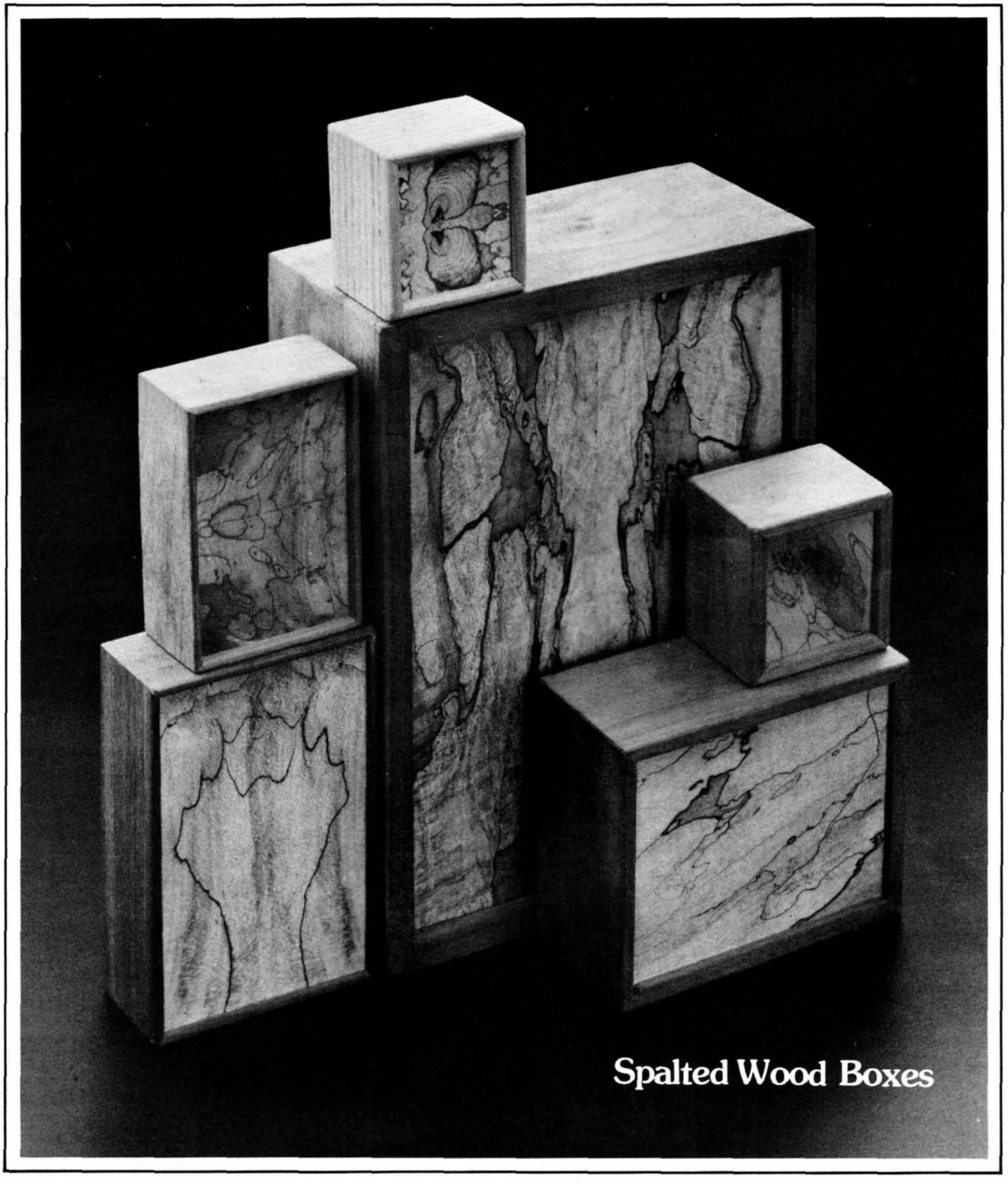
The Woodworker's Journal

Vol. 5, No. 5 September/October 1981 $2.25



Included In This Issue: 18th Cent. Rudder Table · Woodbox Musical Jewelry Box · Toy Hippo · 18th Cent. Tavern Table Sewing Cabinet With Tambour Doors · Deacon's Wall Shelf

Shoptalk

I've been intrigued by the increasing interest in Japanese woodworking tools. Many mail-order firms selling tools now have several catalog pages devoted to Japanese tools and I know of at least one firm that deals exclusively in them.

These tools range in quality from Apprentice through Professional to Master's grades and the differences in price between the grades is startling. A *Ryoba* carpenter's rip saw, with teeth on both edges of an 11 inch long blade, can range in price from $13.00 to $274.00. Needless to say, the saw selling for $274.00 is a very special quality tool made by a Master for Masters' use. Most of the saws of this type are closer to $25.00.

Smoothing planes, which have oak bodies and blades of laminated high-carbon and low-carbon steel, range in price from $25.00 to the staggering sum of $375.00 for a masterpiece with the iron etched with acid to simulate wood grain. Generally, a fine quality Japanese tool can be purchased for about the same amount as its Westerrn counterpart.

Most Japanese tools are very beautiful in their simplicity amd economy of design. They have evolved over many centuries in the Japanese tradition of achieving excellence through a highly ritualized approach. Keep in mind though that Japanese joiners do much of their work sitting on the floor or at very low benches. For this reason, their saws and planes are designed to cut on the pulling stroke. The saws have very thin blades which cut with surprising ease on the pull stroke but will buckle or break if used in the Western way of applying pressure on the pushing stroke. I've been doing things in the Western way long enough for my brain to have deep memory tracks (call them ruts if you will) that tell me to cut on the push stroke, so using a Japanese saw requires considerable concentration. Younger and more adaptable woodworkers will, no doubt, have less trouble.

The planes, being of wood with a simple wedging of the iron, are fussy to adjust and generally require some truing up and sharpening before initial use, as well as careful maintenance thereafter. Of course, this is also true of the Western wooden planes.

The point I'd like to stress is that Japanese tools should not be purchased simply for the sake of novelty. To use them efficiently and with pleasure requires a commitment to the subtleties of Japanese techniques. For this reason I'd recommend that, along with the purchase of tools, you also get the book *Care and Use of Japanese Woodworking Tools* by Kip Mesirow and Ron Herman. This book is sold by most firms that offer Japanese tools. In addition, *Fine Woodworking* magazine, issues 20 and 29, contain in-depth articles on the care of Japanese planes. These back issues are availale at $3.00 each from The Taunton Press, 52 Church Hill Rd., Newtown, CT 06470.

Japanese tools are carried by The FineTool Shops, P.O. Box 1262, Danbury, CT 06810 (their Japanese tool catalog is free), Woodcraft Supply Corp., 313 Montvale Avenue, Woburn, MA 01888 (catalog $1.00) and Woodline, The Japan Woodworker, 1731 Clement Ave., Alameda, CA 94501 (catalog $1.50).

Some of the other Japanese hand tools such as chisels, marking gauges, hammers and hatchets are of excellent design and quality and can be used in the Western way. Serious amateur woodworkers who are willing to respect the uniqueness of Japanese tools will add a new dimension to their enjoyment of working wood. Sayonara.

Jim McQuillan

Letters

I am in the process of building a dining room trestle table made entirely of walnut and would appreciate your advice as to the type of finish to use. Is one type of finish (topcoat) better than another for the table top? This is the area I want to have adequate protection for against spills, hot food, water, etc. and at this point I'm rather confused as to what type would be best - we have children, so I do need adequate protection.

I'd like to use Watco Danish Oil finish for all other parts of the table but do not believe this would be satisfactory for the top.

Bob Mallard, Canton, IL.

John Olson replies:

I'd advise Mr. Mallard to use Watco for the entire table, including the top. Watco enters into the pores of the wood and polymerizes into a solid which, in effect, case hardens the surface. The beautiful thing about Watco is that stains, scratches and other blemishes can be removed with fine sandpaper and the surface can be reoiled with Watco at any time during the life of the piece of furniture. This treatment will leave no trace if the blemish is repaired properly. I have a set of solid walnut family room furniture that I finished with Watco about 17 or 18 years ago. With periodic cleaning, spot repair, and reoiling it still looks like new. Generally speaking, polyurethanes and similar hard, clear finishes are not suitable for the type of service Mr. Mallard foresees for his table. They are hard to repair and require periodic stripping and refinishing.

I have been having trouble putting polyurethane on over a stripped piece of furniture. It bubbles up and has to be removed. I don't know what I'm doing wrong.

I would really appreciate any help in this matter.

Alice Trinkle, Rushville, IL.

John Olson replies:

It appears that the piece was not properly cleaned after stripping. Any paint remover residue left in the pores of the wood will cause the kind of trouble she describes. The manufacturer's instructions should be followed very closely if a commercial remover is used. Since I don't know which stripper was used, I can only make some general remarks. Most water clean-up strippers contain a caustic of some sort which has to be neutralized. A very dilute solution of vinegar and water works well when followed by a thorough washing with clear, clean water. Other stripping agents with hydrocarbon bases should be cleaned thoroughly after use with a 25% - 75% mixture of alcohol and lacquer thinner. In both cases, a finish sanding with 180 to 220 grit paper will help remove any remaining residue.

In some of your projects you use a fraction such as 8/4 or 5/4 to call out lumber thickness. What do these fractions mean?

L.D. Fisher, Kansas City, MO.

The lumber industry specifies the thickness of boards by using what they call a "nominal" dimension. The dimension can be expressed in two ways, either as a whole number, or as the fractional equivalent of that whole number. For example, 2" nominal stock is the same as 8/4 (pronounced "eight-quarter") stock. (The fraction 8/4 is converted to the whole number 2 by dividing 4 into 8.) The terms are used interchangeably, so sometimes you will see 2", other times 8/4.

Remember though, the nominal dimension represents the thickness of the board when it is initially cut from a log at the sawmill. This newly cut

(cont'd on page 8)

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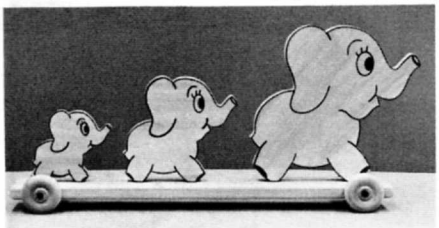

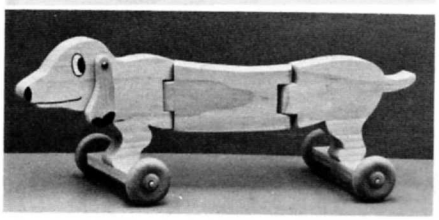

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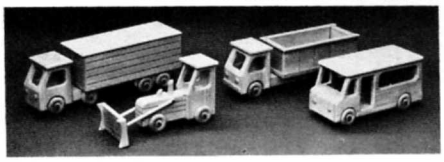

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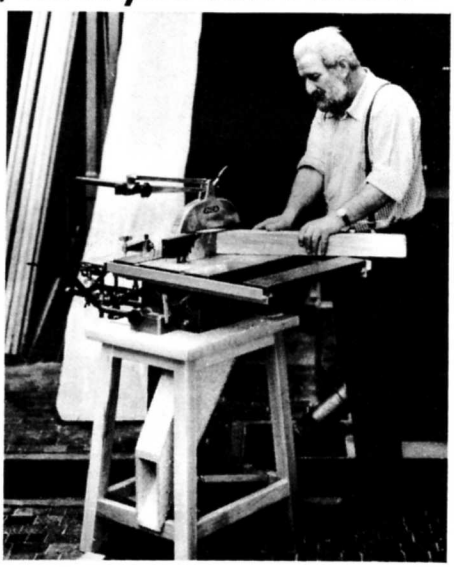

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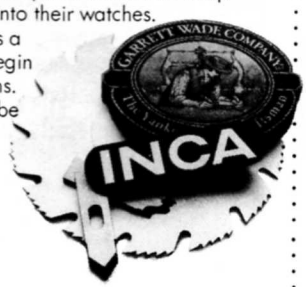

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Letters (Cont'd)

board has rough surfaces, caused by the big sawblade, and a high moisture content. As the moisture content is reduced by air or kiln drying, the board will shrink somewhat, both in width and thickness. The board then has its rough surfaces removed by planing (generally called surfacing or dressing), resulting in a thickness that is considerably less than the nominal dimension. This new, thinner dimension is called the "actual" thickness.

Most lumberyards carry only surfaced lumber. This means that when you go into your local lumberyard and ask for 2" (or 8/4) pine, you will get a board that will actually measure 1¾". In most sizes there is a slight difference between the actual dimensions of hardwoods and softwoods. Here's a list of some common nominal dimensions and their corresponding actual dimensions:

Nominal		Actual	
Whole	Fraction	Hardwood	Softwood
1	4/4	13/16	¾
1¼	5/4	1-1/16	1⅛
1½	6/4	1-5/16	1¼
2	8/4	1¾	1¾
2½	10/4	2¼	2¼
3	12/4	2¾	2¾

I build backgammon boards out of a combination of wooden frames and leather inlaid boards. My most difficult task is finding the playing pieces for the game. Can you tell me where these can be purchased?
Bruce Greenfield, Philadelphia, PA.

Unfinished backgammon checkers are available from Constantine, Inc., 2050 Eastchester Rd., Bronx, NY 10461. All pieces are solid birch. The set has 32 pieces and includes walnut stain to make the dark colored checkers. Price is $3.50 plus shipping.

Would you please advise where I can find a source for the glass bulbs used for hourglass timers?
Frank Plewa, Enfield, CT.

Handblown European hourglasses are available from Woodcraft Supply Corp., 313 Montvale Ave., Woburn, MA 01888. Three-minute, ten-minute, and one-hour glasses are offered. Each glass is filled with fine-grain sand. Mounting tips permit the glass to be secured to wooden bases.

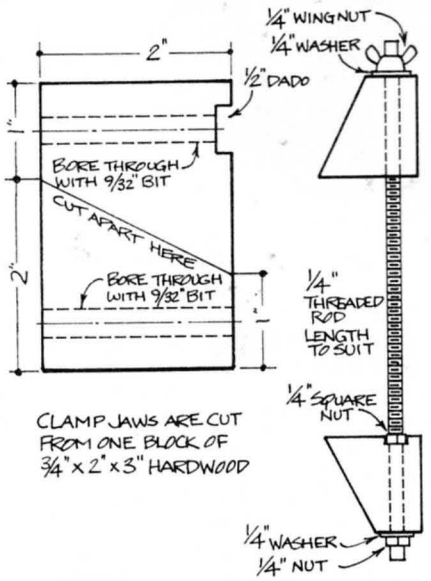
(Cont'd on next page)

Letters (Cont'd)

In the "Shop Tips" section (pg. 28) of your July/August 1981 issue, you show a method of making light-duty clamps. I made four of them and think they are great. In the process of making them, however, I discovered an error. In your drawing, the left-hand drawing shows the dado cut in the 1" wide portion of the block. The right-hand drawing shows the dado as having been cut on the 2" portion of the block. The latter, of course, is correct.

Neil Palmer, Toledo, OH.

Our thanks to Neil (and several other readers) for bringing this to our attention. Here's how the clamp should look.



Could you please advise where I can get ideas for workshop layouts?

Paul Thornhill, Danville, KY.

Try the book The Complete Book of Home Workshops *by David Manners. It's published by Harper and Row and the price is $12.95.*

I would like to join a local woodworking club. Would you please send me the address of any New York - New Jersey club.

William Mirabello, Staten Island, NY.

I'm afraid we don't know of any woodworking clubs in the metropolitan New York area, although there are probably several of them. If readers can provide any help, we'd be happy to pass the information along to Mr. Mirabello.

We've recently noticed that there seems to be a growing interest in woodworking clubs of one sort or another. We wondered if there were other readers, like Mr. Mirabello, who

(cont'd on page 12)

Letters (Cont'd)

would like to join a club but had no way to know if one was nearby. It occured to us that a listing of woodworking clubs could be helpful, so we'd like to include one in a future issue. If you belong to a woodworking club and would like to be listed, please send us the club name and address and we'll see that it gets included.

Would you be able to tell us where to find an electric branding tool that can be custom made with our logo rather than the usual two line - 20 letter type?
The Wooden Knot, Nicholasville, KY.

The Frog Tool Co., Ltd., 700 W. Jackson Blvd., Chicago, IL 60606, can put a logo on a branding iron as long as the logo is less than 2" x 3". They suggest that it be kept simple without fine detail. Long skinny designs should be avoided because they cannot be evenly heated. Also, small letters cannot be made. Price is $127.00 ppd.

I am an industrial arts teacher and have found your project ideas excellent. I also teach evening adult education and the projects have been equally useful for the adults.

In your most recent issue (July/August 1981), I noticed something I felt should be drawn to your attention. In the section "The Beginning Woodworker", several of the sketches on page 12 show the rip fence and the miter gauge being used at the same time. I know that the operation you are showing presents no hazard because the workpiece is never cut in half - just dado cuts and angle cuts. However, because this section is geared for the beginner, I think it would have been a good idea to mention that using the rip fence and miter gauge together, under any other condition, is not advisable, and is, in fact, unsafe.

In teaching youngsters and beginning adults, I've learned never to assume anything and I'm afraid a reader might see this section and think that it's o.k. to cut off boards using the miter gauge in conjunction with the rip fence. It's not.
Richard Buxton, Falls Church, VA.

A few months ago I received a copy of your January/February 1981 issue. After looking it over I decided I liked the Black Forest clock project. Never having done any woodcarving before, I plunged in just like I knew what I was doing, and I think I did a darn good job - for a kid. I'm only 74 years old. Now you guys got me hooked on woodcarving.
Pat Dugan, Placerville, CA.

Workshop Income

By Paul Levine

When Janet and I bought a new refrigerator we needed to make two trips to the bank in order to pay for it. It was a real beauty though, and when we finally got it into the kitchen, it was a pleasure taking off all that protective material, before giving it a good cleaning and stuffing it full.

However, it wasn't long before this new member of our household started to show a nature that was somewhat less than charming. For one thing it made a great deal of noise. The old one, which we sold for $25.00, never made a sound.

After a few service visits things finally seemed in order, but to be on the safe side we went out and picked up a second hand refrigerator from an apartment house superintendent for $15.00. With all the service trips we were losing a lot of coleslaw so we felt the expense was more than justified. As you might imagine, that little old box ran quietly, cheaply, and dependably, just like our old one.

What is this all about? Why is he crying about yesterday's coleslaw? Well, let me tell you. I've been given the opportunity to use some old industrial quality woodworking machinery. These old machines are not as versatile as the newer machines or the multi-purpose ones, so they will take up more space. But unlike much of the woodworking equipment that's made today, these older machines are solidly built - and they do the job they are supposed to do... and do it well.

Your local telephone directory is the most likely place to find used equipment suppliers. Look under headings "Woodworker's Equipment & Supplies", or "Industrial Equipment & Supplies". These outfits usually carry used equipment-if they don't, they probably can tell you who does. Also, school systems will periodically replace their equipment, so you may want to check with your local Board of Education to find out what they do with the old machines. It's also a good idea to check the classified section of your local newspaper.

