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Woodsmith®

UNIQUE EIGHT-SIDED PATIO TABLE

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Woodsmith

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EDITOR'S COLUMN

Sawdust

A few years ago we remodeled the old carriage house that sits behind our office building. Now we use the ground floor as a photo studio, and the upper floor as a conference center.

In the process of remodeling, we decided to tear up part of the parking lot between the two buildings and put in a garden. It's filled with flowers — annuals and perennials and roses. And there's a brick walkway and patio area that zig-zags through the garden to connect the two buildings.

So, what does all of this have to do with woodworking?

The patio is a great place to relax. But there was no where to sit. So last year we built some outdoor furniture — an Adirondack chair, a matching settee, and a patio table. (The photo on the cover of *Woodsmith* No. 69 shows this furniture in the patio area in front of the carriage house.)

I had all the best intentions of moving this furniture inside last winter — but didn't quite make it before the first snow.

Well, I thought, maybe this is a good opportunity to see how redwood furniture weathers the winter.

It made it okay . . . but the warm redwood color turned to an unpleasant gray. Another good opportunity, I thought, to see how to restore the color to redwood furniture.

With summer just around the corner, we set to work cleaning the furniture with TSP and oxalic acid. I hadn't done this before, and was frankly a little skeptical that this process would restore the redwood color without having to sand down to new wood.

It turned out great. After refinishing it with a mixture of spar varnish and oil, it looks like aged redwood — a deep rich red color rather than gray (more like the way cherry ages).

PATIO TABLE. About the same time I was working on this refinishing project, we started to get a batch of requests for plans for a patio or picnic table — usually accompanied with the suggestion to "make it different than the typical 2x6 (construction lumber) tables found in most state parks."

So we decided to add to our collection of outdoor furniture with an *octagonal* patio table. We incorporated an easy-to-make version of mortise and tenon joinery on this table. Basically, you create the mortise by cutting dadoes in two boards and join them together to produce the mortise.

For the other outdoor project in this issue (the formal planters), I switched to a more typical way of making a mortise — using a drill press to rough out the mortise, and cleaning it up with a chisel. Then I cut the tenons on a table saw.

But in the middle of this process, I decided it would be fun to do a little hand work. I got out my mortise chisels and chopped away at the mortises for a second planter.

JAPANESE SAWS. To cut the tenons, I reached for my dozuki saw. It's a nice way to cut tenons. And I thought it was about time we talked about the various Japanese saws we use — especially for delicate joinery.

All in all, it's odd to think that this whole issue actually started when I forgot to move the redwood furniture inside for the winter.

NEW FACES. Last year we produced our first catalog — offering supplies for *Woodsmith* projects and back issues. At that time we were able to store all of the inventory in about 1,500 square feet of the basement of our store here in Des Moines.

That didn't last long. Now we've moved into (and just about filled) a 9,000 square foot warehouse. And we've enlisted the aid of several energetic people — Jerry, Gloria, Ron and Dave — to pack and ship orders.

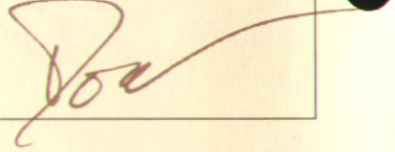
They've invited me to the warehouse to work with them for a day. I'm not sure if they just wanted me around for my sparkling personality, or if they thought I might be able to lose a few pounds trying to keep up with their pace.

HELP WANTED. In the last issue, I mentioned that we were looking for editors and a marketing director to fill positions available here at *Woodsmith*.

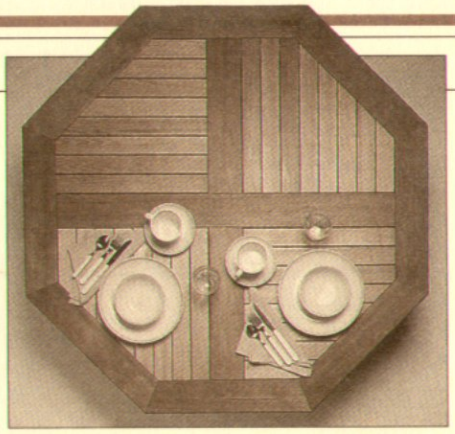
In addition, we're also in need of a project designer. We're looking for someone who can design furniture projects, as well as projects for the shop (jigs and shop storage projects). This position will also require the ability to do the type of technical illustrations shown in *Woodsmith*.

If you're interested, write to Ted Kralicek, Design Director, *Woodsmith*, 2200 Grand Ave., Des Moines, IA 50312. Ted will send more information about the job.

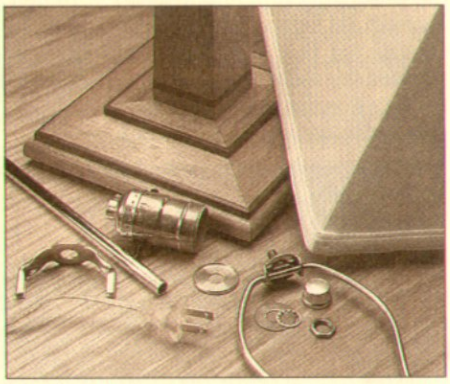
NEXT ISSUE. The next issue of *Woodsmith* will arrive in late July or early August.



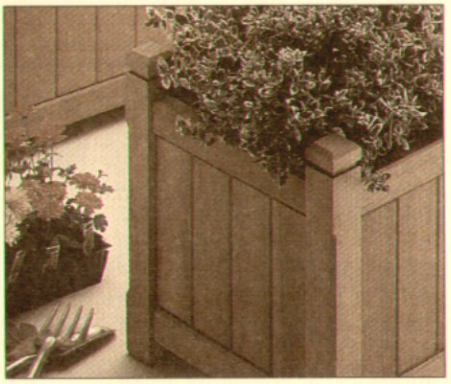
Contents



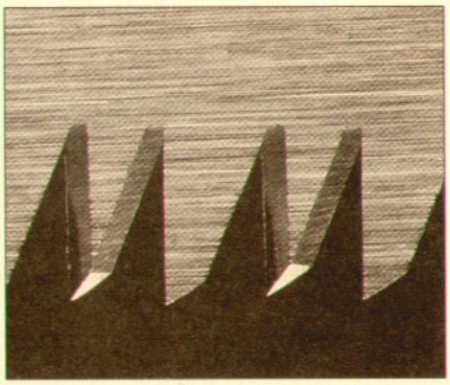
Patio Table *page 6*



Accent Lamp *page 12*



Redwood Planter *page 18*



Japanese Saws *page 24*

Tips & Techniques

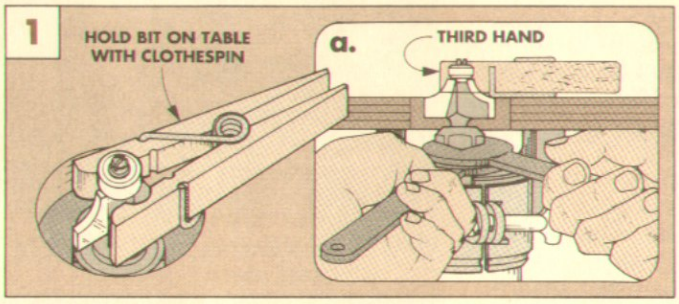
THIRD HAND

■ I had a problem every time I mounted a bit in the router attached to my *Woodsmith* router table. It seems like I needed three hands: one to hold the bit so it wouldn't drop too low and bottom out in the collet, and two hands for the wrenches that tighten the collet.

