

The Woodworker's Journal

VOL. 3, NO. 6

NOVEMBER/DECEMBER 1979

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Build this 19th Cent. Washstand

In This Issue:

- **Harvest Table**
 - **5 Holiday Gifts**
 - **Quilting Frame**
 - **Pine Floor Lamp**
- and much more...**

Shoptalk

This issue completes our third year of publishing and we've come a long way from the day when I sat at the kitchen table doing the artwork for the first issue. As you may have noticed from the masthead, we have completed the move to new quarters and are delighted with the working space now available. Upstairs are the editorial and circulation offices, while the basement contains what we hope will be a model woodworking shop. In case some of you wondered, we actually build most of the pieces shown in each issue. I'd like to extend an invitation to all readers who happen to be in the area to drop in and visit. The coffee pot is always on.

We are now at a rather critical point in our growth. The potential for future expansion is evident, but big isn't always necessarily good. Our original idea was to provide a publication of plans rather than a magazine filled with articles, advertising and blurbs about new products. To date, our readers have overwhelmingly reinforced our thinking through the letters we've received and as reflected in the number of subscription renewals. Of course we have dissatisfied readers too; every publication does and that's as it should be for only through criticism can we become more aware of our shortcomings. Again, we look to you, the reader, to give us the benefit of your feelings about our publication. Some say they would like to see us print on better quality paper in a magazine format, while others say "don't change a thing...we like it as it is." Personally I feel disinclined to mess around with something that has so far proven successful, but my attitude is tempered considerably by

reader reaction. So if you have an opinion on printing, content, advertising...or anything connected with *The Woodworker's Journal*, please let me know.

Many of you will remember that the first issue was mailed out without an envelope. We never did receive a complaint about a damaged copy and would probably have continued mailing in that manner except that the very next issue, due to a situation we could not control, was printed on a type of paper that smudged easily. We decided to protect that issue with a 9 x 12 mailing envelope and somehow, just stayed with that method.

Increasing costs of mailing envelopes, the labor for stuffing them and higher postage rates have forced us to seriously reconsider the matter. Rather than raise subscription rates to help defray these costs, we've chosen to omit the mailing envelope.

In preparation for this and coming issues, we have been doing a lot of browsing at auctions and antique shops. The washstand shown in this issue is one result of our searches and we expect to come up with many more plans for authentic antique reproductions in the future. The Harvest Table is one I've personally wanted to build for a long time so here it finally is...and it's a beauty, with or without turned legs.

We've had so many inquiries about Don Kinnaman's round tapering jig that I decided to break a rule I once set about never repeating a project. This is the first time in three years we've done this and you have my assurance that it will be a very rare occurrence.

Jim McQuillan

THE WOODWORKER'S JOURNAL

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LETTERS

As a novice to the woodworking scene, I would like to know an easy method of making a tack rag for dusting an item off before the finish is applied. Presently I am buying tack rags. Can you help me out? M. Daniels, Northampton, MA

Over the years we've come across a variety of "formulas" for making tack rags. Here's one that we've found to be good. It's easily made with about a two foot square of finely woven cheesecloth or even the back of an old dress shirt. Soak the cloth in warm water, wring out and liberally sprinkle pure turpentine on the moist cloth. Follow this with a liberal sprinkling of varnish. Use enough to turn the cloth yellow. Fold the cloth with all edges to the center and wring out tightly. The cloth should be sticky enough to pick up dust, but not so damp that it leaves moisture marks on the wood. Always store in a tightly sealed jar to prevent spontaneous combustion and to keep it from drying out. Occasionally, sprinkle the cloth with a few drops of turpentine and water to revive it.

Please send me information on where to obtain the kits of patching wax and tools for restoring antiques as mentioned in the "Restoring Antiques" column in your July/August 1979 issue. L. Wegner, Ottertail, MN

The company Golden Star, Inc., 400 East 10 Avenue, North Kansas City, MO 64116 manufactures spirit stains, shellac sticks, etc., and has refinishing kits for sale. They sell in minimum quantities but will also refer you to a local dealer.

Also, The Woodworker's Store, 21801 Industrial Boulevard, Rogers, MN 55374 sells patch sticks, an alcohol lamp, and burn-in knife. These are sold individually, not as a kit. Cost of their catalog is \$1.00.

I have a couple of questions about plans for the wall clock shown on pages 8 and 9 of the Sept./Oct. 1979 issue.

1) Why are parts A, B, and C made from 1/2 inch thick stock? Not everyone has a planer available; and not every yard carries 1/2 inch stock. Many of us have to work with stock material.
2) On page 9, Part L (dial panel) is listed as 1/4 x 7 1/2 x 8 inches. Fig. 2 shows L as 3 3/4 inches from center to bottom and 3 3/4 inches from center to left side. Should I assume the extra 1/2 inch to be from center to top? R. Loomis, Tiverton, RI

You could use 1 inch (3/4 inch actual) stock but it's our feeling that 1/2 inch is more appropriate for this project. It's lighter and lends a better overall ap-

pearance where the stock shows at the bottom. It's true that most lumberyards don't carry 1/2 inch stock, but many are willing to plane down 1 inch. That's the way we get all our 1/2 inch stock for making drawers. Remember though, you pay for 1 inch and you end up with 1/2 inch. Also keep in mind that with proper set-up, parts as narrow as "A", "B", and "C" can be resawn to 1/2 inch stock on the band saw or table saw. Another way, and one that has been used for thousands of years, is to get out your hand plane, give the blade a good honing, and go to it.

In regard to your second question, the 3/4 inch dimensions shown are to the center of the concentric circles on the face, which is below the actual center of panel "L". This was mentioned in the write-up but may not have been completely clear in the drawing. Thank you for bringing it to our attention.

I recently moved...my new home has a 40 x 60 foot horse barn, and I intend to devote a space 12 x 30 to my woodworking shop. Is there a set pattern on placing the tools in the shop, where to set the circular saw, drill press, band saw, etc. I am most interested in placing my tools for the greatest efficiency. D. Shibinski, Niles, MI

There are so many factors to consider when planning a new shop layout (a good deal of them related to the woodworker's individual requirements) that it's awfully hard to make a specific suggestion. What you may find helpful is a book called "The Complete Book of Home Workshops" by David Manners. It's published by Harper and Row and the price is \$12.95.

EDITOR'S NOTE

Last issue we asked for help from our readers in an effort to locate sources of supply for several hard-to-find woodworking items. Our thanks to all readers who took the time to send in suggestions. Here's what we found out.

...For 9/16 x 9/16 inch porcelain knobs. They are available for 40¢ each postpaid from Colonial Workshop, Box 41032, Sacramento, CA 95841. Minimum order is \$3.00.

...For a book on "linen fold" carving, the book "Woodcarving" by W. Wheeler and C. H. Hayward has a chapter devoted to this method of carving. It's published by Drake Publishers, Inc., 801 Second Avenue, New York, New York 10017.

...For stainless steel spikes to hold meat on carving trays. No one could give us a source for stainless steel, but one reader suggested 1/4 inch hardwood dowels, cut to length and pointed.

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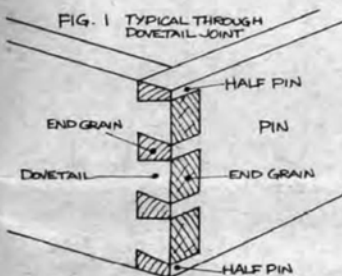
The Beginning Woodworker

DOVETAILS PART II

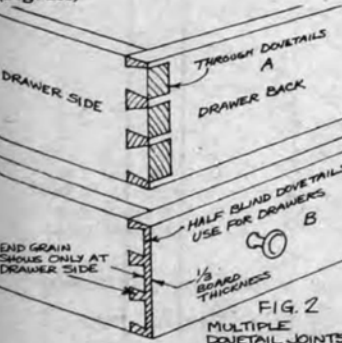
Thus far, we have discussed the laying out and cutting of the single dovetail joint and its variations. If the beginning woodworker has practiced making these single dovetail joints, both in pine and various hardwoods, he or she will have few problems in the execution of well-fitted multiple dovetail joints.

Almost without exception, multiple dovetails are used to join drawer sides to fronts and backs in fine furniture... of both traditional and contemporary design. Thus, it's an important joint and one which should be mastered. Whether the joint is formed by hand or power tools is up to you, but I strongly urge you to learn how to make these joints with hand tools first. Besides experiencing the pleasures of working wood by hand, the manual skills gained in the process will be of great benefit even when using machinery.

The single dovetail joint consists of a dovetail pin on one part fitted to a socket on the mating part with a shoulder on each side. In order to avoid confusion in referring to the parts of a multiple dovetail joint, we shall use the nomenclature shown in Fig. 1.



In most work, drawer sides are laid out with the dovetails at each end. The sockets to receive these dovetails and the pins that fit between them are cut into both ends of the drawer front. The usual practice is to use half-blind dovetails for joining drawer fronts to sides. The easier through dovetail joint is used to join drawer back with sides. (Fig. 2A)

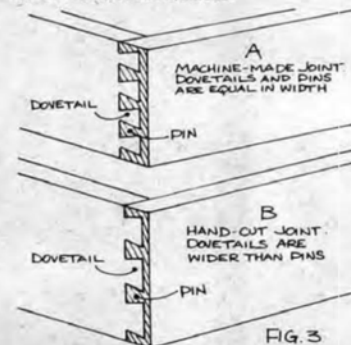


If you will examine the drawer joints on a quality factory-made chest, you'll notice that the dovetails and the pins between them are equal in width. (Fig. 3A) This uniformity is a characteristic of machine-cut dovetails. When cutting dovetails by hand, many craftsmen prefer to make the dovetails considerably wider than the pins (Fig. 3B). The reason for this is that they look better... more interesting, and somehow a bit more elegant. Also, if you're going to cut dovetails by hand, you might just as well make them so they are not mistaken for machined joints.

Referring again to Fig. 2, you also notice that it's customary to end the joint with partial pins at each end. This is the way it's generally done, but the

joint can also be designed with partial dovetails at each end with no significant difference in strength.

The first step in laying out a joint is to decide how many dovetails and pins will be cut in the workpieces. If you are reproducing an antique, you'll probably follow the layout of the original piece. As a general rule, the earliest European and American furniture up to the 18th century, show drawers joined with one, two and sometimes three large dovetails; depending on the width of the mating parts. Through the 18th and well into the 19th centuries, dovetails tended to become smaller and more numerous, reflecting perhaps the increasing skill and sophistication of cabinetmakers.



The more nearly equal dovetails and pins are in width, the stronger the joint will be, but as mentioned earlier; for better appearance, dovetails should be wider than pins. Fig. 3 A & B shows two suggested proportions; A being more or less standard. Example B however, seems neater.

When you have considered the width of the joining parts and have decided on the number of dovetails and their proportions, lay out the dovetails first on the workpieces that will be the drawer sides. If, for example, you decide that the sides will each have four dovetails, the drawer front and back will then have three full pins and a partial pin at each end (Fig. 3A).

Divide the width of the drawer sides into four equal parts. If the width is less than four inches and four equal divisions cannot be easily computed, simply lay a ruler across the workpiece, at an angle so that the zero mark rests on one edge and the four-inch mark aligns with the outer edge. Make a mark at each 1 inch division; then use a square and soft pencil to bring these marks to the end of the board (Fig. 4).

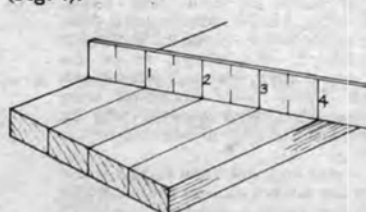


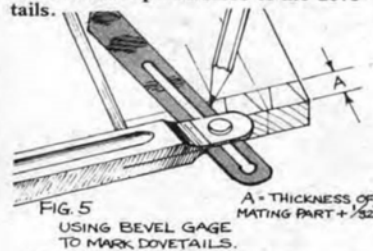
FIG. 4 USING RULE TO MARK WORKPIECE INTO FOUR EQUAL DIVISIONS.

The three division lines you have marked represent the center lines for the three full pins on the drawer front and back. In this example, the dovetails will extend fully through the thickness of the mating piece; in this case the drawer back, thus, the depth of the cut-out spaces to contain the pins should equal the thickness of the drawer back.

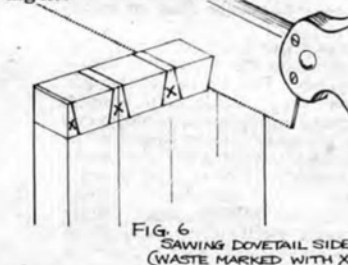
Use a try square to mark off this

thickness plus 1/32 inch around all four sides of the back (Fig. 5). The extra 1/32 inch allows for a final flush trimming later.

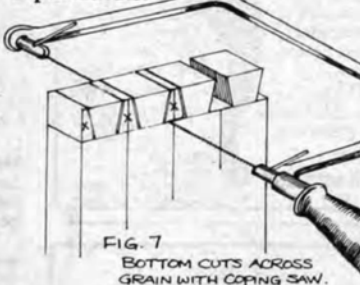
Now set your bevel gage for a 10 degree or 1 in 6 inch angle as shown in Part I, and use the gage to lay out the dovetails on drawer sides (Fig. 5). Hold a sharp pencil at an angle so the point bears firmly against the blade, and mark the sides of the pins which also are the tapered sides of the dovetails.



Mark the waste material between dovetails with an X to avoid confusion when cutting. Secure the workpiece in the bench vise and use a fine-tooth back saw to cut the dovetails. Work carefully, cutting on the waste side of the line; just grazing, but not removing it.



Bring the cuts almost, but not quite to the scribed bottom line (Fig. 6). A coping saw does a good job of cutting across the grain and removing most of the waste (Fig. 7). Remove the workpiece from the vise and clamp it flat on the bench over a scrap board. Then use a chisel to dress sides and bottom of pin cut outs.



The mating pins on the drawer back are best marked using the finished dovetails as a template. To do this, clamp the stock for the drawer back in the vise, end up. Lay the dovetailed side on the end of the back and trace dovetails, using a sharp knife to score the end grain (Fig. 8). Use the try square to carry scribed lines to the face for a distance equal to side thickness plus 1/32 inch.

