't care for carving on all my stocks, but good carving on a few sure dress up the gun collection and are the first to catch the eye.

I'll not repeat myself with instructions on doing this pattern as everything I said concerning my "Down South" pattern applies here. The only difference is that this is more complicated, the leaves have bloomed out a bit, it will require more care in the carving and it will take you

A Specialized Target Job

by

Roy F. Dunlap

Out in them thar' wide open spaces of Arizona—where they calm down Texans by asking "How are things back East?"—the guys and gals take their rifle shooting seriously. Here is a job of checkering turned out by Arizona's son (acclimated, not native) Roy Dunlap, who writes:

"Here is a heavy target job, stocked by yours truly in California walnut from one of Hutchings' blanks.

"It is checkered solely from the utilitarian standpoint. Forearm is 18-line; grip is 20-line, and the forearm was checkered before inletting the adjustable swivel base. No pattern was used, the only idea being to provide plenty of teeth to hold on to in position shooting—any position—and this forearm checkering helps plenty, even when using a shooting glove.

"This forearm checkering runs to the top of the stock, ending about 1/4" from barrel channel. No pattern was used—the forearm was simply checkered all over, with those few points left on front just to end the job quicker.

"On the left side of this stock, the cheekpiece is carried forward on to the grip and is low enough and wide enough to clear the fingertips from the face—the fingertips of the grip hand coming fairly close, or can rest up against the overhanging edge of this cheekpiece.

"The grip checkering is in one unbroken area, covering all portions contacted by the hand in shooting position—checkering going around under grip and enough put on left side to 'hold on to.'

"This gun has seen considerable use and the diamonds are shiny, making them appear slightly larger than they actually are."

ROY F. DUNLAP.

Lenard M. Brownell
tells about his tools and methods

At the busiest time of the year and just before going to the 1951 N.R.A. Frisco Convention to show my wares, Monty Kennedy and Tom Samworth got after me for some material for this book. So, among the commotion already going on, I will try and sketch a few illustrations and write a word or three. I can possibly give you a few suggestions that may be of some help to keep you from learning it the hard way, as I did. But to learn to checker does not come from reading books. If it did, Monty and I and the others that are told we can checker would not have so many grays hairs and show so many signs of wear.

All the designs shown here are not patterns taken directly off the guns, but all are designs used on guns I have made; some copied from the gun, some as I remember them, or from photos I have taken of them.

I do not have a set of standard patterns. I like to take a stock that is ready for checkering and, with a pencil, just start doodling. I often come up with a new design or a new variation of an old one. This makes the work seem more interesting and more truly custom. This old stuff of making piles of stocks all alike and calling them custom stocking is an outright fraud as far as I am concerned. Absolutely original designs are probably impossible to make. These I have, I obtained from drawing on the stock and doing what looks good on the job at hand. But they have been used in some variation or possibly in their entirety by others. This does not bother me in the slightest as I have at least maneuvered them around to the extent of looking good for a well balanced design. In a large sense I feel original with them as I have had nothing particular in mind while drawing them. These designs are flexible and little changes as will be shown on the illustrations can give a rather wide choice of patterns. Checkering done nicely adds a lot to a rifle. Takes it out of "just a gun" class and makes it more of a joy to own and handle at all times.

To take a nice rifle and grab up a checkering tool, which may consist of everything from a rip saw to a horse shoe rasp, and botch it up before you have the slightest idea of what you are doing is not only messing up a good gun but is showing your lack of something or other. Yet I have seen many cases of just that. If this stuff I am putting out accomplishes anything good and if it will get you in the proper frame of mind and to have an idea of what you are doing and what it should look like when finished, then I will have accomplished more than I am getting paid for.

Checkering is one of the most time-consuming jobs on a gun. If you are in a hurry or of the temperament that cannot stand to just grind away at something with slow, unswerving vigilance toward perfection, then your haste to finish and "Oh well, that is good enough" will most certainly show to tattle-tale on you. *Do not try to do an hour's work in 55 minutes.* Besides taking the time to do it well, the most important thing is to correct your mistakes *at the time you make them.* When checkering, you will find that your lines are not staying parallel. Well, take immediate measures to see that they do! Get down and scan along the lines to see if they are parallel and straight. If not, straighten them as best you can before going on or they will exaggerate themselves into a mess. I have even seen attempts at checkering where one line would run into another which was supposed to parallel it and there would be no correction; consequently all following lines turn and run off the same amount or more. Although this will often occur for you, it is inexcusable to let it go without correction.

I will not discuss tools or say much on the technique of using them since Monty has very well covered this phase. I have made a lot of tools for checkering, some good and some bad, and in doing so have found out what it takes to make a good tool and why most commercial tools are no good. Outside of the material being good enough to hold an edge for a reasonable time, the main thing a tool must have is fine teeth. That is my gripe with most commercial tools. They look more like a spring-tooth harrow than a tool to cut 22 lines to the inch in wood. A coarse tooth tool will shell off the diamonds like old River Bottom Jones' hogs eating field corn. DemBart tools are one of the exceptions of the usual "boughten" tool. They make such fine tools I now use them for a great share of my work. I do make a tool with a long blade to cut straight border lines or to straighten lines that get crooked going through burly figure or any other reasons that they will not go straight. DemBart makes replaceable inserts that are a boon to the stocker. A few seconds and you

are going right on with a new cutter of the same size and pitch. Trying to work with a dull tool is just putting hobbles on a race horse. The great time involved in checkering, against the time it takes to change the insert or even to sharpen your home made tools, simply will not permit the using of a dull tool. Also, a sharp tool will cut up to the edge and "whoa" better than a dull one. The greatest thing that has happened since the Injun got a "hoss" is the DemBart electric checkering tool. Only professionals would be interested in it, since it costs half as much as a registered cow, but it is one tool in my shop that is here to stay.

Lots of good light is important for all precision work. But checkering is somewhat of an exception. You need light, but not a lot, and *it must be placed so as to throw shadows into the checkering.* I visited one of the well-advertised gunsmith schools, where they had a poor student sweating and suffering away at a checkering job directly under a large fluorescent unit; he did not know what his job looked like until he got it home. Just hold a checkered stock directly under a good light and you will see what I mean.

Mr. Samworth asked that I include some information and pictures on carving. He probably does not realize what criticism he is laying me open to—therefore, let me make a few statements about carving stocks. There are many people that dislike carving and are very definite about it. Some people just do not like anything that they do not have—those we will not concern ourselves with; the others probably do not like carving because the biggest share of it is such that most people could not be blamed for not liking it.

Carving, if it is not well-designed and executed, looks like hell I will readily agree! Notice I said designed *and* executed. It cannot stand short on either stipulation. I, myself, believe that unless carving is well done it has no place on a gun—which also goes for the metal engraving. So my advice to you is: "If you have not the artistic ability to design things pleasing to the eye, or cannot handle the medium in which you are working, do not louse-up a good stock." In most cases good wood, good workmanship and just good checkering make the highest grade gun. This for any man's money.

Carving should not be flashy, bold and dominate the gun, but delicate, conspicuous only in a manner which accentuates the beauty of the wood and improves the design and general lines of the gun. Suppose you want to carve the good buck you got last year—first draw it on paper; does it look like him or does it look like a razorback hog with horns? *If you cannot draw it, it is a cinch you cannot add that third dimension and carve it.*

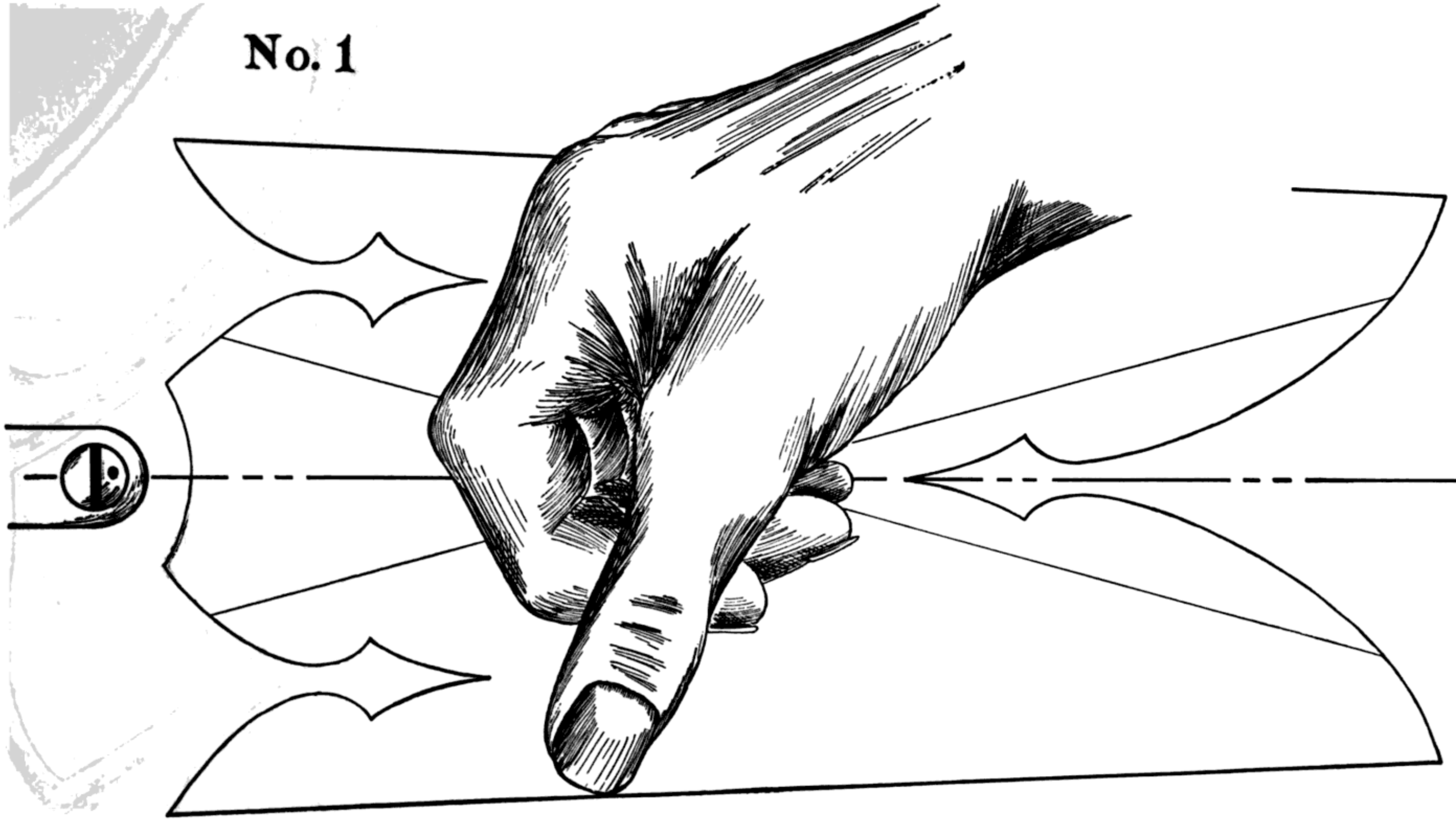
There are two ways to go about carving. If your stock is finished to final size, then you will have to carve into the stock or below the surface. If the stock is not completed you can leave wood for the carving above the surface of the stock proper. This is very difficult at times, as you have to work carefully or you will not have the area surrounding the carving following the same level as if the carving were not there. Also, this type is more apt to become damaged with use, since it is raised.

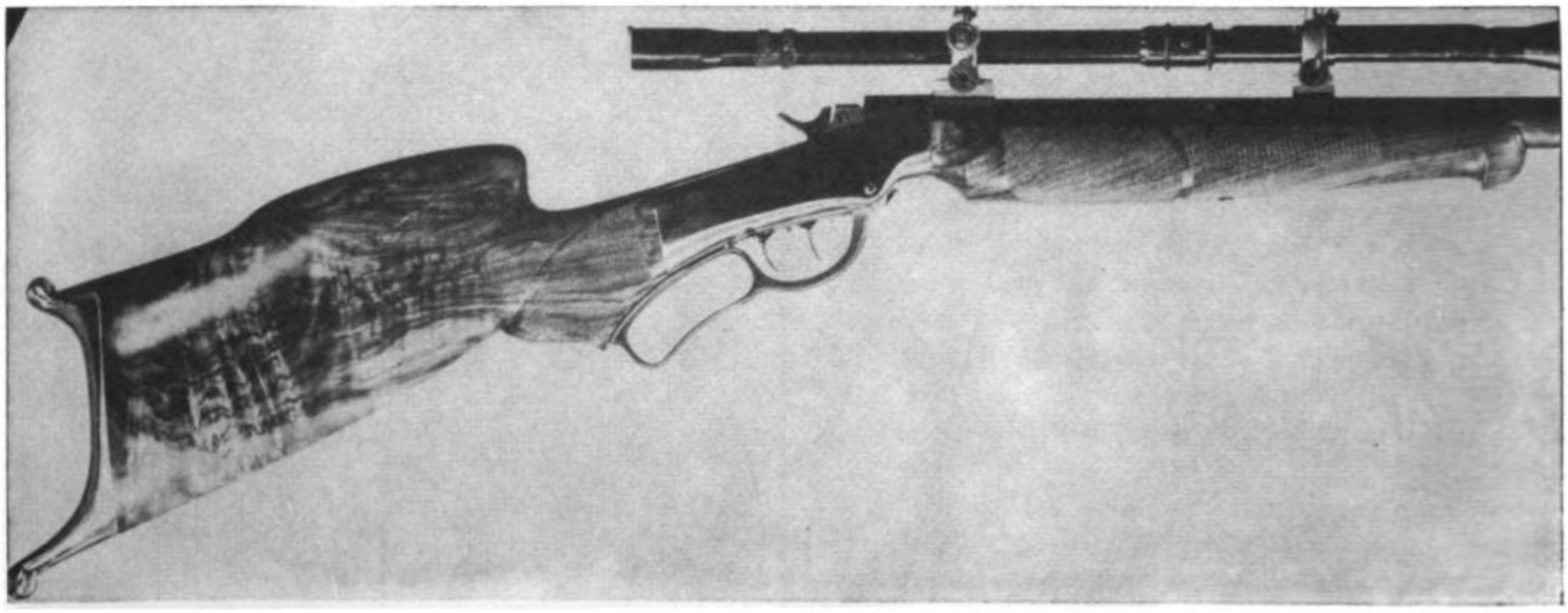
All this writing and I have not told you how to hold a tool or lay out a line. I have written it this way for two reasons. One is that procedures, tools, and working kinks will be covered very thoroughly by others in this same book; and two, is that I do not believe technique is nearly as important as getting a person in the right frame of mind. What I have attempted to do is enthuse you to want to checker your gun in a manner approaching perfection. I want to have you settle for no less than you can accomplish with your maximum efforts. Do not start off all enthused and fizzle out half way through. A little stick-to-itiveness is the difference in success and failure.

Okeh, now you are raring to go! Let us get down to work. I was supposed to have names for these patterns (Samworth says). I never have named a pattern. For one thing, I seldom use the exact thing over again, as explained before, I just sit down and start drawing on a stock. It is hard to tell what I will finally come up with. I will just letter them so I can let you know which one I am referring to as I go along.

Pattern "A" will be a good one to start with, since it has a border independent of the checkering lines. The patterns that follow the lines of checkering are slightly more difficult since they will not be the same on both sides of the stock if your lines are not kept parallel and straight. Let us be determined to keep them straight and parallel regardless. But if there is a little advantage to take on the first one we try our hand at, let us take it.

You can start on the forend first if you wish, possibly gaining a little more control before going into the inside of the pistol grip which is a little tricky. Locate the center line of the forend and make a faint line with a soft pencil or grease pencil so that it can be wiped off. I doubt if any of the patterns in this book will exactly fit your forend. They carry only the suggestions, so just sketch your outline on one side from the pattern. Do not press hard on the pencil or the mark cannot be removed. When it looks good to you, take your parting tool and make an even-depth border line around the outer margins of this half. If you have trouble guiding the parting tool, take your jack knife and go around the border with it just deep enough with the point to give the parting tool something to follow. On the straight lines you can use the single cutter checkering tool.

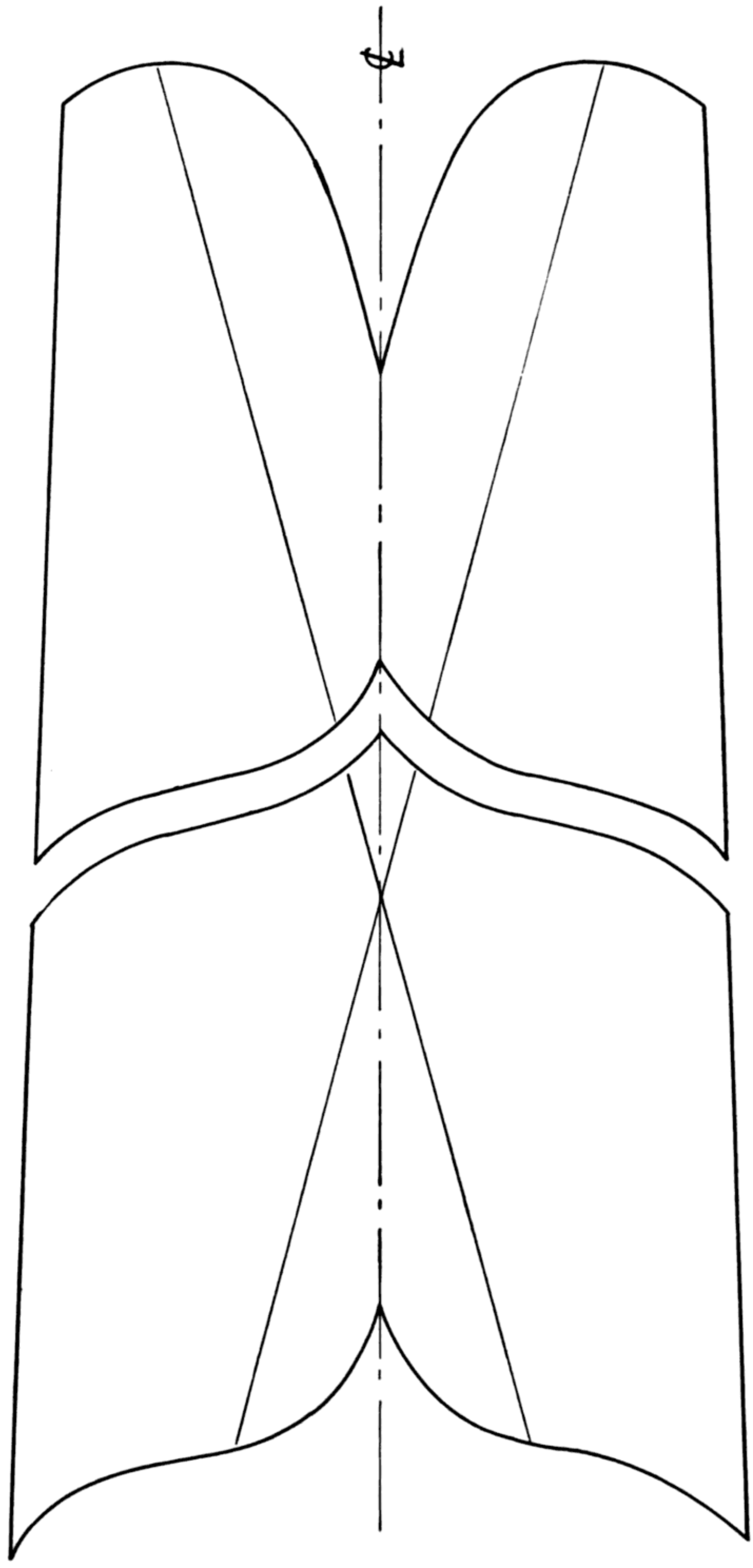


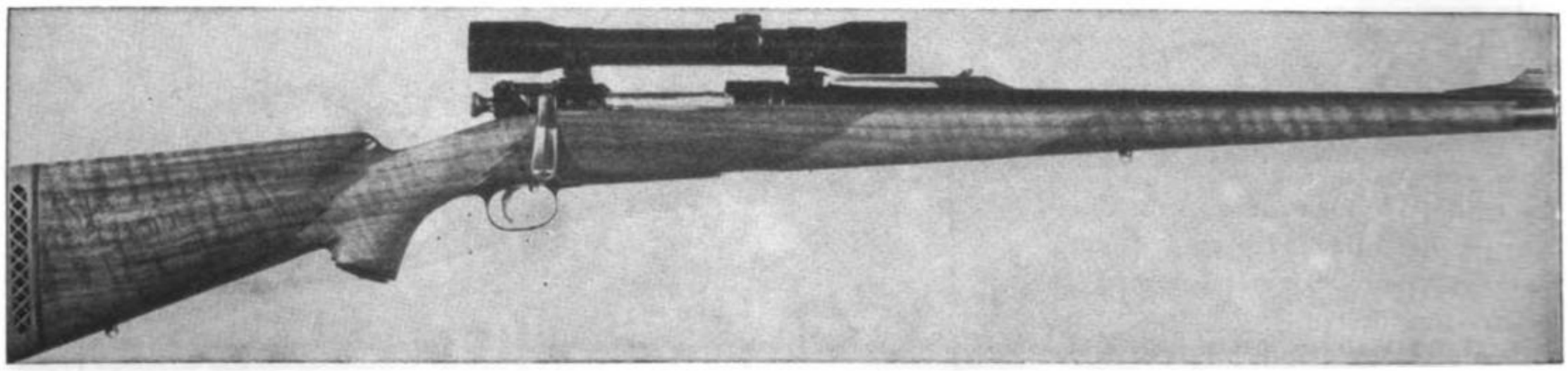


Lenard Brownell's
No. 2 Pattern
as worked out on a single shot
Ballard Rifle

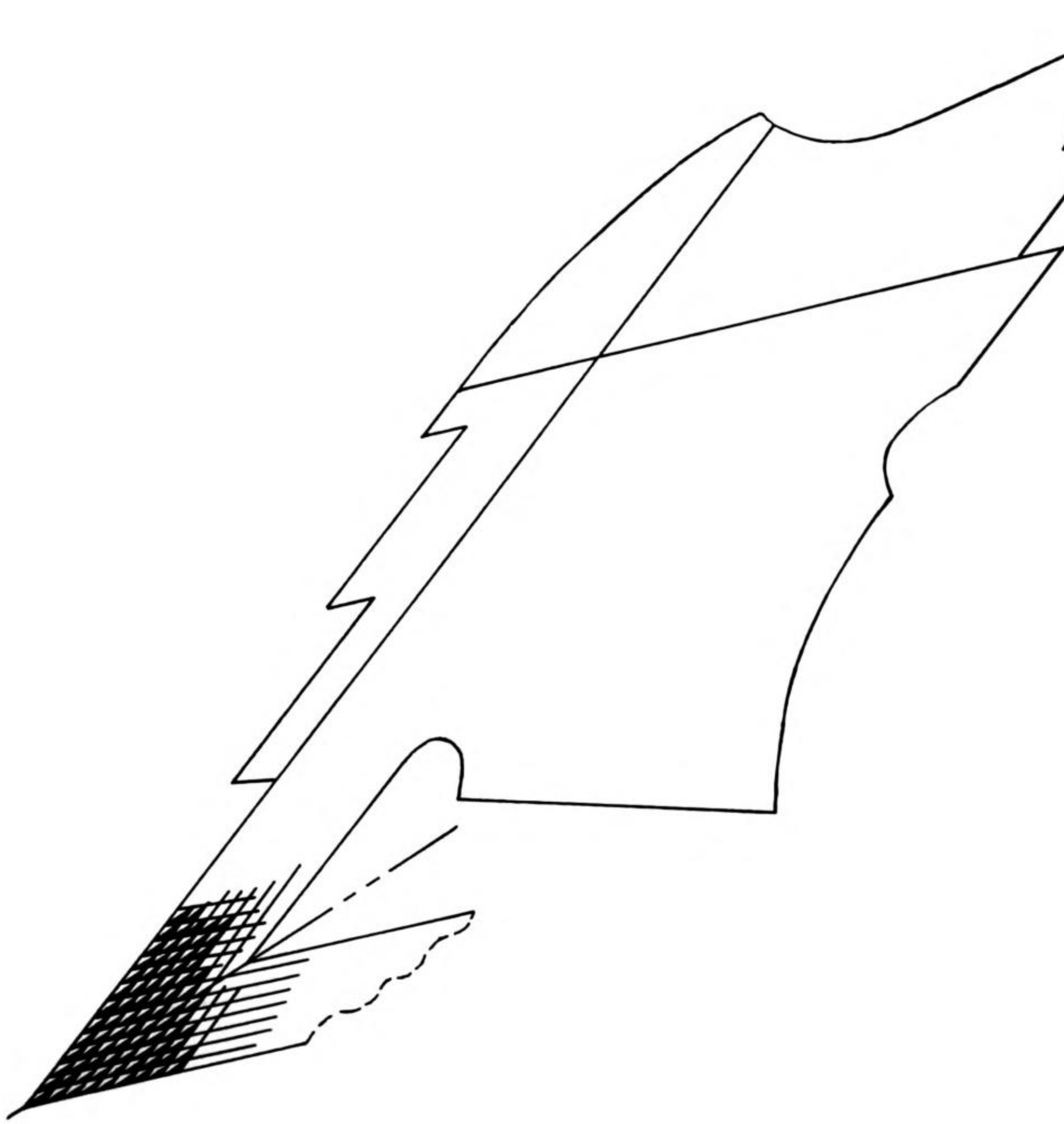
This is a pattern I used on a .38/55 Ballard, which I stocked for M. B. Browning, of Browning Arms Company, Ogden, Utah. I drew it from a photo and memory, since I never kept the original design.

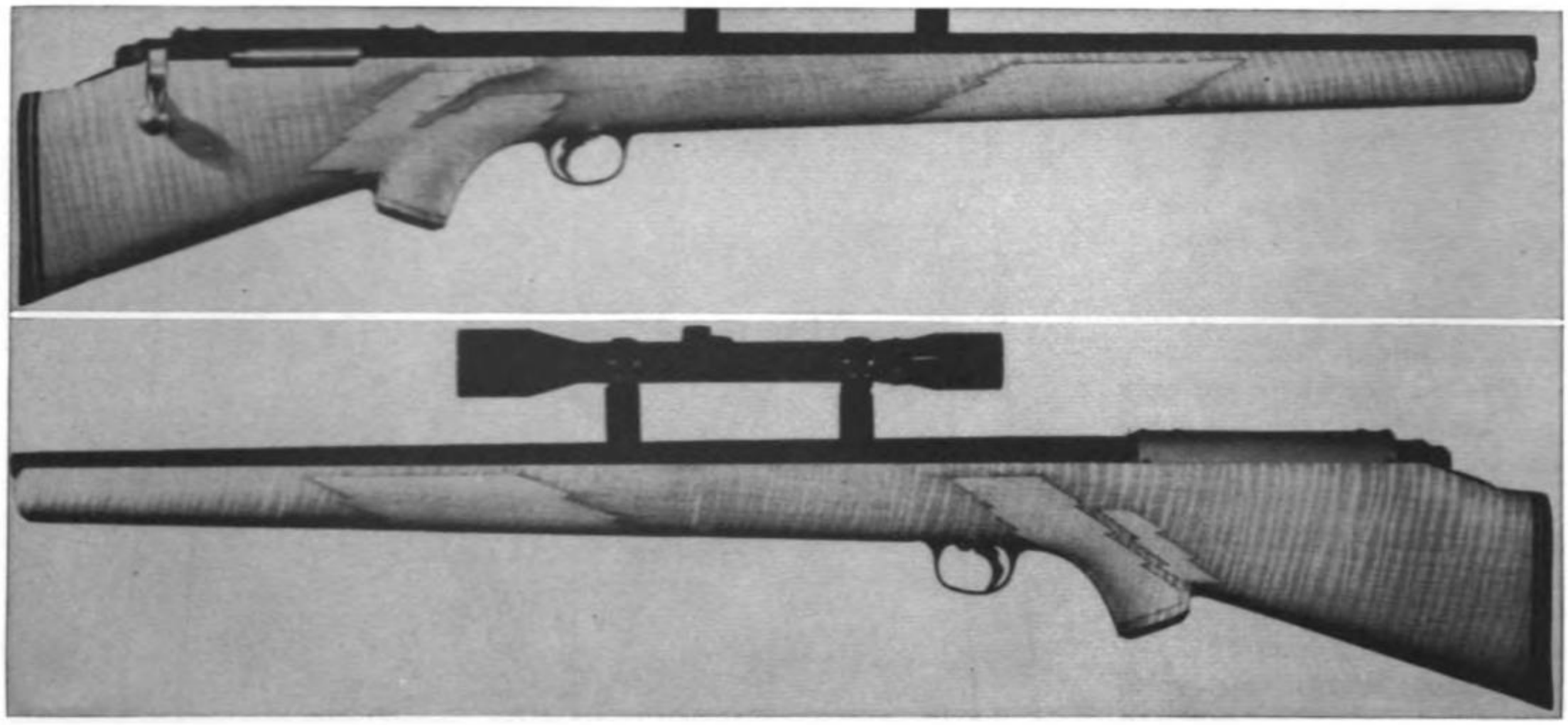
It can be worked out nicely on most two-piece stocks and possibly on some shotguns. Watch your step on the strip dividing the two portions of the forearm pattern; here you must check constantly to keep the checkering layout lines in both sections matching, or in prolongation, with each other. They will tell on you if you do not. If you run-over on that narrow strip, you will just have to look at it for the rest of your life—because it is there to stay.





Lenard Brownell's Springfield - Mannlicher No. 3 Pattern





A Brownell Pattern for a Bull Pup

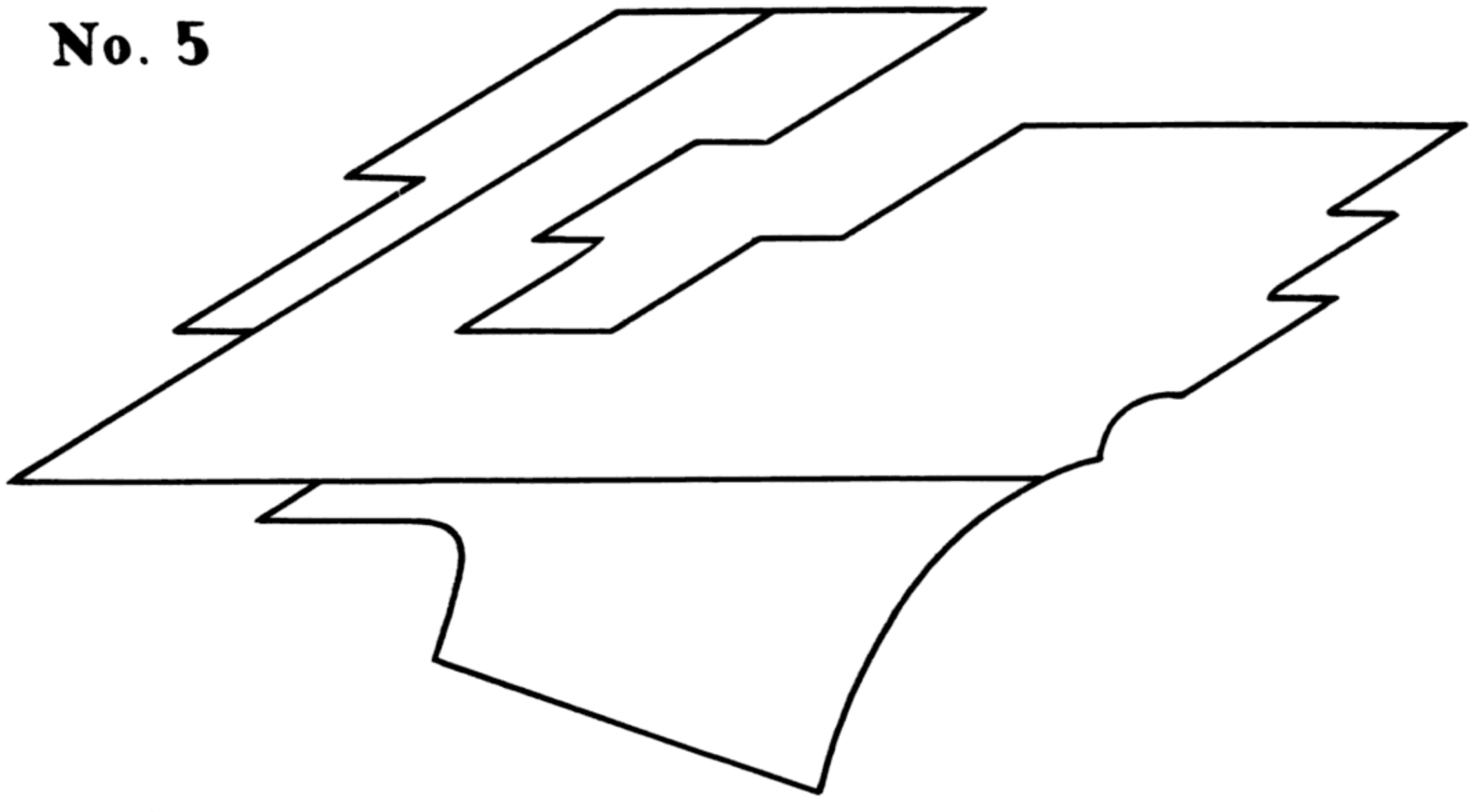
Here is an unusual job—a bull pup, .243 Ackley Express on a 721 Remington action, on which I did the trigger job which incorporates a Canjar set trigger. A 3-shot magazine in a curly maple stock.

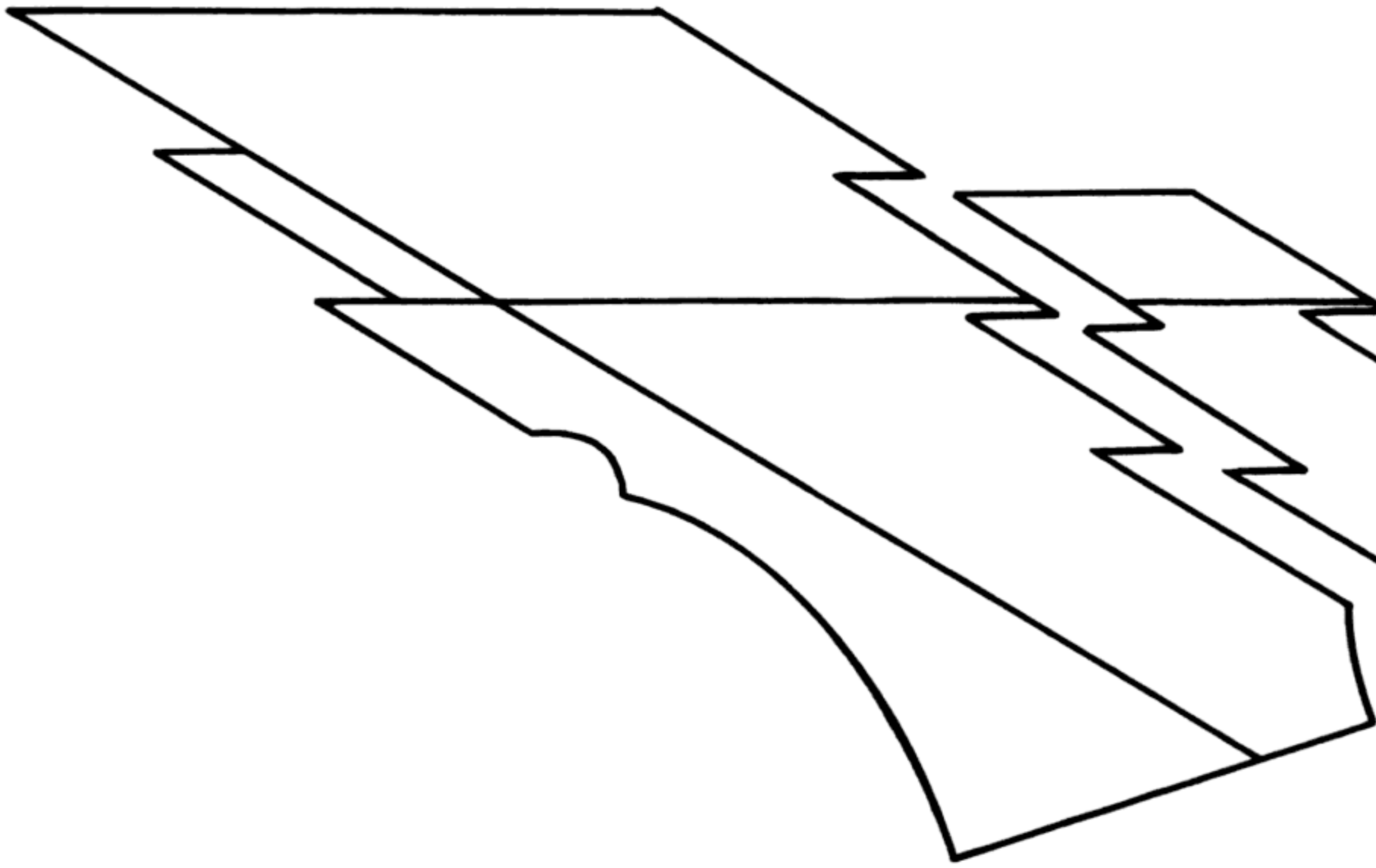
The trigger job alone was a job and a half; it took a rod under tension rather than the usual rod under compression, in order to make it work. The original Remington trigger was used.

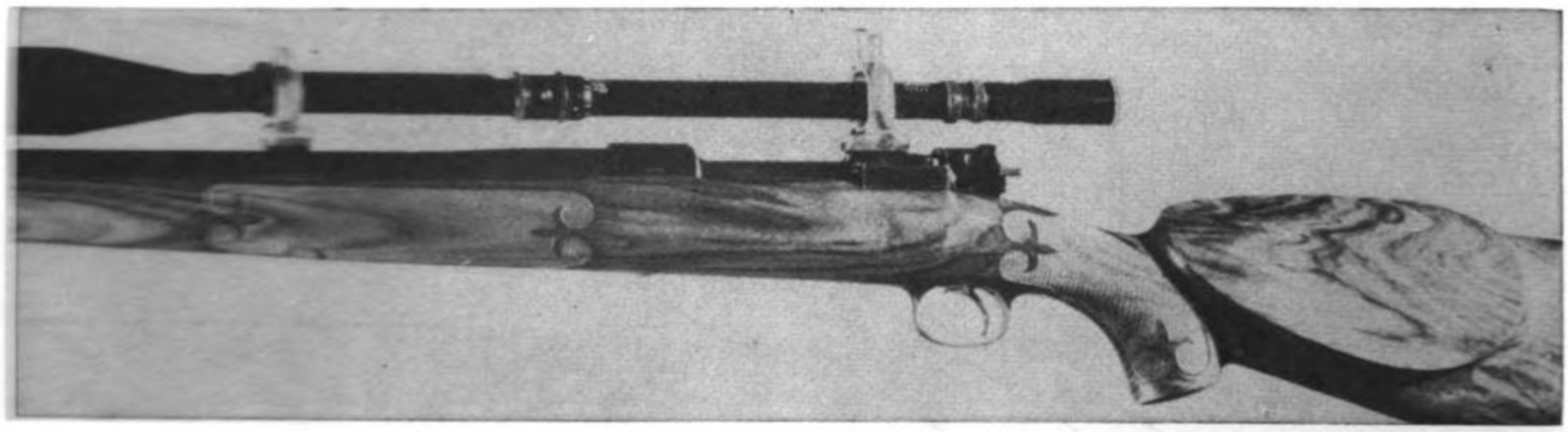
This canoe paddle is owned by Paul C. Von Rosenberg, of Denver, Colorado. Is fitted with a 6X Unertl scope. And is plain hell on chucks as Mr. Rosenberg and I gave it a thorough breaking in on them this past spring when it was completed.

This particular pattern is a sort of take-off of Pattern No. 3, altered to fit the problem in hand.

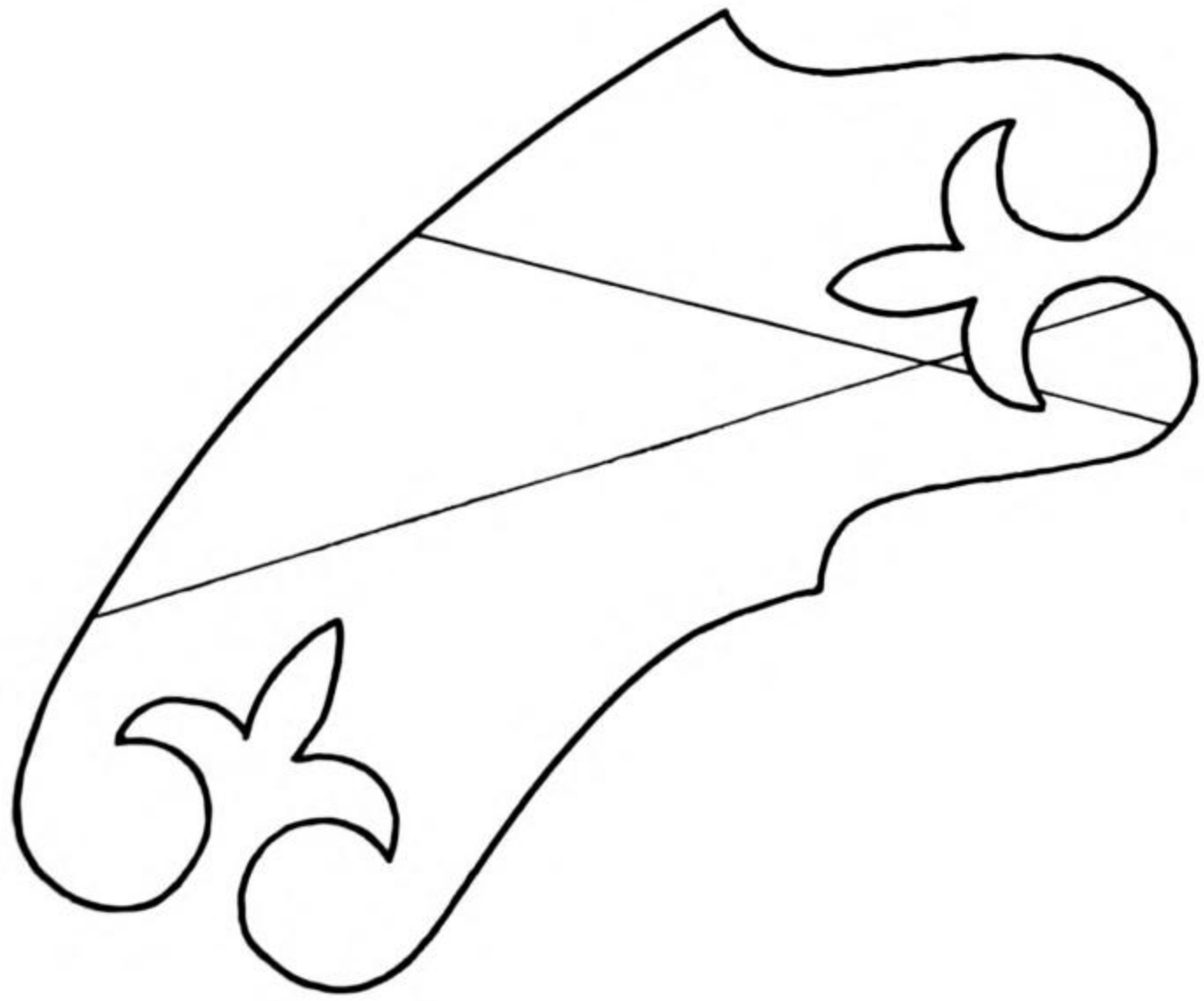
No. 5





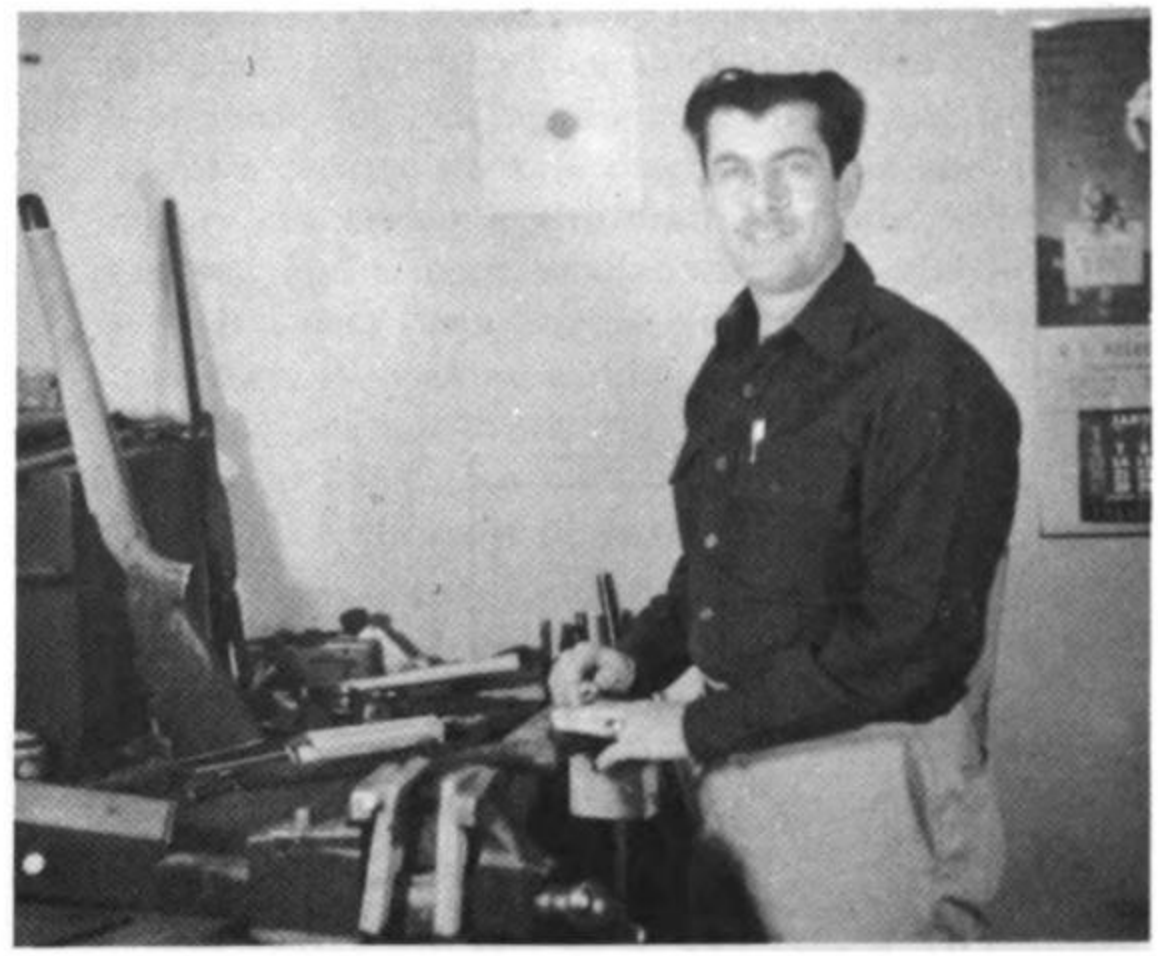


The Brownell Version of the Fleur-de-lis Pattern



Gunstock Carving and the Application of Carving Patterns

by Leighton L. Baker



Lost treasures, lost civilizations, and lost arts have always been intriguing. Every year more treasure and more civilizations are dug from the shifting sands, and sometimes that which was called lost was right under our noses all of the time.

Thus it is with carving, an art which many think is lost. Oh, they will admit that the old masters, over in Europe, can still do it, but they generally add that there are few on this side of the pond that are capable. I guess they are about right; gunstock carving has been mislaid, covered up and forgotten in the shuffle to produce fast conversions with semi-inletted stocks—jam in the barrel and action, dust off the outside, swab on some linseed oil, and toss the completed job at the customer.

The young lad with his first knife knows that the art of carving is not lost; and the old timer, nodding in the sun, stick in one hand, knife in the other, and a pile of shavings at his feet, can still be found in any corner of the country. The desire to carve is with many of us, though often this desire is satisfied with the idle whittling of a stick. Then there are others, and many of them, who would carve and could carve, but who do not have quite the artistic ability to make the original design drawing, to compose a picture in their minds and then transpose it to a gunstock, preparatory to the actual knife and chisel work.

Therefore, it was a great pleasure, a few days ago, to open a box, a good stout box, made of wood, with the lid fastened on with screws. Inside the box, securely packed with cardboard, was a large pile of drawings, some in pencil and some in ink, but all sufficient to gladden the heart of a gun lover. They were the designs that you will find on the following pages, suitable and made especially for carving onto the pistol grip and forearm of your favorite rifle and shotgun.

One group of the drawings presents the foliage and fruit of a great many native American trees and shrubs and were created by William C. Grimm, already well known for his books on this subject. The variety of trees represented in these drawings is so extensive that wherever your home or fancy happens to be you should be able to find a suitable design. There is magnolia and cypress for the Southern boys, cacti for you desert rats, pinyon and pine for the men from the hills, oak and maple and many others for those from the snow country.

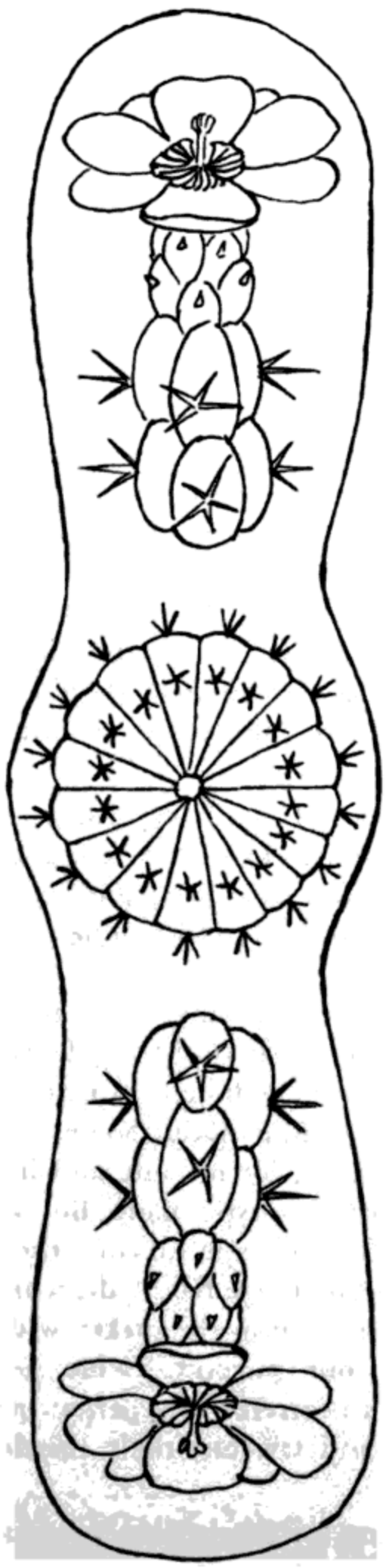
These designs of Mr. Grimm's are on the whole easy to do. The natural and normal method of placing them upon your stock is by incised carving, which is the simplest form of wood carving.

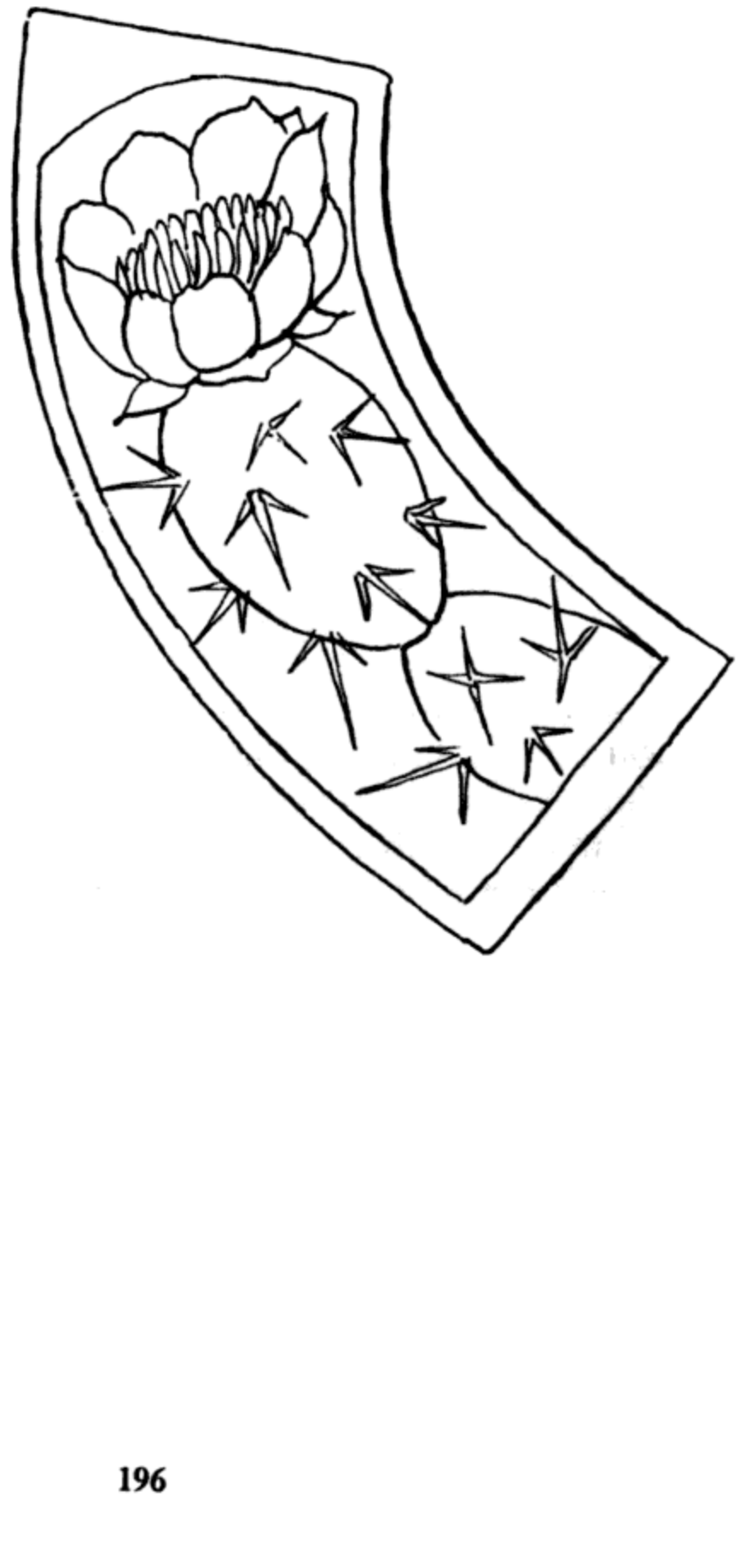
Another series of drawings, by Ward Whitcomb, of Burbank, California, are a horse of a different color. They are of wild life—large game animals, game birds, small game, and also a few varmints. These designs will be much more difficult to execute, mainly because most should be carved in relief, and some of the designs will require a doggone good carver to do them justice. However, it is very true that you do not know what you can do until you try it and it is equally true that a task of this sort gives out whatever has been put into it.

