

The Woodworker's Journal

VOL. 3, NO. 1

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Build This Classic Roll-Top Desk

In This Issue:

- **Two Contemporary Tables**
- **Early American Settle**
- **Walnut Serving Tray**
- **Tenon Jigs**
- **19th Century Lap Desk**
- **and much more.....**

Shoptalk

Wooden boat builders, working with compound curves, routinely tackle jobs that would make many experienced cabinetmakers shudder. Working with relatively large sticks of tough woods such as white oak, teak, African mahogany and locust, skilled shipwrights have to contend with compound curved rabbets, bevels that change from one end of the hull to the other and countless other formidable woodworking problems. When it is realized that a few poorly fitted joints could conceivably result in the loss of the vessel and perhaps human life, it is obvious that a certain amount of respect is due the craftsmen who still build wooden boats. They are woodworkers in every sense of the word.

After about fifteen years of building furniture, we tackled the task of building a small sailboat. From the lofting of the plans to full size patterns to the laminating of the sharply curved stem, we found ourselves challenged as never before. There were mistakes and less than perfect joints...and we tore them out and did them again. As the hull took form, we found ourselves stepping back quite often to admire our creation. By the time the hull was finished, our level of competency for working with wood had risen several notches, or at least we thought so.

In the previous fifteen years we had, in a short time, achieved a certain degree of skill and then leveled off on a ten year plateau. It took the challenge of the boat to get us to start climbing again.

We certainly don't advocate that all woodworkers build boats to develop their skills, but we certainly urge those who want to improve to take on challenging projects. Difficult or complex joinery does become easier if you keep trying. It's not necessary to make every joint like a Chinese puzzle, but the woodworker who invariably chooses butt joints and screws is missing out on a lot of satisfaction...and ending up with finished pieces that will probably not last as long as they should.

Speaking of challenging projects, the roll-top desk in this issue will certainly keep you busy for a few hours. We are proud to be able to present this

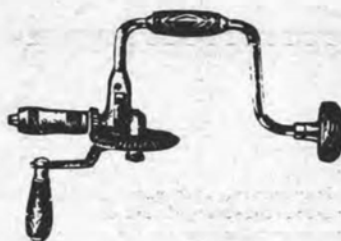
project for the many readers who have requested it.

As with all large projects, we urge you to approach it one step at a time. Don't be overwhelmed by the whole, but instead, break it down into a series of simple procedures, all of which when joined will result in a desk. This is a good time of the year to start a major project so go to it and have fun.

Those who are addicted to reading the mastheads of publications may have noticed a couple of new names on ours. Tom Begnal, who is now Managing Editor, has been employed as a production engineer, sales engineer and professional cabinetmaker specializing in the reproduction of late 17th century American furniture. Tom is a thorough and careful craftsman in everything he undertakes, and we noticed that he whistles a lot when he's working with wood. That's always a good sign.

Pat Friberg, our Subscription Manager, has been buried in work from the first day she walked in the door. It's her job to tame the computer and keep our subscriber list accurate. This is no small task, but one that she is doing very well...and with a sense of humor. That too is a good sign.

Jim Mc Quillan



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Editor and Publisher..... James J. Mc Quillan
Managing Editor..... Thomas G. Begnal
Contributing Editors..... Charles C. Burke
Donald F. Kinnaman
John W. Olson
Advertising Manager..... Margaret E. Mc Quillan
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LETTERS

I would like to obtain plans to build an old fashioned roll-top desk. If you have such plans on file, or in a previous issue, please send me plans or tell me how I may receive a copy. A. Clegorne, Ocala, Fla.

We are happy to be able to tell you that this issue includes plans for what we feel is an exceptional roll-top desk. It is being presented in two parts. This issue contains Part I, and details the lower pedestal desk section. Part II will be included in the Mar/April issue and covers the roll-top section. We've probably had more requests for plans for a roll-top desk than any other project, so we expect that many of our other readers will also find this an enjoyable and challenging project.

I have a quantity of one and two inch cherry that has been racked in a barn in the planned condition for about three years. From this I plan to make the contemporary coffee table described in the March/April '77 issue. Before I start on this project, I would also like to plan end tables. I like the basic design of the coffee table but lack the design skills to adapt this layout to other dimensions as would be necessary to make end tables. Do you plan on publishing drawings in a future issue that would be nearly like the coffee table in style? R. Nehus, Minerva, Ohio

After reading your letter we agreed that a matching end table design would be most appropriate. We've worked out what we feel is an attractive design and you'll find the detailed plans in this issue. Hope you like them.

Could you advise me where I might obtain information for the making of a cedar chest and also any address you may have for obtaining fine furniture hardware? M. Peach, Manitoba, Can.

Try U-Bild, Box 2383, Van Nuys, CA 91409. They offer a plan for a cedar chest measuring 48" long, 20" high and 19 1/2" deep. It's plan #572 and costs \$1.50.

Also, Furniture Designs (see ad in this issue) offers plans for two blanket chests that can be lined with cedar. For hardware try Period Furniture Hardware Co., Inc., 123 Charles St., Boston, MA 02114 or Horton Brasses, P.O. Box 95, Cromwell, CT 06416. Write to them for cost of their current catalog.

I have certainly enjoyed your woodworking publication over the past year. One thing I would like to see...a project on making an antique style quilting frame. Quilting is the "in" thing now. R. Endean, Quakerstown, PA

We've discussed the possibility of including plans for a quilting frame in a future issue, but right now we really don't know when that might be. Why don't you try Stearns and Foster Co., P.O. Box 15380, Cincinnati, OH 45280. They offer plans for an excellent frame. Check with them for the current price.

I may have a solution to your problem of finding tuning pins for the Aeolian Harp. Instead of using auto-harp or zither pins (which have a diameter of 3/16") I used piano pins which are much more commonly available. Although they are larger (1/4" dia.) I was able to allow for that by changing the spacing of the pins on the pin block. Instead of spacing the horizontal rows 1/4 inch apart, I spaced them 1/2 inch to allow for the slight difference in size. All other dimensions remained the same. B. Joyce, Los Angeles, CA.

Thanks for helping us out with your suggestion. We might add that piano pins can generally be found in piano shops specializing in piano sales, repairs and piano tuning.

Could you supply me with a source of information on carving and painting duck decoys? R. Craig Oshkosh, Wis.

We are familiar with two sources that we believe you will find helpful. Try Woodcraft Supply Corp., 313 Montvale Ave., Woburn, MA 01801. They publish a catalog of woodworking tools and equipment, and on page 11 of their latest catalog is a list of six books related to the field of bird and decoy woodcarving. The catalog costs \$1.00.

We would also suggest you try Bay Country Woodcrafts, US Rt 13, Oak Hall, VA 23416. Their catalog offers decoy kits and woodcarving equipment and accessories. On page 10 of the 1977-78 catalog is a list of several more books that may be of interest. They are also a source for glass eyes for decoys.

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The Beginning Woodworker

Enlarging and Transferring Patterns

Often, in reproducing a piece from published plans, the woodworker finds it necessary to reproduce a complicated shape. This may be an elaborately scrolled apron, valance or perhaps a toy. Generally, the pattern is shown on the plan in greatly reduced form and superimposed on a grid of squares. Many beginning woodworkers have only a somewhat hazy idea of how to go about enlarging the pattern, and we can't recall any recent woodworking books that effectively deal with this basic information. There seems to be a tendency on the part of writers to assume that everybody just naturally knows how to enlarge patterns...but we've found that that's not necessarily true. Many neophyte woodworkers have had no real previous exposure to arts and crafts and therefore have a tendency to avoid any project that involves "drawing."

Enlarging drawings is a fairly simple, straightforward process, and requires no artistic ability. The first step is to examine the pattern given in the plan. You'll see that it is drawn on a grid of small squares, and somewhere on the drawing there will be a notation to the effect that "each square equals 1/2, 1 or perhaps even 2 inches."

In order to make the enlarged drawing you will need a few simple tools such as a T-square, drawing board or similar work surface, a rule or yardstick and a piece of paper large enough to take the full size drawing. If you plan to do any amount of cabinetwork, a draftsman's T-square is a good investment. They are inexpensive, and if you wish you can easily make one that will be satisfactory for your purpose.

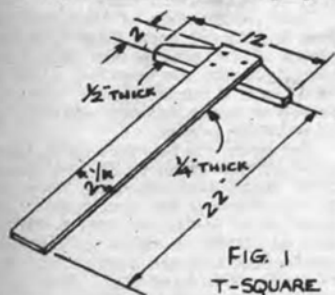
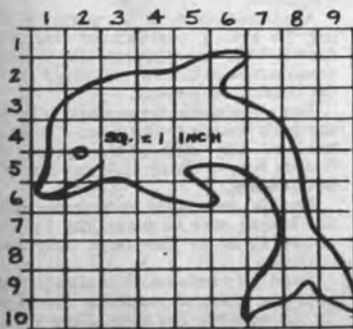


FIG. 1
T-SQUARE

A basic T-square is shown in Fig. 1. Plain hollow-core portable drawing boards can be purchased quite reasonably at art supply stores, but any table with straight square edges will suffice.

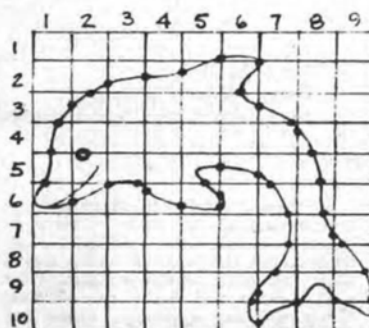
Start by numbering the small squares on the original pattern; first horizontally starting from one corner, and then vertically (Fig. 2). These numbers will help you to keep track of each square when transferring the design to larger grid.



GRID PATTERN AS GIVEN ON PLAN FIG. 2

Using a small piece of masking tape at each corner, fasten a sheet of Kraft (brown wrapping paper) to your board or table and using the T-square, draw a horizontal line across the paper near the top edge. Intersecting this line at a right angle draw a vertical line along the left edge. Now use your ruler to lay off as many squares as are on the small grid. If the unit is 1 inch, mark off a new square every inch. Draw a horizontal line across the sheet at each mark; then repeat the process with vertical lines marked off on the horizontal across the top of the paper.

Number the squares to correspond to the numbers you marked on the original grid. To transfer the design, note where the original drawing intersects each square and place a dot at the corresponding intersection on your enlarged grid. (Fig. 3)



ENLARGED GRID WITH DESIGN TRANSFERRED BY DOT METHOD FIG. 3

Continue to copy the entire drawing square by square, using the numbered squares as a guide to prevent confusion. The only difficulty you will have is in keeping the proportion of the detail in each square the same as in the original drawing. Your eye will quickly tell you if you're failing in this.

Naturally, this method can be used to reduce a pattern in size by reversing the procedure. Instead of making the squares larger, simply make them smaller than the original; then transfer the drawing square by square.

After you have enlarged your pattern to full size, the next step is transferring the drawing to the wood from which the part will be cut. There are a number of ways this can be done, and the size of the pattern usually determines the method of transfer.

Small intricate designs such as pierced fretwork, can be transferred with ordinary typewriter carbon paper. It's best to tape the pattern in place on the stock; otherwise it is bound to slip a bit and spoil your transfer.

Using carbon paper and tracing around the design with a pencil will leave dark lines on the stock. This is fine with maple, pine and other light woods, but you may have difficulty seeing the transfer on walnut and other dark woods. In situations where the stock is dark, do not use carbon paper as a transfer medium. Instead, rub white or light-colored chalk on the back of the pattern; then tape it down on the stock and trace around it with a hard lead pencil. The resulting outline will show up clearly on dark backgrounds. The chalk method is also used for transferring patterns that are just too large for one or two sheets of carbon paper.

Another way of transferring larger patterns is to make the drawing on heavy paper, cardboard, plywood or masonite. The design is then carefully cut out with scissors or jig-saw and the resulting template is laid directly on the stock and a pencil is used to trace

around the edges. If the stock is a dark wood or masonite, use tailors chalk.

Pouncing is yet another method of transfer which is done by taping the drawing on the stock and using a sharp awl or large pin to prick holes along the outline of the pattern. Space the holes about 1/8 inch apart, and before removing the pattern rub along the holes with chalk. When the pattern is removed, the resulting dots can be easily seen and connected with a pencil line.



FIG. 4
DRESSMAKER'S
PATTERN WHEEL

Obviously, this method would be very tedious and time-consuming to use on large patterns. Wooden boat builders, who are quite ingenious when it comes to solving woodworking problems, make use of a dressmaker's pattern wheel. (Fig. 4) to achieve the same effect quickly and easily. The wheel, which has sharp points, is simply run along the outline of the pattern and punches small closely spaced holes into the stock. When a design is large enough to require using a pattern wheel, but also has fine detail and tight curves, use a combination of wheel and pouncing awl to transfer the design.

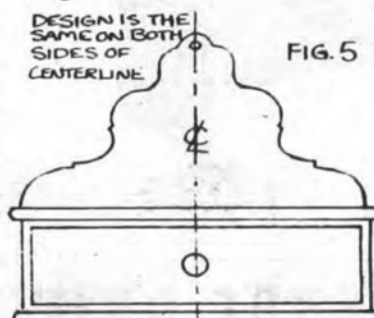


FIG. 5

Much colonial and provincial furniture is decorated with scrollwork and quite often, these scrolls are exactly alike or symmetrical on both sides of a centerline (Fig. 5). In cases such as this, you will generally find that the pattern for only one half of the design is given on the plan. If the design is fairly small, enlarge one half on a large sheet of heavy paper, fold the paper in half at the design centerline and cut the design out with scissors. When opened up, both halves of the design will be exactly alike. (Fig. 6)



FIG. 6

ENLARGE SYMMETRICAL DESIGN ON ONE HALF OF PAPER FOLDED ALONG CENTERLINE, CUT AROUND DESIGN AND OPEN.

With larger designs, enlarge one half of the drawing on cardboard or masonite, and after it has been cut to shape, trace around it to the centerline; then flop the template over and use it to trace the remaining half.

In the process of furniture building, these preliminary steps are quite important and should be given the same care and attention that you will later give to joinery and finishing. Actually, the process of enlarging, transferring and cutting patterns can be a lot of fun and a very satisfying part of the woodworking process.

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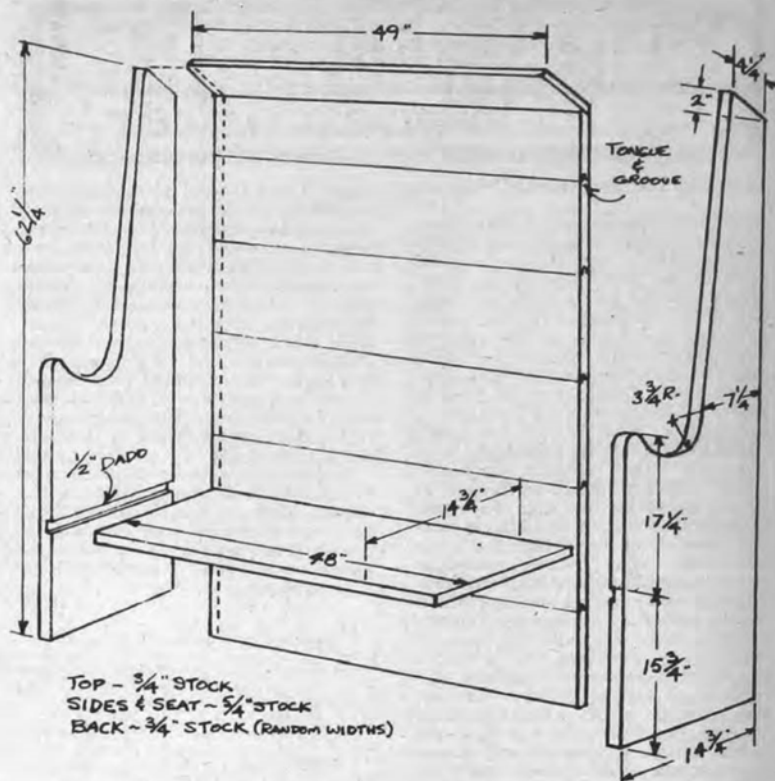
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18th Century American Settle



As they struggled to adapt to their new homeland, the early colonists in America faced many difficult challenges...not the least of which was a long and hard winter season. With winter came the fierce snowstorms, biting cold, and aggressive winds that blew hard across open fields, testing the very timbers of the small wood frame homes.