Purchasing used machinery will usually save you money-sometimes as much as ½ the price of new equipment, but keep in mind that there are some things to watch out for. It's not uncommon for used machines to have parts that are missing, or in need of repair or replacement. Before you buy, find out how much it will cost you to get the machine running properly. It's also important to remember that replacement parts are sometimes impossible to get-especially if the equipment hasn't been manufactured for years. Having a special part made at a machine shop probably won't be cheap. Also, many used machines require 3-phase electrical current. It's expensive to rewire for this, sometimes impossible. Converters are available, but they too can be somewhat costly.

If a machine can save you time, it saves you money. This savings can help you lower prices, to generate more business, or to increase your profit margin. You'll benefit either way.

Restoring Antiques

by John Olson

Restoring Hitchcock Chairs

Four Hitchcock-type chairs presented me with some interesting restoration problems. These rush seated chairs are painted black and decorated with antique gold stripes on the front legs and the uprights supporting the back. The top cross slat is stenciled with a colorful flower design. These chairs have seen around 100 years of use and have a well developed patina of age - attested to by numerous scratches, dents and slightly splintered edges. The seats did not appear to be original, but with the exception of one chair, they were in fair condition except for a few broken strands. One had several adjacent strands broken. A previous owner had stuffed newspaper between the upper and lower layers of rush in an effort to tighten the seats and eliminate sag. Some of the rungs were loose in their sockets and several of the decorative side pieces were split and broken.

The obvious place to start the restoration was with the decorative side pieces. A misguided repairman had fastened these with large unsightly nails so my first task was to carefully remove each one. The broken pieces were repaired using Elmer's Carpenter's glue with firm clamping pressure. They then were reinstalled using 1" x #19 brads.

Loose rungs and joints were repaired by working Chair-Loc (P.O. Box 45, Lakehurst, NJ 08733, $2.50 for a 3 oz. bottle) into the joints. In two cases it was necessary to drill a small hole in the joint so that the Chair-Loc could be applied with a hypodermic type glue injector.

The next step was to repair the seats. Loose and broken strands were glued to the underlying layer and to their neighbors. This was done by working Elmer's Carpenter's glue in between and under each loose strand. A stiff piece of cardboard was inserted under broken strands in the one seat that had several adjacent strands broken. Glue was placed on both sides of the cardboard before insertion and then the whole was clamped using cauls (pine boards). A sheet of wax paper on each side kept glue from getting on the cauls. In the interest of aesthetics, all the glue on the upper surfaces of the strands was carefully removed. While this rush seat repair makes the seat somewhat stiff it allows the chair to be used for several more years before the seat has to be replaced.

In order to preserve the integrity of the patina of age (the owner is a purist), only the worst of the splintered and battered edges were smoothed with 180 grit sandpaper. After all repairs were completed, the sanded areas, and those in which the finish had worn off, were given a coat of flat black paint. Care was taken not to get any paint on the decorative painted flowers. The gold striping was ignored as most of it required repainting.

Striping is an art in itself but it can be mastered with time and patience. I use a sign painter's brush that has very fine hair-like bristles. It is about a ½ inch wide by less than ⅜ inch thick. The best approach is to use both hands and a stick to rest the right hand. Paint with short strokes using only finger movements. Guide lines drawn on the surface are a great help. The gold paint I used was a special mix concocted of gilt paint modified with colors-in-oil. The addition of some yellow, lamp black and Venetian red closely approached the existing color. These colors-in-oil also acted as thickening agents to bring the paint to a usable viscosity, and to bring out the antique gold color.

After a 24 hour drying period the chairs were carefully rubbed down with very fine 400 grit paper taking care not to remove any of the decorative detail. After this smoothing, two coats of a low luster acrylic finish were applied with the spray gun. I use Ben Moore's 4 Hour finish. It levels nicely and dries quickly. A second coat was applied in 3 hours so finishing was done in a day. This finish protects decorative painting and doesn't attack the underlying finishes if they have had sufficient time to dry.

The Beginning Woodworker

The Locked Miter Joint

In the previous issue we discussed the plain rabbet-miter joint as a solution to the problem of joining the sides of a case or box without showing end grain or getting involved in the cumbersome four way clamping setups required for plain or splined miter joints.

The locked miter is another more exotic version of the rabbet-miter joint (Fig. 1A). As with the plain rabbet-miter joint, the locked version presents the usual clean appearance of a miter joint and also requires clamping in one direction only. In addition, it is a stronger joint than both the splined miter and plain rabbet-miter joints.

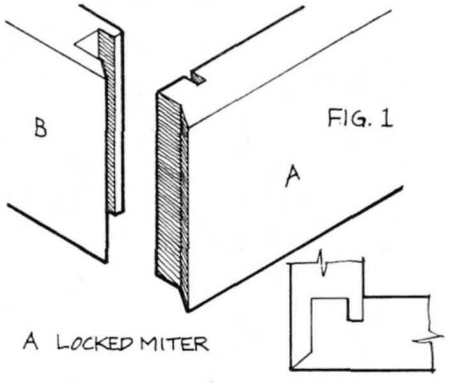
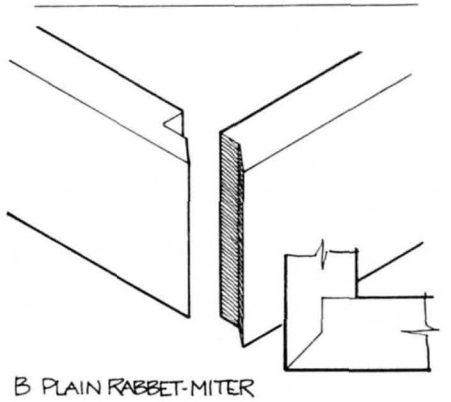


FIG. 1

A LOCKED MITER



B PLAIN RABBET-MITER

Locked miter joints can be used with either solid stock or plywood though care should be taken when machining certain solid woods to prevent chipping. As woodworking joints go, this one is fairly difficult since it requires a great deal of accuracy in setting up the tablesaw blade and fence for each cut.

Six cuts in all are required, three on each mating piece. As always, it is advisable to run a test cut on scrap stock of equal thickness after each new blade or fence setting. Also, make sure that the parts you are forming are of equal thickness.

For clarity in describing the operations, the two mating parts will be labeled A and B in Fig. 1A. To prepare for the first cut which is made on part A, set your tablesaw fence so that an outside blade tooth (a tooth away from the fence) aligns exactly flush with the outside edge of the stock (Fig. 2). Then adjust the blade height for a depth of cut which is 1/3 the stock thickness. In most cases, working with stock about ¾ inch thickness, the blade height will be ¼ inch.

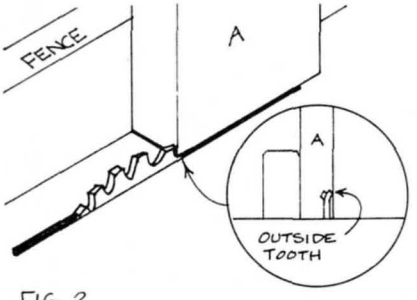


FIG. 2

SETTING FENCE FOR 1ST CUT

Use the miter gauge to hold part A, butt its squared end against the fence and make one pass over the blade (Fig. 3). Please note that the use of the

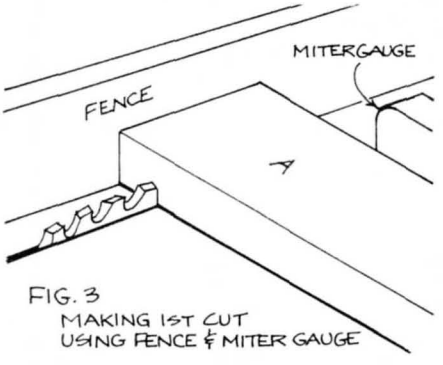


FIG. 3

MAKING 1ST CUT USING FENCE & MITER GAUGE

fence as a stop when crosscutting with the miter gauge is a dangerous procedure only when the blade cuts completely through the board. In this case we are cutting a narrow dado and there is no chance for a cut off piece to jam against the blade.

The second cut is made on part B and requires the installation of a dado blade set to cut a groove equal in width to one half the stock thickness, In the case of stock of ¾" thickness, set the dado blades for a ⅜" wide cut. The blade should be raised until its height equals the full thickness of the stock. Use your test scrap as a gauge for setting the blade height accurately (Fig. 4).

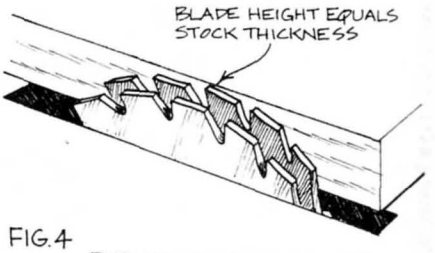


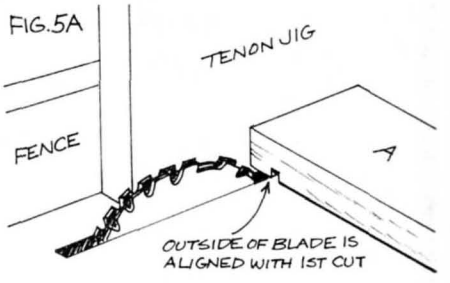
FIG. 4

DADO HEAD WIDTH EQUALS 1/2 STOCK THICKNESS

A tenon jig is set up with the fence so that when part A is laid flat on the table and butted against the tenon jig, the outside of the dado blade is aligned with the first cut made in part A (Fig. 5A).

Part B is then clamped upright to the jig, face side in, and the jig is pushed along the fence running a grooving cut along the end grain of part B (Fig. 5B). This groove will be off center leaving two tongues, one thicker than the other.

FIG. 5A



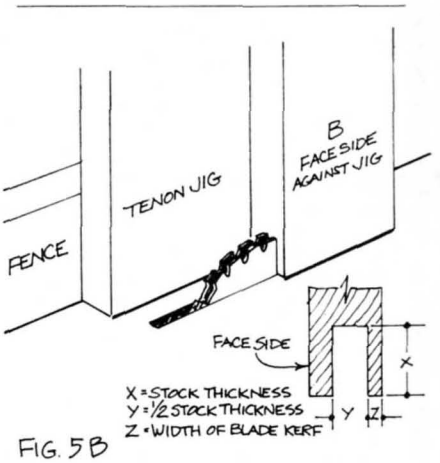


FIG. 5B

MAKING THE 2ND CUT

Cut number three is made on part A and requires a switch back to the regular saw blade. The blade height is

(cont'd on next page)

set by aligning the top of the blade with the inside edge of the thicker tongue of piece B laid face side up (Fig. 6). An auxiliary fence, which can be nothing more than a piece of scrap

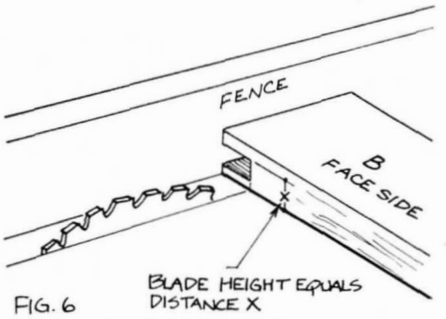


FIG. 6
SETTING BLADE HEIGHT FOR 3RD CUT

1 x 2 pine, is clamped to the regular fence so its bottom edge just clears the top of the blade. This auxiliary fence prevents the small piece being cut from jamming between blade and fence.

Mark piece A for the cut by standing the mating part on it and scribing

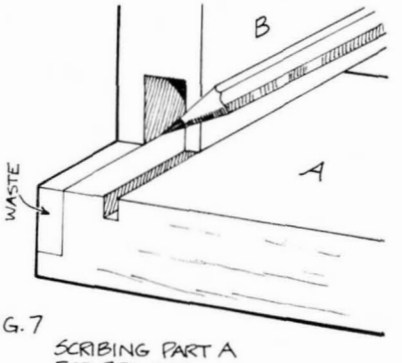


FIG. 7
SCRIBING PART A FOR 3RD CUT

along the thick tongue thus marking where the rabbet cut will be made (Fig. 7). Adjust the fence so when part A is butted against it (held with the miter gauge), the blade will cut along the scribed line (Fig. 8). The thin piece of wood remaining at the end can be broken off by hand to form the rabbet. It doesn't matter if it doesn't break off cleanly as the final miter cut will clean it up.

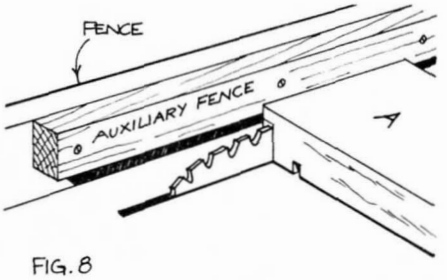


FIG. 8
MAKING 3RD CUT USING AUXILIARY FENCE

The fourth cut on part B consists of trimming the thin tongue to a length

that equals the depth of the corresponding dado in part A. Again use the raised auxiliary fence to prevent the small cut-off from jamming between fence and blade and use the miter gauge for holding the workpiece (Fig. 9). Blade height for this cut can remain unchanged from the previous cut.

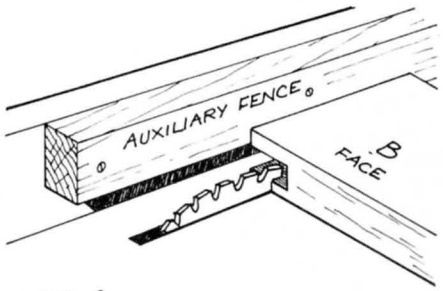


FIG. 9
MAKING 4TH CUT BY TRIMMING THIN TONGUE

The final two cuts require tilting the blade to 45 degrees. Cut number five on part B is done as shown in Fig. 10.

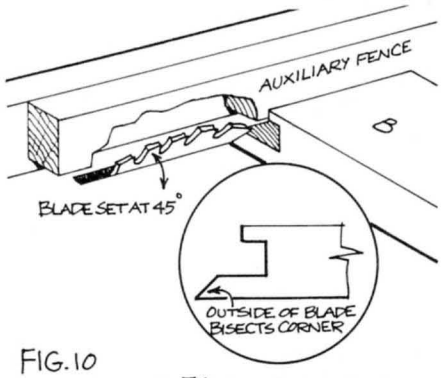


FIG. 10
MAKING 5TH CUT TO MITER TONGUE OF PART B

The auxiliary fence clears the blade but acts as a stop for the thin tongue to butt against when the cut must be duplicated on additional parts. Note that the outside of the blade bisects the corner of the thick tongue. Blade height is not critical so long as it clears the small tongue.

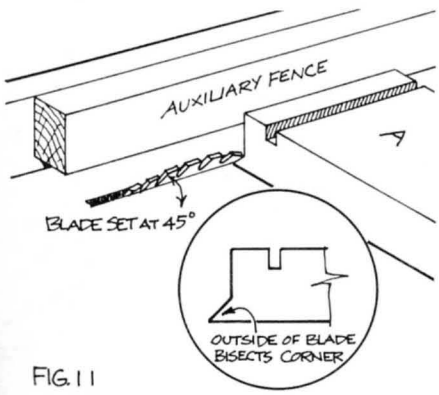


FIG. 11
MAKING 6TH CUT TO MITER PART A. BLADE HGT. REACHES ROOT OF 3RD CUT

(cont'd on next page)

The final cut on part A is done in the same way as the preceding cut but with the blade lowered so it just reaches the inner corner of the rabbet as shown in Fig. 11.

The moment of truth now comes and hopefully you have been careful (or lucky) enough to achieve a perfectly fitted joint the first time around. If you tested each cut on scrap stock first, it's quite likely that your finished joints will be beautiful to behold.

There's one more hybrid miter joint that deserves mention here. It's a fairly easy joint to cut with the tablesaw and presents the usual mitered appearance from the outside. Its main value lies in the fact that it can be used to join pieces of unequal thickness. It's called a housed rabbet-miter and you can see that it really needs to be clamped from both directions (Fig. 12). Someday, you may have a real need for this joint so here's how to make it.

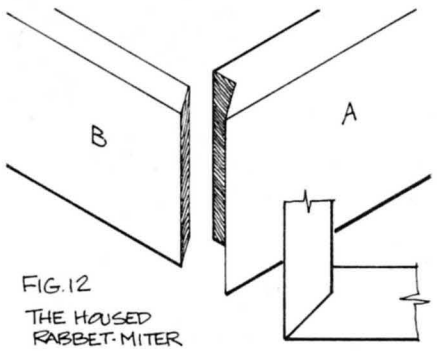


FIG. 12
THE HOUSED RABBET-MITER

The first cut is made on the thicker part. Set the blade height to equal thickness of the thick part minus that of the thinner part. The fence is adjusted so its distance to the blades' outer teeth is equal to the thickness of the thinner part.

Using the miter gauge and the fence as a stop, run a cut across the thick part (Fig. 13). The blade is then tilted to 45 degrees and the miter cut is made on the thick part. Note that the

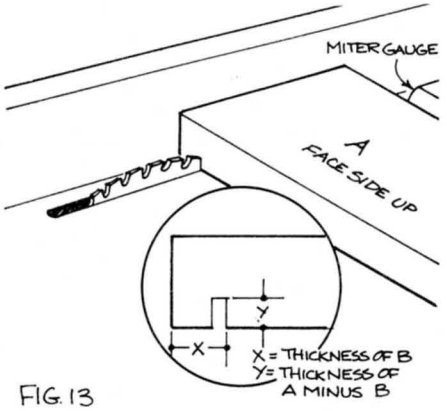


FIG. 13
MAKING 1ST CUT ON THICKER PART (A)

outside of the blade just bisects the corner of the part and the blade height is set to just reach the corner of the first cut made (Fig. 14). Do not use the fence as a stop for this cut.

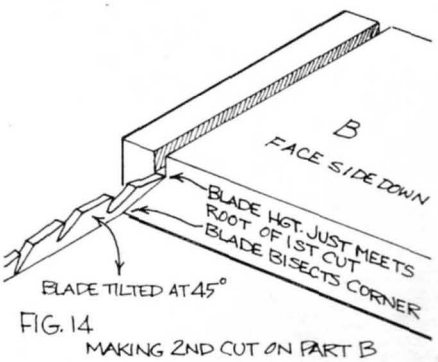


FIG. 14
MAKING 2ND CUT ON PART B

The final cut is made on the thin part and is just a simple miter cut using only the miter gauge as shown in Fig. 15. Obviously, this joint depends on the glue alone for strength which lim-

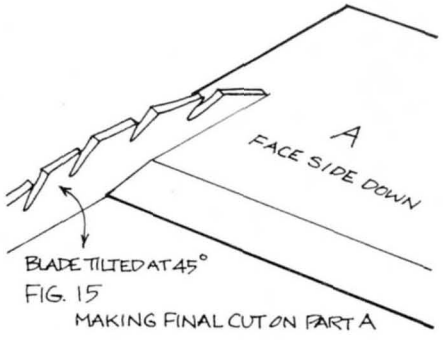


FIG. 15
MAKING FINAL CUT ON PART A

its its use to relatively small cases. In solid stock it can be reinforced with a few finishing nails which can be cleverly concealed by using a small gouge to raise a chip of wood following the grain. The nails are driven in with a nail set and the chips are glued back in place (Fig. 16). If done with care, this method is very effective in concealing nail heads.