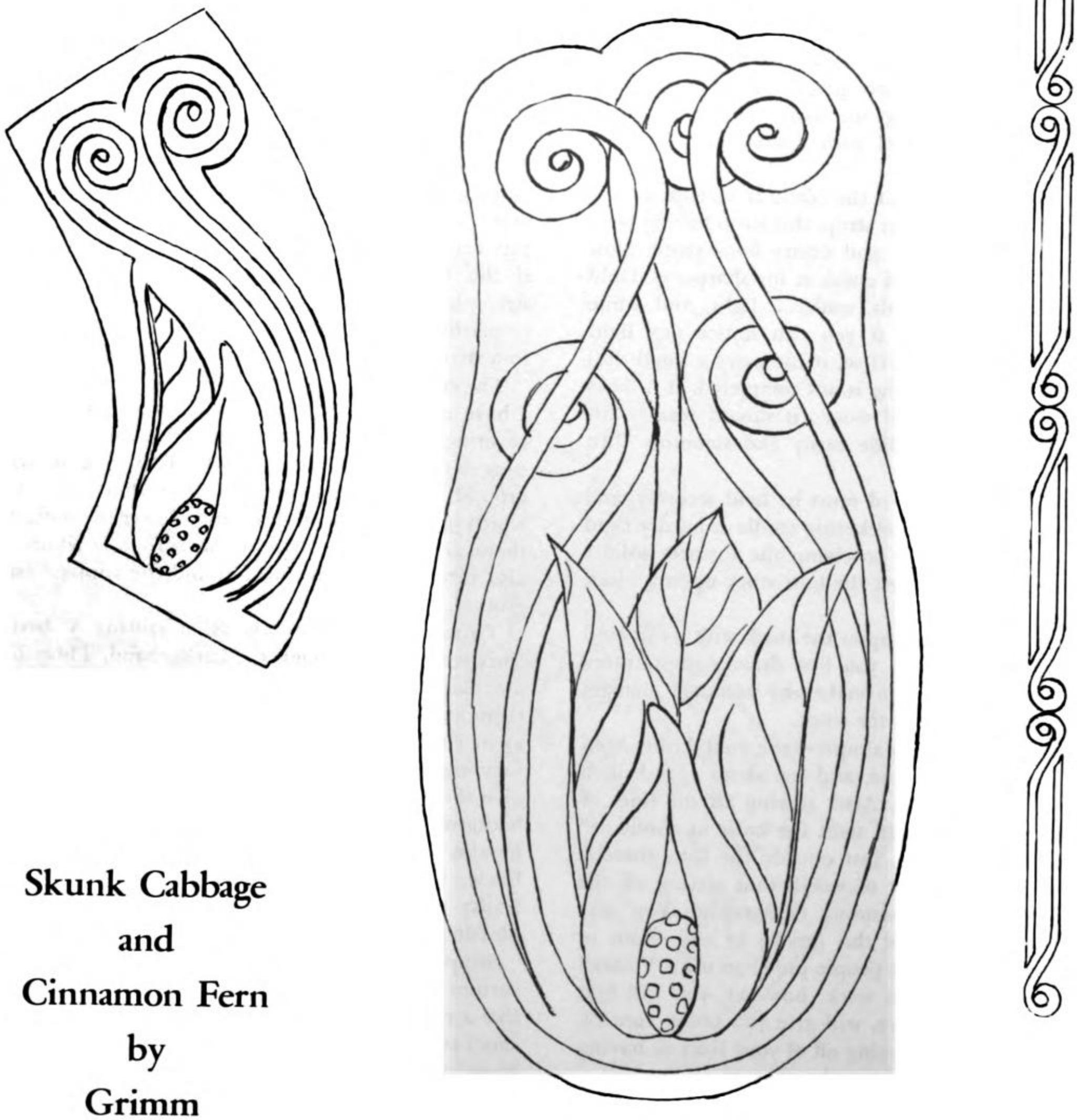
Ward has certainly done himself well with this group of animal and bird designs. He too has covered the field; designs for the lion hunter as well as the deer hunter, for your squirrel shootin' .22 and your goose shootin' shotgun, as well as for the stock of the man who climbs the crags for mountain sheep.

It should be understood that the designs of both these artists may necessarily have to be changed a bit, or modified to fit your gunstock. Some forearms may be slim or be beavertails; the pistol grips vary from large to small with different radius and flair. There-

Cacti
by
Grimm







Skunk Cabbage
and
Cinnamon Fern
by
Grimm

Another attractive way of stippling is to use a small round burr in a high speed hand grinder, lightly touching the surface here and there, irregular and without aim, to produce a background of small round indentations. And the Burgess Vibro-tool has real possibilities when fitted with proper stippling punches.

On practically all of Mr. Grimm's designs I feel that level-surface carving is the best, particularly for the beginner. By this I mean that the entire design is left on the surface and is brought into relief only by cutting away the background. The grace and pleasing lines will give beauty to these designs, even though the leaves and flowers themselves are not modeled in relief. However, Mr. Grimm has a few designs in which the leaves and flowers may better be developed by being modeled in relief. This, of course, is more interesting and possesses greater possibilities for the artistic carver; it also is more difficult.

I might mention that the soon-to-be gunstock carver should try to find examples of carving and study them. He may have examined carvings before but if he did not do it with the idea in mind of becoming a carver himself, then he probably was not sufficiently critical and has only seen part of what he could have.

The work is started as before, the design is drawn upon the wood and then is outlined with the chisel and gouges. To minimize splitting it is best to cut the lines running across grain first. Having outlined the design you cut down the background, it may be best to go rather shallow over the entire background, and then go over again to make it deeper. There is no need to attempt to make the bottom of the background perfectly smooth or neat.

You are now ready to cut out the relief within design. It will help you to use a soft pencil or crayon and shade the design where the relief is to be cut. Most leaves and petals should be dished-out so that their outer edges are left the greatest height. The foliage which is beneath or partially covered by other leaves should of course be cut away to a greater depth. A gouge with a very flat arc is used for cutting out leaves—the size of the leaves determines the size and curve of the gouge to use. The hand closest to the work holds the blade and guides and controls its movements, while the other hand holds the handle and furnishes the power. You should first and quickly find in which direction the wood cuts best so as to not tear or splinter. You will find that your gouge cuts best if, as it is pushed forward thru the wood, it is pushed slightly sidewise so as to perform a shearing cut. The veins within the leaves are cut with a small gouge with a very small radius of arc of the cutting edge, or if the veins are very small they are cut with the V tool. Spines and stickers, and the like are cut with the V tool or with the knife blade.

Your carving, if you wish, may be somewhat highlighted by lightly staining the wood. The background, being rough and broken, will absorb more stain than the surface and thus the design will show up lighter. Rub off as much of the stain as possible before it is dry, thus leaving the darker, contrasting background. The stock is then finished in your usual way.

Ward Whitcomb's most excellent drawings may readily be divided into two groups: hard to do, and harder. Seven of his drawings are much more simple to carve than the rest because they can well be done with level-surface carving, and the background relieved to a depth of 1/16th inch or more. But, of course, you are not restricted to level-surface carving; if you have had a little practise or know a bit about carving go ahead and develop them all in complete relief, modeling the figures and adding details.

Now this modeling in relief of game designs will require a bit more time, a bit more talent, and a few more tools than you used in the simpler leaf designs. So I might as well go back and again talk a little more about the tools. (Which brings to mind that this writing kind of rambles around from here to there, but I am scribblin' it down as it pops into mind, and perhaps it will make better reading that way.)

Somewhere in this book—I do not know just where, but a couple hundred miles back—I said a little about chisels, but I do not guess I said very much. Generally the amateur, as he starts to investigate this chisel business, gets scared to death. First, he does not know what kind to get or how many, and he cannot find any information that tells him; then he sees a photo of a carver or stockmaker with chisels literally covering the bench, then he looks up the price of stockmakers chisels—and his new enthusiasm goes slipping right down the drain.

Well, have heart Friend, 'cause you do not need all those chisels, although I will have to admit that as time goes by you will probably accumulate quite a pile of them. At least, I hope I did not scare you when I told you that the only tool you needed for many of the leaf designs was a sharp jack knife. When I started this business I could not afford any of the fifteen to thirty dollar sets of chisels either, so I made most of my own. Some were made from worn-out files, most of them were of drill rod, a few were made of flat tool-steel stock, and I even made a couple out of old valve stems. These chisels are the ones I still use. There is one factory made set of chisels which I recommend, not because they are the best, because they are not, but because they are the cheapest which are suitable for the job. I use these Miller Falls chisels, set Number 106, quite a bit and have several sets scattered around the shop. There are six chisels in the set: a 5/16" straight chisel, a 3/8" bent chisel,

The Squirrel

by

Ward Whitcomb

Burbank

California

a 1/4" skew chisel, a 3/8" bent gouge, a 3/32" U gouge, and a 3/32" veining tool. These chisels cost about one third of what most professional chisels cost and they will do the job for the amateur. I mention these chisels here because I think that the amateur gunstockers are going to buy a lot more copies of this book than are the professionals, and I believe the average amateur does not have much money to spend. There are other chisels available, darn good ones, some made in this country and some in Europe, and the cost runs about $2.50 each. When you reach the point where you want better chisels, and cannot make your own, then these are well worth the money.

It might be well to tell you how to make, harden, and temper your own chisels—so I shall.

In the first place you must have a tool steel with a carbon content of .85 or above. This carbon in the steel gives it the hardening ability. Drill rod is about the handiest steel to make chisels out of because there is always an assortment of it around a gun shop. Tool steels come by trade names and chemical analysis which may mean little to you, therefore if you must buy some steel just tell the supplier what you want it for and he will get you the proper kind. Now you could take your piece of tool steel and grind and file it to the proper shape of a chisel, but after the chisel was finished you would find that it was not near as good as if it had been forged to shape. The old time gunsmiths even made their gun springs by the repeated heating, pounding and forging of their inferior materials.

Therefore, we will forge our chisels to shape. Heat the end of the piece of steel to a bright cherry red, with your hammer strike as flat as possible to the surface and hammer only on the two opposite sides at one heat. Reheat the steel to hammer the other two sides. Draw out the point, flattening the sides down to the angle you wish, and maintaining your desired width. Forge as close as possible to what your final shape will be. Flat chisels are easy to shape, but the curved cutting edge of a gouge will have to be formed with the help of a V block. Place the red-hot flattened end into the V block, lay a piece of round stock upon the partially formed chisel and then tap downward with a hammer until the desired radius is formed in the gouge. After forging to as close as possible to the final shape you will finish the shaping with a grinder and file.

You now have a chisel which looks completed but which yet has not been hardened or tempered. To do this you pick the chisel up with the tongs, and heat the entire chisel, blade and shank both, to a bright cherry red, which is about 1450 degrees. We will use water as a quench and you should quench only the point of the chisel. Agitate the chisel, moving the blade up and down a bit in the water, so that there will be no definite dividing line between the cold water and the hot steel. If this is not done the chisel may crack at the water line. After removing from the quench we have a blade that is cold and hard and a shank that is still hot and soft. We are going to use the heat that is in the shank to temper the blade, as our blade is now so hard as to be brittle and must be made softer. *Quickly* polish the point with some emery cloth pulled over the end of a file. Now hold up the chisel and watch the colors run up from the hot shank into the cold blade. These colors will run up as a band of yellow, then brown, and then peacock purple. A blue follows the purple but the entire chisel should be quenched just before the blue color arrives. If the quench was performed at the proper time the blade should now be just hard enough so that a sharp file will not quite cut into it. It is a bit too soft if the file will touch it. Your chisel is now ready to be polished, to have a handle affixed, and to be sharpened and honed. Turn back a few pages and read what Leonard Mews has written regarding the kind of handle you should put on your carving chisels.

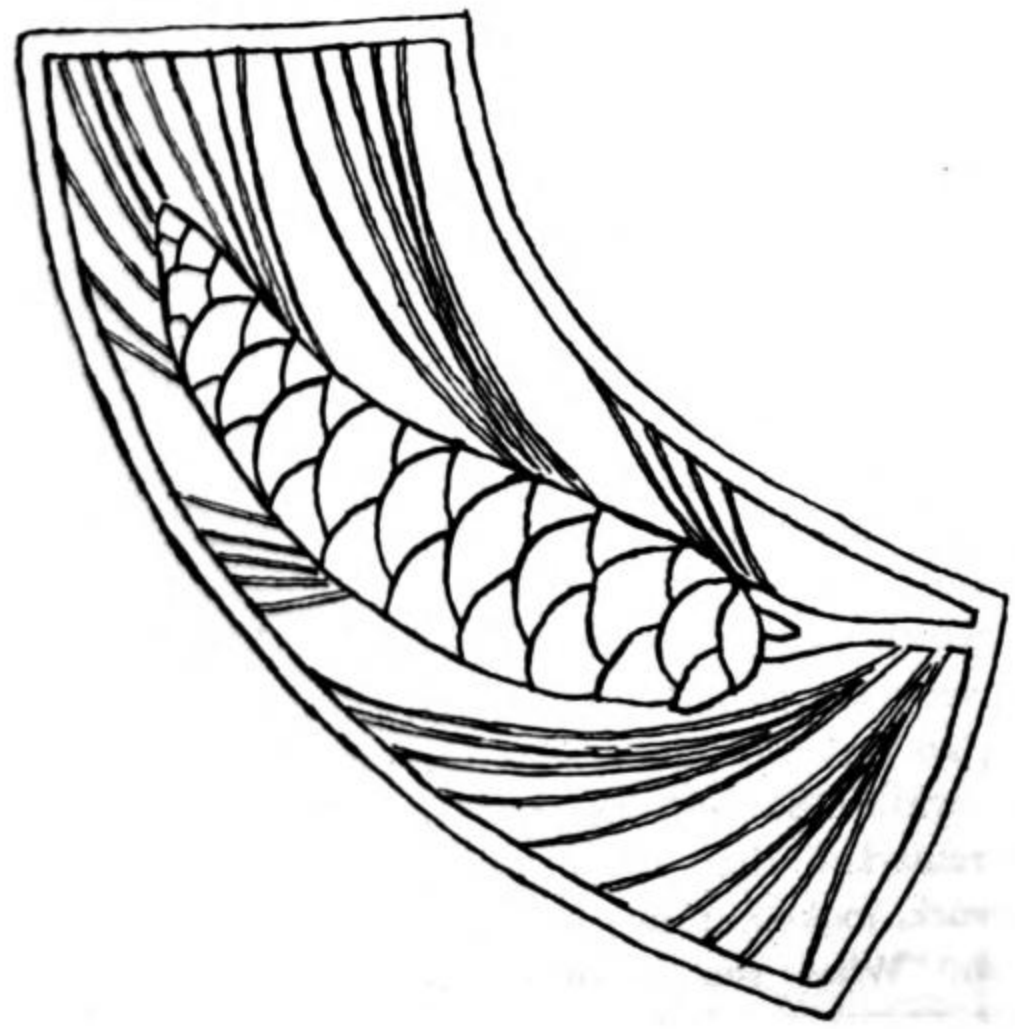
You will not need to make too great a variety of shapes. A 3/8" and a 1/2" bent gouge, both with a shallow sweep, will be the shapes you will use the most. A bent flat chisel, about 3/8" wide, will be used a lot and you will also need a small veiner or U tool, and a parting or V tool. Several more widths of gouges and flat chisels, mostly bent shanks, should also be made. The bevels, ground up to the cutting edge, should be much longer than on the common, store bought, carpenter chisels. However, do not get the bevel too long, with the edge too thin and light, or you will find that the cutting edge will have excessive breakage and chipping; of course this also happens if the steel is too hard and brittle.

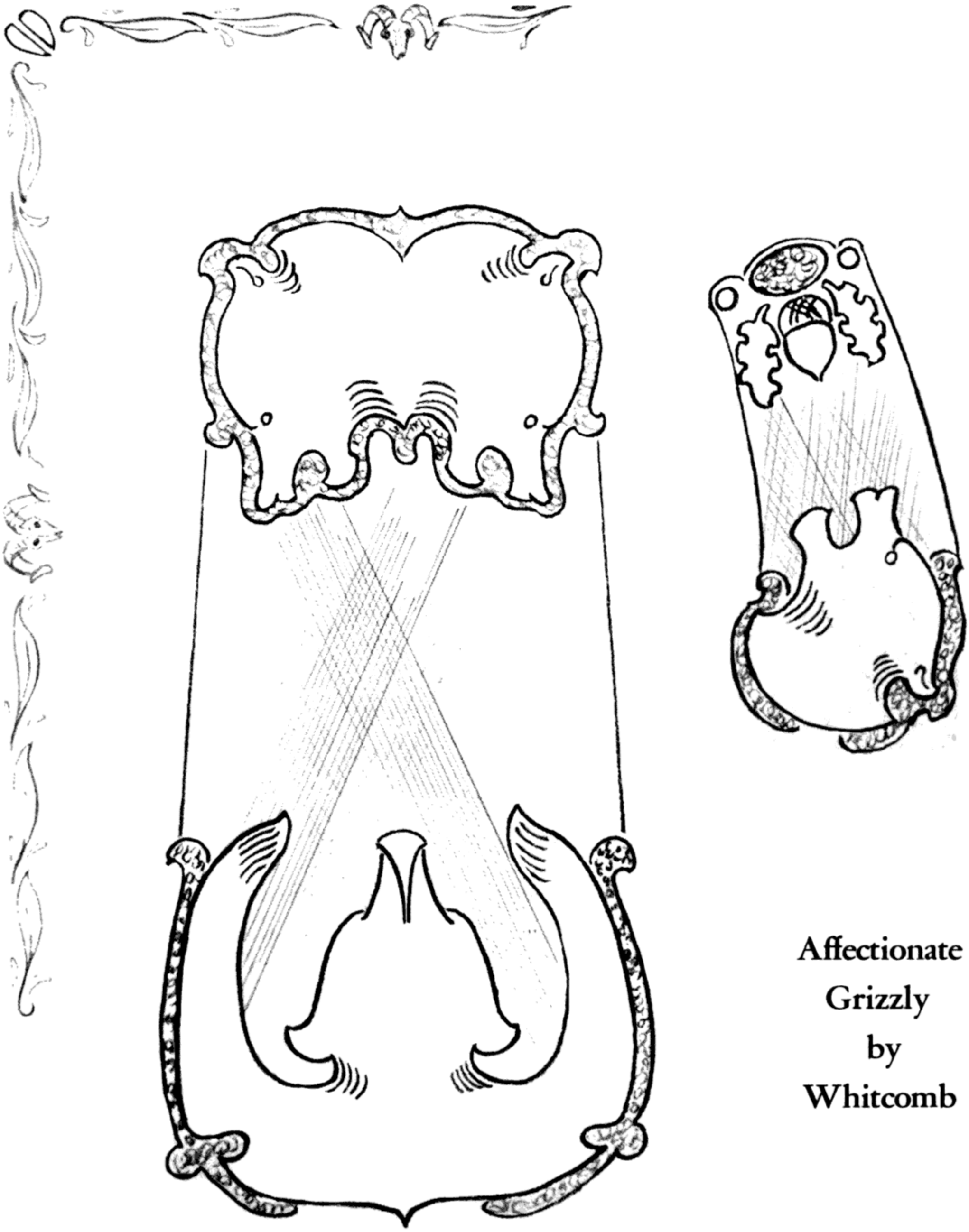
Along with the chisels and gouges you will need about three knives to take care of all of your carving needs. The knife used for the rough work and heavy cutting (when a gouge is not being used for this purpose) should have a fairly-heavy, wide blade with a spear-point shape. A clip blade knife, with a medium sized blade with a long sloping curve is used for the slicing cuts which may be necessary for smoothing up portions of the work. The third knife should have a very sharp-pointed, thin blade and is used for cutting in the fine details such as leaf veins, and the hair, eyes and nostrils of the game animals. The bevel on your knife blades, similiar to the bevel on the chisels and gouges, should be a wide one, allowing a sharper cutting edge, and thus the blade will cut easily and the wood will offer less resistance.

Now, getting back to Whitcomb's drawings, the two game scenes which are probably the easiest to execute are the squirrel on the limb and the varmint

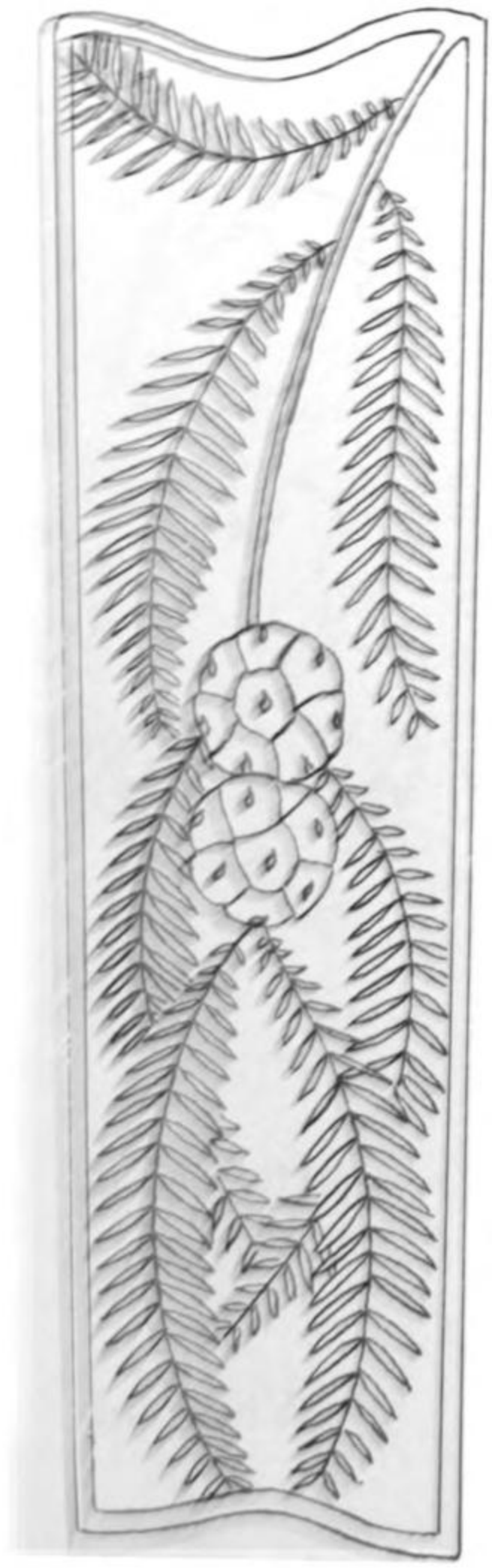
Woodchuck
or
Groundhog
by
Whitcomb

Eastern White Pine by Grimm





Affectionate
Grizzly
by
Whitcomb



Bald Cypress
by
Grimm

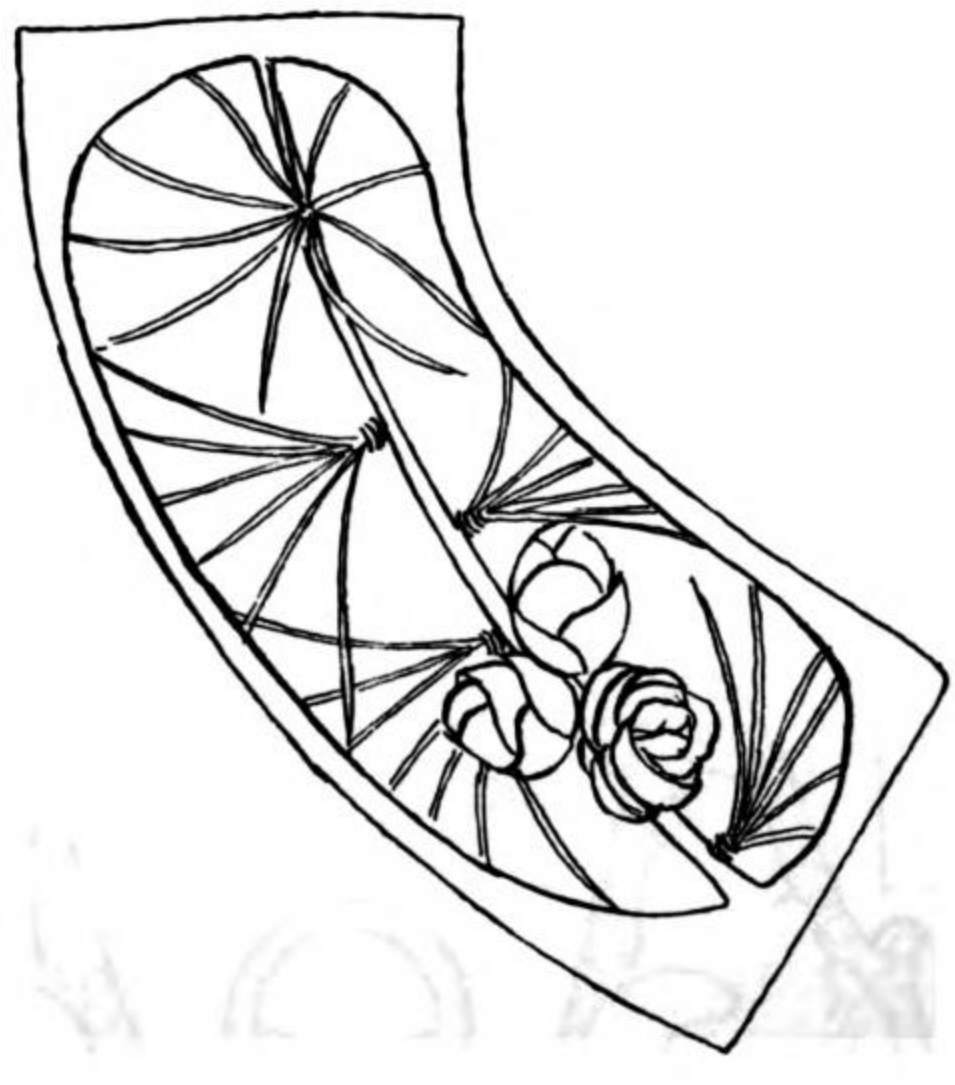
American Larch

or

Tamarack

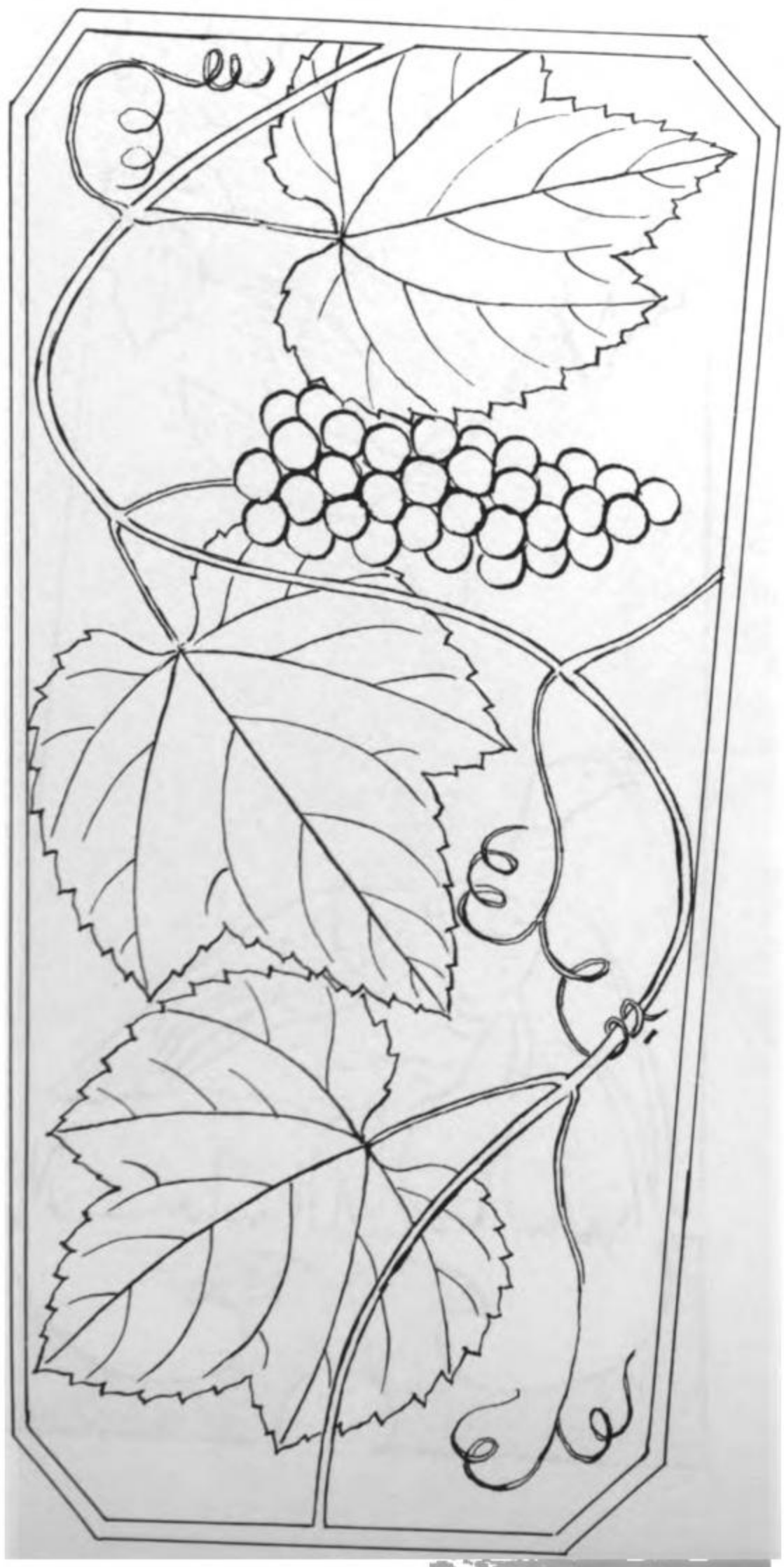
by

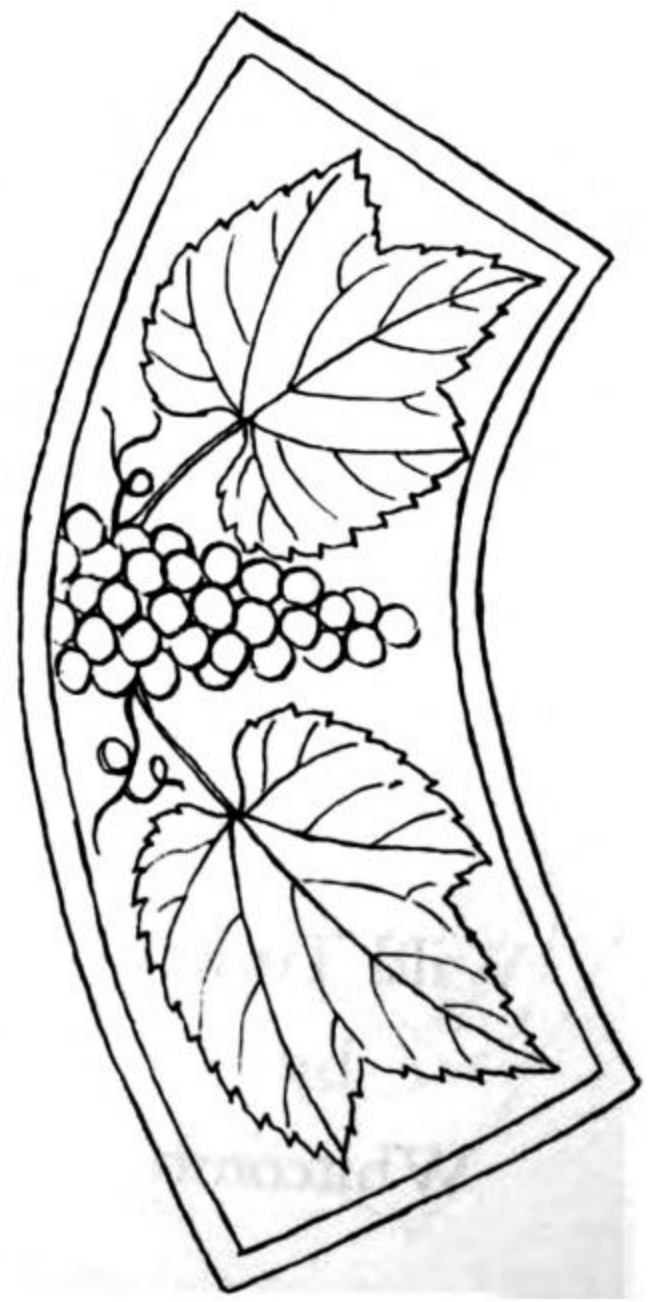
William C. Grimm

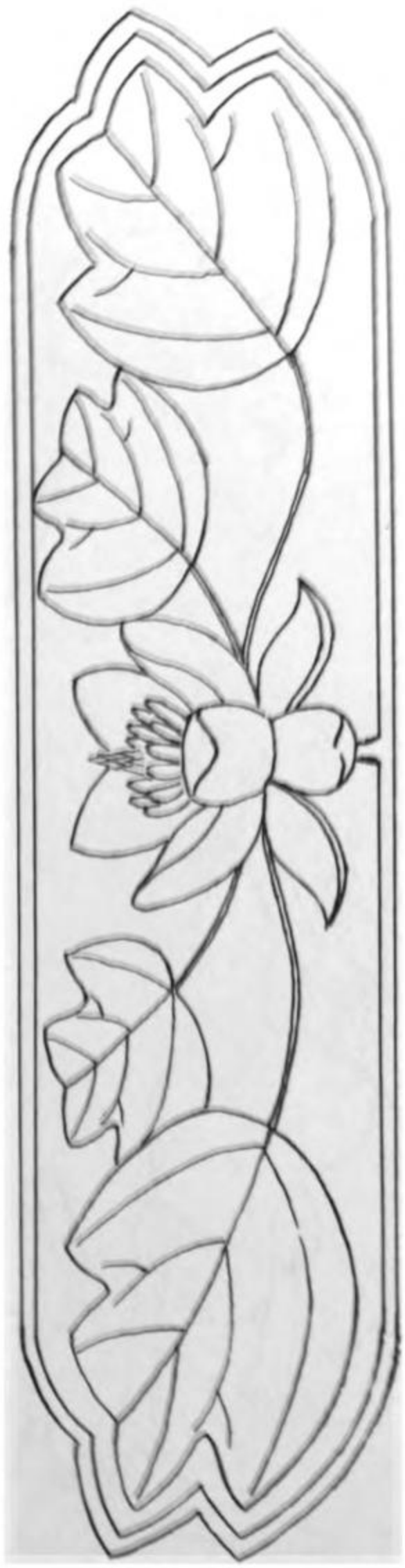


Wild Turkey
by
Whitcomb

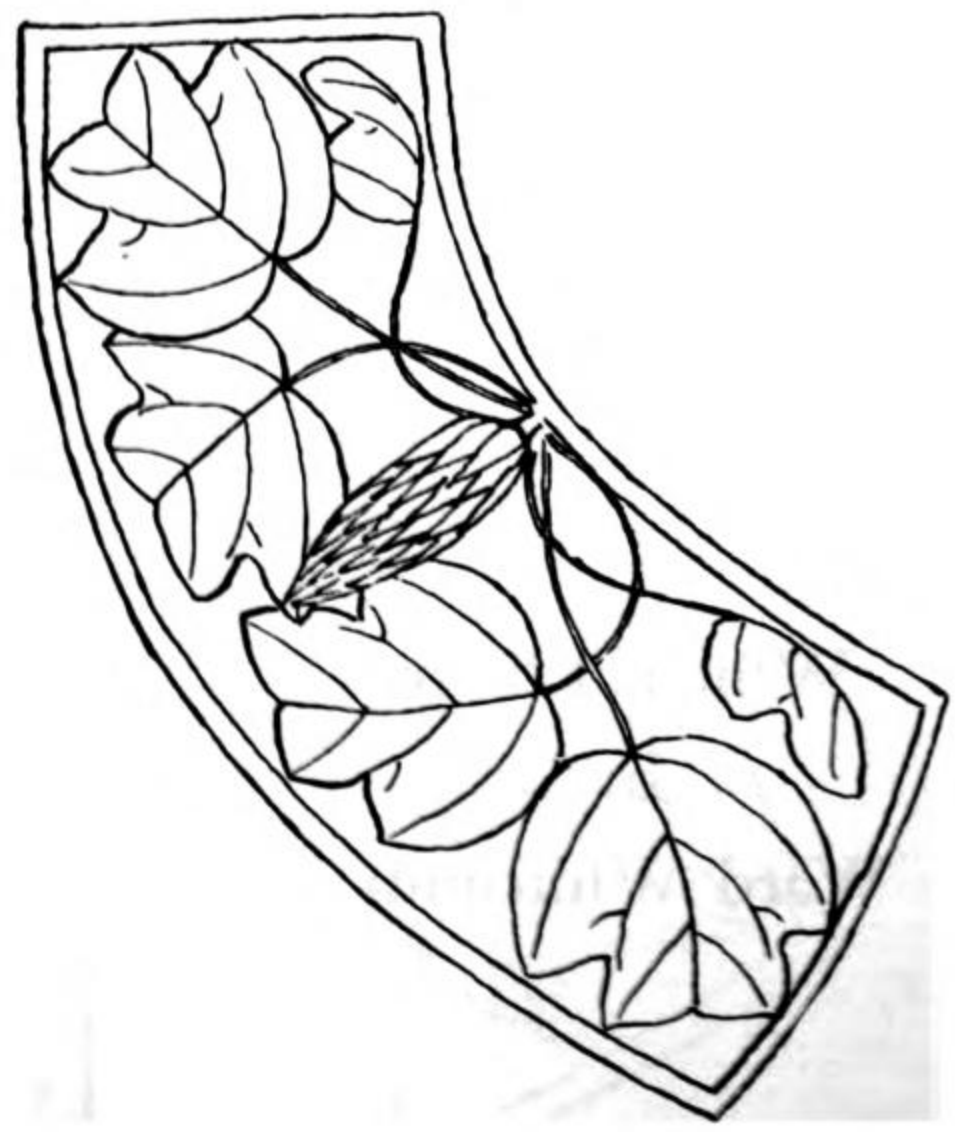
Frost Grape
by
Grimm

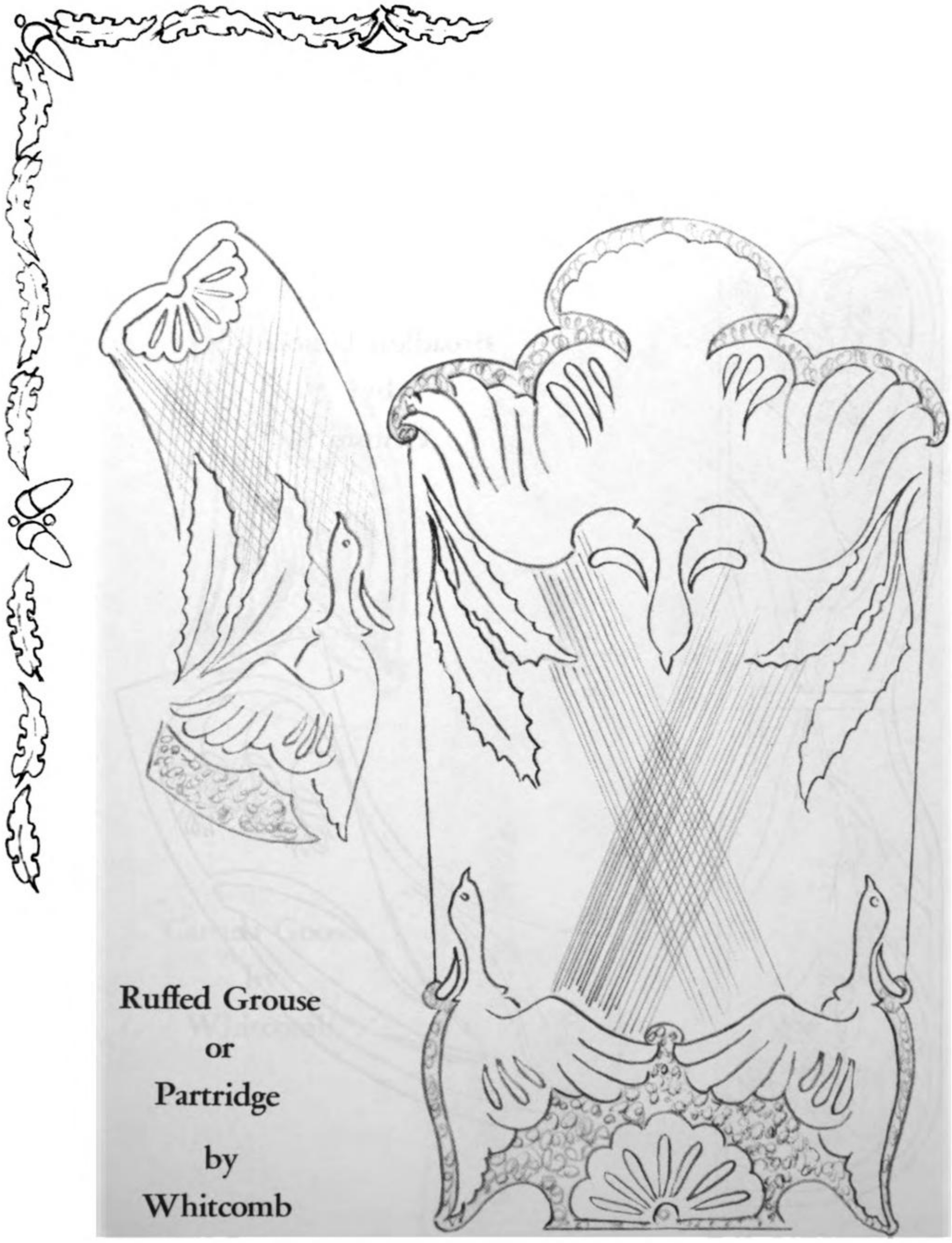




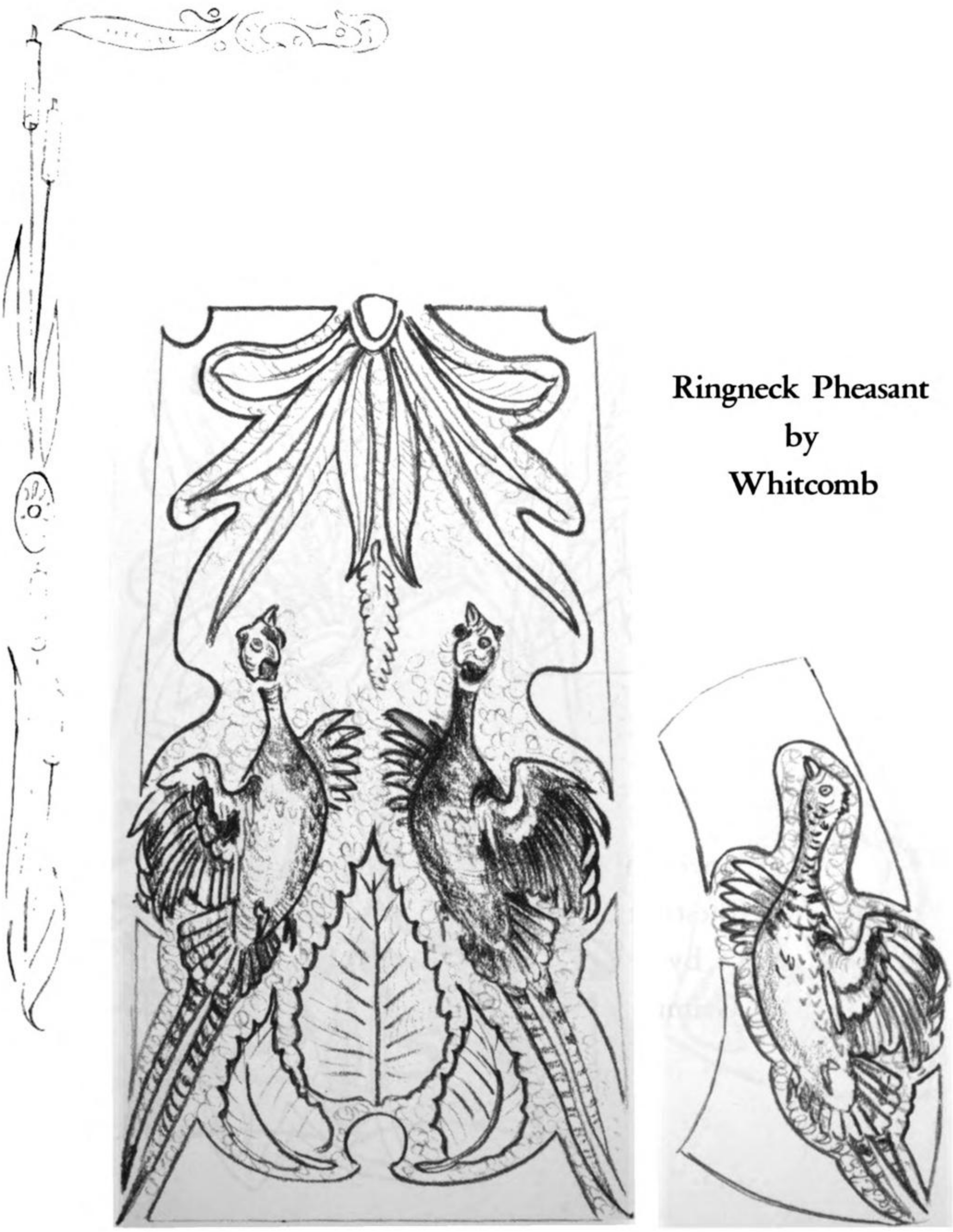


Tulip Tree
or
Yellow Poplar
by
Grimm



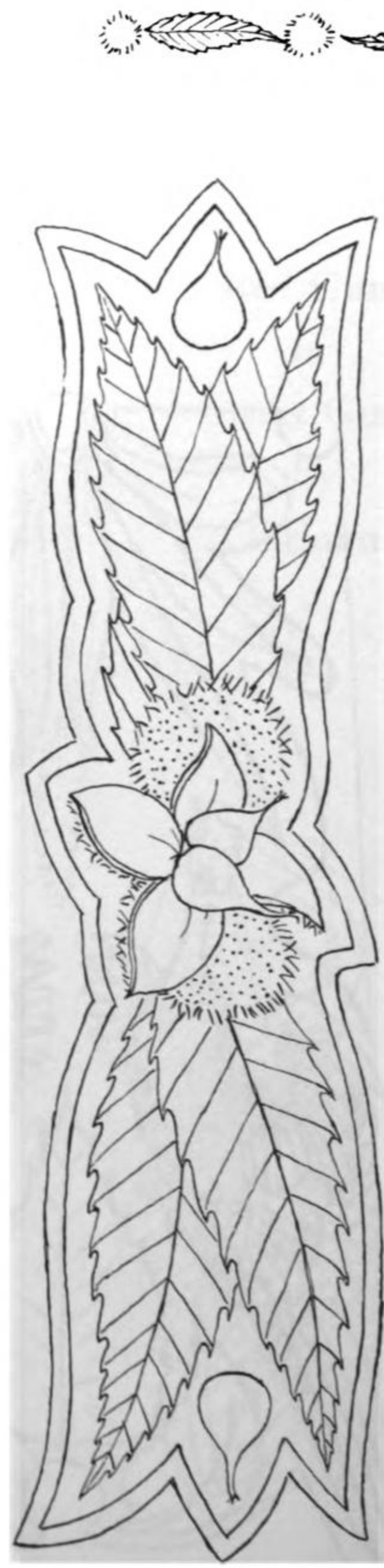


Ruffed Grouse
or
Partridge
by
Whitcomb

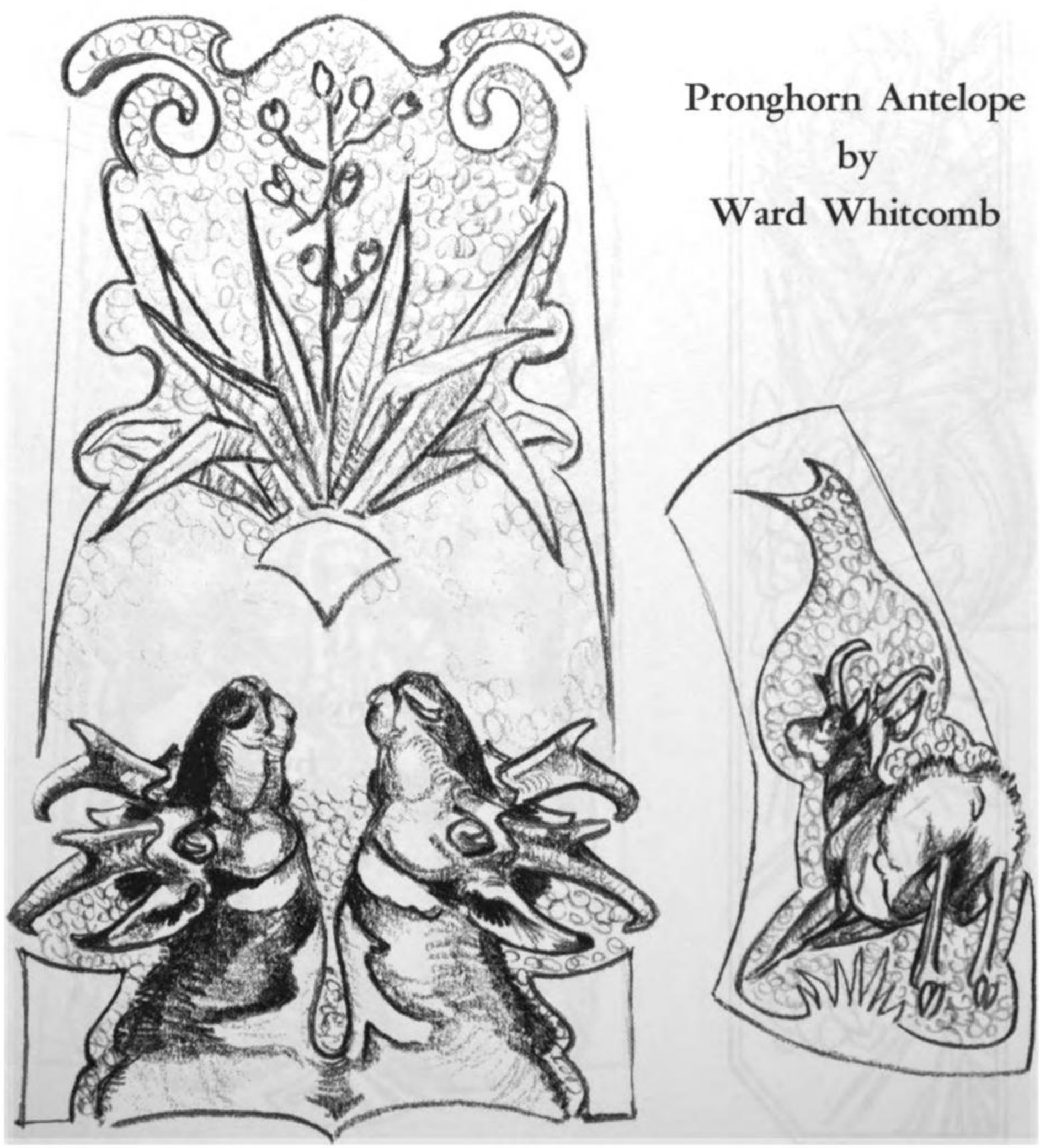


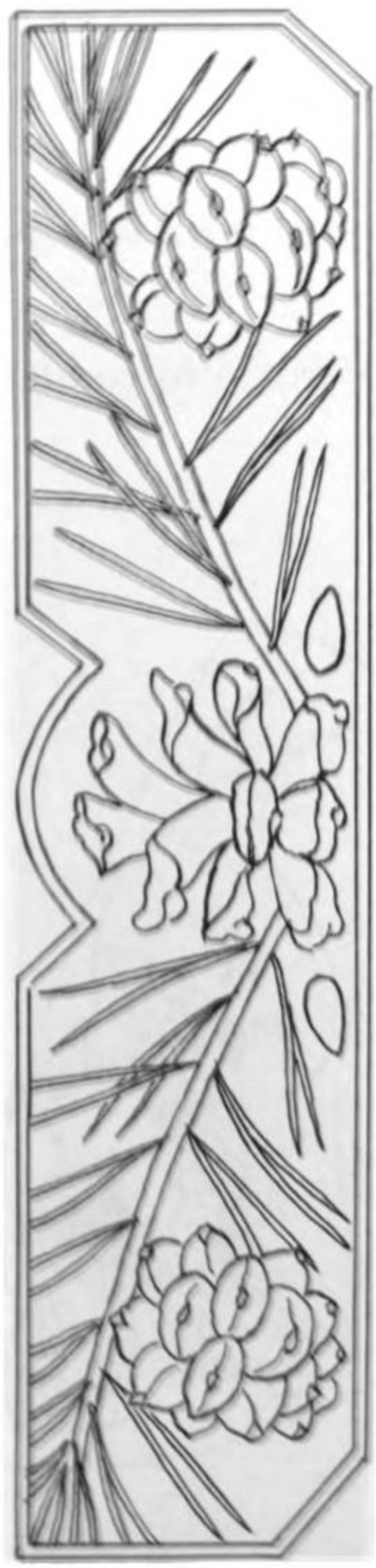
Ringneck Pheasant
by
Whitcomb

American Chestnut by Grimm



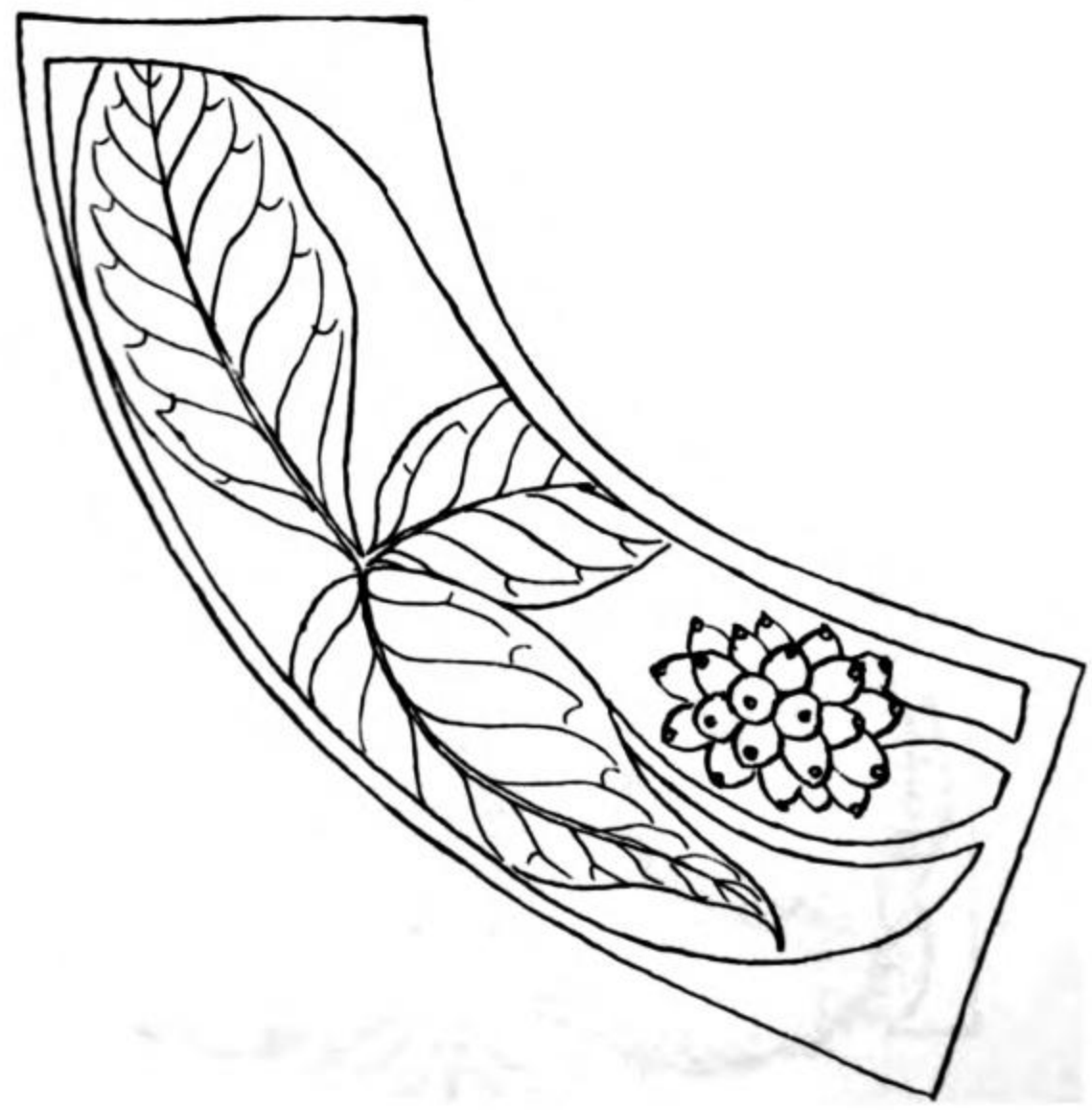
Pronghorn Antelope
by
Ward Whitcomb



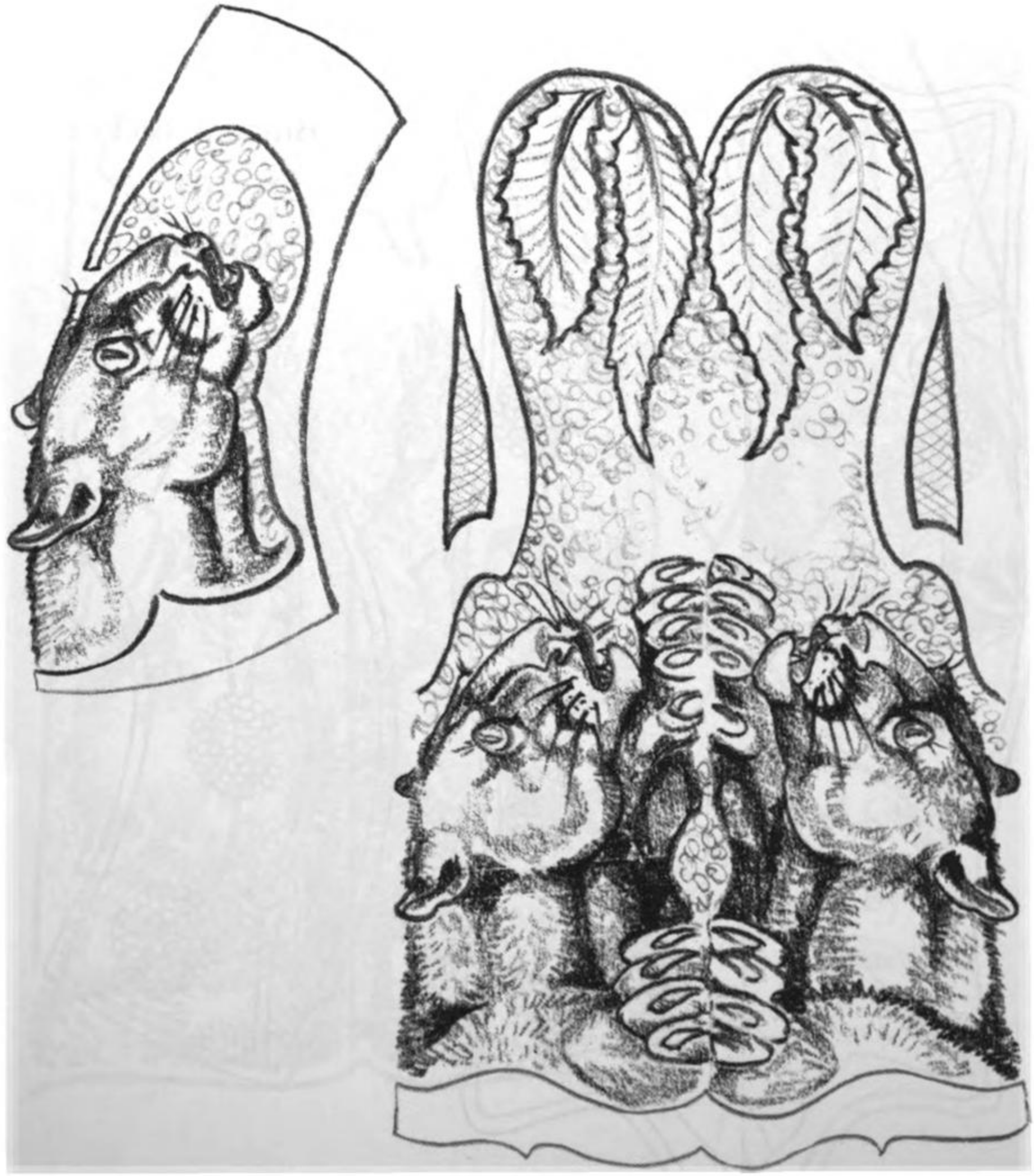


Pinyon Pine
by
Grimm

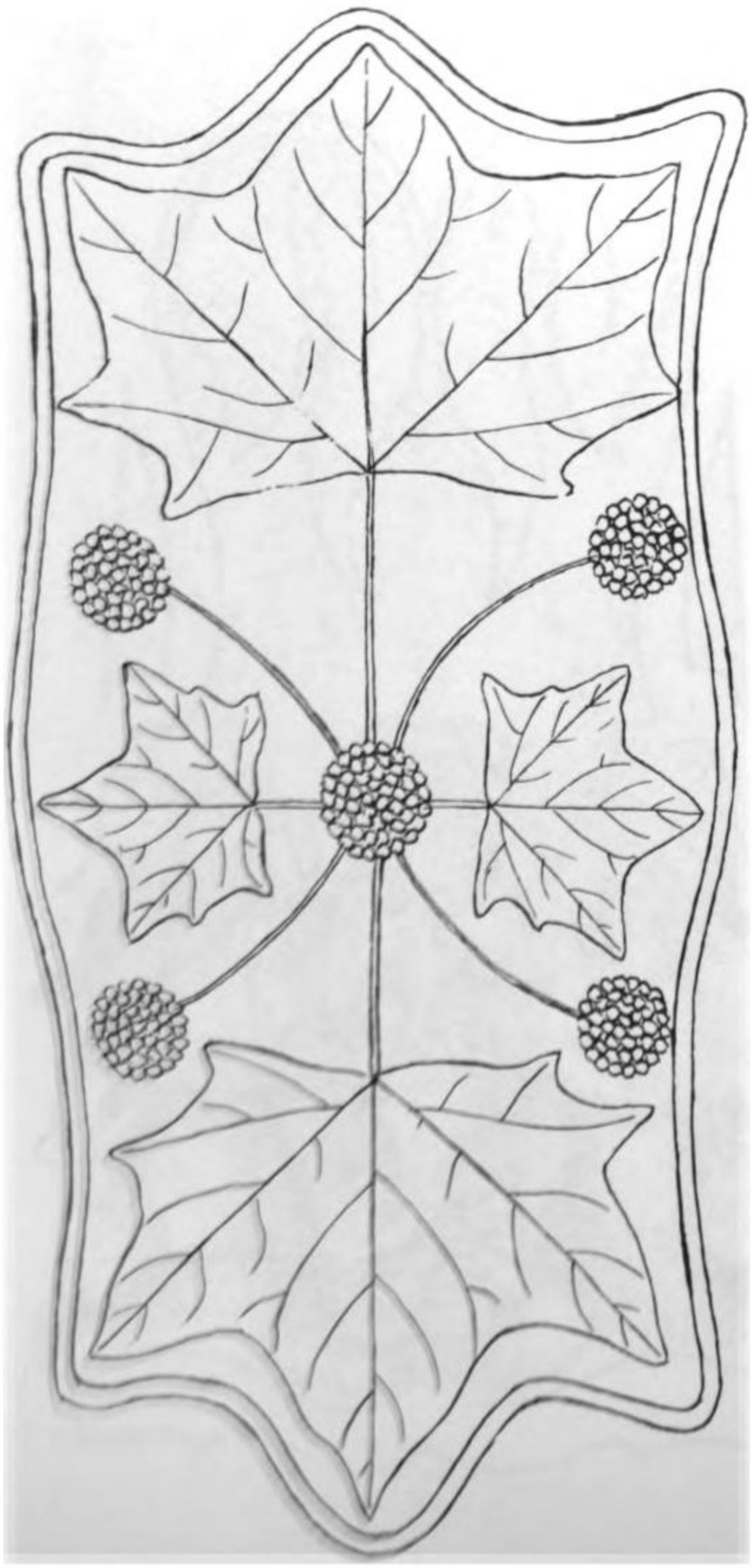
Jack-in-the-Pulpit
or
Indian Turnip
by
Grimm