Not surprisingly, family life centered around the hearth during that difficult season. Its glowing embers provided comforting warmth, and light, and hot suppers for everyone.

With that in mind, one can perhaps understand why a settle such as this, in spite of its humble design, was a cherished piece of furniture in the colonial home. Generally, it sat right next to the hearth and was arranged so that it was perpendicular to the wall. Here, two or three family members could sit together, facing the heat of

the fireplace while the back boards of the settle kept the chilling drafts off their backs. Firewood could be conveniently stored under the seat.

As temperatures in the room varied, so too did the location of the settle. Exceptionally cold nights found it pushed up close to the hearth. During milder periods it would be moved back out of the way. For this reason it was almost always made of pine in order to keep weight to a minimum.

Start construction of the settle by first making the seat. Edge glue two pieces of 5/4" pine so that after trimming, you get the required width of 14 3/4" and a length of 48". Use 3/4" dowels to strengthen this and all edge joints on the project.

The sides can be made next. Edge join 5/4" pine to get a 14 3/4" width and 62 1/4" length after trimming. Referring to the drawing for dimensions, use your pencil to lay out and mark the side as shown. A saber or band saw can be used to make the side cut. The two sides also have a 1/2" deep dado cut as shown on the drawing.

The tongue and grooved back can be tackled next. They are made up of random width 1" (3/4" actual thickness) boards. In order to give the settle an authentic look, use the widest possible boards you can find. We made ours with some boards as wide as 11 1/2". Tongue and groove the boards, as shown, remembering that the top board must be cut at an angle to accept the hood.

Next, make the hood from 1" (3/4" actual thickness) to dimensions shown. Hold off cutting any beveled edges until later.

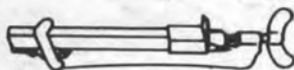
Begin assembly of the parts by gluing the seat to the dadoed sides and fasten with countersunk flat headed wood screws. Use wood plugs to fill the countersunk holes.

Next, use the same method to fasten the back boards to the sides except do not use any glue. This leaves the boards free to move with any changes in humidity.

Finally, attach the hood to the settle top taking care to plane the beveled edges flush to the front and back surfaces.

Sand all surfaces thoroughly, then apply a stain appropriate for Early American pine. For a finishing oil, use Antique Oil Finish by Minwax. Apply as directed and rub down with a clean cloth to a soft luster.

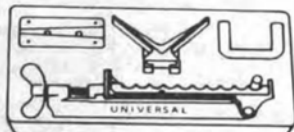
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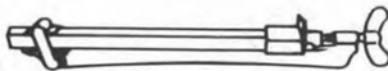
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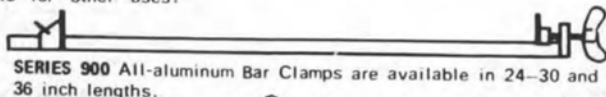
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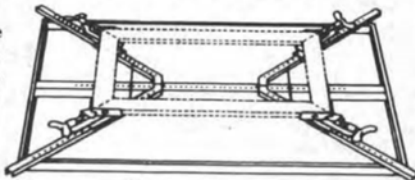


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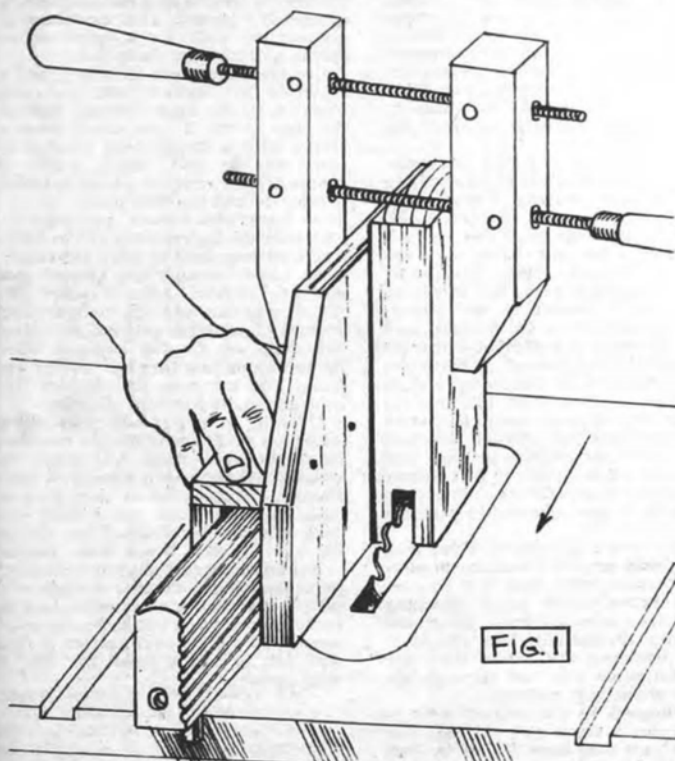


FIG. 1

TENON JIGS

Clean, well-fitted mortise and tenon and open tenon bridle joints cannot be achieved by hit or miss methods. A careful layout and some safe means of securing the workpiece is necessary. When shaping tenons on the ends of rails with a table saw, it is good practice to first make the two cuts that establish the length of the tenon. This necessitates holding the rail vertically and running it over the blade. The average table saw ripping fence provides little support for this operation and chances for kickback are greatly increased. Worse, the hands are holding the workpiece directly over the spinning

blade...a potentially dangerous situation.

A high wooden auxiliary fence fastened to the rip fence helps to provide more support, but it is still not as satisfactory as a tenon jig which will ride the fence or miter gage grooves and to which the workpiece can be firmly clamped. Two common styles of tenon jig are pictured; the first (Fig. 1) being very simple but quite effective type. It can be quickly put together from scrap stock and provides the two important features needed in such a jig; a means of securing the workpiece, and a safe position for the hands.

Figure 1 shows that the distance between the jig and blade is determined by the rip fence which the jig straddles. The pushing hands are completely protected. Figure 2 shows how the jig is constructed. No dimensions are given as the jig should be made to suit your particular fence and the size of the workpiece. The 1/2 inch stop strip provides support against the thrust of the cutting blade, but is not really necessary provided that the workpiece is firmly clamped.

Figure 3 shows some of the cuts that tenon jigs are used to produce. After the two vertical cuts are made (or one if you use a dado head), in the end of the workpiece, the cheek cuts are then made, removing the two waste blocks. Cheek cuts are no problem; being simply a crosscutting operation with the miter gage.

Figs. 4, 5 show a more elaborate jig, but one that is still rather easy to build. It has some advantages over the first jig in that the base rides a miter gage slot which is perfectly parallel to the blade. The adjustable stop pivots on a bolt which enables you to cut slots in obliquely mounted workpieces as shown. Also, very fine adjustments can be made by means of the sliding fence base held with carriage bolts.

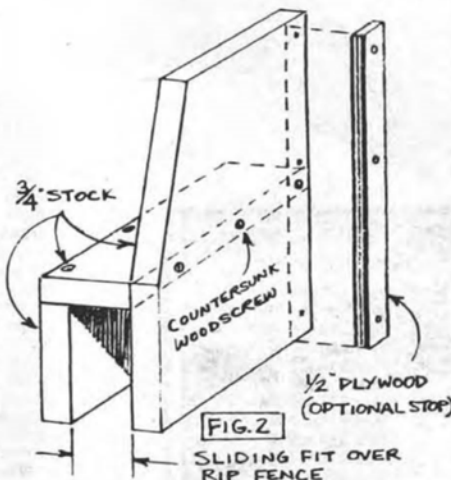


FIG. 2

SLIDING FIT OVER RIP FENCE

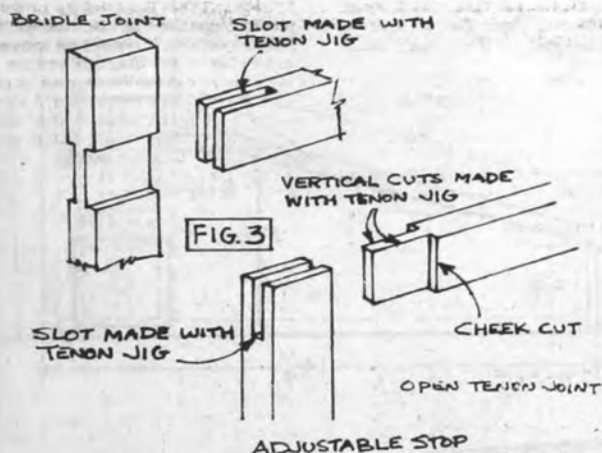


FIG. 3

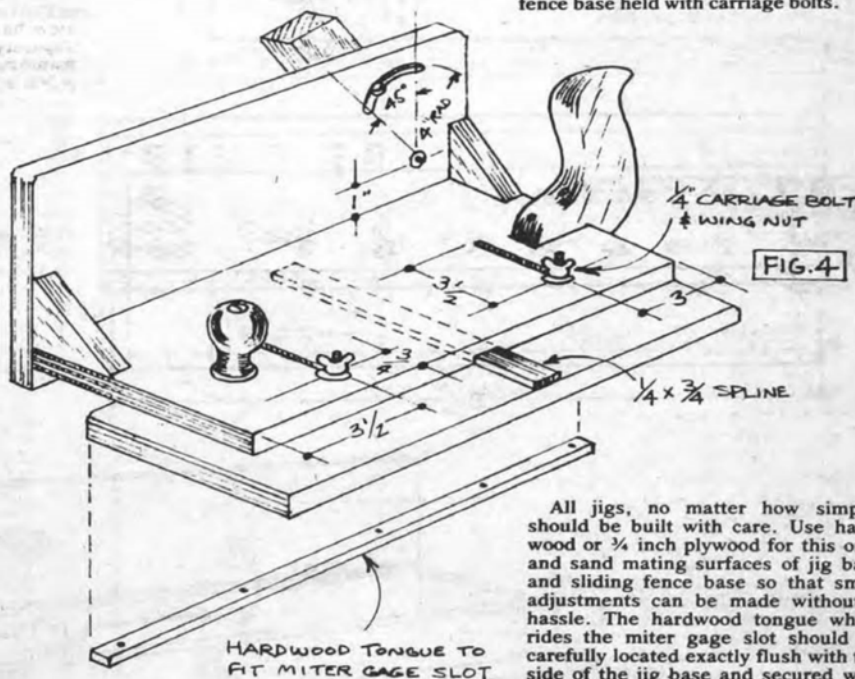


FIG. 4

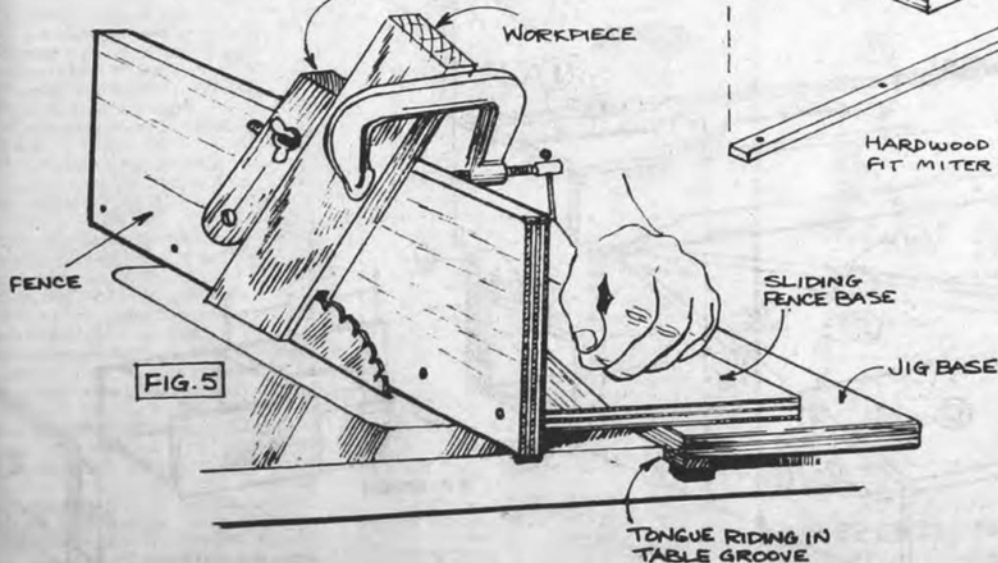


FIG. 5

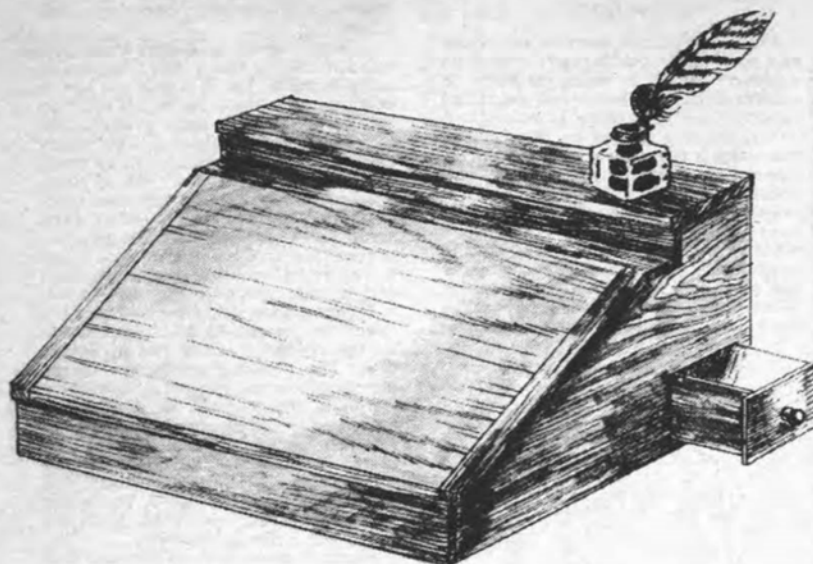
All jigs, no matter how simple, should be built with care. Use hardwood or 3/4 inch plywood for this one, and sand mating surfaces of jig base and sliding fence base so that small adjustments can be made without a hassle. The hardwood tongue which rides the miter gage slot should be carefully located exactly flush with the side of the jig base and secured with countersunk wood screws. Take particular care to rout adjustment slots exactly parallel to each other and to the spline groove.

Use an old plane knob, doorknob or even a piece of large diameter dowel for the forward hand grip. Give all your jigs several coats of thinned shellac or other sealer and sand lightly between coats. Sliding parts such as the fence base and jig base, should be well waxed.

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Pine Lap Desk

Though now primarily collector's pieces, the little lap desks of the 19th century are still very useful for personal correspondence and check writing. This example is a bit more elaborate than most, and in addition to the usual large storage compartment for writing paper, it has an upper compartment for envelopes, cancelled checks and letters. A tiny drawer, originally for an inkwell, is handy for postage stamps.

This little piece is a nice decorator item and will look quite elegant sitting on a small table or stand. Construction is not tricky, but the builder is advised to start with good flat $\frac{1}{2}$ inch stock, and make sure that all cuts are perfectly square. Pine, preferably clear, is a good choice, but cherry or mahogany if available, are better.