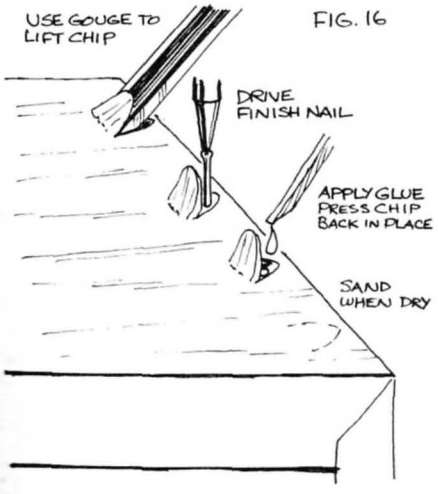
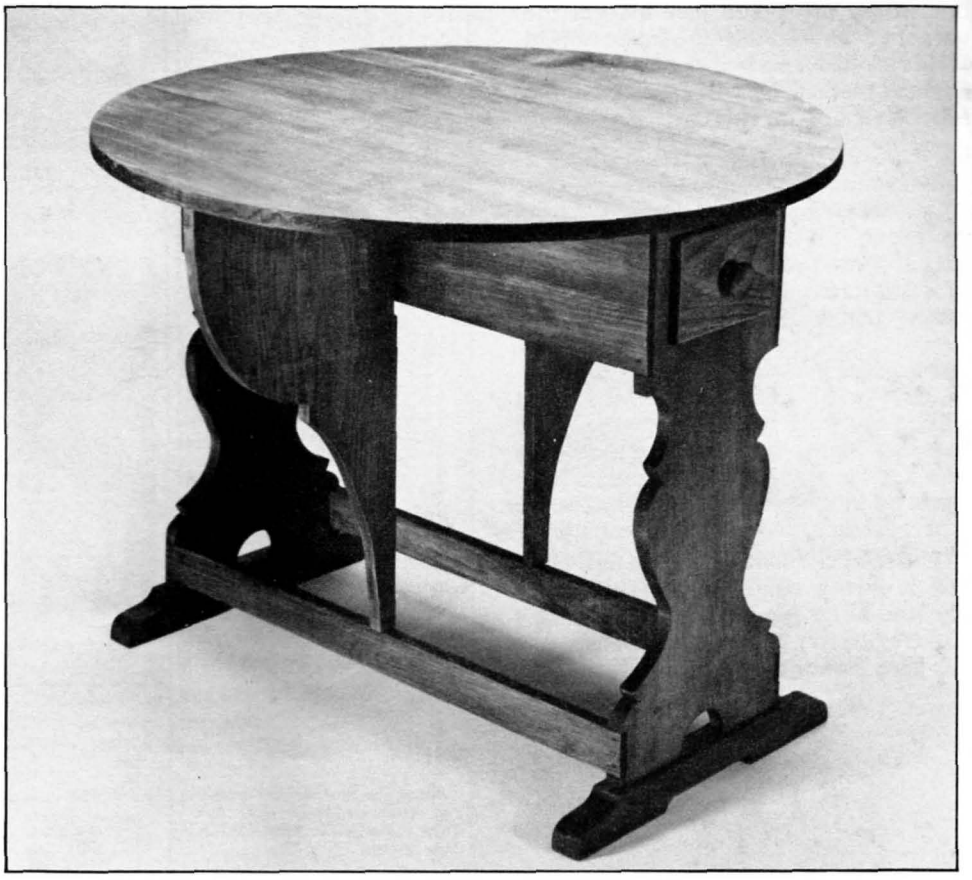


FIG. 16

18th Cent. Rudder Table



Space was at a premium in most early American homes, which perhaps explains why tables like this were so popular during that period. With the leaves folded down (see page 3) the table took up little room when not in use. We think that feature was a good one, and that it can still be enjoyed today - especially for anyone with a small house or apartment.

Ours is made from #2 common pine. The construction techniques are fairly straight-forward and should not present any unusual difficulty.

Make the two sides (A) first. Standard 1 x 12 stock will provide enough width, or if necessary you can edge-join narrower stock. Cut to the length and width shown in the Bill of Materials, then lay out the location of the ⅜" thick x 2" wide x 1" long double tenons.

To make the tenons, equip the table saw with a dado head cutter and set it for a 3/16" depth of cut. With the stock held securely against the miter gauge, make a 3/16"x 1" rabbet cut on one end. Turn the stock over and repeat the cut. If you don't have a dado head, you can accomplish the same cut making repeated passes with a regular table saw blade. Since the stock is 2 feet long, you'll have a lot more control if you attach about an 18" length of scrap stock to the miter gauge. Make sure the scrap stock is straight. Now use a back saw to establish the 2" tenon width, then remove the remaining material with a sharp chisel.

The dado head cutter can also be used to cut the ⅜" x 2" notch for part C and the ⅜" x 6" notch for part D. Next, the 3½" high x 6" wide drawer opening can be located and marked on the stock. Drill one or two starting holes, then cut out with a saber saw. Note the drawer opening is located 1¼" from the top and 1 1/16" from each side. Now transfer the grid pattern from the drawing and cut the profile to shape with the saber saw.

Cut the feet (B) to length and width, then lay out the location of the ⅜" x 2" x 1" mortises. It's a good idea to make the mortise a little deeper than 1" to allow for any excess glue. Use a ⅜" dia. drill bit to remove most of the stock, then use a chisel to square the corners and clean up waste stock. Transfer the grid pattern and cut to shape with the saber saw.

The stretchers (C) and aprons (D) can now be cut to length and width. Size the width for a good fit in the side (A) notches. The ⅜" x ¾" rabbets can be cut with the dado head on the table saw. Note that the stretcher (C) has a ⅜" dia. x ½" deep hole drilled to take the rudder (part E) tenon. Locate the hole halfway (14⅜") across the length and right in the center of the ¾" thickness.

Cut the rudder (E) to length and width. A ⅜" dia. x ¾" deep hole is drilled at a point ⅝" in from the side edge. Two holes are required, one at the top and one at the bottom. These holes must be located exactly in the center of the ¾" thickness in order for the rudder to operate properly. Now, transfer the grid pattern and cut to shape. Note that the rudder also has a slight notch with rounded corners. This is to insure that the rudder will clear the apron (D).

The top (H) can be made from standard 1" x 12" stock which measures 11¼" wide. Select stock that's flat and free of large knots or other imperfections. The ⅜" dia. x ½" deep hole for the rudder tenon is drilled on the underside of H. Locate the hole halfway across the length and ½" in from the edge. If you think the drill bit point might break through the other side, make the hole just ⅜" deep and shorten the rudder tenon to fit. The leaves (I) can also be made from standard 1" x 12" stock. Cut these parts slightly longer than necessary, then butt together and scribe a 33¾" dia. circle. Cut out with the saber saw.

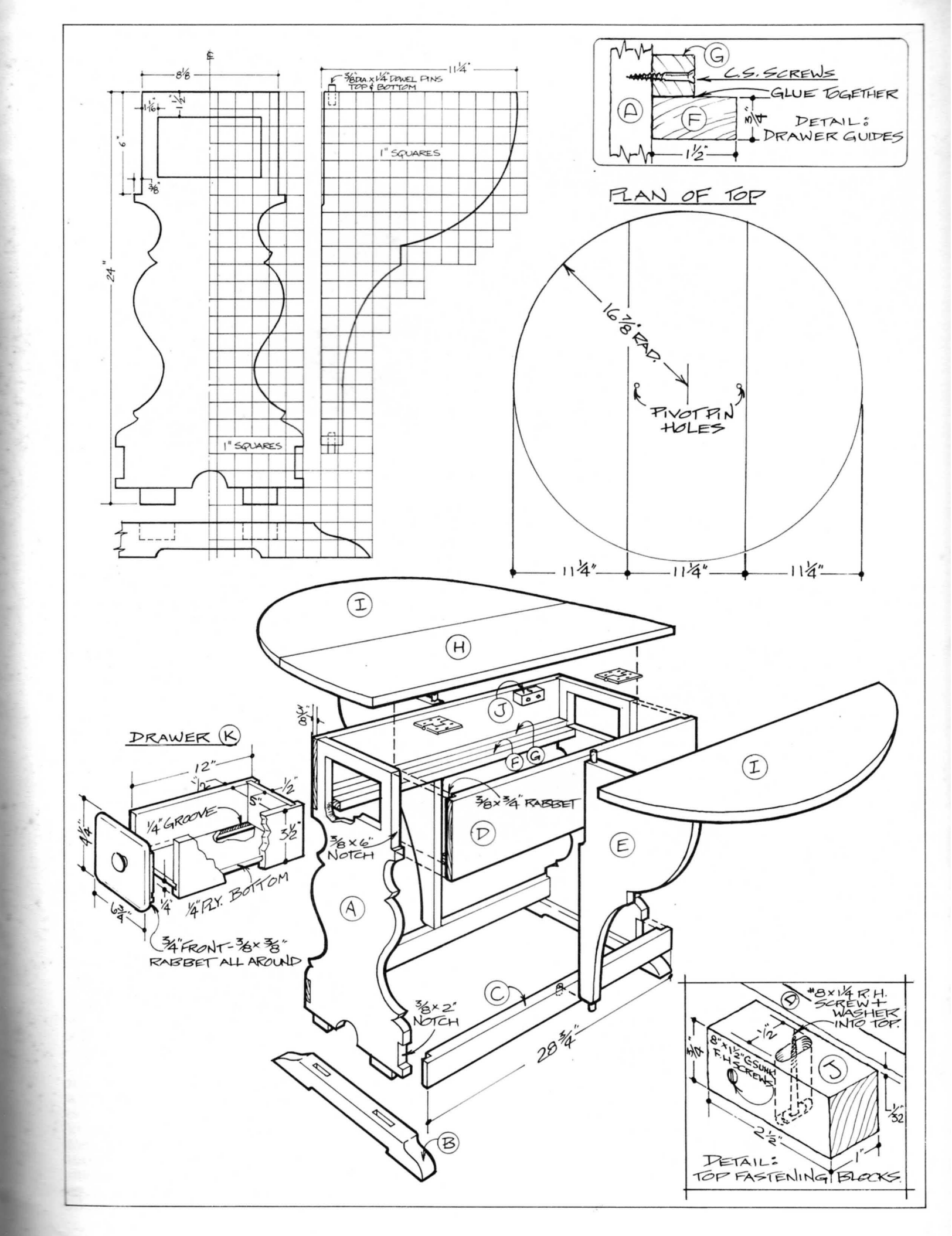
Before assembly, give all parts a complete sanding. Take extra care with the curved edges so they look clean and smooth. Cut ⅜" dia. x 1¼" long dowel stock and glue in place for the rudder tenons. Assemble parts A and B using glue and clamps. When dry, parts C and D can be joined to the leg, again using glue and clamps. Parts F and G can then be cut, sanded, and glued together (see Detail), then joined to fit the apron (D).

Attach the four hinges, then assemble the top to the base using the four fastening blocks (see Detail part J). Changes in moisture content will cause the top to change in width, therefore the blocks require elongated holes which allow free movement of the top. If this free movement is not permitted, stresses will build that could cause the top to crack. When installing, it's not necessary to overtighten the screw - just enough so the top contacts part D. The two drawers (K) are made as shown.

Our table was finished with two coats of Deft Pumpkin wood stain followed by two coats of Deftco (Deft) Danish Oil finish.

Bill of Materials
(All Dimensions Actual)

Part	Size	No. Req'd
A	¾ x 11 x 24 (inc. tenons)	2
B	1½ x 2 x 19	2
C	¾ x 2 x 28¾	2
D	¾ x 6 x 28¾	2
E	¾ x 11½ x 20½	2
F	¾ x 1½ x 27¼	2
G	¾ x ¾ x 27¼	2
H	¾ x 11¼ x 33¾	1
I	¾ x 11¼ x 33½	2
J	¾ x 1 x 2½	1
K	See Drawing	1


8⅛"
11¼"
3/8" DIA x 1¼" DOWEL PINS TOP & BOTTOM
1" SQUARES
24"
6"
1" SQUARES
G
C.S. SCREWS
GLUE TOGETHER
A
F
DETAIL: DRAWER GUIDES
1½"
PLAN OF TOP
16 7/8" RAD.
PIVOT PIN HOLES
11¼"
11¼"
11¼"
I
H
J
F G
3/8 x 3/4" RABBET
D
E
I
DRAWER K
12"
½"
½"
5"
¼" GROOVE
3½"
4¼"
¼" PLY. BOTTOM
6¾"
¼"
¾" FRONT - 3/8 x 3/8" RABBET ALL AROUND
3/8 x 6" NOTCH
A
C
3/8 x 2" NOTCH
28¾"
B
A
#8 x 1¼ R.H. SCREW + WASHER INTO TOP
½"
¾"
8" x 1½" C'SUNK F.H. SCREWS
J
1/32
2½"
1"
DETAIL: TOP FASTENING BLOCKS

by Sam Allen

Musical Jewelry Box

Laminating curved shapes is an interesting aspect of woodworking. It can make seemingly impossible projects easy. This jewelry box is an example. The lid would be difficult to produce without using laminating techniques. If you haven't tried laminating before, this is a good starter project because the laminating form is simple to build and the project is small enough that ordinary clamps can be used to exert pressure on the form. Using the form, a number of sheets of veneer are glued together and clamped to the desired curve. When the glue dries, the laminated sheets will remain nicely curved. There are several ways to construct a laminating form. One way is to glue up several pieces of thick pine to make a block 4½" x 8" x 12" (Fig. 1). Lay out the 2¾" and 3" radii on the end of the block and cut on the smaller radius with a band saw. On the female half of the form make a second cut along the 3" radius line. The ¼" of waste allows for the thickness of the veneers that make up the lid.

Cutting this block requires a band saw with a large depth of cut capacity. If you do not have access to such a machine, another method is to turn a 5½" dia. x 11¼" cylinder on the lathe using a block of glued-up pine. This will be the form over which the veneer will be bent. A section of 6" dia. galvanized stove pipe is cut to 17½" wide x 12½" long and fitted with clamping cleats secured with screws and washers (Fig. 2). The second photo shows how this flexible steel is bent around the form, pressure being applied with C-clamps.

If you can't buy veneers locally, they are available by mail from Albert Constantine and Son, 2050 Eastchester Rd., Bronx, NY 10401. Veneers can range in thickness from 1/40" to 1/28". The lid lamination is ¼" thick and consists of an outer walnut veneer with decorative inlay, a core of cheaper veneers and an inner veneer, also of walnut. The core consists of any grade B veneer. Poplar crossbanding is excellent for the core as it is low in cost, flexible, and comes in sheets 12" wide. The number of laminates in the lid will vary depending on the thickness of the veneers you obtain but you should try for a final thickness of ¼ inch.

The outside or face veneer which is inlaid, is applied later, after the core veneers and inside face have been laminated. Cut the pieces of veneer to 10" wide x 12¼" long, a bit larger than finish size of the lid to allow for trimming later. Use liquid hide glue, the type that comes ready-to-use in a bottle, which allows for longer setup. Apply it evenly to both surfaces of each laminate. A 2" paint roller is an easy way to spread the glue evenly.

Whichever type of form you use, be sure to cover both surfaces with wax paper to prevent the veneer from sticking to the form. Use a piece of scrap veneer the same thickness as the face veneer to act as a spacer to compensate for the face veneer to be added later. Clamp the two halves of the wood form together with large handscrews, or if you use the wood plug and stove pipe form, clamp together with C-clamps. After the glue is dry, remove the lid from the form and cut its ends square and trim to finish size.

Next, the ends of the lid (C) are cut on the bandsaw for a good fit in the lamination. The ends are then used as templates to cut the curved ¼" x 1" wide decorative strips (D) which are glued to the ends.

The ends are glued to the lid lamination by clamping in place either of the forms previously used. When dry, file and sand the tops of the ends until they are perfectly flush with the lid. Fill any voids that are present as any irregularities in the tops of the lid will telegraph through to the face veneer.

I used a commercially made inlay (Constantine #1W9) but you could make your own. The inlay I used comes in a piece of walnut veneer 8" x 12" which is a little too narrow to cover the entire lid so it's necessary to joint and tape a 2" wide strip of matching walnut veneer to the edge that will be near the backside of the lid. *(Editor's note: see* The Woodworker's Journal, *Vol. 5, No. 1, for details on joining veneers*).

Coat the top of the lid and the side of the inlaid sheet that doesn't have paper or tape on it with glue. Remove the veneer spacer from the form and place the inlay and lid into the wood mold. The male half of the mold will no longer fit because of the ends glued to the lid, so simply place a board across the ends to clamp the lid into the form. The alternate cylinder and sheet metal form can be used without modification for the final lamination though care will have to be

taken to make sure that the face veneer comes into good contact with the top of the curved trim pieces D. The face veneer could have been installed at the same time the lid was being laminated but by doing it in this sequence, the joints between the ends and the lid are completely hidden as shown in Detail A. After removing the completed lid from the form, scrape off the paper and tape that covers the inlay and jointed edges and sand the inlay smooth.

The box is constructed of ¼" walnut as shown in Figs. 3 and 4. The box bottom and music box case are made of resawed aromatic red cedar. The easiest way to attach the decorative strips to the box front and back is to use the jig shown in Fig. 5. Lay the strips (F pieces are ¾" wide, E pieces are 1" wide) face down on the jig so they butt together and apply yellow glue; then clamp a side (A) down on top of the jig. The removable rabbeted strips on the jig provide the proper spacing to form the corner joint. After the glue is dry, these strips must be unscrewed to release the assembly.

Assemble the box and add ¼" x 1" wide decorative strips to the box ends so they cover the corner joints as shown in Detail B. Once all the decorative strips are on, use a router with a ⅜" cove bit and pilot to cove all the outside corners and around the outside curve of the lid. Set the depth so the cutter comes within 1/16" from the edge of the front strips F as shown in Detail B.

The inside edges of the frame are coved also but not as deeply as the outside corners. To do this it is necessary to grind ⅛" off the length of the pilot as shown in Detail A; otherwise the pilot will butt against the box ends preventing the cutter wings from contacting the wood. It would be wise to practice these cuts on scrap taking very light cuts.

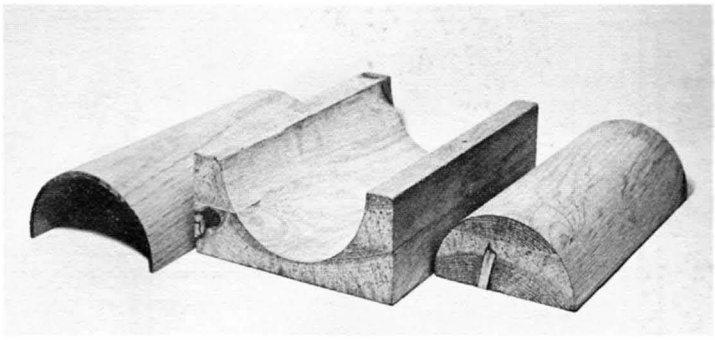
Low cost music box movements are available from either Constantine or Barap Specialties, 835 Bellows Ave., Frankfort, MI 49635 (catalog $1.00). The exact mounting position may vary according to the type of movement you buy. The winding key is recessed in the box bottom by boring a 1½" dia. hole part way through with a spade or auger bit. The movement comes with a trip wire that stops the air-vane governor on the movement. This wire is usually too short to reach the lid of the box and must be extended. Drill a 1/16" dia. hole in the box end as shown in Detail C. The hole position will depend on the location of the trip wire of your movement. Next drill a ⅜" dia. hole part way through the end to intersect with the 1/16" hole. Enlarge the top of the 1/16" hole to accept a ball point pen spring under slight compression. Now snake a piece of stiff wire through the hole, install the spring and bend a loop in the end of the wire to keep the spring in place. The other end of the wire is linked with the trip wire as shown.