To solve the problem, I used an ordinary clothespin as a "third hand," see Fig. 1. Grasp the cutting end of the router bit in the clothespin. Now set the clothespin on the router table with the bit in the collet.

Then adjust the router height until the desired amount of the bit is in the collet. And tighten down the bit, see Fig. 1a.

Howard M. Rathbun
Loveland, Colorado



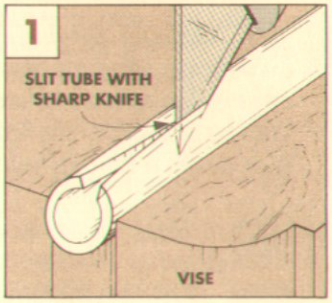
BLADE GUARDS

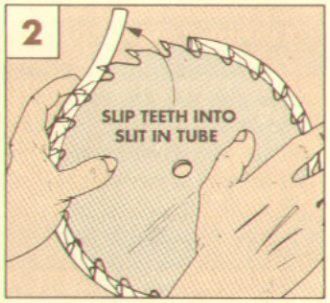
■ Carbide-tipped circular saw blades are expensive, so I take care to protect the teeth from damage when the blade is off the saw for storage or to be sharpened. To protect the teeth, I use a piece of plastic tubing that I bought at a hardware store, refer to Fig. 2. It costs about 20 cents a foot. (Mail order catalogs sell blade guards for $10 or more.)

To make a guard for a 10" blade, start with a 3-foot length of 3/8" O.D. plastic tubing, or 5/16" O.D. tubing for thin kerf blades.

Then, wedge the tube in a vise and slit it open with a sharp utility knife, see Fig. 1. Now spread the tube apart and slip it over the teeth, see Fig. 2.

John Samoluk
Buchanan, Tennessee





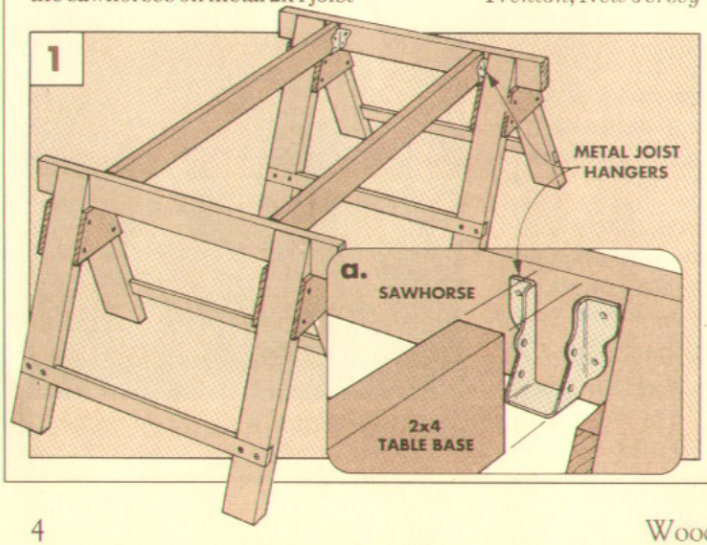
SAWHORSE TABLE BASE

■ I use sawhorses for a variety of jobs, including when I cut down 4x8 sheets of plywood. But the plywood usually sags when laid across two sawhorses. So I devised an easy way to stop the sagging by connecting the sawhorses, see Fig. 1.

The support system consists of two 6 foot 2x4's hung between the sawhorses on metal 2x4 joist hangers, see detail. Attach the hangers so they'll pinch the ends of the 2x4's. This way the 2x4's will stay in the hangers without being screwed in place.

This system also makes a terrific temporary assembly table for those times when my bench is too high and the floor is too low.

Kevin Wright
Trenton, New Jersey

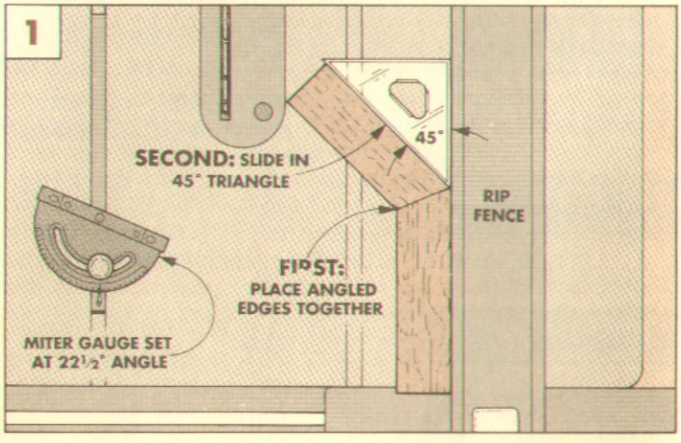


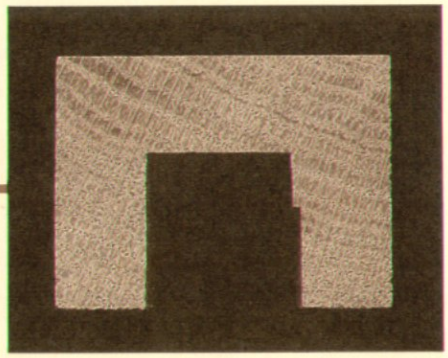
CHECKING 22½° MITERS

■ I had a hard time setting the miter gauge on my table saw to cut exactly 22½° when making mitered cuts for an octagon. So I developed a system using the rip fence and a plastic 45° drafting triangle to check the accuracy of the miter gauge on test pieces.

Here's how. First, cut a piece of scrap in two at 22½°. Then, to check the angle, place the long side of one piece against the rip fence. Next place the mitered end of the second piece tight against the mitered end of the first, see Fig. 1. Now check the angle between the second piece and the rip fence with the plastic triangle. An accurate cut creates a 45° angle.

David Beck
Middletown, Ohio





ROUTING MULTIPLE PASSES

■ I had to rout some ½"-deep grooves for a recent project. To do this, I routed the grooves in two ¼"-deep passes. But when I reset the bit to cut the second pass, the cut was slightly off to one side of the first cut. This left a little step on one side of the groove, see photo. It looked bad, and the groove turned out wider than the router bit.

The problem with my router is typical of many. They have too much play in the mechanism that controls the depth of cut. So when you change the depth of the bit and retighten the motor for the second pass, the bit can cut at a slightly different point than it did on the first pass.

To solve the problem, start by setting the bit to cut the full depth of the groove. Then lay a ¼"-thick spacer (made of Masonite or plywood) on the router table to "raise" the workpiece for a shallower depth of cut, see Fig. 1a. Now make the first pass.

Then remove the spacer and make the final full-depth cut, see Fig. 1b. By removing the spacer, you won't have to change the depth of cut on the router before making the second pass.

To make deeper grooves, use two or three spacers and remove one after each pass.

This worked so well, I made a permanent spacer by screwing a pair of cleats on the ends of the spacer, see Fig. 1. They overlap the ends of the router table and hold the spacer in place.

This method also works when routing multiple passes freehand. Just attach a spacer to your router base plate when making the first pass.