Continued on page 4



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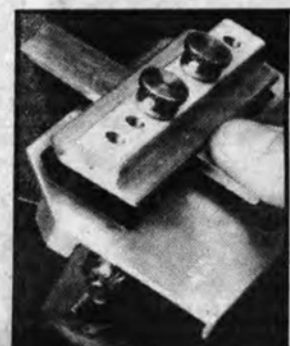
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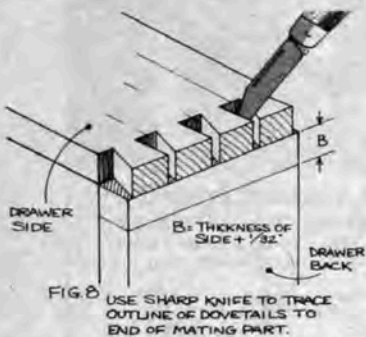
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The Beginning Woodworker (Cont'd.)

Again, mark waste portions and cut out the spaces between the pins, using the backsaw and finishing with a chisel. A well-fitted joint should only require light tapping with a mallet and scrap block. Trim further, if needed, and when the fit is good, apply glue to all surfaces and clamp together. The use of a notched block in conjunction with clamps, will put pressure only against the dovetails where it's needed.

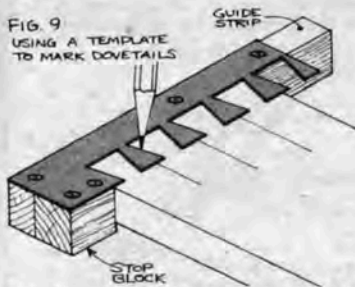


The procedure for making the half-blind dovetail joint is very similar to that for making through dovetails with the exception that the tails are not as deep; the sockets between pins being cut about two-thirds into the sides (Fig. 2B).

If you have cut half-blind single dovetail joints as discussed in Part I, you'll recall that the backsaw is held at an angle of about 45 degrees and the pins are only partially cut. The waste between them is cleaned out with a chisel held perpendicular to the work. Cut a notch along the back guide line;

then alternately chisel with and across the grain to remove waste. A narrow paring chisel is a big help in this operation.

If you expect to do most of your dovetailing by hand, it's a big help to make a template of heavy aluminum or plexiglas. A guide strip fastened to one end will locate it on the work (Fig. 9).



For those who plan to make use of power tools to cut dovetails, the router and a dovetail template kit does a quick and neat job of cutting uniform 1/2 inch dovetails in stock from 5/16 to 1 inch thick. The template kit sells for about \$50.00 and comes with complete instructions for use. These outfits will dovetail pine but work best on hardwoods.

A bandsaw can be used to help cut out the waste on the dovetailed members of joints. The backs of the recesses are then cleaned up with a chisel. Another method is to rough cut waste by repeated passes over a table saw with the arbor tilted to 10 degrees. Use the miter gage as in a cross-cutting operation and reverse the workpiece to cut the opposite angle. Keep machine cuts well within pencil lines so a chisel can be used to trim right up to the lines.

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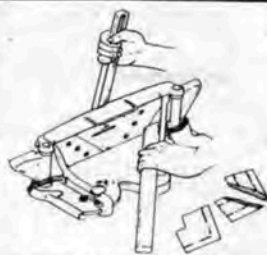
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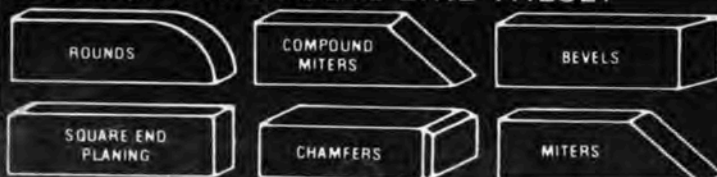


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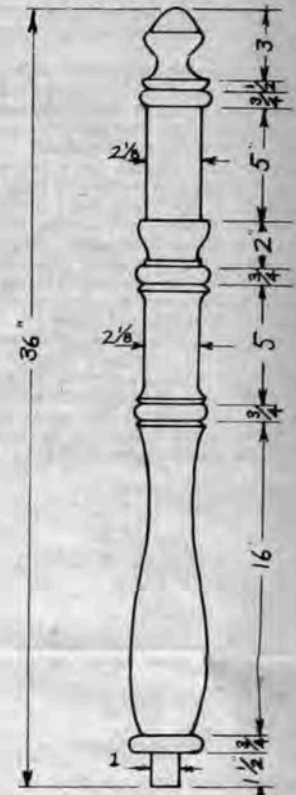
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Clothes Tree

by Roger E. Schroeder

The feet are six-quarter lumber, though two three-quarter-inch, glued-up boards will do. Their tops are routed with a half-inch beading bit and each is joined to the base with dowels.

If hooks with narrow flanges cannot be bought, most hardware stores and lumber companies carry coat hooks. These may necessitate chiseling away part of the tree to leave a flat surface.



Frustrated by my lathe's limited turning capacity between centers and intrigued by the socket and tenon joint, a clothes tree seemed the perfect project as well as the ideal holiday gift.

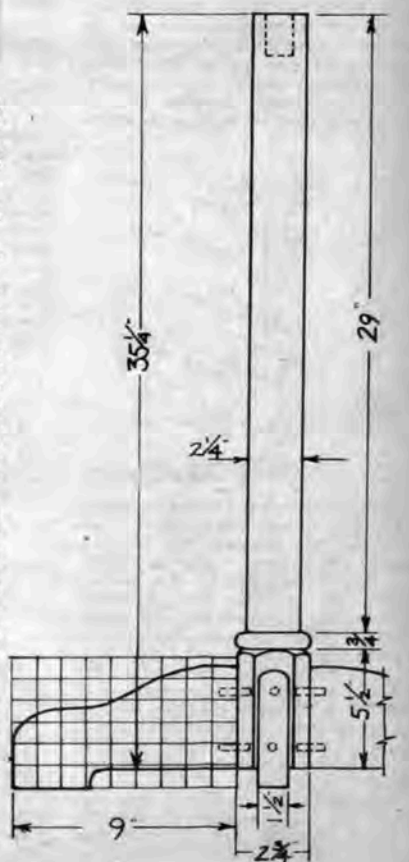
The trees I turned are in two parts, each about three feet in length. The nearly six-foot-high poles lend a majestic appearance to bedroom, den or living room.

Because of their height, I decided on solid three-inch lumber, though glued-up stock can be worked. Maple, because it turns so well, was used, though other hardwoods or even pine can be substituted. Some of the trees were stained, and others, as in the photo, were spray-painted with black enamel. These were accented with gold rings that were sprayed last by masking out the area above and below each ring.

The lower half will have to be turned first so the socket can be bored at the dead center using a one-inch spade bit in a drill chuck. Turning this part allows the tenon to be accurately sized (also at the dead center), since it is unlikely the socket hole will be exactly one inch. A trial-and-error fitting of the two pieces can be done as the tenon is turned down to its diameter.

The square base of the tree has its corners cut at 45 degree angles one-half inch in from the edges by running the entire piece through a table saw before it is turned. This is not only for appearance but also eliminates splintering as the gouge rounds the wood.

Extra wood at the acorn top should be left so it can be parted from the live center with a skew.



Pine Floor Lamp



Based on the old time design of a blacksmith's tool tray, this rather unique floor lamp will lend the flavor of "Early America" to any setting. The large bottom tray provides ample space to display a good size potted plant or a generous supply of your favorite magazines.

Dovetail joints add both strength and interest to the trays, however rabbit joints may be substituted if desired. Pine is used throughout.

Start with the lower tray. Cut the front and back ($1 \times 7\frac{1}{4} \times 20$ inches) and the ends ($1 \times 7\frac{1}{4} \times 15$ inches) to size. Carefully lay out, mark, and cut the dovetail joints as shown, and make the tapered leg cuts. Next, cut a $\frac{1}{4}$ inch deep dado in the back and front to accept the plywood bottom. Although it can be used as is, for best appearance the plywood should be covered with pine veneer. Measure the thickness of the plywood plus veneer, then cut the dado wide enough to fit. The dado is not cut in the two ends because it will show at the dovetails. Instead, two $\frac{3}{4} \times \frac{3}{4} \times 2$ inch blocks are glued at each end. Next, cut the two upright supports ($1 \times 3\frac{1}{2} \times 23$ inches) and the tray support ($1 \times 3\frac{1}{2} \times 14\frac{1}{4}$ inches).

The dovetailed upper tray is made up of the front and back ($\frac{1}{2} \times 2 \times 17$ inches) and the ends ($\frac{1}{2} \times 2 \times 14\frac{1}{4}$ inches). The $\frac{1}{4}$ inch plywood bottom is veneered, and as before, the $\frac{1}{4}$ inch deep dado in the front and back should be cut wide enough to fit. Also a $\frac{3}{4} \times 3\frac{1}{2}$ inch notch is cut to fit over the tray support.

To make the shaft, cut two pieces of $1\frac{1}{2}$ inch stock ($1\frac{1}{4}$ inch actual) $\times 1\frac{1}{4} \times 32$ inches and run a $\frac{3}{16}$ inch wide $\times 3/16$ inch deep lengthwise groove down the center of the $1\frac{1}{4}$ inch face

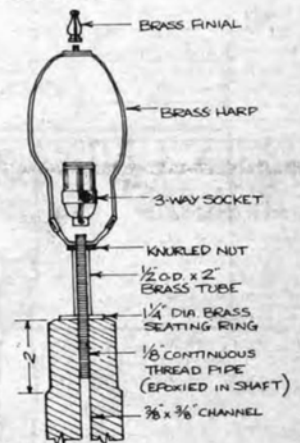
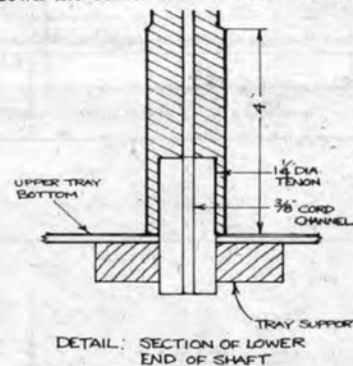
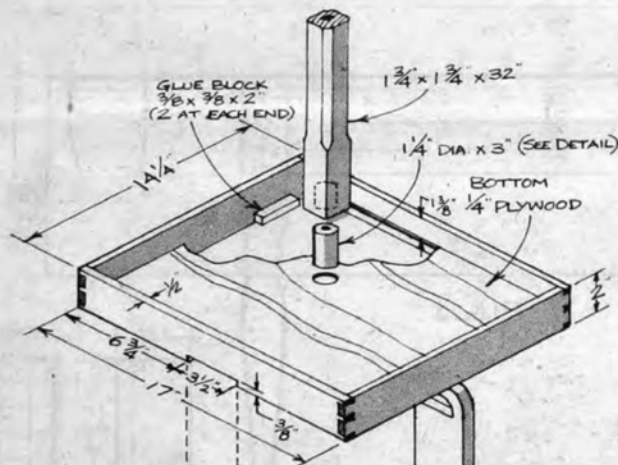
(one side only). Now glue and clamp these two pieces together so that a block is formed that measures $1\frac{1}{4} \times 2\frac{1}{2} \times 32$ inches with a $\frac{3}{4} \times \frac{3}{4} \times 32$ inches channel down the center. To square up the block, trim $\frac{3}{4}$ inch from each side of center on the $2\frac{1}{2}$ inch side. To drill the hole for the $1\frac{1}{4}$ inch tenon, drive a snug fitting $\frac{3}{4} \times \frac{3}{4}$ inch plug into the lower end of the shaft. This will serve as a center point for the drill bit to bite into. After drilling, use a long piece of $\frac{1}{4}$ inch dowel stock to knock out any excess plug still in the channel. Add chamfers on the four corners, stopping them four inches from the bottom end. The $1\frac{1}{4}$ inch diameter tenon can be made from closet pole, or $1\frac{1}{4}$ inch dowel stock, or turned on a lathe.

Begin assembly with the lower tray. Glue the two glue blocks to each end, allow to dry, then glue and assemble the back and front, two ends, and plywood (do not glue plywood). The upright supports are glued and assembled with 3 pegs as shown.

Assemble the top tray, then glue and screw to tray support. Make sure $\frac{1}{4}$ inch extends at each end to fit into upright support dados. A $1\frac{1}{4}$ inch tenon hole is drilled through the plywood and drawer support.

Assemble the tenon, shaft, and lamp parts as shown in the details. The dotted line shows the path of exit for the wire.

Sand all parts thoroughly. Stain to suit and finish with two coats of polyurethane varnish.



Shop-Tips

Keep a 3 or 4 foot length of rope handy for those touch-up staining jobs. Dip the end into the stain and use it like a small brush. When you're done, just snip the used part off. Next time, you've got a clean "brush" ready to use.

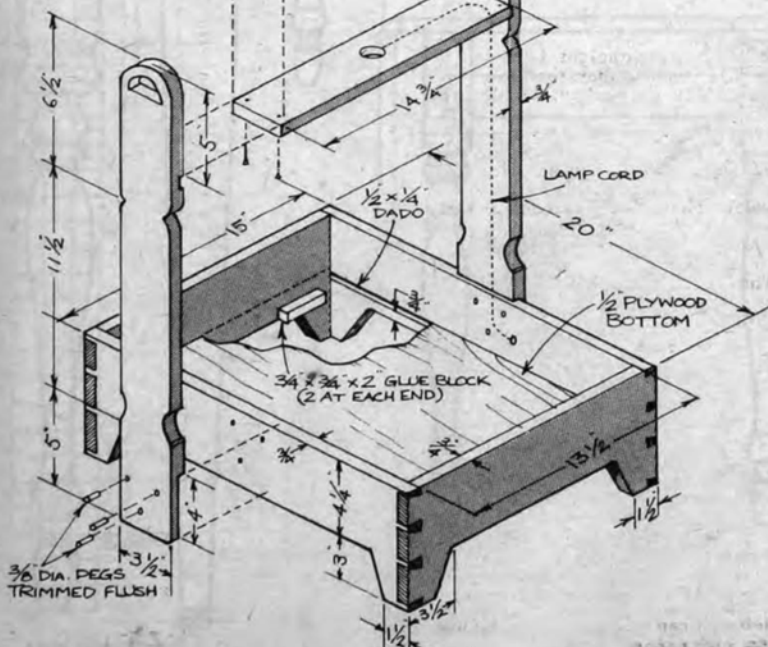
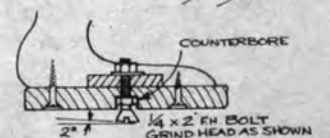
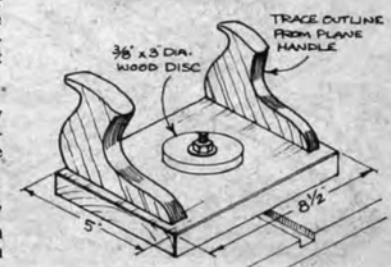
When a jigsaw blade breaks near the lower chuck, the bottom half of the broken blade is usually small and difficult to get out. Keep a small magnet handy to make this job quick and easy.