The jewelry box tray is an optional feature and automatically lifts out of the box as the lid is raised. Two 3/16" thick walnut arms make this possible. They are recessed into the side of the tray and pivot on brass wood screws (see Figs. 6 and 7). A brass screw also connects the tray to the lid and allows the tray to pivot. Small felt washers are placed between the lid and tray to allow clearance and prevent damage to the finish.

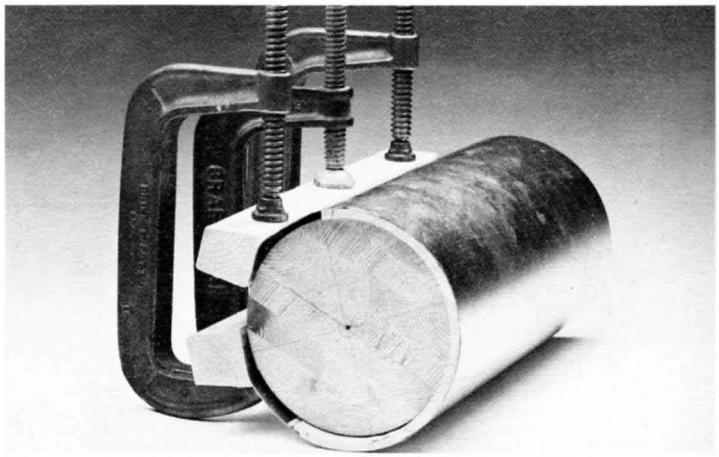
The placement of the pivot points must be exact or the tray will bind or not be level in its raised position. Measurements for the pivot points are given from the hinge edge of the box to eliminate any error that might occur because of variation in wood thickness. If you change any of the dimensions of the box, you will have to determine new pivot points by building a mock up of one side of the box from scrap.

The ring holder (M) in the center of the tray is just a slotted block. A ⅛" slot will fit most rings but you can make some of them larger for wider rings. Cover the block with felt, pushing the felt down into each slot. A bit of glue at the bottom of the slot will hold the felt in place. The entire tray can be covered with felt (except for the routed ends) or the wood can be left exposed.

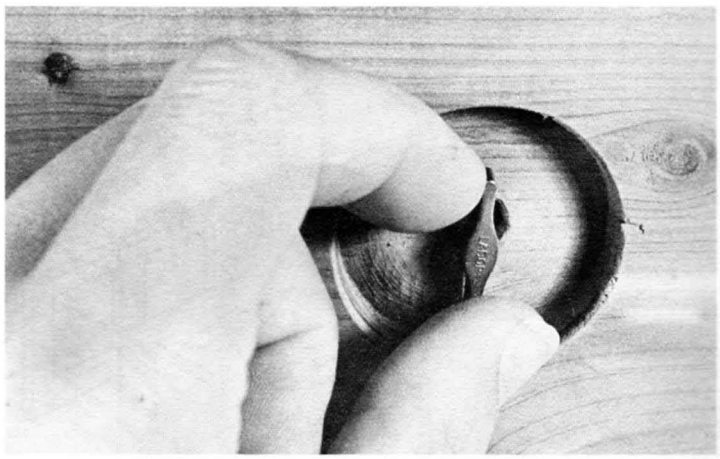
Any clear finish will work on this project. I used Danish Oil. Don't use stain as it will obscure the inlay. Mask the



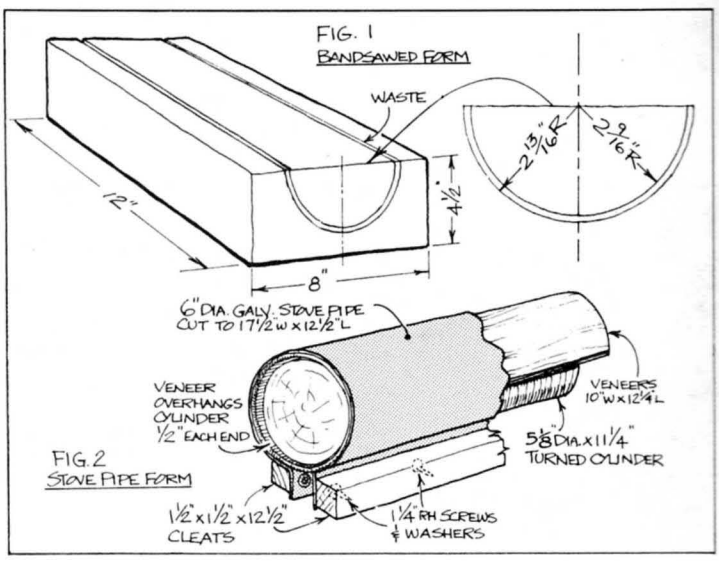
Left to right: completed lid lamination, female mold, male mold.



Alternate form makes use of stove pipe clamped around cylinder with glued veneer in between. Clamping cleats are screwed to stove pipe.



The music box winding key is recessed into box bottom.



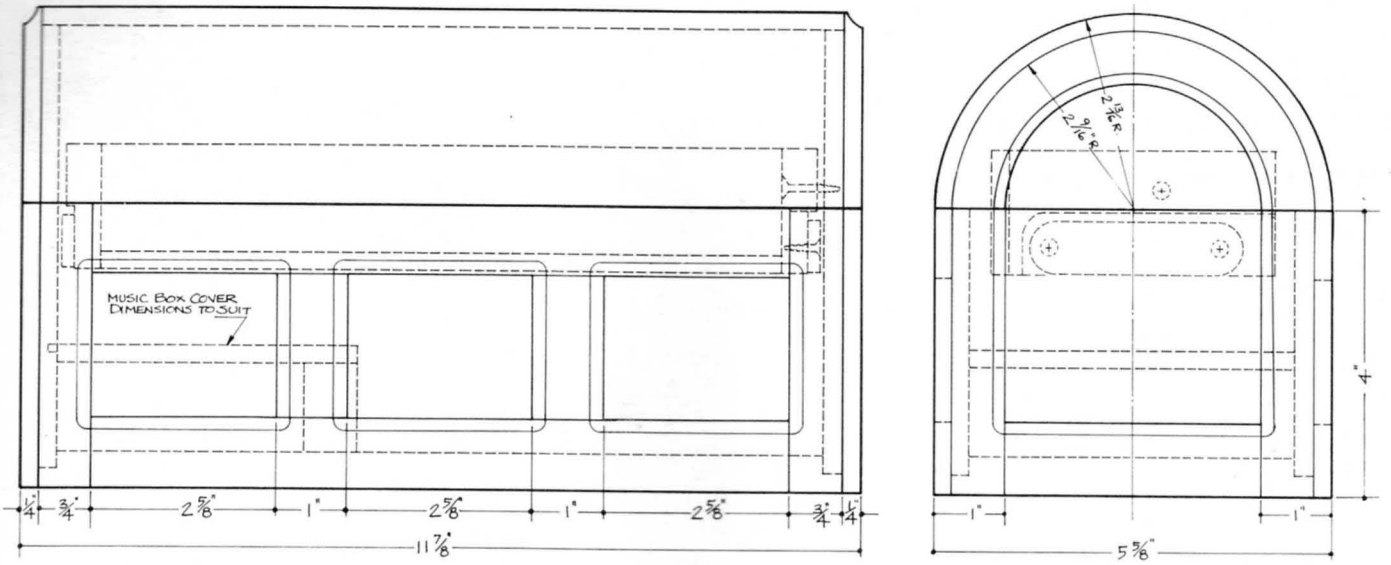
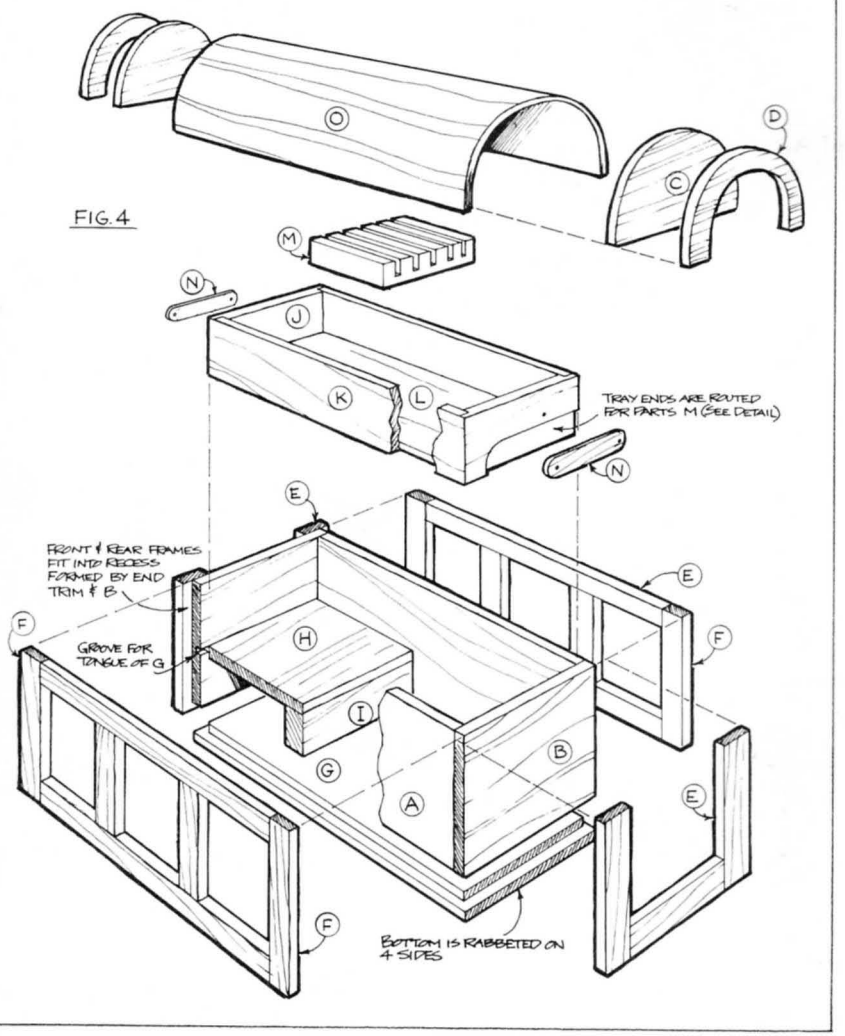
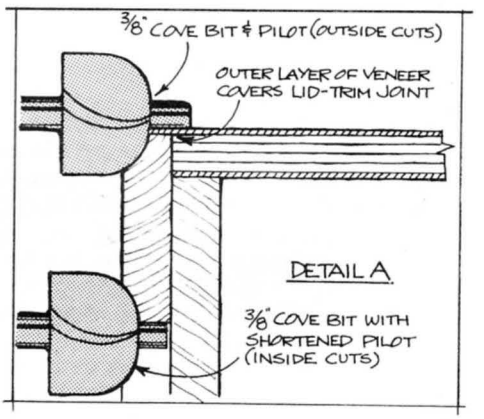
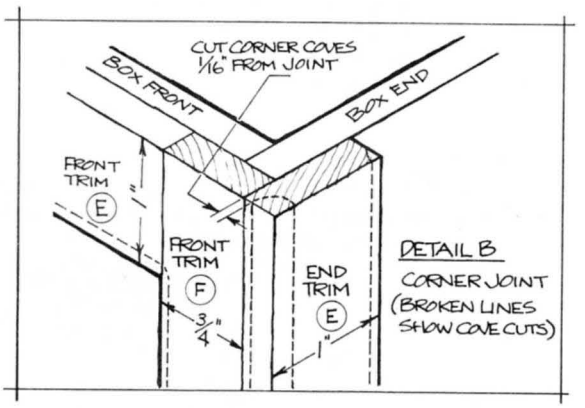


FIG. 3

FIG. 4







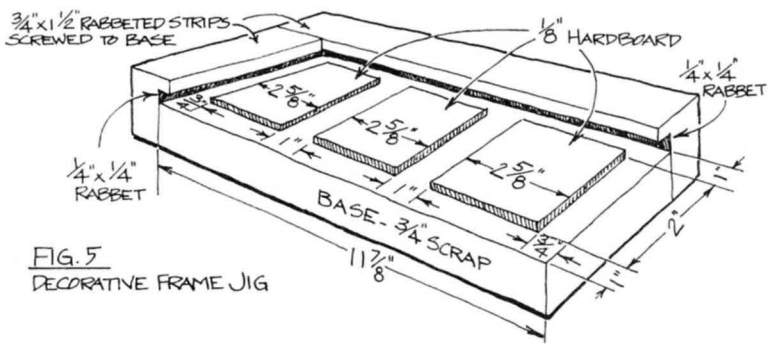
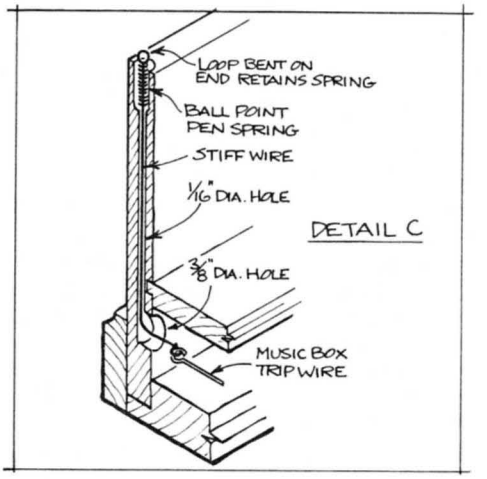


FIG. 5
DECORATIVE FRAME JIG



Musical Jewelry Box Cont'd

cedar bottom and any area to be covered with felt and leave them unfinished. Cover mating edges of the box and lid with felt. This gives a nice finished look, makes the lid close quietly and hides the joints. Also, cover the bottom of the box with felt to protect the finish of the surface the box will sit on.

The felt is applied with white glue spread very thin. If the glue is too heavy it will soak through the felt and ruin its appearance. Cut the felt larger than needed and trim to size with a razor knife after the glue has dried.

Bill of Materials (All Dimensions Actual)

Part	Description	Size	No. Req'd
A	Front & Back	¼ x 3¾ x 11⅜	2
B	Box Ends	¼ x 3¾ x 4⅜	2
C	Lid Ends	¼ x 3 x 5½	2
D	Lid Strip	¼ x 3¼ x 6	2
E & F	Stripping	¼ x 1	As Req'd
G	Bottom	½ x 5⅛ x 11⅜	1
H	Cover	¼ x 4⅜ x (to fit)	1
I	End Block	½ x 4⅜ x (to fit)	1
J	Tray Ends	½ x 1¾ x 4	2
K	Tray Front & Back	¼ x 1¾ x 9¾	2
L	Tray Bottom	⅛ x 3¾ x 9¾	1
M	Ring Holder	¾ x 3 x 3½	1
N	Tray Arms	3/16 x ¾ x 3	2
O	Lid Laminations	Veneer	As req'd

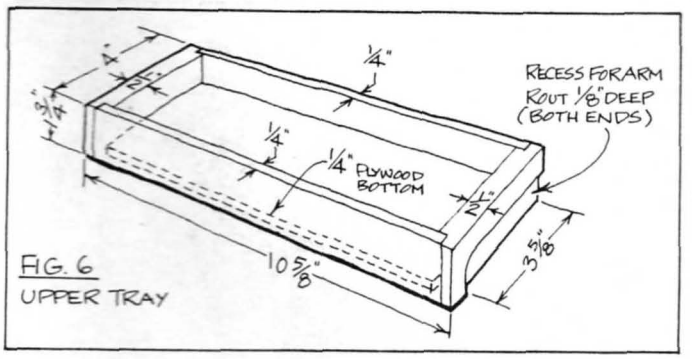


FIG. 6
UPPER TRAY

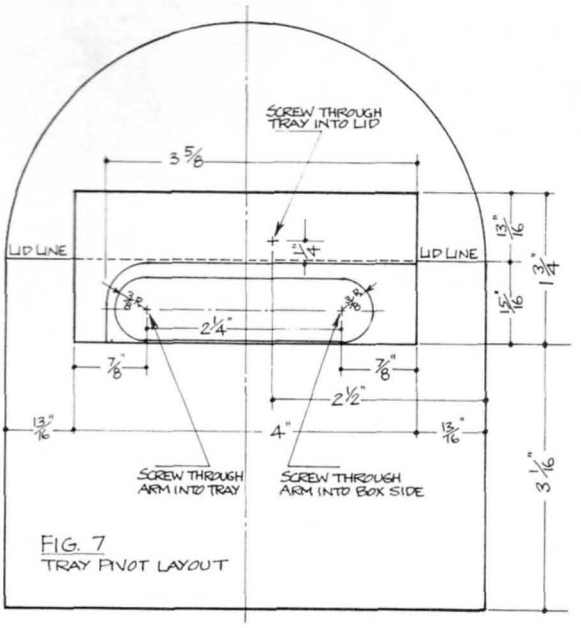


FIG. 7
TRAY PIVOT LAYOUT

The Gift Shop

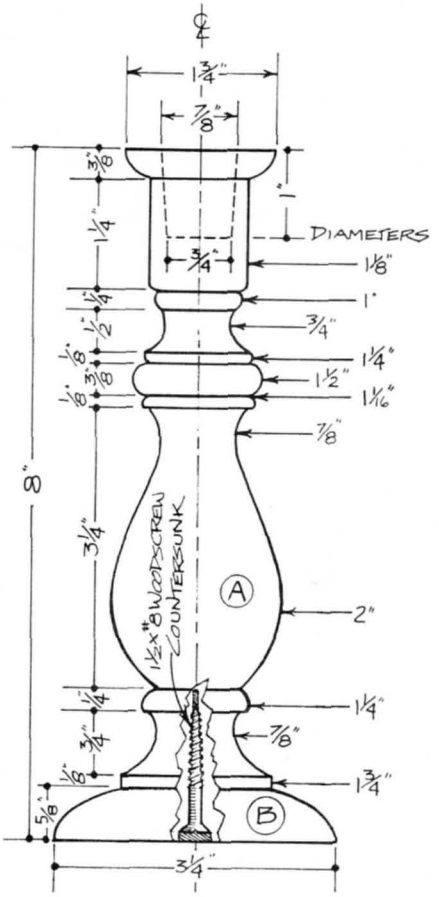
Colonial Candlestick

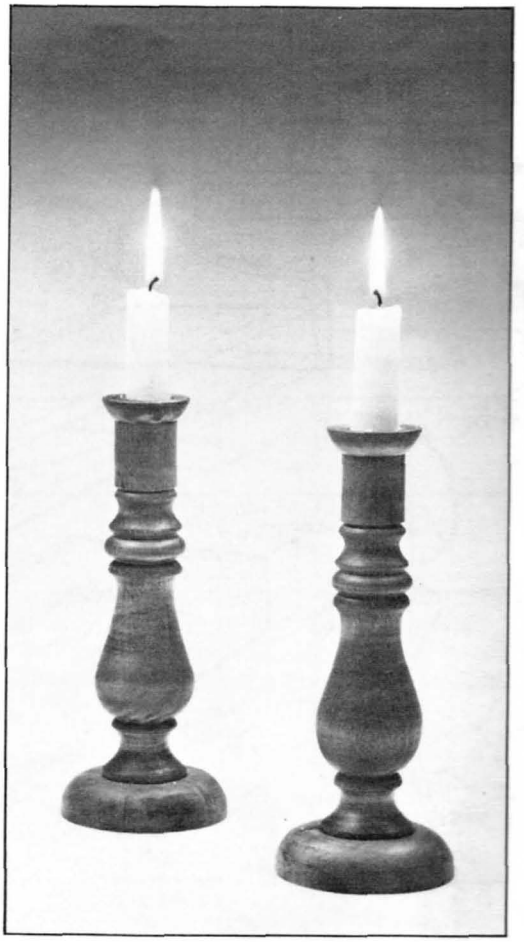
An attractive pair of wooden candlesticks always makes a nice gift item. Colonial homes depended on them for precious table light, especially on cold winter evenings. While not the necessity they once were, we still enjoy them today for the warmth and charm they add to the family dining table. We made ours from maple (stained), but birch, walnut, and cherry can also be used.