Keith P. Brown
Denville, New Jersey

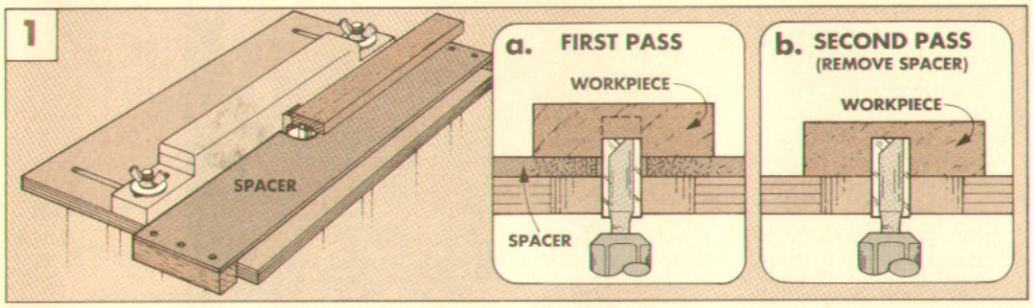


TABLE L-BRACKETS

■ I recently built a table with a butcher-block style, solid wood top. But I ran into a problem when I tried to find brackets to attach the table top to the base.

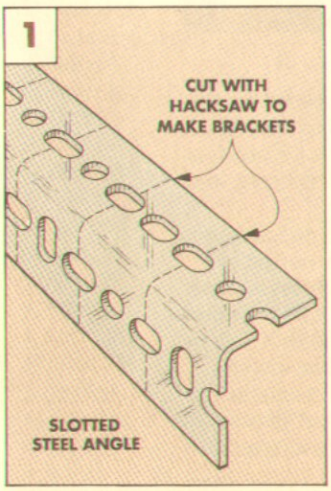
Wood expands and contracts across the grain with changes in humidity. Since my top is made of thick solid wood, I needed brackets that would allow my table top to move independently of the table base.

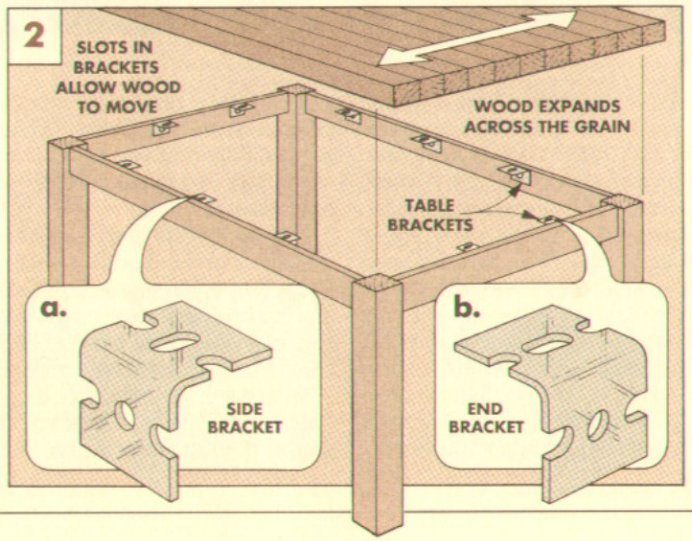
But the "L" brackets sold at my local hardware store don't allow for any wood movement. So I decided to make my brackets out of slotted steel angle, see Fig. 1. The hardware store sells it as framing for shelves. It cost about $4.00 for a 36"-long piece, the shortest I could buy.

What makes it ideal for table brackets is that there are holes opposite some of the slots, see Fig. 1. To allow the wood to move across the grain, the brackets on the sides of the table base need slots perpendicular to the bend, see Fig. 2a. Slots in the brackets on the table ends, however, should be parallel with the bend, see Fig. 2b.

To make table brackets, cut the steel angle with a hacksaw into 1½"-long segments, see Fig. 1. Then screw the brackets to the table base. To attach the top, use a screw and a washer in each slot.

Russ Alexander
Cleveland, Ohio





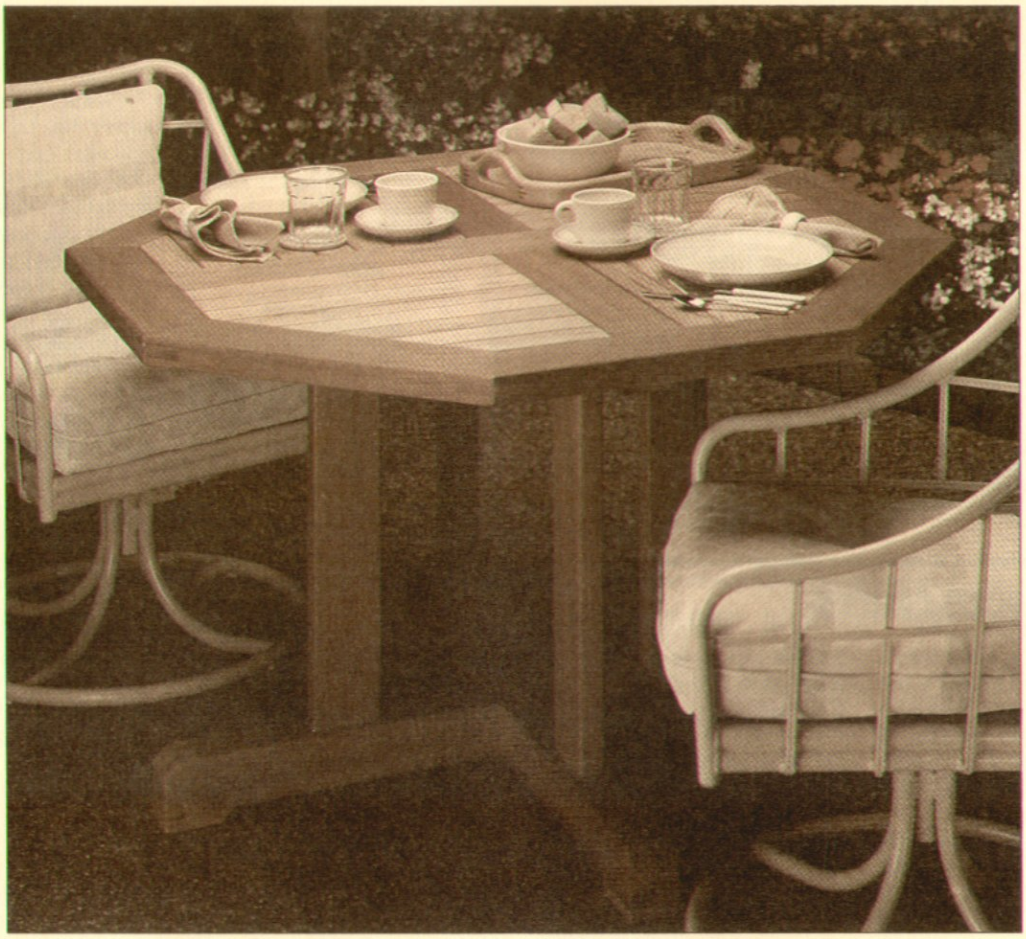
SEND IN YOUR TIPS

If you would like to share a tip or idea, just send it to *Woodsmith*, Tips and Techniques, 2200 Grand Ave., Des Moines, Iowa 50312.

We will pay upon publication $15 to $100 (depending on the published length of the tip). Please include an explanation and a sketch or photo (we'll draw a new one).

Patio Table

It's not just the shape of this Patio Table that's unique. The joinery that goes into building the table is similar to what you'd find in an indoor table. Yet all the joints are made with just a table saw and a router.



This Patio Table isn't shaped like a standard picnic table, and it's not built like one either. Making it involves cutting three joints: lap joints, mortise and tenons, and splined miters. Not the joinery you'd expect to find in an outdoor project.