Pipe clamps can be made to any length you want by using pipe couplings to join lengths of threaded pipe together.

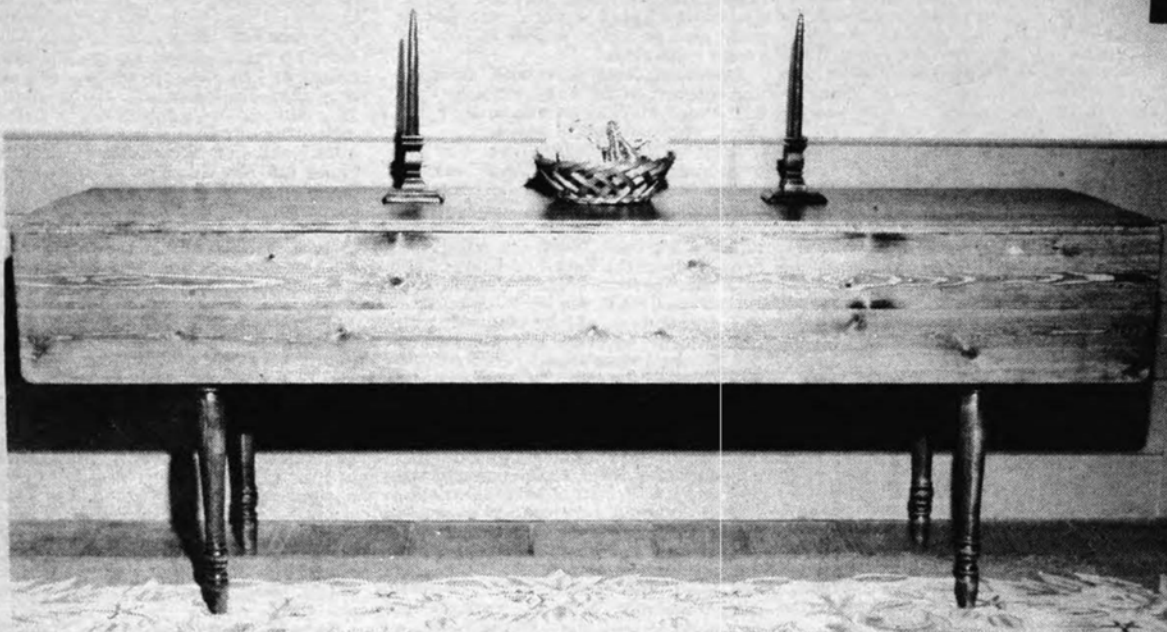
Here's a trick to simulate "antique" nails. Take a nail with about a $\frac{1}{4}$ inch diameter head (sheetrock or common nails work fine) and file the heads to a rectangular shape.

If you apply an oil stain and it comes out too dark, it can be lightened somewhat by rubbing down with a clean cloth wetted with turpentine or paint thinner.

Here's an easily built router plane for cleaning up the bottoms of dados. The cutter is simply a bolt head ground at a 2 degree angle as shown. A nut and washer at each end provide for vertical adjustment. Use hardwood for the base and handles which can be traced from a jack plane or panel saw.



Early American Harvest Table



For those who take pleasure in reproducing and living with early American furniture, this striking example of an 18th century Harvest Table will surely prove to be an irresistible project. With both leaves raised, it provides a generous 45 by 72 inch dining surface; yet with the leaves down it takes up relatively little space and most armless dining chairs will tuck in under the leaves for more efficient storage.

Although the table looks undeniably elegant with lathe-turned legs, you'll note that an alternate square tapered leg is given for those who lack a lathe. Figure 4 shows standard mortise and tenon joinery which will withstand generations of use while Fig. 5 offers a simplified version that is appropriate for a utility table; perhaps for displaying plants.

The first step in construction is to edge-joint $\frac{1}{4}$ inch pine stock for the top and leaves. The top and leaves should be glued up about 1 inch oversize in both length and width. Use four or five boards for the top and join with glue and $\frac{1}{4}$ x $1\frac{1}{2}$ inch grooved dowel pins spaced about a foot apart. Join two boards for each leaf, again reinforcing the joint with $\frac{1}{4}$ inch dowel pins.

Trim top and leaves to finish length but do not trim to finish width until the rule joint is routed. If you goof, or the router slips, you'll still have enough width for another try. If you choose to build the simplified utility table version, or lack a router, you may want to leave the mating top and leaf edges square, fastening them with long decorative black strap hinges.

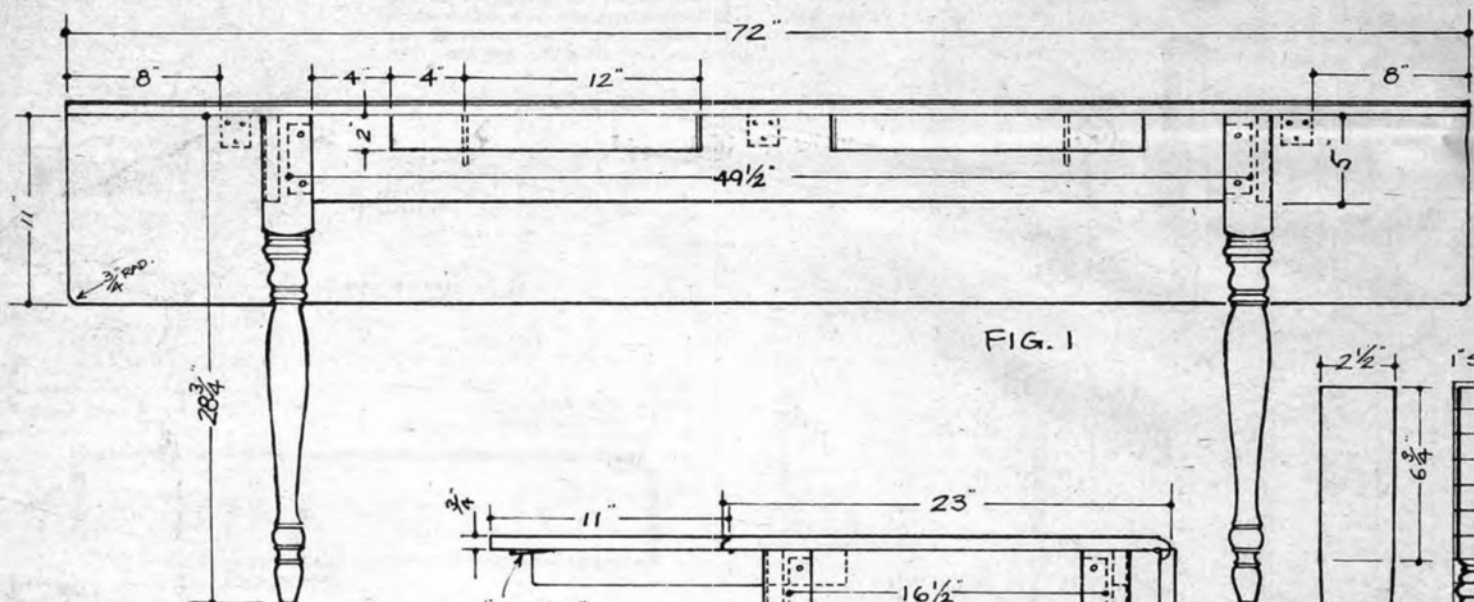


FIG. 1

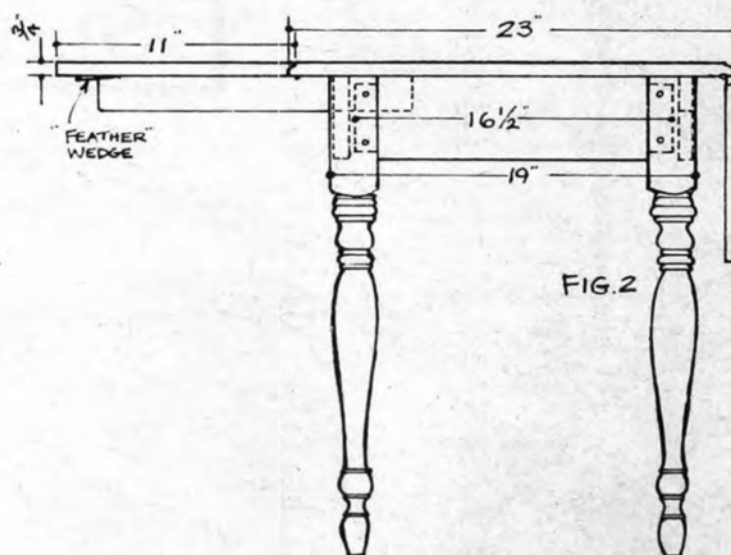
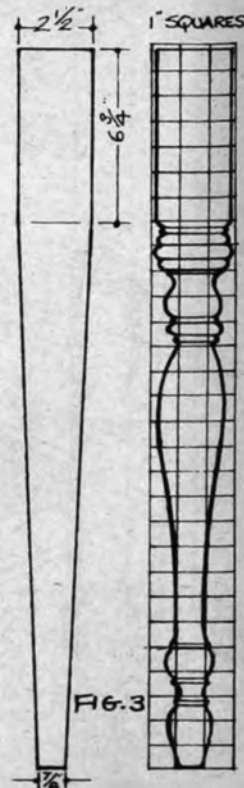
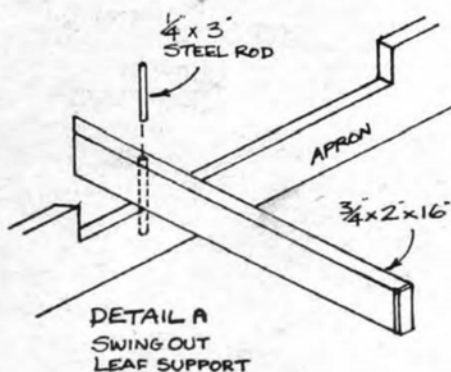


FIG. 2



2 LEG STYLES

The side edges of the top are shaped using a router and $\frac{1}{4}$ inch bead cutter while the leaves are routed with a $\frac{1}{4}$ inch cove cutter as shown in detail B. Three $1\frac{1}{2} \times 3\frac{1}{4}$ inch table hinges are used for each joint and if you've never hinged a rule joint before, we suggest you rout a joint on scrap stock and practice mounting the hinges. The hinge barrel pin must be exactly centered below the top-leaf joint and recessed into a groove in the underside.

The stock for the legs, either turned or square tapered can be either solid or glued up from two pieces of $\frac{1}{4}$ inch stock. Maple, birch or cherry are preferred for turned legs, but clear pine will do if the narrower portions are left slightly larger in section. If you're an experienced turner, the legs will present no problem other than keeping them identical. For the square tapered legs, use a tapering jig (*The Woodworker's Journal*, Vol. 2, No. 6) with your table saw to do the job quickly and cleanly.

Lay out mortises in legs, allowing for a $\frac{1}{8}$ inch set-back of the aprons as shown in Fig. 4, and use a $\frac{1}{4}$ inch drill bit to clear out waste, finishing up with a chisel.

The aprons are next gotten out from $\frac{1}{4}$ inch stock and you'll note that their lengths differ according to what type joinery you use. Shape tenons on apron ends and cut grooves, as per detail C for the table top fasteners. These are sold in many hardware stores or can be ordered from mailorder firms specializing in cabinetmaker supplies. It's best to have the fasteners on hand before cutting the grooves so that a perfect fit can be obtained.

Cut two long notches in each apron for the swing-out leaf supports. Note

that one end of the notch is cut at about 45 degrees to serve as a stop while the other end is cut square to the apron. Cut four wings to fit these notches and drill wings and aprons for a $\frac{1}{4}$ inch steel pivot pin. Use a doweling jig or drill press to drill for these pins as they must be perfectly vertical. A small washer provides slight clearance between the wing bottom and the apron. However, the wings must be exactly flush with the top edges of the aprons or the leaves will sag.