To minimize waste, the candlestick is made in two parts. Part A is a spindle turning and part B is a faceplate turning.

Make part A from a 2" square turning block. Start with a length of about 9". Rough out the stock to a 2" diameter cylinder, then cut to the profile shown. Thoroughly sand all surfaces before removing from the lathe. The top should be slightly dished-in to collect candle drippings. To make the tapered candle hole, grind or file the eges of a ⅛" spade bit so that it tapers to ¾" at the end. Use this bit to drill a 1" deep hole.

After faceplate turning, part B can be joined to part A with a 1½ x #8 woodscrew, countersunk ¼". Final sand all surfaces, then stain if desired. We used a walnut stain on our maple set. Two coats of Watco Danish Oil completes the project.





Deacon's Wall Shelf

Resembling an old-fashioned Deacon's bench, this attractive wall unit will add a bit of charm to most any room.

Begin by cutting the sides (A) to length and width. Lay out and mark the location of the ¼" deep dado and lower rabbet, then make the cut with a dado head cutter, or make repeated passes using the table or radial arm saw. Cut the rabbet and dado slightly narrower than the mating parts (E & F). Then, when parts E and F are sanded, the fit will be just right. The back notches can be cut using the same method. Next, using the grid pattern shown, lay out, mark, and cut the curved profile.

Parts E and F can now be cut to size. Note each one has a ¼" deep dado to take part G. Cut part G so that its end grain goes into the dadoes rather than showing in front.

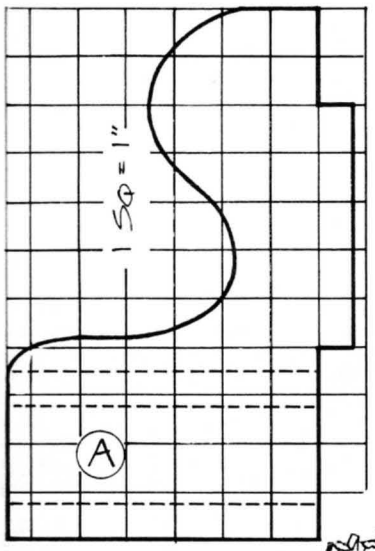
After parts B and C are cut to size, lay out and mark the location of the sixteen dowels. Use a ⅜" dia. bit to drill each hole to a depth of ⅜". If you have one, use a countersink bit to apply a slight (1/16") chamfer to each hole. It's a small detail, but one that shows that care and concern went into the piece.

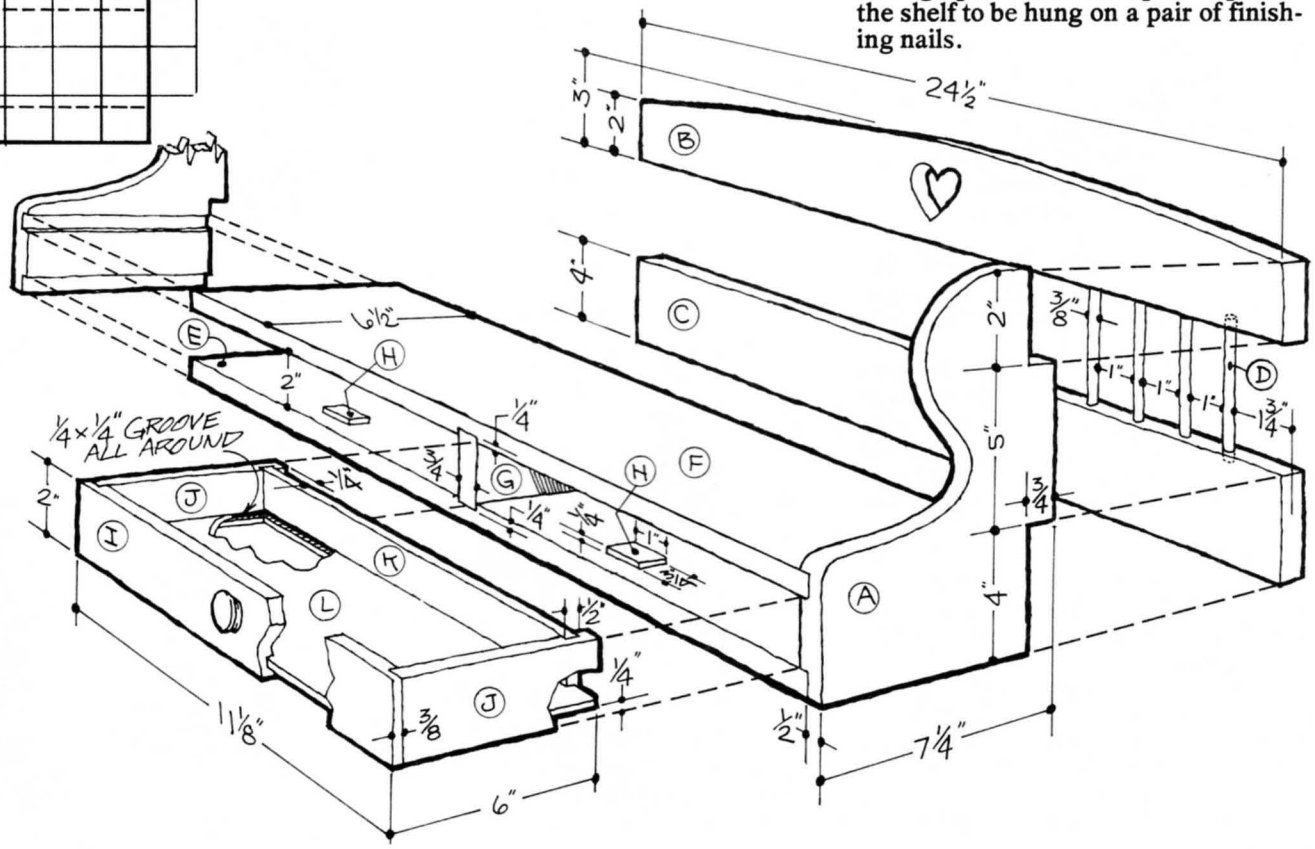
Sand all parts thoroughly, then assemble using glue and finishing nails. Since the shelf is fairly heavy and is hung from part B, be sure to glue each dowel for added strength. Assemble the drawers as shown. A ¼" by 1" notch is cut in the bottom of part K to permit the drawer to fit over part H.

Our shelf is finished with one coat of Deft Pumpkin wood stain followed by two coats of Deftco (Deft) Danish Oil Finish. Two angled holes drilled through part B and into part A permit the shelf to be hung on a pair of finishing nails.

Bill of Materials
(All Dimensions Actual)

Part	Description	Size	No. Req'd
A	Side	¾ x 7¼ x 11	2
B	Upper Back	¾ x 3 x 24½	1
C	Lower Back	¾ x 4 x 24½	1
D	Dowel	⅜ dia. x 5¾	16
E	Bottom	¾ x 6½ x 23½	1
F	Shelf	¾ x 6½ x 23½	1
G	Divider	¾ x 6½ x 2½	1
H	Drawer Stop	¼ x ¾ x 1	2
I	Drawer Front	¾ x 2 x 11⅛	2
J	Drawer Side	½ x 2 x 5⅜	4
K	Drawer Back	½ x 2 x 10⅜	2
L	Drawer Bottom	¼ x 4-15/16 x 10-9/16	2





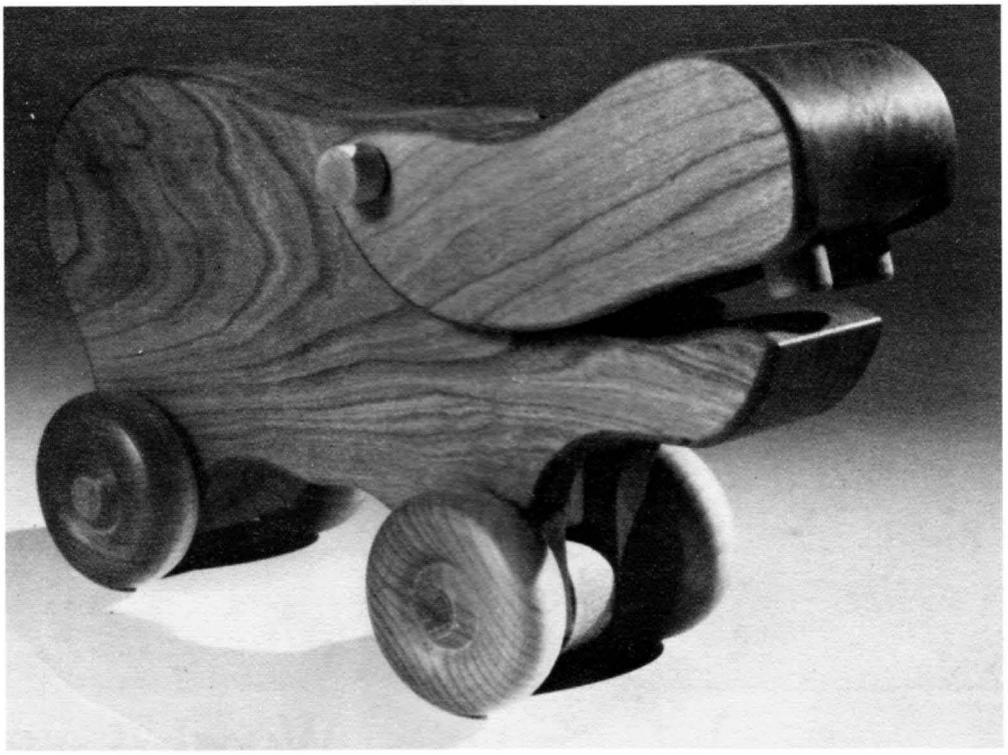
Toy Hippo

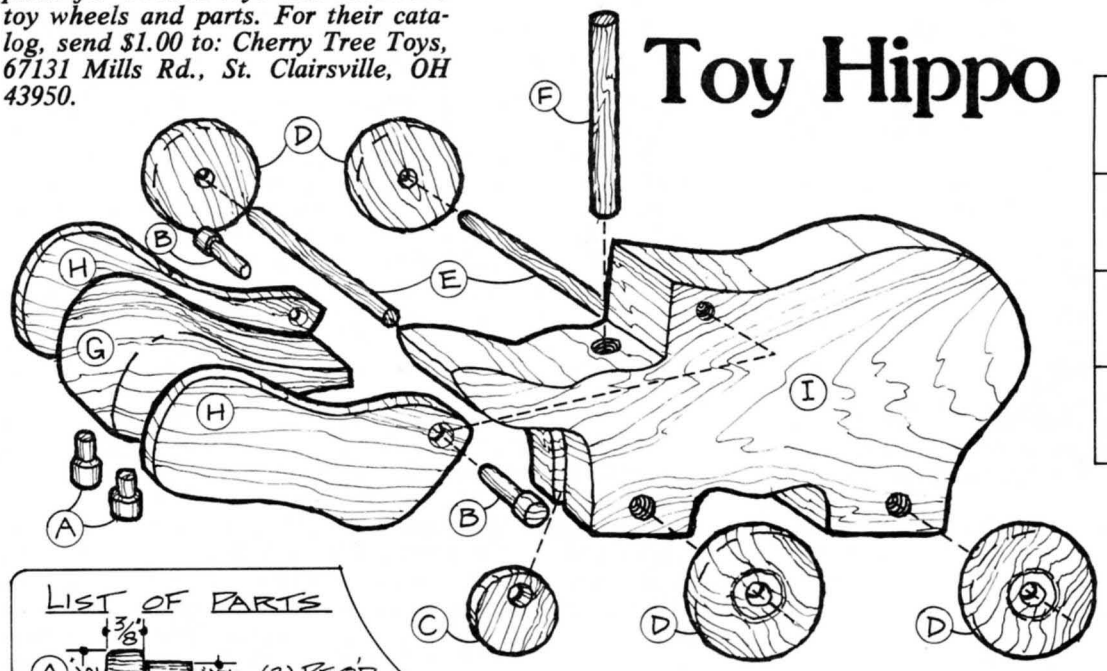
Little people are sure to enjoy this friendly fellow whose mouth opens and closes as he rolls along. Since they can be pretty tough on toys though, it's best to use a hardwood here, preferably maple or birch.

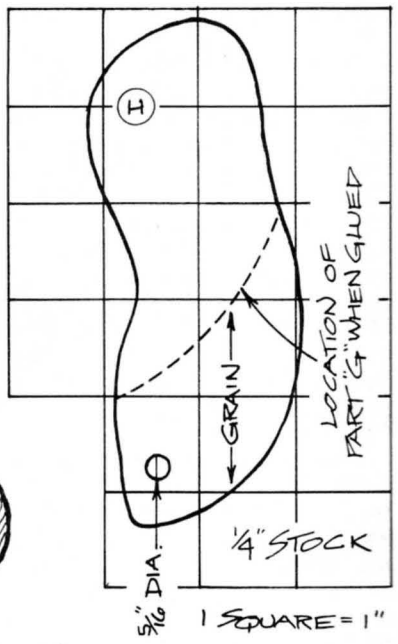
Start by cutting 2″ nominal (1¾″ actual) stock to 5″ wide x 10″ long. Transfer the hippo's profile to the stock, then locate and drill the 9/16″ center hole and 7/16″ wheel holes. Next, use a band saw to cut out the hippo profile. Also cut out part G and the area of scrap stock, following the saw cuts shown. The 11/16″ slot is cut in the front leg with a back or dovetail saw. Make two cuts to establish the width, then remove scrap with a sharp chisel.

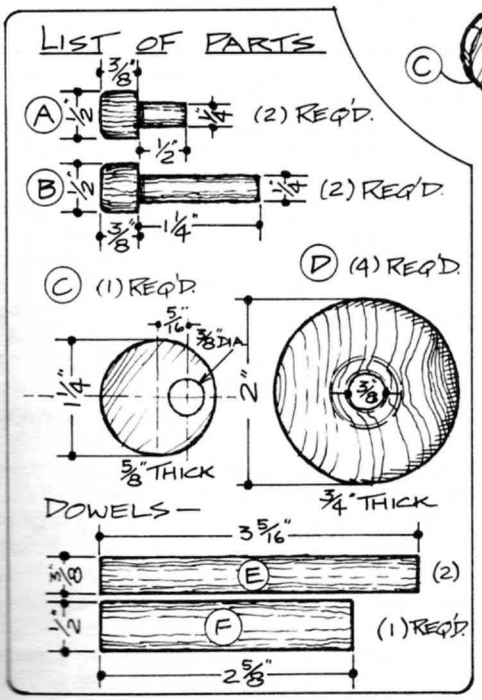
Cut the remaining parts, then assemble as shown. Be sure that part C is firmly glued to part E. When dry, sand thoroughly, removing all sharp edges. No final finish is added.

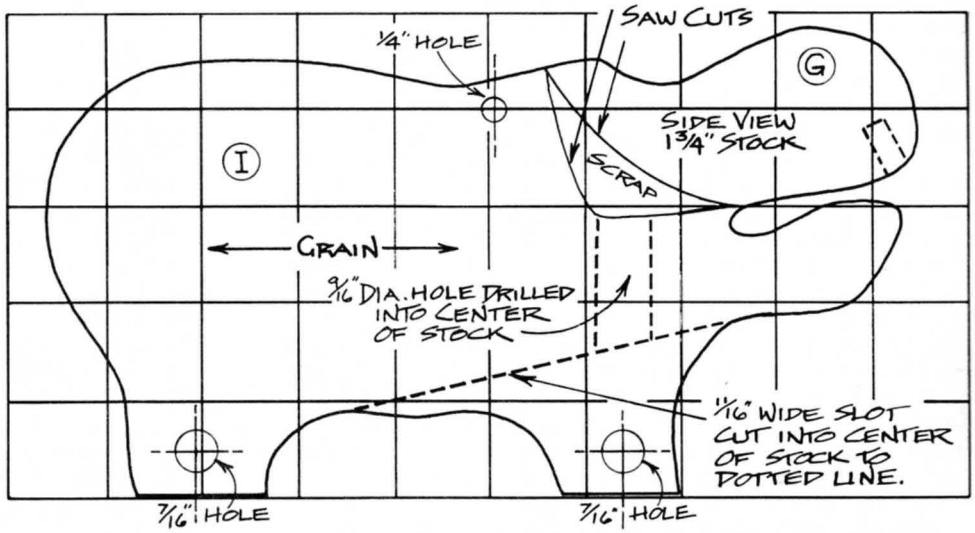
Editor's Note: Our thanks to Cherry Tree Toys for providing us with the plans for this project. Cherry Tree Toys is a new company supplying plans for wooden toys and hardwood toy wheels and parts. For their catalog, send $1.00 to: Cherry Tree Toys, 67131 Mills Rd., St. Clairsville, OH 43950.