JOINERY. But the biggest challenge is not in making the joints for the base. The main challenge comes in accurately cutting the miters for the frame around the top. With sixteen miters to cut, any error gets multiplied when the frame is assembled.

So the secret is to take your time and make a test frame from scrap wood first. Then, when you're done, you'll have a table for outdoors that's built with the craftsmanship of indoor furniture.

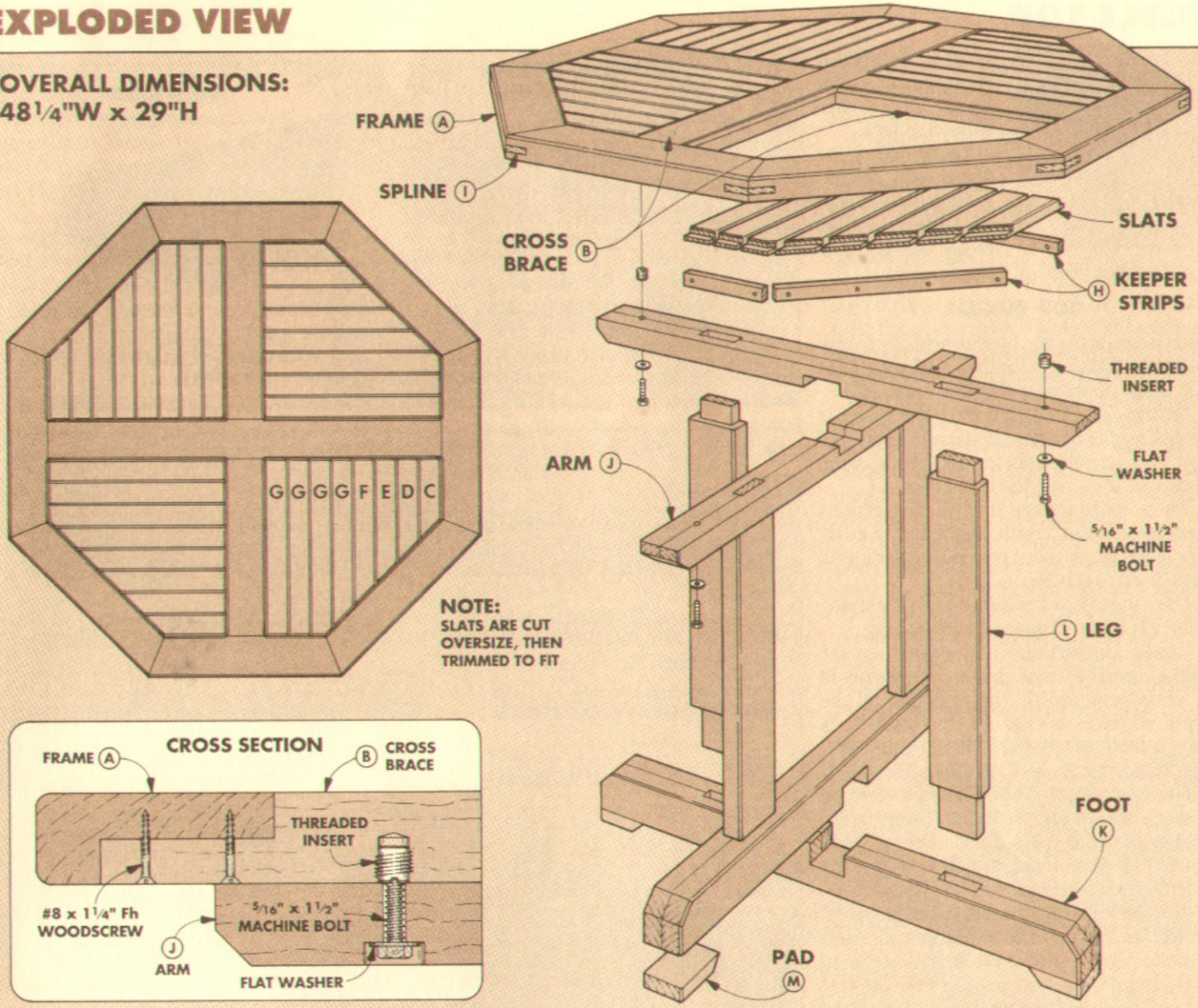
SUPPLIES. I used clear heart redwood for the table base and top frame. White oak and cedar are good alternatives. In fact, I made the top slats of western red cedar — they add contrast and hold down the cost.

The main joints in the table have no hardware, they're assembled with moisture-resistant glue. Keeper strips and screws hold the top slats in place. The top itself is secured to the base with threaded inserts and machine bolts. (This makes it easy to break the table down for storage in the winter.)

To reduce the effects of the elements in the summer, the table is finished with a mixture of spar varnish and tung oil, see Sources, page 31.

EXPLODED VIEW

OVERALL DIMENSIONS:
48¼"W x 29"H



MATERIALS

TOP

A Frame (8)	1½ x 4 - 20
B Cross Brace (2)	1½ x 4 - 46¼
C Slats (4)	¾ x 2⅛ - 9 Rgh
D Slats (4)	¾ x 2⅛ - 12 Rgh
E Slats (4)	¾ x 2⅛ - 14 Rgh
F Slats (4)	¾ x 2⅛ - 17 Rgh
G Slats (16)	¾ x 2⅛ - 19 Rgh
H Keeper Strips (4)	⅜ x ¾ - 45 Rgh
I Splines (8)	½ x 6 - 4 Rgh

BASE

J Arms (2)	1⅜ x 2¾ - 42
K Feet (2)	2¾ x 3 - 42
L Legs (4)	1½ x 4 - 26¾
M Pads (4)	¾ x 2¾ - 4

SUPPLIES

- (4) 5/16" Thrd. Inserts & 1½" Mach. Bolts
- (16) #8 x 1¼" Fh Woodscrews
- (40) #6 x 1" Fh Woodscrews (64) Brads

CUTTING DIAGRAM

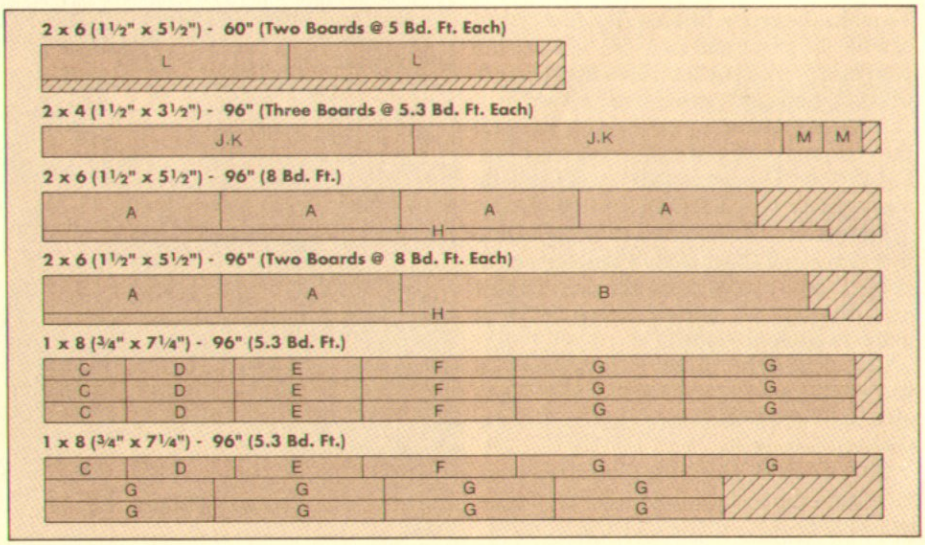


TABLE TOP

The top of the table is an eight-sided frame joined with splined miters.