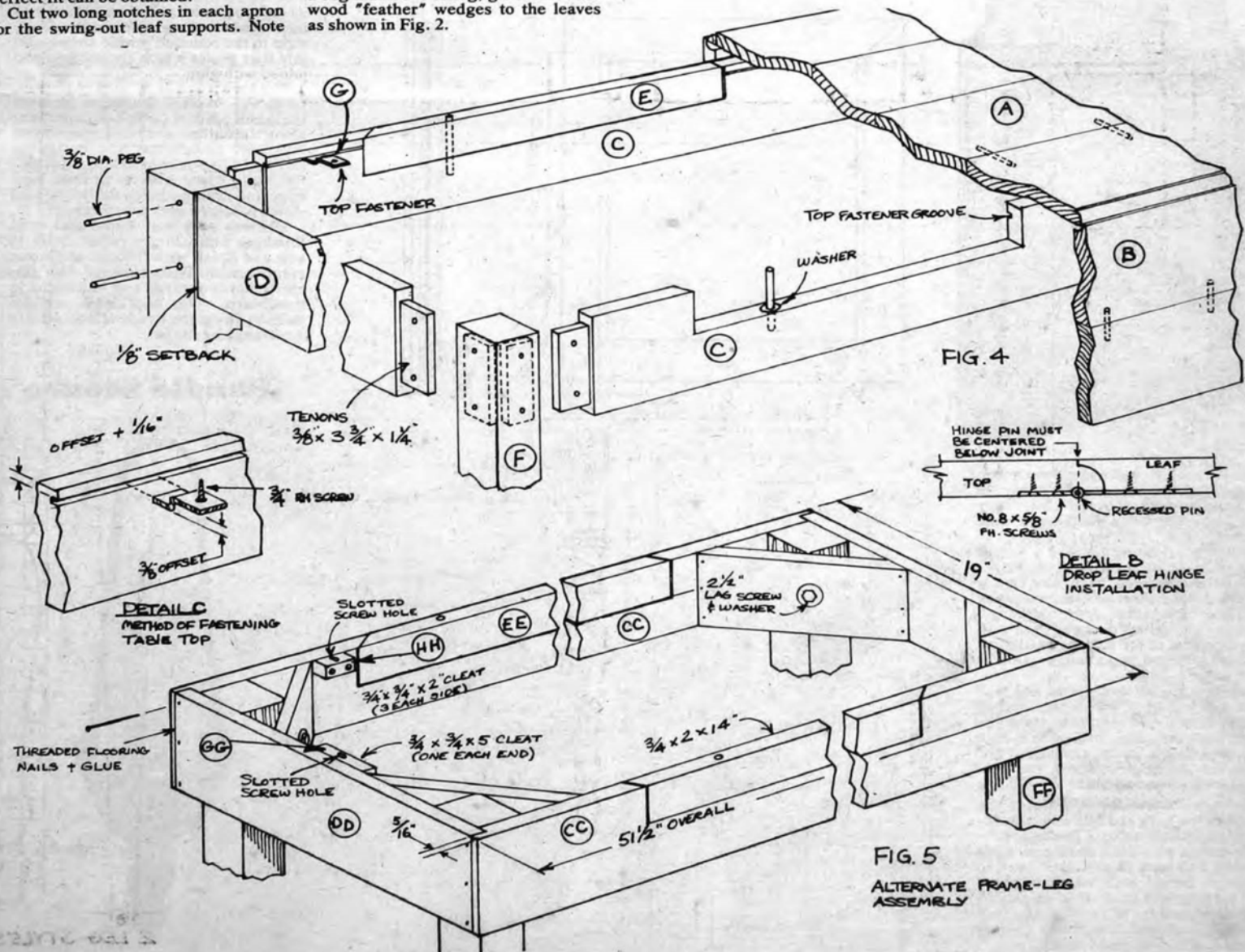
After sanding, the legs and aprons may be assembled with glue and clamped overnight. For the version in Fig. 5, glue and clamp legs to frame corners and secure with corner braces lag-screwed into legs as shown. The top and leaves can now be turned upside down and mortised for the six hinges. After hinges are fitted, remove them and finish-sand and stain top, leaves and frame to suit.

When applying a finish, be sure to cover the underside of top and leaves and the inside faces of aprons. A clear finish impervious to water and alcohol is best for tables. Three coats of a satin luster varnish, rubbed down between coats with 00 steel wool is well worth the effort. Take extra care to remove all dust between varnish coats. Rub the final coat down until all surfaces have an even sheen, then dust and apply a thin coat of furniture paste wax, followed by polishing with a soft cloth.

Finally, fasten the top to the frame using two offset fasteners at each end apron and three fasteners along each side. Fasten leaves to top and check swing-out wings to make sure they support the leaves properly. If there is a slight amount of sag, glue thin hardwood "feather" wedges to the leaves as shown in Fig. 2.

BILL OF MATERIALS

Part	Description	Size in Inches	No. Req'd.
A	Top	$\frac{1}{4} \times 23 \times 72$	1
B	Leaf	$\frac{1}{4} \times 11 \times 72$	2
C	Front and Back Apron	$\frac{1}{4} \times 5 \times 49\frac{1}{2}$	2
CC	Front and Back Apron	$\frac{1}{4} \times 5 \times 51\frac{1}{2}$	2
D	End Apron	$\frac{1}{4} \times 5 \times 16\frac{1}{2}$	2
DD	End Apron	$\frac{1}{4} \times 5 \times 18\frac{1}{2}$	2
E	Leaf Support	$\frac{1}{4} \times 2 \times 16$	4
EE	Leaf Support	$\frac{1}{4} \times 2 \times 14$	4
F	Leg	$2\frac{1}{2} \times 2\frac{1}{2} \times 28\frac{3}{4}$	4
FF	Leg	$2\frac{1}{2} \times 2\frac{1}{2} \times 28\frac{3}{4}$	4
Detail B	Hinge	$1\frac{1}{2} \times 3\frac{1}{4}$	6
G	Top Fastener		6
GG	Cleat	$\frac{3}{4} \times \frac{3}{4} \times 5$	2
HH	Cleat	$\frac{3}{4} \times \frac{3}{4} \times 2$	6



5 Holiday Gifts to Make



In these difficult times of ever-rising prices and declining quality in both goods and life-styles, holiday gift shopping, which should be a pleasure, can instead be a depressing experience. But we who enjoy working with wood have the advantage of being able to beat the system, so to speak, by creating our own gifts at a fraction of their retail cost.

As in previous years, we have assembled, for your approval, a group of useful and decorative handcrafted pieces which will make welcomed gifts. They should also sell well at local gift shops if you have a knack for selling and enjoy mass-production work.

Most of the items shown can be produced with hand tools. The candle sconce, however, will require lathe turning. The napkin holder and lap desk are fine projects for novice woodworkers. All the pieces shown are made, for the most part, from clear white pine, but experienced woodworkers will recognize that in some cases, the use of more exotic woods and joinery will result in really outstanding pieces.

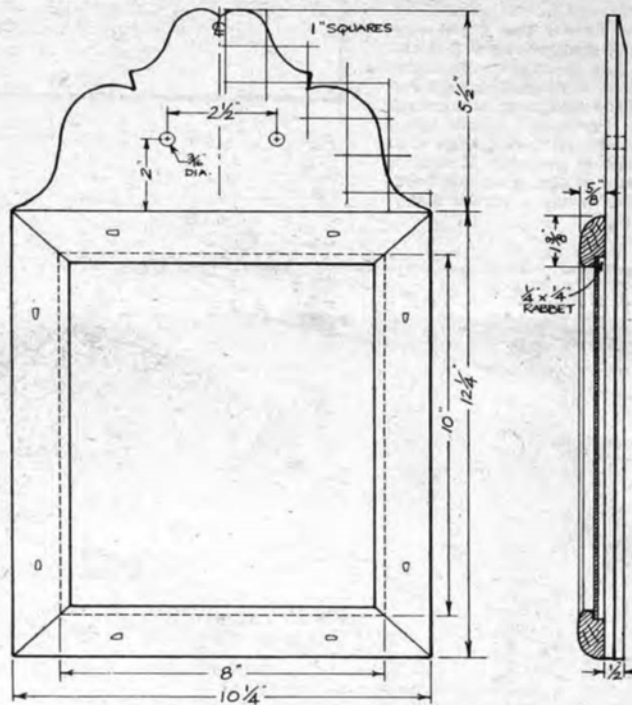
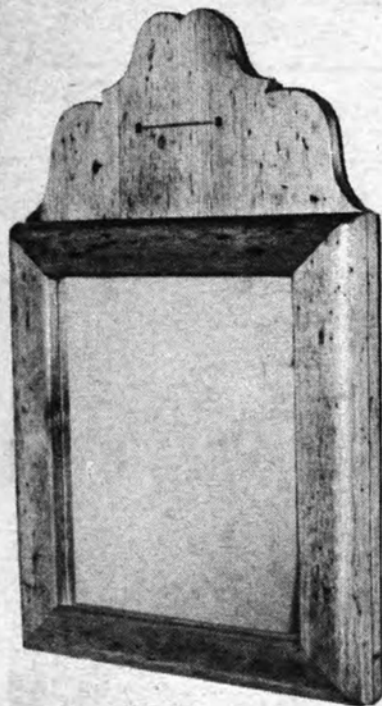
18th Cent. Mirror

A smaller version of this charming piece appeared in *The Pine Furniture of Early New England* by R. H. Kettell. We designed ours a bit larger to use a standard 8 x 10 inch mirror which can be obtained for about \$3.00.

Rip 4 feet of $\frac{1}{4}$ inch x $1\frac{1}{4}$ inch clear pine for the frame. Resaw this strip to $\frac{1}{8}$ inch thickness and cut a $\frac{1}{4}$ inch x $\frac{1}{4}$ inch rabbet along one edge. Plane strip to the rounded profile shown, cut into four pieces which are mitered and joined with glue.

The backboard is $\frac{1}{4}$ inch pine planed to $\frac{1}{2}$ - $\frac{3}{4}$ inch thickness. Enlarge the scroll pattern on heavy paper, cut along the outline and trace around this template, transferring the design to the stock. Use a saber saw to cut scroll. Rasp and plane a bevel around back edge and drill two holes for heavy cord which is looped over a wall hanger.

Distress back and frame and sand, finishing with 220 grit paper. Stain to suit and finish with thinned shellac or satin varnish. Fasten mirror with glazier's points or brads and nail frame to backboard. We duplicated antique nails by filing the heads of box nails to a rectangular shape.

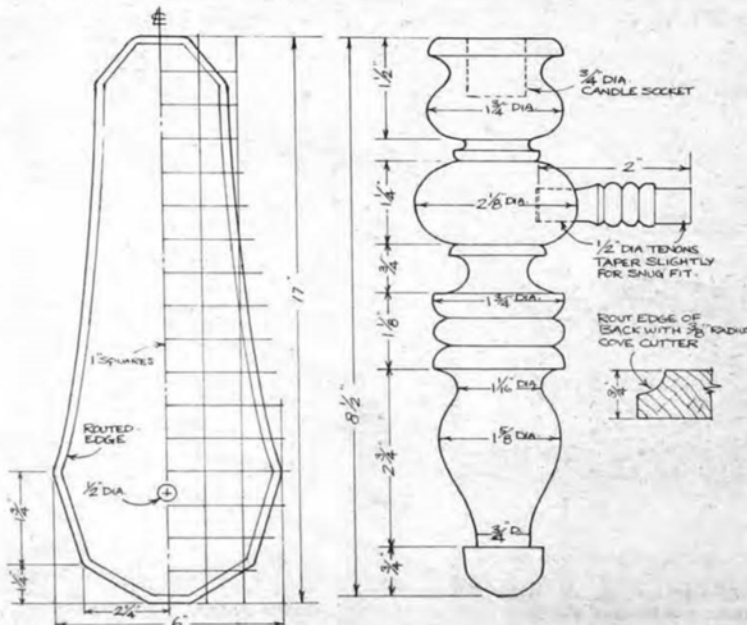


These sconces will make a most welcomed gift. Chances are you'll want to make a pair for yourself also. They look very attractive flanking a pine mirror.

Prepare a turning blank $2\frac{1}{4}$ inches square by 12 inches long. This length will permit turning both the candle holder and the short tenoned mounting arm in one operation. After roughing a cylinder to $2\frac{1}{4}$ inch diameter, the various elements of the turning can be cut with a small and large gouge and a $\frac{1}{2}$ inch skewed chisel.

Sand turnings at slow speed and burnish to a soft glow with a thin strip of maple before removing from lathe and separating the parts. Drill out a $\frac{1}{4}$ inch diameter socket for the candle and drill a $\frac{1}{2}$ inch diameter socket in the turning for the mounting stub.

Prepare a template to transfer the shape of the back and run a cove molded edge around using a router and $\frac{3}{4}$ inch coving bit. Sand back and stain turning and back to suit. Drill back to take the turned stub which is glued into turning and back. Drill an angled hole near top edge of back to hang on a finishing nail and finish with several coats of satin urethane varnish.



Candle Sconce



Serving Tray



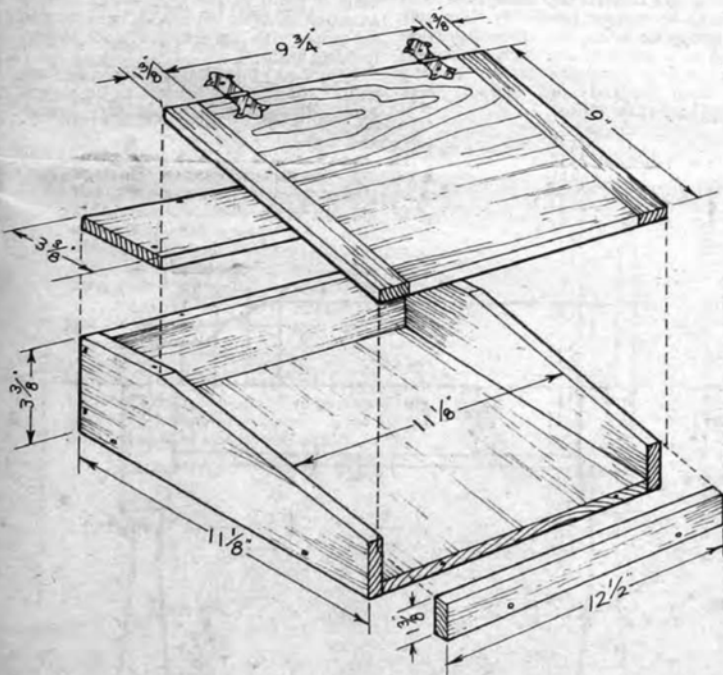
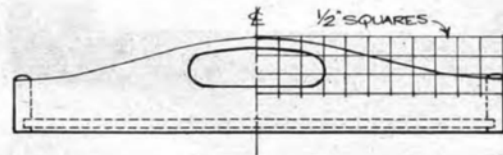
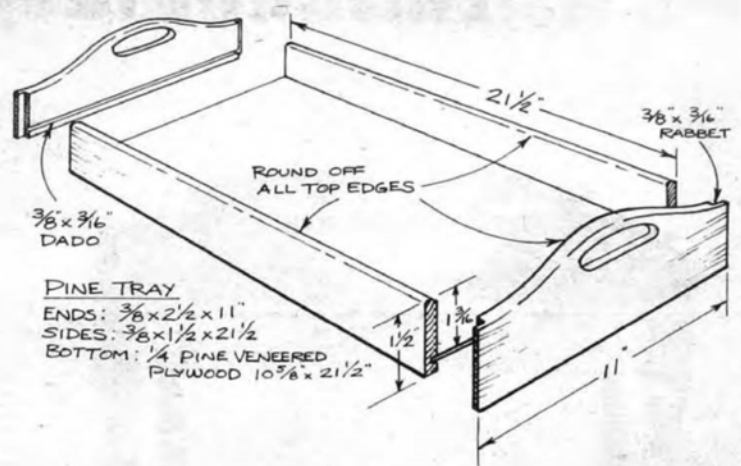
Patterned after a lovely Shaker original, this serving tray can be made of pine, mahogany or walnut. The $\frac{3}{4}$ inch thickness of the sides and ends is no problem as these parts are narrow enough to be easily resawn from thicker stock.