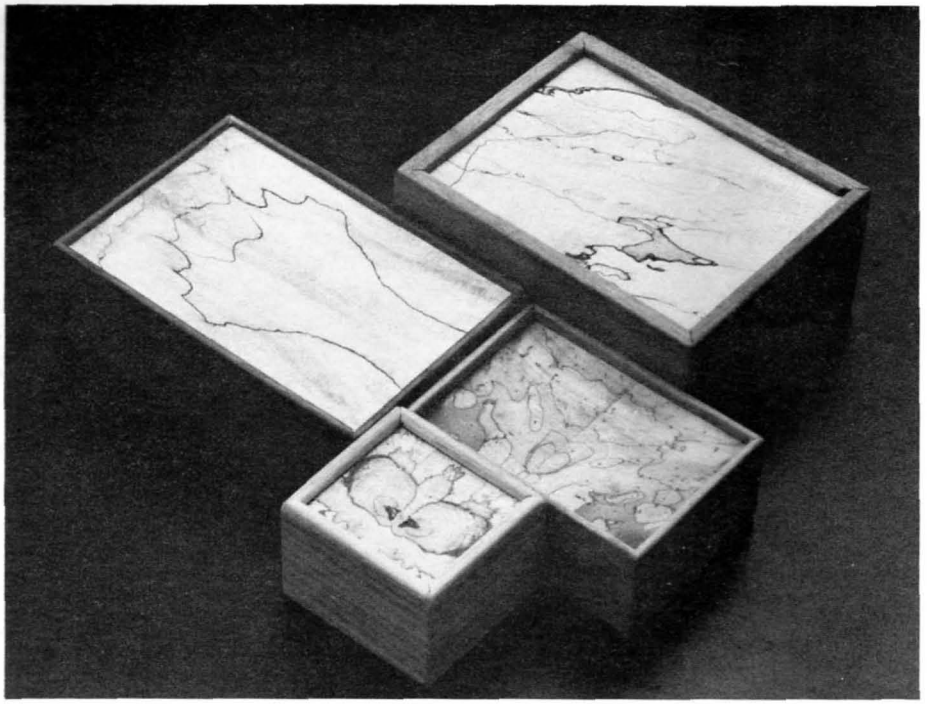


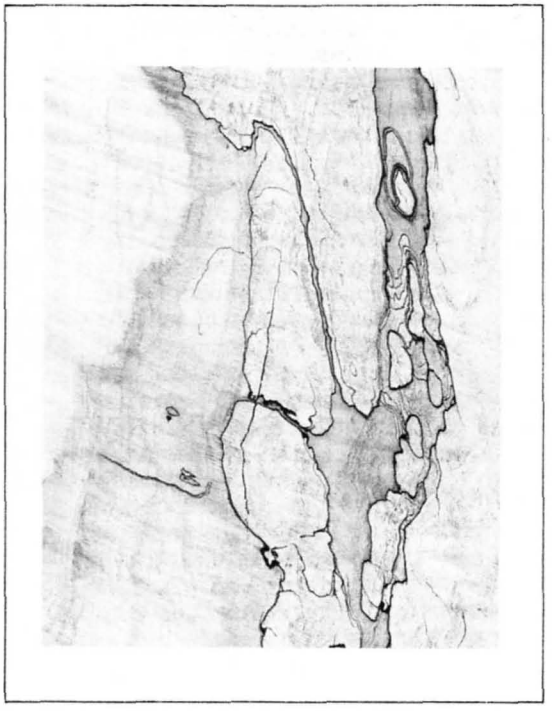












Spalted Wood Boxes

by Paul Levine

If you have access to a woodlot or even a good pile of well-seasoned firewood, you may have the opportunity to obtain some spalted or partially rotted wood which, when cut into longitudinal or cross sections and book-matched, can produce some exquisite small panels for box lids, small frame and panel doors, and even jewelry.

Spalting is caused by moisture and fungus and can be recognized by intricate patterns of black or dark brown lines and sometimes zones of varying colors within the wood. The lines, which look as if they had been drawn with a fine pen and India ink, mark the advance of various fungi responsible for rot. When wood is left in contact with warm moist earth, fungus attack is likely. If left alone under the right conditions, the wood will eventually decompose entirely. However, if you dry the wood out, the decaying process is halted. The trick is to find the right kind of wood at the right time...when the decay process is far enough advanced to produce spalted patterns, but before the wood reaches the "punky" or soft rotted stage.

Harvesting spalted wood may be easier than you think. In a pile of well-seasoned firewood, chances are that some of it may be spalted. Generally, firewood cut in short lengths and left in open uncovered piles for a few months will be moderately spalted. Not all species display the beautiful and complex spalting patterns though. The best examples will be found in the hardwoods of normally pale color such as the maples, various birches and fruitwoods. Oak will sometimes display spalting though most of the time it will start getting rotted and soft in the outer layers without any appreciable spalting advancing into the heartwood. Some fruitwoods, particularly apple, will spalt though generally not in as colorful a way as maple.

To determine if spalting exists within a piece of wood, examine the end grain. If the ends haven't blackened, the irregular patterns may be apparent. A good clue for firewood, standing or felled dead trees is fungus growths on the ends of logs or anywhere along the trunk. Smaller parts, such as limbs, may display more advanced spalting than the trunk or very large limbs.

Once you've located a piece of spalted wood, you have to decide how to cut it to achieve the most interesting figures, particularly when consecutive slices are book-matched to form intriguing "pictures" which, like Rorschach ink blots, are limited only by the imagination of the viewer. End grain and long grain cuts will produce entirely different patterns. For small boxes of 4 or 5 inches length, even a short chunk of spalted maple will provide enough material for you to experiment with different types of cuts. It's fascinating to make consecutive cuts along different planes and see what kind of interesting designs can be achieved, particularly in view of the fact that the spalting patterns may vary depending on the thickness of the slices.

End grain cuts are made straight down just like cutting a loaf of bread, or they may be made at a slant. End grain cuts made perpendicular to a small log or limb are sometimes referred to as oysters. When the cuts are made at a slant, the sectional slices are more elliptical in shape and do in fact resemble oyster shells. Oyster shell veneering is an interesting method of decorating small boxes. Thin cross-sections of a limb are cut and dried. These sectional wafers are then cut into various shapes such as squares or polygons and glued together to form panels which are then glued to the surfaces of a box. Cuts made lengthwise with the grain will produce equally interesting designs and result in longer slices which can be book-matched to form larger panels.

The easiest way to make either long or end grain cuts is with a bandsaw, but a bow saw will do the job nicely. An ordinary panel saw can be used though its kerf is a bit wide and the cut surface will require more sanding. The sections or lengths are usually small so that the rough cutting takes little time. The only difficulty is in cutting the slices very thin. I generally cut mine to 3/16" thickness; final sanding brings them down to ⅛". If thicker slices are used, remember to allow more drying time.

After cutting either end or long grain sections, keep them in consecutive order and stack them with paper towels or other absorbent material interleaved. The stack should then be covered top and bottom with a piece of plywood and pressed under heavy weights or put in a press or vise. In a dry warm place they will be ready for use in a few days. Drying time will vary depending on species, amount of moisture present and the drying environment, but don't try to rush the process with excessive heat as a lot of cracking will occur.

When the sections are dry, choose consecutive pieces with a potentially interesting picture and book-match them. To do this, tape them together and, using a sharp utility knife or razor knife, make two parallel cuts, each being about ¼" from each long side. This will give you your gluing edge plus parallel straight edges to clamp against. Place the book-matched pieces on wax paper, or some other surface where glue will not adhere, and clamp the pieces together using only light pressure to prevent buckling. The

assembly is left in the clamps just long enough for a good glue bond. In a dry shop at about 65 degrees, twenty-five minutes using yellow glue is sufficient. With only one side of the panel exposed it doesn't take long for warping to occur; hence the clamping time should be kept to a minimum.

After removing the clamps, stand the assembled panel on end so both sides are free to dry evenly, and keep the panel this way until the glue has completely dried. The panel can then be cut and sanded to the desired dimensions and stored on end until needed.

Of course you don't have to make a box; you can use this spalted material in any way you wish. Even if you choose to make a box, instead of providing a book-matched panel just for the lid, you can completely veneer the box with matched pieces cut either along the grain or as oysters cut from end grain. Incidentally, you don't have to use only spalted wood for oyster veneering. Cross sections cut from unspalted limbs of many species, particularly those which have great contrast between sapwood and heartwood, will provide a striking effect when joined into small panels and used to cover small boxes.

Making Boxes

To make boxes of the type shown, select a book-matched spalted panel and measure the sides to determine the dimensions of the box sides. The height of the boxes shown, including the lids, runs between 1½" and 2". For the sides and box bottom, select a wood that will complement the spalted top. You really can't go too far wrong here. The top will steal the show no matter what you choose.

Resaw the wood for the sides to 3/16" or ¼" thickness. Thinner is better for me. I like the light and delicate feel of a thin box, but you must decide for yourself what your taste and ability can handle. The resawed pieces are ripped to a width equal to the depth of the box. The ends of these strips are then crosscut at 45 degrees to form miter joints at the box corners. I use a miter box and and X-acto razor saw, which looks like a small dovetail saw, for this job.

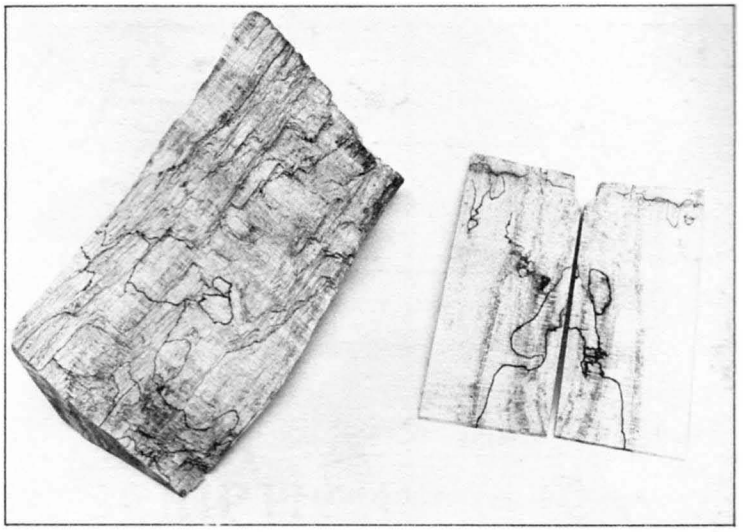
The strips, after being mitered, should be ¼" longer than the sides and ends of the top panel The inside faces must then be grooved near the top and bottom edges to receive the top panel and box bottom. Because very small amounts of material are being removed, handling these small pieces can be tricky and great care must be taken while machining them. If proper push sticks are used, the work can be done easily and in safety. I use a table saw after first fitting the table with an auxiliary blade insert.

The insert is made from plywood and shimmed up, if necessary, so that it will sit flush with the table top. After cutting the insert to fit the shape of the opening, start the saw and raise the blade to a height of 1/16" while holding the insert down with a clamp or a push stick. This insert will prevent the thin piece being worked from slipping down alongside the blade.

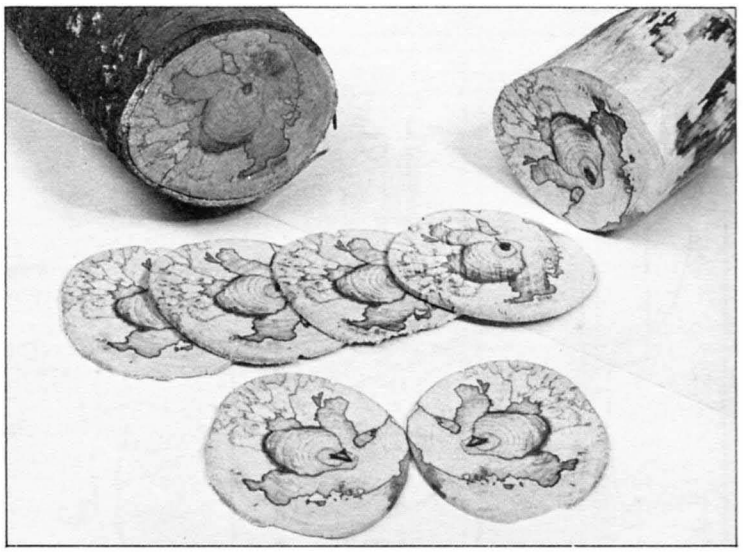
Set the fence so that the first cut will be made ⅛" from the edge of a side strip. Make a test cut on scrap, using push sticks. If the test cut is correct, proceed to make the two grooving cuts on the inside face of each side. These grooves can also be cut with a router mounted in a table.

If you have cut your top panel so that after sanding it is about ⅛" thick, and you have a carbide blade that cuts a ⅛" kerf, the box will be ready for test assembly. If your top is a bit thicker than ⅛" or your saw blade cuts a narrow kerf, you will have to reset the fence for another series of cuts to widen the grooves. Again, make test cuts first. The top panel should fit snugly in the side grooves and the joints at the corners should be close. If the joints don't quite close, pare the top down until they do. With the dimensions that I've given, you should find that the top is not too small for the sides. It's better to start this way and trim from the top as necessary. If the sides are too long and the top wants to fall out, you will have to trim the sides down which may result in tearing out grain at the grooves so it's better to have the sides a trifle on the short side.

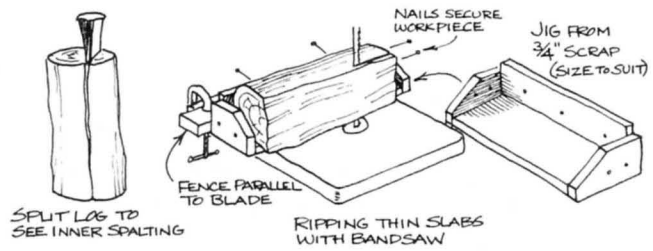
When the top and four sides fit together properly, make a bottom exactly the same size as the top. I usually use the same kind of wood as used for the four sides. Depending on

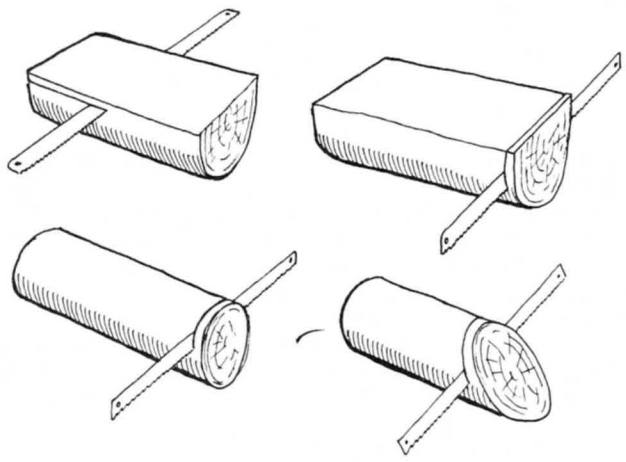


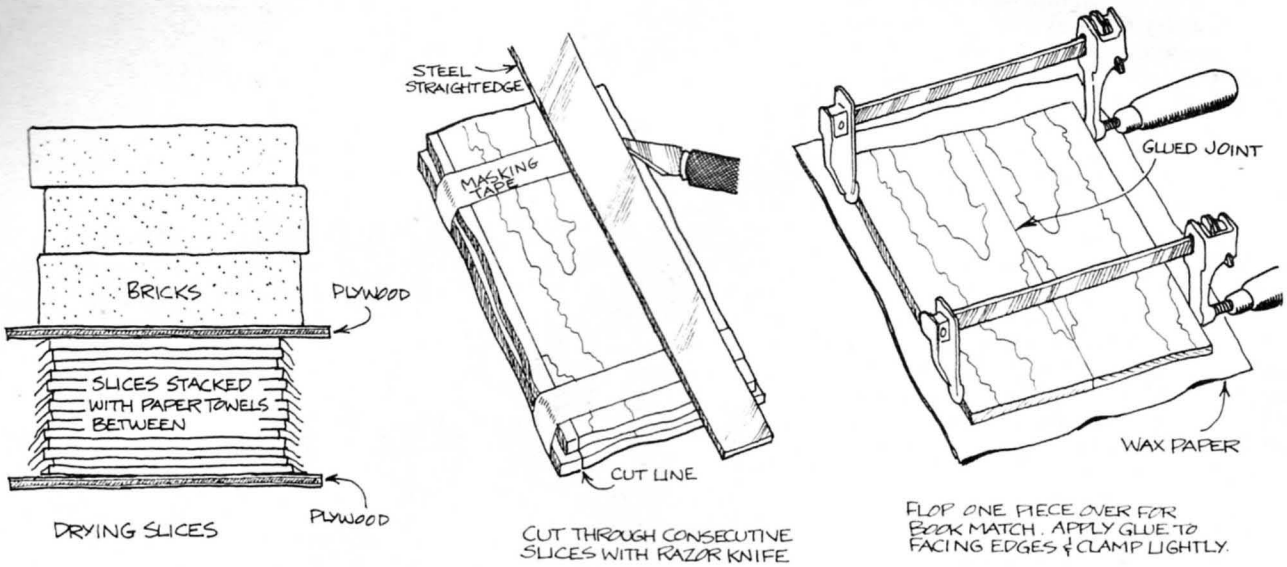
A chunk of spalted maple and two book-matched slices cut lengthwise with the grain.

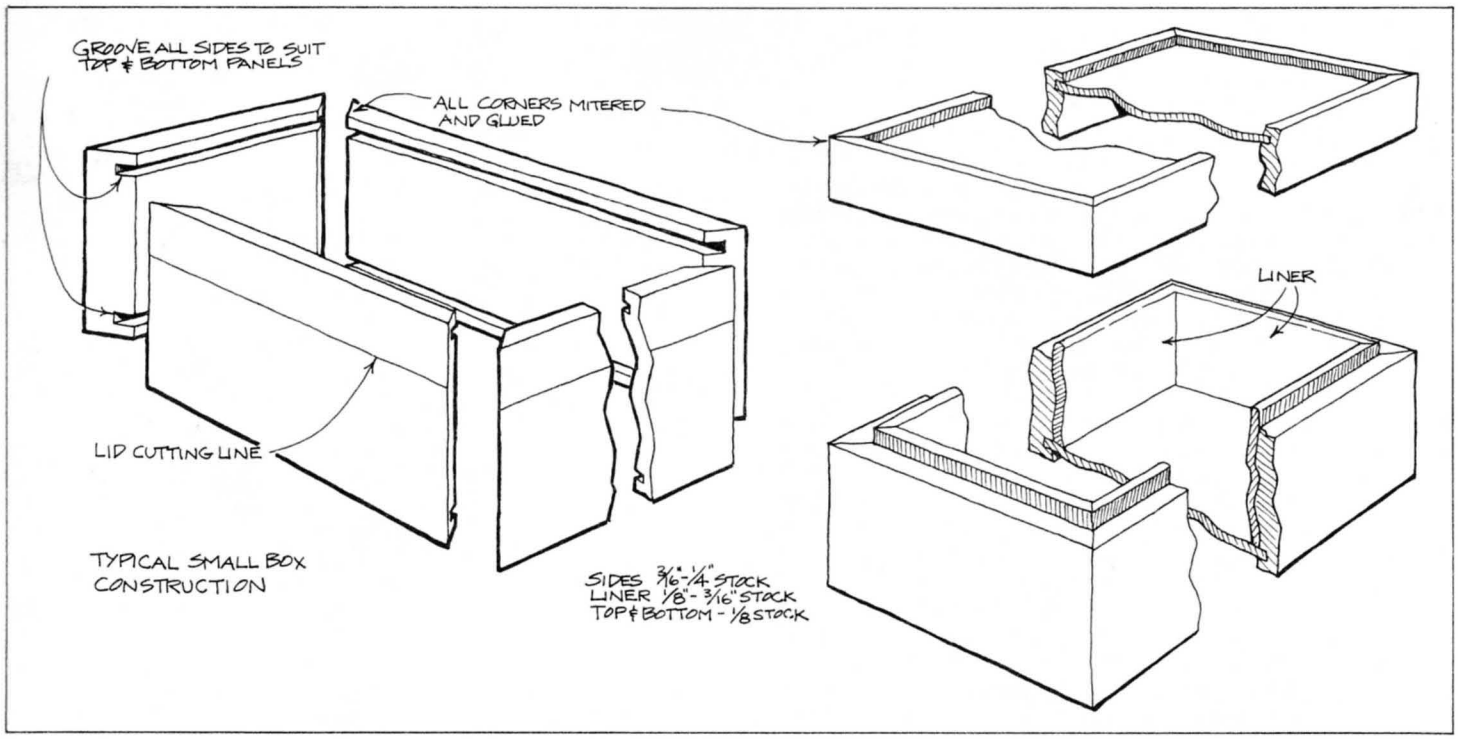


A spalted cherry limb with consecutive end grain cuts. The two slices in the foreground will be trimmed square and joined.









the size of the box, this bottom panel can be resawed in one piece from thicker wood or glued up from two pieces as was the top.