To strengthen the frame, a pair of interlocking cross braces is added. These create four openings that are later filled with the top slats.

TOP FRAME

Start work on the top by cutting eight **frame sections (A)** from a 2x6 to rough lengths of 22". Then rip these to finished width (4").

MITERS. To check that the miter gauge is set at the exact angle, I first made a series of test cuts on eight pieces of 4"-wide scrap plywood. (Also, see the tip on page 4.)

Then, to guarantee that all the sections were identical in length, I attached an auxiliary fence to my miter gauge and clamped a stop block to this fence.

Once the test pieces form a perfect octagon, miter all eight sections to length, see Fig. 1.

KERFS AND SPLINES. To strengthen the joints, I used ½"-thick splines. The splines fit in kerfs centered on the thickness of the frame sections, see Fig. 1a. I cut these kerfs on the table saw using a dado blade and a special jig, see Shop Notes, page 16.

Next, make the splines by resawing enough stock to fit the kerfs. Then cut the splines to width and length, refer to Fig. 4. Note: For maximum strength, orient the grain of the spline across the joint line.

POCKETS. The next step is to cut "pockets" on the underside of four of the frame sections to receive the cross braces, refer to Figs. 1 and 3. I roughed-out these pockets using the router with a straight bit, routing to within ⅛" of the layout lines. Then I cleaned up to the lines with a chisel.

CROSS BRACES

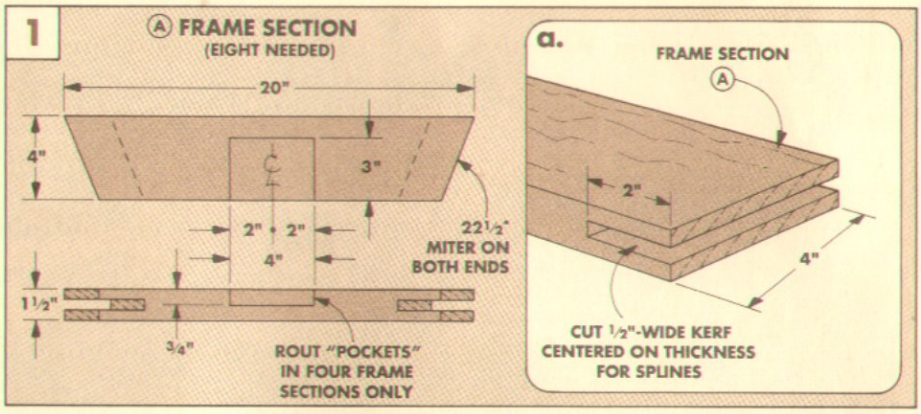
To make the **cross braces (B)**, first dry-assemble the frame and measure between the extremes of each pocket. Then cut two pieces of 2x6 to this length, and also to final width.

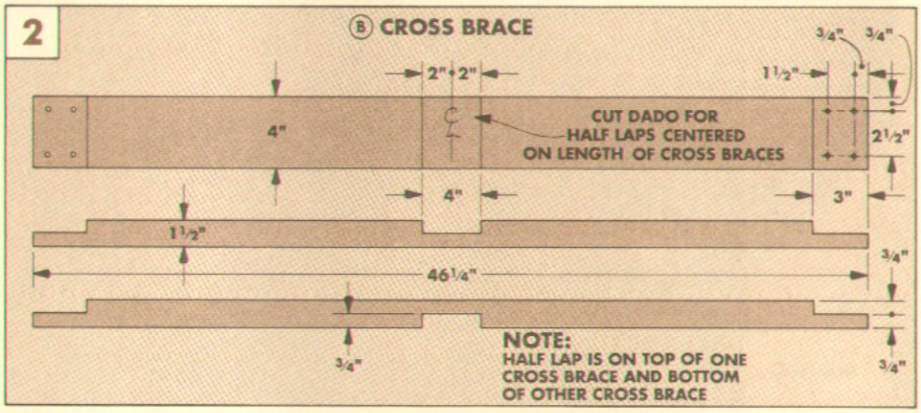
HALF LAPS. Now lay out half-lap joints on the ends and center of each cross brace, see Fig. 2. Note: The center half lap is cut on the *top* of one brace and the *bottom* of the other.

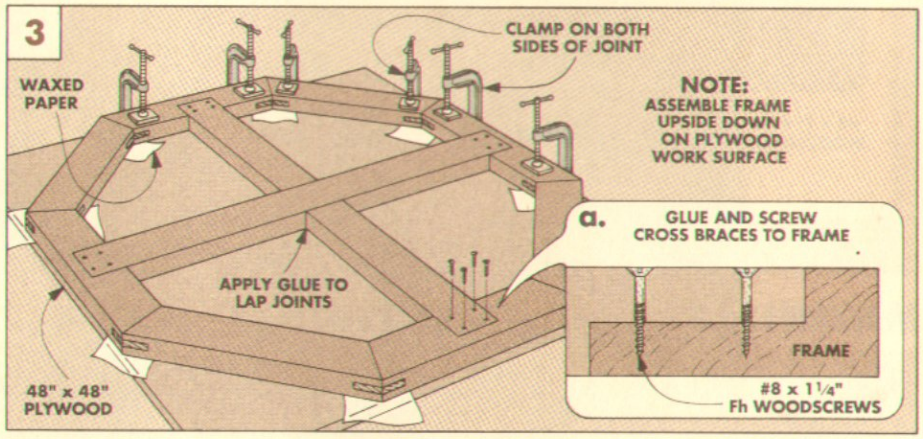
ASSEMBLY. I assembled the top upside down on a half sheet of plywood, see Fig. 3. Spread some plastic resin glue in each saw kerf, then add the splines. (See page 31 for more on outdoor glues.)

Clamp the frame pieces to the plywood as you work your way around the table. Then glue and screw the cross braces into the pockets, see Fig. 3a.

TRIM SPLINES. Once the glue dries, trim, then sand the splines flush with the inside and outside edges of the frame, see Fig. 4a.







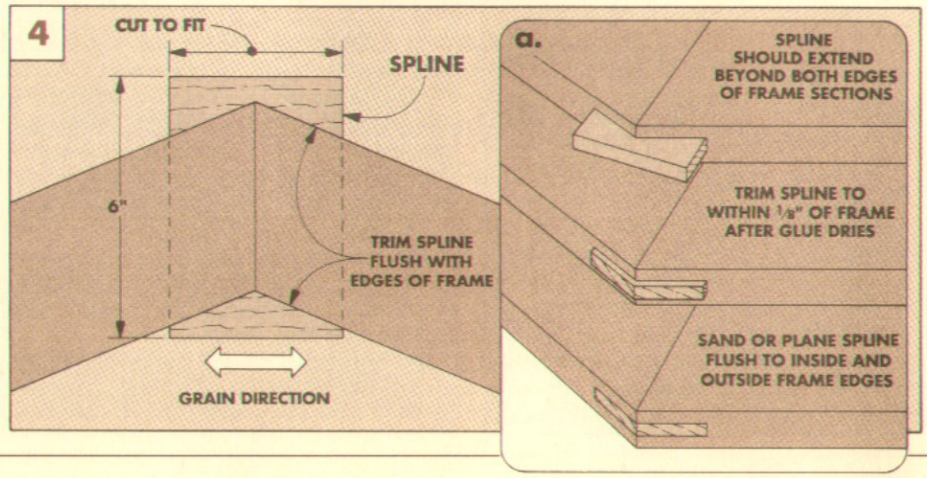


TABLE TOP CONTINUED

With the top frame assembled, the next step is to round over the edges.