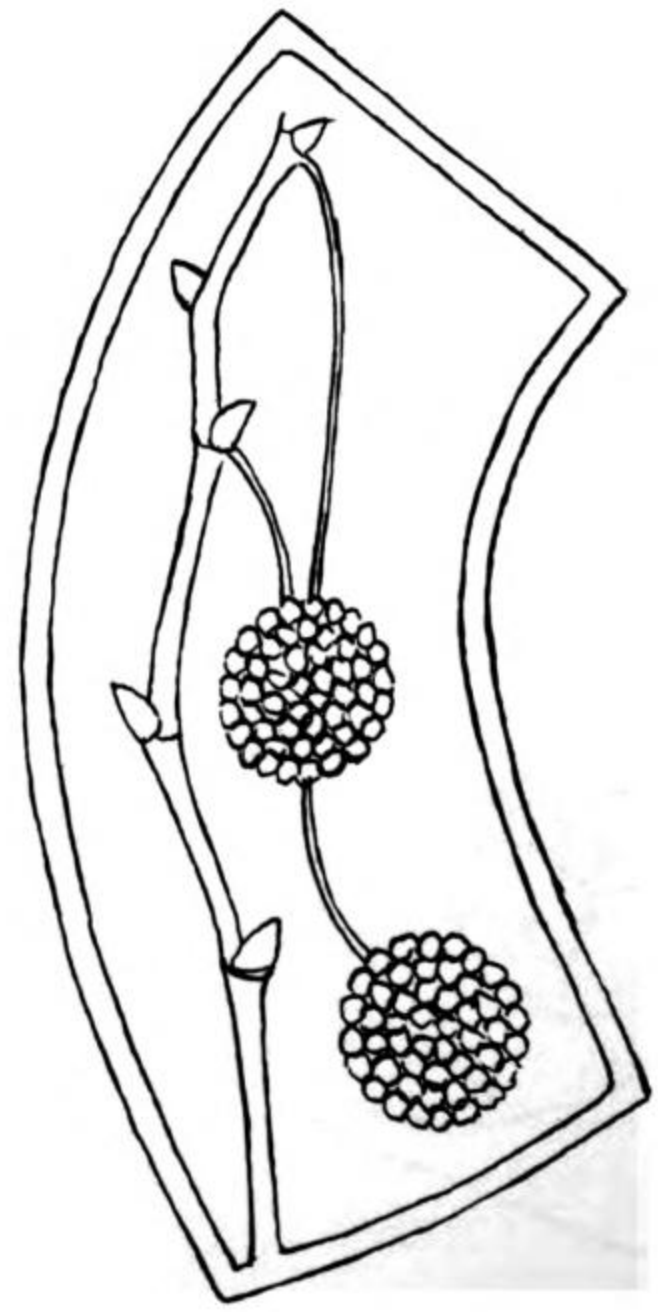


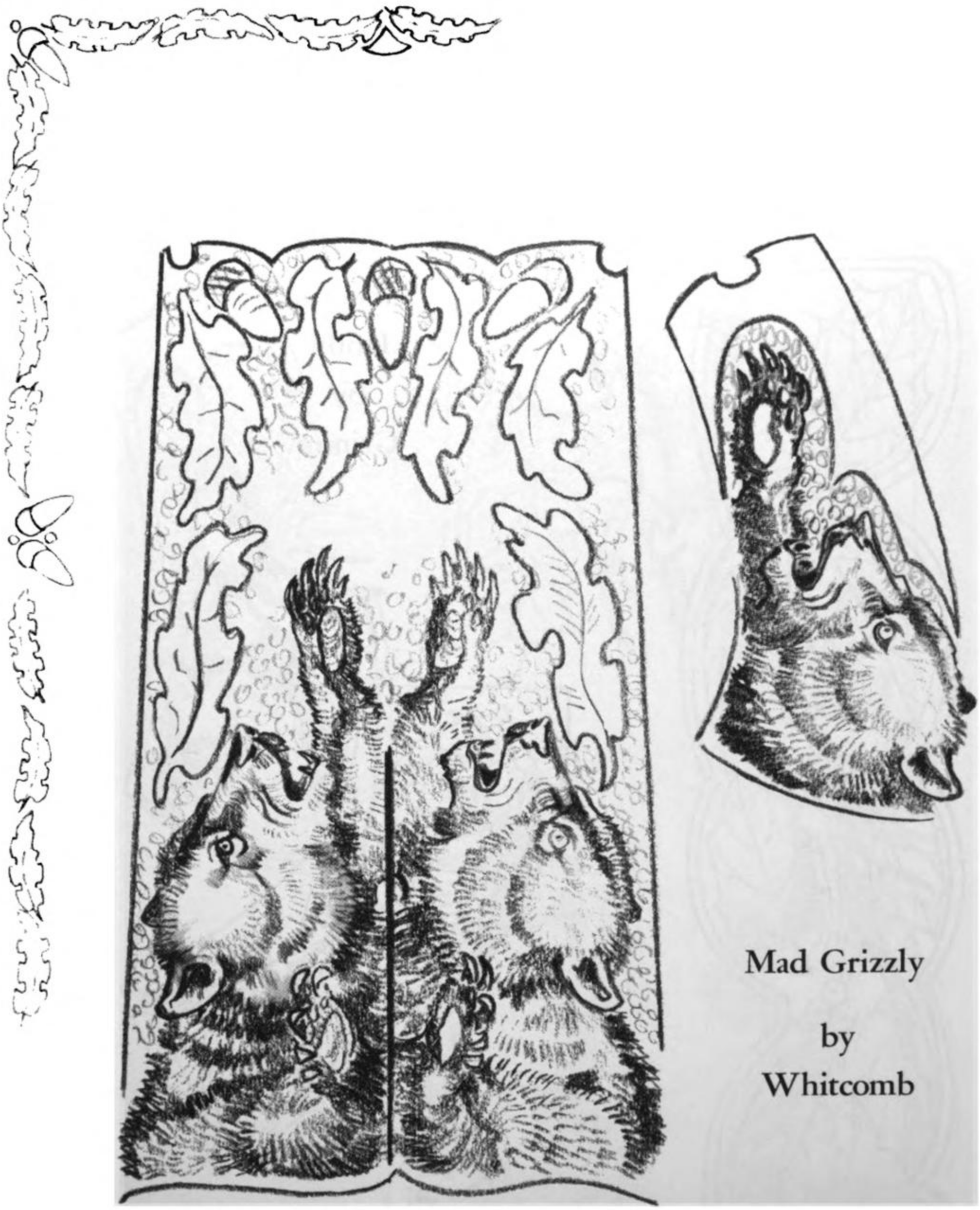
Mountain Lion or Puma by Whitcomb



American Sycamore or Buttonwood by Grimm





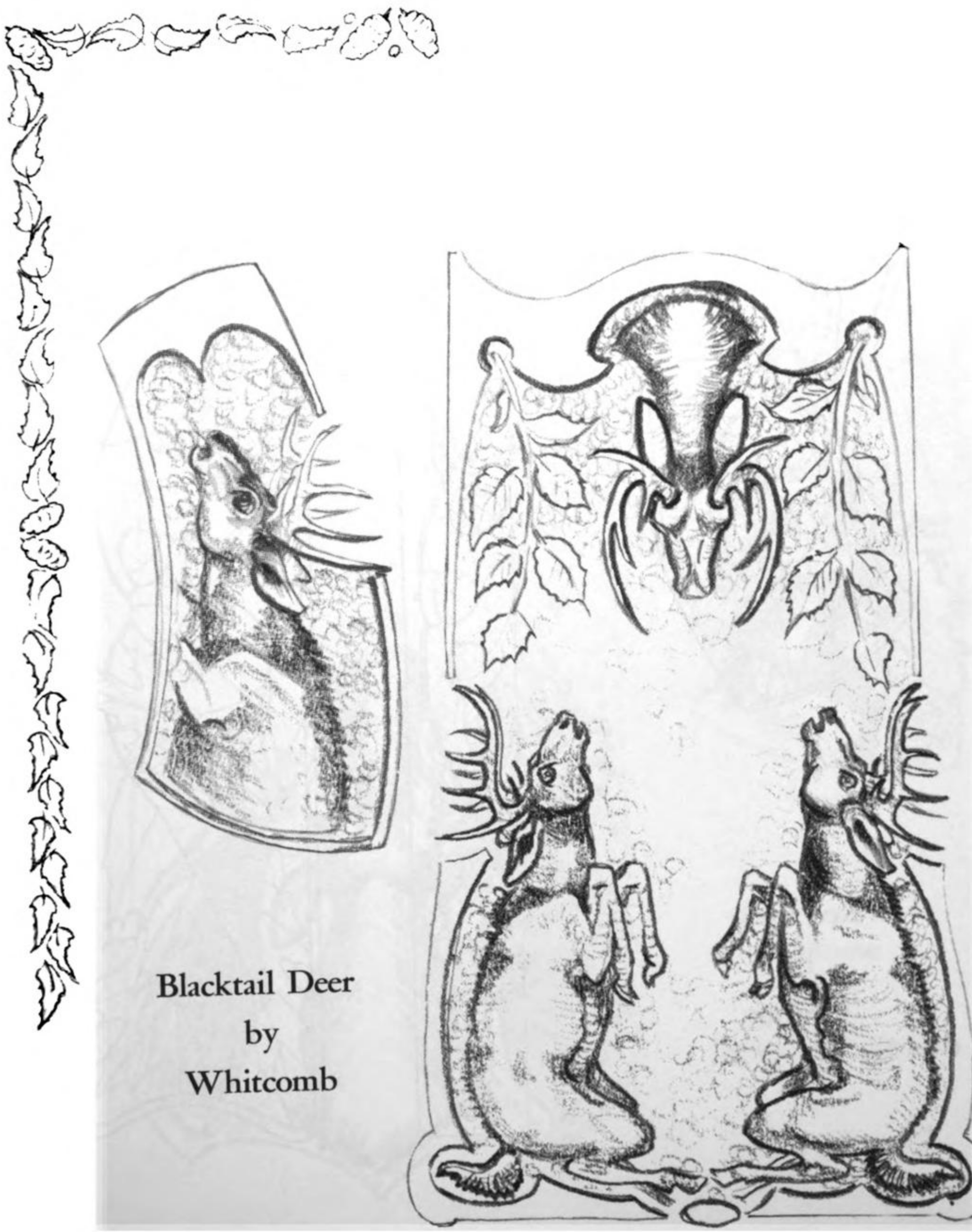


Mad Grizzly

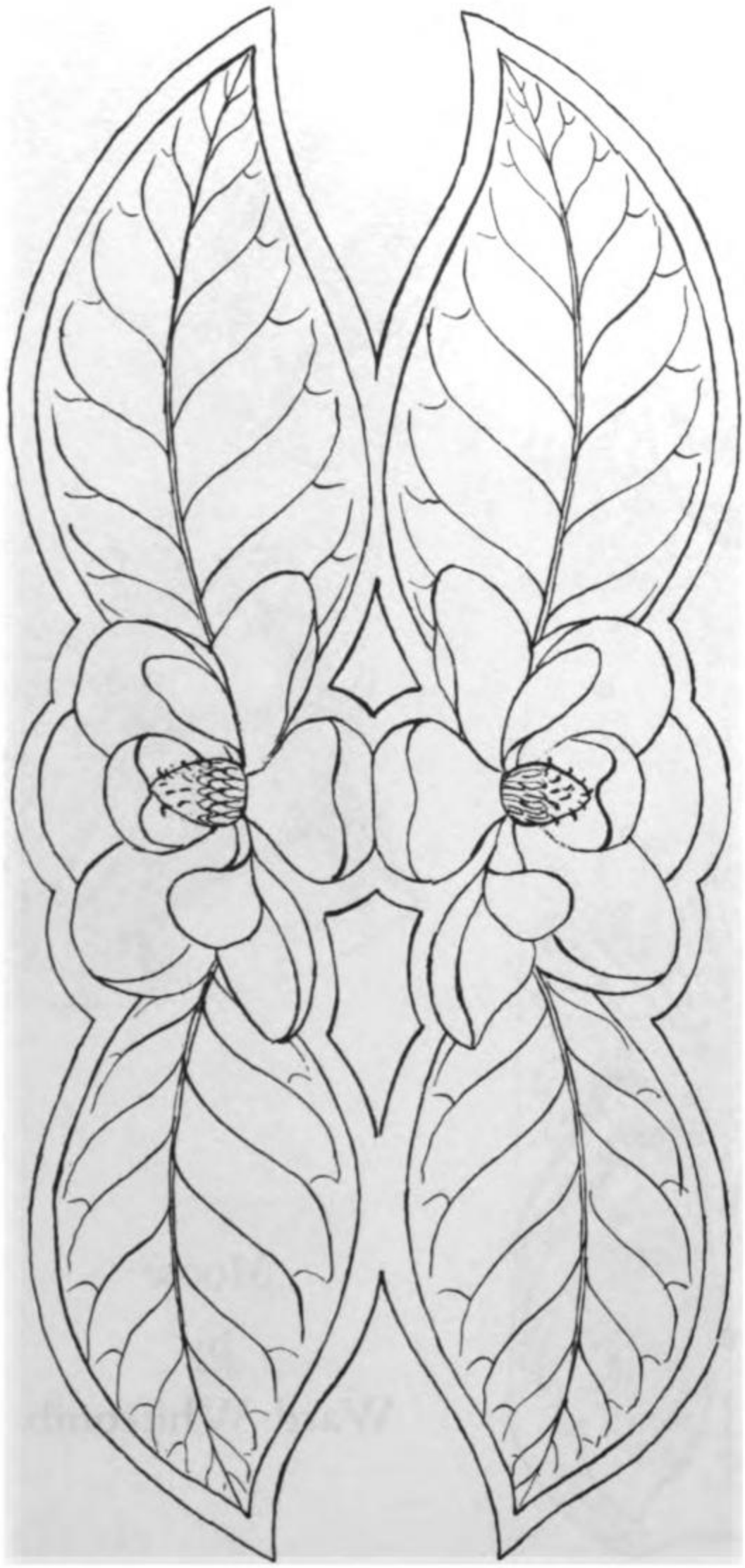
by

Whitcomb

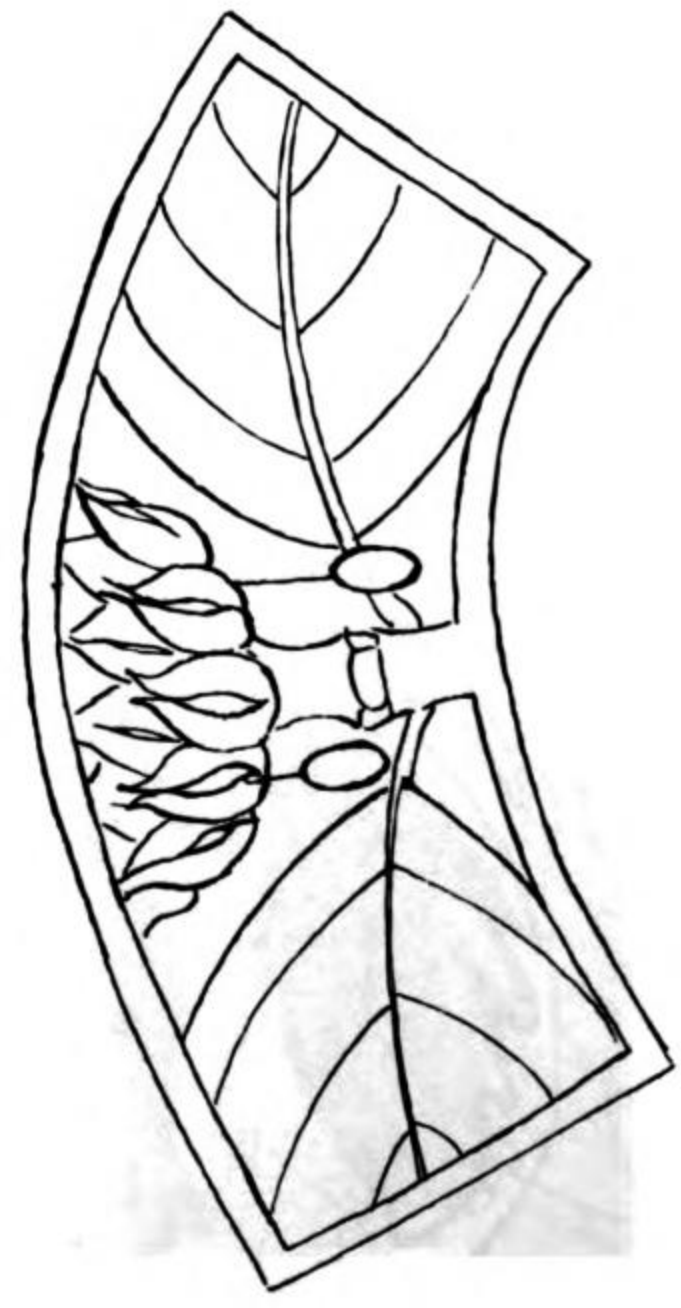
American Holly by Grimm

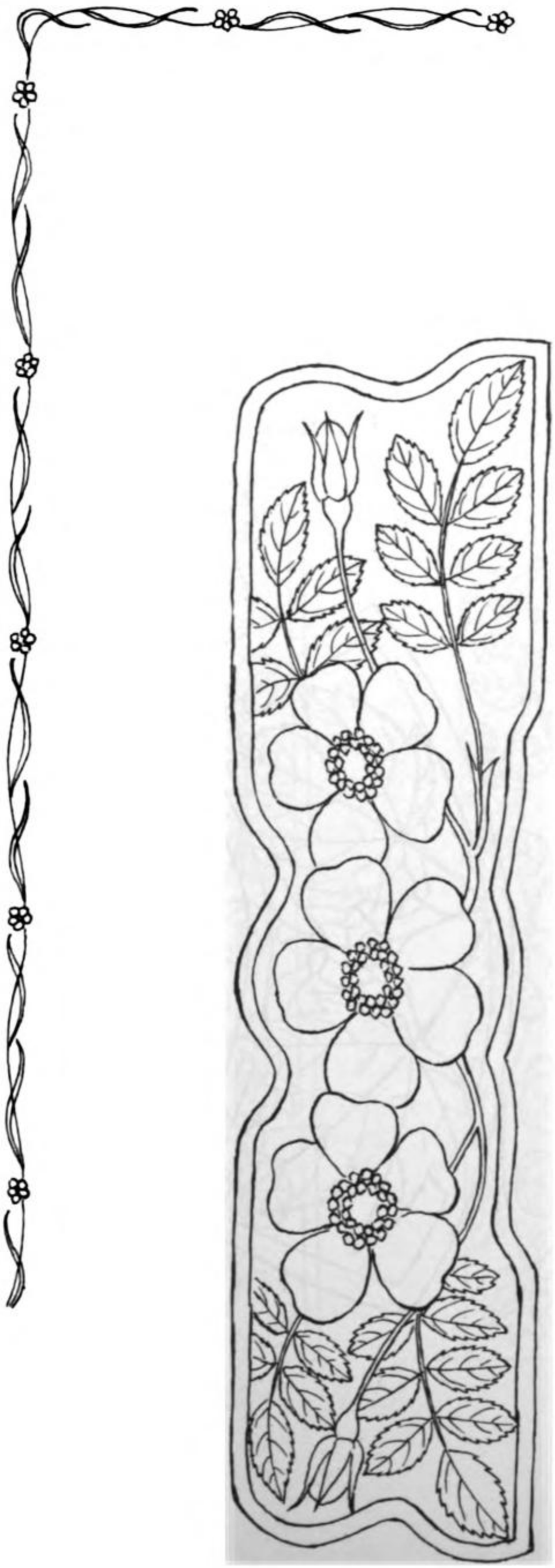


Blacktail Deer
by
Whitcomb

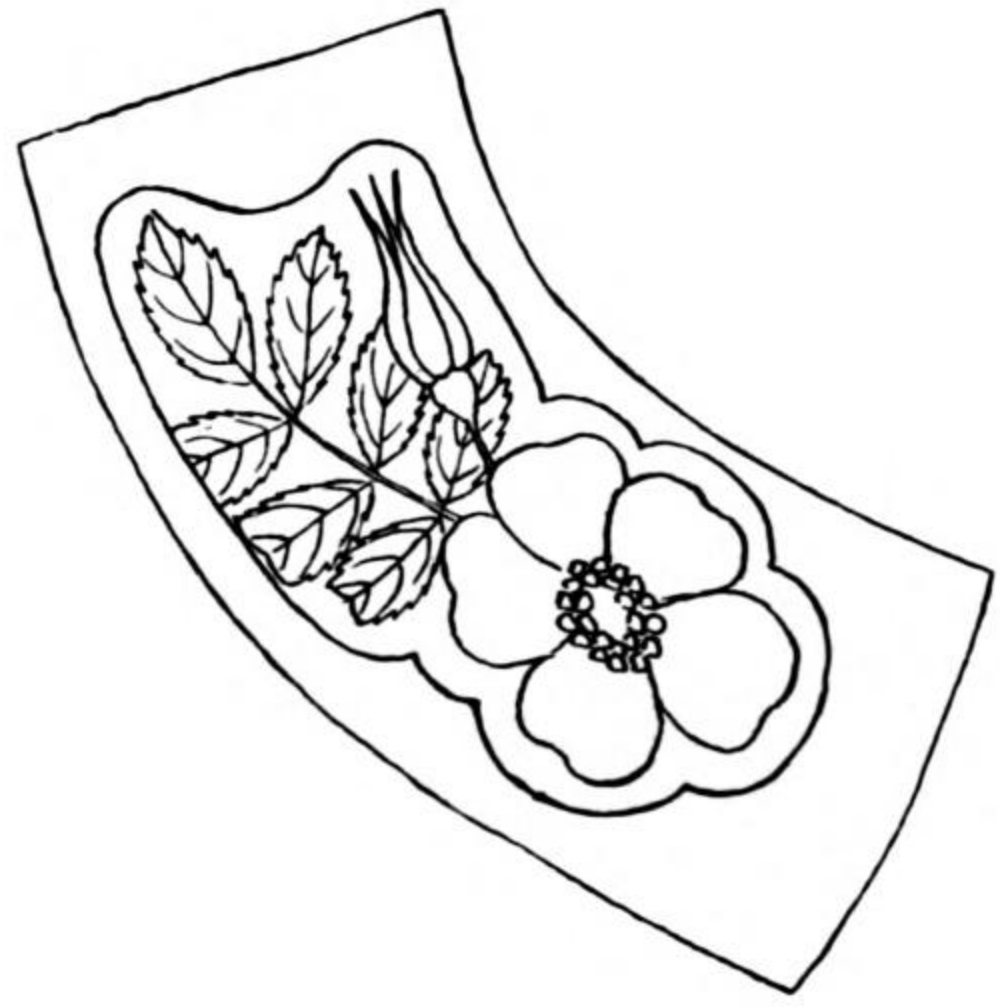


Southern Magnolia or Bull Bay by Grimm

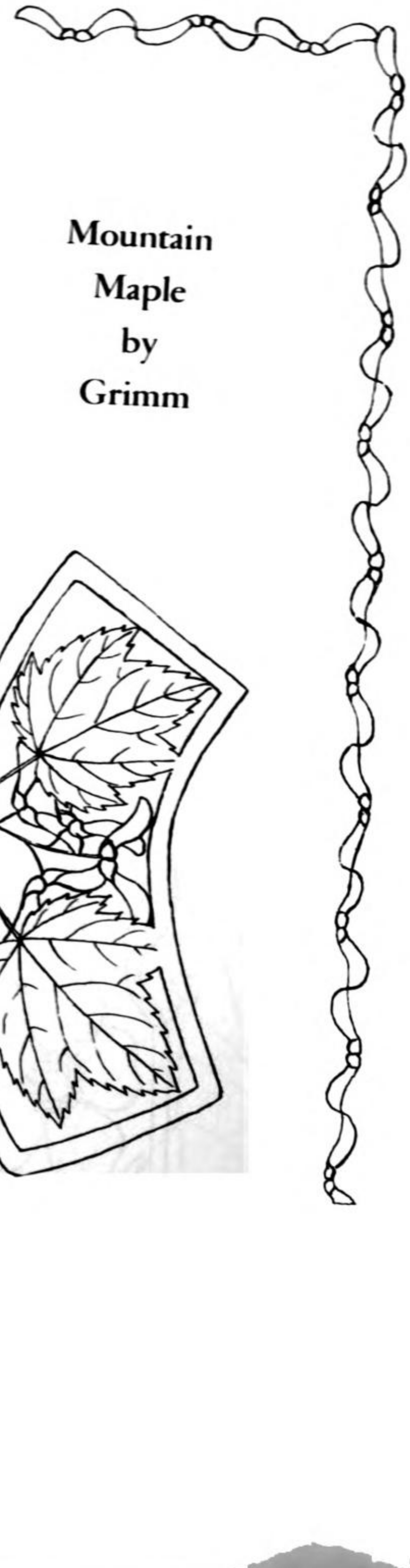


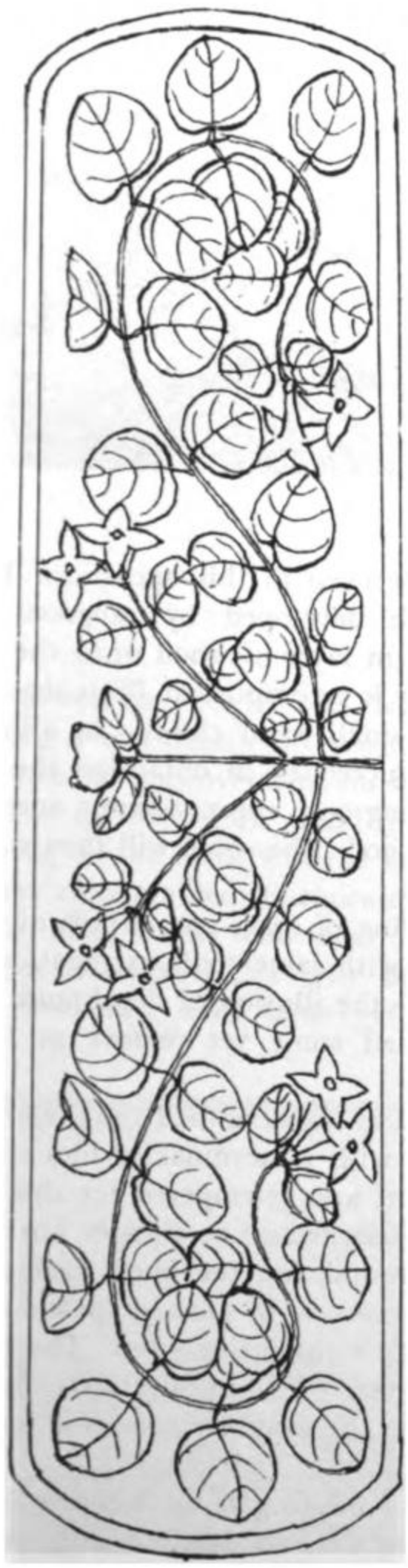


Wild Rose
by
Grimm



Mountain Maple by Grimm



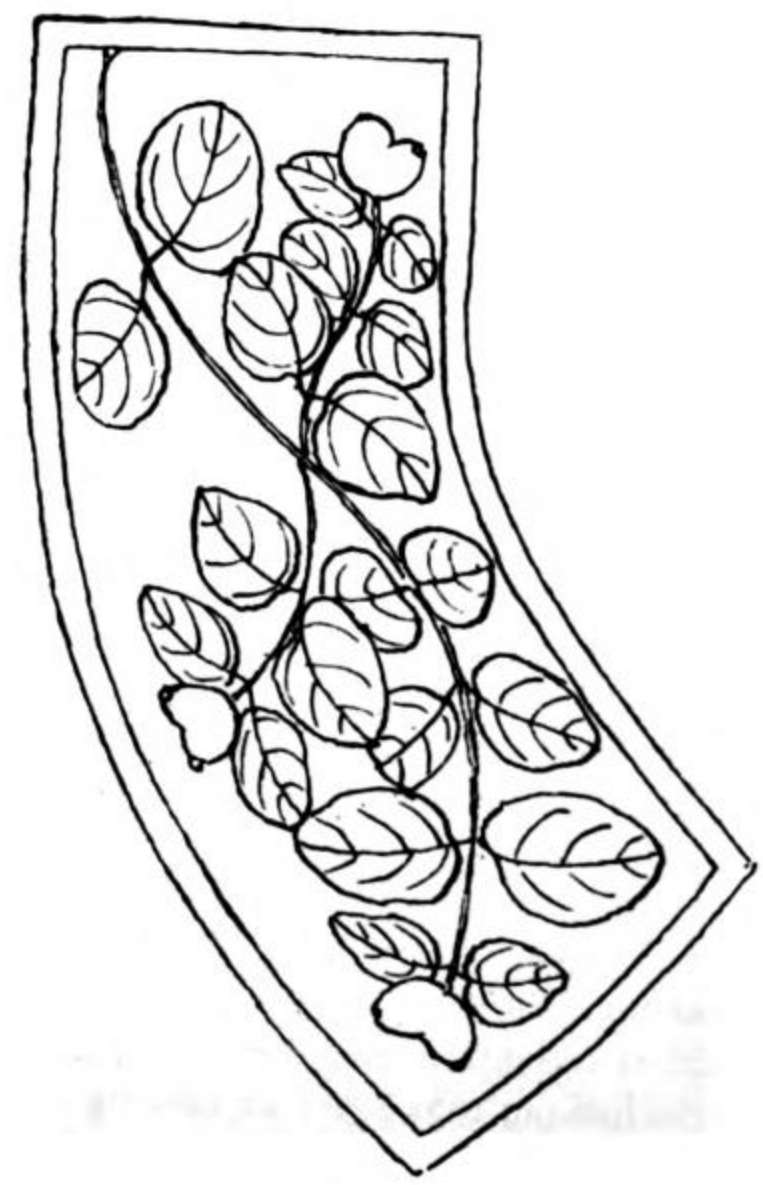


Partridge

Berry

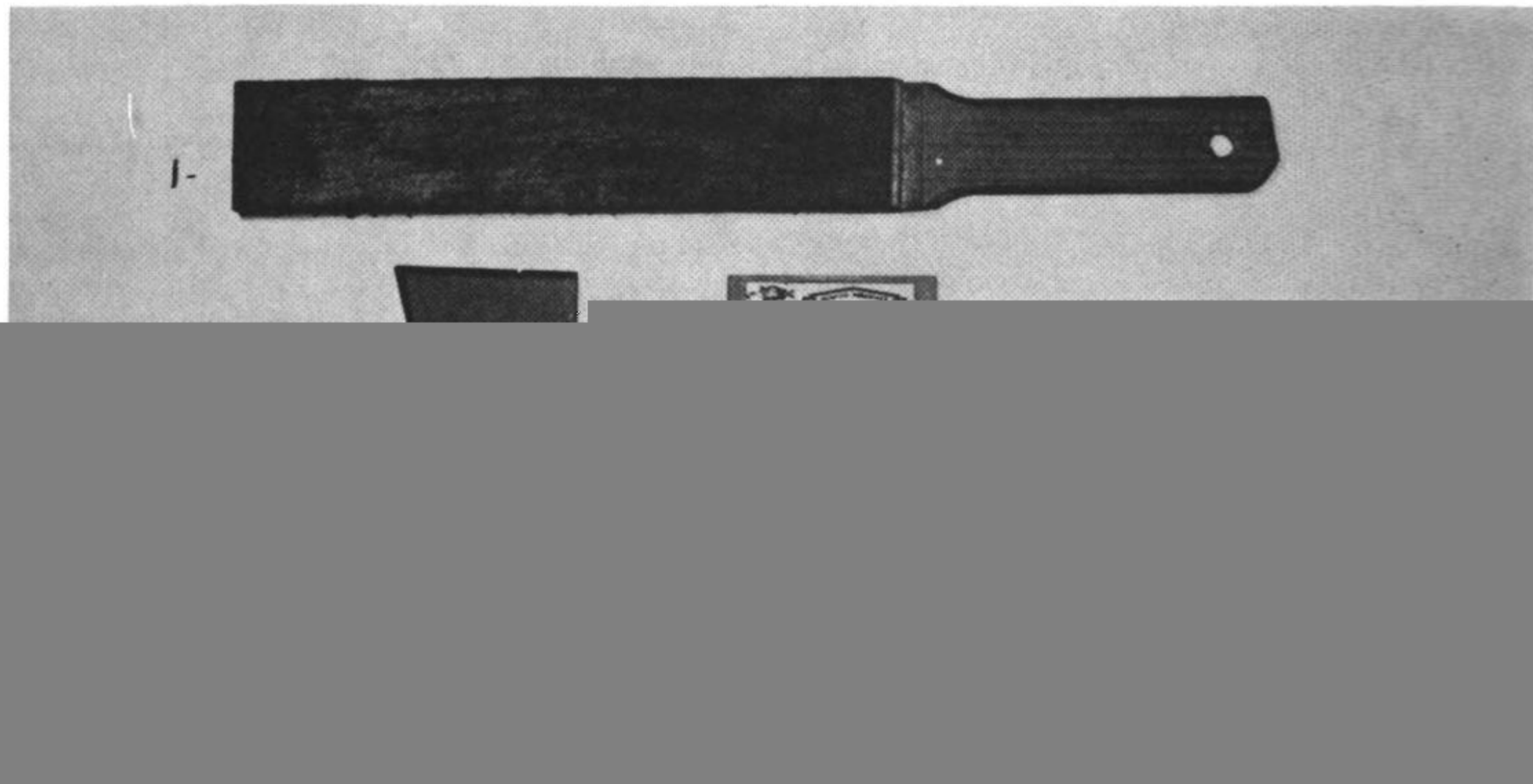
by

Grimm



Don't try to fill the wood you have carved as it will only lead to a mess.

One afterthought to add, don't try to carve any intricate pattern on soft wood. All of our patterns, with the exception of No. 2 should be done on good hard wood. No. 2 can be used on any type of walnut as long as you use some care. We pulled a real boner on No. 5 by using Claro. We were carried away by a beautifully figured piece of wood and forgot its softness. This pattern will be very much more effective and easier to detail on a hard piece of French walnut.



OUR CARVING TOOLS AND THEIR USES

For the beginning woodcarver, probably one of the hardest and most important things to learn is the proper sharpening of the chisels and gouges. The sharper the tools the better work you'll do, as the wood will chip and tear as soon as the tools start to dull. So, in the long run you'll save a lot of time and temper if you keep them sharp.

Nos. 1, 2, and 3 are the tools we use for sharpening. To keep a razor edge on your tools use No. 2 first. Put a drop of oil on the stone, then lay your tool at the angle the sharp edge has been cut and draw it toward you, keeping it at all times at the same angle. Repeat this at least 10 to 15 times. If it's a double-edged tool, turn over and repeat on other side. Repeat the whole operation on No. 3.

For the final polishing pull the tool a few times over the plain leather side of the strop (No. 1) and then repeat on the rouge or red side of No. 1.

Nos. 4 and 12 are a penknife and an Exacto knife with a No. 11 blade. These we use for outlining the pattern before we start to chisel. Which one you use is a matter of preference. My husband prefers the penknife as he has done lots of whittling with it. I prefer the Exacto as there is not so much danger of getting your fingers cut and you can get your hand down closer to your work and for me this gives better control.

No. 5 is an angle-bladed flat chisel. This we use for flattening areas and for removing the wood along the outside edges of the carving to bring it into relief.

No. 6 is a small veiner used for any kind of a narrow, deep cut. Such as the main vein of a leaf and also for removing wood in narrow places. For the fine veining in a leaf we use a No. 4 or 12.

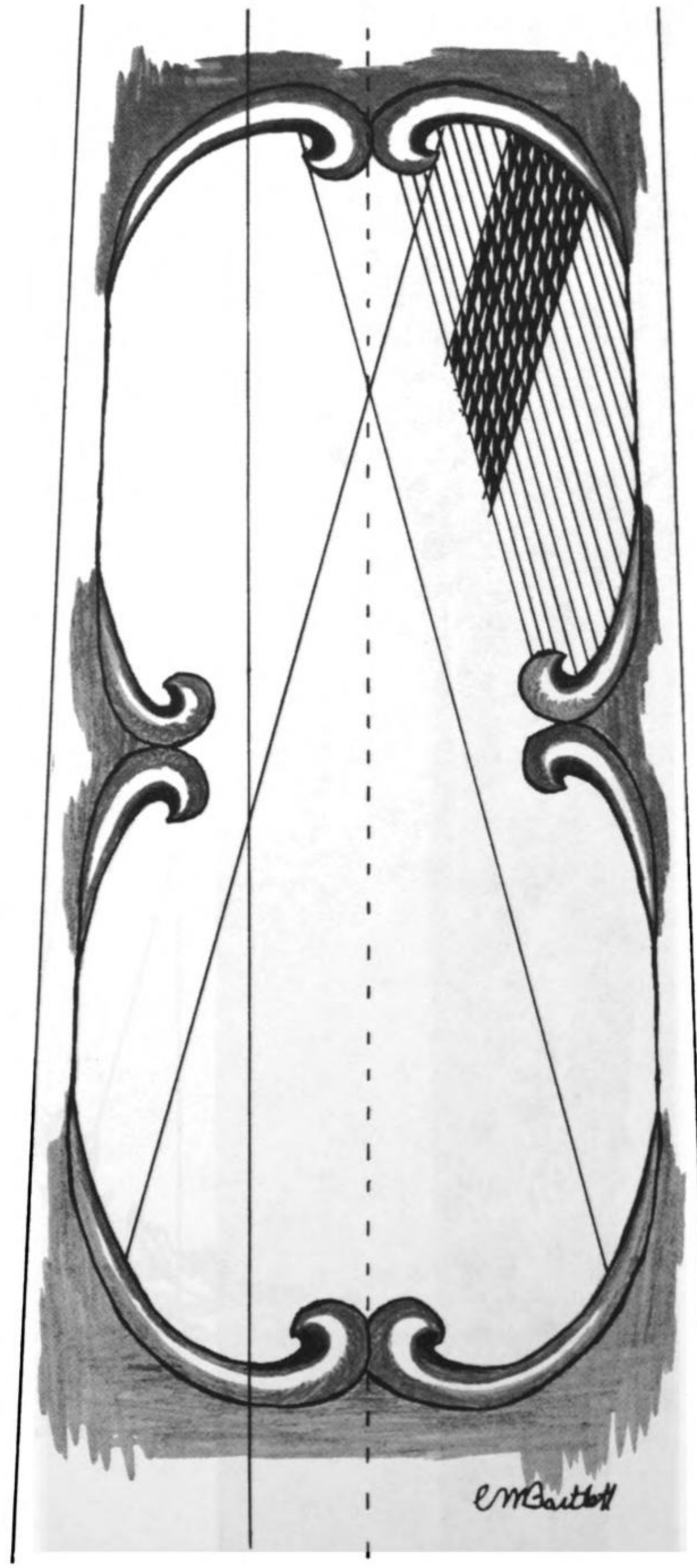
No. 7 is an engravers tool. It is not a necessary tool but comes in handy once in awhile for fine veining or fine lines.

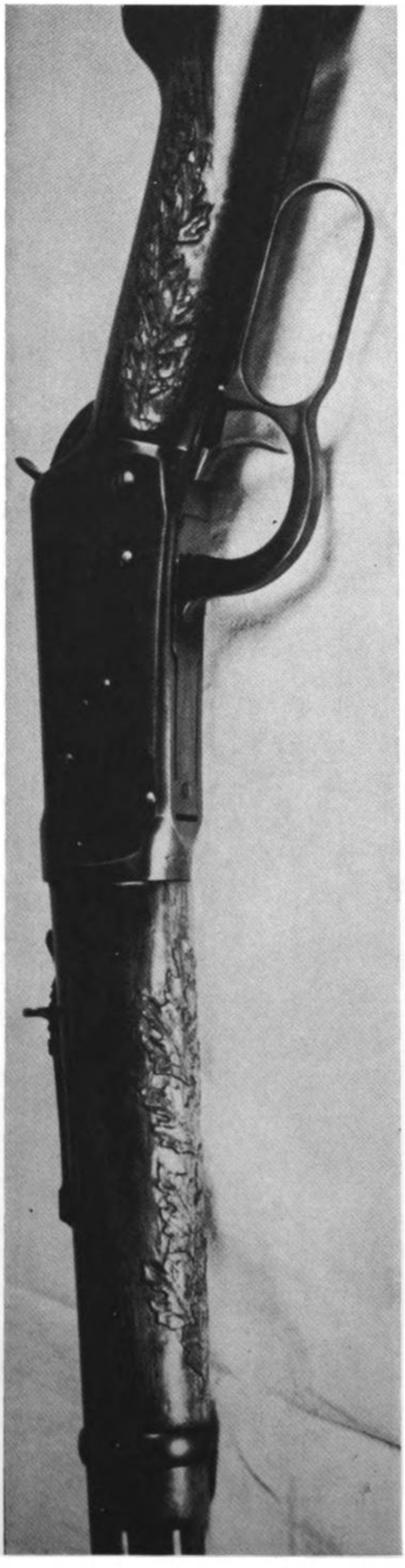
No. 8 is a slightly curved gouge. This tool we use more than any other. We use it for all our shaping and most of the wood removal. This one is sharpened on one edge only. Care must be taken in sharpening so as not to round the corners, but keep them sharp and square.

Nos. 9 and 10 are some war surplus dental tools we picked up. They are very handy for removing wood in holes and hard-to-get-into areas. We don't use them often but when you need them they are nice to have. They are easy to keep sharp as they are made of good steel.

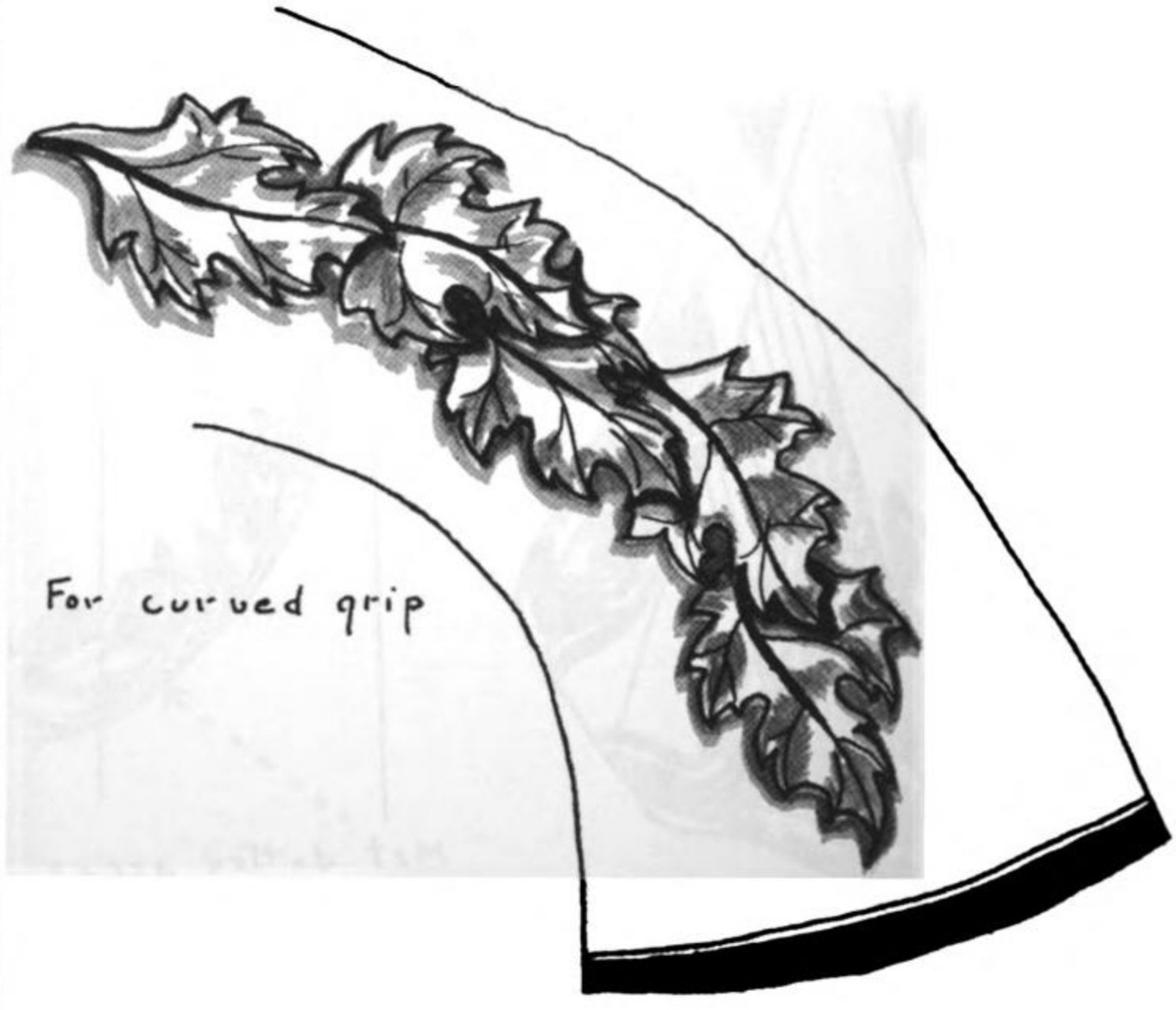
Nos. 11, 13 and 14 are files of various sizes and shapes. They are used for removing tool marks in areas you want smooth. We then remove the file marks with fine sand paper.

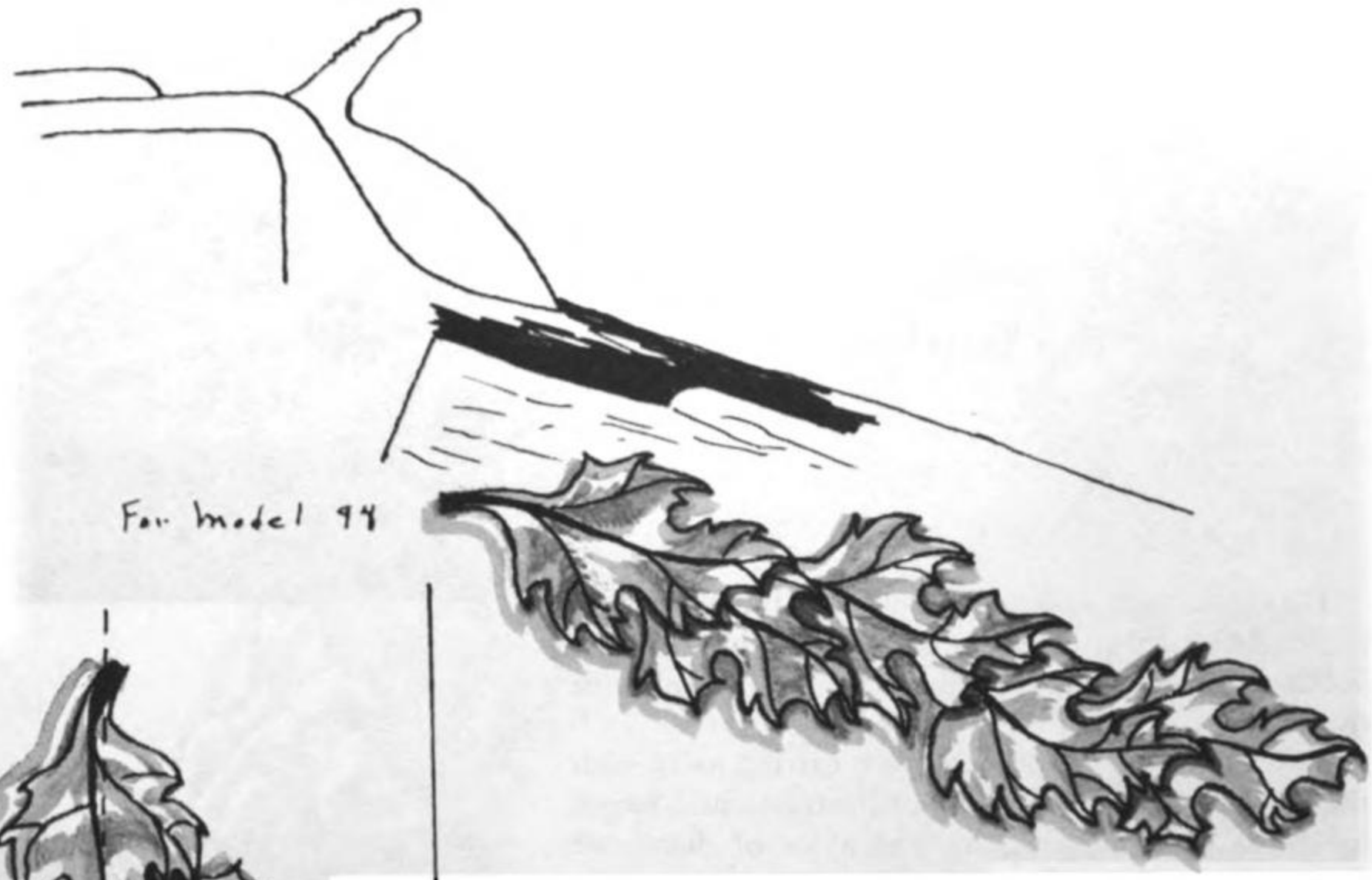
For matting, which we do not have illustrated, we use a leather tool. It works very well on the softer woods. For the harder woods we use a large nail that has been shortened and flattened and then pounded very hard into a 32 line file that is used for checkering metal. In very small areas we use a small nail and make one tiny dot at a time.