It's best to prepare the bottom first as its final thickness will determine the width of the grooves in which it rides. Basically, the bottom is $\frac{1}{4}$ inch plywood or hardboard, veneered on both sides to match the rest of the piece. White pine veneer runs about 25¢ per square foot. Mahogany costs about the same while walnut is a bit more. The veneer is simply contact cemented to the plywood, excess being trimmed off

with a veneer knife. Sand veneered panel carefully.

Next cut stock for ends, lay out and run the grooves $\frac{3}{16}$ inch deep and wide enough to take the bottom in an easy slip fit. Enlarge the curved top edge pattern on heavy paper; cut out and trace the outline on the stock. Jigsaw to shape and carefully round off top edges and sand.

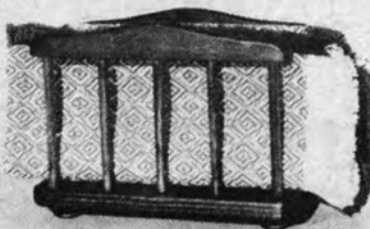
Cut sides to length and width and also groove them the same as the ends. Round off top edges. Use glue and clamps to join ends and sides but do not glue bottom in its groove. Give the pieces a final sanding and finish with clear sealer or a penetrating oil finish.



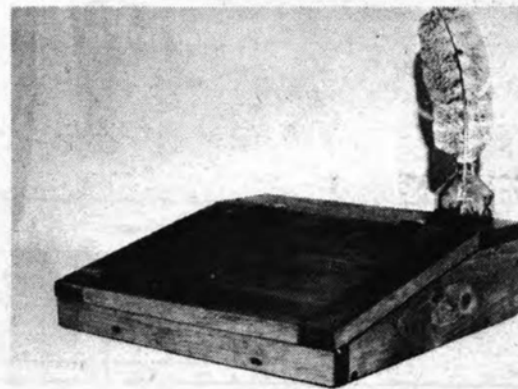
Napkin Holder

This nice little rack can also be used as a desk-top organizer for bills or mail. The drawings and photo pretty well show the construction of the piece. The only difficulty a novice might encounter is in drilling the spaced dowel holes in upper and lower parts.

After the base piece is cut from $\frac{1}{2}$ inch pine, dowel hole centers should be carefully laid out. Shape curved upper pieces from $\frac{1}{2}$ inch pine and clamp in place on base so that layout lines on base can be transferred to curved pieces. Drill $\frac{1}{4}$ inch diameter holes $\frac{1}{4}$ inch deep. Cut 10 spindles to a length of 4 $\frac{1}{2}$ inches. Wooden drawer pulls of $\frac{1}{4}$ inch diameter are glued to the base bottom. We used pulls that had $\frac{1}{4}$ inch tenons glued into sockets



on the base. Sand and stain all parts before assembling with glue. A dark walnut oil stain looks good. Finish with several coats of thinned shellac.



Pine Lap Desk

Made entirely of $\frac{1}{4}$ inch white pine, this is a good project for the novice. Veteran woodworkers can upgrade this piece to heirloom quality by substituting $\frac{1}{2}$ inch walnut and dovetailing the case corners. Nevertheless, built as shown, it's a very handsome item.

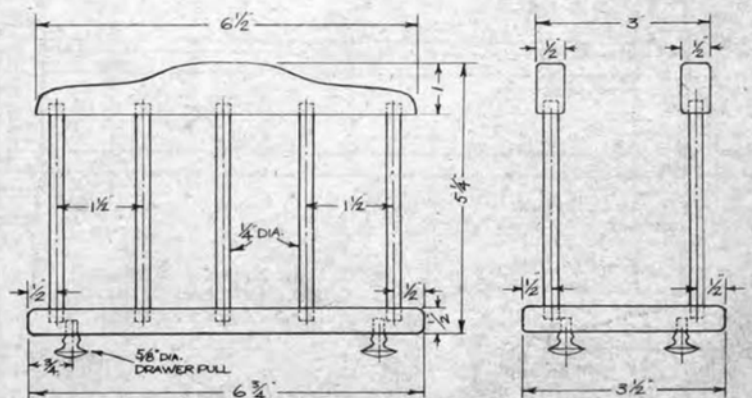
Clear pine is preferred and all parts should be well sanded first and joined as shown. The case back fits flush between sides and the bottom butts against it. Use 5 penny (2") box nails after filing the heads to a rectangular shape to simulate antique nails.

Glue and nail sides to bottom with

grain running as shown. Cut case back and front for an exact fit and glue and nail to sides and bottom; then add top flush with sides and back.

The lid is made of three parts as shown, glued and clamped together. Rest lid on case and mark front and back edges for bevel. Cut bevel by planing toward center from edges to avoid splintering.

Give desk final sanding and stain for an aged pine effect. Finish with at least two coats of satin finish varnish and mount decorative brass hinges similar to those shown.



19th Century Washstand



Before the introduction of indoor plumbing, washstands were necessary furnishings in most households. Besides providing a stand for the usual pitcher and bowl, some of the more elaborate versions had shaving mirrors and towel bars.

The antique example shown here is one of the more popular designs and lends itself well to a variety of modern uses as lamp or end table, nightstand or teamed up with a mirror in the hall.

The fastenings, joinery and tool marks on the piece shown date it probably to the early 19th century. The nicely turned legs are cherry; all other parts are clear pine. We would guess that it was built by a competent country cabinetmaker. The unpinned mortise and tenon joints are still perfectly tight and the dovetail joints were carefully fitted though the glue has failed on the rear corners of the drawer.

The plans offered here follow the original in all details except for slightly thicker aprons, a plywood drawer bottom and a different method of top fastening. The original one-piece top was glued to twelve blocks, glued to aprons. This prevented seasonal movement and resulted in a crack in half the length of the top.

Start construction with the legs which are ripped from solid cherry to 1 1/4 inches square by 28 inches long. Lay out and mark the location and length of each square section and use a parting tool to start the transition from squares to turned portions; then use the gouge to bring the turned portion down to a uniform 1 1/2 inch diameter. The various elements of the turning are then located and shaped with gouge and skew chisel.

Finish-sand legs while still lathe-mounted, then remove them and plane the square sections down to 1 1/4 inches square. Lay out mortises for aprons, lower rails and lower drawer rail (G), using tenon dimensions in Fig. 3. Note that mortises are located so that aprons and rails are set in 1/8 inch. Drill out mortises to a depth of 1 inch, using a 3/8 inch drill bit, then trim mortises with sharp chisels.

The aprons and rails are next gotten out from 3/4 inch stock; either cherry or clear pine. Sand outer surfaces of aprons and rails, and test fit joints making adjustments where needed. Identify the mating parts of each joint with a pencil mark on the inside faces.

The bottom shelf is glued up from 1/2 inch stock and notched at each corner for a snug fit around the legs. The upper drawer rail (F) is cut and glued flush with the front edge of the shelf. The rear rail (D) is nailed to the rear edge of shelf, 1/4 of an inch in from the back edge. Use 4p finishing nails set below the surface of the shelf.

At this point it's a good idea to sand and stain all parts. Staining before assembly helps prevent the often nagging problem of uneven stain at the joints. This problem usually results from glue that oozes from the joint on assembly. The glue dries clear and becomes difficult to see...and because of this it may not be completely removed when the project is sanded. When stain is applied, the glue won't absorb as much stain as the wood, resulting in an area with an uneven and sloppy looking stain.

Choose a stain that results in an "antique" look. There seems to be a general disagreement among wood-

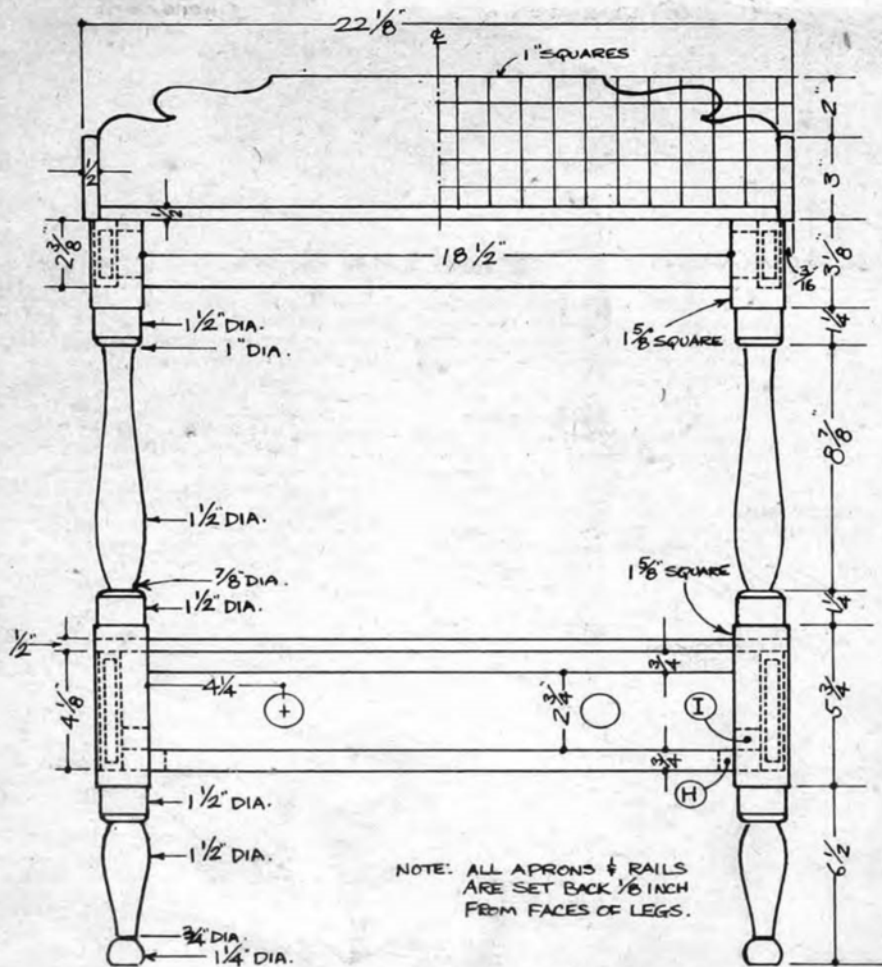


FIG. 1 FRONT ELEVATION

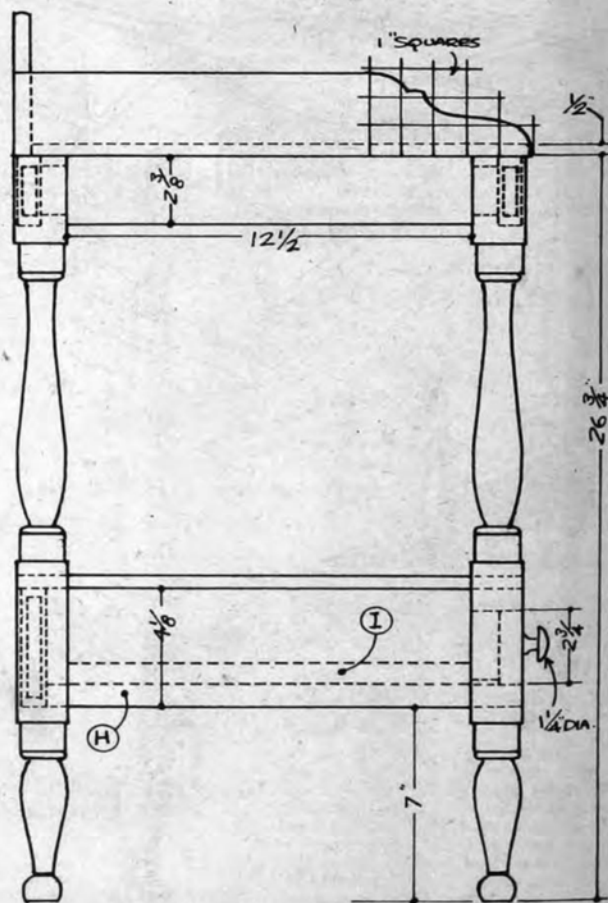


FIG. 2 SIDE ELEVATION

workers as to exactly what an antique stain should look like, so it pretty much becomes a matter of individual taste. With pine, one method that has proved popular here is the application of one coat of Minwax "Special Walnut" wood finish.

Glue a side apron and rail into front and back legs. Use clamp pads to protect legs and center pipe clamps on each joint. Repeat the process with the remaining side rail, apron and legs.

After these dry, lay a leg-rail unit on a flat surface and add lower drawer rail (G) and shelf rail assembly. Next add front and rear aprons and the other leg-rail unit. Turn the entire assembly upright and fasten four pipe clamps lengthwise; again using pads and centering clamps on each joint. Check frame for squareness and tack diagonal braces in place as necessary to hold frame square while the glue cures.

The top, unlike the original 15½ inch wide board, should be made by edge-jointing and gluing three or four ½ inch thick boards. Use light clamp pressure to prevent buckling. The sides (L) and back (M) are cut from ½ inch stock, allowing enough length for the through dovetail joint at each corner. Enlarge the patterns in Figs. 1

and 2 on thin cardboard; cut templates and transfer outlines to stock. Use a jig or coping saw to cut the graceful curves.

The front edge of the top is rounded off and the top is fastened to frame with screws and glue blocks as shown in detail B. Sides and back are added to top with 5p finishing nails set slightly below the surface. Do not glue sides to top.