ROUND-OVERS. To round over the *outside* edges of the frame, I used a ¼" round-over bit, routing in a counter-clockwise direction, see Fig. 5.

For the top *inside* edges of the frame — and also the top edges of the cross braces — I used a ⅛" round-over bit, routing in a clockwise direction, see Fig. 5.

RABBETS. When the top slats are added, they're held in place by a series of keeper strips attached to the underside of the frame, refer to Fig. 9. The slats rest on a ledge rabbeted into the frame. The ledge is formed by routing a ⅜"-wide rabbet along the bottom inside openings of the frame, see Fig. 6.

Make at least two passes to rout the 1"-deep rabbet, leaving a ½"-thick lip to support the slats, see Fig. 6a. Then square up the corners with a chisel.

TOP SLATS

Each of the four openings contains eight slats. The slats start out as blanks of differing lengths that are individually cut to fit.

RIP SLATS TO WIDTH. The top slats (C,D,E,F,G) fit into the frame openings with equal ⅛"-wide spacing between them, see Fig. 7. To determine how wide each slat should be, first measure across the widest part of the opening. (All four openings must be the same size.)

Then, to allow for nine ⅛"-wide gaps, subtract 1⅛" from this measurement. Finally, divide this figure by eight to obtain the desired width of the slats. (In my case, 2⅛".)

Now enough ¾"-thick stock for all 32 slats can be cut to this finished width, refer to the Cutting Diagram on page 7.

CUT TO ROUGH LENGTH. With the stock for the slats ripped to uniform width, they can be cut to length. To minimize waste, I started by first cutting them to five different rough lengths, refer to parts C,D,E,F, and G in the Materials List on page 7.

MEASURE AND FIT. The procedure for cutting the slats to finished length is the same for each of the four openings. So for each opening, first cut a 45° miter across the outside end of the *five shortest* slat blanks, see Fig. 7 and the Exploded View on page 7.

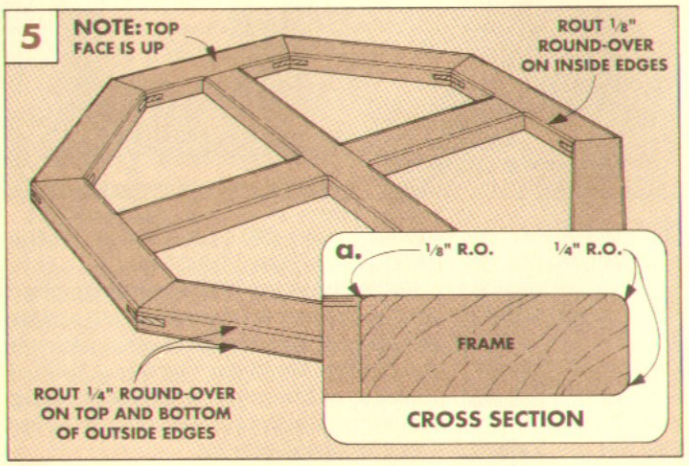
Next, position the slats over the opening with a ⅛"-thick temporary spacer positioned on both sides of each slat. Now make a pencil mark on the inside end of *all eight* slats to indicate where it meets the edge of the cross brace, see Fig. 7. Then cross-cut each slat to finished length at the pencil mark.

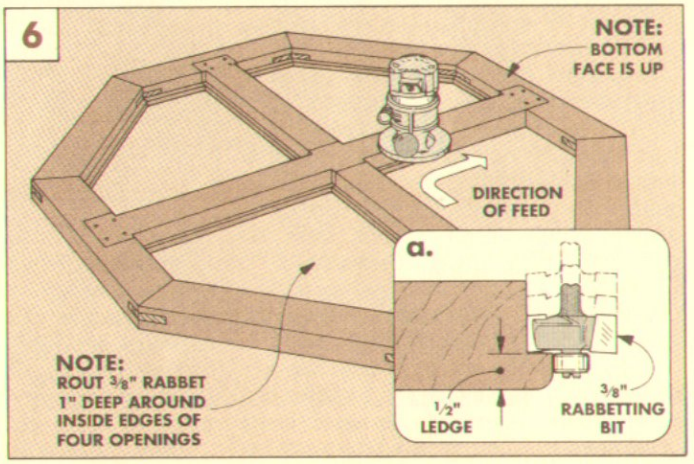
RABBETS. The slats should fit in the openings now, but they won't be flush with the top surface of the table frame. To get them flush, cut rabbets on the ends of each slat, see Figs. 8 and 9. I cut the rabbets with a dado blade on the table saw.

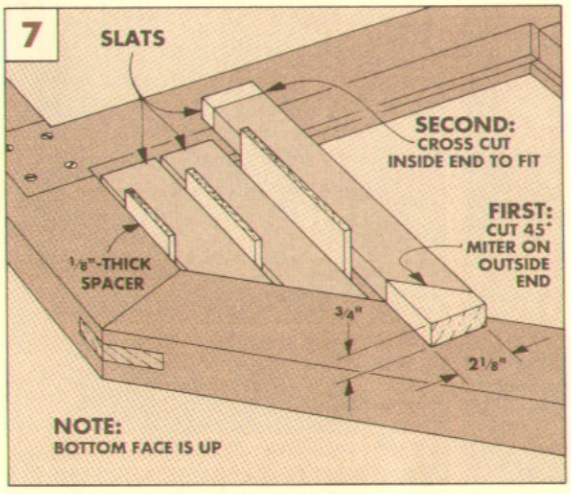
ROUND-OVERS. Now round over all four top edges of each slat with a ⅛" round-over bit in the router table. (Note: The bearing on the router bit has to be removed for routing the rabbeted ends, see Shop Notes, page 17.)

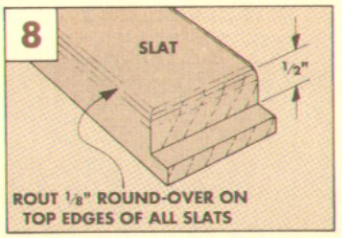
INSTALL THE SLATS. Next, to maintain a uniform space between the slats, I tacked them in place, one at a time, through the rabbeted ends, see Fig. 9. Position the temporary ⅛" spacers between each slat as they are tacked down, refer to Fig. 7.

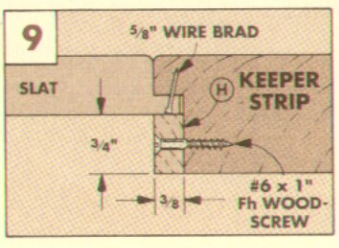
KEEPER STRIPS. When all the slats have been tacked in place, rip enough ⅜"-thick stock for **keeper strips (H)** to a finished width of ¾", see Fig. 9. Then cut each keeper strip to fit, and screw them under the slats, see Fig. 10. Note: Don't glue the keeper strips in place. This way it's no problem to replace damaged or broken slats later.