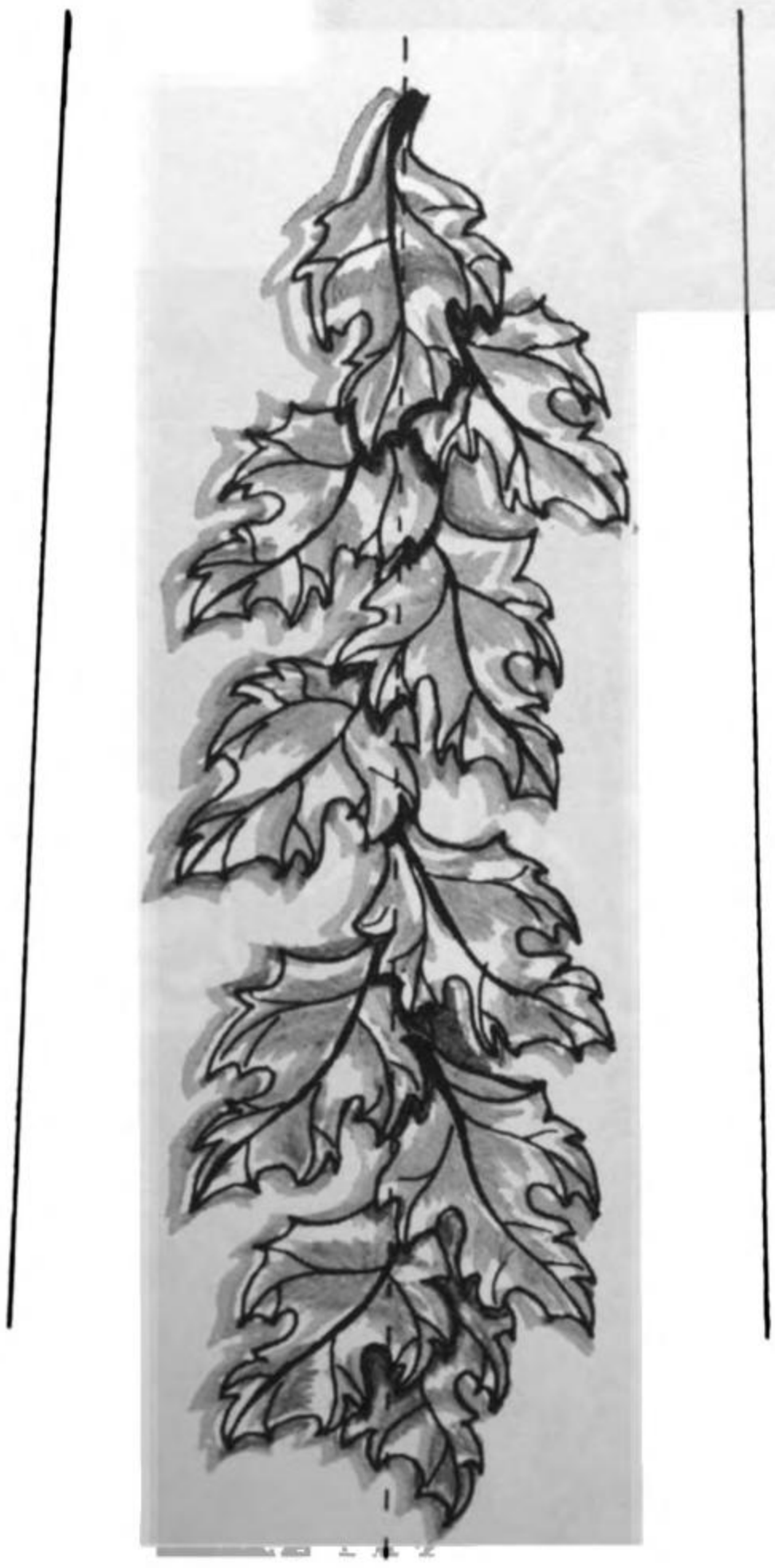




No. 4
Maple Leaf Pattern
by
The Bartletts







This is one of my first stock carvings. I put it on my oldest daughter's Model 94 Winchester. She's been the envy of her boy friends. Not only does she have a gun—but a carved one too. She's a darn good shot and loves to hunt. Should make some guy a nice wife in another ten years.

It is carved in the same manner as pattern No. 1. On the '94 there is not too much wood on the forend, so be careful not to cut too deep.

By using the forend pattern as two side panels and the curved pistol grip pattern illustrated, this pattern can be used on any lightweight sporter. Don't forget to make the curves in the leaves deep enough.

No. 5
Filigree
Pattern
by
the Bartletts

This pattern is extremely elaborate but we feel it is very beautiful if carefully executed. It is extremely delicate and must be done on very hard wood with the sharpest of tools.

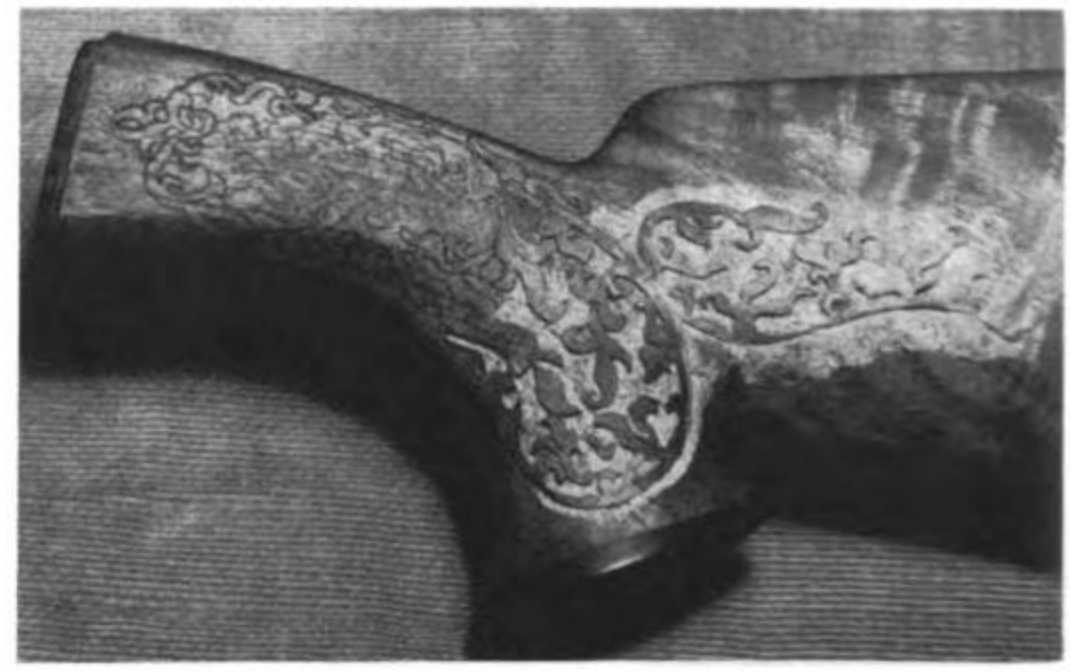
As I mentioned before, we were carried away with the beauty of the piece of wood illustrated and forgot its softness. As a result, we lost a lot of detail we could have had in a hard wood.

The border of this pattern should be in relief. The wood cut away, outward from the design, then the edges of the border slightly rounded. After the pattern has been cut with the Exacto or penknife, remove the wood in the background to the depth you desire. To be the most effective the background should be matted. This way, after the wood is oiled, the background remains dull and the design really stands out.

This pattern can be shaped any way the carver feels the urge. The more detail put into shaping the fancier the pattern gets. Also on completion remove the tool marks as much as possible.

This design will keep you busy for a long time but if you like anything this fancy your efforts will be worth while.

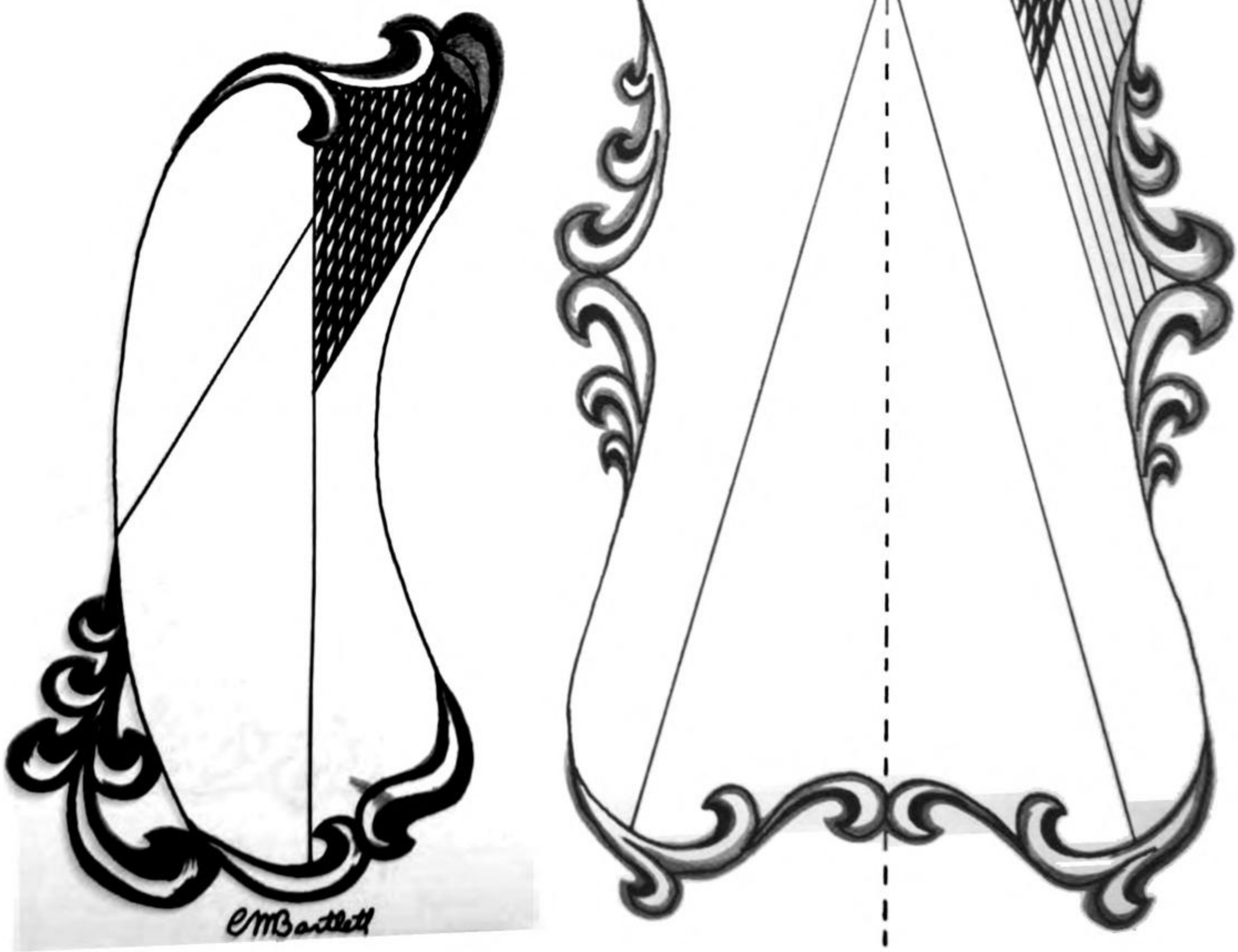
The diamond in the forend, we feel, should be ivory, gold or silver. We prefer gold. This has been carved only on shotguns but it would look nice on a light sporter stock of the classic European design.

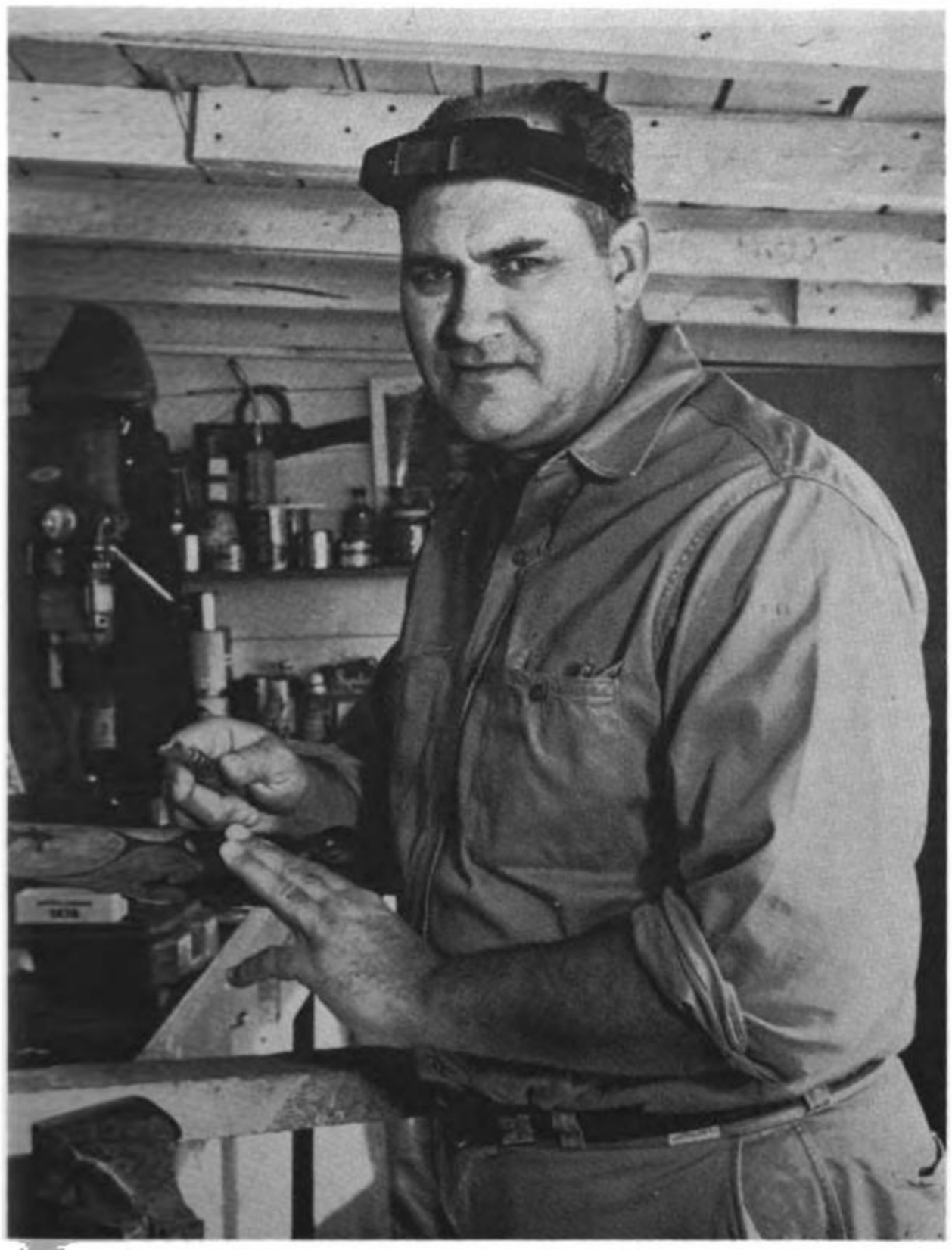


No. 6 Border Pattern

This pattern was borrowed from Leonard Brownell and "gussied up" to suit our tastes. This, by the way, can be done with any of our patterns or any one else's if you don't quite agree.

We like this pattern best tapered up to the area to be carved and bring the carving into relief. Don't taper the wood at the checkered area but start very gradually at the edge of the carved area and deepen as you get to the center. This one should be done as suggested in our carving procedures.





Myself in the shop working on the *fleur-de-lis* with ribbon pattern shown here.

I have a 10-foot work bench where all the stocking and checkering is carried on. I still make all my stocks by hand throughout from the solid blanks but I have a drill press, band-saw, and 85 chisels (just counted them) plus a lot of checkering and engraving tools.

As you see I prefer to do my checkering with the cradle held in a machinist's vise, the heavier and solider the better I say.

The Patterns, Tools, Methods and Ideas of Dale W. Goens

I sincerely hope the following information will be of some help to those desiring to learn the art of checkering and carving. Many words have been written on the how-to-do, so you may find that some of my ideas are new, some parallel to other stockers and some may not suit you at all.

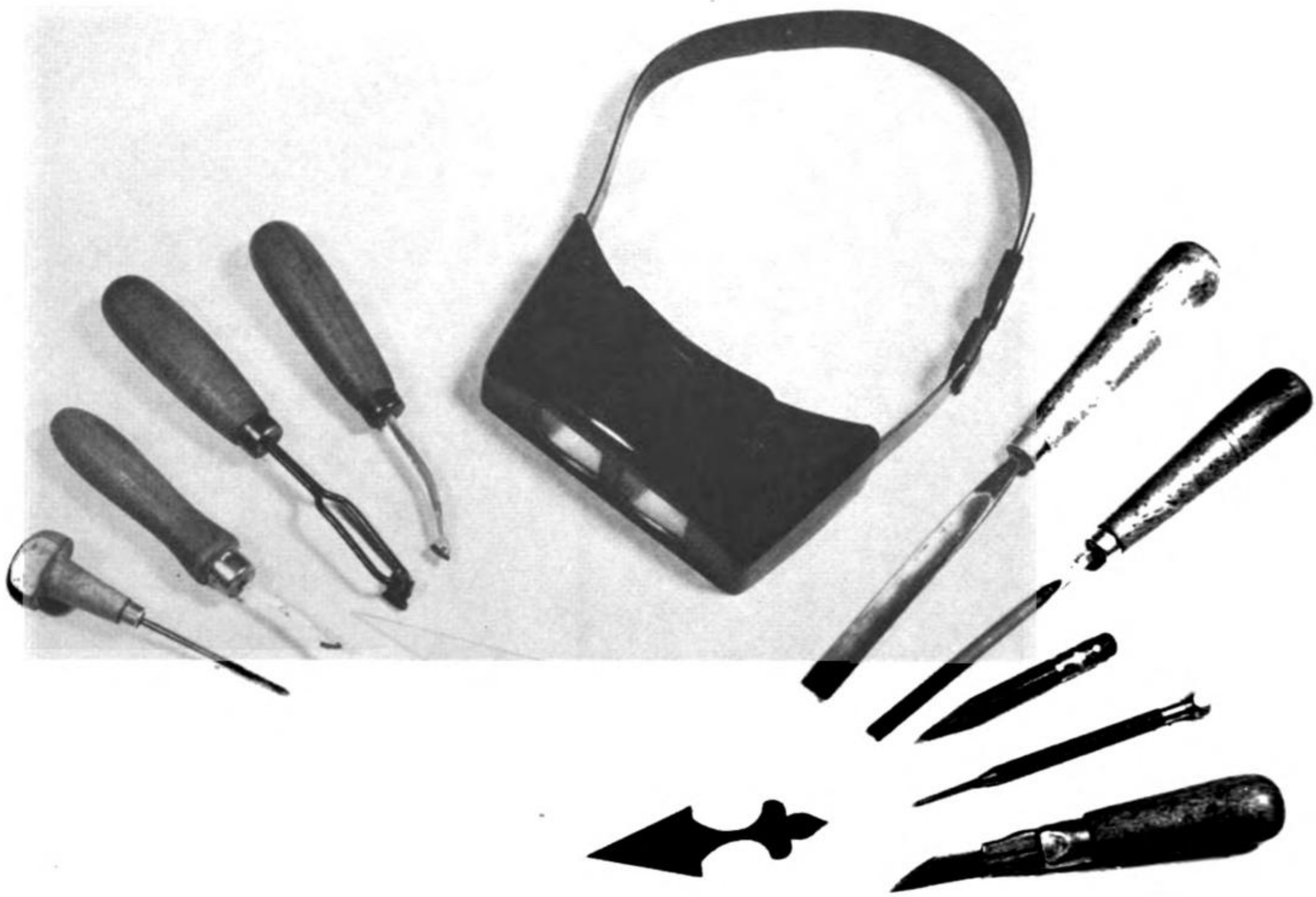
I find the rule, "necessity is the mother of invention," still holds and many stockers find themselves doing the same thing the same way, and not even knowing any other exists. The same holds with special tools, which help make the job a bit easier.

I find that the longer I work at this business, the more I find myself sticking to certain patterns, but with slight variations to suit the particular job at hand; a good example of which is my *fleur-de-lis* with points pattern. The original pattern was done on a stock with a fairly long forearm and I found that on a shorter forearm the pattern has to be varied quite a bit, so anyone attempting to use the pattern must remember this point.

None of the patterns I have submitted here can be called beginner patterns or even advanced amateur. They will all call for very close attention to detail and ability to stay-with-it. They are intended for the person already somewhat experienced in checkering and carving.

I have left out the elementary patterns because this book already contains many excellent ones for the beginner. I will say this about such patterns: I believe the beginner should do small-area patterns, of the fill-in type, where none of the diamond forming lines are a part of the outside border.

I am thoroughly convinced that the most important phase of good checkering is the ability to do good spacing of lines, and this calls for the very best in ability and the use of good, sharp, precise tools.



The checkering tools shown above are the ones most needed, the only one I left out (by mistake) was a small pair of dividers. The tools shown are from left to right:

1. Homemade carving tool, handle is an engraving tool handle, as I operate this tool like an engraving tool. See closeup, in action, on page 258; the shank of the tool is positioned across the thumb which leaves the balance of the hand, four fingers, wrist and arm, to apply power to the job of cutting. This tool I find comes into its own in cutting the medium radii that are too short for the checkering "V" tool. This is not a posed photo. I was actually deepening the cut, although I knew the photographer, Oscar Goodwin, was coming out from Albuquerque to get the pictures so I cleaned my fingernails before he started, which is the only false part of this setup, shooting the closeups of my hands.

2. This is the only other homemade tool here. This tool I made to act as a small knife, but it has teeth. I got the idea from a veneer cutting knife; also I made the tool with a high-working angle and it does an excellent job of initial layout in hard-to-get-at places.

3. This is my main spacer, W. E. Brownell full-view handle with 3-line spacer, an excellent tool which will space right or left from the same position.

4. This is a mixed-up tool, actually it is a Dembart fine cut, single "V" cutter, in a holder I made myself, although the handle is a Brownell non-tiring handle. Works too! The main job for this tool is to deepen the checkering and bring the diamonds to point.

5. This is a 2¼ power Magni-viewer, I use it for fine checkering and engraving.

6-7. These are the two of the many chisels I have, and these were selected because they have the correct radius to cut that *fleur-de-lis,* (See the black plastic template down in front). I am a great believer in selecting the right radius tool for the job. This is an idea that stems from the old school on carving and a person that attempts a job of carving should have *many* carving tools. You can sure do a much more precise job as each fleur will be the same size and shape.

While on the subject of carving tools, if you look closely you will see that the business ends of each of those chisels is sharpened on the inside by about one-third of the chisel's thickness and the balance on

the heel of the blade. This is necessary for two reasons: First and most important; the chisel will take to the wood without your fighting the tool to keep it into the cut. Secondly, they work better on the incise cut, (See photos of these two tools at work). Another point I'll make here, notice I have the chisels sharpened at right angles to the blade, or straight across you might call it. This is extremely important as a carving tool that gets pointed on the cutting end will split out in front of the cut. This is due to the prying action; now, actually a tool sharpened with the center portion of the blade edge angled back may cut even better in curly wood, as you now get a shearing cut. But for the most part I suggest keeping the chisel cutting end straight.

8. This is one of those real soft-lead pencils I talk so much about. They are very important, as one can draw on the finished stock with no fear of making any serious permanent marks. They are the type used by the first-graders, I think, anyway I get mine in the dime stores in the school supply section.

9. This scribe (and the dividers I forgot to have in the picture) are most necessary for a number of jobs, but mostly to punch through the patterns and to scribe-in lines where you definitely are going to cut, such as marking alongside of the clear plastic templates, shown here in the foreground.

10. I guess no layout of tools would be complete without a knife, and this is a removable blade carving knife, though I never use it to carve with, as I figure carving should be done with carving chisels and gouges. However this carving knife comes in handy for several jobs besides sharpening pencils. One use I put it to is to cut a good straight line for the master lines, and this is especially true in highly figured, curly wood.

11. Now as to those templates down front; the black plastic job is a double-ended template, with *fleur-de-lis* at one end and a checkering layout one-half diamond on the other. The clear plastic templates are homemade also, the one on the left has the same 36-degree as the end of the black plastic job; one clear plastic template works with the other clear one for laying out border lines and such.

There are other tools we need for certain jobs, but I find the ones shown here to be most necessary.

Fleur-De-Lis with Ribbon

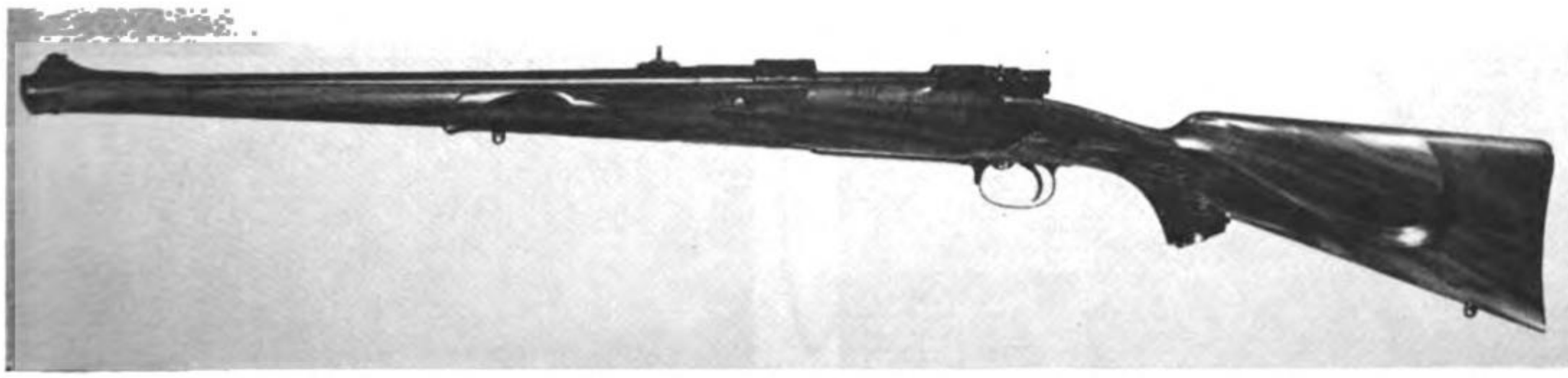
Dale W. Goens

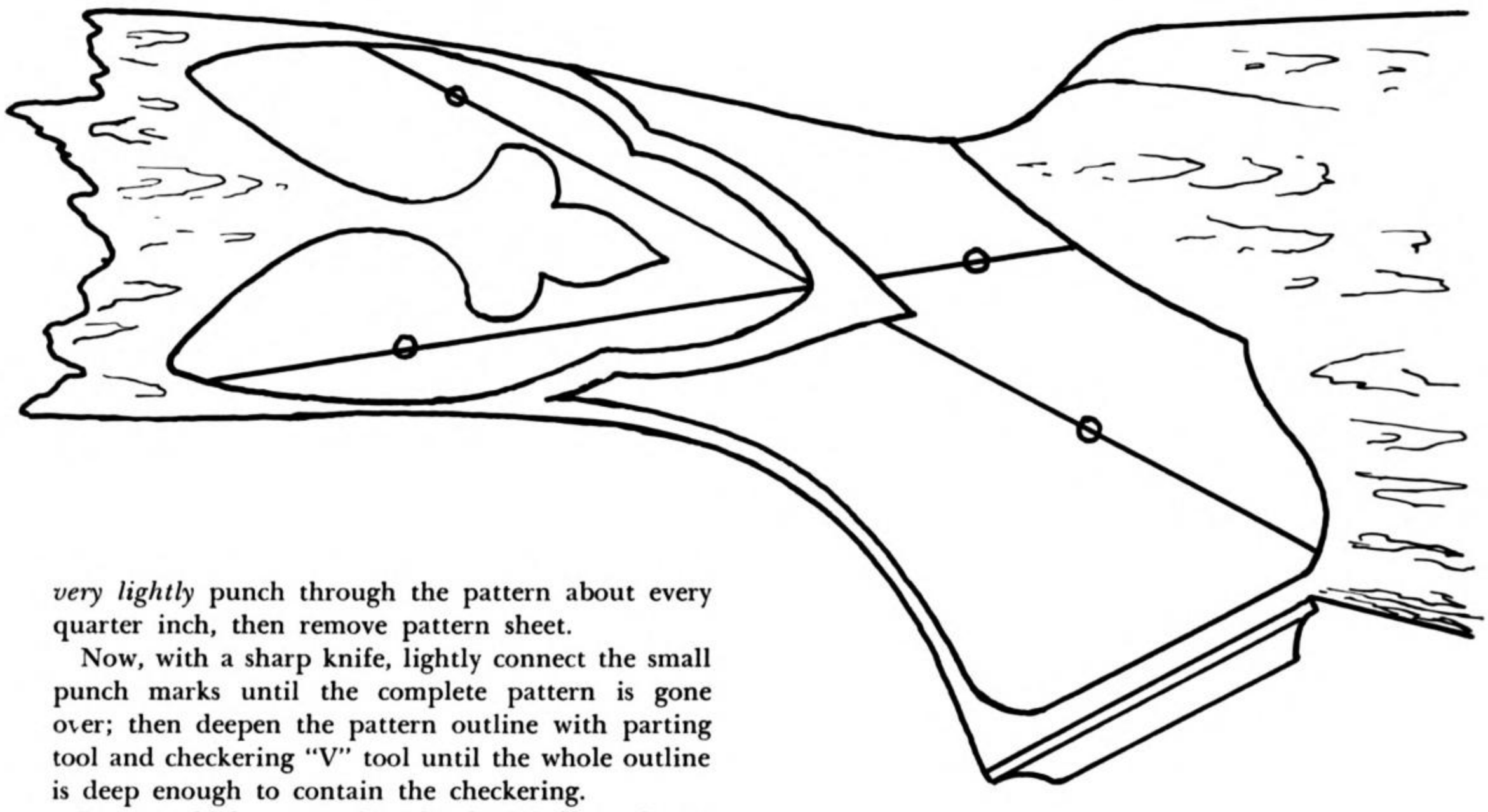
I guess we could call this pattern the "Seven Panel Job" also, as the completed job has seven panels.

I'd like to give a little dope on this job before getting into the pattern. This Mannlicher job, I turned out for Mr. Roy V. Schaefer, Eugene, Oregon. He cuts and cures some fine Oregon black walnut, myrtle and maple. The blank he furnished for this job is a beautiful red and hard as a rock; my arms and wrists ached from the pressure needed to do the inletting on it. Take note of the integral schnobble on the forearm; this breaks up the long forearm of the Mannlicher stock, and the idea is especially good when stocking the long barrel of say 22" or 24" length. The action is the new model 400 FN Mauser in standard 7mm caliber and has factory engraving.

Before getting under way I might add that this pattern looks extremely good on a sporter stock. This pattern, with its seven panels, should be cut to the finer checkering, about 24 lines per inch; 25 would be OK in some woods, but certainly nothing coarser than 22 lines per inch.

In the layout of this design, the complete pattern of forearm can be layed out right onto the stock, since none of the checkering lines form any of the outside border; also this forearm pattern can be adjusted or slightly changed to the individual stock, then transferred by whatever method you normally use for your layout. I have found that using a small sharp scribe is excellent and I just transfer the forearm pattern from pattern sheet to stock, by taping the pattern in place and then, with the sharp scribe,



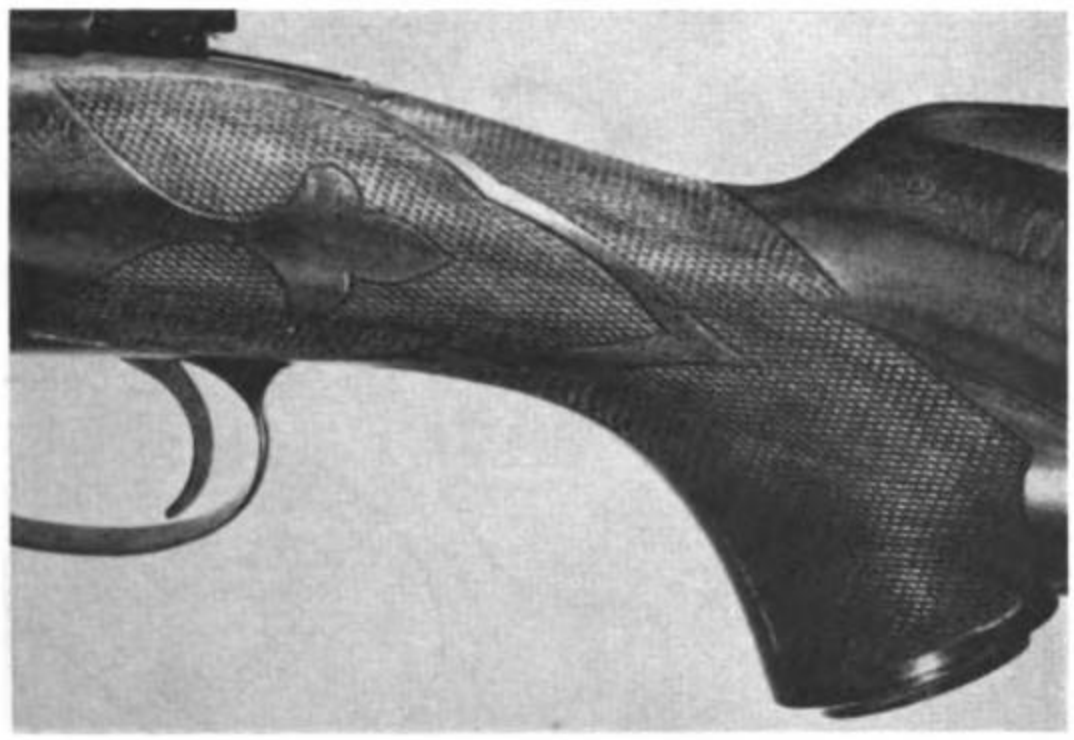


very lightly punch through the pattern about every quarter inch, then remove pattern sheet.

Now, with a sharp knife, lightly connect the small punch marks until the complete pattern is gone over; then deepen the pattern outline with parting tool and checkering "V" tool until the whole outline is deep enough to contain the checkering.

I must add however, that the *fleur-de-lis* or flower (there are three on the forearm) are best cut with carving gouges and you must pick the ones with the right radius to give uniformity to each flower; for those who don't know, this is the "old school" method of carving and is still the best, though one must have a good selection of chisels to employ it. I have about 85 and still not enough.

I have left the hardest part to the last, namely that of getting the grip pattern onto the stock, and here is where the *fleur* pattern comes in handy. I have one of tough, thin, black plastic that I made for the job. We should first locate this fleur of each side of the stock at the section of the grip (see pattern), then scribe around the plastic; now the balance of the pattern must be *very, very* carefully laid out, partly by free-hand and partly with french curves. This should be done with a soft-lead pencil (like the first-graders use). Then check and double

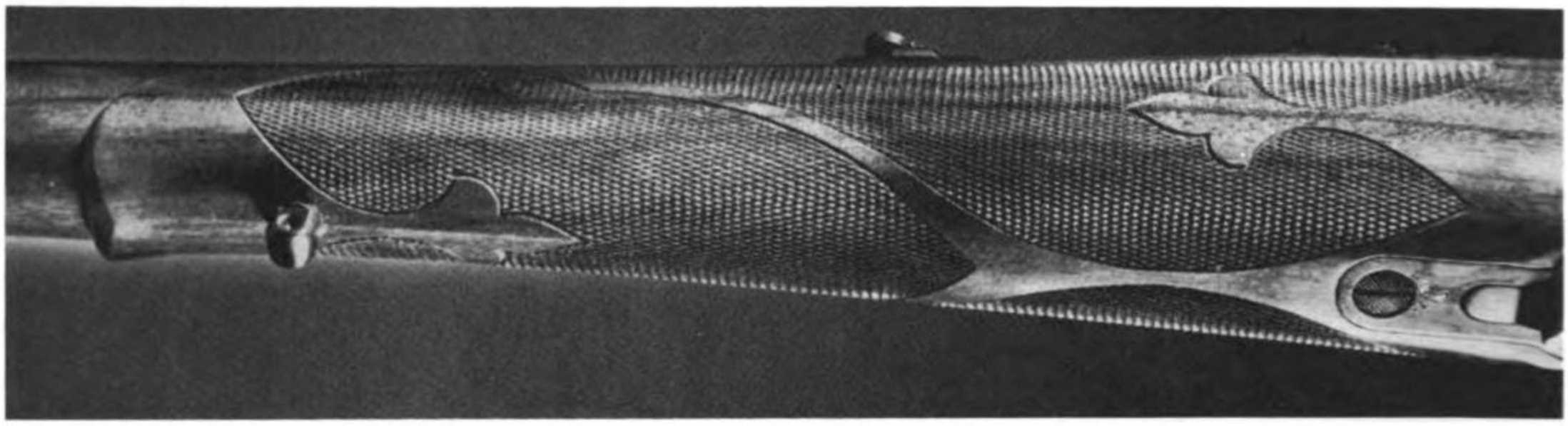


check to be absolutely sure the pattern is on straight and is symmetrical. I would say that it would be better to use a simple point pattern and get it good and straight than to do this fancy pattern sloppily and louse it up. Nothing, but nothing, looks worse than a crooked, poorly layed-out-and-done fancy pattern. Now that you are sure the pattern is on right, start cutting the border line in with the parting tool and the checkering "V" tool; then cut out the *fleurs* with gouges like you did the forearm pattern.

Now all that's left are the hours and hours of spacing, checkering and deepening the checkering until all the diamonds come to sharp points. This pattern is the fanciest I do, and I'm sure you will find, as I have, that it will really try your patience; since those seven panels of checkering have what seems like miles of border you have to be cautious of and not run over. We can't have one runover line on this job as it will look terrible; be especially careful of the ribbon between the panels.

You might take this tip from me; on doing these fancy patterns *don't* work too long at one time, as you will tense up from being careful for too long a period and before you know it you go scooting over the border or otherwise louse things up somewhere. The best idea is to get clear away from the job for awhile and do something else, anything to ease up the tension. You will find when you return to the grind that things will go much easier for a time. Now that we are speaking of time, take plenty of it in doing this pattern.

One last word, when you are finished with the checkering and deepening, then go over the border again to clean up all those faint nicks and the complete job will look much better.



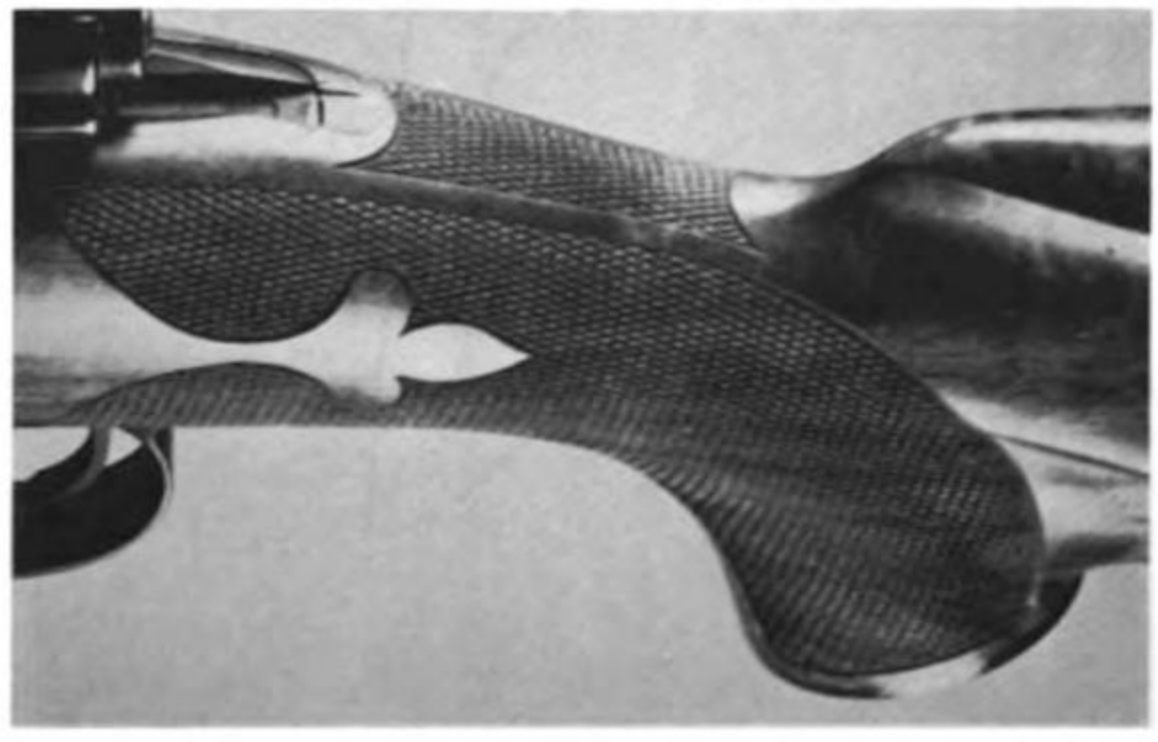
The Edna Oakley Rifle with a Fill-In Pattern

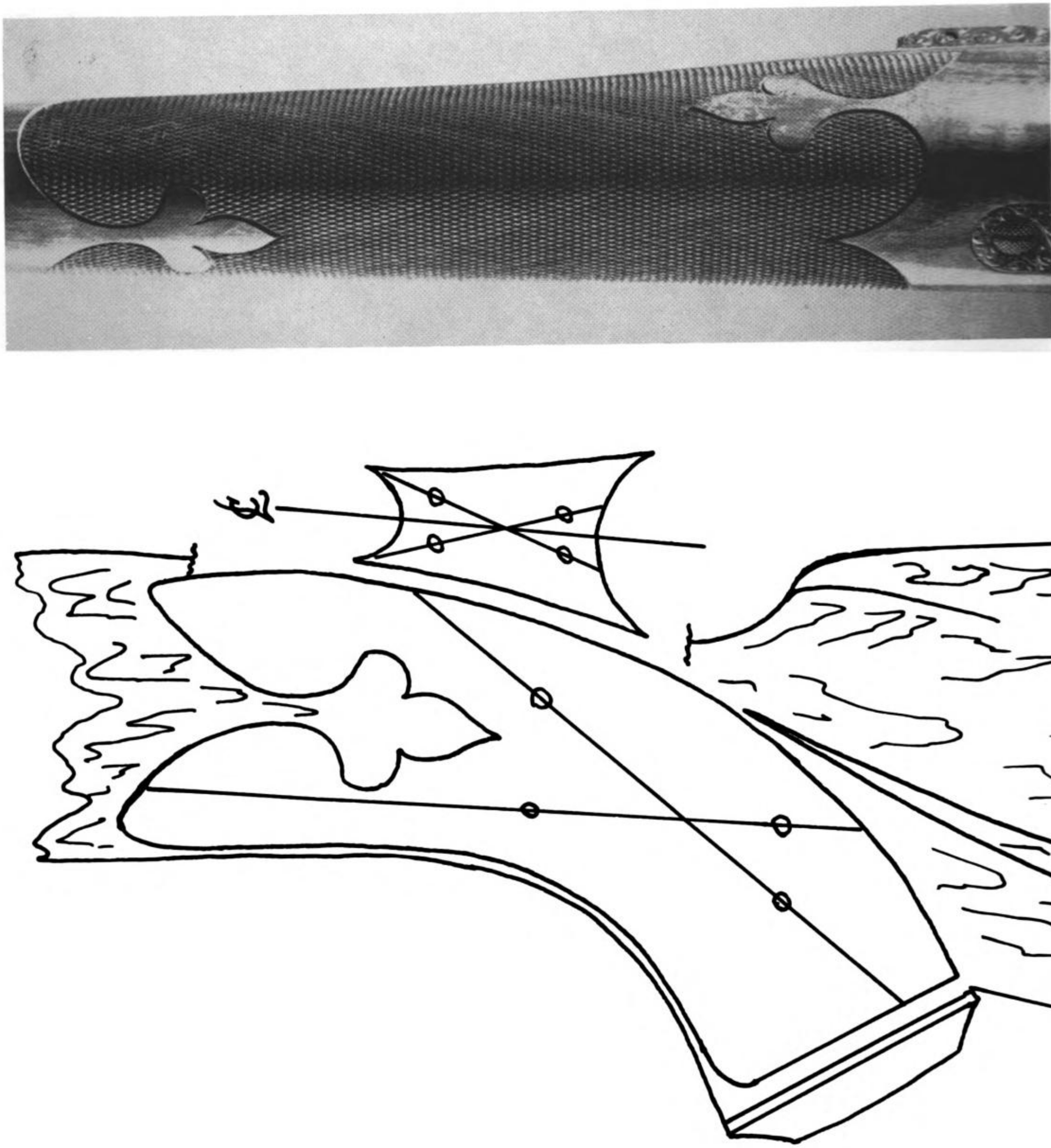
By Dale W. Goens

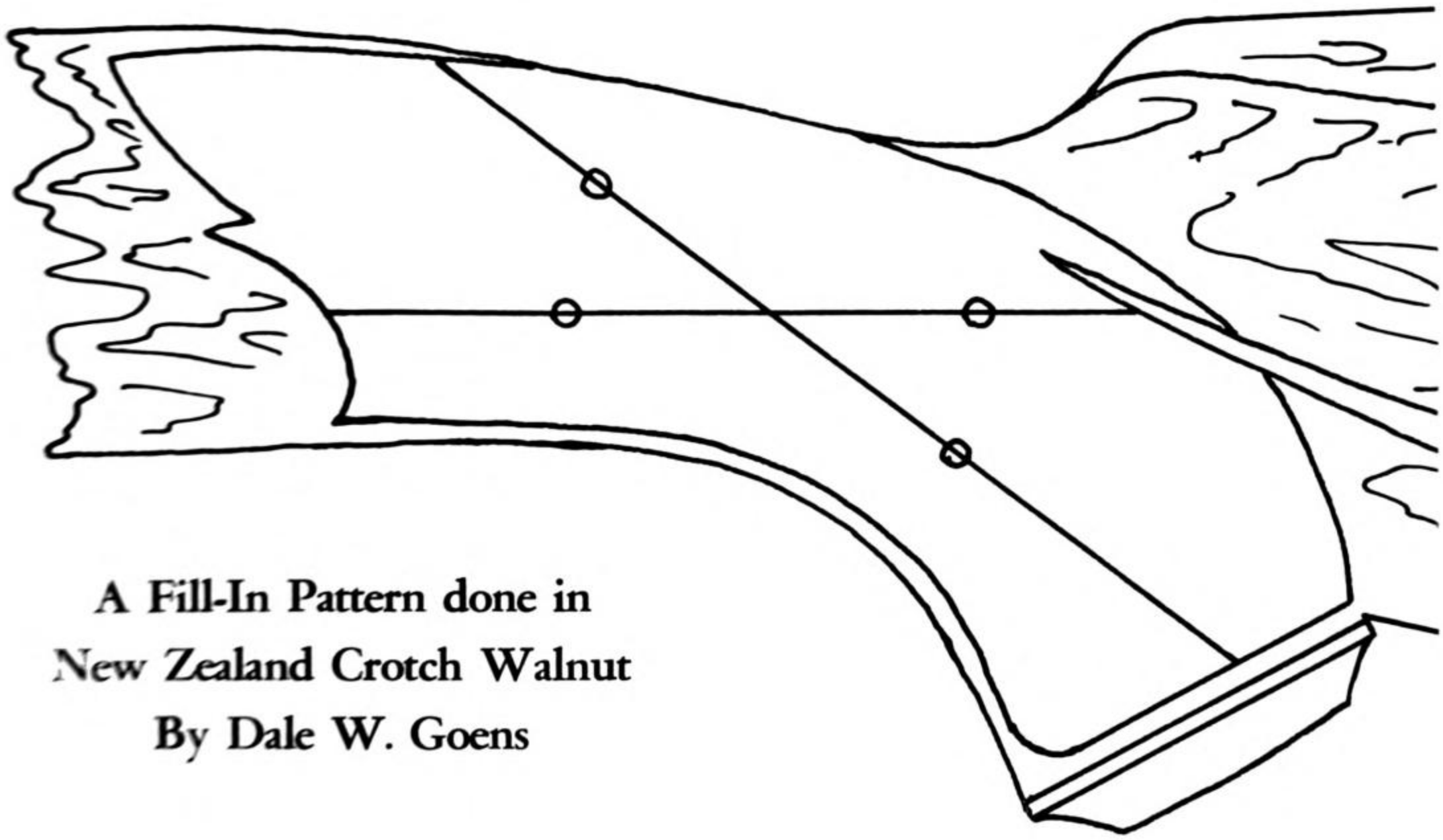
This is without exception the most beautiful piece of crotch claro walnut I have personally stocked and for that matter the prettiest I have ever seen. That superb butt stock has colors of brown, red, yellow and black, yet the grain is perfect through the grip and then flows gradually upward through the forearm. It is a piece of wood that is a stockmaker's dream, with all the wild beauty of grain in the butt stock where it belongs. I engraved and stocked this rifle for Edna Oakley, the good wife of Joseph M. Oakley—he of the famous stock blank suppliers, Oakley & Merkley.

Just for the record, Joe Oakley (tree surgeon) has given me the dope on the California walnuts. There are three species of walnut trees grown in California and they are the only ones given specific botanical names listed as follows: English Walnut, *Juglans Hindsii;* Black Walnut, *Juglans Nigra;* and Claro Walnut, *Juglans Hindsii.*

Joe tells me there are a few freak, crossed species, that are hybrid. The most common is Baston or sometimes called Bastonion. I am sure that this is a slang or nice word for bastard tree, as the tree comes about through a freak of nature by the pollination of a black walnut with the English walnut tree. This nut then grows into a tree that is hybrid and is the end of the line, as the nuts from the hybrid are sterile and cannot produce another tree. This hybrid walnut produces some very interesting wood which nearly always, as far as I can find out, is white in the center, gradually darkening toward the outer edge until you reach the white sapwood. Many times the heart is splotched like a pinto and all I have worked is hard and tough and checkers in splendidly.

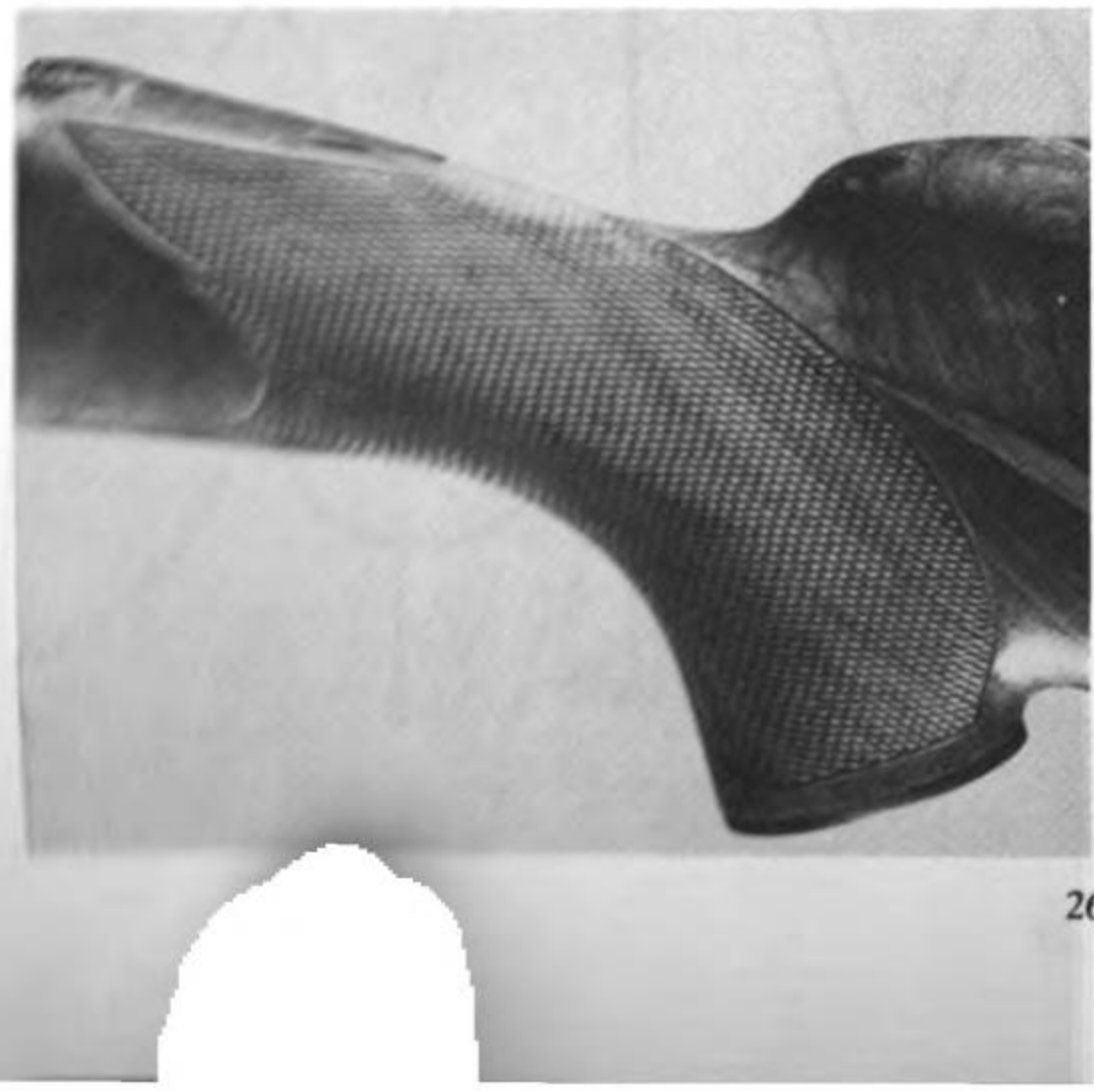






A Fill-In Pattern done in New Zealand Crotch Walnut

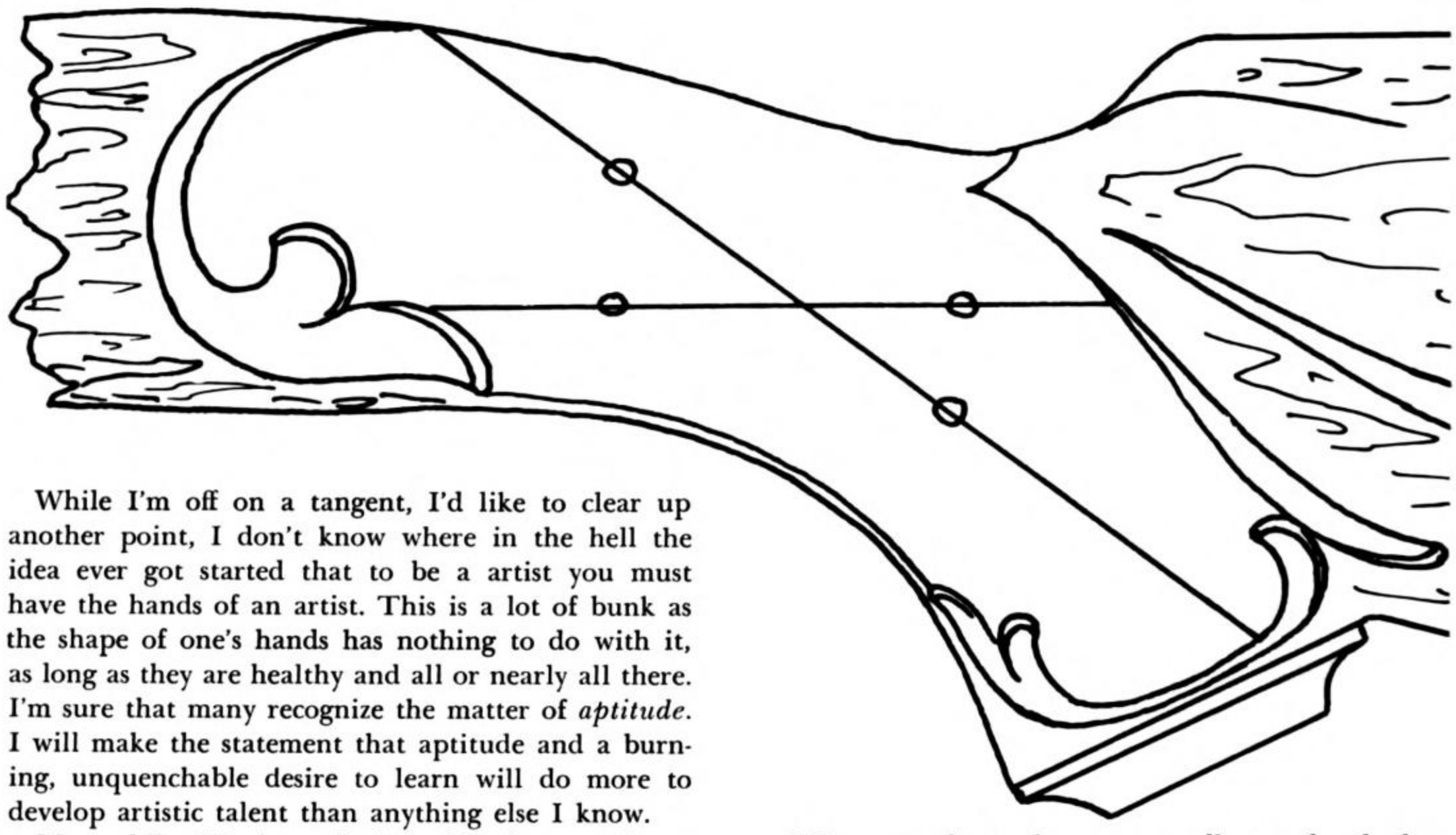
By Dale W. Goens



This piece from New Zealand, of English crotch was furnished by Fred Huntington, and is a very good piece of wood which checkered well. This particular blank is well figured and has matched grain on both sides of the blank. I am sure that our American claro has much more spectacular figure and color in the crotch blanks, this is however a very good blank and, come to think of it, you don't see very many *English* walnut crotch blanks.