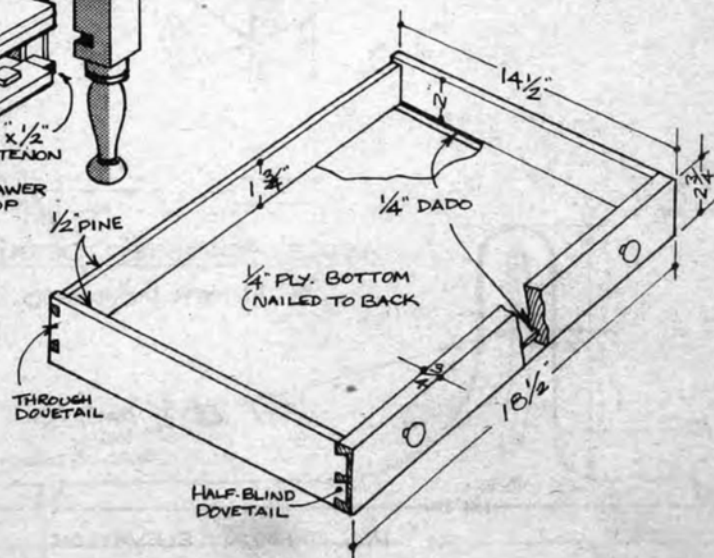
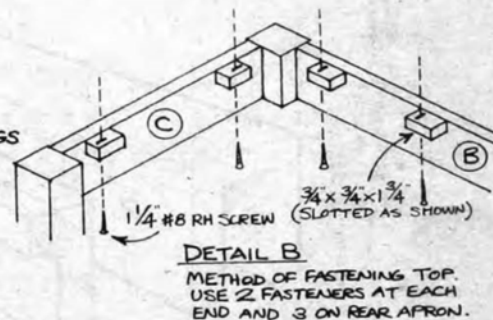
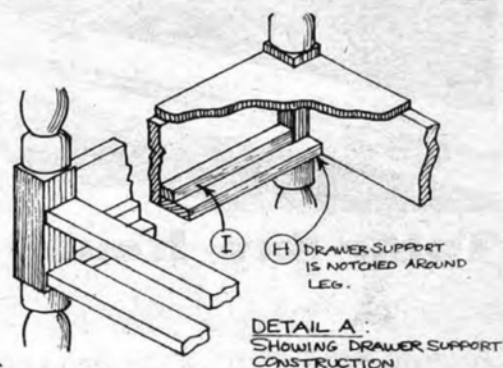
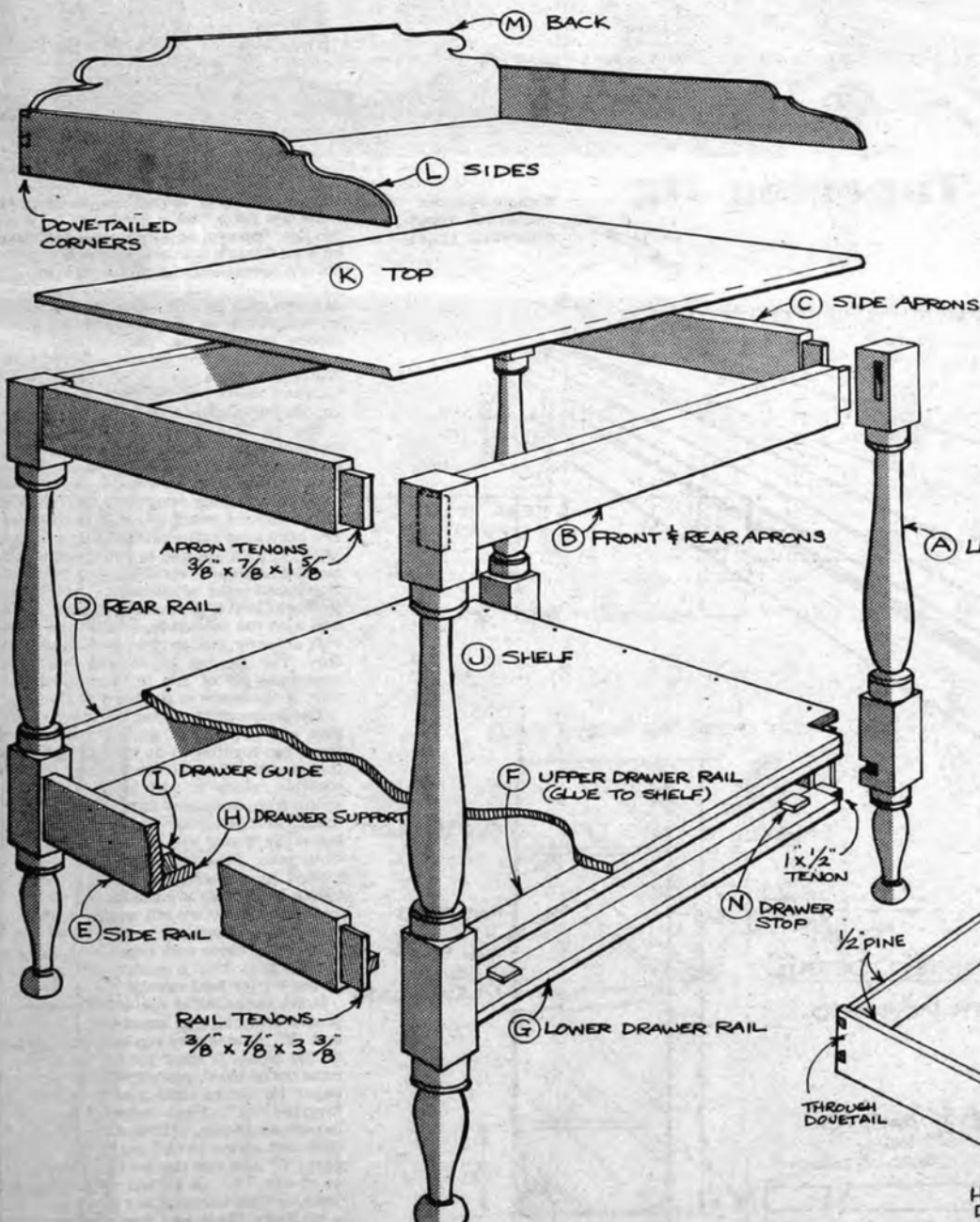
Referring to Fig. 3 and detail A, the drawer supports (H) are cut to length and notched around back legs. Glue and clamp these flush with bottom edges of side rails. The drawer guides (I) are then added.

Fig. 3 shows drawer construction with authentic dovetailed joints. Note that the drawer back is narrower than sides and is not grooved for the bottom, but rather rests upon it. Fasten bottom to back with a few thin box nails. Do not glue the bottom into its grooves; it should have a slightly loose fit. The addition of small drawer stops (N) glued in place, and wooden drawer pulls completes construction.

Finish with several coats of either a low-luster varnish or one of the new penetrating oil finishes which are more satisfactory than the old boiled linseed oil finish.

BILL OF MATERIALS

Part	Description	Size	No. Req'd.
A	Legs	1½ x 1½ x 26¾	4
B	Front and Rear Aprons	¾ x 2¾ x 20¼ (includes Tenons)	2
C	Side Aprons	¾ x 2¾ x 14¼ (includes Tenons)	2
D	Rear Rail	¾ x 4½ x 20¼ (Includes Tenons)	1
E	Side Rail	¾ x 4½ x 14¼ (Includes Tenons)	2
F	Upper Drawer Rail	¾ x 1½ x 18½	1
G	Lower Drawer Rail	¾ x 1½ x 19½ (Includes Tenons)	1
H	Drawer Support	¾ x 1¼ x 13¼	2
I	Drawer Guide	¾ x ¾ x 12½	2
J	Shelf	½ x 15½ x 21¼	1
K	Top	½ x 15½ x 21¼	1
L	Sides	½ x 2¾ x 16	2
M	Back	½ x 5 x 22	1
N	Drawer Stop	¼ x ¾ x 1¼	2



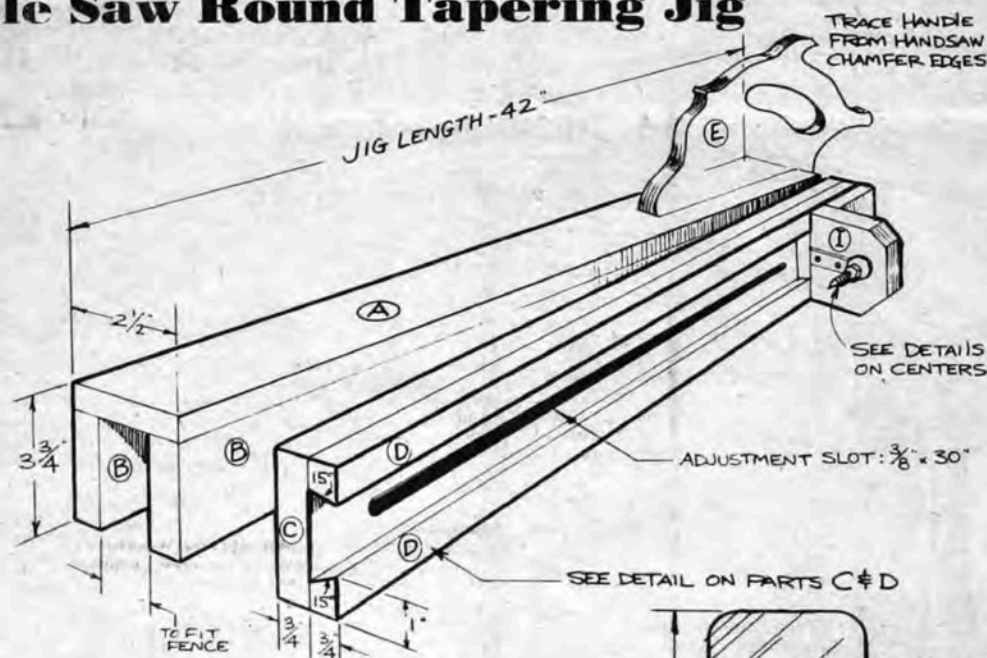
Woodworker's Jigs

by Don Kinnaman



Photo by Ray Carroll

Table Saw Round Tapering Jig

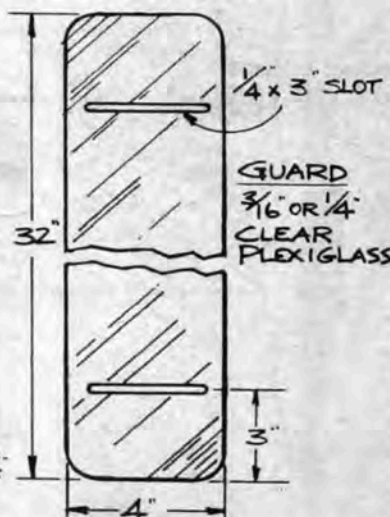
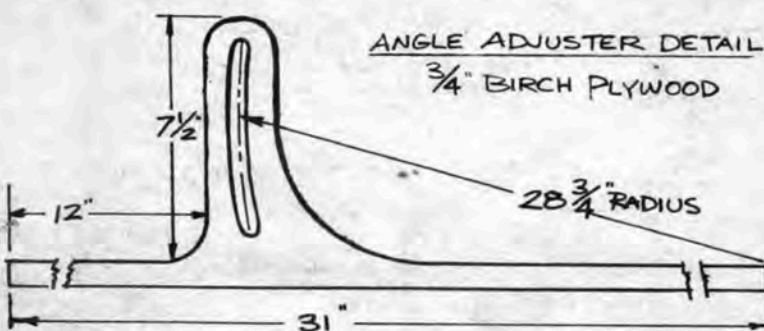


Have you ever thought of using your table saw for a "lathe operation?" Of all the jigs, fixtures, or accessories available for the tablesaw to enable it to perform the 125 odd operations, the "Round Tapering" jig is probably the most fascinating. The idea of such a jig was conceived in 1962 as an outgrowth of a standard tablesaw square tapering jig, and patents were applied for, but the idea was never sold. The jig enables you to use any make tablesaw in its basic condition, and with any kind of sawblade, so long as it is sharp.

The jig straddles the rip fence, and contains a pair of tapered centers, which holds the work piece very much like a wood lathe. The sawblade is lowered somewhat slightly above the centerline of the workpiece, much like a lathe tool rest. The work after being slabbied into a square taper, is then allowed to run free into the moving sawblade, resulting in a perfectly true round taper or cylindrical piece. The jig works best if the fence is slightly out of line with the sawblade, so that the blade will actually cut on the downward side only. The jig can be altered and build somewhat out of line to accomplish this feat, if the fence is too hard to re-align.

The photos and working drawings should give you very little trouble putting one of these jigs together. I do want to warn you that you should strive to make it as solid as possible, since it will be taking much strain from your saw unit. We used Rock maple and birch for our original model, but other woods can be adapted as well, even pine. Make sure that all stock is planed, jointed and true with no warps or twists. Butt joints are used along with glue and screws. Soften all edges especially those that come in contact with the sawtable, fence, and especially the saw handle grip. Use a router and a chamfering bit for best results.

Refer to the bill of materials, plans and photos and cut and assemble parts "A" and "B" making sure you have enough slip on the fence. It must not be snug, but it must not be too sloppy either. Use sheets of paper for shims until you assemble the inverted "U". Next trace a hand saw handle as shown, chamfer all edges and glue and screw to the top of "A". Make part "C" and add the dovetail strips "D" as shown. "C" is slotted to take an adjustable slide tailstock this being done with a tablesaw blade and fence, after boring holes at each end. Next, fit the "CD" portion to the "ABE" section with a 2" x 3"



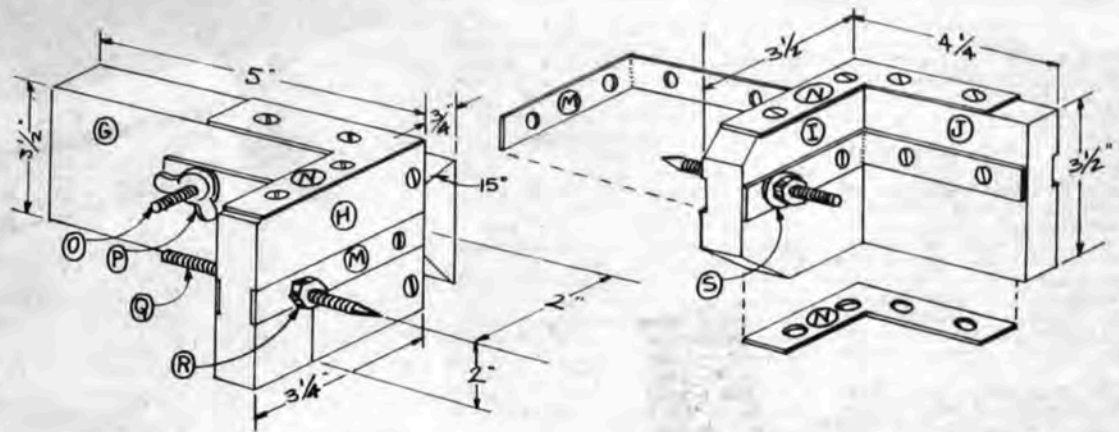
Jig (Cont'd)

light pin butt hinge.