When you are ready to glue up after sanding, dry test the assembly once more. If everything looks good, use yellow glue sparingly at the mitered corners and one small dot of glue on the center of each side (in grooves). Try to use as little glue as possible to prevent a lot of squeeze-out, particularly on the inside. Hold the assembly tight with hand pressure for about three minutes and then set down to dry completely.

After drying, give the outside surfaces a final sanding. I generally finish with 220 grit paper. The lid must then be removed from the box by making a cut around all four sides. This cut can be made one-third of the way down from the top of the box. The bandsaw is best for this job. (*Editor's note: see box lid cutting jig in the July/August 1981 issue of* The Woodworker's Journal*).* It can also be done with a fine tooth blade in a bow saw. Cuts should be made backed up with scrap to prevent splintering.

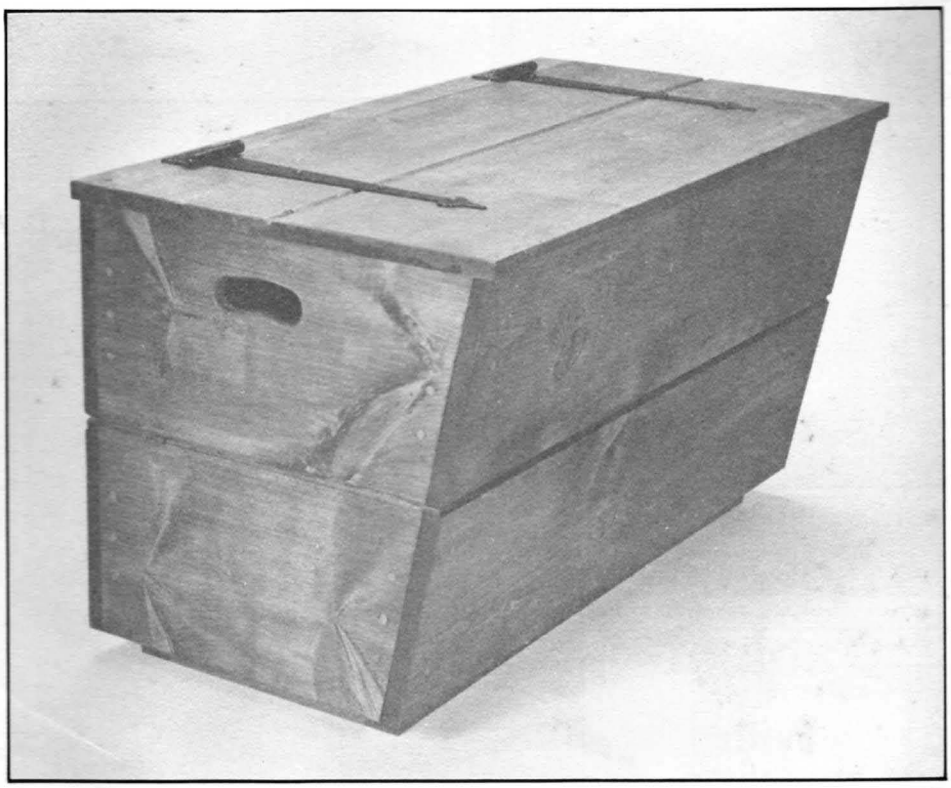
I rarely hinge my box lids but instead glue a thin liner in place on the inside to form a lip which holds the top and seems to greatly enhance the appearance of the box. The liner is resawed from the same wood as the box sides, or sometimes from a contrasting wood. The thickness of the liner is generally slightly less than the thickness of box sides. After measuring the depth of the box without the lid, I add 3/16″ to this measurement and rip the liner strips to that width. These are then mitered at the ends to fit snugly around the inside of the box. A bit of glue is dabbed on the box sides and some finger pressure for a few minutes secures the liner. The edges of the protruding lip are rounded slightly with fine sandpaper.

Most of my boxes are finished with Watco Danish Oil and wax. You can use any finish you prefer but if you use an oil finish and intend to sell the boxes, it might be wise to warn your customers that the finish will have to be renewed from time to time.

In closing I'd like to add that I sell these boxes just about as fast as I can make them. Most of the sales are made through various galleries and shops that deduct a commission of 30 to 50% from the selling price. The prices are determined by several factors including the beauty or rarity of the wood and the difficulty in working it. Most of the woods I use come from piles of firewood and choice pieces saved for me by friends.

Woodbox

by Raymond Schuessler



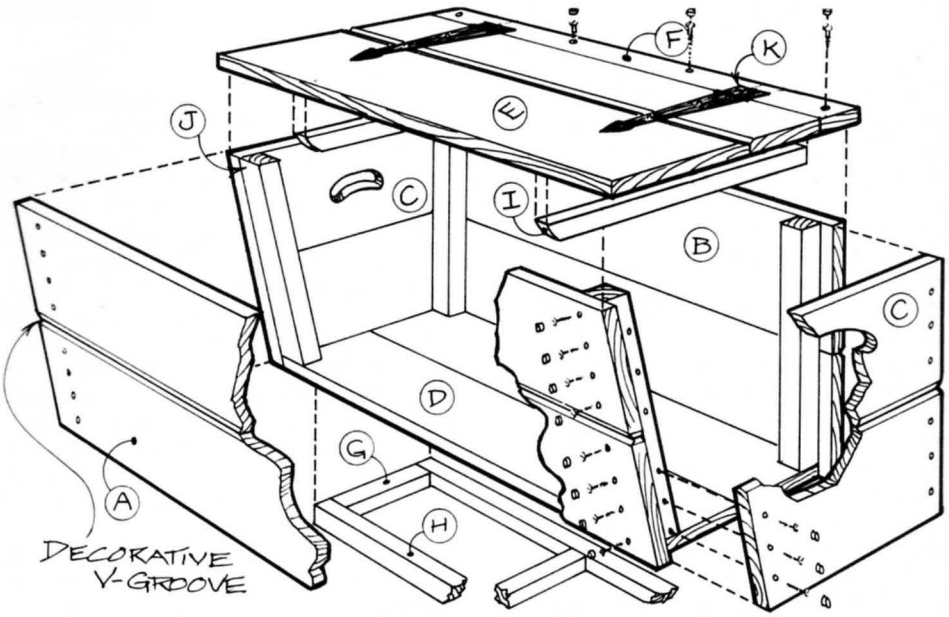
A woodbox can be a useful accessory for most any home that enjoys a woodstove or fireplace.

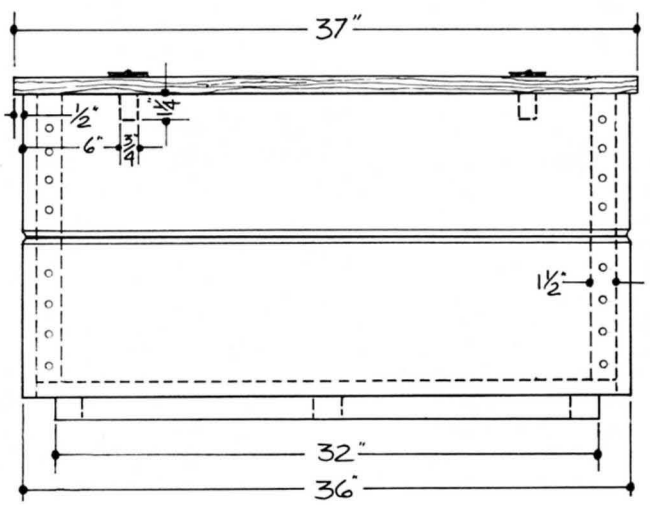
Parts A, B, C, and E are made from edge-joined 1″ x 10″ nominal (¾″ thick x 9¼″ wide actual) stock. Parts B and C then have ¼″ trimmed from one edge resulting in a width of 18¼″. Part E is also trimmed so that each board measures 8⅝″. Part D is made from edge-joined 1″ x 8″ nominal (¾″ thick x 7¼″ wide actual) stock. If you use dowel pins to edge-join, center them on the ¾″ thickness (⅜″ in from the edge) and use ¼″ dia. pins. This keeps the dowels from showing when the decorative groove is cut.

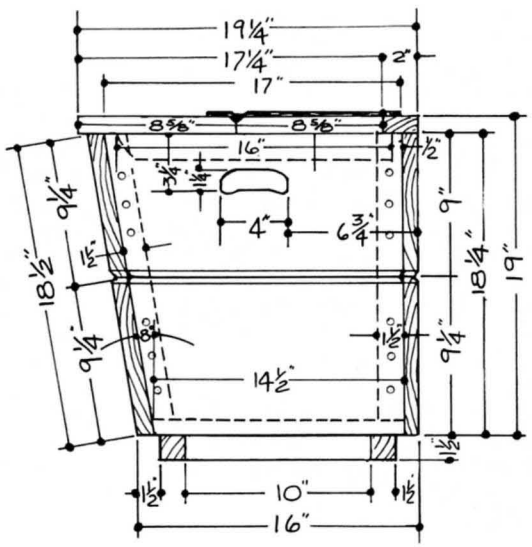
Assemble as shown on the drawing. Use glue on all joints and wood screws, countersunk and plugged, where shown. Secure the bottom (D) with a ⅜″ x 2″ lag screw driven into each corner block (J). The decorative groove is applied with a router and ½″ v-groove bit, set for a 3/16″ depth of cut. The hinges, purchased locally, are made by Acorn Mfg. Co., Mansfield, MA 02048.

Woodbox - Bill of Materials
(All Dimensions Actual)

Part	Description	Size	No. Req'd
A	Front	¾ x 18½ x 36	1
B	Back	¾ x 18¼ x 36	1
C	Side	¾ x 18¼ x 17	2
D	Bottom	¾ x 14½ x 34½	1
E	Top	¾ x 17¼ x 37	1
F	Cleat	¾ x 2 x 37	1
G	Base End	1½ x 1½ x 10	2
H	Base Ft. & Back	1½ x 1½ x 32	2
I	Batten	¾ x 1¼ x 16	2
J	Corner Block	1½ x 1½ x 17½	4
K	13″ Strap Hinge	Acorn # 0123BH	2







Sewing Cabinet

With Tambour Doors

by Thomas A. Gardner

This charming antique sewing cabinet has been a family posession for years. When it was made, or where, is not known. Most of the parts are walnut, but readers will find that just about any wood species, even pine, is acceptable. To avoid trouble, it's absolutely necessary to work accurately and follow the construction details with care.

Begin with part F, cutting it to overall length and width. Lay out and mark the ⅛" deep x 5/16" wide x 3⅞" long groove, then cut out using a router and a straight bit. The cove is cut with a ¼" cove bit.

Part D can now be cut to length and width. This part also has ⅛" deep x 5/16" wide by 3⅞" long grooves cut in the underside. In order for the base to be square, these grooves must be exactly in line with those in part F. As shown in the front elevation view, these grooves are located ⅜" in from each end. The ¼" cove bit cuts the front and side coves.

An easy-to-make template is used to cut the tambour grooves for part D. To make the template, cut ¾" plywood to the shape of the inner oval on the detail of the tambour groove cut (page 33). Note that it measures 2¾" wide x 6⅝" long with a 1⅜" radius on each end. Carefully locate the template on part D, then secure with two short wood screws. The ⅛" deep groove is cut using a drill press and 3/16" round bottom router bit. The material in back is cut away to permit the insertion of the tambour doors after the body is assembled. Part D also has a groove to accept part C. Locate these ⅜" in from the side as shown. Use a router with a ⅛" straight bit to make the cut.
out and cutting the tambour groove so that it is exactly over the groove in part D. Perhaps the best way to do this is to place B & D back-to-back, tambour groove side up. Now transfer the groove locations from D to B. Again use the template to cut the groove. Part B also has ⅛" x ⅛" x 1¾" grooves for part C. Be sure these line up exactly with the mating grooves in part D. A ⅛" x ⅛" x 7⅜" stopped rabbet can now be cut in the back edge to accept the back (H). Complete B by cutting the 2⅛" radius and routing the cove with the ¼" cove bit.

Part E has a ⅛" x ⅛" rabbet for the back (H) and ⅛" x ¼" notches are made on both front corners. Part C has a ⅛" x 3/16" rabbet for the back. A 1-11/16 radial cut allows room for the tambours. It's also rabbeted and notched to fit parts B & D. Part A can now be made as shown in the drawing.

Parts A, B, C, D, E, & F are now assembled. Sand thoroughly, then start by joining D, E, & F. First, dry assemble for fitting and squareness. If o.k., apply glue and clamp, again checking for squareness. Part A is attached to B using ¾" x #6 wood screws. Parts B and C can now be joined to D.

The tambour strips are cut and shaped as shown. Canvas, denim, or any other tough, flexible material can be used for the backing. Cut it so it will be ⅜" from the top and bottom. To apply the backing, place the tambour strips face down tightly against one another. Square the strips. Now, using thin strips of wood, fashion a frame tightly around all four sides and secure with brads. This frame acts to keep the strips in place while applying glue and backing. Coat the tambours with glue and apply backing, keeping it smooth and even. After the glue has set, break the joint between the tambours. Round the upper and lower corners of the leading and rear tambours.

The tambours are now installed from the back of the cabinet. Some sanding will generally correct any irregularities. When adjusted, apply a coat of wax to the tambour ends, then attach the back (H).

Cut the thread holder (parts I) as shown. The spindle (J) is turned and attached off-center in the ½" holes. The holes for the thread holders are drilled using a #4 finishing nail with the head removed. Now drill 14 holes for the thread holder (8 in the upper, 6 in the lower, evenly spaced). Number 4 finishing nails, shortened to 1", are set in each hole from the bottom. The wood screw acts as a fulcrum for turning the thread holder out of the cabinet.

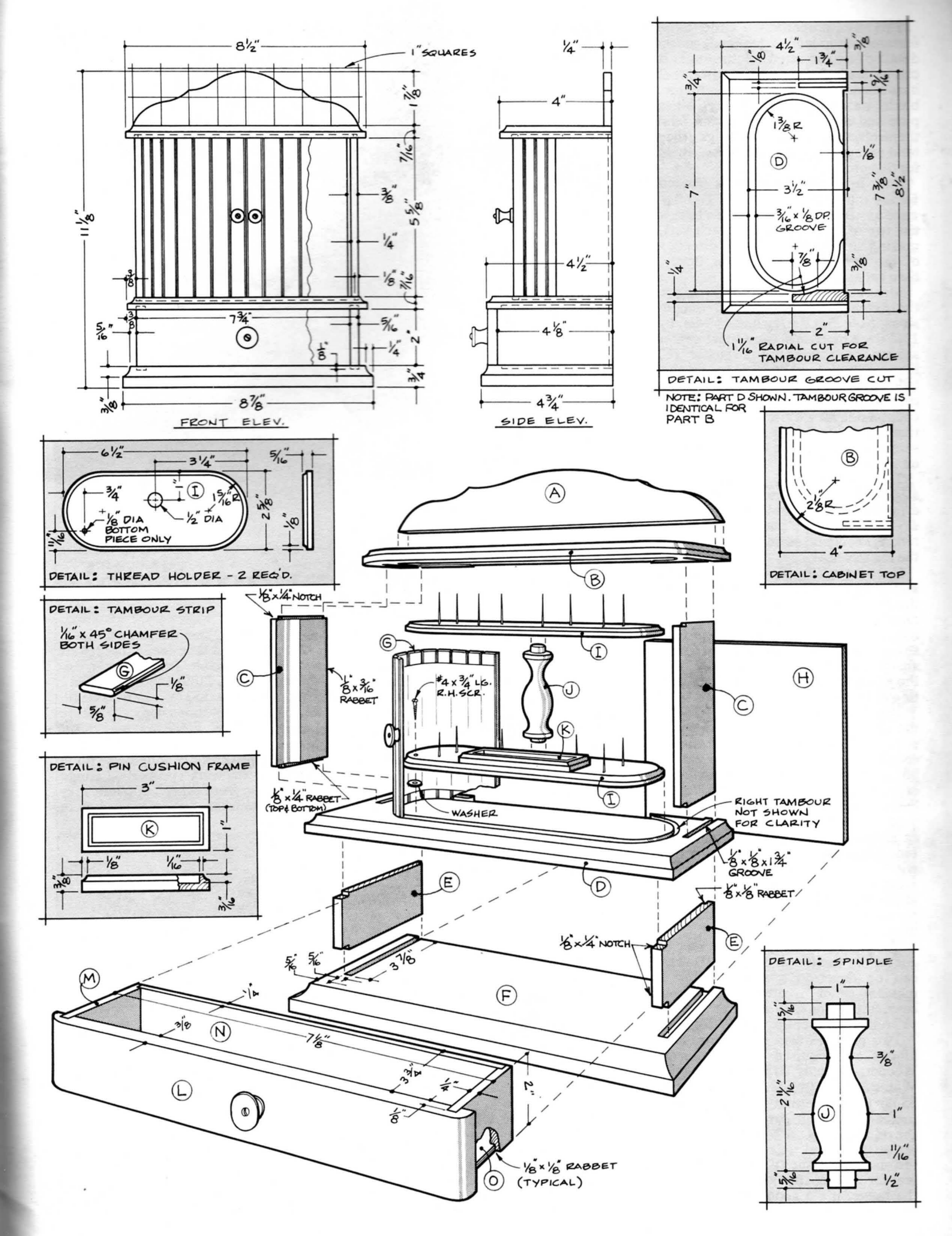
The pin cushion holder is prepared as shown. The interior is either routed or chiseled out by hand. Attach it with either a screw or with glue. The cushion can be made out of sponge rubber covered with fabric. It is glued in place. The assembly is attached to the cabinet with a round headed screw and a washer under the lower level---for smoother movement. Test for performance. Make any necessary adjustments. It will be a time saver if all parts of the thread holder are sanded, varnished and waxed before assembling.

The drawer is of simple construction. The front is walnut, the other parts are of pine. The bottom, ⅛" plywood, is inserted into ⅛" x ⅛" grooves cut in all four sides, as shown.

Finish with 2 or 3 coats of satin polyurethane, rubbing down the final coat with 0000 grade steel wool. A good grade of furniture wax completes the project.