This fill-in pattern of checkering is easier to do than any of the *fleur-de-lis* patterns and somewhat easier than most point patterns.

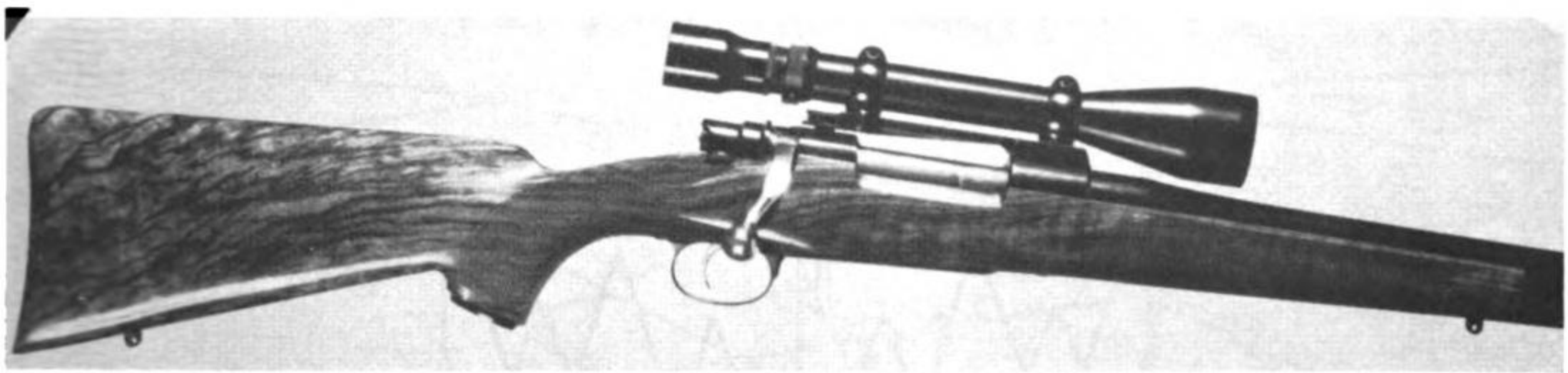
The methods I give under the carved border pattern can be used to get this pattern onto the stock.



While I'm off on a tangent, I'd like to clear up another point, I don't know where in the hell the idea ever got started that to be a artist you must have the hands of an artist. This is a lot of bunk as the shape of one's hands has nothing to do with it, as long as they are healthy and all or nearly all there. I'm sure that many recognize the matter of *aptitude*. I will make the statement that aptitude and a burning, unquenchable desire to learn will do more to develop artistic talent than anything else I know.

Meanwhile, "Back to the Ranch"—sharp tools are very important, and every effort should be made to keep your tools razor sharp at all times. This is just the very best good habit you can get into.

When you have the pattern all completed then scrub some oil into both the carving and checkering, and be very sure to wipe out all the excess. A couple of light coats should do real fine.



Dale Goens' Favorite Point Pattern

The age-old stand-by of checkering patterns is the "Point Pattern" and there are many variations of it. I have tried many of them and find that I still have to vary the pattern to suit the job then in hand.

This pattern on this beautiful exhibition French walnut is my favorite point pattern. I use it quite often. It has good coverage and it is not skimpy. This will give good areas for gripping both forearm and grip. The checkering meets at the top, but is not a continuous pattern. It still has plenty of checkering over the grip to give a good "holt" for the man who uses an over-the-grip hold.

I may get criticized for the type method I use to lay out the point pattern on the stock, but I use the one I worked out that is easiest for me. The best way I have found to keep the pattern symmetrical with all points alike on both sides, I repeat Monte Kennedy:—This is not *the* way but *a* way of doing the job.

After determining the dimensions of the area to be checkered on the forearm, I lay out the pattern completely on a sheet of paper, and then transfer it to the forearm, including the master lines. I guess I am what you would call a brave soul, as many of you would not dare layout the points complete for fear of not coming out right on the layout. But I figger I'll hit the layout, or come so dang close that one more spaced line will cover my layout.

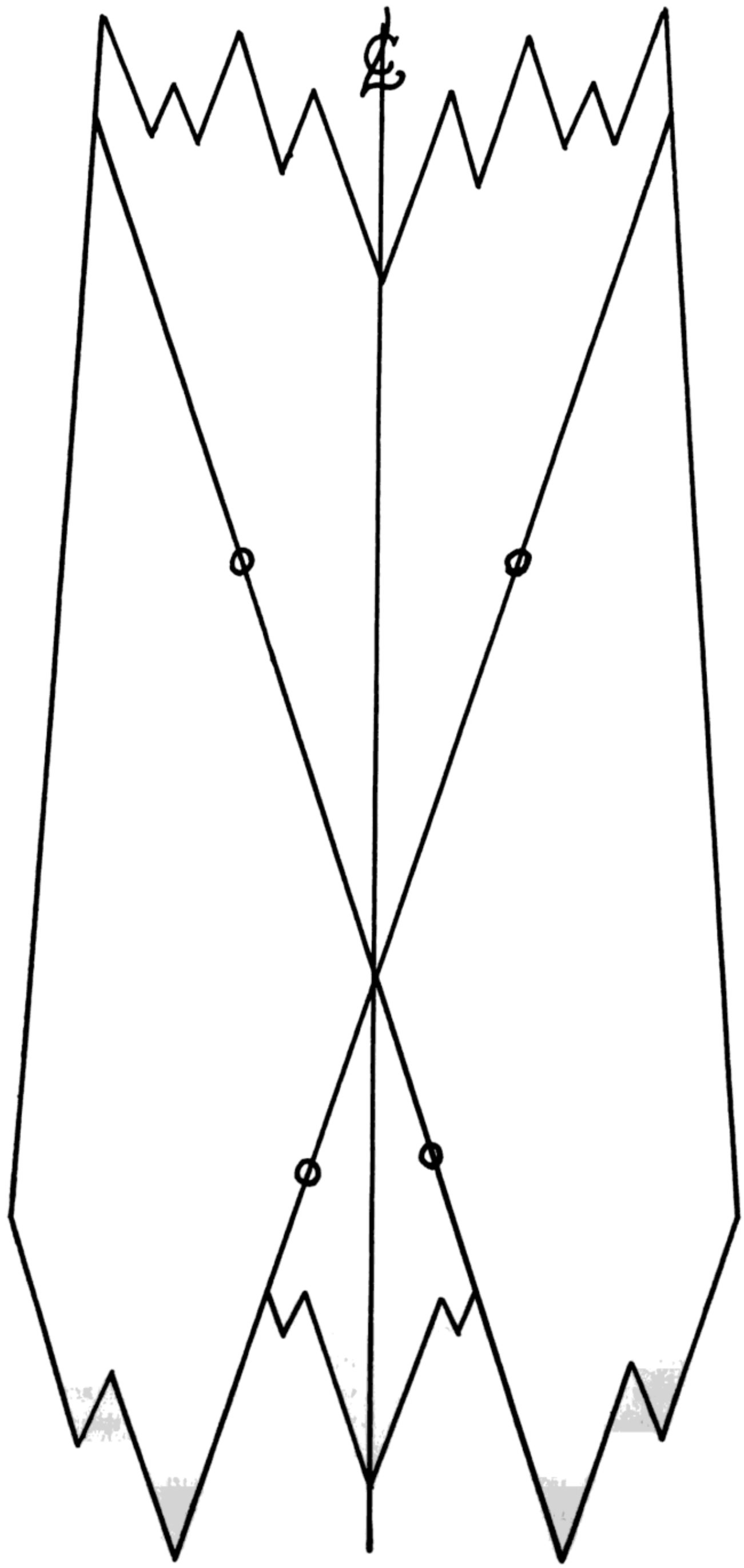
Something else I do after I get all the pattern laid out, both forend and grip; I take a small scraper and work all the finish out of the area to be checkered, this saves a lot of plowing through stock finish that gums up the spacing tool.

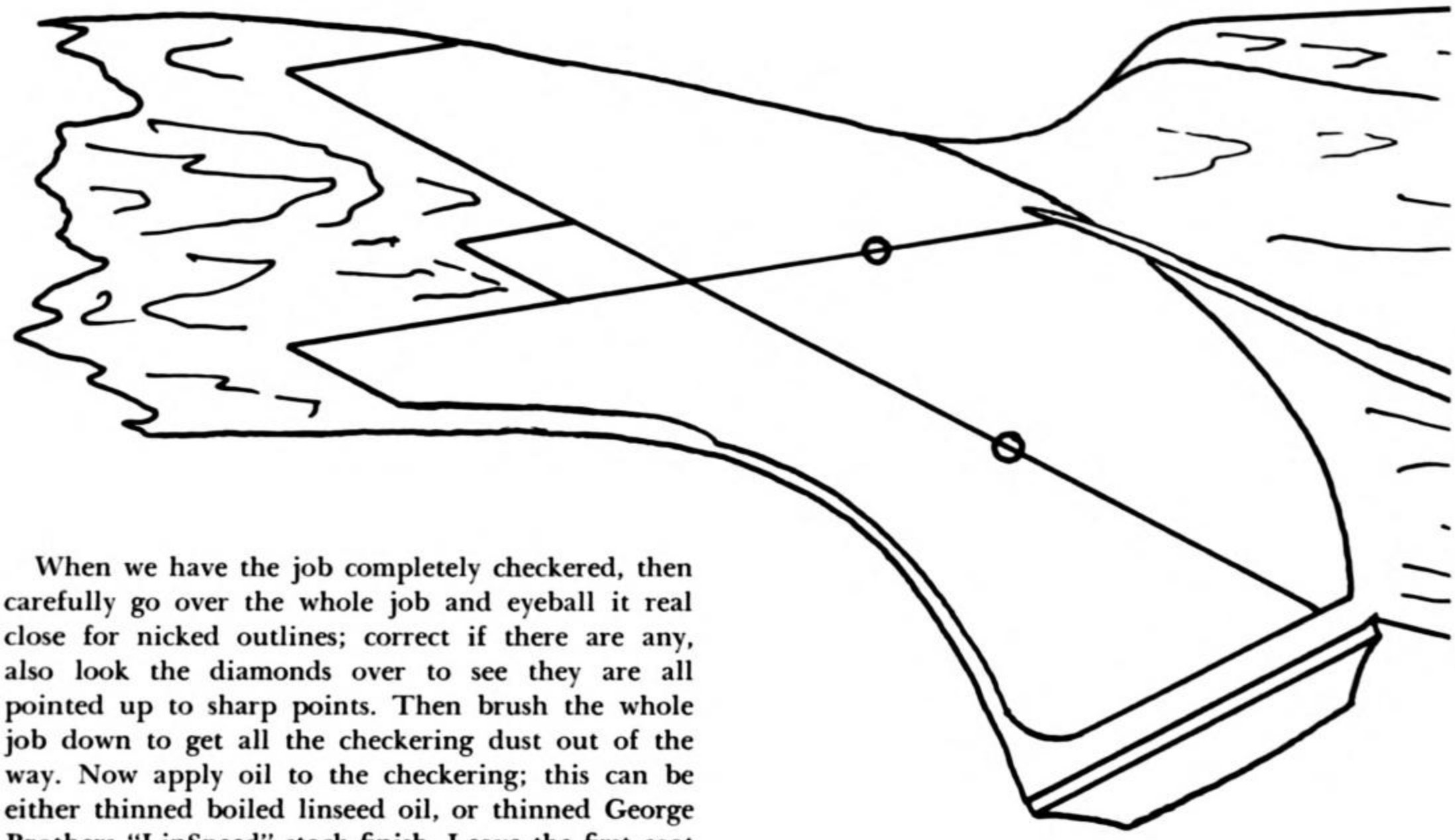
My favorite spacing tool is a Brownell *3-line* spacer in his full view handle. In good spacing it is *so* very important to get a good start and this means getting a *good straight* master line, so we let *one row* of the *three* line spacer ride the master line and very, very carefully cut two new lines on both sides of said master line. But from here on, I let two rows of teeth ride the lines and cut just one new line at a time on each side of the guide line; then after I have about five or six lines cut each side of the master line, I reverse the direction and space five or six lines more on each side of the growing area, and so on, changing direction every so often. This keeps all spaced lines paralleled to the master line. Also, we should cut the lines to the border along the sides of the pattern, but *not* the diamond-forming lines at each end of the pattern; these lines should stop just short of our original layout, and all are joined up after spacing the other direction.

After going over the whole pattern, both directions, I do the same over again, this deepening the spaced lines. Now we change tools and for forming the diamonds I use a Dembart *fine* "V" cutter and start going over the whole pattern, at least twice to bring all the diamonds to point. The complete job requires at least four times over. Checkering is very time consuming, and we must be very cautious at all times as one badly overrun line can ruin a good job.

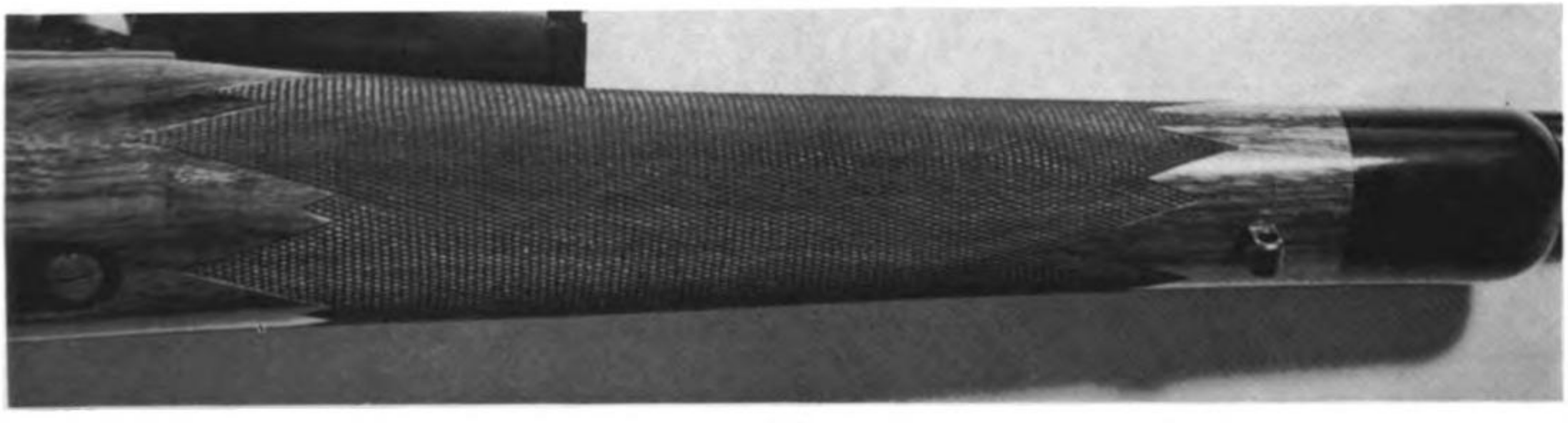
We humans are prone to making mistakes and we will make mistakes in our checkering. The mark of a good workman is to *never* leave the mistakes unattended, so here are a few hints to save the job, so to speak. If you overrun a pattern at the fore or aft end this is corrected by a slight lengthening of the lines, increasing the pattern size to overtake that one runaway line; just don't overrun again though, as I would hate to see you checkering out into space.

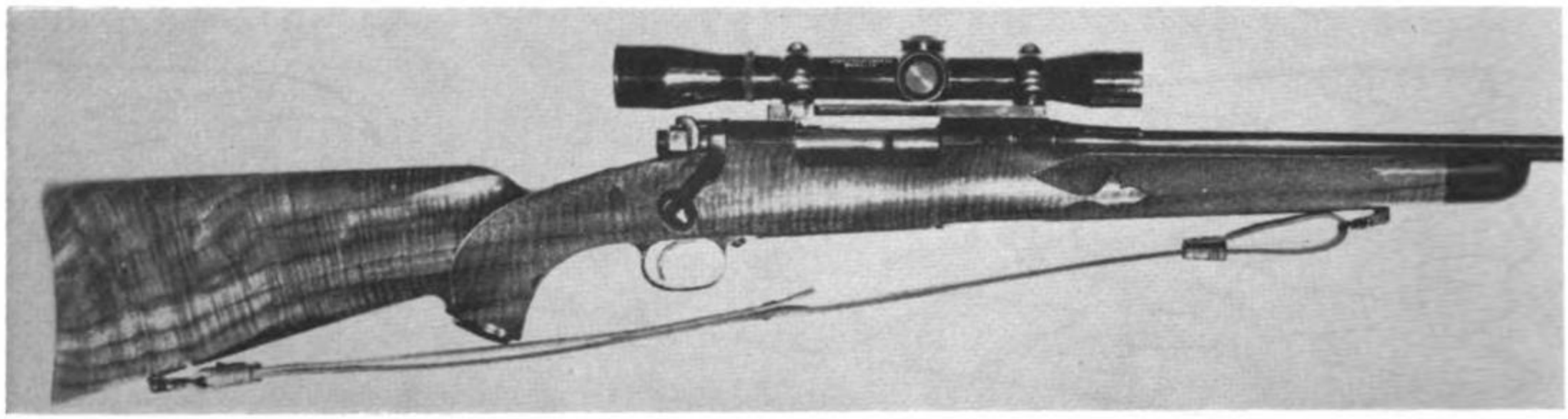
If you overrun the sides of the pattern, and if the overrun is not too bad, just widen the sidelines to catch up with the overrun line. If we have really goofed and run over a bit too far, then for cripes sake take the time to fill the job and refinish that little area. This is not too bad and will hardly show, unless of course it is across grain, then my friend you either scrub out the whole works and start again, or be a brave soul and let the *filled,* overrun show; at least you will be commended for taking care of the goof, and not skin your ignorance by leaving the butch unattended.





When we have the job completely checkered, then carefully go over the whole job and eyeball it real close for nicked outlines; correct if there are any, also look the diamonds over to see they are all pointed up to sharp points. Then brush the whole job down to get all the checkering dust out of the way. Now apply oil to the checkering; this can be either thinned boiled linseed oil, or thinned George Brothers "LinSpeed" stock finish. Leave the first coat dry twelve hours, then apply one or two more coats. This should be carefully checked. We want good clean diamonds, not gummy ones.





A Goens

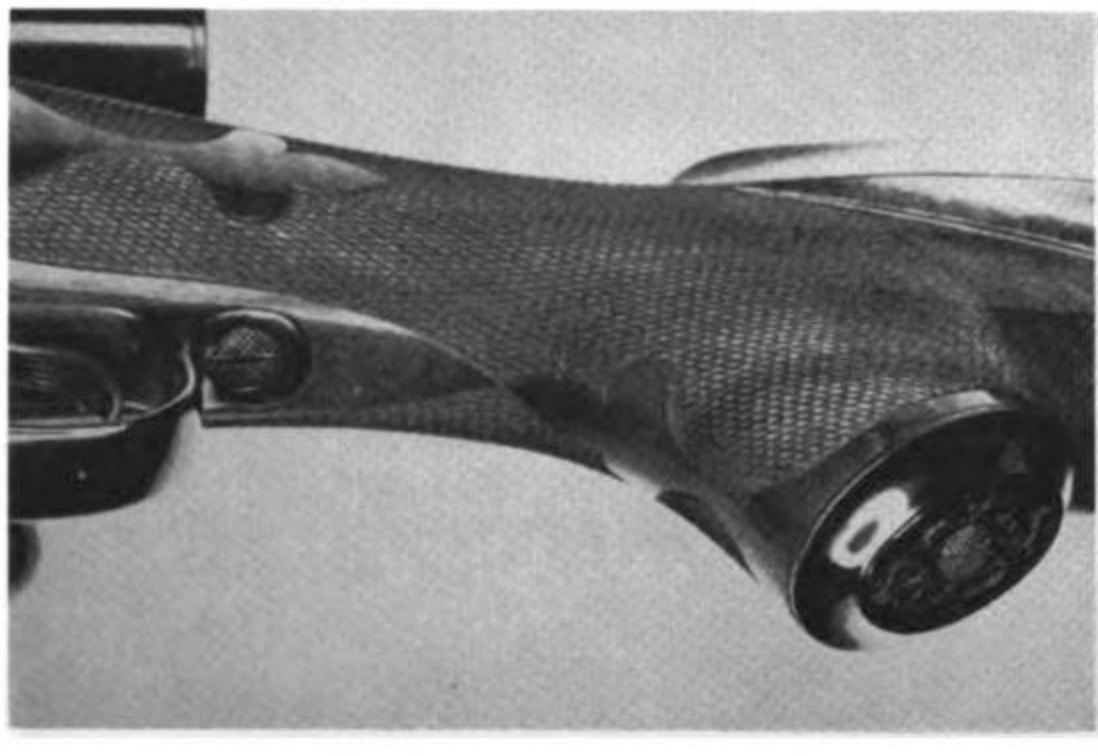
Fluer-de-lis Pattern with Points

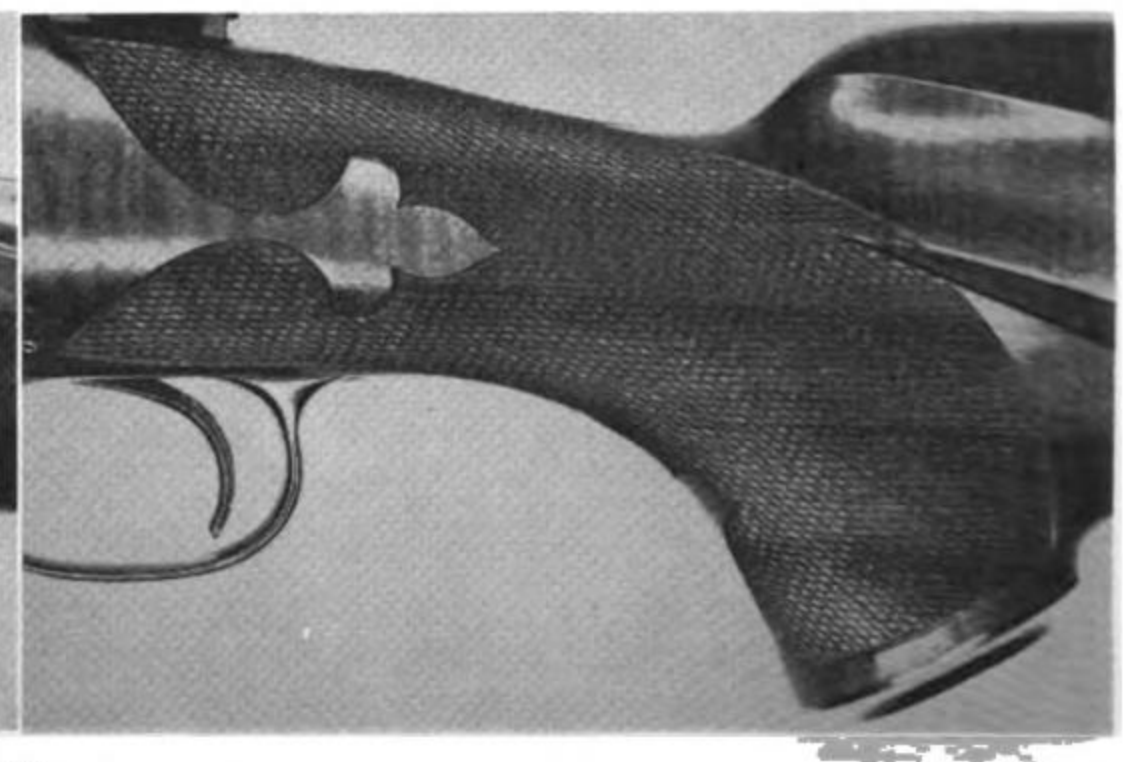
Before getting to the actual layout of this pattern, I think we should further discuss this art of good spacing of lines for checkering, and to do this right we must extend ourselves and use the very best of tools obtainable.

My spacing tools are all of those made by W. E. Brownell, 925 Donmoyer, South Bend, Indiana. I find his full-view handles and spacers suit me just right, and do an excellent job. They will space right or left and have a lot of adjustment in the working angle to be used, also many of my checkering patterns are of large coverage, often in the grip area they go over the top and well under the grip, and this spacing of lines under the grip calls for a tool with lots of adjustment so as to get the proper working angle.

I will show my tools and discuss them elsewhere but I just cannot put too much stress on the importance of good even spacing—and the areas to be checkered on a gunstock complicates good spacing of lines for the forming of the diamonds making up the checkering pattern. I have often said that, if we were checkering a perfectly flat surface or a perfect cylinder, then it would be much simpler to do good spacing but the areas to be checkered present the problem of being tapered, concave and convex, in a changing surface to be worked on.

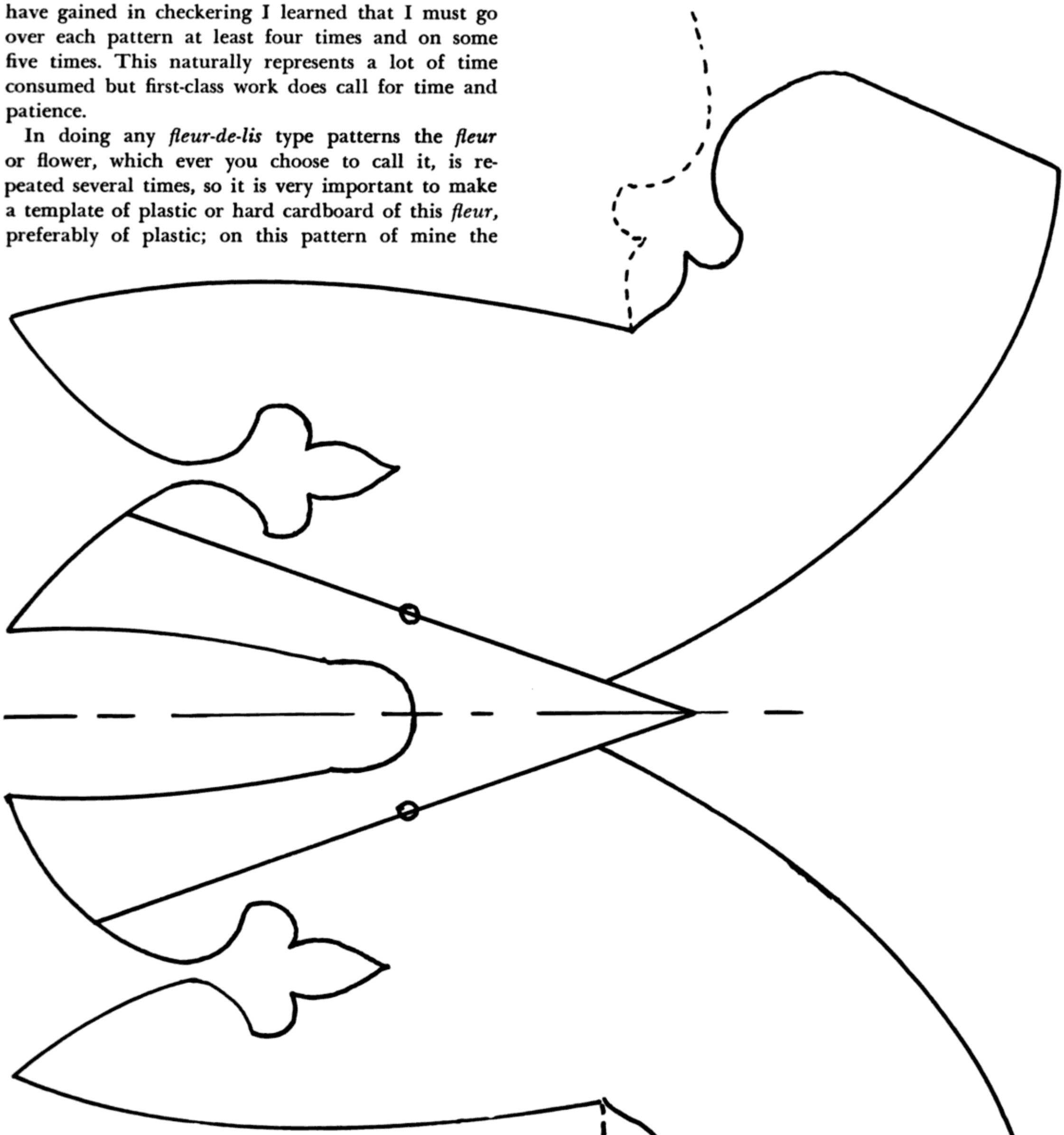
The forearm pattern is easier to lay out in nearly all cases, so we will start with the forearm of this *fleur-de-lis* with points and this is the exact method I use to get the pattern on the stock's forearm: I wrap a white piece of paper around the forearm to be checkered and mark along the sides of the stock. This gives me the exact area I need to lay out the pattern, both laterally and fore-and-aft, and I do just that on the prospective pattern paper, by laying the pattern out complete. I then transfer it to the stock to be checkered. I will not go into detail on actually doing the job, as this pattern is for those already experienced in layout and checkering. I will mention however that in the years of experience I





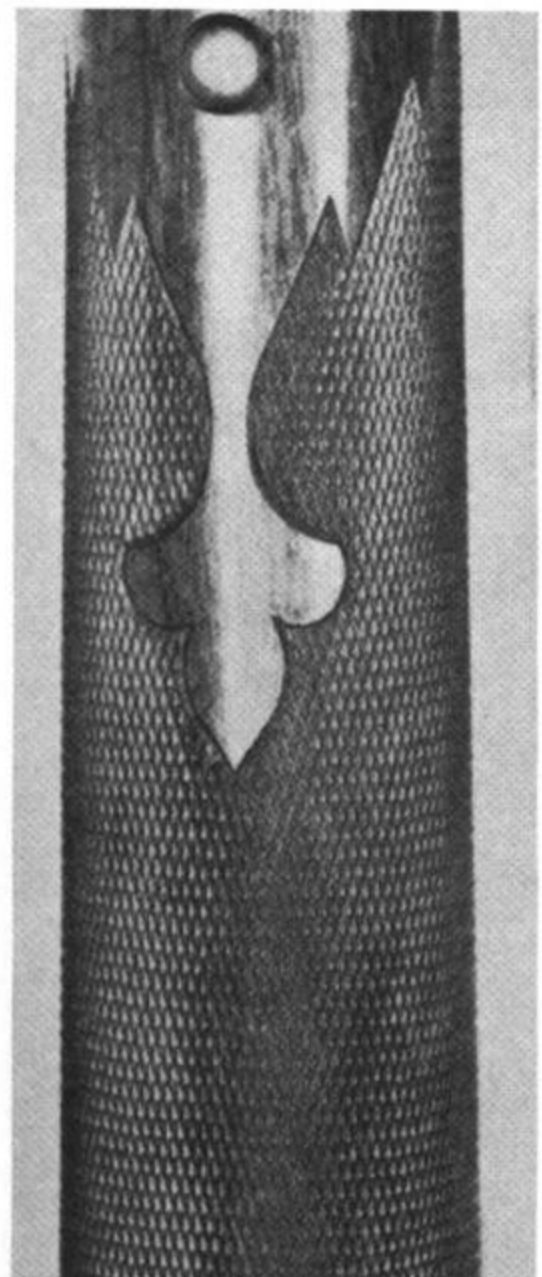
have gained in checkering I learned that I must go over each pattern at least four times and on some five times. This naturally represents a lot of time consumed but first-class work does call for time and patience.

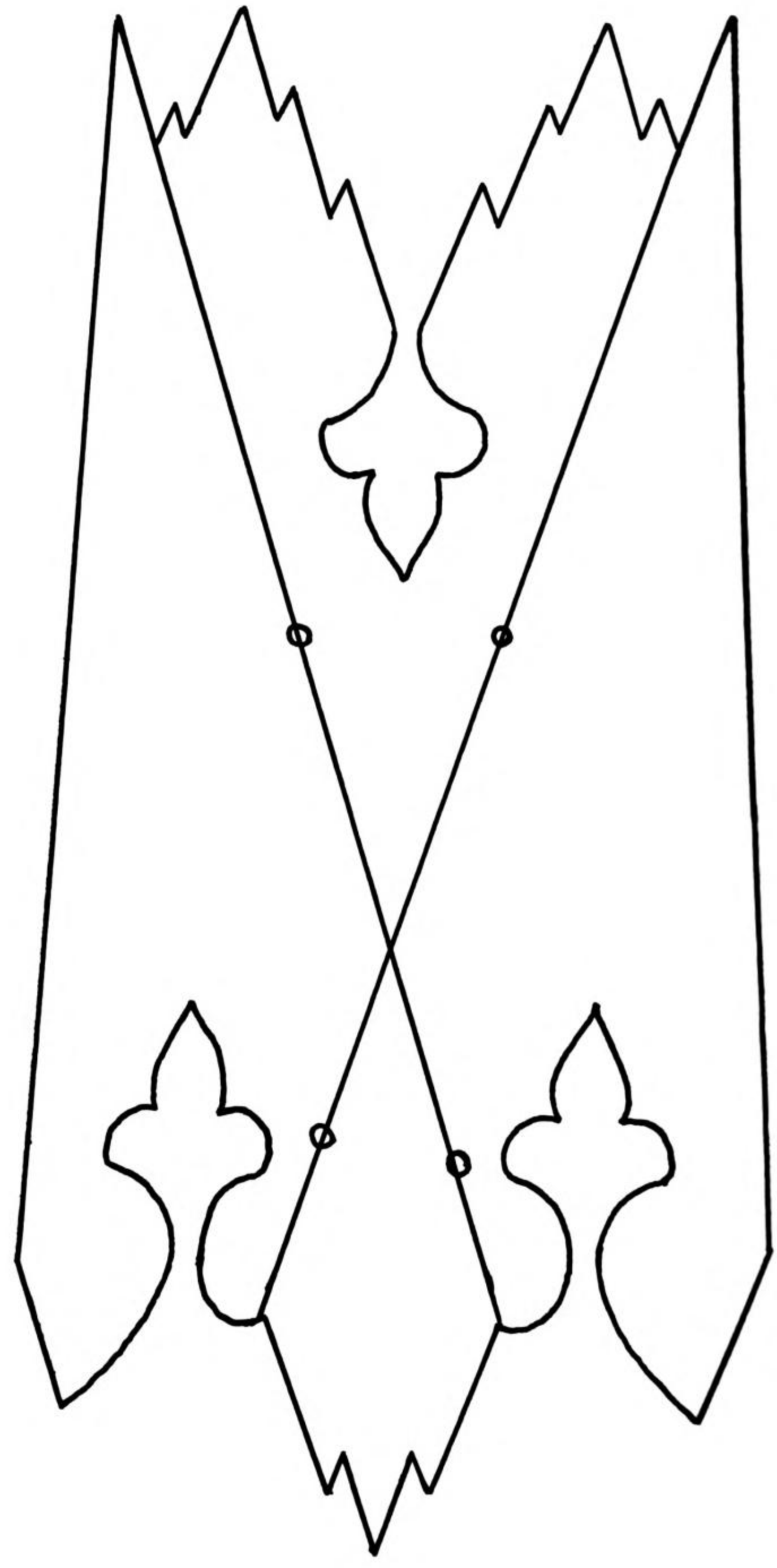
In doing any *fleur-de-lis* type patterns the *fleur* or flower, which ever you choose to call it, is repeated several times, so it is very important to make a template of plastic or hard cardboard of this *fleur,* preferably of plastic; on this pattern of mine the

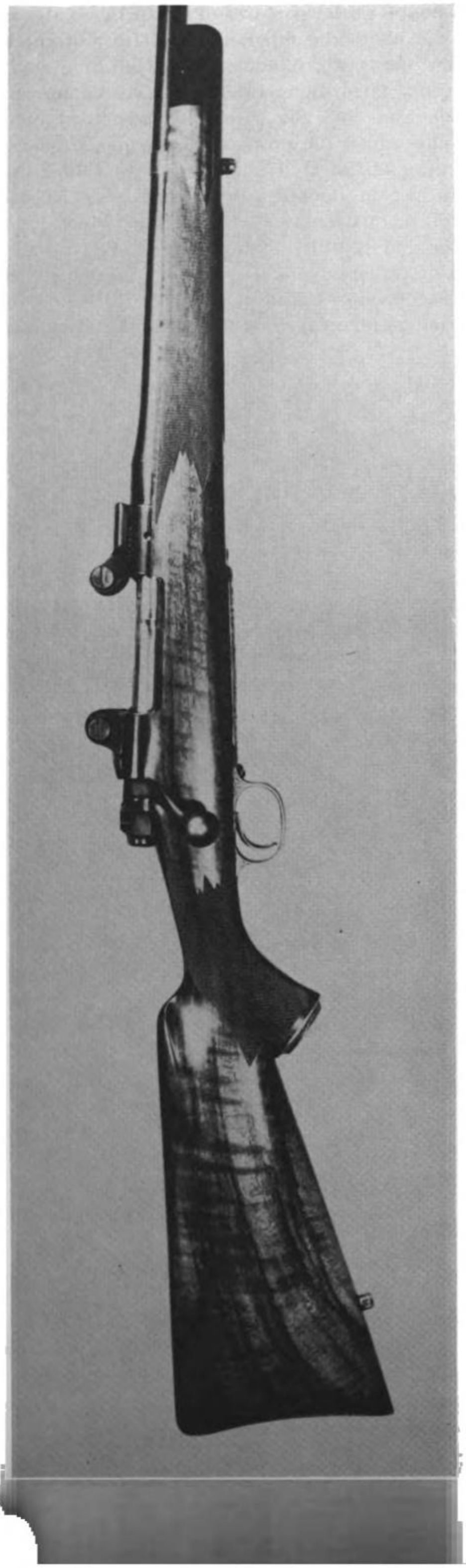


fleur appears six times, so for good conformity and uniformity they should be alike in size and proportions.

Since we cannot use our paper pattern on the grip area, I find the most important thing is to establish all the *fleurs* first, right on the stock with our plastic template. Here is where I give away one of my "secrets"—that *fleur* down under the grip is hell to lay out but this is how I do it; I take my plastic template and lay it on a piece of masking tape and







The Layout and Cutting of a 17-Point Checkering Pattern

By Dale W. Goens

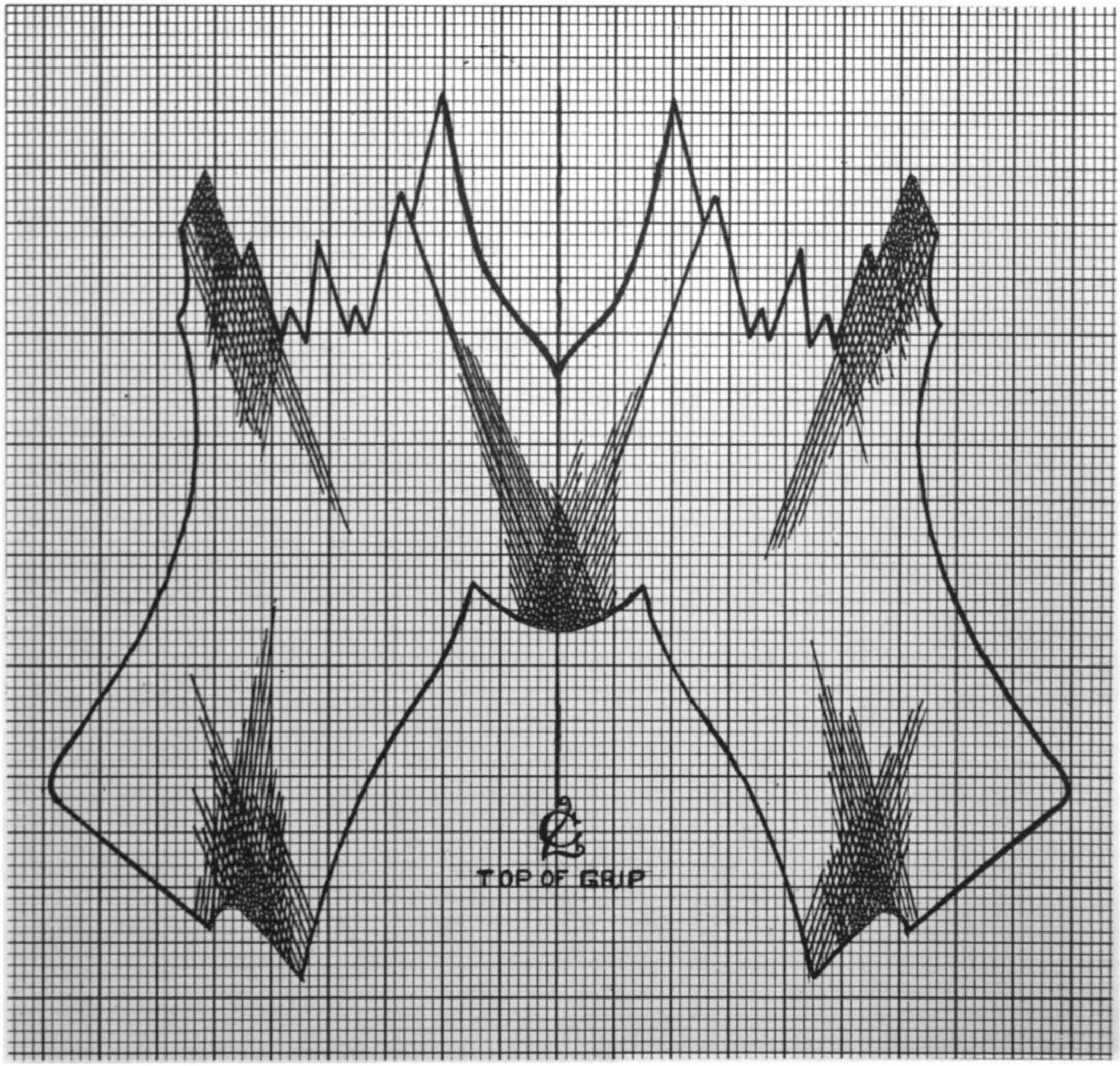
I feel I should give a note of warning in attempting a checkering job of this type as I believe it should be done only by the advanced amateur or professional; it's like the dog that sat on the sandpaper, "ruff" and I wouldn't kid you otherwise. I'm sure you will feel as I do that I have a good reason to call this a 17-point pattern and, combined with 26 line checkering, it makes for a very technical layout and the most careful of checkering.

This pattern may seem out of place back here amongst all the carving patterns but I asked Samworth's permission to include this one for several reasons. First; for all you conservatives caught looking through this book (you know, the old-school variety). Secondly; to help those fellows who may be having trouble with getting their points to come out symmetrical. Finally out of pure cussedness on my part, to show that I'm capable of doing stocks in the so-called classic style.

If you will follow my instruction I'll show you how to lay out a symmetrical pattern that can be scrutinized from any angle and the pattern found to be right on the button. First; I insist that you get some graph paper, either with ⅛ or ¼ inch squares, as our master layout will be on this paper. The pattern I included here will be solely for reference purposes. Do not attempt to lift this pattern directly from my layout because, I can assure you, it will *not* fit your stock. What I *am* attempting to do is show how you can make your own layout. So, keeping that in mind, you must make a preliminary forearm pattern; by figuring roughly how long you want your pattern to be, and how wide by wrapping the paper tightly around the forearm of the stock, then marking down a border line below your stock inletting line.

A point must be made clear here. You should check your forearm to be sure that, if you had a center line down the bottom of the forearm, you have exactly the same amount of area each side of the centerline. To be frank, if you don't, your forearm is lopsided and you better get it straight before attempting such a difficult pattern.

After getting the width, and your center line established, transfer onto the actual graph paper and get your center line lined up on one of the graph lines. From here on you will need to make an accurate diamond template of the proper proportion you use.



I personally use a 37½° diamond, by 37½°, I mean the included angle of the small end of the diamond. You should, if at all possible, make up a diamond template of clear plastic and scribe a center line on it the long way. By using this template, line up your diamond center line on the centerline of your pattern, then lay in the two master checkering lines from the sides of your template. From here on you can lay out points, just about as you please, but there would actually be an advantage to using a many-pointed pattern such as I did and I shall explain the reason.

If you are laying your points out accurate and symmetrical you can make a many-pointed pattern easier to do. Let's assume you have your forearm pattern all complete; you should carefully wrap the pattern around the forearm of your stock and secure it with tape fore-and-after, then with a very fine scribe, punch through the pattern right on each one of the points, just enough to lightly mark your stock. Remove your pattern and, with flexible rule and scribe, lightly connect your points to form a complete pattern.

Now you must admit, if you have been careful, it has been easy up to now, but buddy, from now on you better take on an extra charge of patience. We are going to checker this stock and pick up every point we have laid out. I can hear some of you say it's impossible. Well, the picture is living proof that I did it and do so all the time. Come on now and I'll

show you how to pick up those points. Suppose we use a 26 line spacer and start out on one of our master lines; after spacing about four or five lines get down and sight along those lines. Straight? O.K. Now as we approach our first pickup point, while yet five or six lines away, start checking to see if we are parallel to our master layout points.

From here on you better start learning the trick of crowding your lines. To give you an illustration; Monty Kennedy in this book gives, on page 57, a good exaggerated illustration of what I mean. He is explaining about checkering over a Wundhammer swell and the involved problem of spacing, by widening or crowding your lines, to take care of the extra area on the swell. To further illustrate my point, if you were spacing on a perfectly flat surface or a perfect cylinder you would have no problem, but a gunstock forarm and grip have minor swells and slight curves and concave surfaces, so much that, whether you are aware of it or not, these will give you trouble in *fine* checkering on *large* areas.

Getting back to our problem at hand. We have the solution here in this master layout with the pick-up points established and, as I said a few words back, as you approach the pickup point you will, by virtue of a good layout, hit some of the points right on the nose but on some you will have to start *just barely* crowding your lines to meet these points you have already established. Don't get me wrong on the matter, because the amount necessary to crowd your lines is very very small, so small in fact that it's not even noticeable. I hope I have this point made clear. Many good checkers do what I just explained by instinct, or feel, or sixth sense, or whatever you might call it. Many will disagree with this method as it does seem sort of like it's backwards, but if you will follow my instructions the best expert in the world will find no fault with the completed job.

We haven't said much about the grip area, and the pattern of the grip area that I have included is for reference purposes only. By referring you to the pattern sheet, I can explain how to lay out this grip pattern. O.K., let's go. Look at the pattern sheet; notice the pattern center-line and the two master checkering lines. Establish these lines directly onto the stock and be sure to make each master checkering line exactly the same length, using a pair of dividers for this purpose. From these base points and by angular reference, using your diamond template, you can lay out all the points on each side of the grip. But the rest of the pattern will have to be laid out onto the stock free hand, then proceed to fill in all your checkering, paying attention to the tricks of the trade I have mentioned.

Some Ideas on Checkering Tools by Dale Goens

Samworth asked me to include information on any trick tools I use, so hang on and I shall try to explain with words and a sketch or two how to make one.

I have made many checkering tools of every conceivable type and design, but in recent years I find there are finally some good tools on the market. I will not attempt to list all the types, designs or brands, however I should give some dope on the type I use. I have personally quit making spacers as I find the tools made by Bill Brownell of South Bend, Indiana are really top quality. His tools have the added advantage of being able to space right or left, they will cut a-comin' and a-goin', and they will cut with speed without tearing out a few dozen diamonds.

There is one tool that I still make, and for the lack of a name for it I shall call it a "Line Finisher" as that is its primary use; when spacing checkering you don't finish out the lines clear up to the border with a spacing tool—the conventional method is to use the checkering "V" tool. I have always found fault with all ordinary "V" tools; besides being very time consuming the biggest complaint I have with ordinary "V" cutters is that when you come too close to the border you have to use too much force to bulldoze your tool all the way up to the border and, should you hit a grain structure that's just right, so-help-me no one has reflexes fast enough to keep from plowing across the border into strange territory, whereupon we turn the color of a red beet and get up and stomp around thoroughly teed off. Hence the advent of my newly named "Line Finisher." So, for those who might care to make one we will take up the subject right now.

There are a jillion types of tool steel on the market but for the sake of simplicity and availability we shall pick the common drill rod, besides we will have to heat treat this little jewel and you can do it with few requirements. Should you have the facilities and want to use a better steel, I recommend Carpenters

No. 11 Special, which is very good for engraving tools also.

For this job we shall use 3/16" drill rod that comes annealed and, of course, can be worked with ordinary files and such cutters you might find useful to do the job. I am going to assume that you have only hand tools to work with; in this respect you will need access to a vise, a heating torch, a few flat mill files, plus a set of small Swiss pattern files. Oh yes, you will need access to the Little Woman's oven too. But we will get to that a little later on.

Cut a piece of drill rod 3/16" diameter to a length of from 4" to 6", depending on how long you prefer the tool to be. Using my sketch for reference, heat and make two bends in the rod to the profile shape I show. Warning, do not attempt to bend the rod cold as the high carbon content tends to make the steel a little brittle.

After you are satisfied with the profile shape, then reheat the tool and flatten the prospective cutting end to a thickness of about 1/8". After each heating do not quench the tool, let it cool by itself, else the steel will become hard and you will not be able to work it with files.

When the tool has cooled sufficiently we are ready to shape it up and begin to fashion the cutting end. Please check my sketches for shaping hints. You can suit yourself as to the degree of the bottom of the cutter but it should be between 60° and 90°. The cutting teeth are not to be as deep as on a regular "V" Tool, so I always cut them in with a jeweler's saw then sharpen them with the needle files. We are not going to depend on this tool cutting with down pressure so much as cutting directly in front of the carving cutter. We can start our inside V cut with a three-cornered pattern file and file a V cut like the inside of a carving parting tool. If you are now satisfied with looks so far then check with my comments on "The Parting Tool" which follows for methods as to really getting the inside of the V good and sharp. As the cutting quality of the tool will depend on getting the inside V good and sharp. I personally do this little trick with an engraving tool.

You should also put a square taper on the shank of the tool so that when inserted into a file handle it will not turn on you.

We are now ready to heat treat our newly fashioned tool, so let's get on with the project. You will need a heating torch and a quench of water that is about 5% salt brine (for even hardening) and of course the Little Woman's oven, so we may as well light the oven first and set the regulator on 350°. With the heating torch going, grasp the shank of the tool with a pair of pliers and play the heat over the cutting end of the tool but be very careful not to put the heat directly on the sharp edges of the tool, as these sharp edges will collect heat first and get too hot and burn out the carbon, so you heat back a little and let the heat creep out to the end until it is a cherry red (1440° F), then quench immediately into the salt brine solution.

When cooled good try a file on the tool on the side, *not* on the cutting edge and if you have followed my instructions the tool should be glass hard. Now we must place the tool in the draw oven to remove the internal stresses and increase the toughness of the tool. Just place the tool in about the center of the oven going at 350° and bake it for one hour. After removing the tool and cooling you can proceed to clean up and stone the cutting edge lightly, and you are in business. As I mentioned before, I use the tool primarily to finish checkering lines to the border but it also does a beautiful job of cutting long curved border lines.

NOTES ON THE PARTING TOOL

I'm hoping to pass along some information on this particular carving tool that I had to learn the hard way. You wonder why I pick this tool to write about? I guess it's the most picked up, tried, cussed and laid-aside tool I know. Yet I know of no other tool that has so many possible uses for the gunstock carver and checker. With it you can cut most of your outline in carving patterns. Nearly all checkering patterns have a curved line that's just right for this tool. In what we call "point" patterns of checkering, there are short lines to be cut at the points that a properly shaped parting tool makes easy.

I know a lot of you are going to say that no matter how sharp you get this tool, it just will *not* cut, that it tears instead of cutting a clean line. O.K., I'll tell you what you do. You lay this book down right now and go get that parting tool. I can see some of you grinning already as you know what the trouble is with this tool. You have your parting tool in hand, now look closely inside the V down along the point, or business end. I bet there is a curve at the bottom of the V. Now, if you have a magnifying glass (or maybe you can see with your naked eye) look directly at the cutting end of the tool, head on. There, down where the inside curve meets the two sharpened outside edges, you have a small flat spot that is *not* sharp, (see figure "A") and cannot be made so by sharpening the *outside* edges of the tool.

O.K., there is your trouble, but what to do about it. First; we can correct the cutting possibilities of the tool by getting a knife edge, hard, Arkansas stone, and stoning *inside* the V towards the end. By stoning down just lightly, checking the point often, and even working a bit from the outside, you will eliminate that flat spot.