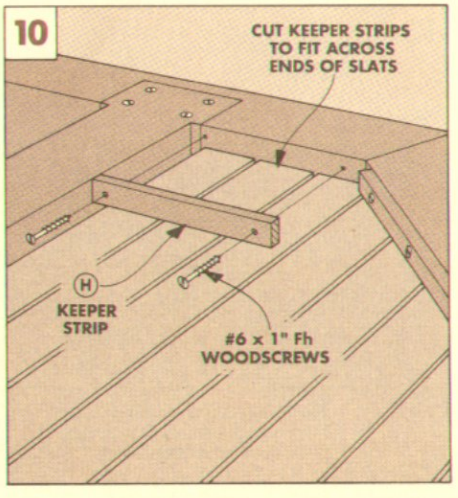
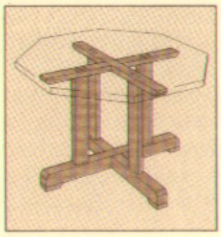


TABLE BASE



When the table top is complete, work can begin on the base. The base has four legs joined to cross-shaped arm (top) and foot assemblies.

I started by making the arms and feet from three identical blanks. (Two of the blanks are the feet. The third blank is ripped in half to become a pair of arms.)

Each blank is made from two 2x4s that are glued together, see Fig. 12. Start by planing (or resawing) one face of each 2x4 (to 1⅜") to provide a clean, flat gluing surface.

There's a trick to forming the mortises in each blank. Before gluing the planed faces of the 2x4s together, cut ½"-deep notches across each face, see Fig. 11. Then, when the pieces are glued together, the notches form mortises, see Fig. 11a. Shop Tip: To keep the dadoes aligned while you're gluing up the 2x4s, fill the mortises with temporary "tenons."

After the pieces are glued together, rip the assembly to 3" wide, see Fig. 12.

FEET

Once the blanks are cut to size, set one blank aside (for the arms) and continue working on the other two (for the feet).

HALF LAPS. The two feet are joined into a cross shape with half-lap joints, refer to Fig. 17. To make identical "self-centering" half laps, I used the rip fence as a stop together with an auxiliary fence screwed to the miter gauge. (Shop Note: It's okay to use the miter gauge with the rip fence since you're not cutting all the way through the wood.)

To make these half laps, first lay out the position of a 2¾"-wide notch centered on the length of one foot blank, see Fig. 12a.

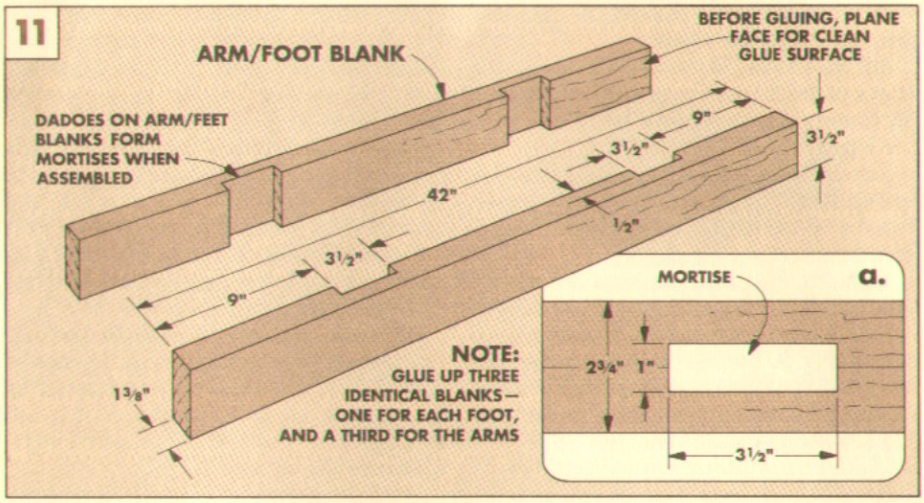
Then, to cut the notches, make two cuts on each piece, turning the piece end-for-end between cuts. This defines the outside limits of the notches. Then clean out the waste between the first two cuts with additional cuts.

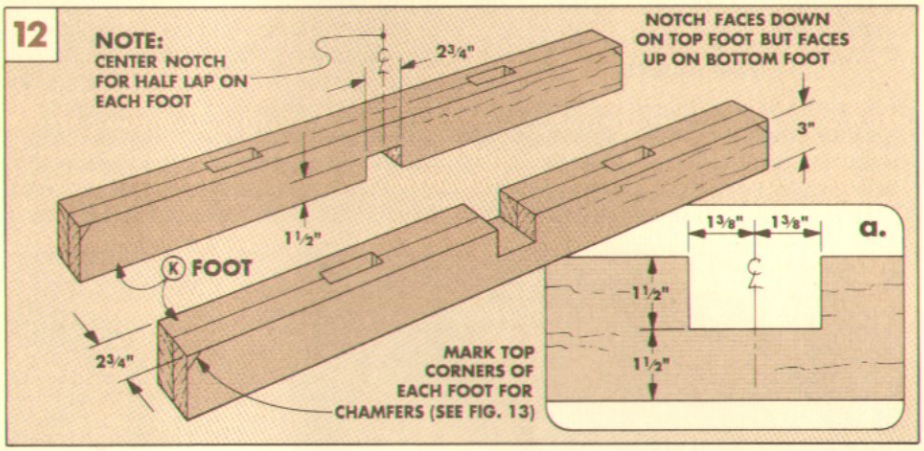
CHAMFERS. When you're done cutting the notches that form the half laps, lay out and cut a decorative chamfer on the top ends of each foot, see Figs. 13 and 13a.

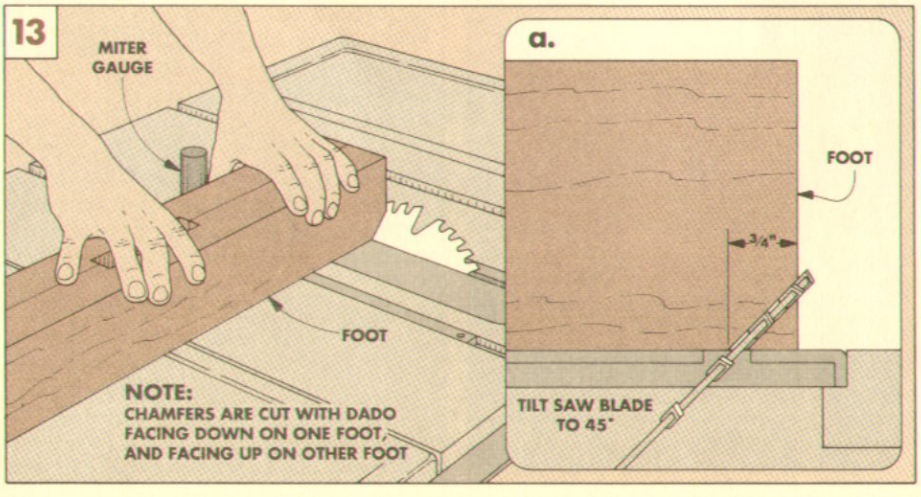
Note: The chamfers are cut with the half-lap notch *down* on one foot, and the half-lap notch *up* on the other, see Fig. 12.

PADS. To keep the table feet dry, I glued ¾"-thick **pads (M)** to the bottom ends of each foot, see Figs. 14 and 14a.

ASSEMBLE FEET. With the pads in place, the feet can now be assembled into a cross-shaped unit. I used plastic resin glue and clamped the two pieces together. Finally, to minimize splintering, I softened the upper edges (and also the outside ends) of the feet with a ¼" round-over bit.