Follow the drawings and photos and make two center units. The adjustable tailstock unit is a combination of parts "GHKMNOPQR". Fasten part "H" to "G" with screws and glue. Next, dado a slot to take the 3" angle irons on both sides of the right angle. Add the flat corner braces, drill a hole 2" from the inside "L" and fit with a 2" piece of $\frac{1}{4}$ " x 20 continuous thread rod, jam nuts and washers. Now add dovetail block "K" to fit the "CD" part. This should slip for good adjustment but not be sloppy. Fit with a $\frac{3}{8}$ " x $\frac{1}{2}$ " carriage bolt, washers and wing nut.

Now make the opposite centering block as shown. You will note a slight variation in width of the rear block, since tapering tolerances must be taken into account. The rear block is fastened with glue and screws near the push handle, as shown. Install the angle adjuster "F" assembling with glue and screws. Now set two $\frac{1}{4}$ " x 20 x 3" hanger bolts for the clear plastic guard, and a 3rd one for the angle adjustment. Use fender washers and wing nuts of ample size, for good grip.

In the photos you will notice some places to "store" $\frac{1}{4}$ " "T" nuts near the push handle. These will be used as centers for the work pieces. You may make provision for 8 for a set of four legs but the model shown has spaces for four "T"s. —Now go all over your unit, sanding it down and softening all edges. Determine your tapers per foot, and make some marks on your jig to handle this. A 2" piece of aluminum or wooden yardstick makes a good calibrator, using a miter gage pointer (which can be purchased already from Rockwell) or by making from a bent nail. Give your entire unit a coat of sanding sealer and urethane. Ours was done entirely with lacquer. Make sure though that the "tunnel" is finished so it will slide nicely when in use.



ADJUSTABLE TAILSTOCK (DRAWINGS NOT TO SCALE)

Using the Jig: Select four pieces of stock the same length, and of a turning square measurement. Find the centers and bore small holes for the "T" nut centers. Tap centers into one workpiece and place between centers on the new jig. Make sure they are fairly snug for the first cuts. Now using your hand or a push stick, steady the workpiece on all four sides, until they have been tapered. When this is done, allow the work to revolve into the "down" side of the lowered saw blade. This will spin the work and true it at the same time. A second very light cut especially with a hollow ground blade will make it smooth. —Finally after all legs have been rough cut, replace your sawblade with a home-made 10" plywood

sander disk, or use a commercial one: Sears No. 9GT22723. Make one good pass for each leg against the sander face, and your job is done.

You can make faceted, short tapers, long tapers, cylinders, reverse tapers and combinations. With a little ingenuity, you might be able to add refinements to your "Round Tapering Jig" which will expand its use even more.

A parting thought: Align your taper with jig and sawblade, using a yardstick or other straight edge, making certain your "centers will clear the moving sawblade.

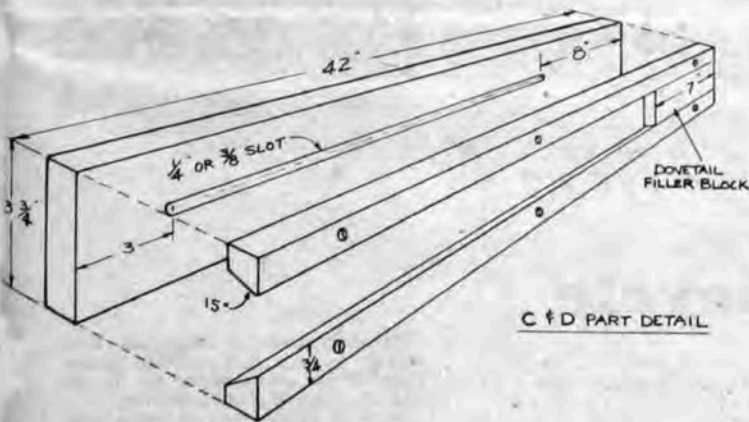
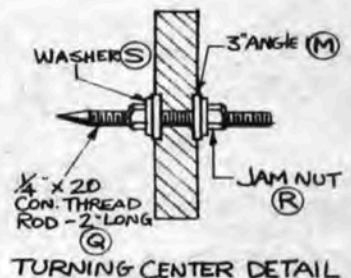


TABLE SAW ROUND TAPERING JIG BILL OF MATERIALS

PART CODE	PART NAME	SIZE	NO. PCS.	MATERIAL
A.	Fence Tunnel Top	3 1/2" x 2 1/2" x 42"	1	Birch or Maple
B.	Fence Tunnel Sides	3 1/2" x 3" x 42"	2	" "
C.	Tapering Fence	3 1/2" x 3 1/4" x 42"	1	" "
D.	15 Degree Guides	3 1/2" x 1" (or 3 1/4") x 42"	2	" "
E.	Sawhandle Gripper	3 1/2" x 6" x 14" (approx)	1	" "
F.	Taper Adjustment	3 1/2" x 8 1/4" x 3 1/2"	1	Birch Plywood
G.	Tailstock Base	3 1/2" x 3 1/2" x 5"	1	Birch or Maple
H.	Tailstock Part	3 1/2" x 3 1/2" x 3 1/2"	1	" "
I.	Headstock Base	3 1/2" x 3 1/2" x 4 1/4"	1	" "
J.	Headstock Part	3 1/2" x 3 1/2" x 3 1/2"	1	" "
K.	Dovetail Block (tailstock)	3 1/2" x Width of Dovetail x 5"	1	" "
L.	Safety Guard	3/16" or 1/8" Plexiglas	1	" "
M.	Angle Iron Braces	1/2" x 3" x 3"	4	Steel
N.	Flat Angles	1/2" x 3" x 3"	4	Steel
O.	Tailstock Adjustment	3/8" x 3 1/2" Carriage Bolt	4	Steel
P.	Tailstock Locking Nut	3/8" Wing Nut	4	Steel
Q.	Turning Centers	1/4" x 2" Cont. Thrd Rod	2	Steel
R.	Jam Nuts	1/4" x 20 head (hex)	4	Steel
S.	Washers	To fit 1/4" bolts	4	Steel
T.	Tapering Hinge	2" x 3" Narrow Butt	1	Steel

ALSO NEEDED: Approximately 28 - 2" x 10 (or 12) Flat Head Bright Steel Wood Screws.
 3 - 1/4" x 20 x 3" Hanger Bolts (wood screw—machine screw combo)
 3 - 1/4" x 20 Wing Nuts and Washers (For angle adjuster and Guard adjustments)
 2 (or more) 1/4" "T" Nuts for use as turning centers
 Optional: Miter gage pointer, or home made bent nail pointer
 2" section of steel or wooden rule for adjustment gage.
 Lacquer sanding sealer, varnish or lacquer top coat for finish.



Photo shows the many operations possible. From left to right: combination octagon-round taper, cylinder, stop taper, regular round taper, double taper, square taper and short round tapered leg.

Photo by Ray Carroll



Photo shows jig with guard in place, using a 10" carbide tip sawblade, preparing to cut 2" x 2" x 24" stock. Centers are 1/4" Tee nuts driven into each end.

Photo by Ray Carroll

Quilting Frame

Quilting can be more enjoyable with a good frame to support the work at a comfortable height and keep it taut. This frame is easily built and can be disassembled for storage. Hardwood should be used for all parts; especially the long quilt bars.

Lay out and cut the upper frame ends first, shaping the rounded ends with a saber or bandsaw. Locate and drill 1 inch diameter holes for the quilt bar tenons. Lay out the two ratchet wheels on $\frac{3}{4}$ inch stock by scribing first a $1\frac{1}{2}$ inch diameter circle then a concentric 2 inch circle. Divide the circles into eight equal parts and use these division lines to mark and cut notches as shown in the detail. The pawls are shaped to fit the rackets as shown.

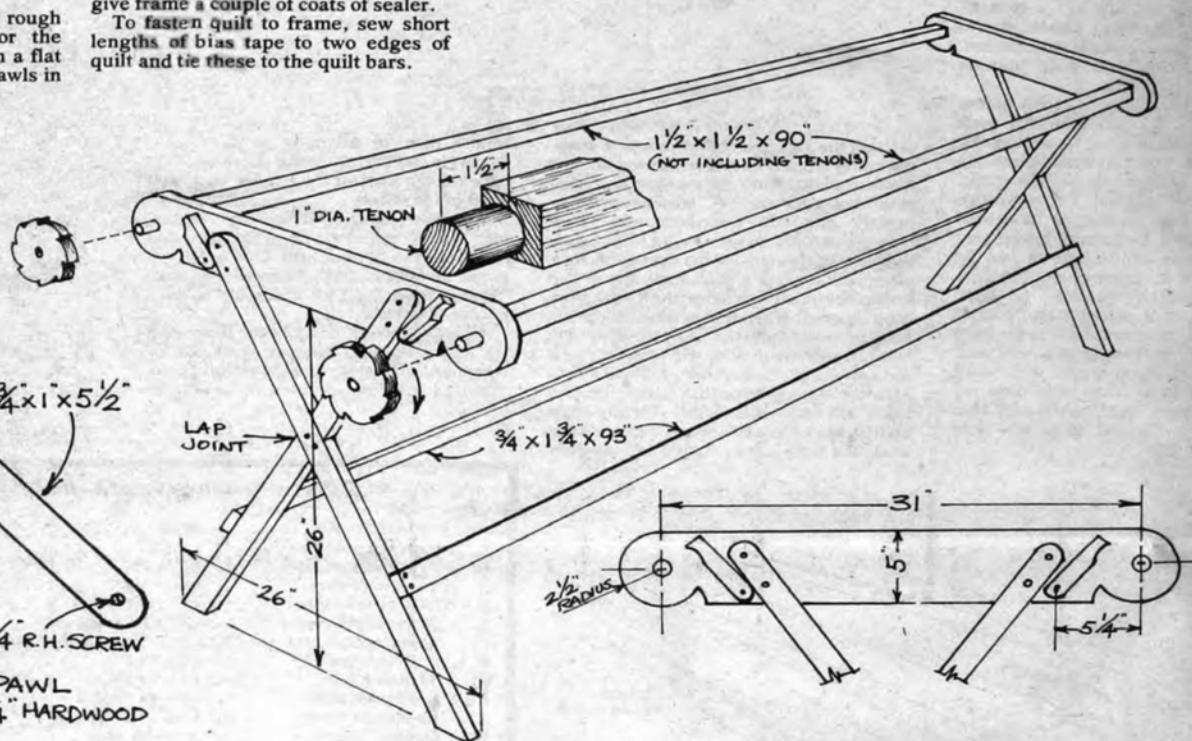
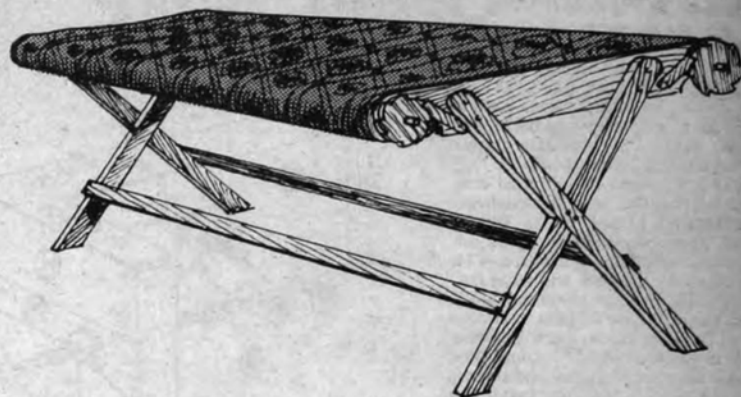
Rip leg stock and cut to rough length but before notching for the lapped joint, lay a frame end on a flat surface and place rackets and pawls in

position. Now locate upper ends of legs so they just touch the bottom ends of pawls. There should be enough clearance to allow pawls to be fully disengaged from the rackets. After legs have thus been located, mark at the intersection for the lapped joint.

The long quilt bars can either be bored at both ends to take 1 inch diameter x 3 inch tenons, or the tenons can be rasped to shape from the squares. If the latter method is used, be sure to allow for three inches of additional length when cutting stock.

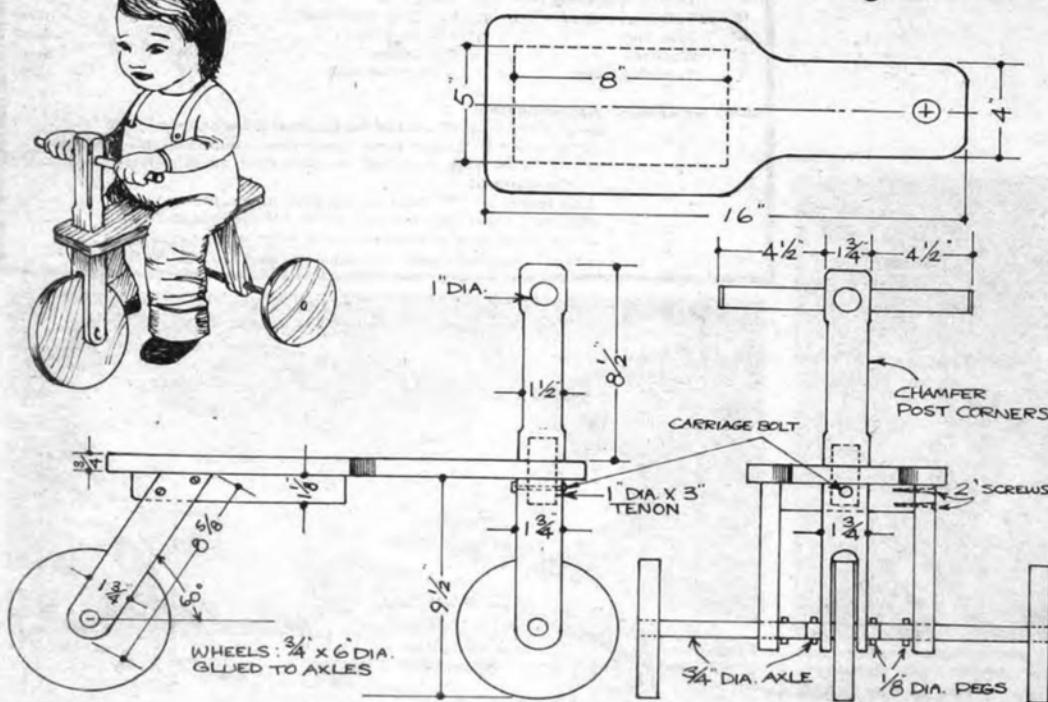
Glue rackets to tenons and screw pawls to frame ends, backing off on the screws enough to permit movement. Assemble legs and stretchers with countersunk flat-head screws and give frame a couple of coats of sealer.