FIG. "A"

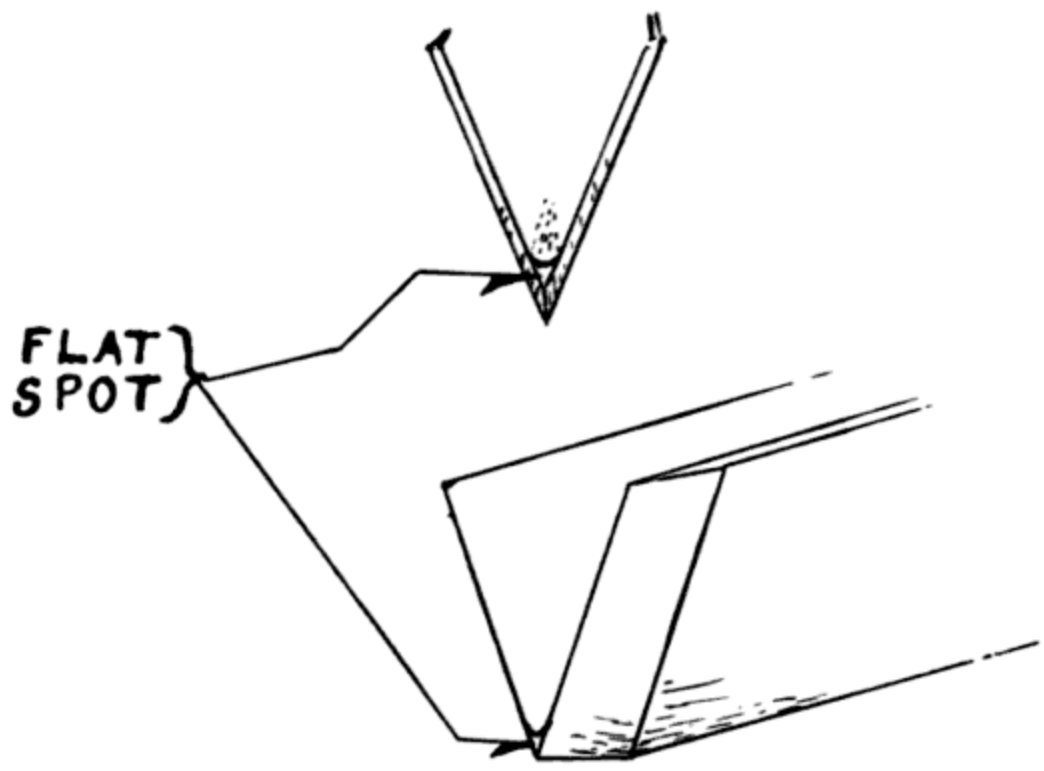


FIG. "B"

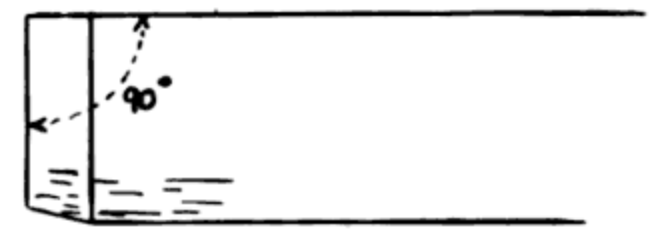


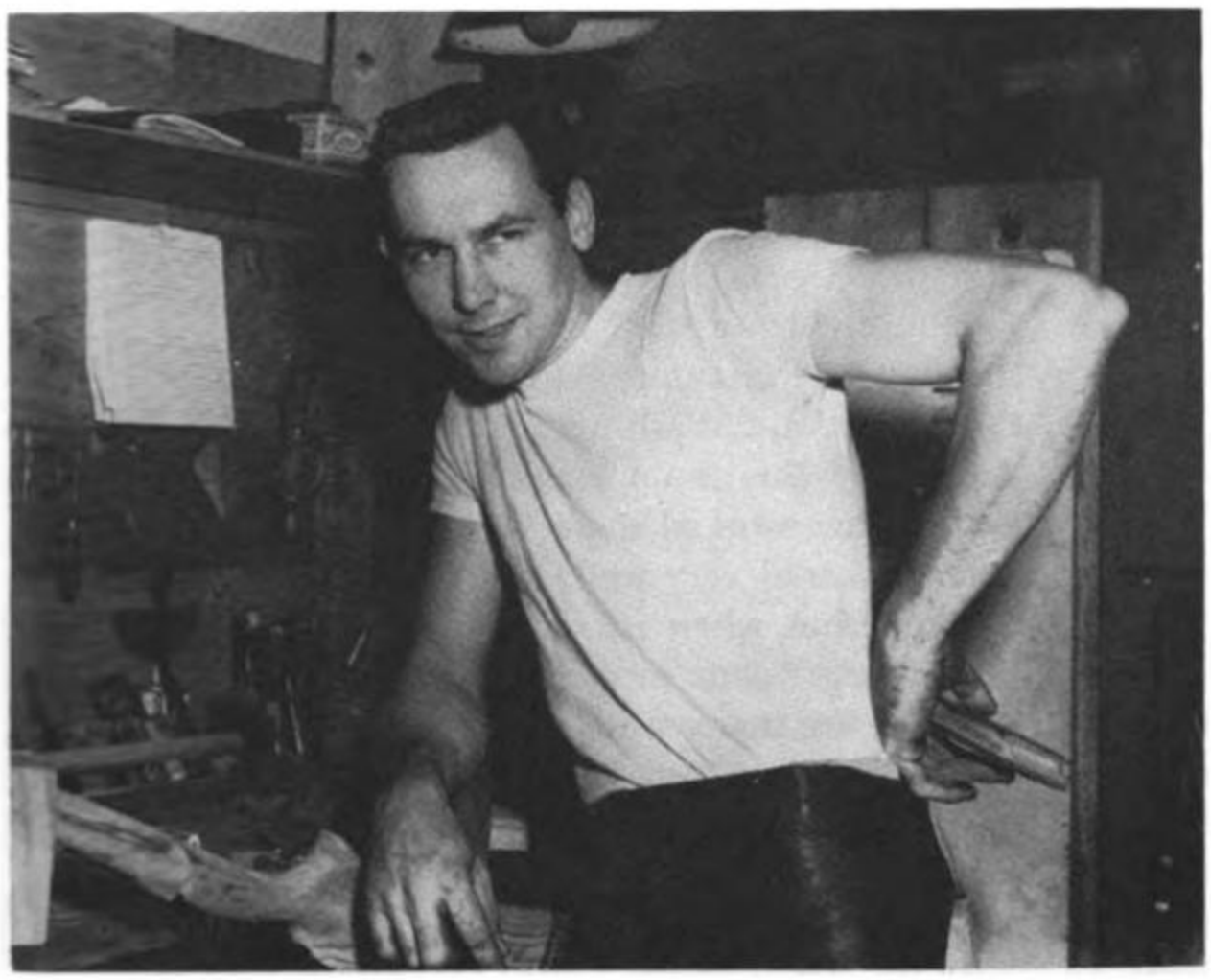
FIG. "C"

FIG. "D"

Another method is to take the tool to someone who does precision grinding and explain to them that you want the inside ground to a dead point which eliminates the radius in the bottom of the V; another method a little crude, but it works, is to use a 120 grit rubberbase mounted wheel, sharpened to a knife edge of the same angle as the inside of your V tool. You can, by being careful, use this wheel in a drill motor and grind the inside of the tool. Or, you can anneal your tool and take it to an engraver and he can hand-cut, with his graver, the inside of the tool; this, of course, involves rehardening. I have done this last method as I do engraving and have made many parting tools. If you will just use a little patience and are careful you will now begin to have a lot of respect for the parting tool.

Now just a word about profile shapers and their advantages and shortcomings. These are best explained by the sketch (see Figure "B"). Always sharpened 90° to the top surface, is your most practical shape. You notice I didn't say the best shape, as in (see Figure "C"). This sloping-back shape will cut good anyway of the grain and will cut well, even in fancy figured wood, as the principle here is that it compresses the wood as it cuts like a shear. The only bad feature of this shape is that it's hard to bring it to a halt at the end of a line *exactly* where you want it, as the sloping back hides the cutting edge. In Figure "D" this sloping-forward might work in some places, if razor sharp, but will always give trouble going with the grain and in figured wood, as the prying action tends to rip or splinter the wood in front of the tool.

Well fellows, I just gave away most of my pet secrets but I sure hope it will be of help to you and, like I said, *keep those tools sharp*.



Some Work From Jerry Fisher

In 1956, when it became evident that I was going to need help, due to my association with the Wholesale Sporting Goods firm, I wrote to Kenny Aikin at the Denver School of Gunsmithing. I asked him if he had a student that he could recommend for stockmaking. He replied that he had two, one graduating in November (as I recall) and one in the Spring. Knowing neither one, I contacted the first one graduating, who turned out to be Jerry Fisher. If I had screened a hundred prospects I could not have come up with a more satisfactory result than Jerry turned out to be. Young, good personality, good knowledge of the work, natural ability, a stickler for detail, and quick to learn, all of which added up to the ideal, so far as I was concerned.

Jerry never worked *for* me. He did work for me on his own time and all of his work went out under his own name. He is now in Golden, Colorado, has his own shop and is turning out work of well above average quality. Here again, I am proud to have been associated with this fine stockmaker.

MONTY KENNEDY

They say experience is the best teacher and in checkering this surely must be the absolute truth. For some people, checkering may come easy but for me it was quite a struggle to gain speed and control at the same time. The methods I use are quite conventional. I don't think there is anything very secret about checkering.

The first and most important thing is a device designed to hold the work rigid at all times while checkering. My cradle is more or less a copy of Monty Kennedy's sit-me-down rig which is really nice as it takes the weight off the number 12's. As of late, however, for laying out I've been putting the cradle in the bench vise until all layout lines and border are on and then back in the sit-me-down rig to finish up. It seems like going about it in this manner has given me better control and a lot straighter lines. Speaking of straighter lines, Monty Kennedy threw me a tip that really helps out here. By penciling lines about ¼" apart parallel to the master lines you can eyeball these as you scratch along and any deviation can be immediately detected and corrected. A mistake is no longer a mistake if it has been corrected.

Good checkering to my way of thinking should be fairly fine, from 22 to 26 lines per inch. Each diamond should be the same as the last one, all lines should be straight and drawn to an even depth. There has been some good checkering done to a double line border, however, I feel in a lot of cases the double line border is used to cover up nasty runovers. Yet Tom Shelhamer uses the double line border at times and does nothing but *very* fine work and I'm sure will continue to do so.

Bob Owen the old master from Port Clinton, Ohio, used the double line border quite a bit. Here is another man who, I'm sure, did not use this border to cover up mistakes. It was recently brought to my attention that Mr. Owen has passed away. His remains were cremated and returned to his home in England.

To me, the single line border looks the best, so consequently this is the one that falls in on most of my work. It goes without saying that runovers are strictly taboo on a well executed checkering job. One of the best ways I've found to prevent runovers is to use a tool that cuts on the pull instead of the push. The Dembart V tool is excellent for this as the cutting head can be reversed and it can be used either way. The advantage in this is that you can walk up to the border, stop, pull the tool away from

the work and still have it cut. The control is much better this way and it will eliminate any runovers, with me at least.

Good lighting is very important in checkering. Without good light, it is doubtful whether or not anyone could do first-class work. I prefer to work in a room with all the natural light shut out. A goose-neck lamp with a 75-watt bulb seems to work pretty well as it can be maneuvered around to bring the checkering into shadow or relief. The light should be so mounted that it can be swung out of the way or into the proper position at will. Above all, avoid natural sunlight as the sun is constantly moving and will never give you the same consistent light.

As for checkering tools, the Dembart Company in Tacoma, Washington, seems to fill the bill pretty well. I have made quite a number of my tools and will make more in the future, however, when it comes to spacing tools and V plows, for my money Dembart has the edge. The handles may be used over and over again and the cutters are always good for at least one job and sometimes more.

It seems like false economy to me to spend a lot of precious time making checkering tools when six-bits will replace a Dembart cutter. True, there are tools that you will have to make but there are not too many of these. One tool that I make is for skip-line spacing. This tool can be made from a 3/16" diameter drill rod. I like to use 24 lines-per-inch spacing for this with a 14 lines-per-inch skip spacer. Another tool that comes in mighty handy is a jointer, also made from 3/16" diameter drill rod. The head on this tool should be made fairly long, 5/8" is about right. Teeth can be cut in this tool with the aid of a 28 lines-per-inch metal checkering file. With this tool a great many things can be done. You can straighten wavy lines in short order, plow out long border lines and for laying out master lines it is almost indispensable.

All tools should be kept sharp at *all* times. I believe it goes without saying, however, there often seems to be an exception to the rule. I, for one, used to be guilty of trying to make a set of Dembart cutters last thru three or four jobs. They just won't do it, believe me.

The wood that we checker is a pretty important item. Some woods just weren't made to be checkered. The best of all, for my money is good hard French walnut. Don't get me wrong, not all French walnut takes good checkering. Some French wood runs pretty soft and is open-grained, however, blank for blank, it seems to work out pretty well. Good hard American walnut also checkers very well. The best American I've seen was grown in Oregon, but some of the other states produce some fine wood, Pennsylvania in particular.

Some maple works up into a nice stock and checkers nicely. The best maple stock blanks come from Wisconsin; rock maple they call it. This wood might be either tiger stripe in figure or birdseye, same tree I believe. At any rate it checkers cleanly and leaves sharp, shiny diamonds. The western woods grown in Oregon and Washington leave a lot to be desired as some of this wood seems to run pretty soft. However, I have worked some Western that was real hard and checkered very well. I guess that I'm a little bit cantankerous when it comes to maple, as the darker contrasting woods seem to catch my eye a lot better.

There are many woods that will work into a stock, however, I'm a firm believer in the tried and true. A custom stocked rifle or shotgun is a lifetime possession and therefore should be done up in the best of taste and the best wood available.

As for the patterns I use, I'm afraid that they are not too original but there are so many good old standby patterns for checkering that far be it from me to try and invent something new and original. Good point checkering can be varied in many ways, some very good and some sort of lousy. Good checkering has to be laid out with definite symmetry according to the lines of the stock to be checkered. Very often a small symmetrical pattern by far outclasses one greater in size and ornateness.

For the first timer in checkering it seems like it would be best to start with a small conservative pattern before going into the more complex designs. This should be done on an old stock of no value and never to be put into service. Whatever pattern one uses, it should be applied with the utmost patience and exactness. If there be curved lines, make them curve evenly without any breaks in symmetry and keep them at an even depth all the way through. I like to score my border lines to about half-depth to start with and when the checkering job is finished, go around them again and bring them to full depth.

Never think about time when checkering, the job will take so long to do, so use the necessary time that it takes to make the job complete.

The checkering patterns that I show here are but variations of many designs to precede them. All checkering designs are pliable and may be maneuvered around to fit almost any job.

Pattern No. 1 shows the tried and true classic point checkering design with the wrap-around forend panel. This pattern is by far my favorite and I never seem to tire of it. The grip panel, with the exception of a few alterations, is the same as used by many gunstockers way before my time.

A Large-Caliber, Heavy Rifle For Dangerous Game

by Jerry Fisher

A custom built .458 Winchester. The deep well magazine of my own design will hold four rounds. With one cartridge in the chamber, this makes a five shot magazine rifle. I couldn't say from experience, but from what some of the African big game hunters tell, five rounds is none too many when you're looking a wounded Cape Buffalo in the puss at close range.

The magazine is made by silver-soldering a 3/16" extension on top of the conventional Mauser magazine box. After this has been accomplished, you can hack-saw the trigger guard off just flush with the rear portion of the magazine box. Then lower the trigger guard 3/16th of an inch, clamp and block in place preparatory to welding. The welding can be done with an acetylene torch and #2 tip. The hinged floor plate is a copy of the old commercial Mauser type and presents no great problem. All in all this makes a very nice magazine arrangement.

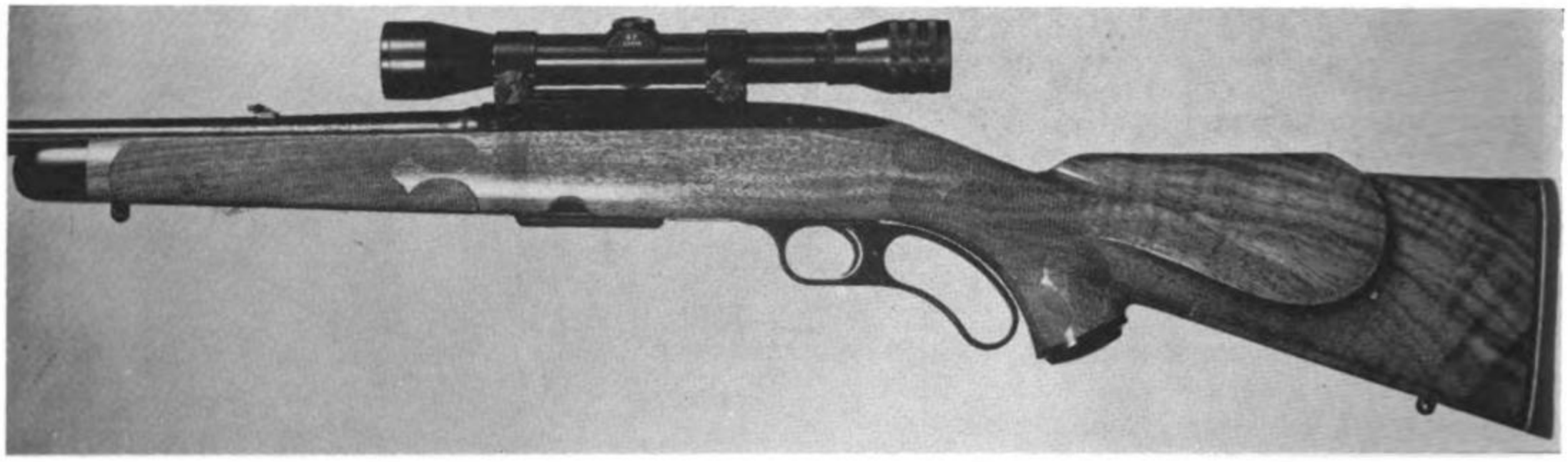
Notice that the bolt handle comes fairly straight down ahead of the trigger, which is set way back in the rear of the trigger guard. This, friends, is to prevent recoil from driving the bolt handle into the big knuckle of your trigger finger.

The front sling swivel on this job is set out on the barrel *a la* John Bull. This leaves the hand on the forearm free of any obstruction which might impair quick handling. Many people prefer the sling set out on the barrel as this is, because when carrying the rifle in the sling position the barrel is a good six inches lower, and if you are tramping through thick underbrush this is a decided advantage.

You will also notice the long, slim wrist or grip section on this rifle. This design is favored by a good number of people who want a real fast-handling brush rifle. The long grip also frees the hand in recoil and will prevent a good many skinned knuckles when the trigger guard and bolt come bouncing back.

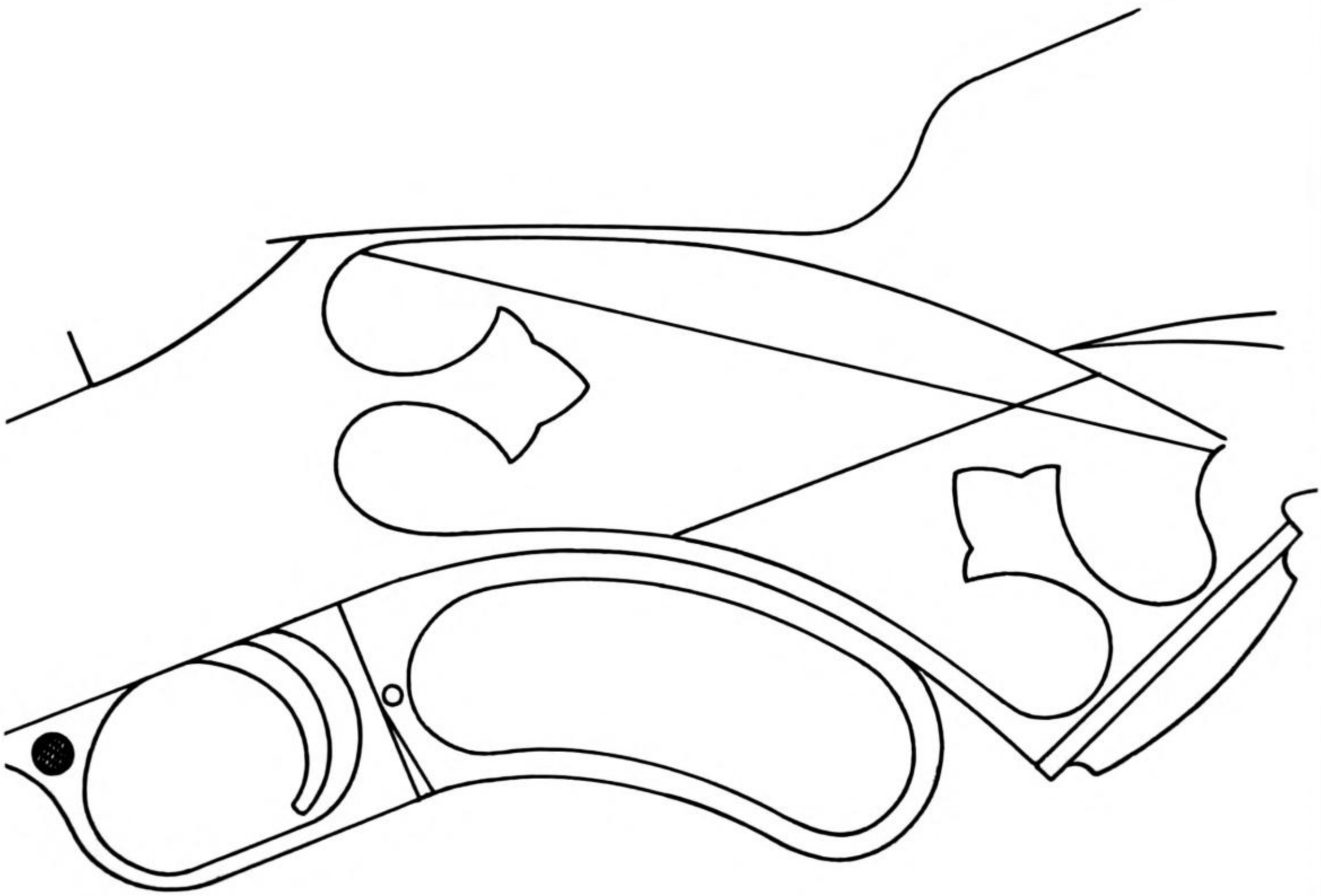
This particular rifle weighs in at ten pounds. In order to handle a rifle of this caliber effectively, the weight should be kept up to at least ten pounds and a little more wouldn't hurt it a bit.

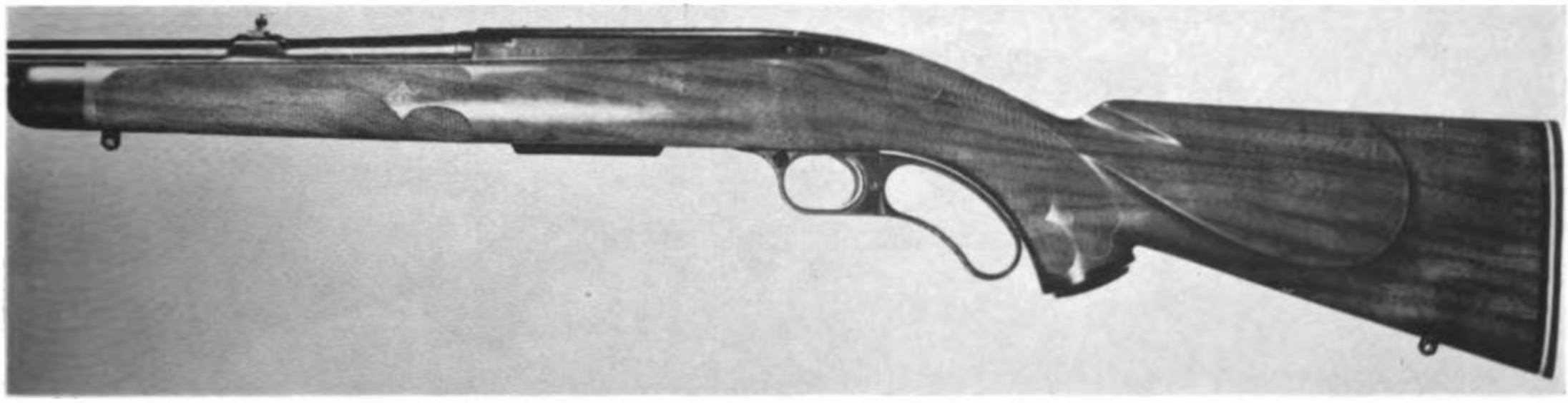
I have stocked this rifle in a very hard and beautiful piece of French walnut, supplied to me by Howard Clark, 414 Main Street, Stevens Point, Wisconsin. The checkering on this stock runs 24 line per inch and follows the traditional fleur-de-lis motif. On the grip section the checkering appears to run over the top of the wrist, actually it is split with a dividing line. I don't think this makes it much easier to execute, it's just another way of doing it.



A Pair of Lever Action Jobs
by Jerry Fisher

A Model 88 Winchester .243 caliber stocked for Lewis L. Mackey of Port Clinton, Ohio. This job is done in a nicely figured piece of French walnut obtained from Howard Clark in Stevens Point, Wisconsin. The forend tip and grip cap are fashioned from African ebony. The checkering on this stock follows a fleur-de-lis motif, submitted by Mr. Mackey to me. The spacing is 22 lines per inch.

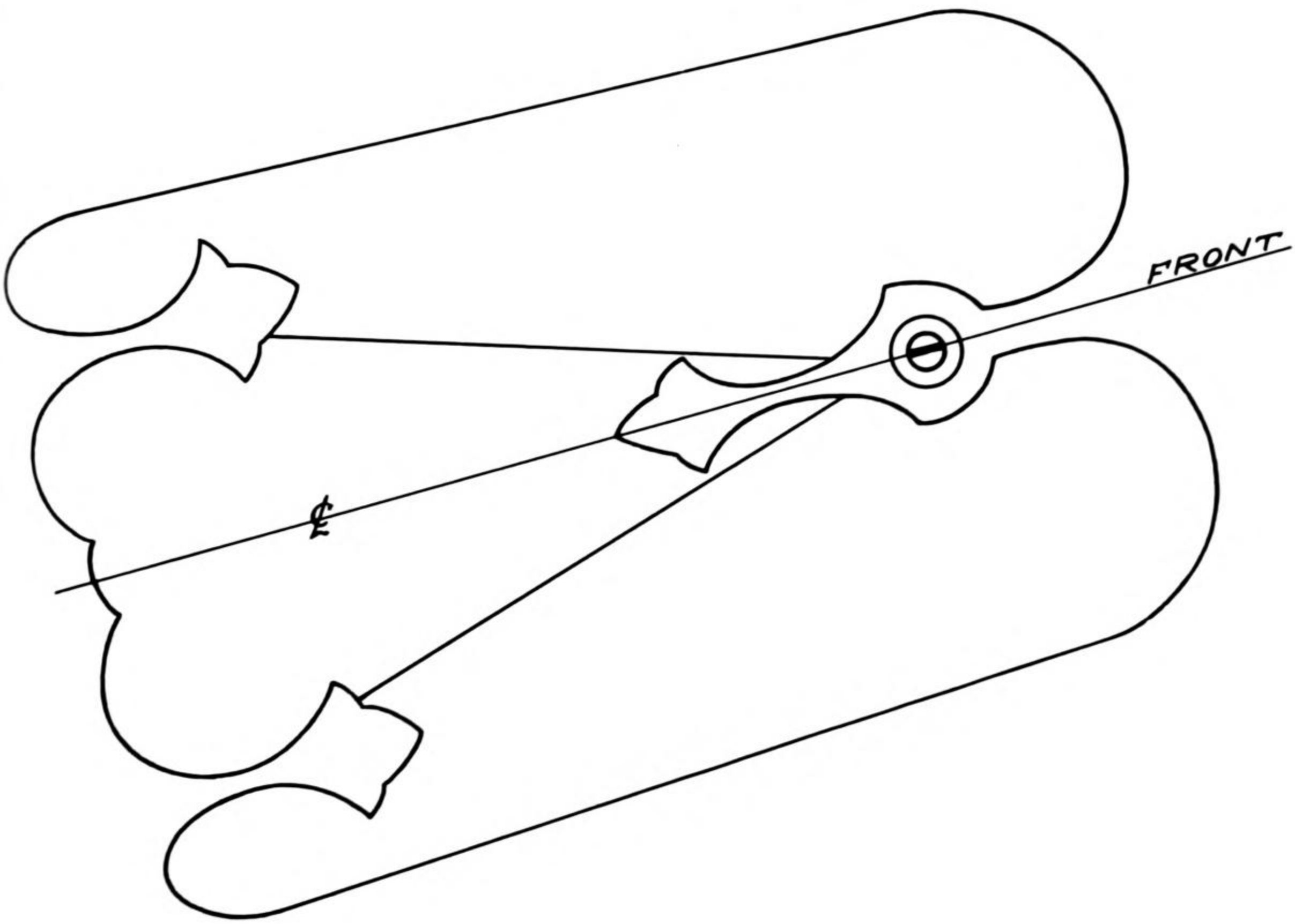




Another one of Lewis L. Mackey's M/88's. I stocked this one in a very exceptional piece of Oregon walnut from Roy Schaefer of Eugene, Oregon. This job has been rebarreled by Bliss Titus of Heber City, Utah.

The caliber of this rifle is .270 on a necked down .308 case. According to Mr. Mackey it is very accurate. Although I don't have any data on this particular wildcat, I imagine the ballistics would be very good.

The checkering on this rifle follows the lines of the .243 very closely except for the nich in the cheekpiece. It would be impossible for a camera to pick up the color of this beautiful piece of wood on black and white film. I believe Oregon has produced some of the finest American walnut I have ever seen.



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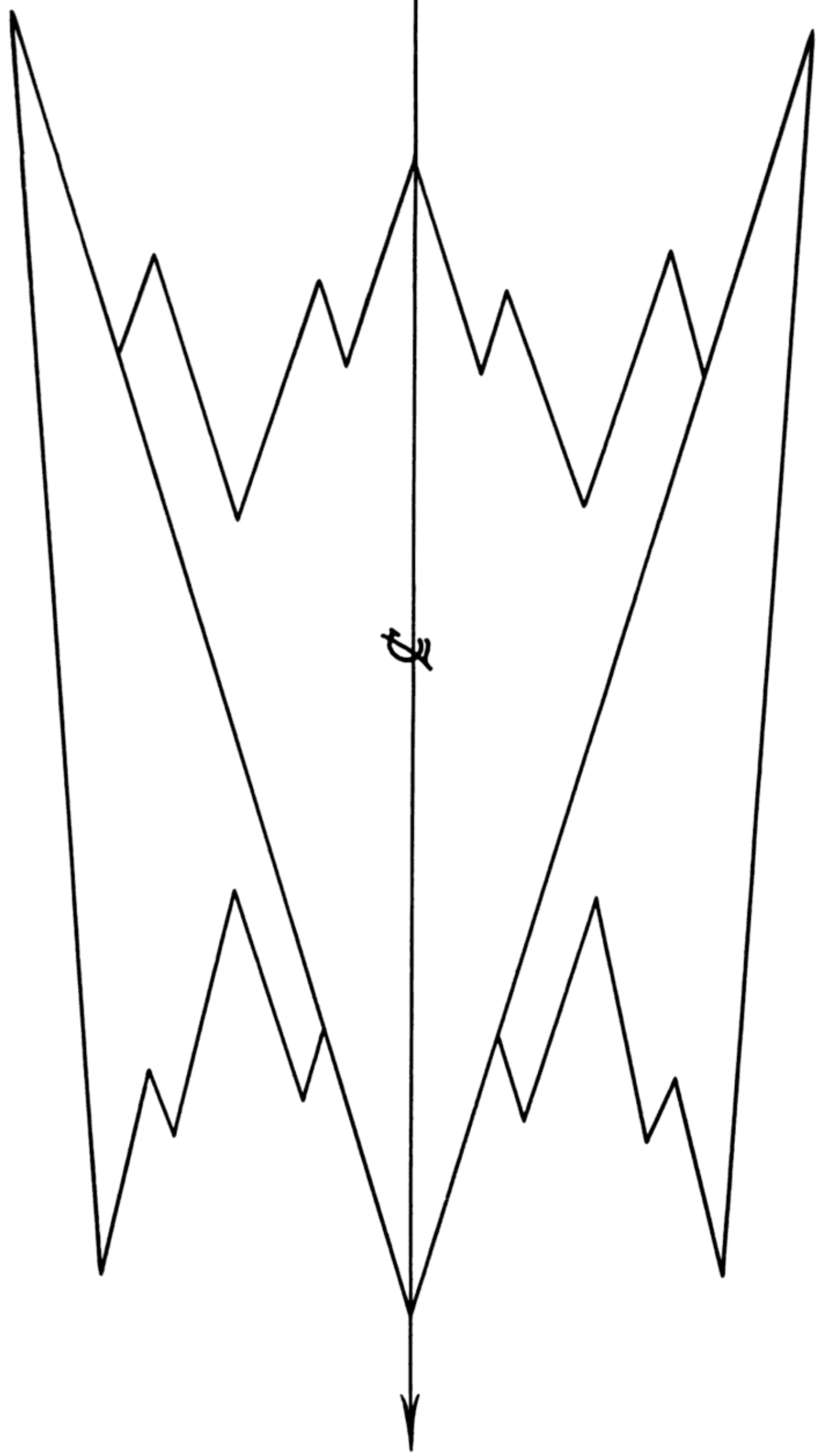


What
Jerry Fisher
Uses
for His Own Hunting

My own .350 Apex Magnum stocked in a very hard piece of New Zealand walnut. Although it's a little heavy for a mountain rifle, 8¾ pounds complete with sling and three rounds of ammo, I like to carry this rifle in the Colorado Rockies for sheep and mule deer. Its trajectory is fairly flat up to 300 yards with the 250 grain bullet. For going into the thick black timber after elk, it's just about the greatest thing since corn flakes. The wind doesn't affect the big bullet too much in the high country, brush and small limbs don't bother it in the timber. One man's idea of the all around big game rifle.

The checkering on this job is done in a fairly common type of a three panel point design, the forearm panel is split with a dividing line through the center of the panel on the bottom. This simplifies the checkering a bit as the master lines don't have to go clear around the stock. The wrist panels are laid out with the aid of a French curve and a plastic 3½ to 1 diamond.

A Pair of Jobs

by Jerry Fisher—Golden, Colorado

A Model 70 Winchester .257 Roberts. This job I have stocked with a very nice slab cut of French walnut from Howard Clark. The checkering is spaced 24 lines per inch and runs clear around the forearm and over the top of the grip. The pattern itself is just another treatment of the many-times-used fleur-de-lis adjustment.

The steel pistol grip cap and buttplate are supplied by Al Biesen of Spokane, Washington. The Lyman Alaskan scope is mounted in one of Harry Tilden's super-solid mounts.

This little M/70 I have worked over for Carl Kamper of Littleton, Colorado. Carl is one of the most avid Bighorn Sheep hunters I know of, having collected several fine full curl trophy rams, and in Colorado sheep country that takes a lot of hunting.

This picture shows a .358 Winchester built on a shortened 98 Mauser action. The action was shortened one-half inch by John Fullington, formerly of Burbank, California. The workmanship on this action job is very good as it's almost impossible to tell that it has been welded. The bolt handle is my own work, done from a commercial Rex knob. The stock was made from one of Carl Peterson's excellent machine cut patterns. Carl is located at 11106 Roscoe Blvd., Sun Valley, California.

The original design on this particular style of stock falls to Monty Kennedy. The wood is nicely figured California English Walnut, fitted with a carved grip cap and serrated buffalo horn butt plate. The checkering is done in the fleur-de-lis motif, 22 lines per inch.

Four Patterns Designed by B. D. Mileham

PATTERN NO. 1

This pattern could be done in shallow relief, if you prefer, but personally I prefer it flush with the surface of the stock, then if a look of depth is desired, make an extra pass or two with the checkering tool bringing it below the surrounding area. This method also provides some protection for the checkering.

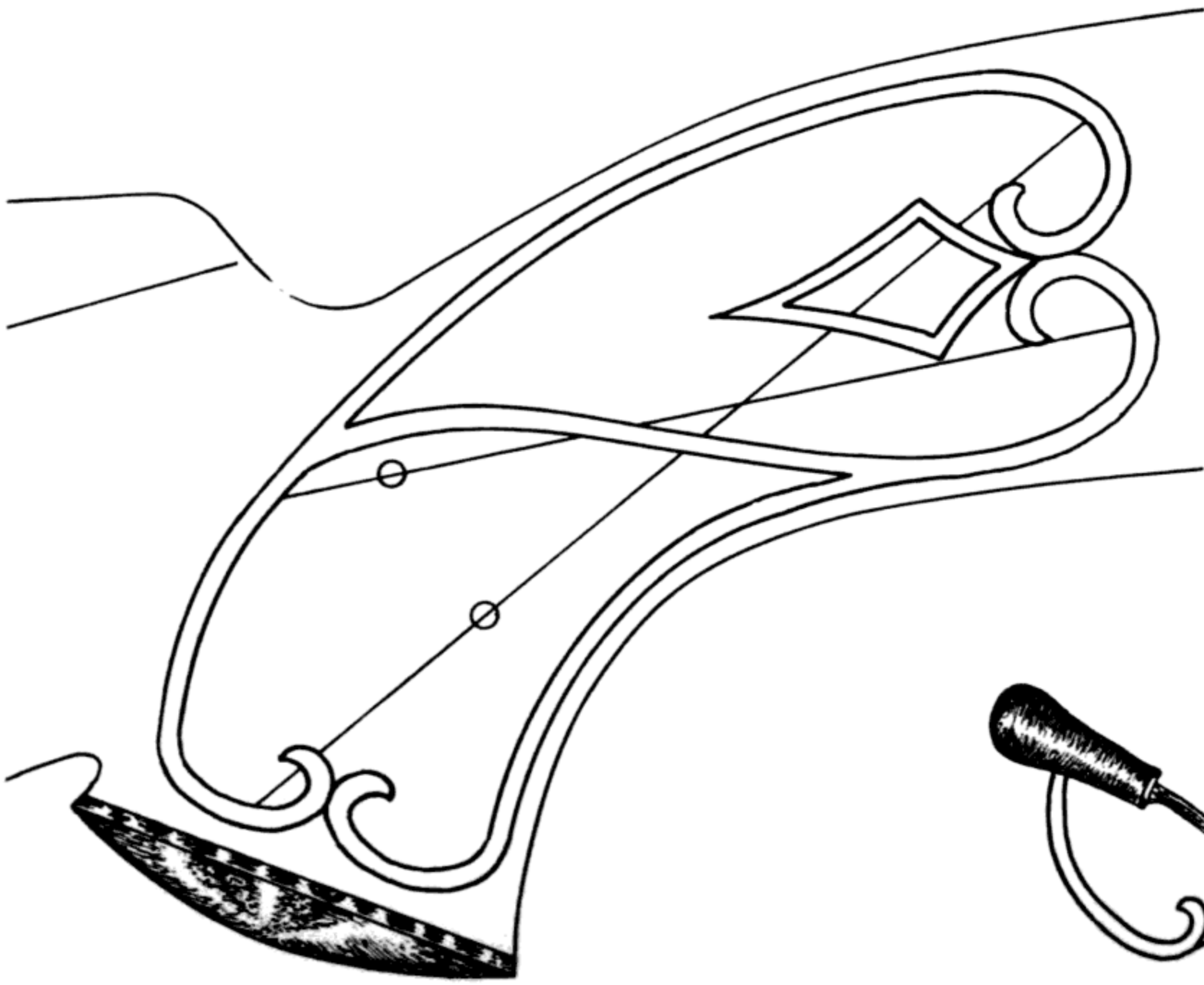
In that practically all carving patterns are composed of curved outlines, they can be laid out on the bare wood making corrections possible, before the outlines are actually cut.

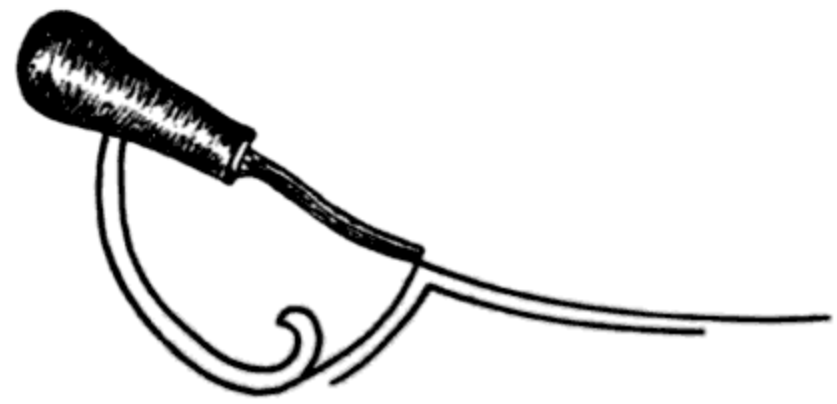
In a pattern such as this where the pattern runs under forearm I believe it better to trace off only one-half of pattern, position this on the center line and fasten down lower edges with masking tape, slide carbon paper under pattern, fasten top edges same way and trace. When this half is completed, merely switch pattern to other side of stock and repeat procedure. In this way you have a complete patte on which both sides are identical.

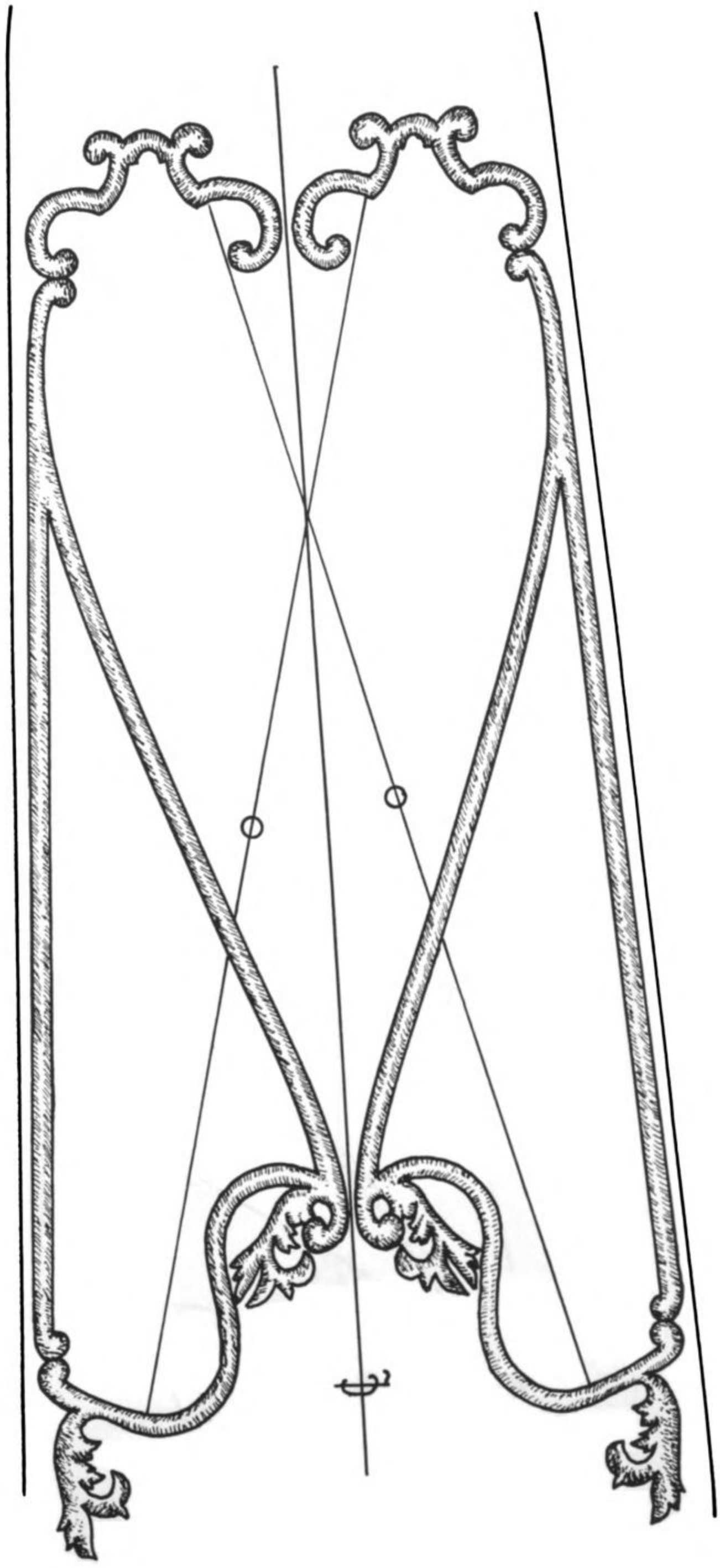
Which, incidentally, brings up a point; on a pattern where one line parallels another, accept no one's measurements but your own.

To assure that all lines are the same width I believe it best to cut the outside line first then, using dividers that lock, set them to the desired width and, running one leg in the groove cut, with the other leg make a mark parallel to this cut. When these lines are to your satisfaction go over them lightly with a knife followed also lightly by a veining tool.

Bring lines down to not more than half depth of what the checkering will be when completed. Finish stock, checker and bring outline down to final depth which should obliterate (we hope) any nicks that may have been in the outline.







The No. 4

Mileham Pattern

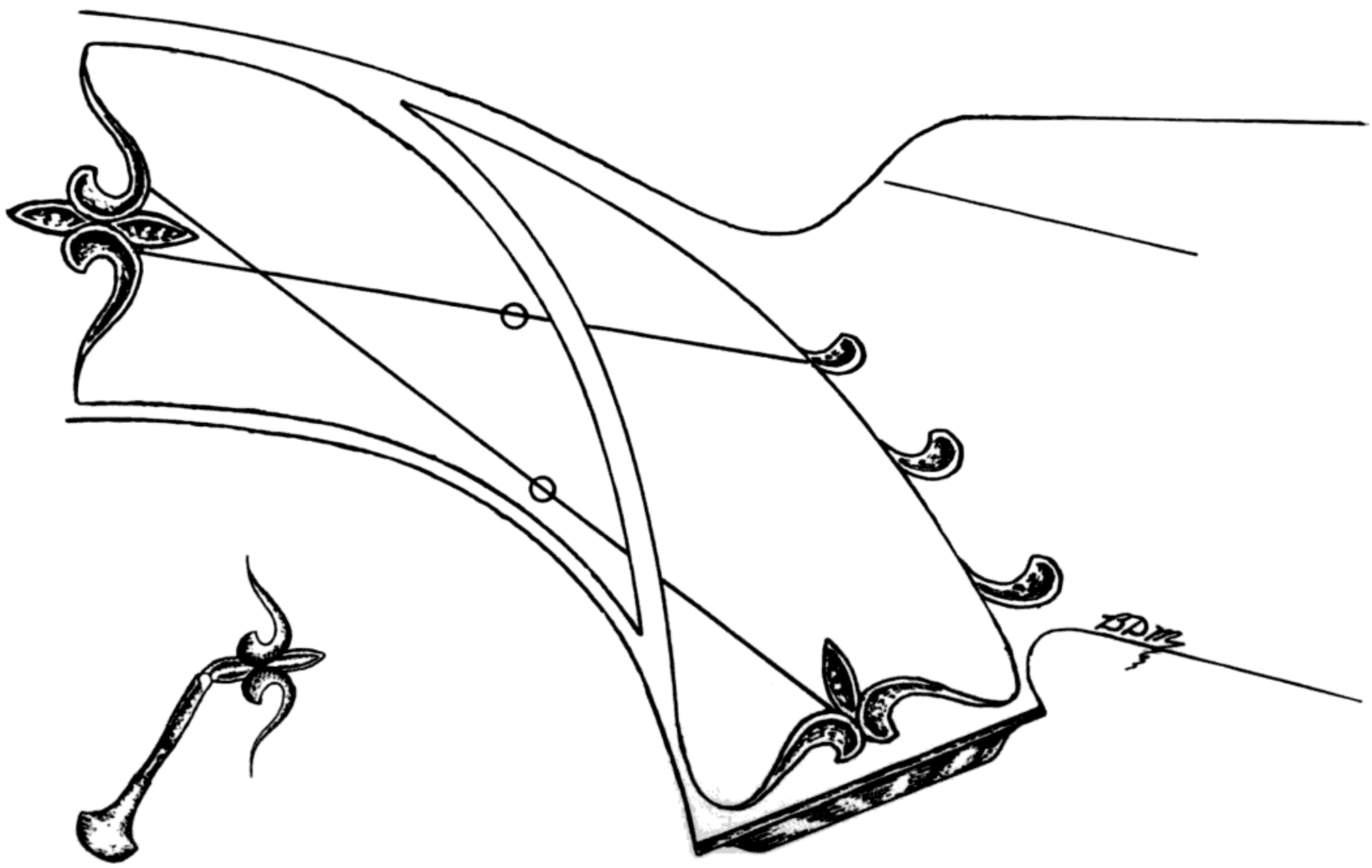
This pattern should be flush with stock. Lay out entire pattern, cut around pattern with knife and follow with veining tool.

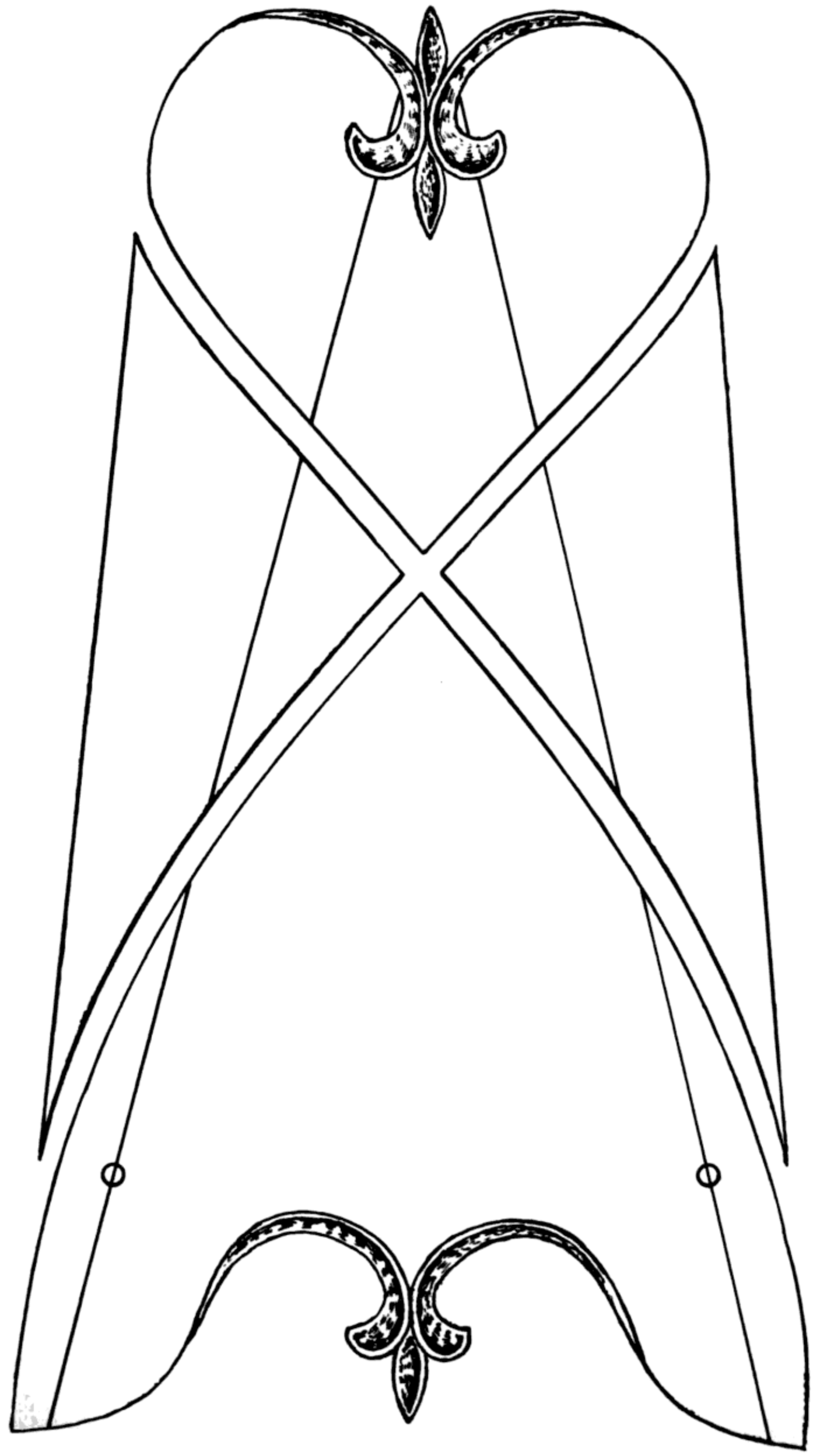
On carving patterns that are carved before stock is finished, as most of them are, you may feel an urge to bring the outlines that the checkering will not come in contact with, to full depth but keep them shallow; as you progress on the stock finishing the outlines will fill up with finish which will necessitate removal when stock is completed and you can bring them to full depth at this time.

This is an easy pattern to carve; round the sections shown as being rounded and scoop out the others enough to reflect the light but don't go too far and overdo it.

I have always used fine sandpaper to smooth the cuts on a carving pattern. I understand that some do not find this necessary, the gouge or chisel leaving a surface smooth enough for finish. If you can do this, more power to you, as for me I'm going to need more instructions on the proper way to sharpen a gouge before I can abandon the sandpaper.

As you will notice, this forearm pattern is a little larger than average, it was drawn this way because it can be used on large forearms as is, or easily reduced in size by trimming some off of the top edge.





Notes and Examples of the Butt-Stock Carving of Animal Subjects by Del McNemar

To the beginner this hand carving of gunstocks may seem extremely difficult, as a matter of fact it isn't easy; however it can be made easier if you have a little artistic talent, lots of patience, some serious practice, good eyes and tools. A good set of tools to start out with is the Millers Falls #107. These are not long-handled but ball-handle, palm tools. They may be purchased in any hardware store for about $7.00. The #107 tools are not the very best, but they will do until you learn what you want in a better tool.

This #107 set consists of five tools, a 3/8" bent chisel, 3/8" skew bevel chisel, 3/8" gouge, 3/32" U tool, 3/32" V veining tool.

In stock carving keeping your tools razor sharp is an absolute must. When sharpening, do not grind the edge down too much at a time. After you get the razor-edge on the new tools, touch them up *often,* very lightly, on your fine stone.

At this point, let's talk about wood. By far the easiest piece of wood you can work with is straight-edge-grain walnut. This is an average production gun grade, nothing fancy. For the beginner starting out on a tiger tail, fiddle back or a crotch grain is asking for trouble. I say this because the fancy grades I mentioned may split out in making your cuts, because their grain runs in all directions. Do some work on the straight-edge-grain wood before tackling a fancy job. When you do decide to carve a fancy-grained stock, take lots of care not to work against the grain. When you find yourself doing so, turn the stock in the opposite direction to make that particular cut. Keep in mind you cannot replace a bad split-out and if this happens you may have not only ruined your carving but also a valuable piece of wood. Now, assuming you have some *sharp* tools and a practice stock, we will begin a carving job.

Scrape all the old finish completely off the stock.

right down to the wood where you intend to lay out your pattern. If you are artistic in drawing your subject for carving, so much the better; just sketch your subject of the stock. If not, select a picture of your intended carving, making sure the pattern is of proper size for a well-balanced layout.

Scotch tape the pattern, with carbon paper underneath, to the place where you scraped the finish off. Go over the pattern with a 3H pencil, transferring the subject onto the wood. After the transfer, cut out the lines about 1/16" deep with the V or veining tool. In many tight or hard-to-get-into places, you may use the tip of the skew bevel chisel. In this operation, you are merely parting the subject from the background. When cutting out the lines, try not to leave tool marks from the back side of the V tool on the carving. The use of the skew bevel chisel in critical places will eliminate this.

After you have parted the subject from the background, take the edge of the 3/8" gouge and cut the background away from around the whole subject up to the parting lines you just made. This must be done at least twice. Go over the lines again with the V tool, deepening them. Then deepen out the background. The idea is to have the subject high enough from the background to be able to give it the proper relief.

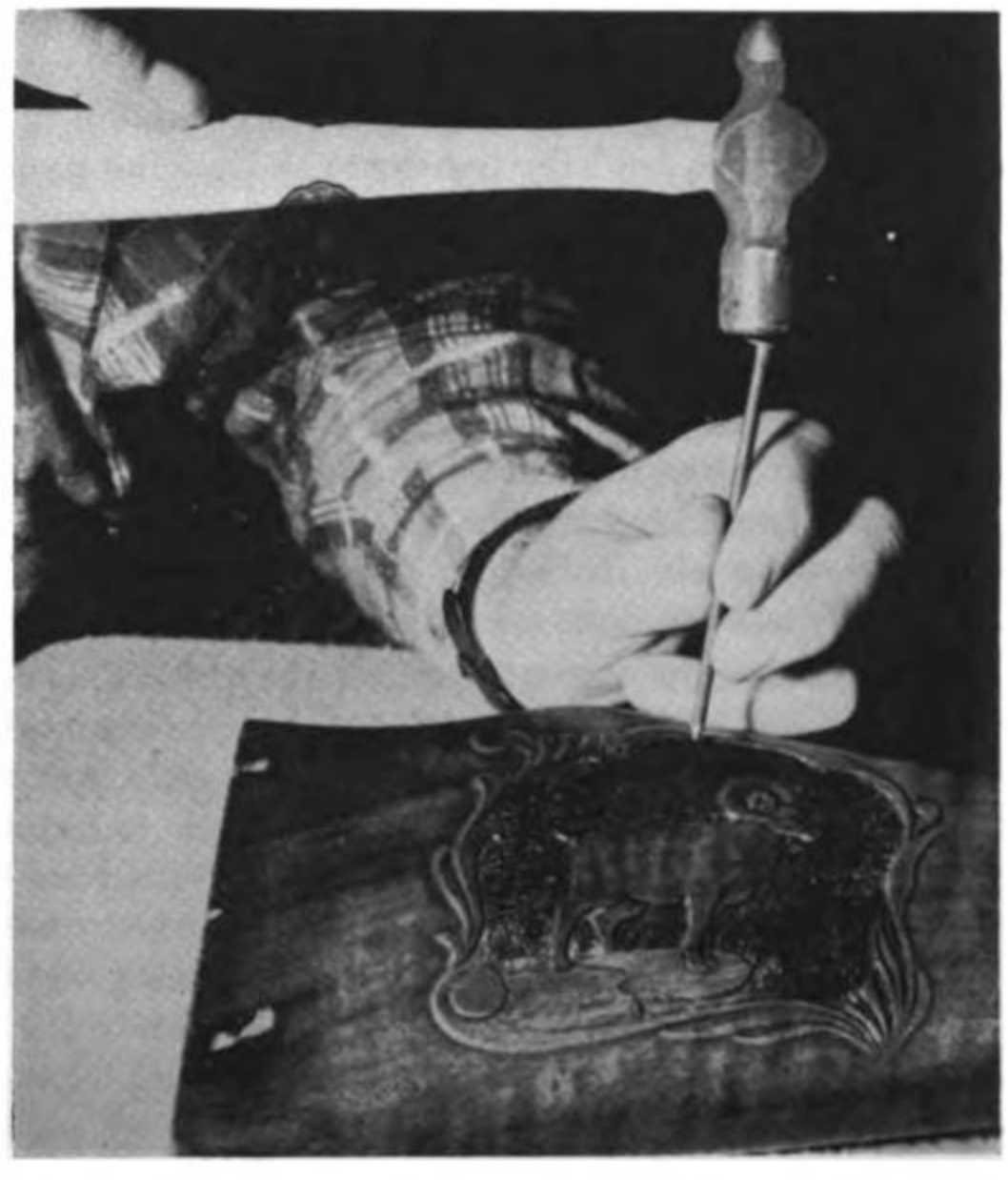
I have found it much easier to rough out the background a fair distance away from your carving before you start the detail and muscle relief. For the actual carving to bring out lifelikeness and fine detail is a matter of practice, here is where patience and perseverance pays off. You must work slow and deliberate, figuring out where to take out wood and how much. During the entire carving process, one must never take too much wood away with the tools. You have to leave yourself plenty of wood for sanding. It is easy to rough out too much at first, then when it comes time for sanding you don't have enough of your carving left to work with. When you are satisfied the job is actually complete, as far as detail and relief is concerned, it is time for filing, sanding and finishing.