Bill of Materials - Sewing Cabinet
(All Dimensions Actual)

Size	Part	No. Req'd
A	¼ x 1⅛ x 8	1
B	7/16 x 4 x 8½	1
C	⅜ x 2 x 5⅞	2
D	7/16 x 4½ x 8½	1
E	5/16 x 4¼ x 2¼	2
F	¾ x 4¾ x 8⅛	1
G	⅛ x ⅜ x 5⅞	16
H	⅛ x 7⅜ x 8-5/16	1
I	(See Detail)	2
J	(See Detail)	1
K	(See Detail)	1
L	⅜ x 2 x 7¾	1
M	¼ x 2 x 3⅞	2
N	¼ x 2 x 6¾	1
O	¼ x 3¾ x 6⅞	1


8½"
1" SQUARES
11⅛"
1⅞"
7/16"
3/8"
1/4"
1/8"
5⅝"
2"
¾"
5/16"
7¾"
⅜"
8⅞"
FRONT ELEV.
¼"
4"
4½"
4⅛"
4¾"
SIDE ELEV.
4½"
1¾"
⅛"
⅜"
9/16"
1⅜ R
⅛"
D
3½"
7"
7⅜"
8½"
3/16" x ⅛ DP. GROOVE
7/8"
¼"
2"
1 11/16" RADIAL CUT FOR TAMBOUR CLEARANCE
DETAIL: TAMBOUR GROOVE CUT
NOTE: PART D SHOWN. TAMBOUR GROOVE IS IDENTICAL FOR PART B
6½"
3¼"
5/16"
¾"
I
15/16" R
⅛" DIA BOTTOM PIECE ONLY
½" DIA
2⅝"
⅛"
11/16"
DETAIL: THREAD HOLDER - 2 REQ'D.
B
2⅛ R
4"
DETAIL: CABINET TOP
A
B
⅛" x ¼" NOTCH
DETAIL: TAMBOUR STRIP
1/16" x 45° CHAMFER BOTH SIDES
G
⅛"
⅝"
C
⅛" x 3/16" RABBET
#4 x ¾" LG. R.H. SCR.
J
K
I
H
C
⅛" x ¼" RABBET (TOP & BOTTOM)
WASHER
RIGHT TAMBOUR NOT SHOWN FOR CLARITY
⅛" x ⅛" x 1¾" GROOVE
D
DETAIL: PIN CUSHION FRAME
3"
K
1"
⅛"
1/16"
⅜"
3/16"
E
⅛" x ⅛" RABBET
⅛" x ¼" NOTCH
E
5/16"
5/16"
3⅞"
F
M
1¼"
3/16
N
7⅛"
3¾"
¼"
⅛"
2"
L
O
⅛" x ⅛" RABBET (TYPICAL)
DETAIL: SPINDLE
1"
5/16"
⅜"
2 1/16"
J
1"
11/16"
5/16"
½"

18th Cent. Tavern Table

by Robert A. McCoy

This well-proportioned little table features drop-leaf sides and nicely detailed leg and stretcher turnings. It can be made from a variety of cabinet hardwoods including cherry, maple, birch, walnut, and mahogany. Since pine and other softwoods do not lend themselves to detailed turnings (they tend to tear), it's best not to use them for this project.

Start by gluing-up stock as needed for the top (H) and leaves (I). To minimize any tendency to warp, it's best to use two or three boards for each part, making sure to alternate the direction of the annular rings. Clamp firmly, then set aside to dry.

Make the legs (A) next, referring to the detailed drawing for all dimensions. Note that the leg has a 1″ dia. by 1¼″ deep mortise in the square center section to accept the stretcher (C) tenon. It's a good idea to make this hole slightly deep to allow for any excess glue. Also, at this time, drill and countersink for a 1½ x #10 wood screw that will reinforce the joint. Locate the screw hole so that it will be centered on the tenon.

The stretcher (C) is made next, again referring to the drawing for all dimensions. Note that both ends have a 1″ dia. by 1¼″ long tenon. These tenons should be sized for a good fit in the leg mortises.

Cut the two feet (B) to overall length and width, then lay out the location of the ⅜″ wide x 1½″ long x 1¼″ deep mortise. Use a ⅜″ dia. drill bit to remove most of the material, then square the corners and clean-up with a sharp chisel. Transfer the profile from the grid pattern to the stock before cutting out with a band or saber saw.

The front and back aprons (D) and the side aprons (E) have mitered corners. Before making these miters, check your table or radial arm saw to be sure it's cutting at exactly 45 degrees. If not, make adjustments before starting.

Make the four fastening blocks (G) as shown. Changes in moisture content will cause the top to change in width, therefore the blocks have elongation holes which allow free movement of the top. If this free movement is not permitted, stresses will build that might cause the top to crack.

The rule (drop-leaf) joint can now be cut on the top (H) and leaves (I). This can be done on a shaper using a matched set of ½″ drop-leaf bead and cove cutters, or with a router using a ½″ rounding-over bit and ½″ cove bit.

Two pair of brass table (drop-leaf) hinges are required (available from Woodcraft Supply, 313 Montvale Ave., Woburn, MA 01888, p/n 16R42-PH, $5.00/pr.). Note that one-half the diameter of the hinge barrel is mortised in the underside of the top. Also, the center of the barrel must be in line with the shoulder of the rule joint. To get a feel for cutting this joint and locating the hinge, it's a good idea to make a practice joint on some short lengths of scrap pine.

A router equipped with a ¼″ beading bit is used to apply the decorative bead to the top and leaves. When cutting, use care at the point where the leaves meet the top, as this area may tend to split. To minimize this problem, use a small wedge of wood to fill the space between the two parts.

Final sand all parts, then dry assemble the legs, feet, stretcher, and aprons. If the assembly is satisfactory, the feet can be glued and clamped to the legs. When dry, the remaining base parts can be assembled, clamped and checked for squareness.

The finish is a matter of personal choice. The table can be stained, or if an open-grain wood is used, the reader may choose to start with a wood filler to fill-in the pores. Be sure to carefully follow manufacturer's directions with all finishing products. Final finish using 3 or 4 coats polyurethane varnish, with overnight drying between each coat. A light sanding with fine sandpaper is required after each coat has dried. Rub down the last coat with 0000 grade steel wool followed by a good wax polish.

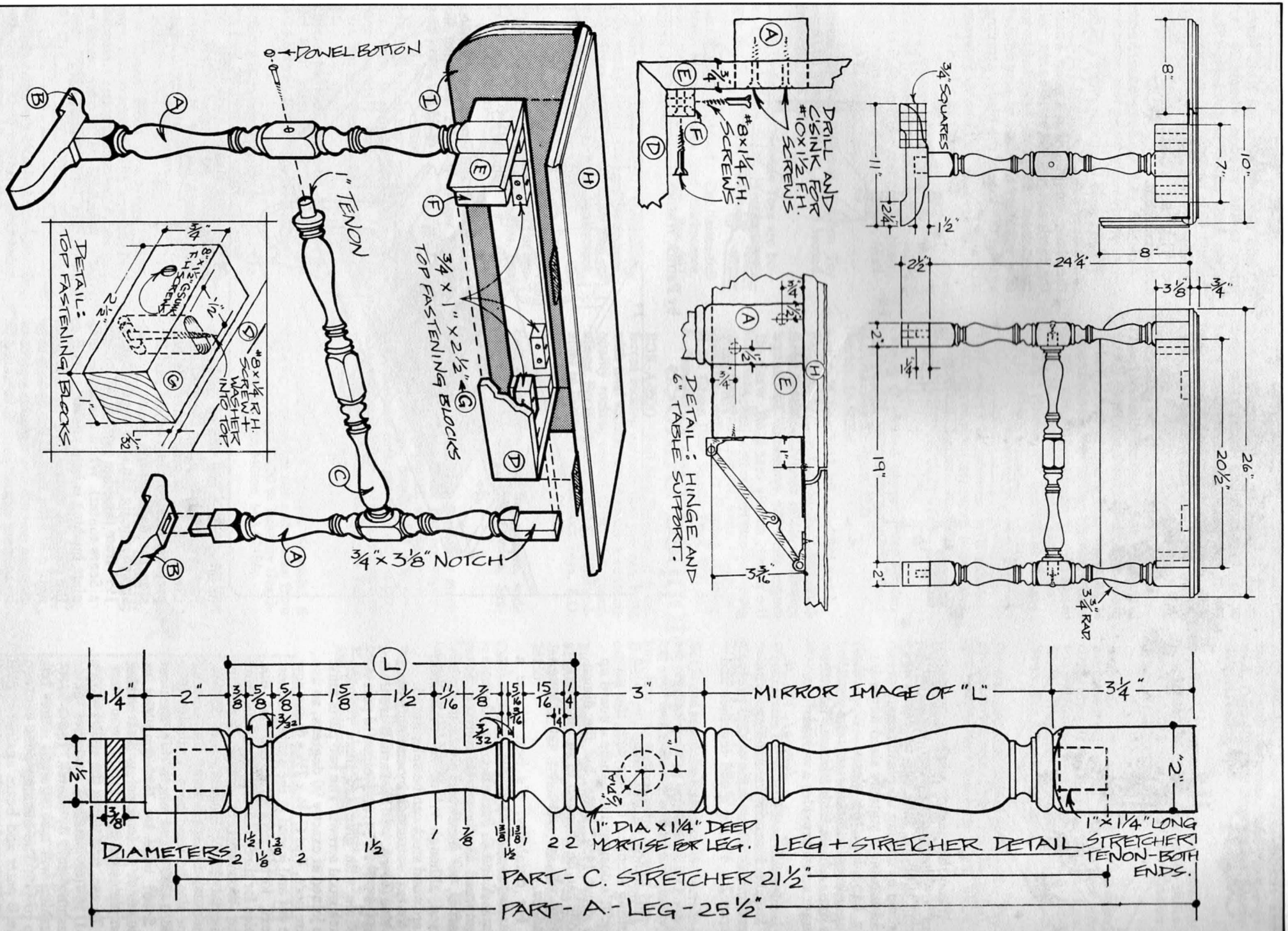
To attach the top, place it upside down on clean papers or a pad to protect the finish. Center the base on the top, then fasten using 1¼″ x #8 round head wood screws and washers. Remember the top must be free to move so don't overtighten the screws.

Two 6″ table drop-leaf supports are required (available from The Woodworkers' Store, 21801 Industrial Blvd., Rogers, MN 55374, p/n D4510, $2.75/pr.). The dimensions shown are based on The Woodworkers' Store hinge. These dimensions are critical and must be carefully adhered to if the hinge is to work properly. Hinge dimensions from other suppliers may vary somewhat, so check before installing.

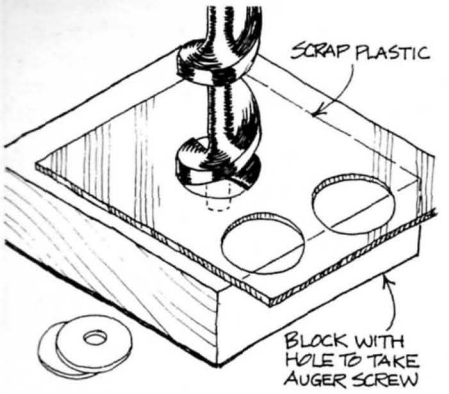
18th Cent. Tavern Table

Bill of Materials
(All Dimensions Actual)

Part	Description	Size	No. Req'd
A	Leg	2 x 2 x 25½	2
B	Foot	2 x 2½ x 11	2
C	Stretcher	2 x 2 x 21½ (Inc. tenons)	1
D	Ft. & Back Apron	¾ x 3⅛ x 20½	2
E	Side Apron	¾ x 3⅛ x 7	2
F	Glue Block	¾ x ¾ x 3⅛	4
G	Fastening Blocks	¾ x 1 x 2½	4
H	Top	¾ x 10 x 26	1
I	Leaf	¾ x 8 x 26	2


DOWEL BOTTOM
1" TENON
3/4 x 1" x 2 1/2" TOP FASTENING BLOCKS
3/4" x 3 1/8" NOTCH
DETAIL: TOP FASTENING BLOCKS
#8 x 1/4 R.H. SCREW + WASHER INTO TOP
DRILL AND C'SINK FOR #10 x 1 1/2 F.H. SCREWS
#8 x 1 1/4 F.H. SCREWS
DETAIL: HINGE AND 6" TABLE SUPPORT.
3/4" SQUARES
3/4" RAD
MIRROR IMAGE OF "L"
1" DIA x 1/4" DEEP MORTISE FOR LEG.
1" x 1/4" LONG STRETCHER TENON-BOTH ENDS.
DIAMETERS
LEG + STRETCHER DETAIL
PART - C. STRETCHER 21 1/2"
PART - A. - LEG - 25 1/2"

Shop Tips

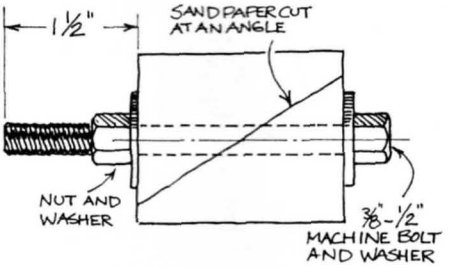


When thin plastic washers or spacers are needed to keep wood parts from rubbing, they can be easily obtained by cutting up plastic containers and turning a suitably sized auger bit by hand into the plastic. Work the auger from both sides until the washer is free. A block with a hole to take the auger screw provides a worksurface.

James L. Via, Jr.

I make inexpensive sanding cylinders for use on my lathe or drill press. Scrap 2 x 4's are glued together and cut to either 2" or 3" in length. A ⅜" or ½" hole is drilled through the center of the block and a machine bolt with a washer is pushed through as shown. A washer and nut are attached and tightened.

The block is chucked in the lathe and turned to the desired diameter. A piece of cloth-backed sandpaper is cut at an angle and glued to the cylinder with white glue. The cylinder is ready to use after drying for 24 hours.



I use ⅜" bolts for 1½" and 2" cylinders and ½" bolts for 2½" and 3" cylinders. Bolts should be about 1½" longer than the cylinders. To change the paper, simply tear it off, wash off glue, dry and reglue new paper.

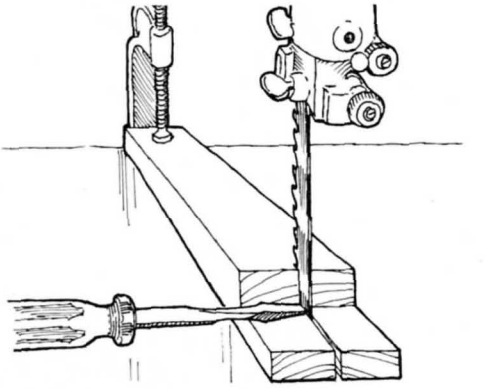
V.R. Stuart

I add rubber bands cut from inner tubes to the wooden wheels of toy trucks and other large toys. The "tires" help reduce noise, prevent marring of wood floors and look good too. They are simply glued on with contact cement.

Reinhart Burdt

When I need to quickly clean a band saw blade, I run a notched block into the blade, stopping it at a point where the teeth are just covered by the full thickness of the block. Then, with the saw running, I press a screwdriver against the side of the blade, scraping it clean.

Stanley Peterson



Router Jig For Stopped Dadoes

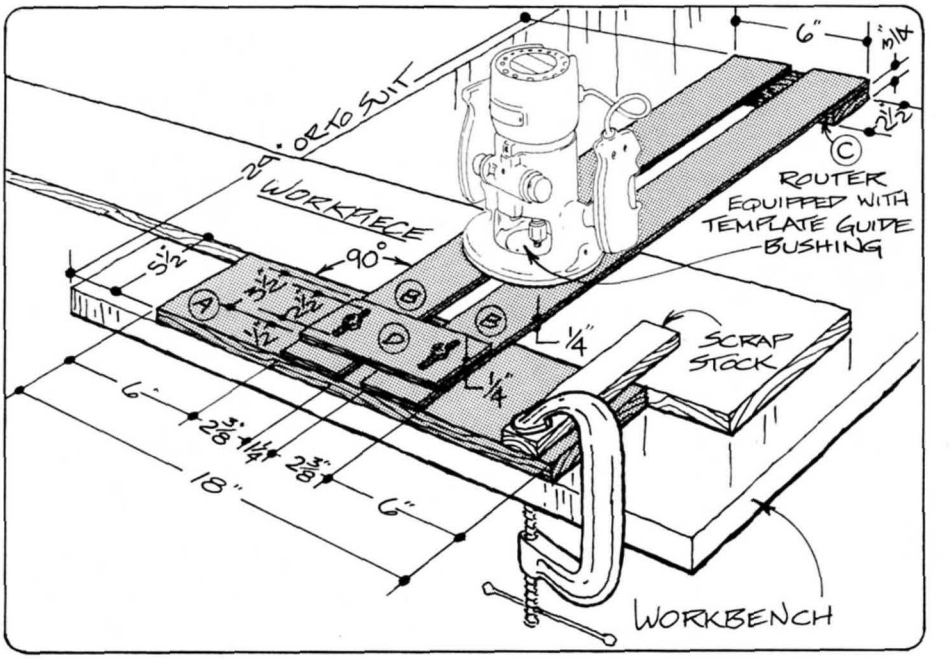
by Patrick Warner

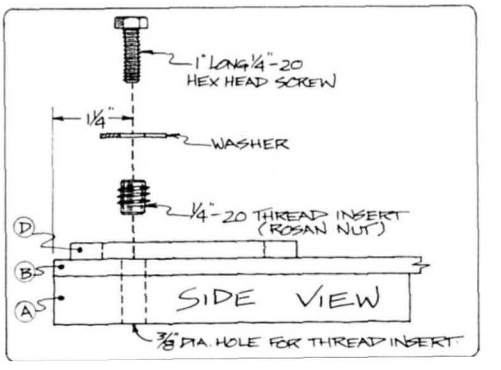
This handy jig will save time when cutting stopped dadoes with the router. It's designed to handle a board up to about 14½" wide, but the dimensions can be changed to suit most any width. It can also be cut through dadoes.

For durability, it's best to use a hardwood such as maple or birch for parts A and C. Parts B are made from tempered hardboard (Masonite). For part D, ¼" hardwood plywood can be used, although ½" or ¾" thick solid hardwood stock can be substituted.

Start construction by cutting part A to size (¾ x 5½ x 18). Parts B are then cut (¼ x 2⅜ x 24) and joined to part A. Fasten with glue and three countersunk wood screws. The two parts must be joined at exactly 90 degrees, so use care here. Part C (¾ x 2½ x 6) can now be cut and joined in the same manner. Next, locate and drill two ⅜" dia. holes for thread inserts (available from The Woodworkers' Store, 21801 Industrial Blvd., Rogers, MN 55374). Teenuts, fastened from the bottom, can also be used here. Cut part D to width (3½") and length (6"), then cut a 5/16" wide by 2½" long slot as shown. A 1" long screw and washer completes the jig.

To use, first equip the router with a 1-1/16 (or smaller) template guide bushing (sold by Sears). The 1-1/16" bushing will take straight router bits up to ¾". The bushing goes between the B parts and bears against one of them. Either of parts B can be used as in mind which one you've chosen before orienting the jig on the workpiece. Clamp the jig in place after it's been properly located, then adjust part D to stop the dado where desired. As designed, the jig can stop the dado up to 1½" from the edge (with a ¼" bit and a Sears router). When used, the template bushing is held against part B as the router is moved from back to front until it hits the stop. If the dado is to be stopped on both ends, clamp a piece of scrap stock across parts B to serve as the second stop.





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Rustic, Country Mirror Plans and ideas. $100.00 profit from a single board. $3.00. James Fite, Rt 3 Box 441, Shelby, NC 28150.

Cabinet-Spacious, sturdy, attractive jewelry cabinet. Six drawers and necklace compartment with revolving hanger. Easy to follow plans $3.00. Fred Faust, Box 3688, Laureldale, PA 19605.

Woodcrafts. Veteran Craftsman has experienced $1000 crafts shows, will send plans for 6 best selling wood items for $5.00. Bennett Wood Products, Rt 8, Box 680-S, Pensacola, FL 32506.

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Shop Notes