Start construction by jointing and gluing up stock of sufficient width for the large lid and bottom. Allow extra length and width for trimming later to exact size. Cut two sides (B), and lay out and cut drawer opening in one side. Cut front (C), divider (E) and back (F). Shape rabbets in front and sides, and notch divider to fit between sides. Don't forget the $\frac{1}{4}$ inch groove in the side to take removable partition (I).

Attach back and front to sides with glue. Clamp assembly and check carefully to make sure that it's square. Fasten bottom with small finishing nails driven through front, sides and back. Add divider (E). This should fit snugly between the sides. Glue the rabbeted joints and nail through the sides into the ends of divider.

The drawer is constructed with $\frac{1}{4}$ inch plywood sides and bottom. The drawer back and front are of $\frac{1}{2}$ inch stock. The front has a $\frac{1}{4}$ inch lip a-

round all four edges and the sides are fastened with glue and brads to the rabbet thus formed. In order to keep the drawer from falling out, one side is extended 4 inches. This extension is grooved to slide on a wood screw driven into the filler piece (K).

Cut the filler piece to length and a width of $2\frac{1}{4}$ inches, and glue and clamp it to the back; butting against the desk side. If you don't have a clamp with a throat deep enough to reach the far end, cut a couple of pieces of pine scrap to wedge between divider (E) and the filler piece.

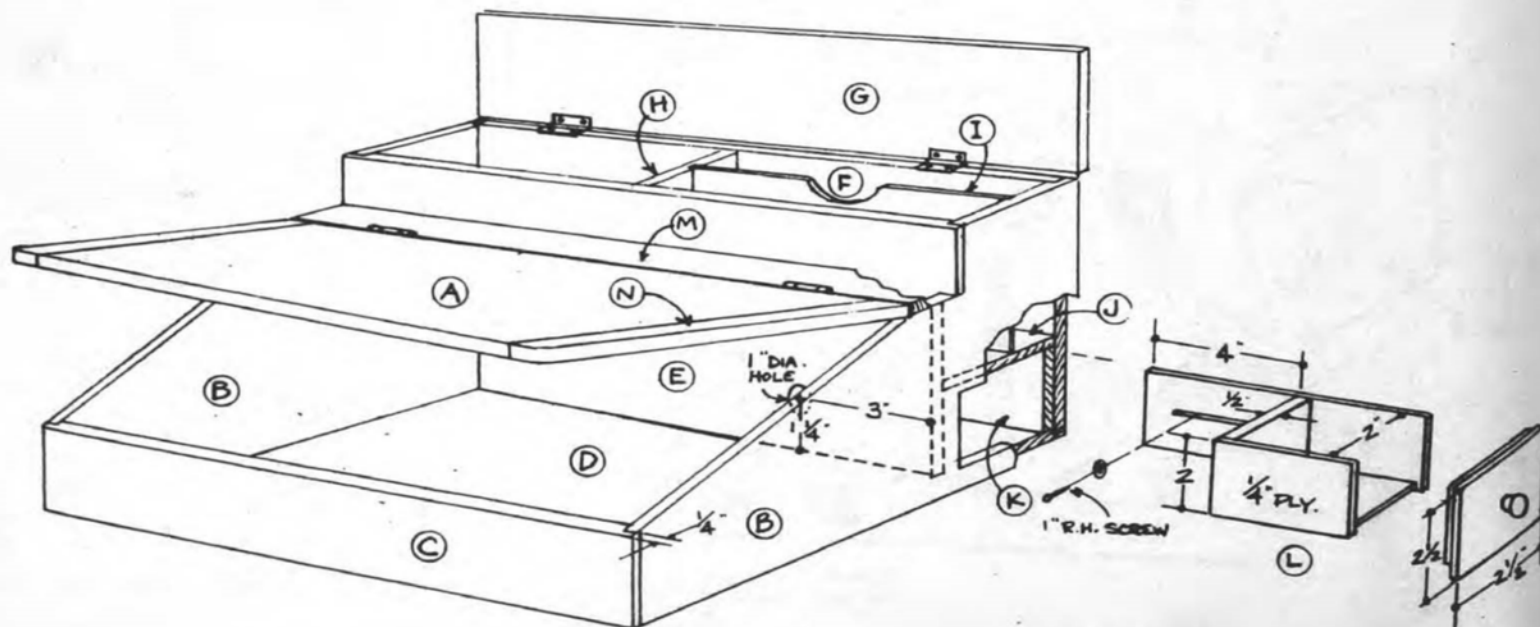
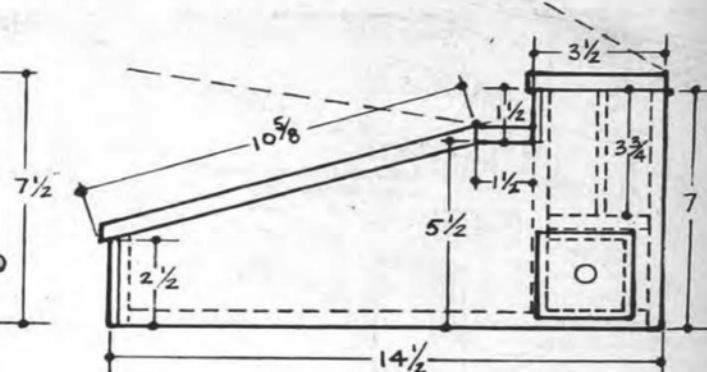
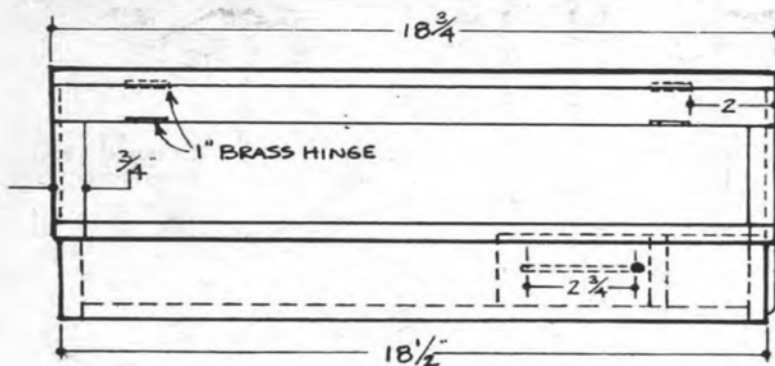
Now insert the drawer and bore a 1 inch hole through divider (E) to insert a screwdriver used to drive the round-head screw through the slotted side and into the filler. After drawer is fastened, you can add the compartment bottom (J) which is pressed into place and rests on the top edge of filler. Fasten by nailing through divider and back. You can now add divider (H), and removable partition (I).

Cut top lid (G) to size and mount with two small brass hinges mortised into top edge of back. Add ledge (M) which overhangs each side by $\frac{1}{4}$ inch. Finally, cut large lid to size, glue on edge strips (N) and bevel front and back edges of assembled lid. Fasten lid with 1 inch brass butt hinges.

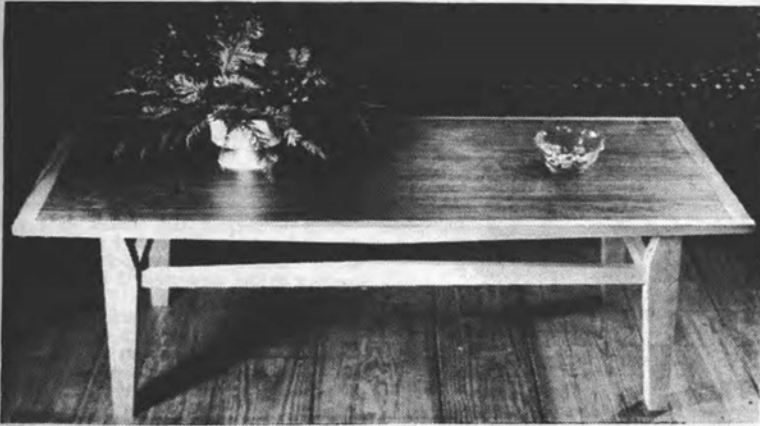
Round all corners slightly with sandpaper and finish exterior surface with stain and a shellac or varnish. Seal interiors of main box and upper compartment, and either cover bottom of desk with felt or add a small felt disc to each corner.

MATERIAL LIST

Code	Name	Size
A	Lid	$\frac{1}{2} \times 10\frac{1}{4} \times 17\frac{1}{4}$
B	Sides	$\frac{1}{2} \times 7 \times 14\frac{1}{2}$ (2 req'd)
C	Front	$\frac{1}{2} \times 2\frac{1}{4} \times 18\frac{1}{2}$
D	Bottom	$\frac{1}{2} \times 13\frac{1}{2} \times 17\frac{1}{2}$
E	Main Divider	$\frac{1}{2} \times 6\frac{1}{2} \times 17\frac{1}{2}$
F	Back	$\frac{1}{2} \times 7 \times 18$
G	Upper Lid	$\frac{1}{2} \times 3\frac{3}{4} \times 18\frac{1}{4}$
H	Divider	$\frac{1}{2} \times 2\frac{1}{2} \times 3\frac{3}{4}$
I	Partition	$\frac{1}{4} \times 3\frac{3}{4} \times 9\frac{1}{4}$
J	Pigeon-hole Bottom	$\frac{1}{2} \times 2\frac{1}{2} \times 17\frac{1}{2}$
K	Filler	$\frac{1}{2} \times 2\frac{1}{4} \times 7$
L	Drawer	$\frac{1}{4} \times 1\frac{1}{2} \times 18\frac{3}{4}$
M	Ledge	$\frac{1}{2} \times \frac{3}{4} \times 10\frac{3}{4}$
N	Lid Edge Strips	



Coffee Table



Crisp, uncluttered lines and an interesting contrast between elegant walnut and natural maple make this table a worthy project for the craftsman of moderate skill.

The top is an assembly consisting of a $\frac{1}{2}$ inch walnut plywood panel, edged with maple strips. The lower leg assembly is made entirely of hard maple.

Legs are shaped from $1\frac{1}{2}$ inch stock and are $1\frac{1}{4}$ inches square at top and bottom. Use a tapering jig (WWJ Vol. 2, No. 6) to cut the tapers as shown in the leg detail.

Cut the two long stretchers to over-

all length from $\frac{3}{4}$ x $1\frac{1}{4}$ x $36\frac{1}{2}$ inch stock, and shape tenons on each end. A tenon length of $1\frac{1}{4}$ inches is about right. Note that stretchers are tapered from $1\frac{1}{4}$ inches at each end to a mid-point width of $1\frac{3}{4}$ inches. The end rails are shaped from $\frac{3}{4}$ x $1\frac{1}{2}$ x $15\frac{1}{2}$ inch stock, and are not tapered.

Make an identifying mark on all legs, rails and stretchers so that tenons and dowel pins mate with the parts for which they were individually fitted. Lay out and cut mortises, and bore the legs for $\frac{3}{8}$ inch dowel pins to fasten end rails.

Sand all parts thoroughly, to remove machining marks, before assembling the frame with glue and clamps.

Next, the plywood panel is cut to overall size and rabbeted around all four edges. Use a plywood cutting blade with your table or radial saw, to produce a smooth, non-splintered cut.

Shape the two tapered edge strips for the top from $\frac{3}{4}$ inch maple; then cut the two end strips. Set up a dado cutter, and run a $\frac{1}{4}$ x $\frac{3}{4}$ inch groove along all edging strips. Also, cut $\frac{1}{4}$ x $\frac{3}{4}$ inch tongues on both ends of the wide strips. Assemble the top with glue and clamp overnight.

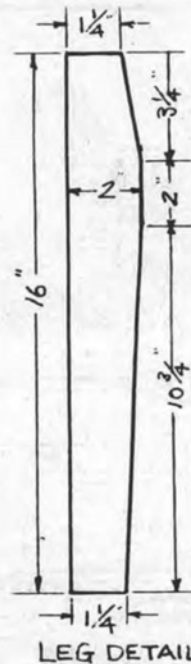
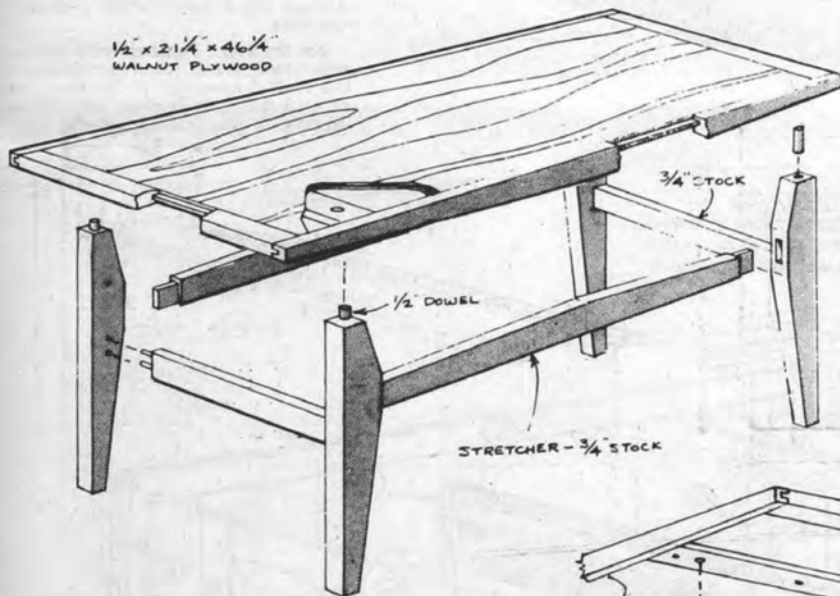
When the top has dried, cut two cleats to fit across the underside. Drive a small headless brad into the top center of each leg and use these brads to punch marking holes in each cleat, to locate dowel sockets. Bore legs to a depth of 1 inch to take $\frac{1}{2}$ x $1\frac{1}{2}$ inch dowel pins. Groove pins to release trapped air and glue, and drive them into the legs so that $\frac{1}{2}$ inch protrudes. Bore a $\frac{1}{2}$ inch hole through cleats, using the punch marks as centers, and glue the cleats to the legs.

Complete assembly by turning the top upside down and placing frame assembly on it. When it is centered,

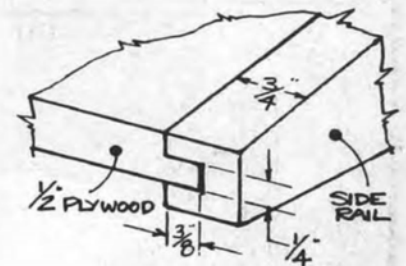
fasten cleats to top with countersunk $\frac{1}{4}$ x #10 woodscrews.

While many prefer the contemporary look of open-grain oiled walnut, a table top such as this, which is subjected to spilled drinks and wet glasses, is best given a paste wood filler treatment prior to sealing. Use a walnut toned paste wood filler, and mix with turpentine according to manufacturers directions. Apply to the panel with a brush, and work only a small section at a time. When the wet appearance disappears, rub the filler well into the pores of the wood, using a pad of burlap. Rub first across the grain and then with it. Remove all traces of surface filler before it begins to harden as it is difficult to remove once it sets up. For that reason, don't try to do the entire top at once.

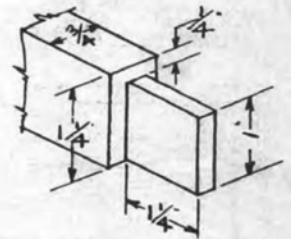
Sand the panel lightly, taking care not to go across the grain of the end strips. Dust the surface and use a tack cloth to pick up all traces of dust. Finish the top with at least three coats of urethane varnish, rubbing down with 4/0 steel wool between coats. The lower frame and underside of top should each receive at least two coats.