For this you will need a few small jeweler's files or fingernail sanding boards. File or sand out the tool marks on the entire carving, including the background. One remarkable thing about using fingernail boards for sanding is the fact that they may be trimmed to any shape desired for hard-to-get-into places, by merely snipping the end with side cutters. Next step, switch to a fine sandpaper for further smoothness, then oo steel wool.

There are several methods of finishing backgrounds. You can file, sand and smooth out all the rough spots into the general stock contour. This method is by far the most difficult because the finished carving must look like it was set on the side of the stock. A stippled background is very popular.

Stippling is tapping the background at random with a center punch or nail. When using this method you can, if you wish, paint the stippled background with india ink. The ink is very permanent, so do not get any on the carving. The ink process will make your carving stand out like a star on a dark night.

Gouge mark finishing is rustic and attractive. Start on the side of the background with the grain and, using the 3/32" U gouge, go across horizontally, mak-



ing little gouge marks at random and off-hand. Don't try to set any sort of pattern, keep it wild and irregular. You may keep your stippling or gouge marks within an outside border if you wish. This can consist of a wavy line or some light scroll.

I have found that the best place to do fine, detailed hand carving on gunstocks is on a cloth covered table. I have heard of people putting the stock in some sort of a vise and carving at it from a distance, with their elbows flying around, using long-handle tools. This would be like trying to carve intricate designs on a saddle horn at full gallop.

Get close to your work. Have your elbows on the table or at least against it, with a bearing or grip on the stock. This position will help eliminate making slips. If you are right-handed and using the palm or ball-handle tools, hold the handle so the carving tool or cutting edge is on the heel side of your hand, using the left thumb for a guide. If you are left-handed, it would be reversed. By all means avoid holding the tools in a sword like fashion.

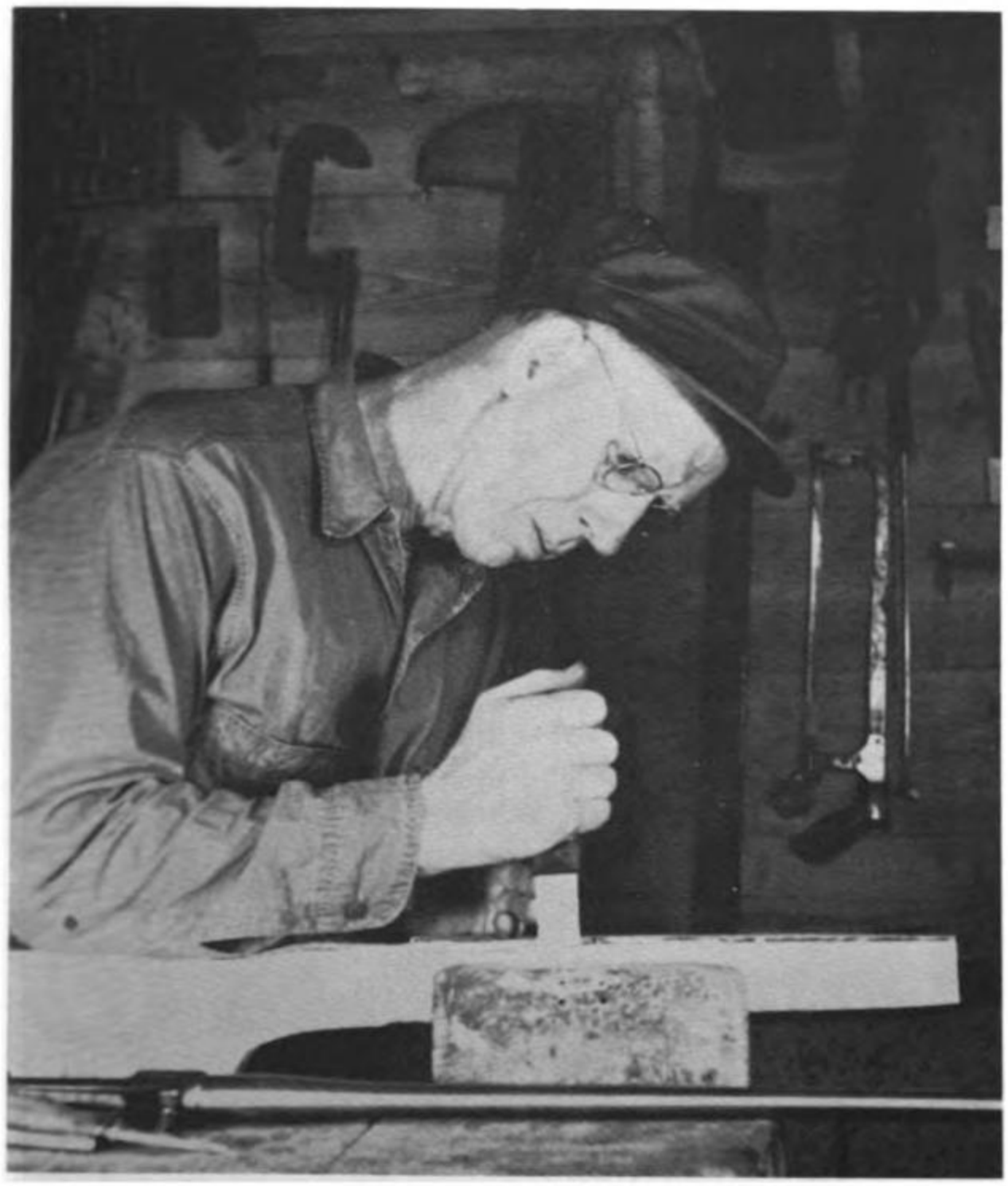
Do not work too long at a time, two hours is plenty, maybe less, depending on your eyesight. Rest your eyes occasionally, because this work is a tremendous eye strain. Take your time working, no first class job was ever done overnight.

In many instances it will be necessary to remove all the old finish from the entire stock before finishing the carving, depending of course on what type of background you used. If you used the smooth, fairing-into-the-stock background you must remove all the stock finish. If you stippled or gouge-marked the background and carved an outside border, being very careful not to disturb the original finish outside the border, you would not be required to completely refinish unless desired.

In refinishing, after all the old finish is removed and the entire stock is absolutely sanded and smooth it must be whiskered, carving and all. To whisker you merely apply warm water on the stock with your hand and pass it over heat. The water dries in a few seconds raising the whiskers in the grain. These whiskers are removed by rubbing the stock with oo steel wool. The operation should be repeated once more for maximum smoothness.

Before applying the first coat of finish, you may bring out further lifelikeness in your carved subject by staining the carving. You apply mahogany water stain with a fine brush. This dries immediately. When dry, pass the oo steel wool over the carving very lightly. The high spots on the carving will become lighter as you rub leaving the low spots darker. On applying your stock finish, try not to get too much on the carving because it will puddle up in the low places.

After the first coat is dry, rough up stock and carving with the steel wool before applying the next coat. Apply as many coats of finish as desired.



Some Opinions from Hal Hartley together with a few Examples of his Work

If one is to do good checkering he must have good vision, good lighting, good tools, a steady hand, and a checkering cradle.

In most cases a good optometrist will be able to prescribe glasses that will enable one to see well. I have been wearing glasses for nearly thirty years, bi-focals for about eight years. Checkering is eye-straining work and it is necessary to use anything that will help relieve any of this strain. For several years before I started wearing bi-focals, my optometrist gave me a pair of clip-on lens that did the work of bi-focals; I could clip these on my regular glasses and get along fine while checkering or doing close work, and could remove them when not needed. Finally I had to go to bi-focals and wear them at all times. But I still use these clip-on glasses while checkering, rather than get new and stronger bi-focals. Another gadget I frequently use is a Dazor adjustable magnifying glass with three small fluorescent light tubes attached to it. It has a 5", four-power glass and I use it when working the checkering at the border lines; this glass makes 24-line checkering look about 1/8" wide. I can really see with it, but it doesn't have enough field of view to cover the entire pattern. It is a great help in making checkering tools, especially when filing the teeth on the cutter. The gadget provides good light too.

The best light I have found for checkering is natural daylight, but in the sunlight the work must be shaded. Shade thrown by a building is best and does fine, except in cold weather. While working in the shop on a clear day I like to work near the windows that face the North. (Don't let sunlight fall on the work.) The light must strike the checkering at right-angle; this will throw a shadow in the lines and they show up much better than they will if the light runs North and South.

I don't like to checker by artificial light and have never been able to rig up a light that doesn't strain and tire my eyes. Some people can work with lights, but I can't. A steady hand is a great help in checkering. If you have one, fine; if you tremble a bit, and we all do, you can still make out.

After I have cut the master lines, or the two starting lines, I place the spacing tool to one side of the line and slip it into the groove. After you have cut a few lines you will find that it is much easier, and safer, to slip-in the tool than it is to place it directly in the groove. Run the lines up to about 1/16 inch of the pattern border *and stop there*. Use the V-tool to finish out those lines.

Checkering can be done without a checkering cradle but it is much easier if you use a stout cradle held in a swivel-base vise. The illustrations shown

The main reason for this illustration is to show a couple of aids in checkering a gunstock.

The first is a source of light and magnification, made by the Dazor Manufacturing Corporation of St. Louis, Missouri. This one is their Model M-209. The adjustable magnifying glass is four-power and is five inches in diameter. You will note three 8" fluorescent lights, these are shielded from the eyes and they put a non-glare light on the work. The glass can be moved to almost any angle or position and although it doesn't have enough field of view to cover the checkering pattern on a forearm, it does have enough to cover the one on the grip. It is especially helpful when using the V-tool to sharpen the checkering up to the borders. On the stock shown, I was using a spacer of 28 lines-per-inch; this glass made them look nearly 1/8" wide—a real help for aging eyes. It is also fine to use when cutting the teeth on checkering tools, or for any fine or close work on small parts. A pity it is not available with an 8" or 10" lens, but that may come in time.

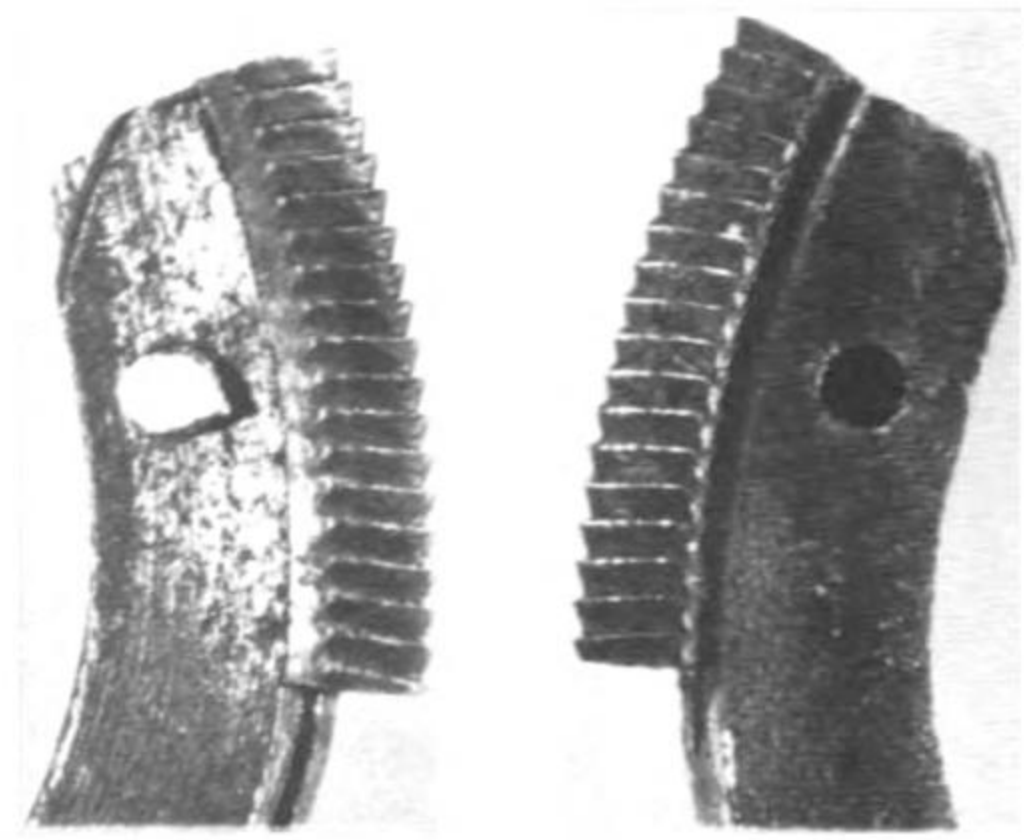
A stock can be checkered without the aid of a checkering cradle, but the job can be done *much* easier if one is used. It should be heavy enough to be steady and should be held in a heavy vise mounted on a low, heavy bench of a height to bring the work to the exact height best for the individual user. The less vibration in this work the better.

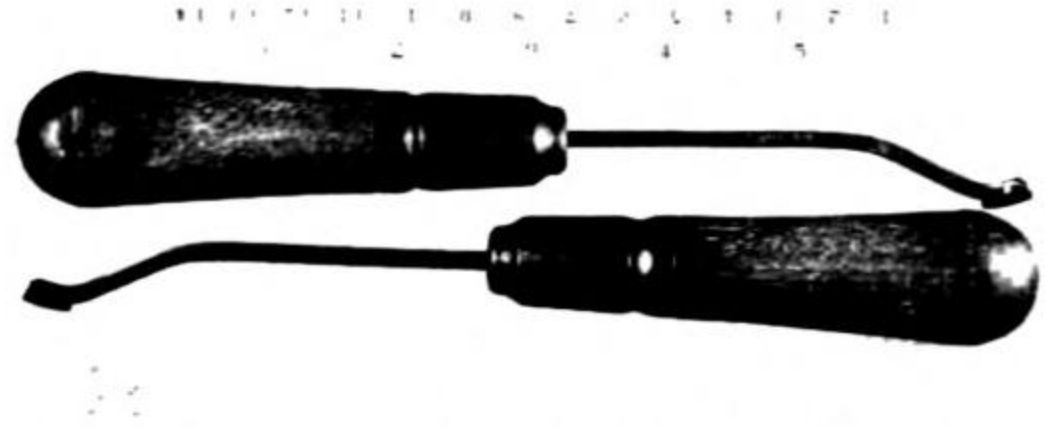
You will notice a brush in my left hand. It has nylon bristles, which are fairly stiff. This is used to brush away the dust created by the checkering tools. The bristles are not stiff enough to scar or mar the points or the finish.

throughout this book will be easier to understand than any written description.

Next we come to the all important checkering tools. What I have to say about them are my personal ideas and observations of some 25 years of stock-making. For years I have made my own tools and I find that I can do better work with them than I can with the 'boughten' tools I've tried. Further along, I'll show photos and describe my method of making the different tools.

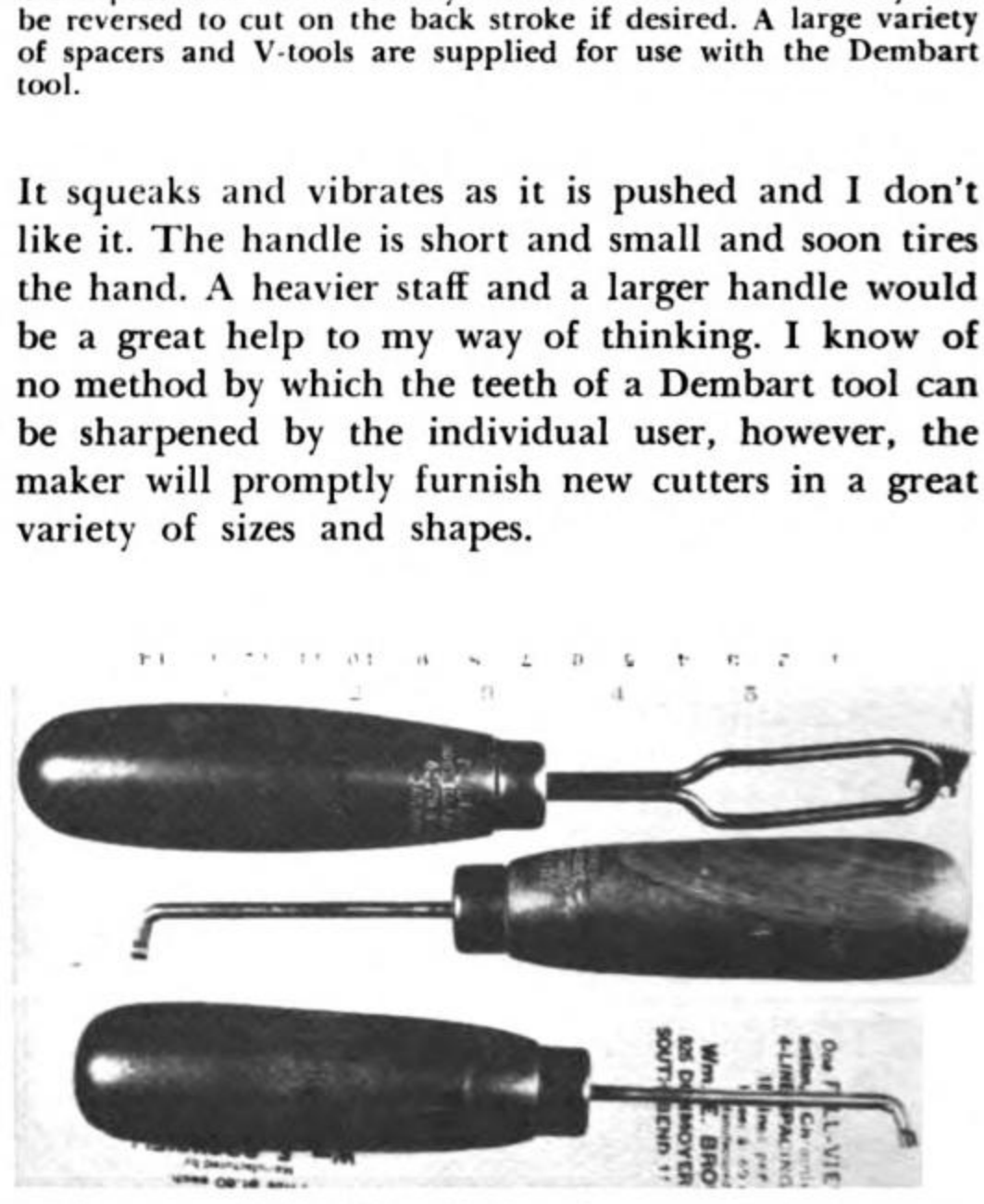
Dembart, one of the leading makers of checkering tools turns out detachable cutters that are precision-made. They cut very clean in any wood suitable for stock use. The teeth have a forward rake and will only cut one way. The cutter head can be reversed and will cut on the pull stroke, if this method suits you best. The cutter is cut with a 90° angle, I believe. The staff is square and is too thin.



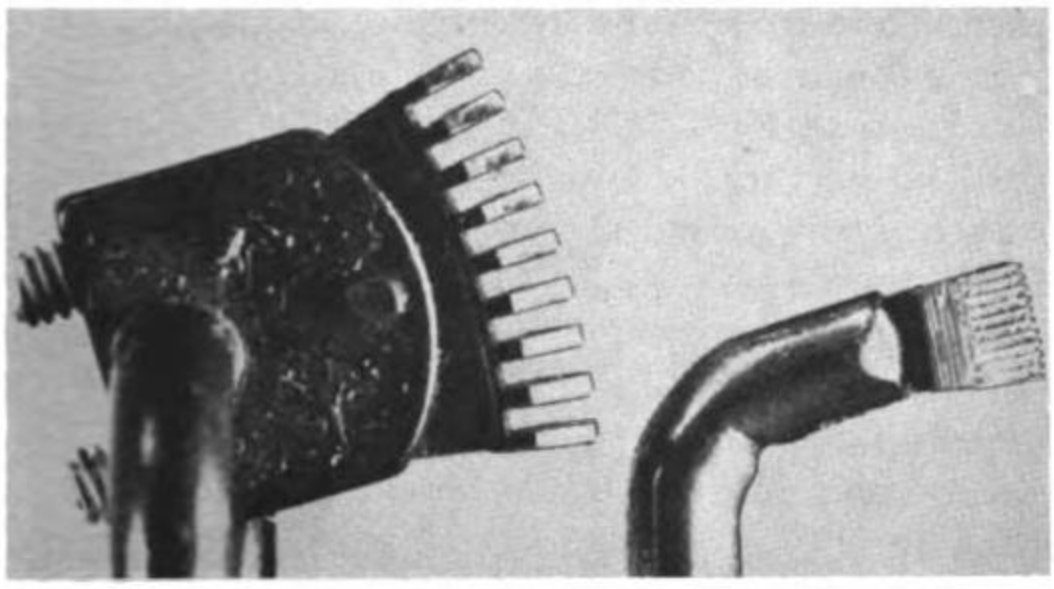


Dembart checkering tools shown at bottom. Top view is a magnification of their V-tool, at left is a new cutting head whereas the one shown at right has dulled a bit. These heads are replaceable and cut only on the forward stroke; they can be reversed to cut on the back stroke if desired. A large variety of spacers and V-tools are supplied for use with the Dembart tool.

It squeaks and vibrates as it is pushed and I don't like it. The handle is short and small and soon tires the hand. A heavier staff and a larger handle would be a great help to my way of thinking. I know of no method by which the teeth of a Dembart tool can be sharpened by the individual user, however, the maker will promptly furnish new cutters in a great variety of sizes and shapes.



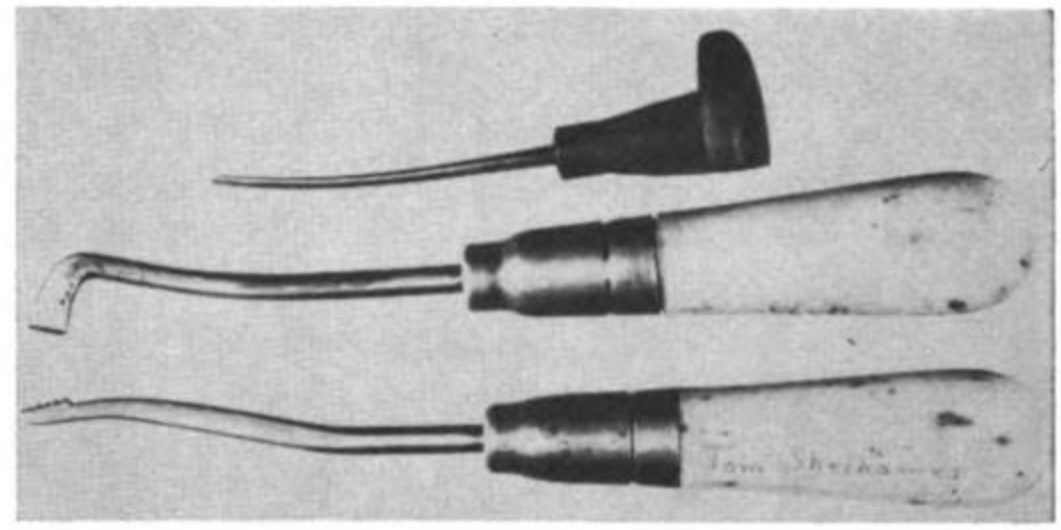
The Brownell 'double action' tools cut on both push and pull strokes and are very popular on account of the 'full view' feature of their spacer and V-checkering handles.



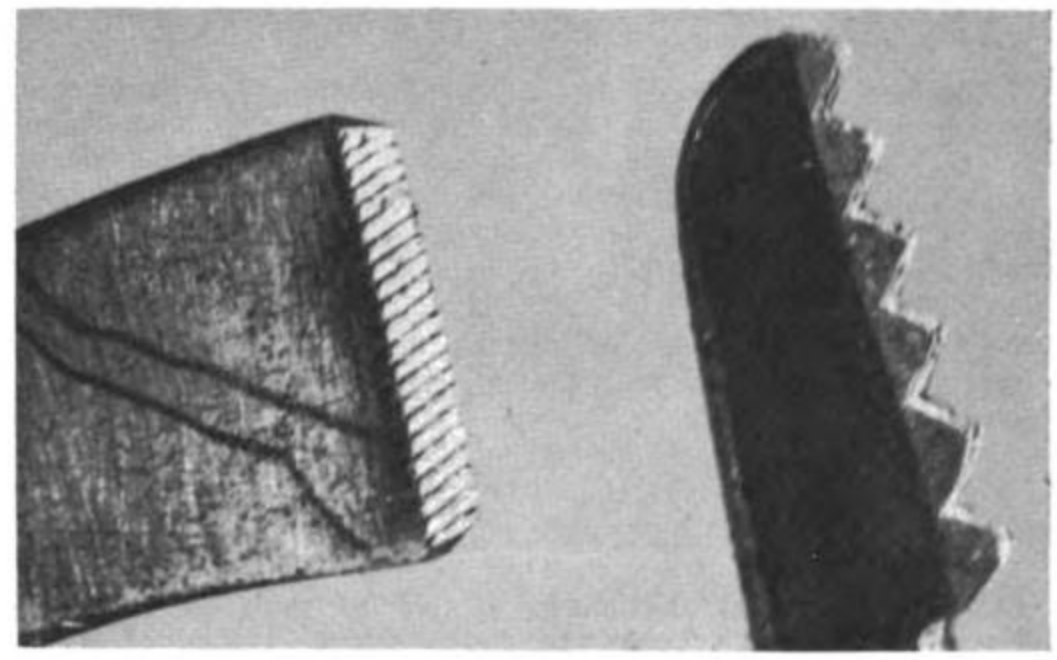
This is a magnification of the cutters furnished with the Brownell V tools, the one at the right being a short head to finish out lines and get into narrow places. The V cutter, at left, shows method of adjustment for setting the angle of this cutting head—a very desirable feature for most users.

Of all the commercial tools on the market, those made and sold by W. E. Brownell, 925 Donmoyer Ave., South Bend 14, Indiana suit *me* best. His detachable cutters are made to give a scraping, rather than a cutting action and will cut alike when either pushed or pulled. The cutter teeth are hard and up to six complete checkering jobs can be done before they noticeably dull. The regular V-cutter will cut cleanly in most wood, but if the work should show fuzz the 'super fine' cutter will cut it clean and smooth. The only fault I find with this Brownell tool is the squeak. A heavier staff would correct this.

There are other tools on the market, you can try them all and will likely find you can do a good job with any of them.



Tom Shelhamer's checkering tools. He makes and sharpens his own cutting heads and blades, and the quality of his checkering has never been bettered. The top tool shown is a veiner, or parting tool, with which he finishes out his checkered lines to the border—but leaves off the border, it being unnecessary with the grade of checkering he does.



A six-diameter magnification of the working ends of the Shelhamer spacer and V-tool, which cuts on both the push and pull strokes. Note the rake he puts in the teeth.

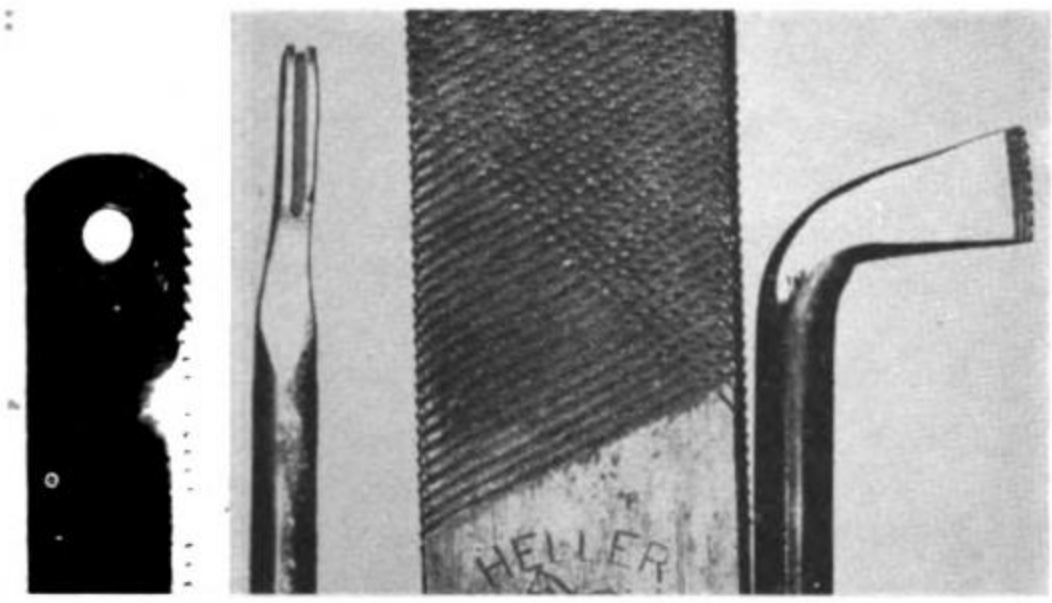
Making the Hartley Model Checkering Tools

The first checkering tools I ever used were given to me by a retired gunsmith and had been made of screwdrivers. The round handles were about four inches long and some 3/4" thick. As I practiced with these tools on flat pieces of wood, I noticed that my hand tired quickly and the fore-finger tip became numb because of pressure on the thin shanks.

I decided that new handles were in order, so I selected pieces of hard maple and drilled a 3/16" hole in one end. I forged a four-sided point on the end of the shank and drove it about one inch into the solid wood. Then I started shaping the handle, having plenty of wood to work with. This new handle was to serve three purposes the original handles did not: It was to have a flat place for the fore-finger to rest on, so as to avoid the numbness caused by pressure on the shank: It was to be larger and longer so as to be more hand-filling and comfortable: It would be left fairly rough, to provide a better gripping surface, giving better control than a smooth surface would.

As I used a rasp to work the handle to shape I frequently tried it for feel. By feeling and rasping I soon shaped the handle so it felt snug and comfortable in my hand—and I have carried out these ideas in all subsequent checkering tools.

When a customer writes me for tools I ask him to send a drawing of his hand, with outspread fingers; I also ask if he is right or left handed. I explain my reasons for leaving the rasp marks on the handles, but if he insists I will make them smooth; a number of customers have written that they had tried the rough handles but had smoothed them up; then, after trying them out had decided to roughen them again. Checkering, good checkering that is, is a very precise operation and if the tool is comfortable in the



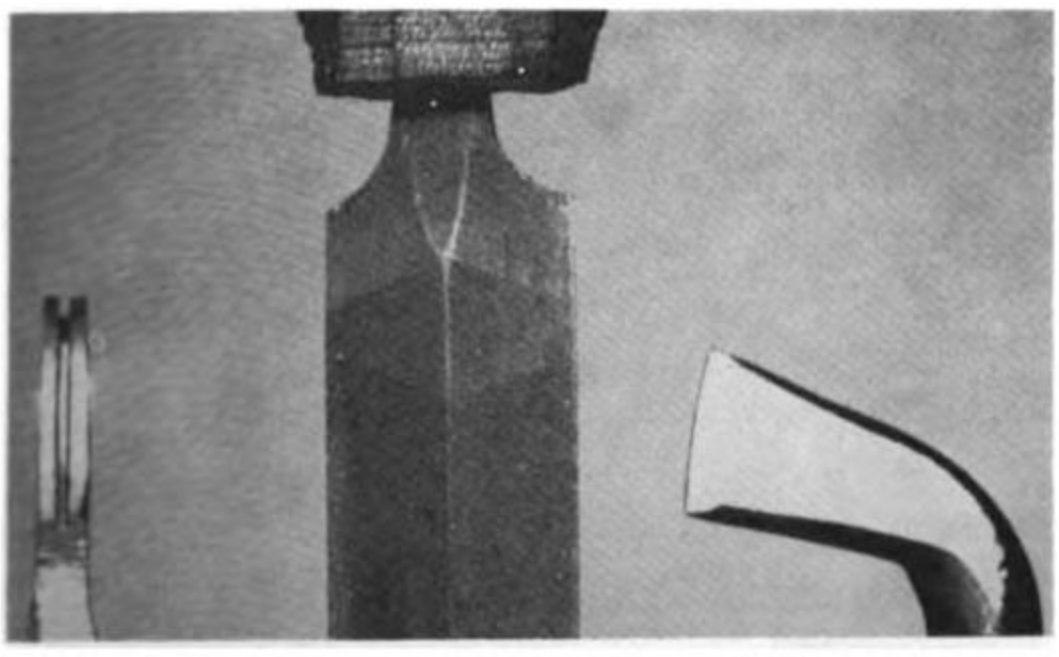
The illustration pretty well tells the story here. On the left is a hack-saw blade that has had the set ground from its teeth. The saw was then used to cut the groove in the spacer. If the set had been left on the teeth it would have cut a groove at least 1/16" wide, but on this spacer we wanted to make one giving 24 lines to the inch. The bottom of the spacer is filed flat and a knife-edge file is used to cut a groove along its center so the saw blade will follow it easier. After the saw cut is made about 3/32" deep, the knife-edge file is used to true the groove, making it with square sides.

A flat file is used to file the outer edges, or sides, to a sharp angle, making the edge of the groove almost knife sharp. The next step is to scrub the tool across the coarse file and mark the teeth. The file shown cuts 28 lines per inch.

Shown at the right is a V-tool which has had the teeth file-marked, and is now ready for the knife-edge file.

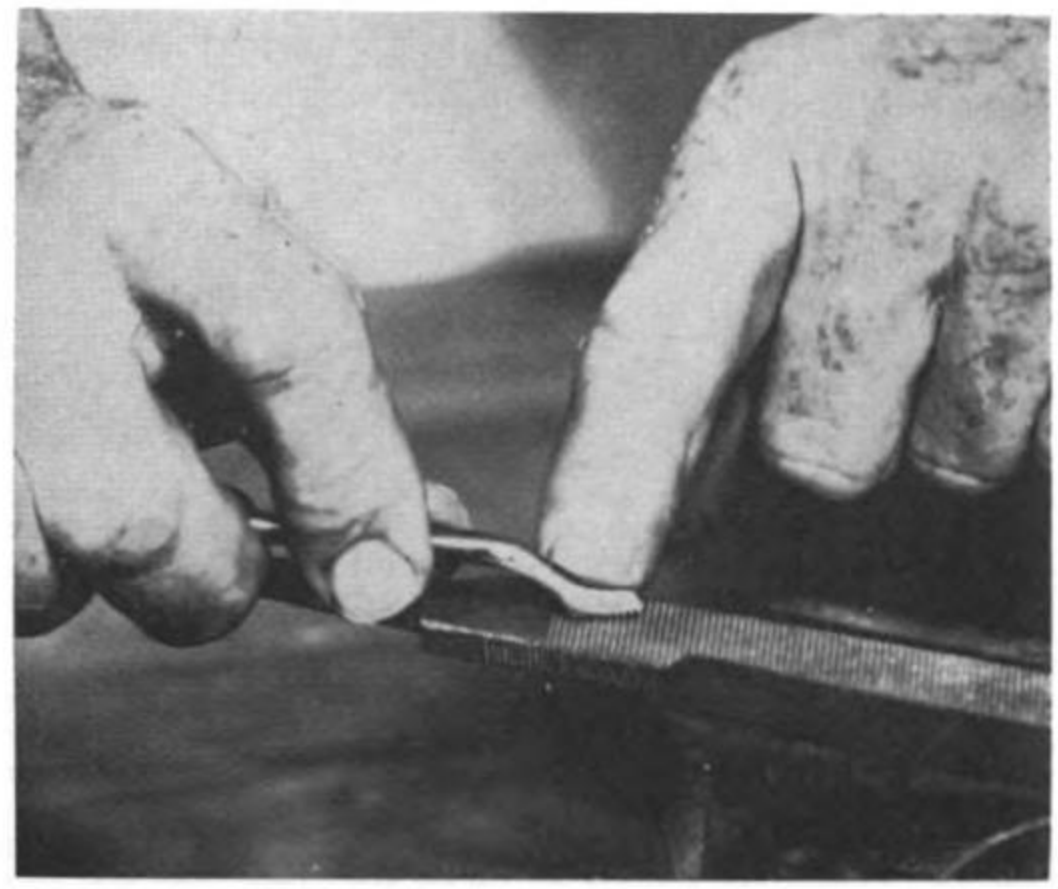
will have some trouble if you have to run the 'short' side in the groove made by the previous cut, wherever, the long teeth will work nicely in the groove as the short side marks the new line. However, I like to get both sides alike and so have no trouble working to either the right or to the left.

When you have the teeth cut to suit you, and all burrs have been removed, heat the back end of the staff and forge it into a four-sided point. Heat the end with teeth to a bright red and quench in water. Brine may be better, but either brine or water will make it glass hard. Those teeth are fairly fragile and you must be careful not to be too rough with the tool from now on.



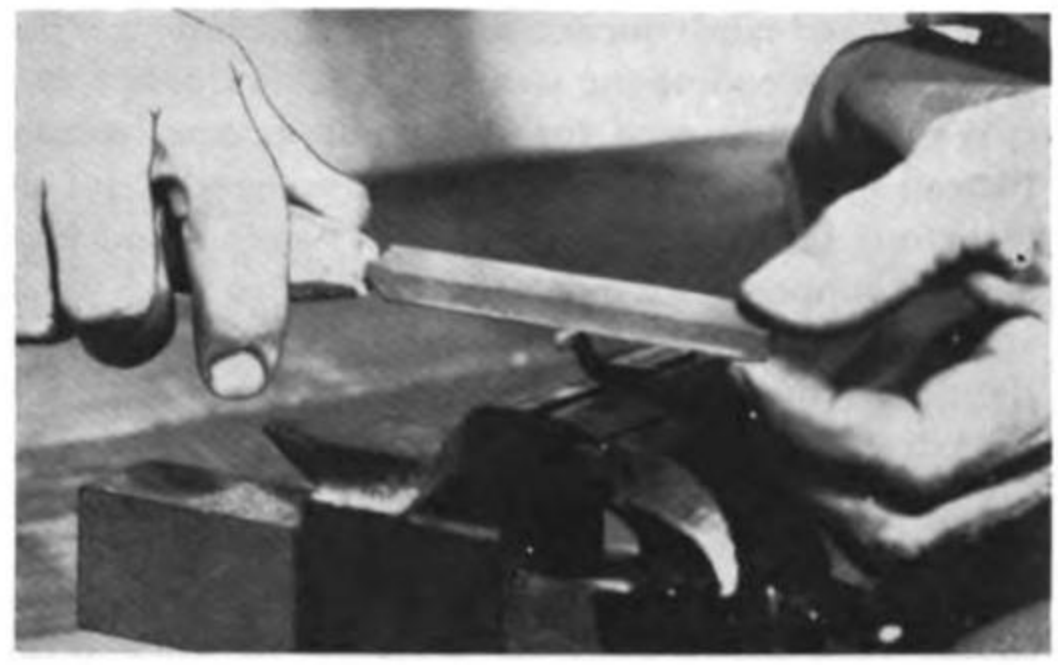
Here we have the rough-filed spacer and V-tool blanks and the all important knife-edge file. This is the only file I have found that will do the job of cutting teeth the way I want them to be shaped. I suggest that you get one like it to start with and I feel sure you will do a better job than with any other shape of file. Get it in the 4" length with fine teeth.

A spacer made this way cuts neat, straight lines. English flat-top checkering can be done with such a tool. Since there is no bevel in the groove there isn't much tendency to climb out and I can do a much better job of holding my lines true. It is best to start out with a spacer of 16 lines-per-inch; as you get proficient in handling and making the tools you can make and use spacers up to 26 lines-per-inch, in suitable wood.



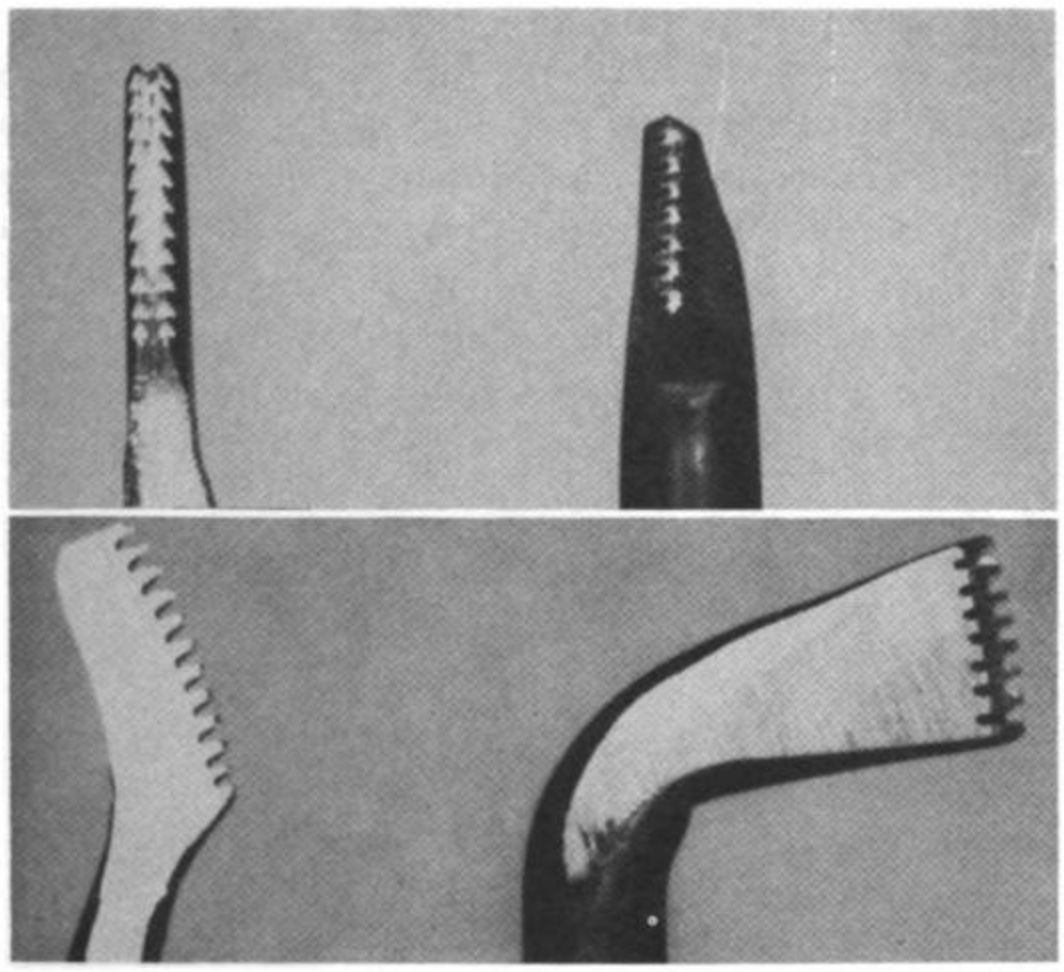
Here is shown my method of marking the teeth on a checkering tool, both spacer and V-tool.

Clamp a bastard file in a vise and scrub the tool to-and-fro in the same direction as the file teeth run. The file shown has 28 lines to the inch. The proper length of file depends somewhat upon the size teeth you want. My personal choice is one giving 36 lines per inch. I find that finer teeth, especially in the V-tool, give a cleaner, smoother cut. In hard, tough wood a spacer with teeth 16 per inch works well, but in average American walnut fine teeth work better, altho a bit slower. In brittle wood coarse teeth are more likely to tear out checkers. Apply fine teeth and a light touch for a neat job.



When the teeth have been marked, clamp the tool in a vise and use a fine-cut knife-edge file to deepen and shape the teeth. File straight across, cutting about 1/16" deep. I like teeth with no hook. If the teeth are cut straight they scrape away the wood. If they have hook they will tear away the wood and frequently will tear away too much. Also the hooked teeth will only cut in one direction, while scraper teeth will cut alike on the push or pull stroke.

When you have finished with the filing, use a fine stone to carefully rub away the burrs that might still cling to the outside of the teeth. Just a light stroke or two, on each side, will do it.



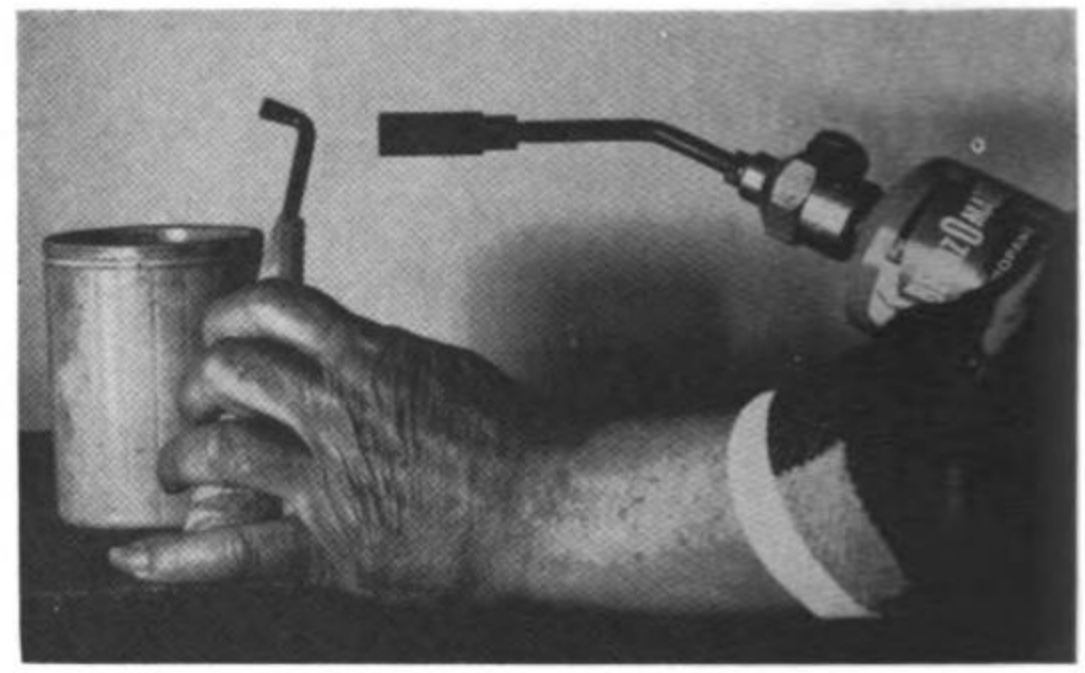
The above show the side and bottom views of the finished tools. Notice the evenness of the teeth in the spacer. If there should be a long tooth in a tool it will cause it to hang in the wood, and if too much pressure is applied it may tear out wood or may jump out of the groove and make a bad line. Teeth of equal length are very necessary for good work.

You will notice dust clinging to the teeth of the V-tool. It had just been tried out and it cut clean and smooth in average walnut. Coarse teeth do not clog with dust as quickly as fine teeth, but, fine or coarse, they must be cleaned with a brush after a few lines are cut. I have gotten into a habit of tapping the tool against the checkering cradle after each pass and this usually keeps the tools clean.

Now for the V-tool. Forge and shape the drill rod for this V-tool as shown in the illustrations. File it to the shape you want and then file the edge to a 90° angle, or 80° if you like that better. Scrub it across the bastard file to mark the teeth and then cut them with the small knife-edge file. File the teeth so they will scrape instead of cut the wood. Heat to a bright red and quench in water. Also forge the point on the end of the staff.

We are ready now for the all-important handle. Instead of a short, small, screwdriver handle, let us make one that will fill the hand in comfort and give enough support to handle efficiently. Use hard wood and drill a 3/16″ hole about 2½″ deep. Set the staff tightly in the vise and drive the wood on it; the forged point should be driven about 1″ into the wood, then there will be no danger of the staff ever turning in the handle.

Use a coping saw to cut the handle roughly to shape, then use a rasp, or a chisel, to work it to the shape you like best. You will want to place your fore-finger on the staff as you start to checker and you are likely to find that within a few minutes the tip of the finger will feel numb, from pressure on this small area of metal. Years ago, I made my handles to support my forefinger and the illustrations show this feature in detail. Make the handles to fit the palm and to give support to the fingers. Just keep rasping away until you get a comfortable fit and you can checker for hours without tiring the hand —but not the eyes.



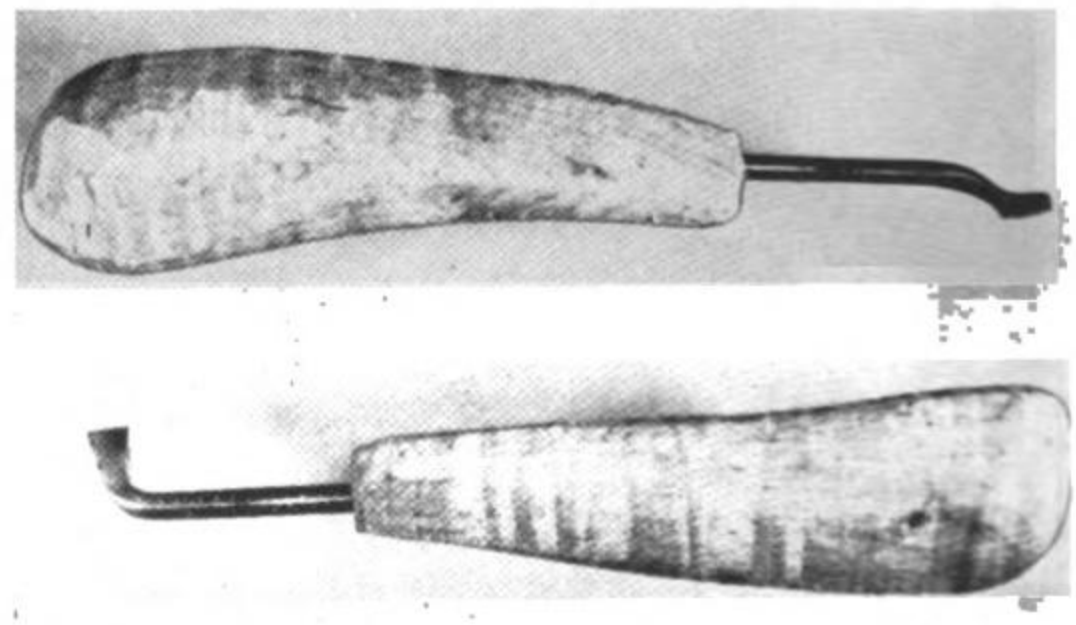
A new V-tool has been made and I am preparing to temper it. The heat source is a BernzOmatic torch, which is easy to light and quick to give an intense flame.

Place the point of the flame at the bend of the tool, never directly on the teeth. By heating below the teeth the metal will turn red, the color will work to the teeth and there will be no danger of burning them away. When the metal turns a bright red, showing a greasy look, dunk it quickly in cold water (note the container of water). This will harden the metal and the tool will cut much longer than if left soft.

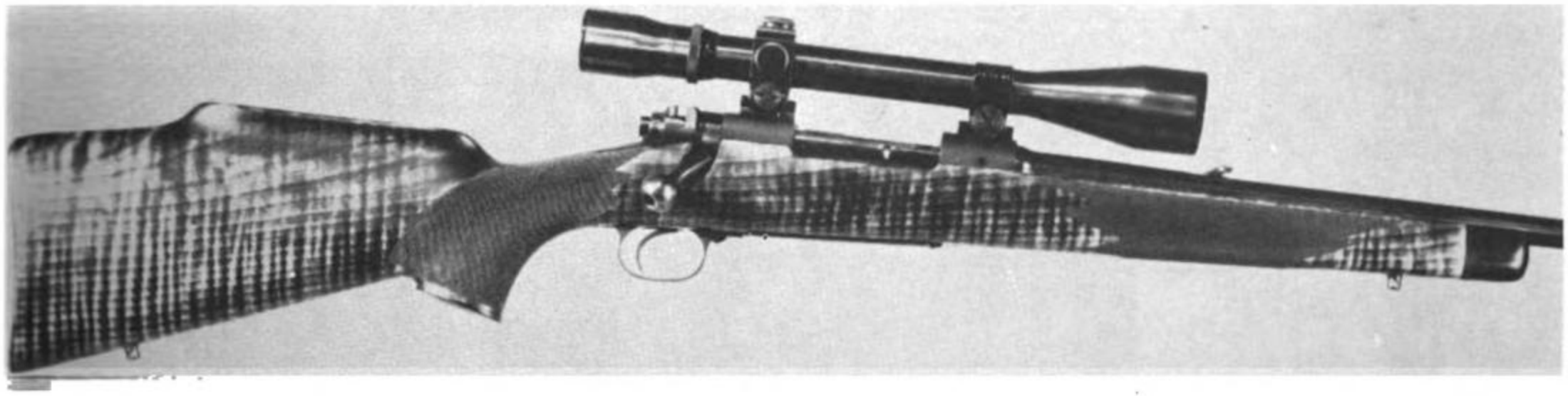
A good thing to keep in mind is to never start a checkering job with a tool so dull that you may not be able to complete the work with it. There is a chance that if you sharpen a spacer in the middle of a panel you won't get it to cut lines exactly as before. I have had this happen a few times and had to re-sharpen and try again.

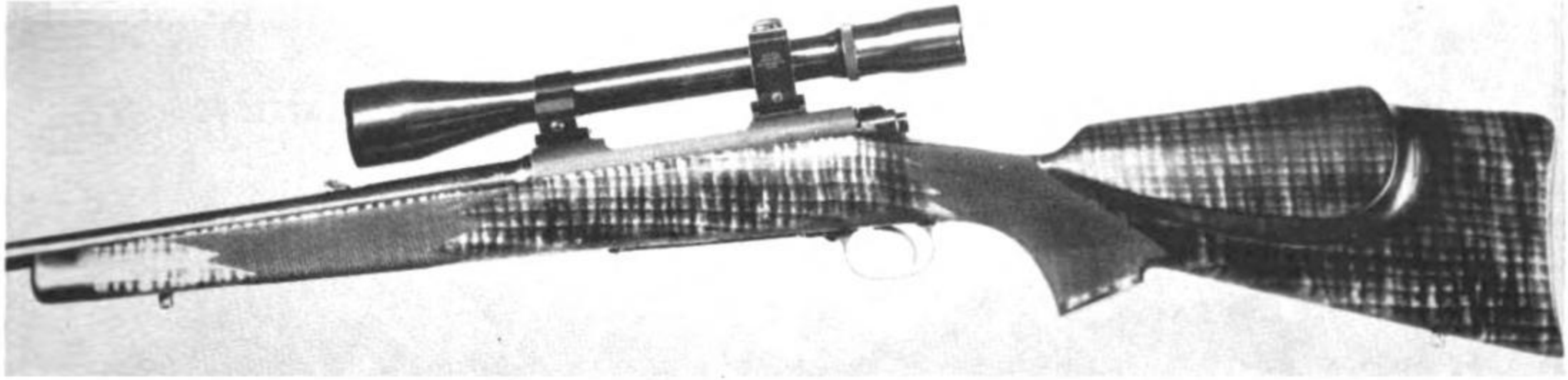
You will need a brush with fairly stiff bristles to brush away the dust from the checkering. Get one with nylon or fiber bristles, not steel or bronze which may mark or scratch the stock surface or the finish.