To fasten quilt to frame, sew short lengths of bias tape to two edges of quilt and tie these to the quilt bars.



DETAIL: RACKET & PAWL
CUT FROM $\frac{3}{4}$ " HARDWOOD

Tot's Tricycle



Carefully built of hardwood, this walker tricycle will provide many hours of fun and exercise for the tot who has recently started walking.

Start by cutting seat to shape from $\frac{3}{4}$ inch stock and bore for an easy fit of the 1 inch diameter steering post tenon. Cut the $5/4 \times 5 \times 8$ inch sub-seat and attach to underside of seat as shown using glue and four $1\frac{1}{2}$ inch countersunk fh screws.

Cut rear axle supports from $\frac{3}{4}$ inch stock, miter ends to fit flush against underside of seat, and bore for an easy sliding fit of $\frac{3}{4}$ inch diameter wooden axle. Attach supports to sides of sub-seat with glue and $1\frac{1}{2}$ inch fh screws.

Wheels are cut from hardwood or $\frac{3}{4}$ inch plywood and bored for a snug fit over axles. Both front and rear axles are prevented from shifting sideways by $\frac{1}{8}$ inch dowel pegs inserted through axles.

The steering post is in two parts, both of which are $1\frac{1}{4}$ inches square and center-bored for a 1 inch diameter tenon. Chamfer the upper post as shown and drill for handlebars and tenon. Glue tenon into upper post only. Notch lower post to provide slight clearance for wheel. The short axle is glued to wheel and revolves in slightly oversize holes in the post. Drill through front of lower post and tenon for a 2 inch carriage bolt.

Sand all parts carefully and round off all sharp corners to prevent splintering.

Swedish Door Harp

Hang this door harp on the inside of your front door and each time it's opened you'll be rewarded with its warm melodious sound. The door movement sets the four wooden clappers in motion, causing each one to repeatedly strike the horizontal steel strings. Of Scandinavian origin, the door harp is a project that makes an ideal gift item...one that's interesting, enjoyable, and easy to make.

The auto-harp pins are under a fair amount of strain when the guitar strings are tightened, so use maple for the frame. Begin by cutting two pieces $\frac{3}{4} \times 2\frac{1}{2} \times 9\frac{1}{2}$ inches for the frame sides, and two pieces $\frac{3}{4} \times 1\frac{1}{4} \times 3\frac{3}{4}$ inches for the top and bottom. Referring to the drawing, note that the dotted lines represent the dimensions of the frame parts before the harp is cut to shape. Using this as a guide, glue and assemble the frame parts, then allow to dry thoroughly.

The front and back are made from $\frac{1}{4}$ inch Honduras mahogany. It's available from Constantine, 2044 Eastchester Road, Bronx, New York 10461 at a cost of 85¢ per square foot (sold in minimum lots of 3 square feet). Cut two pieces 8 inches wide $\times 9\frac{1}{2}$ inches long to fit over the frame. Cut a $2\frac{1}{2}$ inch diameter hole in the front piece, then glue and clamp the front and back to the frame. After drying, transfer the outside profile of the harp to the glued

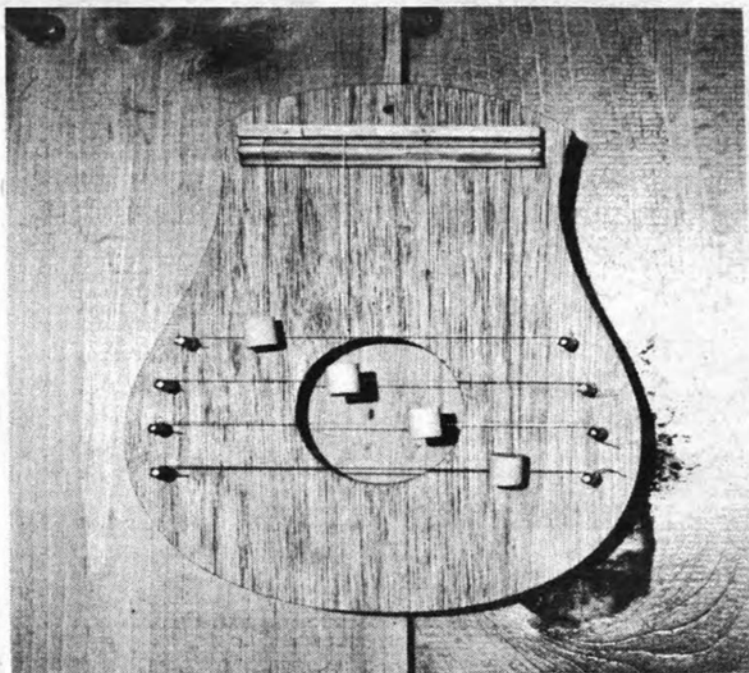
up stock and cut to shape.

Eight auto-harp pins are used to tighten the steel guitar strings. They are available for 25¢ each from Fretted Industries, 1415 Waukegan Road, Northbrook, Illinois 60062. Locate and drill $3/16 \times \frac{1}{4}$ inch deep holes. Use a hammer to drive about $\frac{1}{4}$ inch of the threaded portion into the hole, then use a wrench to thread the pin so that the string hole is about $\frac{1}{8}$ inch above the surface. Cut steel "B" guitar strings (available at any musical instrument dealer) to length and tighten between each pin.

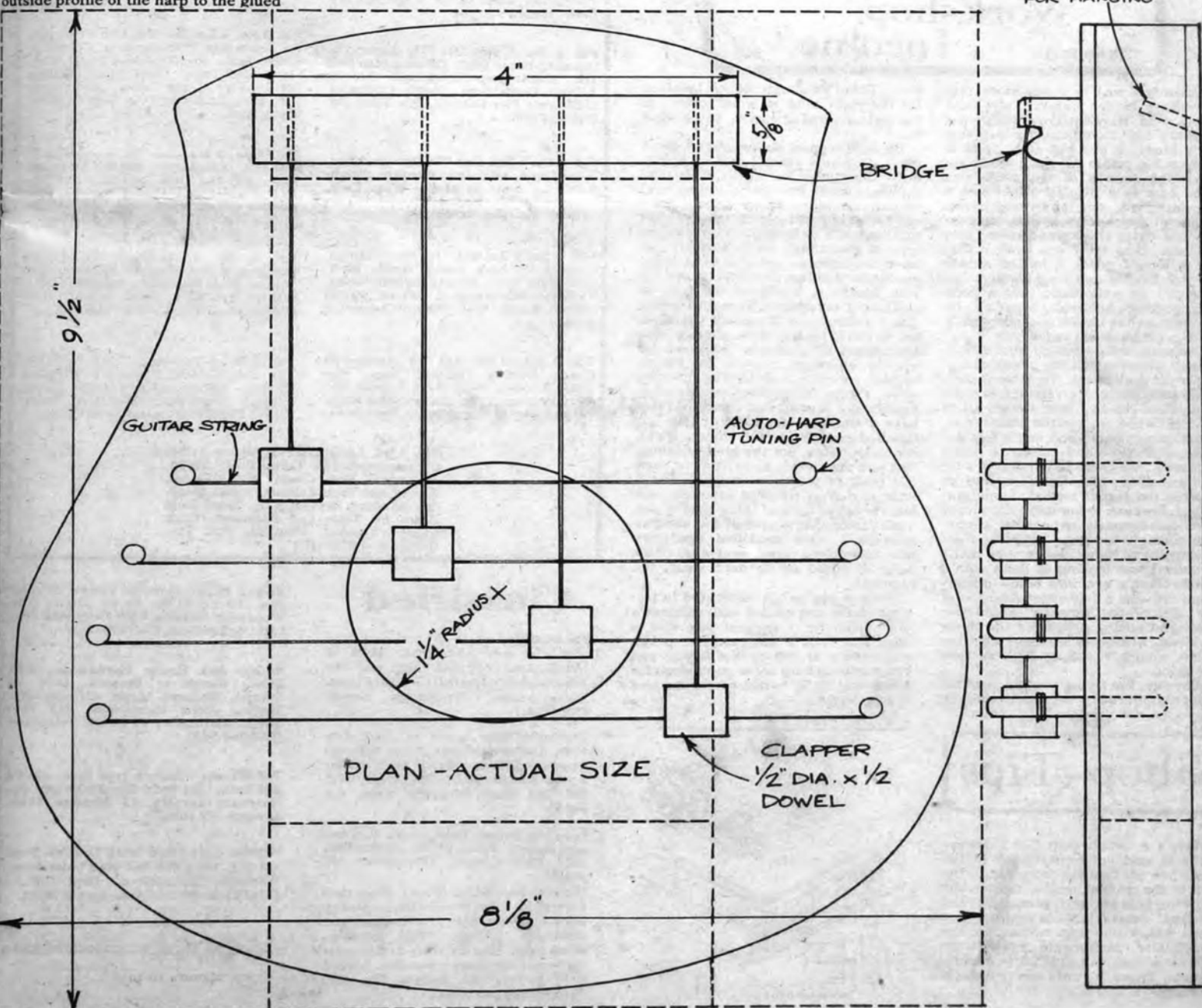
The bridge is made from $\frac{1}{2} \times \frac{3}{8}$ inch pine. To form its curved profile, use the table saw to run a lengthwise groove about $\frac{1}{8}$ inch wide $\times 5/16$ inch deep. Use sandpaper to round off and shape the edges as shown in the drawing. Drill four $1/16$ inch diameter string holes and glue to the front.

The four clappers are made from $\frac{1}{2}$ inch dowel stock cut to a $\frac{1}{2}$ inch length. Also, if available, $\frac{1}{2}$ inch diameter wooden balls can be used. Insert and glue the end of a piece of string into a small hole drilled in each clapper. Run the strings up through the bridge holes, adjust to length and secure with a knot.

Sand thoroughly and stain to suit. Finish with two coats of polyurethane varnish.



ANGLED HOLE FOR HANGING



STATEMENT OF OWNERSHIP, MANAGEMENT AND CIRCULATION

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A. Total no. copies printed (net press run).....	16,500	21,000
B. Paid circulation		
1. Sales through dealers and carriers, street vendors and counter sales.....	18	34
2. Mail Subscriptions.....	11,783	15,916
C. Total paid circulation (sum of 10B1 and 10B2).....	11,801	15,950
D. Free distribution by mail, carrier or other means samples, complimentary, and other free copies.....	34	54
E. Total distribution (sum of C and D).....	11,835	16,004
F. Copies not distributed		
1. Office use, left over, unaccounted, spoiled after printing.....	4,665	4,996
2. Returns from news agents.....	0	0
G. Total (sum of E, F1 and 2-should equal net press run shown in A) 16,500		21,000

I certify that the statements made by me above are correct and complete.

(S) James J. McQuillan, President & Publisher

Workshop Income

Charles Burke

Recently I was in a big store that specializes in the sale of toys and games and tricycles and children's furniture and model-making supplies of all kinds. It's a big store, and it charges big prices for good merchandise. One section of the store was given over to a display of children's play furniture...not tables and chairs (although they had them too), but tunnels and slides and boxes to climb into and onto. The stuff was well made, and it looked good; it looked sturdy and serviceable and long-lasting. But it wasn't so well made that a good woodworking hobbyist wouldn't be able to match or beat it in quality without knocking himself out.

The main thing, though, that attracted my attention was the prices charged for the play items. They were stiff, really stiff, plenty high enough to more than offset the fact that almost all of the solid wood used in the pieces' construction was hardwood, not a less expensive softwood. I asked a store salesman whether he actually ever sold any of the play furniture, and he assured me that it moved. I was surprised, because to my mind the pieces were outrageously expensive, expensive enough to keep anybody from buying any of them...but maybe that's because I was looking at them with a woodworker's eye and could quickly come up with a fair approximation of the difference between production costs and selling prices for the items involved. Maybe to someone else the prices wouldn't look as high as they did to me.

Anyway, I'm trying to get across the point that there is a big profit potential

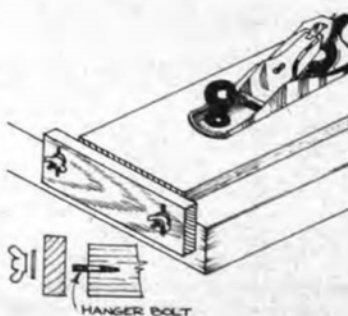
here. There's enough money involved for the right kind of woodworker, in the right type of situation, to go after it.

By right type of woodworker I mean the type who's careful and conscientious about what he makes. This play furniture stuff has to be strong and serviceable...you for sure don't want any little kid getting hurt because your makings are defective. By the right type of situation I mean that (1) you have available to you locally a retail operation that can move the items for you. Ideally it would be the type of children's toy/games/furniture outlet that I visited, but it wouldn't have to be. It could be any type of store that specializes in products designed for use by children...a plain toy store, maybe, or even a children's clothing store. I'd lay off general merchandise outlets like department stores. (2) you have a suitable means of getting the finished products to the stores. These are large items, not the kind of things that you can stuff in a car trunk or even the back of a station wagon. You'll want to deliver finished products, not kits, because for one thing they'll sell a lot faster that way and for another you don't want unskilled operators mis-assembling your makings; they have to stand up to hard wear, remember.

Even if you're not interested in trying to make any money with children's play furniture, I suggest you visit a shop that sells it anyway. The prices will come as an eye-opener to you, and you might pick up some good ideas for items that fit in better with your own selling tastes.

Shop-Tips

Here's a bench stop that's always ready to use, yet remains out of the way when not needed. Simply raise the stop to the proper height, tighten the two wing nuts and start planing. When finished, loosen the nuts and the stop drops below the top surface of the bench. Use 1 inch maple or other suitable hardwood. Cut slots for two hanger bolts. Two wing nuts and two washers complete assembly.



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