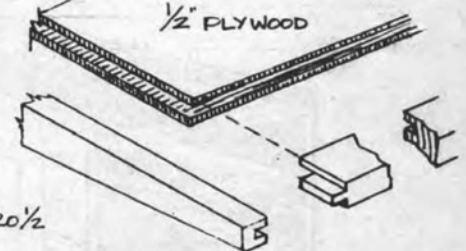
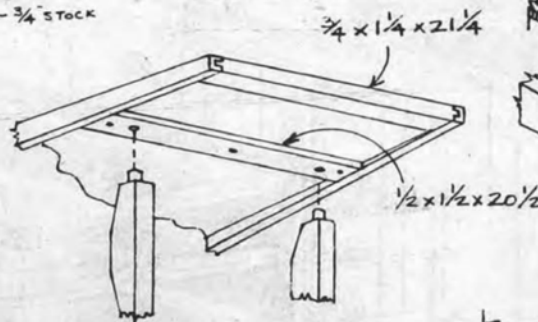
LEG DETAIL



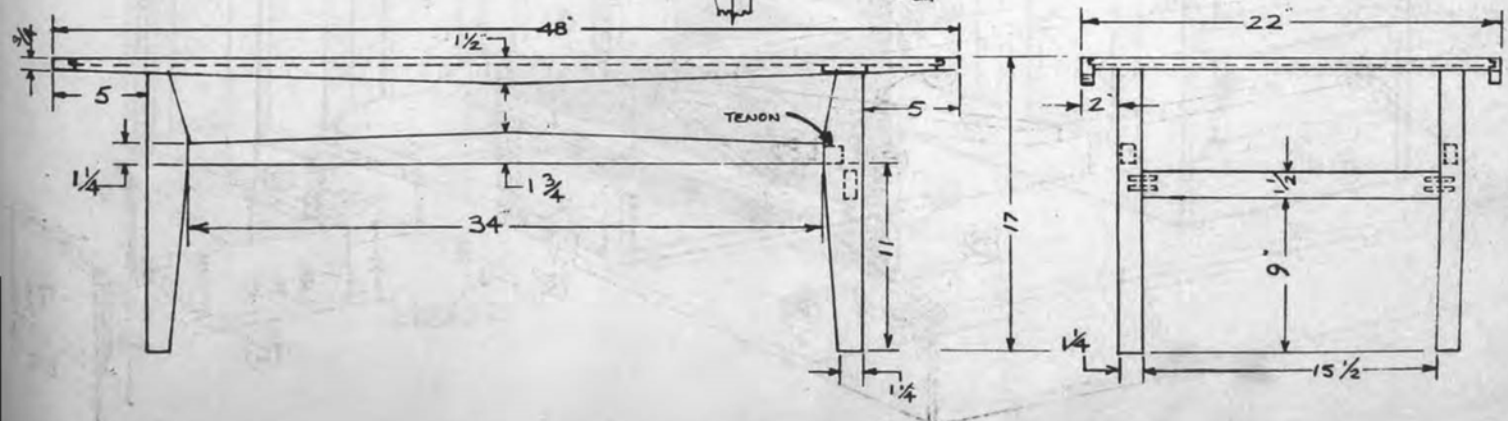
DETAIL - SECTION THROUGH TOP SHOWING PLYWOOD RABBET



TENON DETAIL



DETAIL - JOINING OF TOP EDGING AND PLYWOOD



A Classic Roll-Top Desk Part I

By Richard Wonderlich

Several years ago I obtained an antique roll-top desk that required a great deal of rebuilding. At the time, it served my needs well, but as time went by, I found some things that I didn't like about my old desk.

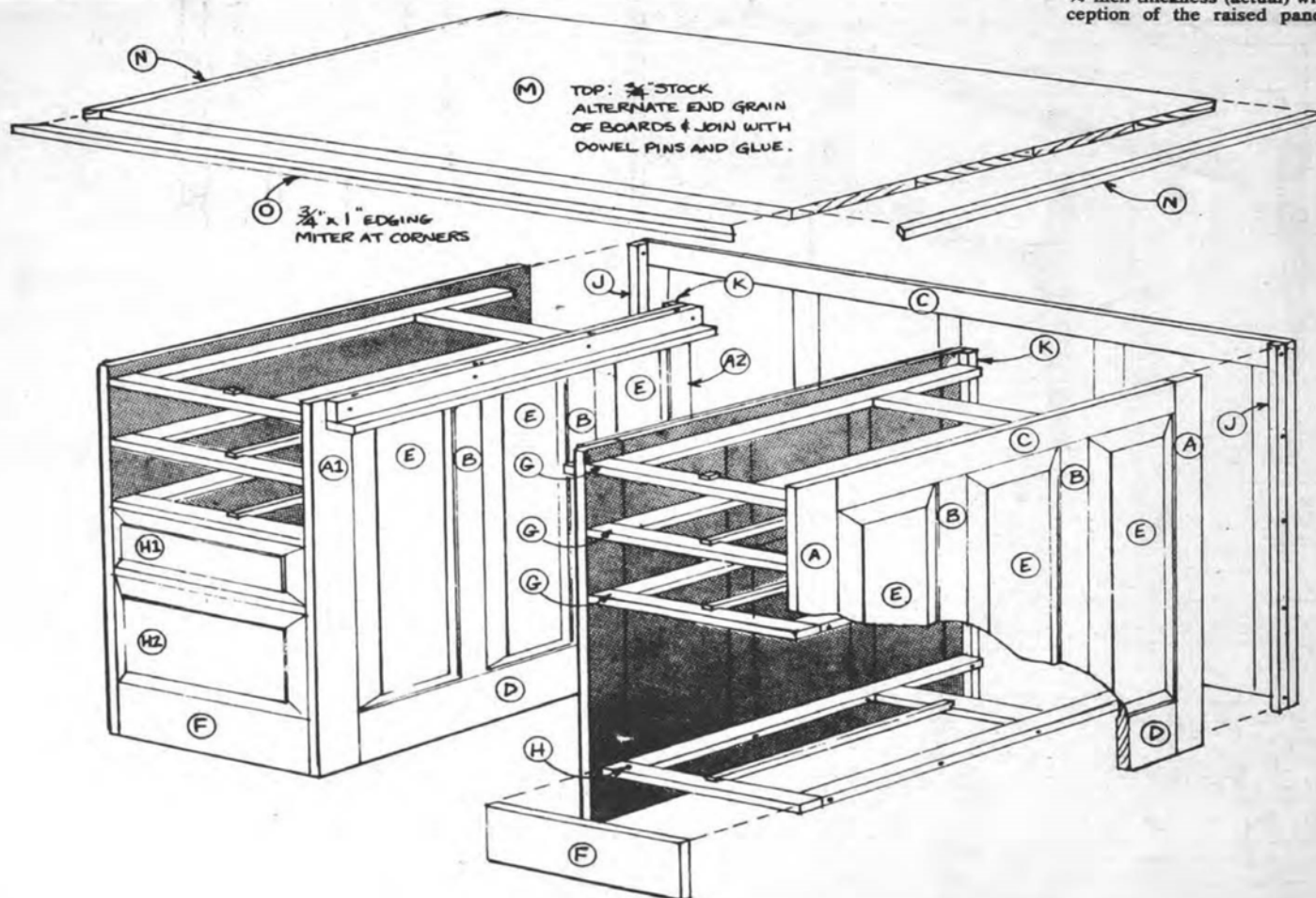
The slats in the old roll-top had three holes drilled through each and were strung together with wires. After about a year of use, the wires would break and have to be replaced. Since I was unable to find a wire that would withstand the stress of continual bending, I decided to use another method of holding the slats together in the new desk I planned to build.

The pull-out writing boards in the old desk were edged with two lengthwise strips and a front strip, and with changes in humidity, the joints would open up causing cracks in the writing surface. For my new desk, I would devise a way to make them look like the old design, but yet not be affected by moisture or warp.

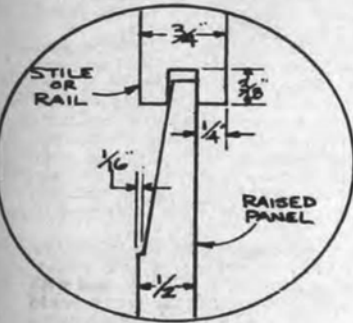
The new desk was made from walnut as it is readily available in my part of Iowa. Some of the wood came from my grandfather's farm; some of it was salvaged from old buildings that were torn down, and the rest had been gradually accumulated.

Most of these old desks were made of oak, and this will certainly be an appropriate and economical wood to use. Drawer sides are best made of $\frac{1}{2}$ inch oak, while drawer bottoms are of $\frac{1}{4}$ inch plywood. The drawer dividers, or frames, can be made of any clear, well-seasoned hardwood, but those front rails which can be seen should be of a wood which matches the exterior of the desk.

For the base, I started with the end panel assemblies. All of the lumber in the basic framework of the desk was $\frac{3}{4}$ inch thickness (actual) with the exception of the raised panels which



were of 1/2 inch stock. The raised panels were cut using a shaper with a Rockwell panel raising cutter. The outer edges of each raised panel were cut to 1/4 inch thickness to fit into a corresponding groove in the stiles and rails. (Detail A)



Stiles and rails were joined with 3/4 inch x 2 inch dowels; two per each joint. The grooves cut to hold raised panels and center stiles, should be 1/4 inch wide and 1/4 inch deep for an easy fit to allow for movement due to changes in humidity. Do not use glue on these joints.

The kneehole panel assemblies are constructed exactly like the ends with the exception of the rear stiles labeled A-2. These are 2 1/4 inches wide rather than 3 inches. (Figs. 1 & 5) The back panel assembly (Fig. 2), is constructed in the same manner as the end and kneehole panels.

Drawer dividers are detailed in Fig. 3. I would advise making them slightly wider than the 12 inches shown. After they are glued and set up, run one side through the jointer to be assured of straightness. Then trim

the opposite side with the table saw, to an exact finished width of 12 inches. You can then be assured that the sides will be both straight and parallel; an important point since this is the framework that holds the end and kneehole panels together. The drawer dividers are held in place with counterbored screws into each stile.

When all dividers are installed, you will have two drawer units or pedestals which are then attached to the back panel assembly. Two 1/4 inch square strips (K) are glued along the rear inner edges of the kneehole panels. Screws are then driven through these cleats and into the back panel. The ends of the back panel also have cleats (J) of the same thickness so that they too can be screwed into the end panels. (Fig. 1)

The kneehole drawer guides (I) are also used to hold the top slab. These guides are each glued up from two pieces, then screwed flush with the top inside edges of the kneehole panels. Holes are bored up through them for counterbored 3 inch wood screws which are driven into the top. (Det. B)

For the kneehole drawer I used the table saw to make a cove cut pencil trough insert. This was done by running the stock at an angle to the blade, taking very shallow cuts until the desired depth was obtained. The front joints of the drawers on my new desk were dovetailed. This can be done with a router and dovetail jig. Cutting many dovetail sockets in drawer fronts by hand is a laborious task. If you want to have dovetails and have only hand tools, an easier method is shown in Detail C. After the 1/2 inch drawer front is joined to the sides, a 3/4 inch beveled false front is glued and clamped to the front. Make sure that mating pieces are planed flat and make good contact.

MATERIAL LIST

PANEL ASSEMBLIES BASE ENDS (2 Req'd)

- A Stile..... 3/4 x 3 x 29 (4 Req'd)
- B Stile..... 3/4 x 2 1/2 x 22 1/2 (4 Req'd)
- C Rail..... 3/4 x 3 x 23 (2 Req'd)
- D Rail..... 3/4 x 4 x 23 (2 Req'd)
- E Panel..... 1/2 x 6 1/2 x 22 1/2

KNEEHOLES SIDES (2 Req'd)

- A1 Stile..... 3/4 x 2 1/4 x 29 (2 Req'd)
- A2 Stile..... 3/4 x 2 1/4 x 29 (2 Req'd)
- C
- D
- E

Same as Base Ends

BACK

- A Stile..... 3/4 x 2 1/2 x 29 (2 Req'd)
- B Stile..... 3/4 x 2 1/2 x 22 1/2 (3 Req'd)
- C Rail..... 3/4 x 3 x 41 (1 Req'd)
- D Rail..... 3/4 x 4 x 41 (1 Req'd)
- E Panel..... 1/2 x 8 1/2 x 22 1/2 (4 Req'd)

G DRAWER DIVIDERS (7 Req'd)

- Front Rails..... 3/4 x 1 1/2 x 12
- Rear Rails..... 3/4 x 1 1/2 x 9
- Side Rails..... 3/4 x 1 1/2 x 26
- Guides..... 3/4 x 3/4 x 21

H DRAWER DIVIDERS (2 Req'd)

- Front Rails..... 3/4 x 1 1/2 x 12
- Rear Rails..... 3/4 x 1 1/2 x 9
- Side Rails..... 3/4 x 1 1/2 x 25 1/4
- Guides..... 3/4 x 3/4 x 20 1/4

DRAWER ASSEMBLIES H1 DRAWERS (5 Req'd)

- Front..... 1 1/4 x 4 1/2 x 12
- Sides..... 1/2 x 4 1/2 x 22 1/4
- Back..... 1/2 x 4 1/2 x 11 1/4

H2 DRAWER (One Req'd)

- Front..... 1 1/4 x 7 1/2 x 12
- Sides..... 1/2 x 4 1/2 x 22 1/4
- Back..... 1/2 x 4 1/2 x 11 1/4

H3 Drawer (One Req'd)

- Front..... 1 1/4 x 12 3/4 x 12
- Sides..... 1/2 x 12 3/4 x 22 1/4
- Back..... 1/2 x 12 3/4 x 11 1/4

L KNEEHOLD DRAWER (One Req'd)

- Front..... 3/4 x 3 1/2 x 20 1/2
- Sides..... 1/2 x 2 1/2 x 20
- Back..... 1/2 x 2 1/2 x 18 1/2

F FRONT BASE TRIM (2 Req'd) 3/4 x 4 x 12

J CLEAT..... 3/4 x 3/4 x 29 (2 Req'd)

K CLEAT..... 3/4 x 3/4 x 29 (2 Req'd)

M DESK TOP..... 3/4 x 31 x 49

P Writing Board (2 Req'd)

- Veneered Part. Board... 3/4 x 9 1/2 x 22
- Front Edging..... 1 x 1 1/2 x 12
- Side Edging..... 1 x 1 1/2 x 22
- Stops..... 3/4 x 3/4 x 3

For those who lack the time and equipment, an alternate method is shown in Fig. 6. The rear of each drawer is dadoed into the sides, and the lower edge has a 3/4 x 1/4 inch notch to fit over the center guides of the drawer dividers.

In some of the drawers I ran small grooves in the sides so that partitions could be added as needed...for such things as cancelled checks and card files. Drawer fronts should fit in their respective openings with a slight clearance at top and both ends.