You will find many patterns to choose from in this book, along with all the details you may need to lay out and to do the job. Some of these tips I have given should help you with the tools and visual aids. When the tools get dull, you can heat them until they turn blue, or dull red, which will draw the temper. Then file or stone the teeth lightly and be sure you keep them true. Heat to a bright red and quench in water and you are again ready for more checkering.



Here are the completed checkering tools. A 24 line spacer and a V-tool. Comfortable, hand-filling handles. These handles were smoothed off to suit a customer; I prefer the tools I use to have rough handles.





A Tiger-Tail Model 70 in .243

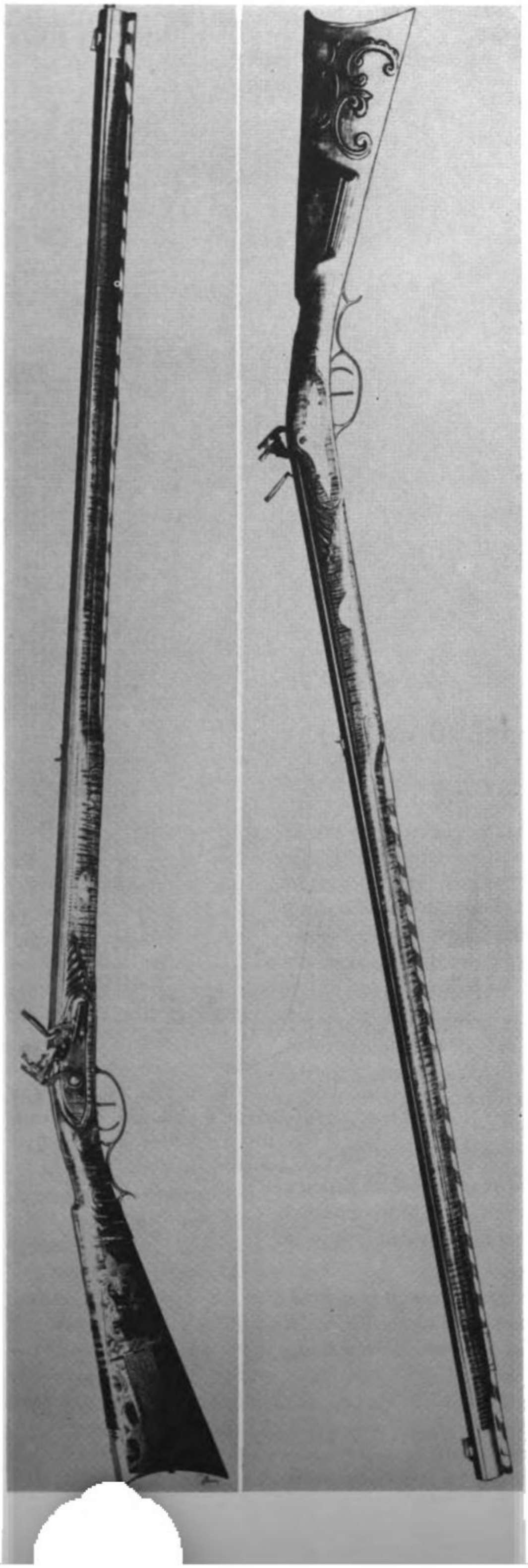
by Hal Hartley

This stock was made from a true quarter-sawed blank and shows the tiger-tail figure very well. The alternating dark and light stripes, or lines, run around the stock looking as if they had been wrapped around it. Some people like the tiger-tail figure while others like the slab-cut figure, or the three-quarter-cut figure. Each cut has a distinctive figure or pattern.

On this stock, the roll-over comb just clears the opened bolt while the heel has an inch more drop than the nose. The flared cheekpiece slopes forward to the nose. The grip is fairly close and there is a Wundhammer swell to fill the palm. The owner has a small hand, hence the reason for the close grip.

The checkering is 22 lines-per-inch and this point design follows the classic concept. The sharp pointed checkering on the pear shaped forearm offers a secure grip.

This rifle will be used mostly for shooting ground-hogs in the rolling grasslands and hay fields. Its weight of eight pounds, three ounces will be easy to carry and handle.



Carving On A Modern Flintlock Rifle

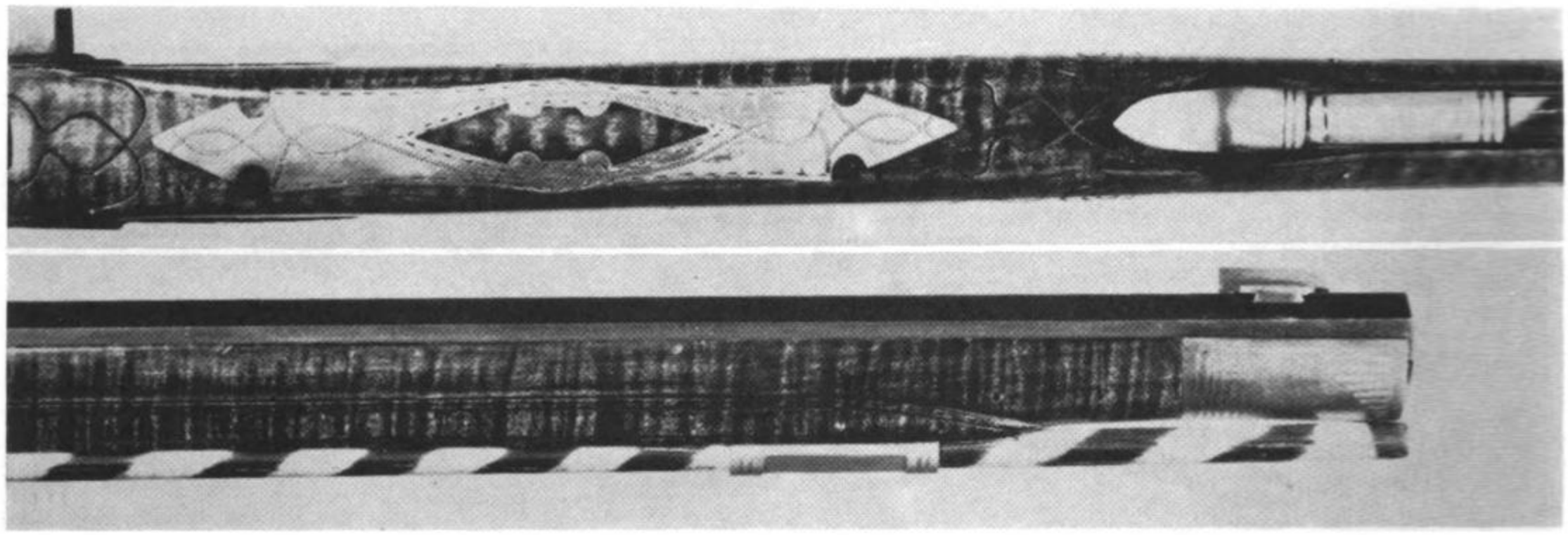
by Hal Hartley

I have read that today more people are shooting the muzzle loaders than at any time in the past 75 years. I do know that more muzzle loader "shoots" are held around our hills than are small bore tournaments.

Four years ago, when we organized (and we now have 26 active members) we all had muzzle-loading guns. Some were in shooting condition, but most were in a pretty sad state. We got busy repairing, re-barreling and re-building them and eventually set a date for a shoot. When the smoke had blown away and the targets scored we came to the unanimous conclusion that if we were to shoot good scores we would have to get better guns.

Each member had his own idea as to the kind of rifle he wanted and proceeded accordingly. We ordered new barrels from different well-known barrel makers. Triggers, locks, butt plates and trigger guards came from other sources. We built rifles that ranged from light squirrel rifles to .45 caliber bench rest guns. Immediately the scores picked up and the competition became hotter. No one member is a consistent winner over a series of shoots. We take our wins thankfully and prepare for the lumps next to come.

Most of our rifles are of the percussion type, but we also have some flintlocks. Recently I made a stock for a rifle, using new metal parts throughout. The stock was of curly maple. The barrel .40 caliber, 40" x 13/16." The butt-plate, trigger-guard and all the trim were of brass. The complete rifle weighs 11 pounds, 3 ounces.



From 1795 to 1830 was the so-called "golden age" of American flintlocks. The leading gunmakers of the period turned out the finest guns they were capable of making. Some of the guns were beautifully carved, both incised and in high relief. Many had open-work patchboxes, with engraving that ranged from simple to exquisite.

On the stock mentioned. I combined, in a general way, the decorative principles used by these more noted early gunmakers.

The most prominent carving is between the cheek-piece and the butt-plate, consisting of "C" scrolls in high relief. I have never read of, nor been told of the significance of this "C" scroll. Possibly it had good luck, or religious background. At any rate the old masters used it on their better guns.

When you are shaping such a stock, keep in mind that you must leave the area for these scrolls higher than the surrounding, finished surface will be. On this gun the scrolls were 3/16" high. I drew the design on the stock freehand and used a pointed knife to cut around the outline. Flat chisels, gouges and the skew-point were used to cut away excess wood and to shape the scrolls. Small, flat chisels were used to scrape away and smooth the area between the scrolls. This is a particularly hard place to smooth, but you must do it right to give the clean, finished look it deserves. Just a bit of roughness will give a slip-shod look.

The area just back of the lock-plate shows the much used "tear drop." Just back of it is some incised carving.

Forward of the side lock-plate, carved in relief is the "fan." I don't know the reason for this, either, but I have seen two rifles which had it.

Forward of the side-plate is a line of carving made with a parting tool and skew-point chisel. I once saw something like this on a rifle. More incised carving is shown at the tail pipe.

Most of the incised carving can be done with a parting chisel. Keep it sharp and use a steady hand at all times.

I use a blow torch to darken and to accentuate the grain in maple, but you can't use it on carving because it will burn away the edges. So I make up a stain to use on the places I can't use a torch.

The chisels, their use and care as mentioned elsewhere, are applicable to this stock.

Two Model 12 Winchester Pumps
by Hal Hartley

There must be a lot of Winchester Model 12 shotguns in America. I have stocked well over 200 of them and in most cases a new forearm was ordered. On every job the customer specified that the new forearm be made one to two inches longer. Many shooters find that they have better control of the gun if their forward hand is one or two inches closer to the action. The longer forearm makes this possible. Shooters with short arms must almost straighten the forward arm to operate the forearm when ejecting and reloading. A bent arm also gives better control when the gun is being swung on a crossing bird.

The cross section of the forearm is a bit bulky, but after one becomes accustomed to the feel it isn't objectional. A diameter of 2″ is about the safe minimum. One can be made thinner, but there is always the danger of splitting. Customers have their ideas and I try to carry them out if they aren't too extreme.

This No. 1 Winchester Model 12 was fitted with a stock and fore-end of curly maple. This wood shows a figure that is typical of a blank that was sawed about half-way between a quarter-saw and a slab-saw cut. It was scorched with a blow torch to bring out the grain.

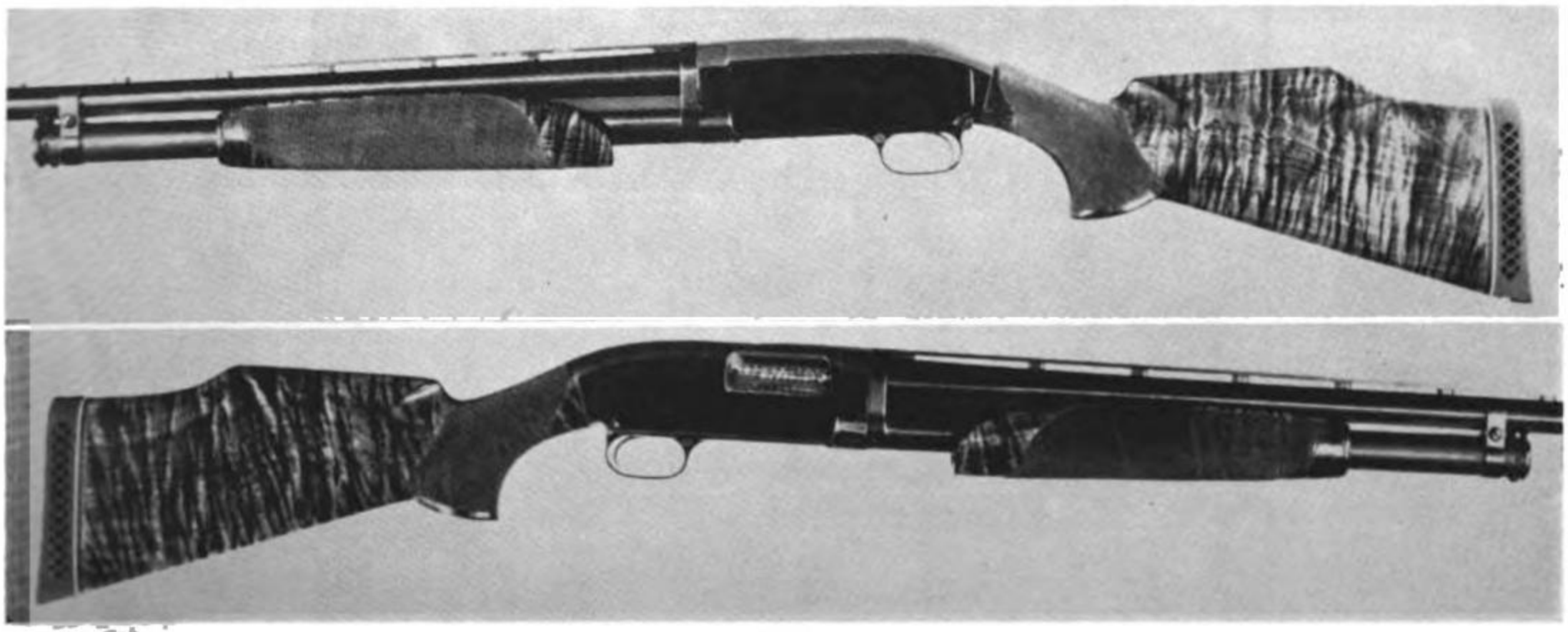
The gun belongs to one of the country's leading shooters and was made to his specifications. Take note of this pistol grip, which is fairly close and has a slight hook; this shape gives him better control than a more sloping grip would. It is especially helpful in holding the stock solidly to the shoulder while ejecting the fired shell and pushing the fore-end forward to reload. And this owner can certainly function that fore-end; on several occasions I have seen him have three crows dead and falling in the air at one time, and on one occasion he had four. Which is fast shooting with any type of shotgun.

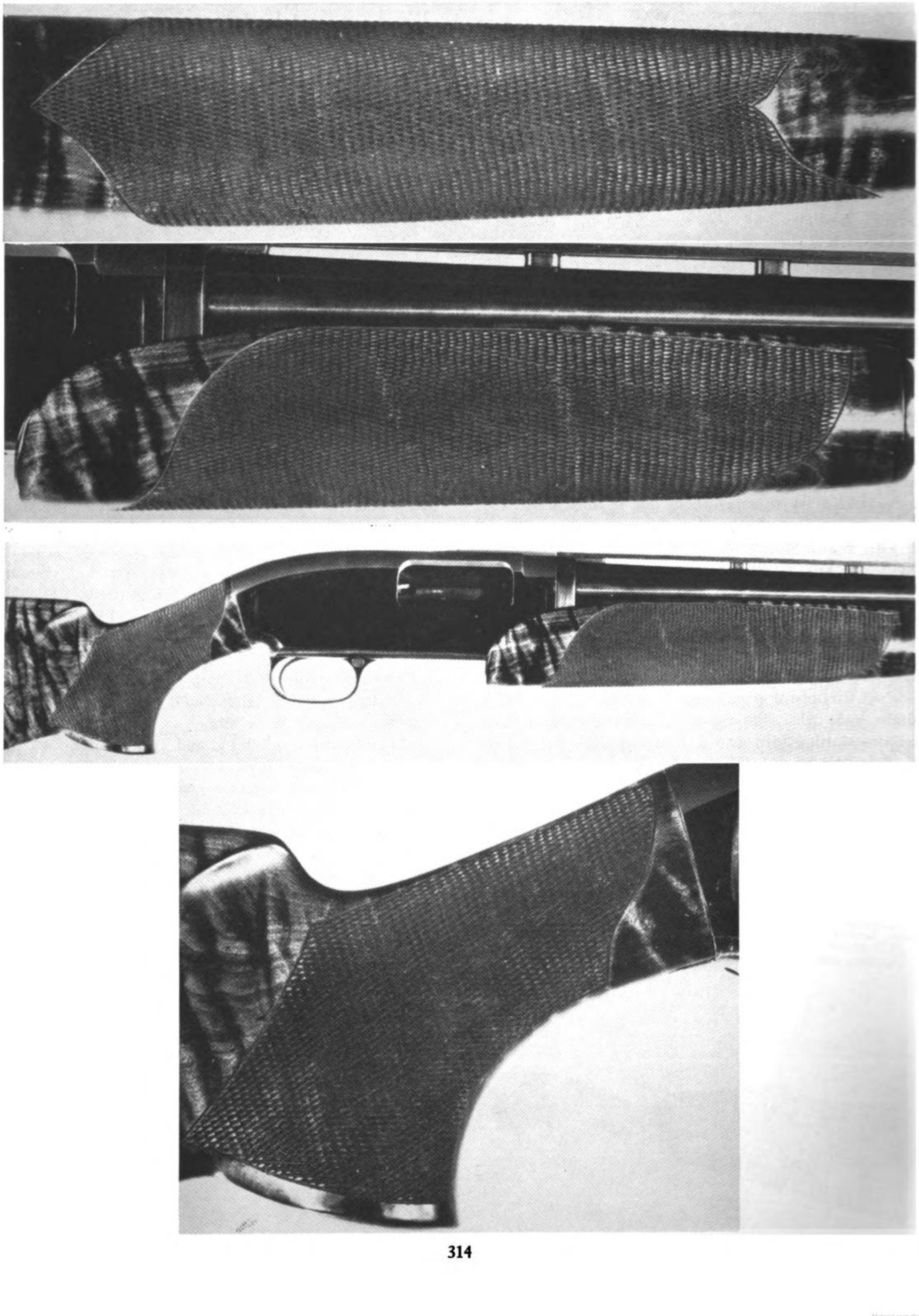
The Monte Carlo comb has a drop of 1⅜″; the heel drop is 2½″. The shooter's cheekbone is placed two inches from the comb nose when he is shooting straight away. For crossing shot to the left his cheek moves forward from one-half to an inch, and on a crossing shot to the right it moves to the rear about the same. So, regardless of the angle of the shot, he has the same sight line as long as he holds the cheek snugly to the stock. This comb nose is far enough forward to support the heel of the thumb and to keep the nose and mouth of the shooter from contacting the hand when, the gun recoils.

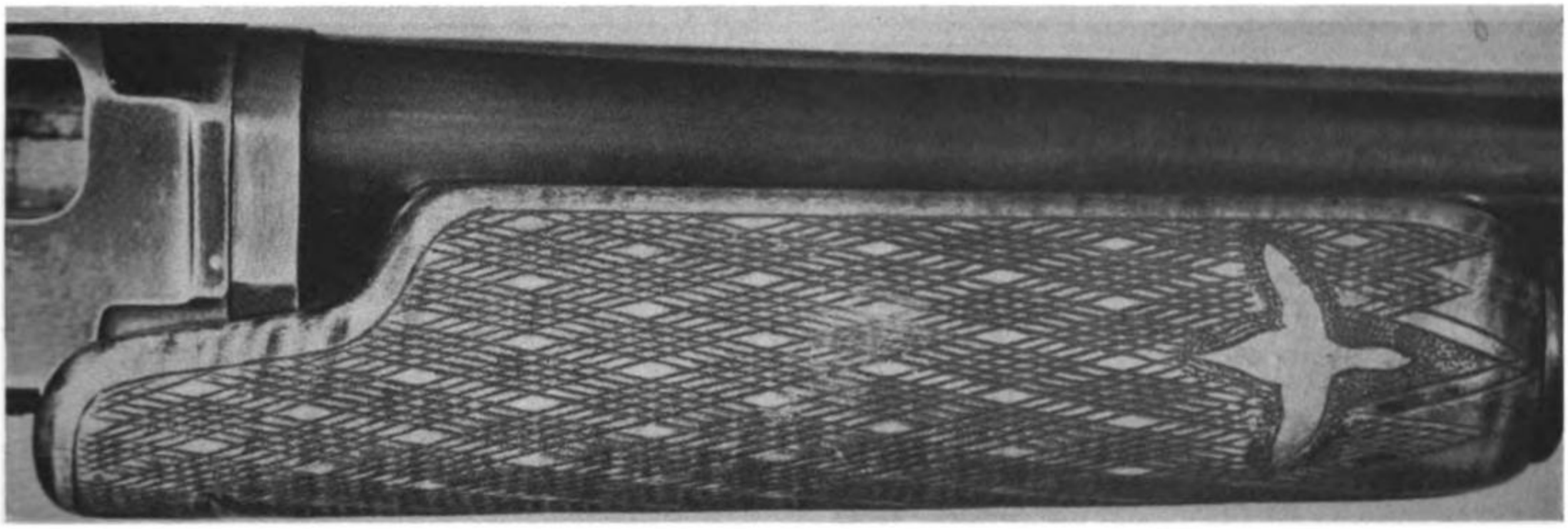
The fore-end measures 9½″ and this length gives a shooter with average, or shorter than average, arms better control of the gun. The checkering is deep and sharp and even if buckskin gloves are worn the surface is positively non-slipping which, after all, is the main purpose of checkering.

In comparing these two shotguns we find several differences in the specifications. On gun No. 2 shown on page 315 the drop at the nose and heel of the Monte Carlo comb is 1⅝″. Drop at the butt is 2½″. Length of pull is 13½″. Grip circumference is 4⅞″. The shape of the grip is about average. The owner has a fairly large hand with long, strong fingers. This grip suits him.

The forearm is 9″ long and is a straight 2″ in diameter. Some customers specify a slight taper from front to rear. Some want the taper from rear to front. A slightly greater diameter at the front would conceivably give a more secure grip when pushing the





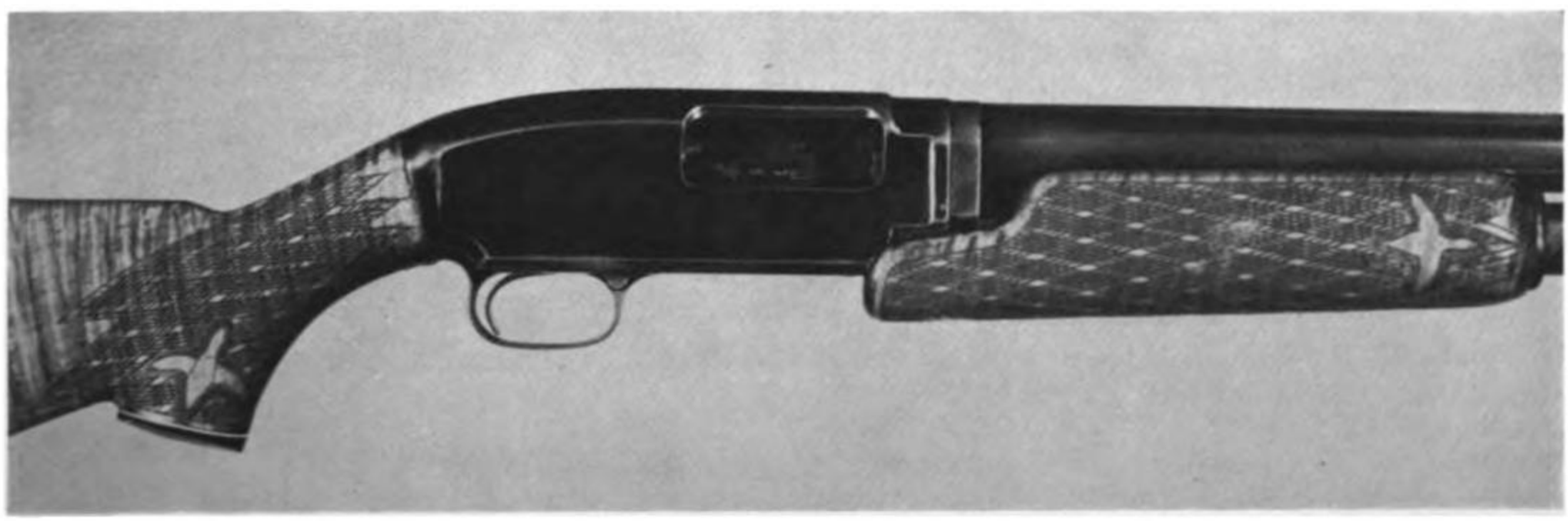


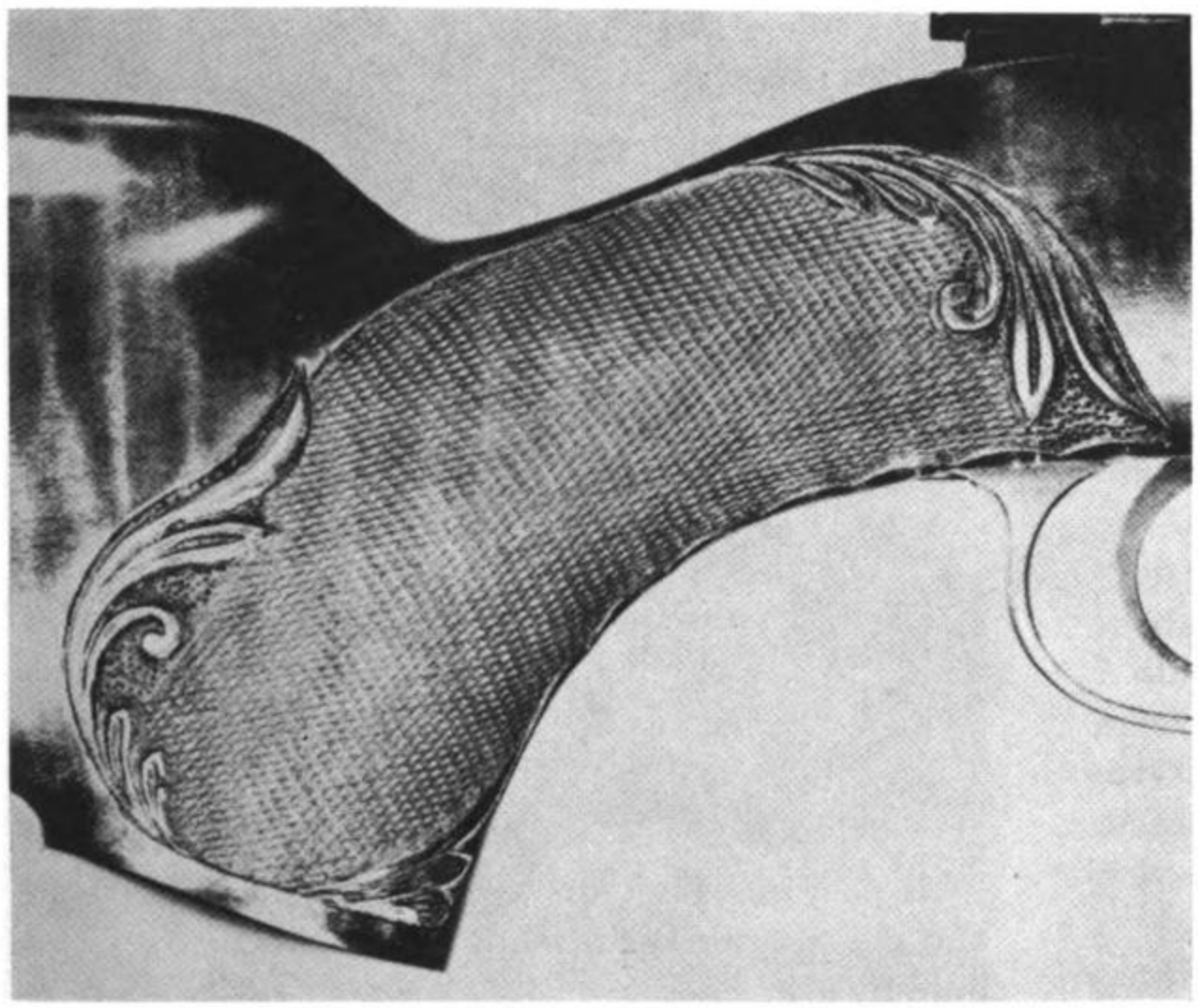
This 'step down' shape of the fore-end of the No. 2 gun differs from the curved rear on the No. 1. The grip of this No. 2, shown below, has a more open sweep than has No. 1.

forearm forward to close the action. The hand and arm might absorb some of the recoil too. This is something to argue over some night when gathered around the stove, but I'm sure a straight forearm will answer both opinions.

You will note the abrupt step-off at the rear. Customers are about evenly divided on this shape and that of gun No. 1 which has a curved end. I don't see any functional advantage to either. It is a matter of taste. The No. 1 forearm is 2″ in diameter at the rear and tapers to 1½″ at the front. These forearms work equally well in the field, or traps.

You will note the striking grain in the wood of these guns.



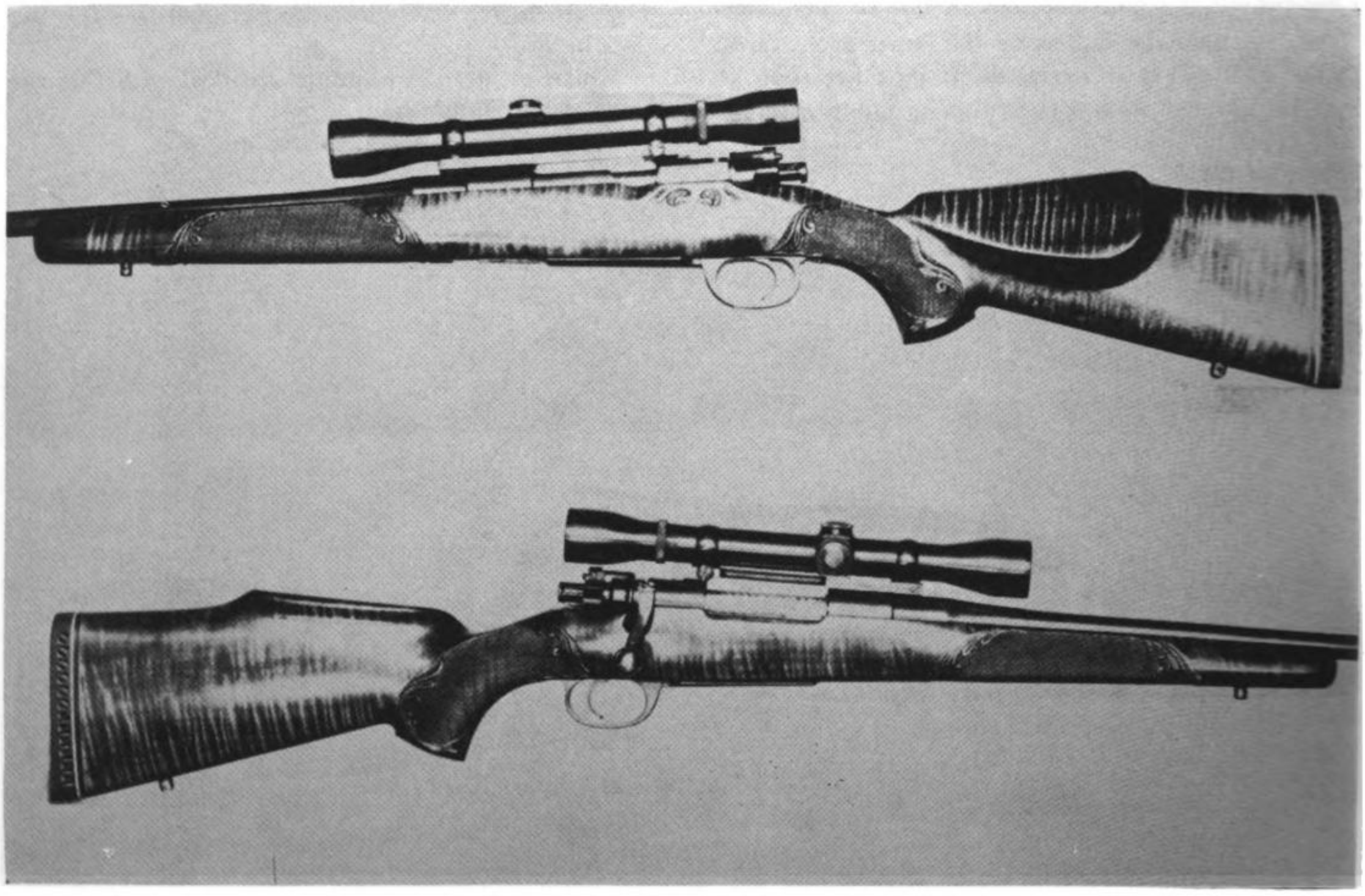


A Maple Stocked 1908 Mauser in .30'06

by Hal Hartley

This gun was made up with the specific purpose of use in mountain hunting. Cutting all excess weight was the principle intent. I selected a '98 Mauser action and had it fitted with a 22" featherweight barrel, chambered for the .30'06 cartridge. Being a figured maple addict, I picked a blank that had been sawed so as to show the grain to the best advantage.

The wood was hard and tough and consequently would carve and checker well. I planned to use a Weaver K-4 scope, with no iron sights. The Monte Carlo roll-over comb added a bit of weight but I wanted this added height and I offset the weight by hollowing out the butt stock and by cutting a 5/8" x 3/4" groove under the barrel. The hollow in the

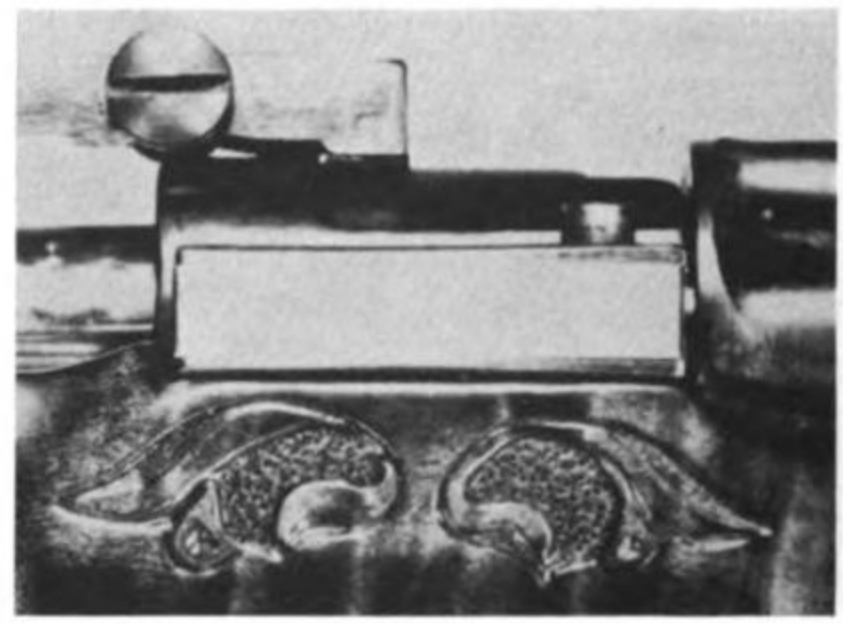


butt stock is 5″ x 2½″ x ⅝″. This is to be a personal gun so I made it to suit *me*.

Some of the features are: A 14″ trigger pull: The cheekpiece is ¼″ higher at the rear than at the nose, which just clears the bolt. The side of the cheekpiece slopes forward and inward which helps to throw the recoil away from the face. The circumference of the grip is 4⅞″ and there is a swell on the right side to fill the palm. A bakelite forearm tip and grip cap and a thin recoil pad comprises the furniture for the stock, which fits me nicely and is a pleasure to shoot.

I wanted something a bit different from the run-of-the-mill checkering so I decided to use a small amount of carving to border the checkering. I drew the pattern on freehand and used a pointed knife blade to cut around the outline. A ¼″ flat chisel and a skew chisel were used to cut away the wood up to the outline, leaving the area to be carved about 3/32″ in relief. A gouge and a parting chisel were used to shape the carving. The checkering is 24 lines per inch.

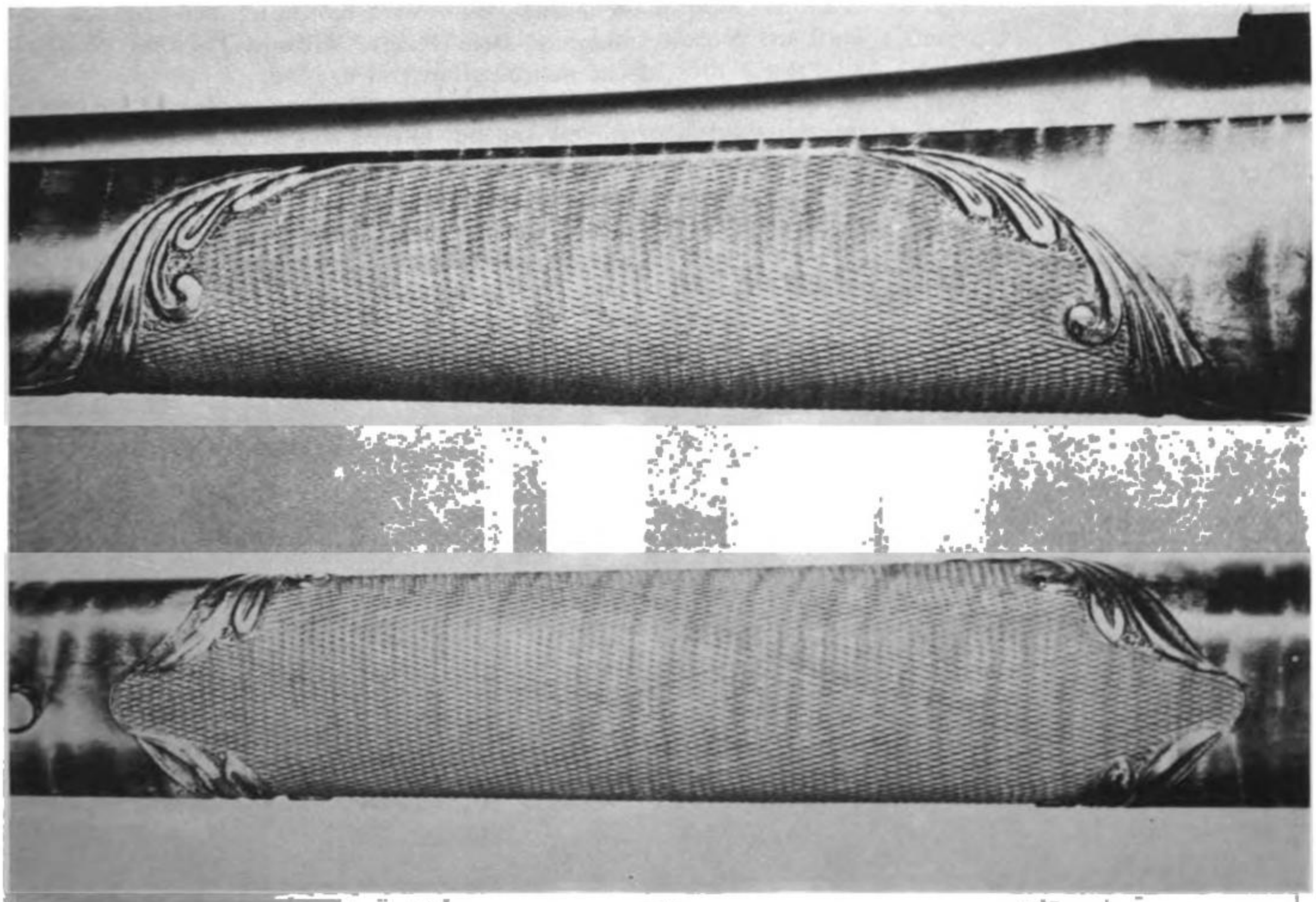
Just to add an extra touch I carved a small area under the bolt release. This place is nearly always



left blank, so I thought a bit of carving would help. Apparently it does because nearly everyone who examines the gun has some remark to make about this point.

A plumber's blow torch was used to scorch the stock, which brought out the contrasting grain, making a very pretty stock with dark brown, light brown and tan colors. The gun complete with scope weighs 7 pounds, 11 ounces.

"Look out Montana, here I come."

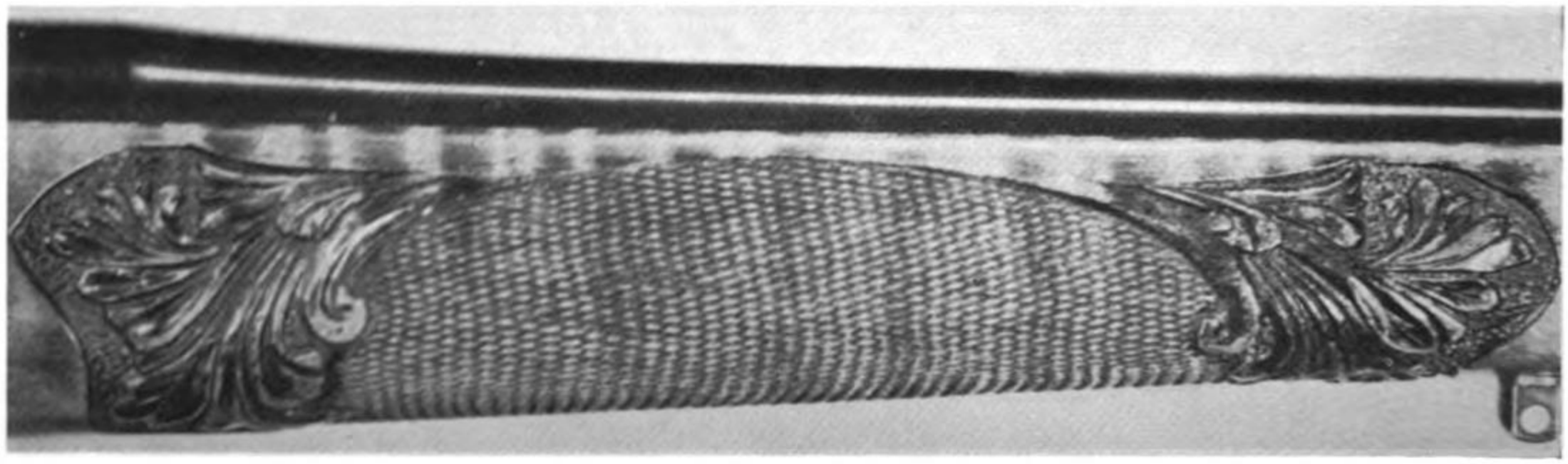


A Maple Stocked .220 Swift Checkered and Scroll Carved by Hal Hartley

For this gun I selected a blank of hard, unusually tough curly maple, slab-sawed. By taking this cut from the side of the log, the blank showed a curly, or wavy figure, rather than the striped, or fiddleback figure obtained from a quarter-sawed blank. This blank had a "heavy" figure, the curls being about as wide as a lead pencil and about a half inch apart. Most of the hard maple we have in the Blue Ridge Mountains is white, but blanks from this particular tree had an orange tinge which accentuated the figure.

For a pattern I decided on a variation of the Triebel No. 21 and carved it in bas-relief. You will note that the forearm has panels which are connected. I drew a sketch of a panel that would cover the particular area and taped it over the place to be carved. Then I used a sharp prick-punch to outline the pattern, making the pricks about 1/16" apart. After outlining one side I transferred the pattern to the opposite side and pricked it in. Using a narrow-blade, sharp-pointed knife I cut a line connecting the prick marks, making the cuts about 1/16" deep.

Now for the serious work and a few words on getting at it. The chisels are the main tools and I will mention the minimum needed. The one I use most is a skew-point. This chisel is ¼" wide and is ground with a fairly long angle ending in a sharp point. With it you can use the point to get into places a flat-end, or a gouge chisel will not go. You can also cut along edges, either straight or curved, with it. You will need a veiner, or parting chisel, which makes a "V" cut, either for fine lines, or the deep



cuts. You will need gouge chisels with at least three different radii. You can use more, but will likely get by with three and they need not be more than ¼" wide. You don't need heavy, wide chisels for this style of carving, it takes flat chisels of ¼"-⅛"-1/16" possible 1/32".

These chisels and gouges must be of steel that will *hold* a keen edge. Some steel will *take* a keen edge, but is either so hard it will crumble, or is so soft it soon dulls. No steel will keep a sharp edge very long, and you *must* keep these tools sharp enough to cut *across* the grain without tearing. *So you must be continually sharpening them.* I prefer my chisels, both flat or gouge, to be flat on the bottom with a long bevel on top. Some wood carvers use gouges with the bevel on the bottom. This makes them easier to sharpen, but I can't control my cut as well as I can with the flat bottom.

For sharpening I use a medium-grit Carborundum stone to bring the tool to a "wire" edge. This keen, rough edge will cut meat better than a smooth edge will, but it will only take one cut in wood to roll that edge over. So you must use a fine, or slip-stone to remove this rough edge, bringing it to a smooth, keen edge that should last for some minutes of cutting. Every one has his own method of sharpening tools, so you must work out the way that suits you best, but be sure to keep those edges sharp. Get into the habit of using the slip stone every few cuts, or so. A dull edge demands more pressure, is more likely to slip, with every chance of tearing away wood from wrong places, and is more apt to cut a finger or hand. It is much safer to use sharp tools and keep them sharp, then the carved work is more neatly done.

Now to the carving. I use the gouges to cut *straight down* around the ends of the scrolls, using the gouge that best fits the shape of the scroll. Then I use the ¼" flat chisel to remove the wood up to the edge of the pattern. In any curly wood *you must cut across the grain* to keep from tearing out a chunk. In hard, tough maple a sharp tool will make a slick cut across the grain, slicker than it can be sanded.

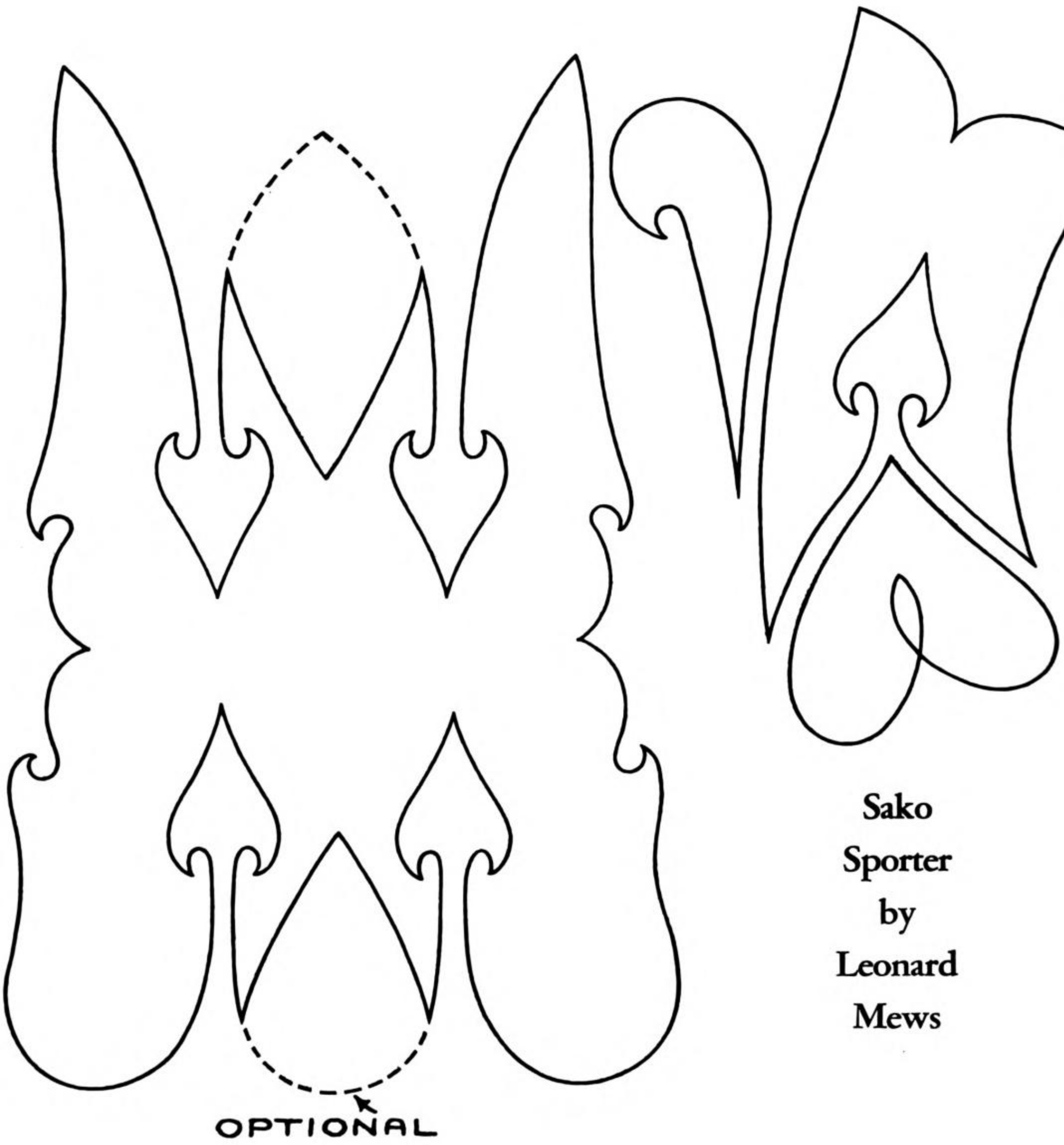
On this stock I removed the wood to an average of 3/32" depth, leaving the scroll area in relief. When I had cut away all the wood I could with the ¼" chisel I used the skew chisel in the hard-to-get-to places. Nothing beats the skew for its job.

With the edges cleaned up it was time to start shaping the tops and sides of the scrolls, which called for the gouges. There was no set pattern for the scroll leaves so I cut deep, narrow grooves in some and wide, shallow grooves in others. I used the parting tool to cut lines, some deep, some light. You can turn your imagination loose here, but keep reasonably close to the theme of the pattern. Use a sharp, pointed knife to clean up the edges of the pattern, getting them neat and smooth.

The next job is to level and smooth the area to be checkered. I used a 24-line tool for this stock and cut as close to the scrolls as I could, but there were places that couldn't be reached, so I stippled these places. I used a single point stippler made of ⅛" drill rod, and instead of tapping it lightly with a hammer, I used it in my hand to press the point in the wood. This is a bit slower, but can be neater.

The stock had been sanded smooth before the start of the carving, but it had become a bit soiled and had a few scratches. So I used No. 5-0 paper to clean it up again. I used a plumbers blow torch to lightly scorch the stock in order to better bring out the contrasting figure. (This procedure is fully explained in another part of the book.) After sanding the surface to an even color it was ready for the first coat of finish.

I'll let you use the finish that you like best.



Sako

Sporter

by

Leonard

Mews

The Jesse's Grief Pattern

Now that the aspiring guncarver has practiced up to this point, his work undoubtedly has merit and is worth showing around. As a concluding pattern—something for him to shoot for—we close with this triflin' bit of gunstock whittlin'.

This example was found in Germany, on the stock of a schuetzen rifle chambered for the 8.15 x 46mm target cartridge. It represents the most outstanding example of gunstock carving ever seen by this publisher—and I have seen many such jobs. I do not particularly care for the designs worked out here, they are standard scenes used for years and years by German and Austrian woodcarvers, typically European in depiction and style. Years ago, such scenes, done in all grades of workmanship, were often seen on panels, cuckoo clocks and similar articles coming from Central Europe; the Black Forest country being famous for its woodcarvers. The Swiss were also greatly skilled along these lines. As an example of skilled workmanship with carving tools this gunstock we show here stands supreme; it should be seen and handled to be properly appreciated. The work is done in deep relief—the figures standing out from the background a full quarter-inch or more. Everyone who has been shown this job admits that it is the absolute tops in gunstock carving.

Practically all this embellishment was done with carving tools. Less than 1% has been stippled in, there are a couple of small areas indicating far-distant sky where this may have been done but all the main backgrounds have been covered with landscape or animals shown in correct perspective and carved in with knife and chisels. A close study of the stag and eagle will show correct carving technique necessary to obtain hair and feather resemblance—which same effect can be obtained on the designs of Ward Whitcomb, previously shown, and which effect should be applied to these designs when they are done in heavy relief. After a close examination of the four illustrations shown of this schuetzen gunstock the reader will probably come to the conclusion that those preceding Whitcomb and Grimm patterns may not be so hard to do after all!

As a matter of fact, a job of this degree and quality does not seem to astound or bother a skilled woodcarver to any great extent. When this work was shown to T. J. Stone, 236 N. Main Street, Lenoir, North Carolina, who today is one of the best woodcarvers in our country, he stated that it was very good work indeed, that it would take him "about a week" to carve each side of a gunstock in this manner, and that were he not so "pressed up" with work at the moment he would like to try his hand at it. Hal Hartley insists that he could do it, too.

Which fact and address we mention for the benefit of any rifleman who possibly might want similar work done and who would be willing to wait out Mr. Stone for less pressing times.

This German gunstock was picked up in Munich, Bavaria, in 1945, by my friend Major Jesse D. Thompson, then a Lieutenant in the Air Force. He was passing through the occupied city when he came upon an immense pile of confiscated firearms, thousands of dollars worth of all kinds of German rifles and shotguns. He stopped for a moment to look—and at once pulled this stock from the pile. A pause of some two days then ensued, while Jesse, assisted by all the enlisted men he could muster, took this mountain of guns apart and put it together again a couple of times. With the result that they did manage to find the barrel—a Krupp steel, octagonal, many-fluted affair, well embellished with gold figures and flowering along the top flat, also bearing the maker's name in relief "C. Stiegele-Munchen." Barrel and stock each carry the number "8597" and are in perfect shape.

Jesse breaks down every time he tells me the story about this find. He is a real gun-lover and has some splendid pieces in his collection. I am wondering if any reader of this book might happen to know of a dog-face who brought back from the wars a single-shot, schuetzen receiver and a forearm bearing the numbers "8597." I will give a pretty to learn of such, provided the owner's address is included with the information.

THOMAS G. SAMWORTH,
Georgetown, South Carolina.

Pattern Frill-de-doos

During the past decade, it has come to the point where plain, honest checkering is not ornamental enough for many of our gun owners and they have been demanding further embellishment to their gunstocks—in the form of carved borders, small finials, or conventional designs run-in as a part of the checkering pattern. So far, about the only conventional design most gunmakers seem to have thought of has been the fleur-de-lis.

On the following two pages is shown a series of small designs and figures, all of which are applicable to a more or less degree for use with some harmonizing style of checkered pattern. We have left out the fleur-de-lis as plenty of these will be found scattered about on other pages.

These figures and designs are the creation of William C. Grimm, of Georgetown, South Carolina, who also did a score of the carving patterns included in this book.

Pattern Intaglios

These figures have been drawn in plain, unshaded style for clarity and convenience in tracing, but they are susceptible of considerable variation in their application to the gunstock. They can be used with one outline, with the checkering running clear up to their margin; or, like those drawn in the left hand column, they can be sketched in on the stock with a double border, with this marginal spacing being left clear or stippled. Or, this marginal spacing can be slightly raised or lowered, leaving both figure and/or checkering in a different plane.

In tracing off, any of these figures may readily and accurately be reproduced in three sizes—a direct over-the-lines tracing for same size; a more or less inside tracing for a slightly smaller design; and an outside-the-lines tracing for a larger figure. Thus, almost any size of checkering pattern may be balanced with the properly sized figures.

Finials

A finial, according to the dictionary, is "An ornament placed upon the apex of a roof, pediment, or gable, or upon the corners of a tower, etc.; a similar ornament serving as a termination to a canopy or the like, . . .".

Early English and American gunmakers considered the finial to be an ornamental ending to their trigger-guards, tailpipes, buttplate tongues, patchboxes, toe and comb plates—made of brass or silver and inletted into the gunstock.

Finials are susceptible of use on our modern guns, as P. O. Ackley shows in his pattern on Page 161, where they are carved out as an appendage to the checkered pattern.

Many of Bill Grimm's designs, shown here as finials, are well suited for use in reverse—that is, they may be run-in as pattern intaglios.

Considerable latitude is possible in the working-out of these finials. Generally, they should be carved out in more or less relief. Stippling, or matting as some call it, is possible on portions of many of these figures. The experienced carver will find room for exercise of his talent in shading and veining on certain figures—so try out and mix them up as you please.

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