Since I was unable to locate drawer pulls similar to those on the original desk, I decided to make my own. As shown in the drawings, I used the split turning technique with a 3/4 inch piece in the middle which is waste. This method produces four pulls at one time when turned on the wood lathe. The pulls are six inches long and the finger grooves can be hollowed out with a router or dado head and table saw. After splitting the turning into two

Continued on Next Page

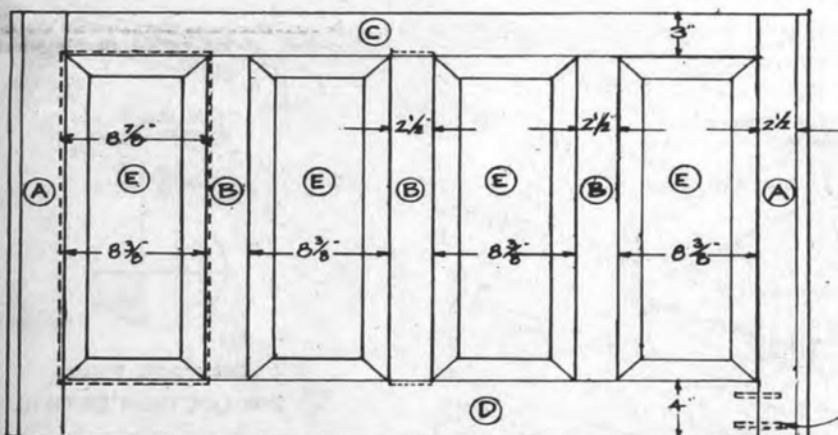
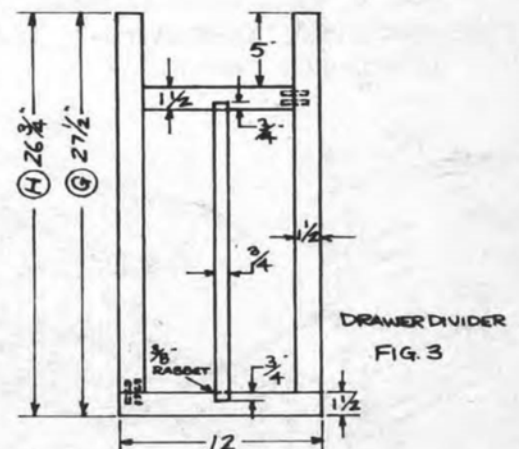


FIG. 2 BACK VIEW



DRAWER DIVIDER
FIG. 3

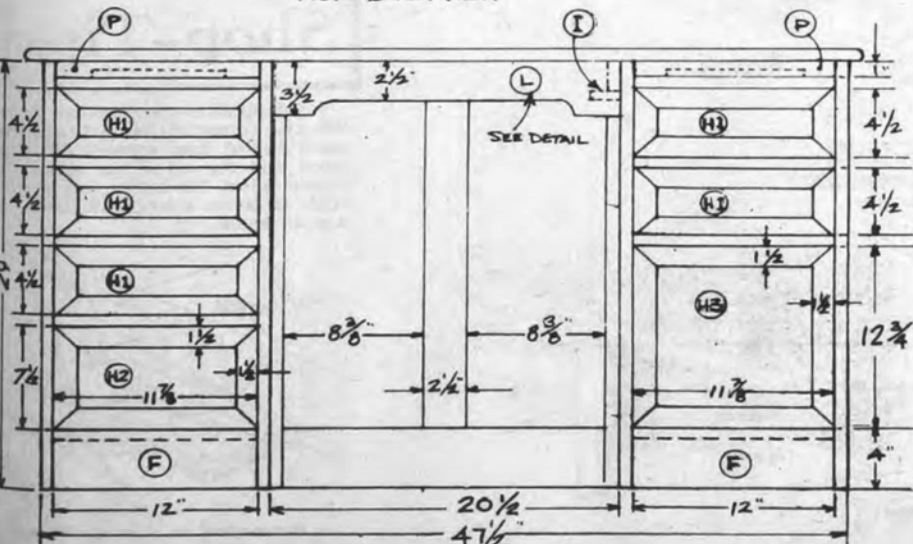


FIG. 4 FRONT VIEW

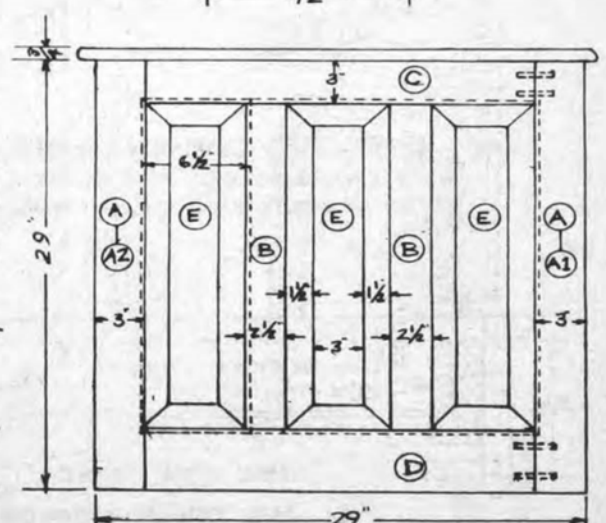


FIG. 5 END VIEW

....Desk (cont'd)

parts, position them over the dado head and clamp them to the table. Then slowly raise the spinning blades. After grooving, this piece is then split into halves to form two pulls.

As can be seen in the drawing, the pull-out writing boards consist of a piece of $\frac{3}{4}$ inch particle board with veneer on both sides. This veneered panel is edged along both sides and front with $1 \times 1\frac{1}{2}$ inch strips. The whole unit is joined with tongues and grooves or with $\frac{3}{4}$ inch dowel pins.

The desk top is glued up from $\frac{3}{4}$ inch stock, edge joined and reinforced with $\frac{3}{4}$ inch dowel pins. Be sure to alternate the boards to minimize warping. It's also a good idea to seal the underside of the top before installing it. On the outer edges the top is held with screws that go down through the top and into the rails of the base unit, and also into the top rail across the back. These screws are simply countersunk flush with the top, since they will be covered up when the roll-top unit is installed. Or you may wish to sink the screws and plug the holes.

After adding the top, you will have a very handsome and functional desk. The roll-top unit is built separately, as time permits.

Editor's Note: Richard Wonderlich, 34, is a farmer who has been enjoying woodworking as a winter evening hobby for the past ten years. He estimates that the desk shown in the photos took about 150 hours to build.

Obviously, this desk is an ambitious undertaking, even for the advanced woodworker; but well worth the effort for an impressive and very useful piece of furniture that should last for several generations. With its paneled back, we believe it is one of the finest examples of its type to be found, and can be displayed with pride anywhere in the room.

Instructions for building the roll-top unit, and finishing will be given in the March/April '79 issue.

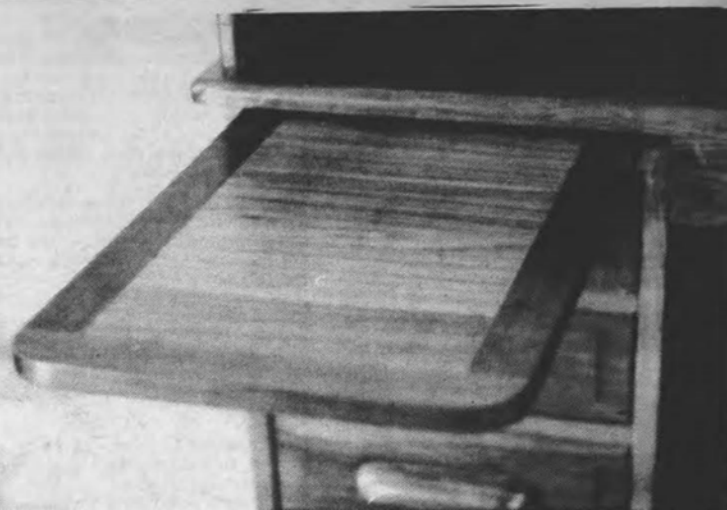
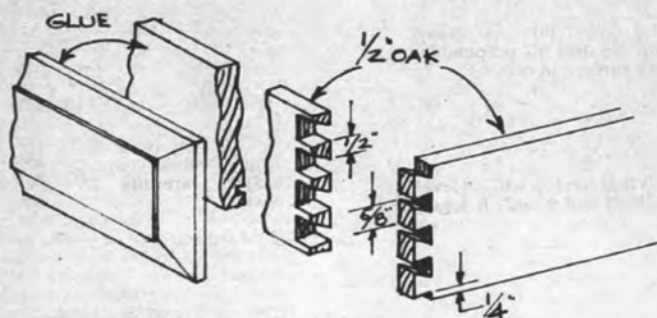
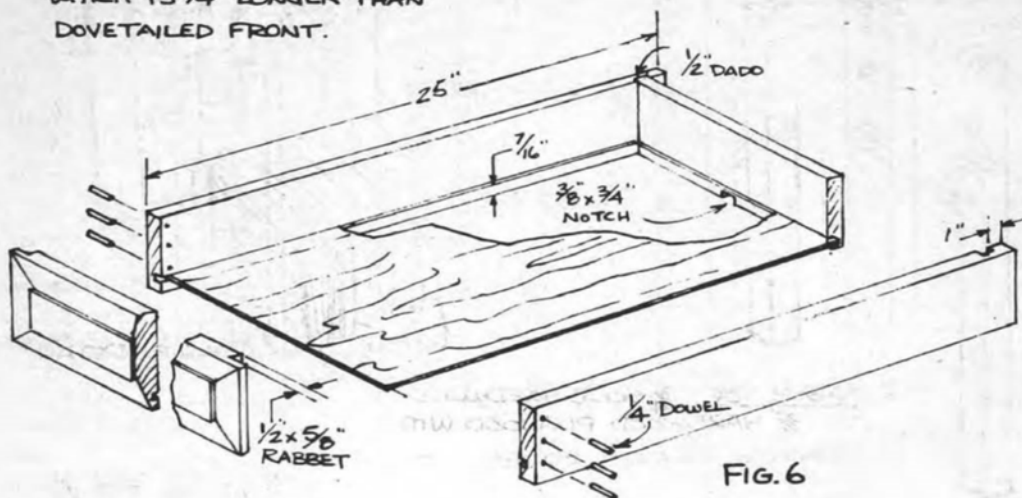
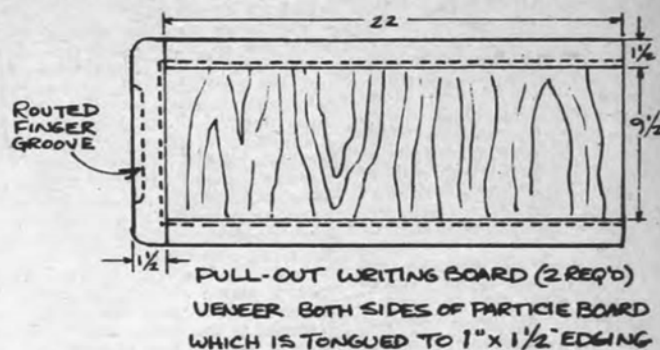


Photo shows writing board pulled. Note the direction of the veneer grain in relation to the solid edging strips.

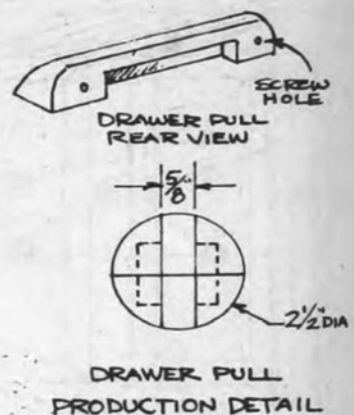
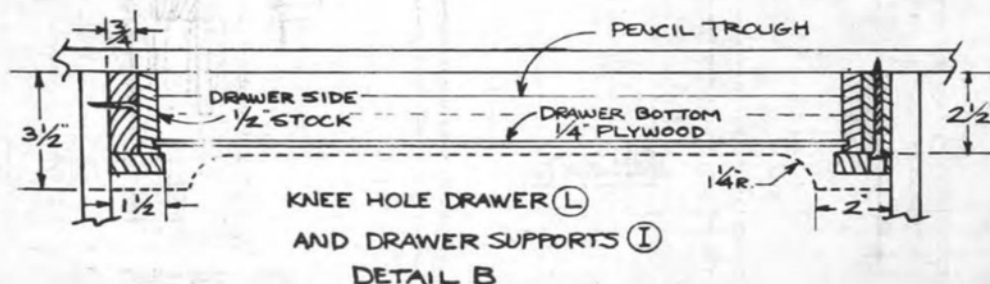


DOVETAIL $\frac{1}{2}$ " FRONT TO SIDES
ADD $\frac{3}{4}$ " BEVELED FALSE FRONT
WHICH IS $\frac{1}{4}$ " LONGER THAN
DOVETAILED FRONT.



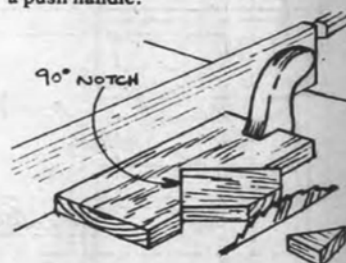
SIMPLIFIED DRAWER CONSTRUCTION

$\frac{1}{2}$ " DRAWER SIDES ARE GLUED & DOWELED
TO RABBETED $\frac{1}{4}$ " THICK FRONT



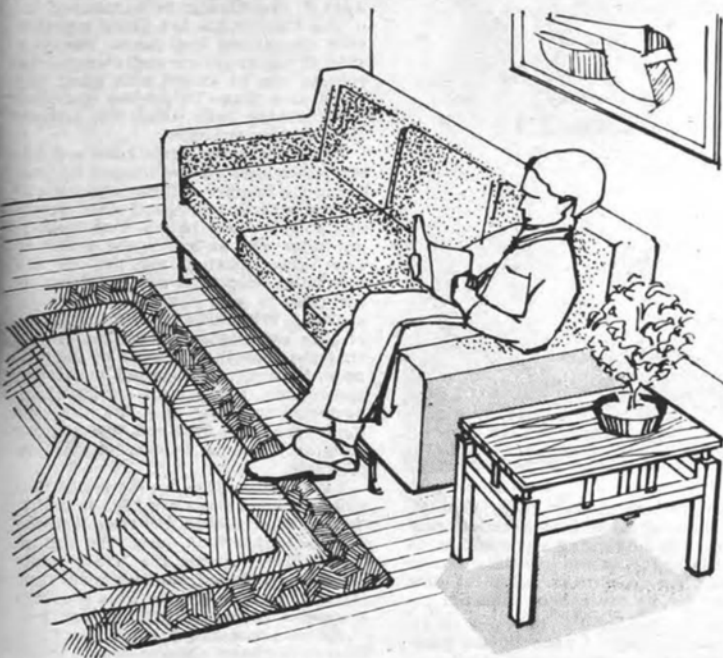
Shop-Tips

Many furniture projects call for reinforcing corner blocks, and these can easily be cut from squared off scrap stock with the aid of the simple jig shown below. For safety, use a push stick, or fasten a length of dowel for a push handle.



A lower shelf on your workbench is not a good place to store power tools. Get them up high and well above the dampness level of basement floors.

Contemporary End Table



Back in our March/April 1977 issue, we presented plans for a very attractive contemporary coffee table. Here, now, is a design for a matching end table...one that retains the same light and elegant look of that earlier piece. Unquestionably, it has all the characteristics of a fine piece of furniture.

A contemporary table like this should be made using a good cabinet hardwood. For a light, natural finish either maple or birch would be a good choice. Walnut is always popular if a darker finish is desired. If you've already made the coffee table, you'll undoubtedly want to use a matching wood for the end table.

Note that the piece is essentially made up of nine basic parts; the four legs, a front and back rail, two side rails, and the top. The top can be either solid stock, veneered panel, or hardwood plywood with veneer taped edges.

Start construction by cutting the four legs from $1\frac{1}{2}$ " square stock to a length of $20\frac{1}{4}$ ". Next, from the same size stock, cut the front and back rails 22 " long and the side rails 14 " long.

Referring to the drawing, lay out, mark, and drill holes for $\frac{3}{4}$ " x $1\frac{1}{2}$ " blind dowel pins as shown. Always keep the drill bit perpendicular to the work surface in order to insure proper alignment and fit up of the dowel pins.

Next lay out, mark, and drill holes in the legs and rails for the $\frac{3}{4}$ " diameter support post dowels. These holes are $\frac{1}{4}$ " deep and must be drilled uniformly so that the top will be level when assembled and glued. A total of ten $\frac{3}{4}$ "

diameter dowels are required. (4 pieces x $2\frac{1}{4}$ " long for the legs, 2 pieces x $3\frac{1}{4}$ " long for the side rails, and 4 pieces x $4\frac{1}{4}$ " long for the front and back rails.) Glue and seat the dowels to the legs and rails as shown. Lay a straight edge over them to insure they are all the same height. Make adjustments as necessary.

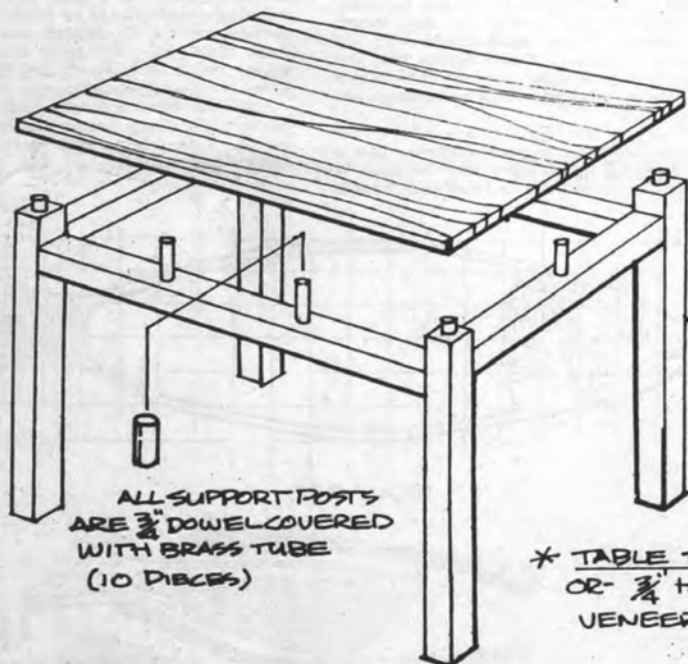
The legs and rails can now be glued and clamped, making sure that all joints are square. Set aside and allow to dry overnight.

When the top is completed, turn it underside up, and set frame upside down on it. All edges of the top and frame should be flush. Carefully scribe around each dowel and then punch a starting hole in exact center of each dowel location. Drill dowel holes in bottom of top to a depth of $\frac{1}{4}$ ". If you use an auger or spade bit, you will be faced with the problem of the screw point breaking through the top of the good side. If this occurs, the most practical solution is to plug the holes with pegs of matching wood. If you have one, the ideal bit to use here is a Forstner bit.

Cut the required number of brass tubes to length. Use a file to remove any burrs and apply a thin coat of lacquer to prevent tarnishing.

Slip the brass tubes on the $\frac{3}{4}$ " dowel post, apply wood glue, then assemble and clamp to the top. Allow to dry.

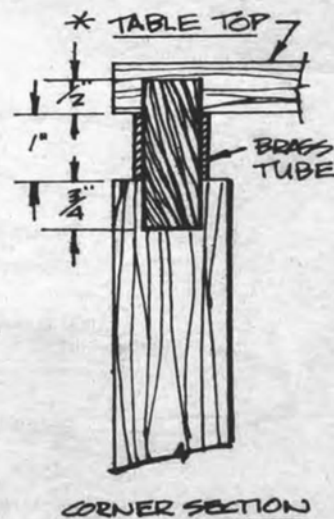
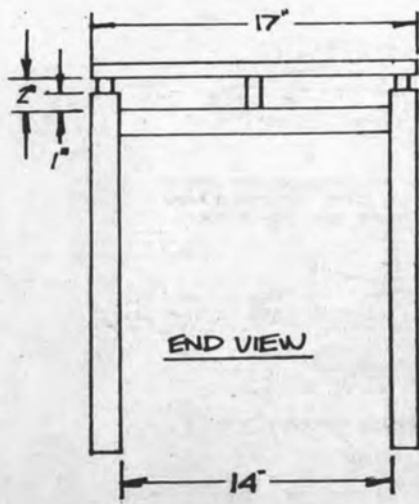
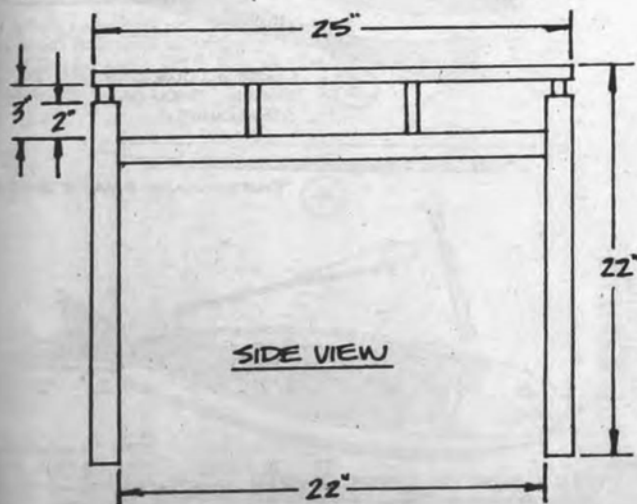
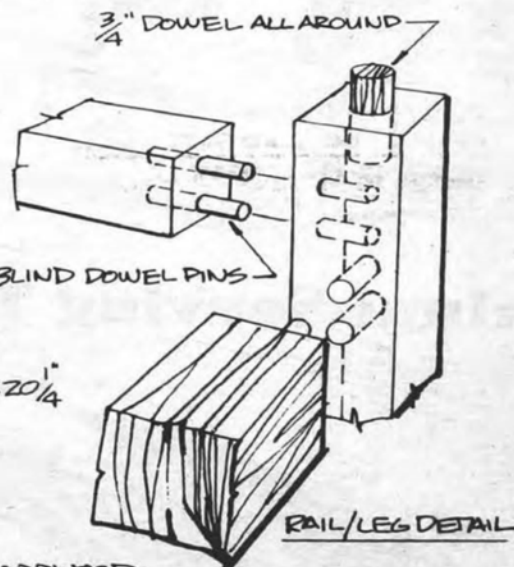
Sand and stain (if desired) to suit. Apply several coats of a good quality sealer, carefully sanding between coats.

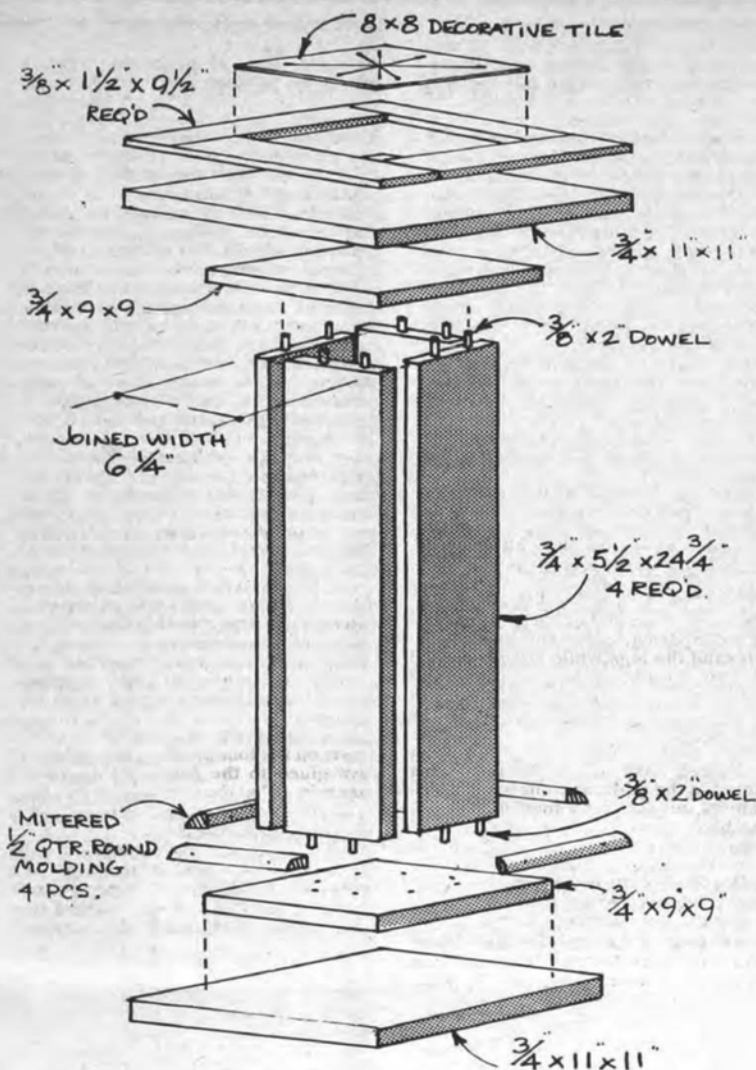


(2) $\frac{3}{8}$ " x $1\frac{1}{2}$ " BLIND DOWEL PINS

LEGS - $1\frac{1}{2}$ " x $1\frac{1}{2}$ " x $20\frac{1}{4}$ "

* TABLE TOP - $\frac{3}{4}$ " SOLID HARDWOOD
OR - $\frac{3}{4}$ " HARDWOOD PLYWOOD WITH
VENEER TAPED EDGES





Plant Stand



Constructed of soft pine, this attractive plant stand is an excellent project for the beginning woodworker. A decorative tile insert provides a nice bit of color to contrast with the pine which can be stained or painted.

Start by cutting the two sets of 11 and 9 inch squares for the top and base assemblies. Remember to sand all surfaces that will be seen, before joining parts. The 9 inch squares are carefully centered and glued to the larger squares. A few small brads with the heads clipped off and driven into the squares, will keep the parts from skidding out of alignment when clamps are applied.

Next, cut the four $\frac{3}{4} \times 5\frac{1}{2} \times 24\frac{3}{4}$ inch pieces for the square column. Use a doweling jig to bore two vertical $\frac{3}{8}$ inch holes in both ends of each board.

A hole depth of 1 inch is sufficient for 2 inch long dowels which are glued in place. Be sure to cut several grooves along the length of each dowel to release trapped air and glue; otherwise the boards may split if the dowels are a tight fit and have to be hammered in.

The four boards are glued together with alternating butt joints; one to a side. If you've got enough clamps, the column can be joined with glue, two sides at a time. Otherwise use glue and finishing nails which will provide the clamping action.

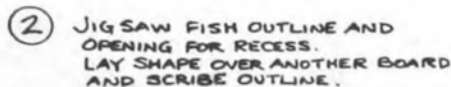
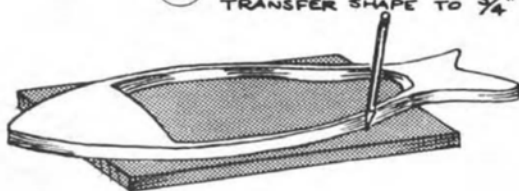
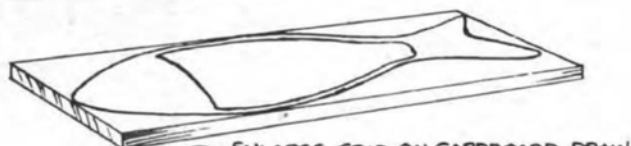
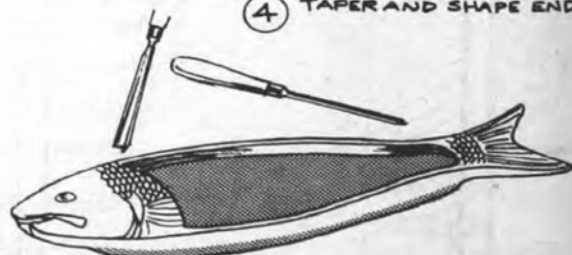
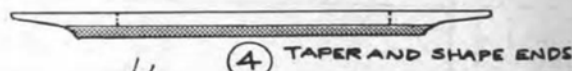
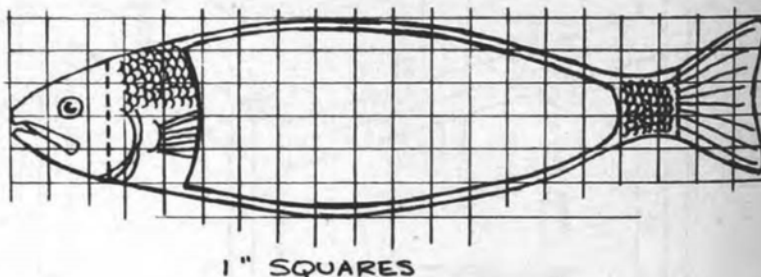
The dowel holes in the base and upper assemblies can be located by centering the finished column in place and carefully scribing around each dowel end with a sharp pencil. Punch starting holes with an awl in the center of each dowel location and drill $\frac{3}{8} \times 1$ inch holes. Now, just before joining, is the time to give the column a good sanding. When this is done, drip a bit of glue in the dowel holes and lightly coat the dowels and ends of the column; then join it to upper and lower assemblies. The column should stand perfectly vertical, and the doweled joints can be clamped by placing weights, such as bricks, on the top platform.

Cut the thin strips for the frame that will hold the decorative tile. Actually, these strips should be sized for the particular insert on hand. We had an 8 x 8 inch ceramic tile which when dropped into place, sat a bit lower than the surrounding frame. This provides a secure recess for the flower pot.

All that remains is to add molding trim to the base. Quarter round molding is shown but you can use a cove or crown molding for a good effect. The molding strips should be joined at the corners with a 45 degree miter cut. Tack strips in place with small finishing nails; their heads set and the holes filled with wood dough.

Give the piece a finish sanding and remove all sharp corners before finishing with stain and varnish or shellac and enamel.

Walnut Serving Tray



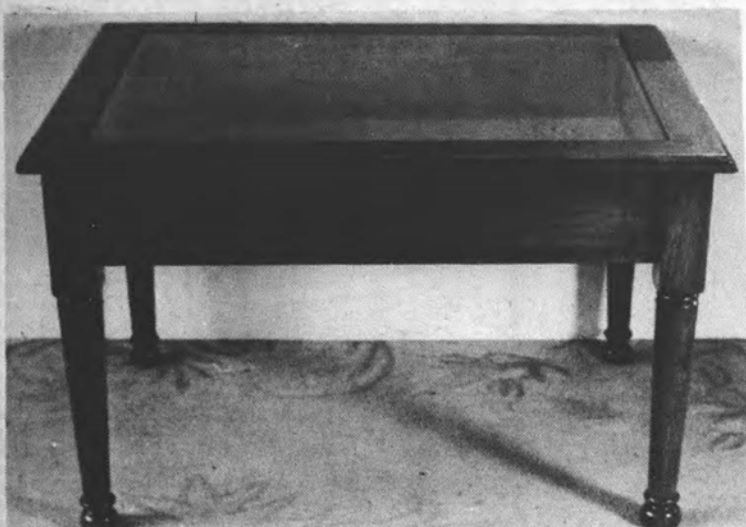


Table courtesy of Henry Diamond, Sherman, CT.

Curio Table

Prized stamps, coins, butterflies, dueling pistols...or just about any small items can be attractively displayed in this fine little curio table.

Besides providing a dust-free and handsome way to store your collection, the table is the right size for use as an occasional or end table in the den or family room.

The nicely detailed turned legs give the piece a traditional look, but if you lack a lathe, or would prefer a more contemporary design, simply substitute square or tapered legs. The table shown was built of pine but cherry or maple are also good choices.

The legs (Detail A), are turned from $1\frac{1}{4} \times 1\frac{1}{4} \times 19$ inch clear stock; either solid or glued up. It's a good idea to lay out and cut the mortises in each leg while they are still in the square. Allow a bit of extra length at the foot end so that the foot can be shaped without interference with the lathe tailstock. In order to insure that all legs are turned alike, prepare a template of the leg profile and use this to layout the various turnings. A good hand with the skew chisel and gouge will do most of the tapering, coves and beads. Finish-sand the legs while lathe-mounted at slow speed, working down to 220 grit paper.

The aprons are cut from $\frac{3}{4}$ inch stock allowing $1\frac{1}{2}$ inch extra length for a $\frac{1}{4}$ inch long tenon at each end. You will need easy access to the items stored in the table, and one way to provide for this is to cut a small opening in the back apron which is fitted with a hinged door. This should be done before the apron is joined to the legs.

Dry fit all joints before applying glue and clamping. After glue has dried, drill each joint for two $\frac{1}{4} \times 1\frac{1}{2}$ inch dowel pegs which are glued in place

and later trimmed off flush.

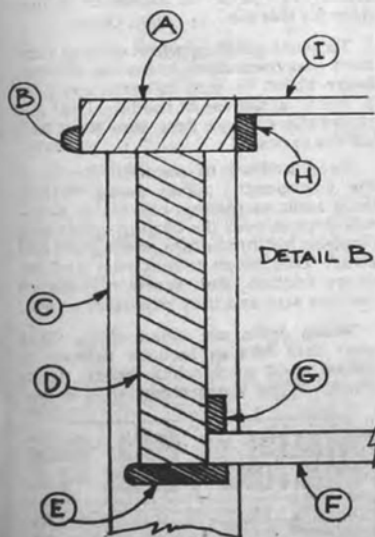
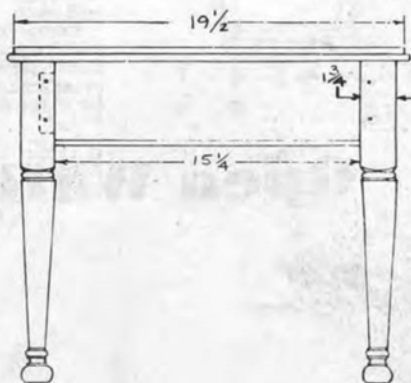
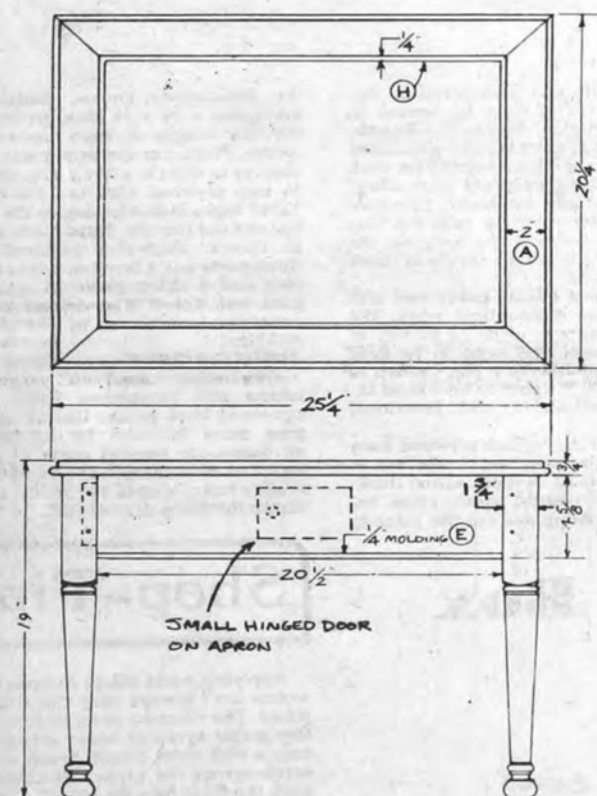
Referring to the sectional view of Detail B, shape four molded strips (E) and brad them to the bottom edges of aprons. These strips provide a decorative bead and also support the table bottom which can be cork board, $\frac{1}{2}$ inch plywood or $\frac{3}{4}$ inch particle board. Cut bottom (F) for an easy fit with about $1/16$ inch clearance all around. The bottom can be painted, veneered, covered with green felt or otherwise treated in a way that will provide an attractive background for the curios.

After the bottom is in place, cut the four small strips (G) and brad them in place to conceal the loose joint between aprons and bottom. These strips butt up against the legs.

The top frame is made of $\frac{3}{4}$ inch stock, and corners are joined with mitered half-laps as shown in Detail C. Sand the frame parts carefully before assembly. Glue the corner joints and double check for squareness before the glue sets. The frame is trimmed with a half-round molding, mitered at the corners, which provides a nice decorative touch and conceals the end grain of the joints. Cut and fit the small door to the apron opening. Mount door with small brass hinges and fasten a small knob and turn-button.

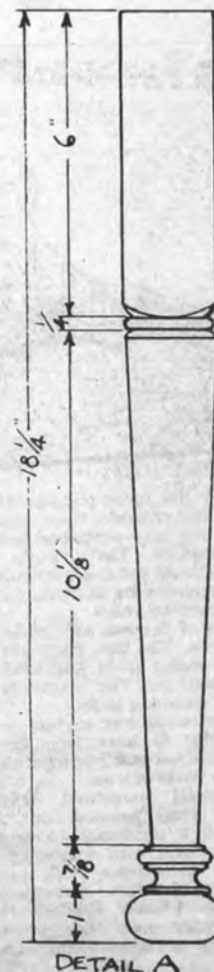
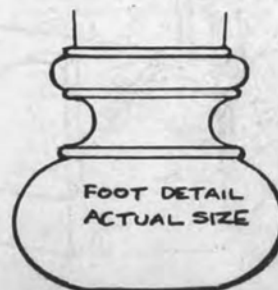
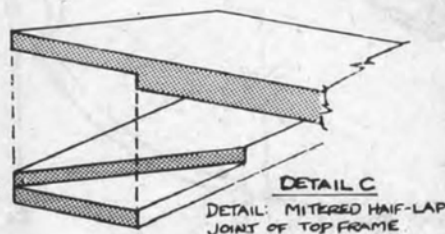
The $\frac{1}{4}$ inch plate glass should be cut for an easy fit within the frame. It rests on the four small strips (H) which are glued to the frame. These strips are mitered at the corners.

Stain the table to suit and finish with at least three coats of varnish, well rubbed with 4/0 steel wool between coats. A final coat of wax, buffed to a soft shine completes the project.

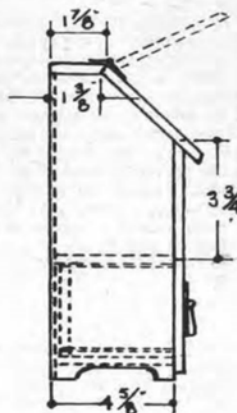
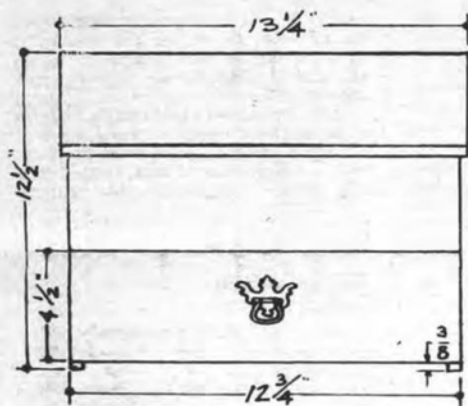
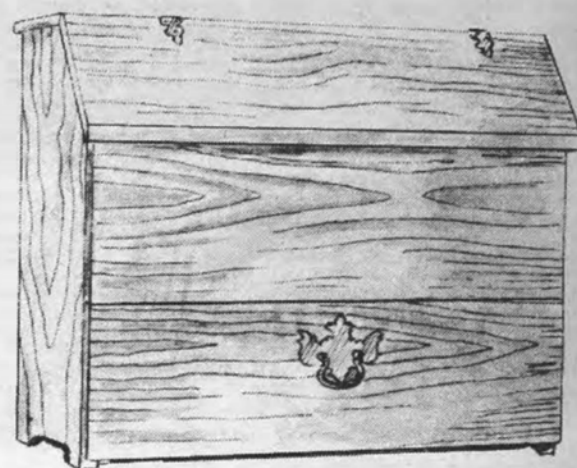
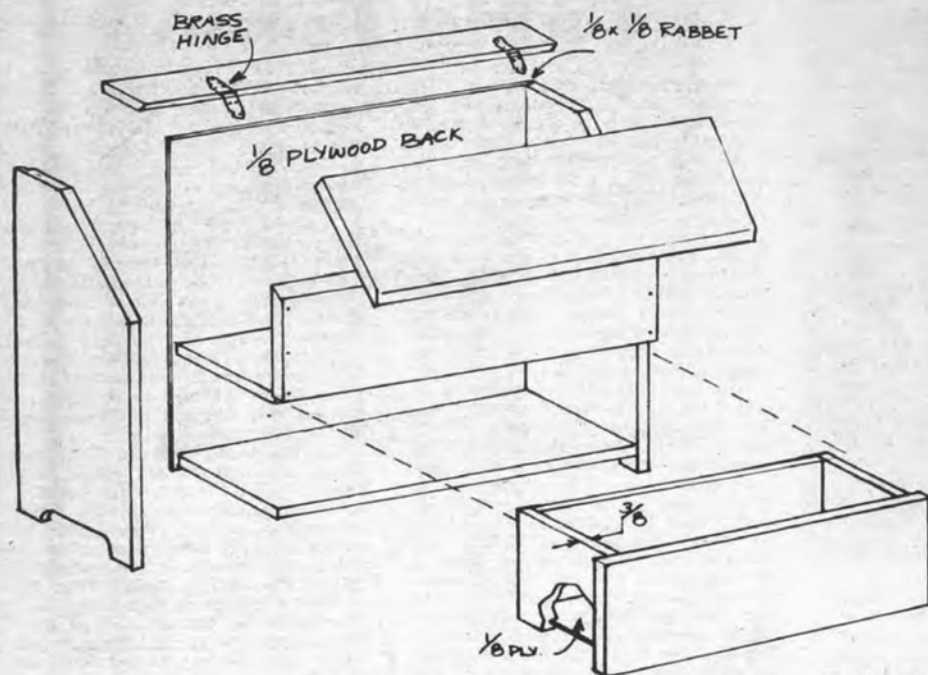


KEY

- A Top Frame $\frac{3}{4} \times 2$ "
- B Half-round Molding
- C Leg $1\frac{1}{4} \times 1\frac{1}{4} \times 18\frac{1}{4}$ "
- D Apron $\frac{3}{4} \times 4\frac{3}{4}$ "
- E Molding Strip $\frac{1}{4} \times 1\frac{1}{2}$ "
- F Bottom $\frac{1}{2}$ " Plywood, etc.
- G Inside Trim $\frac{1}{4} \times \frac{1}{2}$ "
- H Glass Ledge Strip $\frac{1}{4} \times \frac{1}{2}$ "
- I $\frac{1}{4}$ inch Plate Glass



Candle Box



The Candle was considered an important source of light for homes in Colonial America. Unlike the hearth, the candle was portable and generated additional light where needed for such popular evening pastimes as reading, quiltmaking, and no doubt, furniture making. It is generally believed that boxes of this style were hung on the wall and used to store a supply of those valued candles.

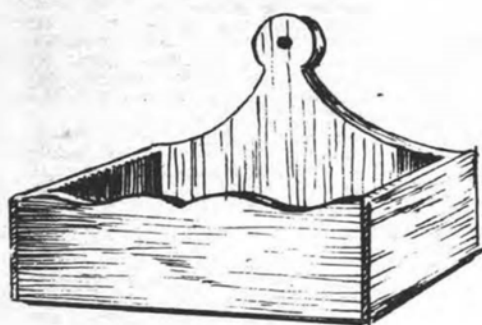
Today these quaint boxes can still be put to use in countless ways. We like to use ours to collect a variety of odds and ends that need to be kept handy. No matter how you choose to use it though, it's sure to be a most interesting, attractive and functional wall piece.

Except for the 1/8 inch plywood back and drawer bottom, the candle box is made entirely of 1/4 inch (actual thickness) pine. To begin construction, refer to the drawing and cut the sides to

the dimensions shown, keeping in mind that a 1/8 x 1/8 inch rabbit runs the full length of each inside back corner. Next, cut the upper and lower shelves to size (3/4 x 4 1/2 x 12), then the 1/8 inch plywood back to 12 1/4 wide x 12 1/2 high. Still referring to the drawing, cut out the top, front piece and lid as shown. Note that each of these three parts has a beveled edge, so use care and a sharp plane to make the joint well fitted. The drawer components can now be cut to size and assembled.

Thoroughly sand all surfaces, taking care to remove excess glue squeezed from joints. Use an antique pine stain followed by an antique oil finish, or several coats of a low luster varnish. Attach the lid with decorative brass hinges as shown. Lastly, fasten the brass drawer pull.

Open Wall Box

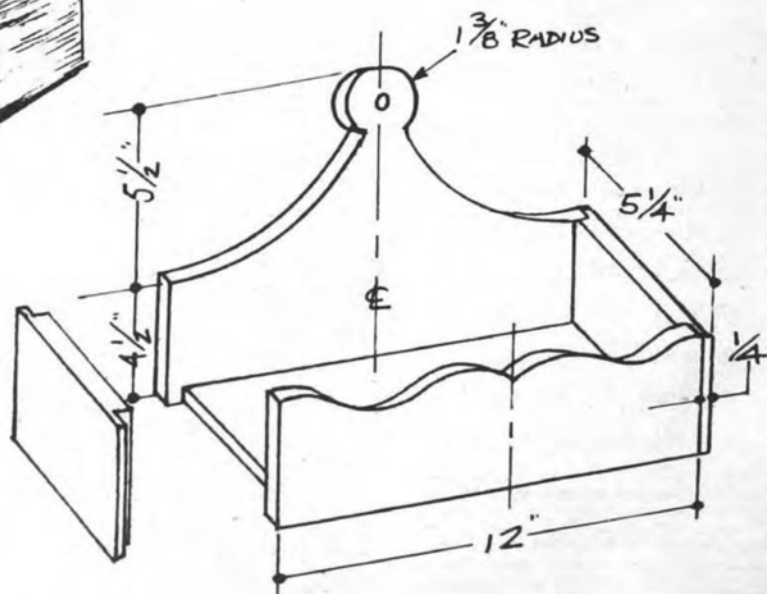


Probably the most popular of Colonial wall box reproductions, the original pine box was probably used for storing candles. There have been many variations, but this particular design has remained a favorite for well over two hundred years.

All parts of the box are made from 1/4 inch pine. The box ends are rabbeted to receive front and back and this joint is glued. The bottom is held with small finishing nails.

All parts of the box should be well sanded prior to assembly, and all edges should be well rounded to simulate many years of wear.

Many small household items of this type were painted...our forefathers had a tendency to disguise pine; sometimes with a coat of milk paint, and sometimes with painted graining to simulate mahogany or other costly woods. Modern tastes run to antique pine stain protected with a coat or two of low luster varnish.



Shop-Tips

Applying paste fillers to open grain woods isn't always easy the first few times. The viscosity must be just right, like maple syrup or heavy cream, and only a stiff short bristle brush used to scrub across the grain will effectively pack the filler into the pores. A stencil brush 1 1/2" or 2" in diameter is just right for this job. John Olson

To avoid splitting when cutting mortises that come close to the top of a leg, leave about 1/4 inch of extra stock, or a "horn" at the top of the leg. Drill and chisel the mortise first, and then trim off the excess.

Keep a block of paraffin handy to the workbench. After using cutting tools such as planes, chisels or saws, rub the wax over the cutting edges and on plane bottom before putting the tool away. This helps prevent rust and reduces friction. Rub screw threads on the wax also and they will drive easier.

Sharp drills are clean drills. Soak your drill bits in lacquer thinner to soften wood pitch which builds up on flutes. Wipe them clean with a rag.

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Tumbling Toby

Here's a simple wooden toy that's guaranteed to delight youngsters...and intrigue grownups as well. Toby is counterbalanced so that a light tap will set him somersaulting back and forth along the parallel bars...and he'll keep going for some time.

This toy can be made quickly from just a few scraps of pine and dowel. Low in cost and easily mass-produced, it's an ideal item for sale to gift and toy shops.

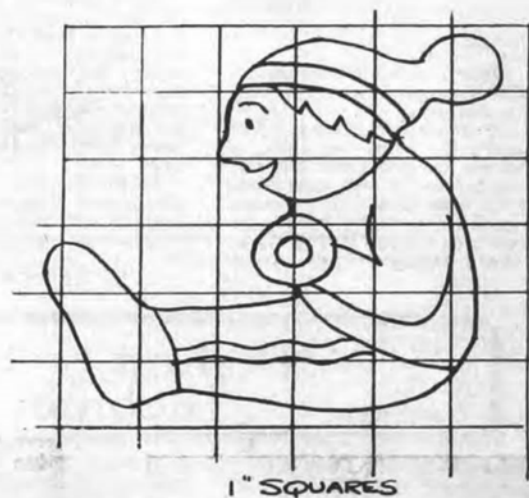
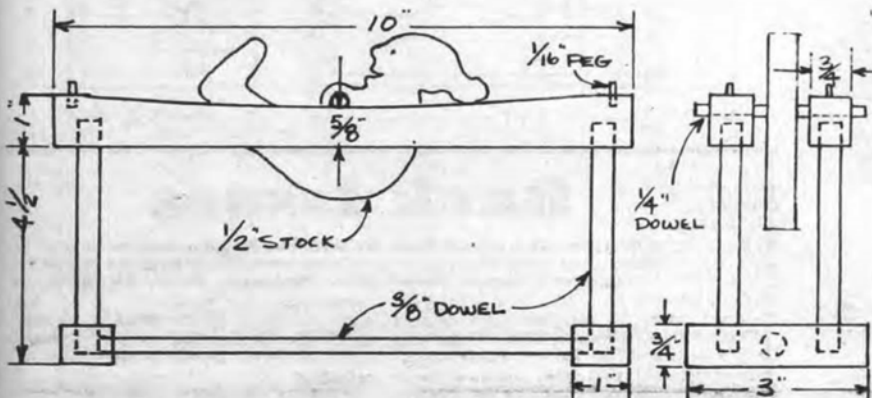
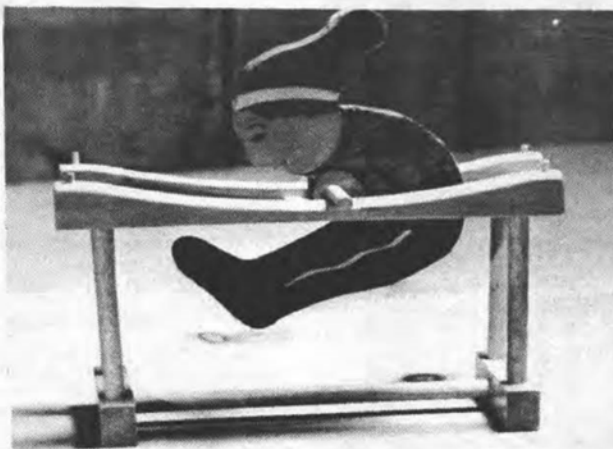
Start by enlarging the squares to 1 inch on heavy paper. Then transfer the figure to the enlarged grid. Cut out the pattern, and use it to trace the figure on $\frac{1}{2}$ inch pine. Jigsaw to shape and drill a $\frac{1}{4}$ inch hole through the hands. Insert a 3 inch length of dowel so that it protrudes an equal distance

on each side and glue in place.

The parallel bars are shaped from $\frac{1}{4}$ inch pine. Rasp a gentle curve along the top of each bar as shown. Drill holes in the bottom edge of each bar for $\frac{1}{4}$ inch dowel uprights.

Cut two base pieces and drill three $\frac{1}{4}$ inch holes in each; two for the upright supports, and one for the long stretcher. Sand all parts carefully and assemble the parallel bars with glue. Temporarily place a spacer block between the bars while the glue dries to keep them parallel and spread about an inch apart.

Finish the toy with a couple of coats of thinned shellac. Toby can be left natural or painted with enamels or colored with felt-tip pens.



Restoring Antiques

By John W. Olson

REPAIR KINKS

Many of the antiques that end up in the restorer's shop have unsightly gouges, deep scratches and batters that are beyond simple filling and sanding. These defects may be repaired by inlaying a matching piece of wood. The oldtimers called these patches "dutchmen". This technique can be equally valuable in new work when material is prohibitively expensive or in short supply. Unsightly knots, resin pockets, edges showing bark and similar defects can be made reasonably unobtrusive.

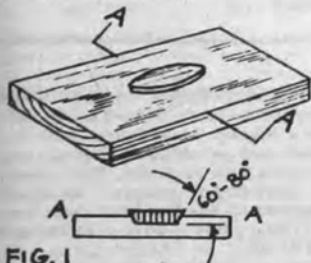


FIG. 1

The first step is to determine the exact location and shape of the dutchman. Many repairmen recommend a boat shaped inlay, such as shown in Fig. 1; however this isn't necessarily the best shape. If advantage can be taken of grain direction and natural patterns of pores and rays in the wood, the repair will be unnoticeable except to the most observant and critical person.

Along broken and split edges, a simple replacement will probably do as shown in Fig. 2. In this case, and on curved surfaces, the easiest shape to fit is one that has the two inner edges

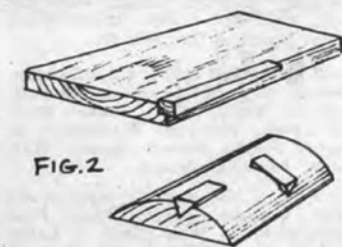


FIG. 2

intersecting at 90 degrees. It can be clamped tightly with a minimum of fuss. A dutchman which has only one facing surface laying at a skew to the board being repaired can be persuaded to stay in place with a small, short hidden dowel, or a couple of brads or fine finishing nails in pre-drilled holes. This latter is necessary so as not to split the dutchman. See Figure 3.

After the shape of the dutchman has been determined, its outline is pen-



FIG. 3

ciled around the defect being repaired. The bed can now be prepared. When the dutchman is to be inlayed in a flat or nearly flat surface, the sides of the hole being excavated should be at an angle of 60 to 80 degrees with the horizontal, and the floor made as flat as possible. Any convenient depth will

do; $\frac{1}{4}$ to $\frac{1}{2}$ inch is sufficient. In any case, make sure your dutchman does not quite touch the floor.

The dutchman should be made from the same species of wood as the piece being repaired...matched as well as possible in grain texture, pattern and color. The angle of the cut with the direction and position of the rays and pores in the piece being matched should be studied and the dutchman prepared so that not only is the grain running in the same direction, but also so that the patterns of the pores and rays match as nearly as possible.

Often the piece of wood for the dutchman can be removed from an inconspicuous place on the piece under repair. In the case of a table top, it is often possible to cut a piece from the reverse side of the board. A word of caution: go slowly and take care not to ruin that which you wish to repair. A $\frac{1}{4}$ inch deep and $\frac{1}{4}$ to $\frac{1}{2}$ inch wide piece is about as large a chip as can be successfully removed; although at times I have managed upwards of $\frac{3}{4}$ to 1 inch. Again, choose a part of the board whose grain patterns resemble those under repair on the reverse side.

To bring the dutchman to shape it often is best to make a pattern of cardboard, heavy paper or very thin wood which reproduces the exact outline of the hole into which the dutchman will fit. The outline can be transferred to the pattern by rubbing. Place a piece of paper over the hole, rub soft pencil over the area of the hole. This outline can then be traced on the pattern. Cut the dutchman slightly larger; say $\frac{1}{16}$ inch, then shape the sides to match the angles of the sides of the hole. When finished and well fitted, the dutchman should lay very slightly above the floor of the hole and stand proud above the surrounding surface.

Any of the common glues will serve to hold the dutchman in place, but I generally use yellow aliphatic resin

or epoxy. The latter is especially effective when there is space between the dutchman and the floor of the hole. The epoxy hardens and supports the central portion of the dutchman. Clamp firmly in place to bring the sides of the dutchman into intimate contact with the sides of the hole.

The fibers of the wood are flexible enough so that very small irregularities in fitting disappear under the pressure of the clamps, and when finished, the joint will show only a fine line.

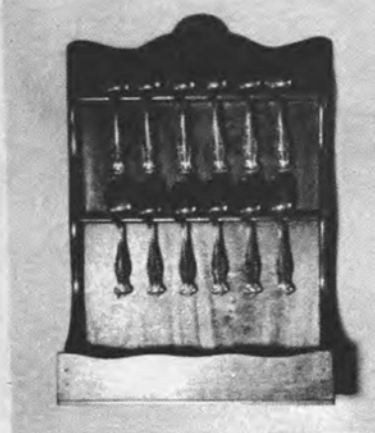
Similar approaches can be used to attach a piece designed to replace a badly damaged corner or edge, pieces missing from a carved decoration and other odds and ends that need to be replaced. Generally, the best approach is to attach the repair piece and then bring it to shape.

Clamping often becomes a major problem, and it is well to plan ahead. As indicated above, sometimes a few brads or a dowel will help to keep the dutchman from sliding around under clamping pressure. Epoxy can be a lifesaver since it requires little or no clamping, and holds firmly after setting up.

After the glue has hardened, the dutchman can be leveled with a sharp chisel, small plane, a file or sandpaper. This latter approach is the safest. A bit of skewed grain can cause the plane or chisel to undercut and spoil the repair you've been working hard to make. A little imagination will indicate the best approach to take.

Pieces of carvings can be worked in to shape with the coping saw, chisels, files and bent rifflers. These latter are very handy for intricate work. Strive to make the union between dutchman and part being repaired as smooth as possible. Any irregularity that you can feel with the tips of your fingers will be apparent when the repair is stained and finished.

Colonial Spoon Rack



Any collection of fine silverware can be proudly displayed in this charming colonial spoon rack.

Note that basically it is made up of seven parts; the back, two sides, a front, bottom and two spoon holders. All are made from $\frac{3}{4}$ inch clear pine.

Since this wide stock is hard to come by, the back will probably have to be made from two pieces of $\frac{1}{2}$ inch stock, edged glued together, then planed

down to the $\frac{1}{4}$ inch thickness.

After planing to width, transfer the grid patterns from the drawing to the stock and cut out. If using a grid pattern is new to you, refer to the beginning woodworker article in this issue for some helpful tips.

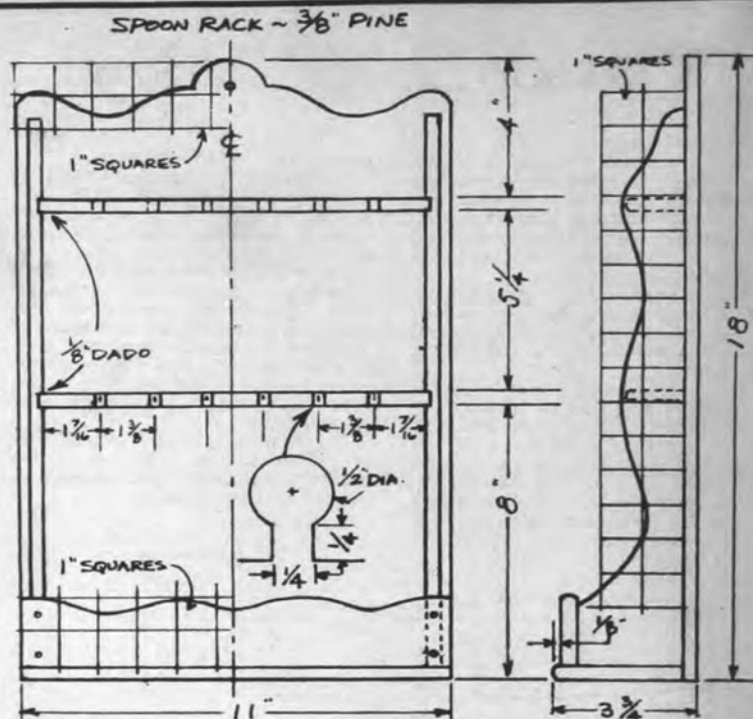
Now cut out the two sides, again planing down the heavier stock and cutting the curves per the pattern.

The front piece and bottom can be cut out next. Continue using the same procedure, taking care to make all cuts accurately.

The final two parts are the top and bottom spoon holders. Refer to the drawing for dimensions needed to drill the holes and cut the grooves. You'll want a nice, clean hole here so use a sharp drill bit. Cut the grooves so that they will be uniform in width.

Begin assembly by first attaching the back to the sides. Use wood glue and fasten from the back with small finishing nails. Next, attach the bottom to the back and sides. Use two decorative brass escutcheon nails on each side to attach the front. Finally, put the spoon holders in place and fasten from the back with finishing nails.

To finish, sand all surfaces completely and stain to suit. Apply two coats of satin varnish, rubbing down the final coat with 4/0 steel wool.



Workshop Income

Charles Burke

We woodworkers who try to make a little spare money on the side by selling things that we make don't pay enough attention to people with other hobbies. Other hobbyists often need and would like to buy some of the things that we can make easily enough. We should take advantage of the good market they offer us.

The hobbyists whom we can help more than any others are those people who can all be lumped under the general term of "collectors." There are too many of them to categorize...name an object and I'll bet you somebody collects it...but that really shouldn't make any difference to you if you want to sell. It's none of your business if a potential customer wants to spend his time saving old trolley car transfers or peanut butter jars. What is your business is that collectors of all types need something to put their collections into.

What they put their collections into depends of course on the items being collected. It might be an album like those used by stamp, postcard and some photo collectors, in which case you're not really in the running...unless you can sell them on the idea of letting you veneer their album covers, drill their pages or something like that. But in many cases, the collectible item won't be anything as easily storable as stamps or photos; it will be something comparatively bulky or odd-shaped, like maybe beer cans or pistols or fishing reels. These are the people you want to go after. They definitely need a good place to keep their collection, and therefore, they need you because you're the guy who can give them their custom-made, hand-finished, one-of-a-kind-nobody-else-has-one-like-it junk repositories. They need boxes, frames, racks, cabinets, shadow boxes, trays. Provide what they need and you'll make money. It's that simple.

The hard part in many cases is not making the stuff. That's relatively easy. The hard part is finding the people who do the collecting. What you have to do is keep your eyes and ears open. You have to have your an-

tennae out so that you'll pick up information about different types of collectors and what they need. Go over the section of your newspaper that devotes itself to hobbies of all types. This section usually runs in the Sunday edition of daily newspapers; you've probably read it before for its occasional woodworking articles...so start going through it more carefully to see what's going on in other hobbies. Pay particular attention to the announcements of club meetings and shows, and make it your business to attend one or two of them to see what's needed by people in the hobby.

Years ago I had a cushy deal going for a long time just because I dropped into a coin show one time when I had nothing better to do and saw the way many coins were exhibited. They were put into boards with holes in them to hold the coins, and then the whole thing was covered with glass or plastic and stuck between frames. The beauty of it was that once I was able to latch onto a couple of collectors, I was able to offer them completely customized coin displays...the kind they were proud to hang up in their livingroom. They really wanted display cases like the ones I was offering them, and the only reason they hadn't bought them before was that stores don't sell them and no one had ever offered to make them.

So that's the ticket as far as selling to collectors is concerned. First you have to find them, then you have to learn something about what they need, and then you have to offer them good pieces at good prices.

You'll be surprised to see how many collectors will be anxious to do business with you once you show them you know what you're talking about and can produce quality material. Collectors, for the most part, want to show their stuff off, and they'll pay you well for providing the means for letting them take their accumulations of rattlesnake skulls and petrified moose droppings out of the bureau drawer. Collect some collectors...and collect some cash at the same time.

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