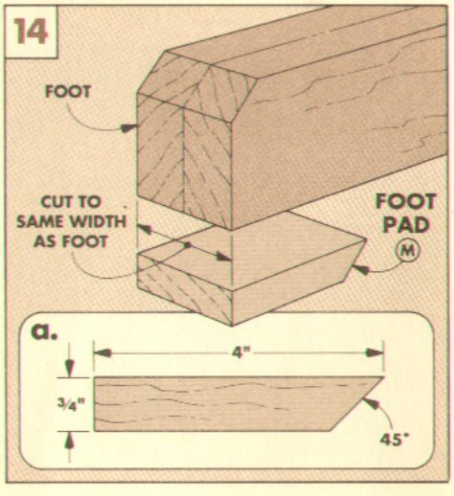


TABLE BASE CONTINUED

ARMS

To make the arms, start by ripping the remaining glued-up blank into two 1⅜"-thick pieces. Do this by first ripping one to finished size, then ripping the other to match the first.

Note: Unless your saw can cut 3" deep, you'll have to make two passes to rip each arm, see Figs. 15a and 15b.

HALF-LAPS. To cut the notches that form the half-lap joint, first lay out the position of the notch centered on the length of one of the arms, see Fig. 15. Then cut the notches using the same procedure as on the feet.

CHAMFER. When the arms are cut to finished size, cut a 45° chamfer across the ends of each arm. Again, orient the chamfers in relation to the center half laps, see Fig. 15.

ASSEMBLE & ROUND OVER. Now glue and clamp the arms together at the lap joint. Then complete the arms by routing a ¼" round-over on the lower edges, see Fig. 17.

LEGS

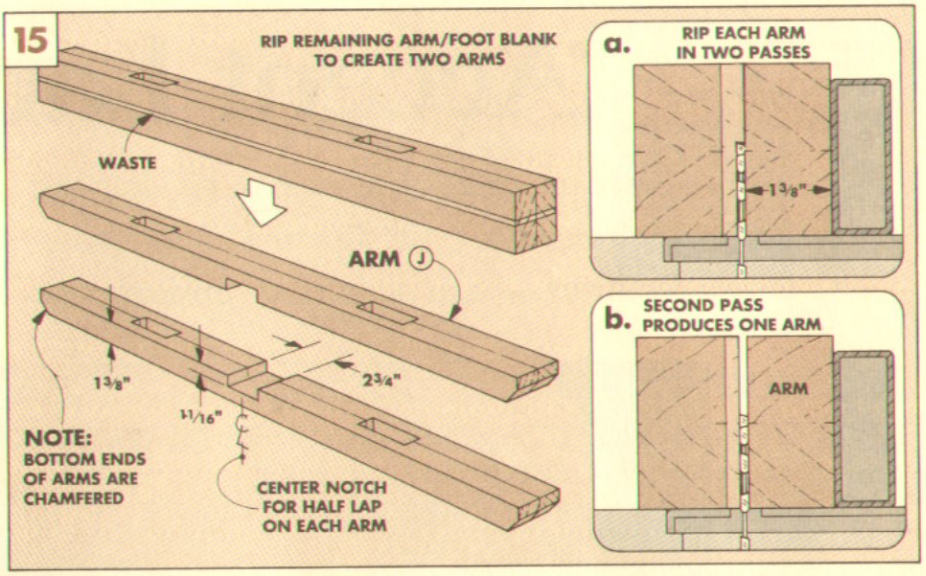
To make the legs, start by cutting four lengths of 2x6 to finished dimensions, see Fig. 16.

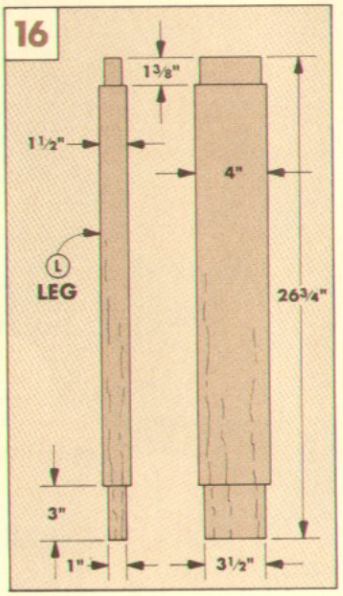
TENONS. After the legs are cut to size, the tenons can be cut on each end of the legs, see Fig. 16. (Note: Since the arms and feet are different thicknesses, the tenons at the top of the legs are a different length than the tenons at the bottom of the legs.)

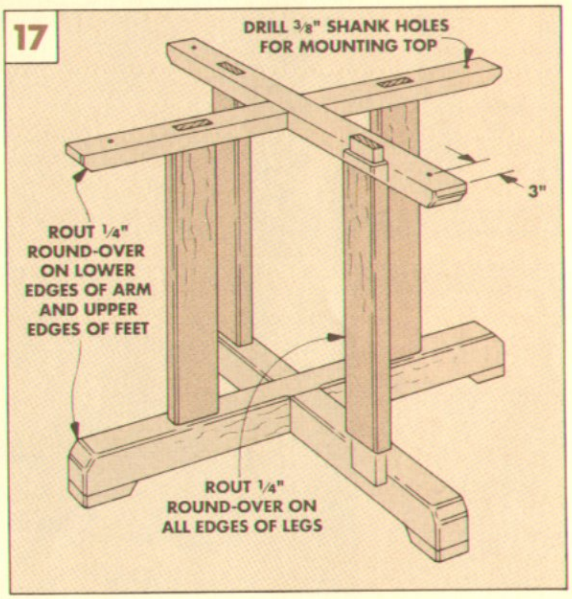
To cut the tenons, I used a dado blade to make a shoulder cut on each piece with the end of the leg butted to the rip fence. Then I made multiple passes to complete the tenon.

ROUND-OVERS. Before assembling the base, rout a ¼" round-over on the edges (but not the tenons) of all four legs, see Fig. 17.

ASSEMBLE THE BASE. To assemble the table base, first glue the legs, one at a time, into the mortises in the feet assembly, see Fig. 17. Then glue the arm assembly onto the top ends of the legs.







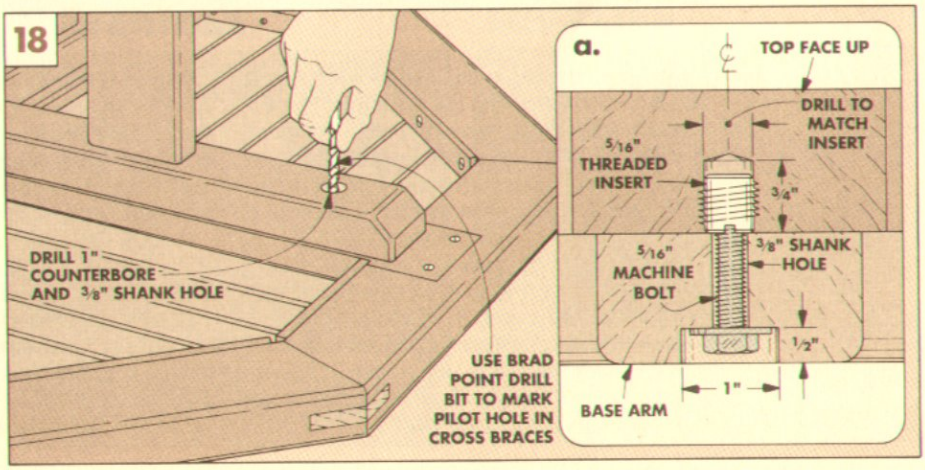
ATTACH THE TOP

With the table base assembled, the table top can be attached to the base.

COUNTERBORES AND SHANK HOLES. Begin by drilling a counterbore and shank hole near the chamfered end and centered on the width of each arm, see Figs. 17 and 18.

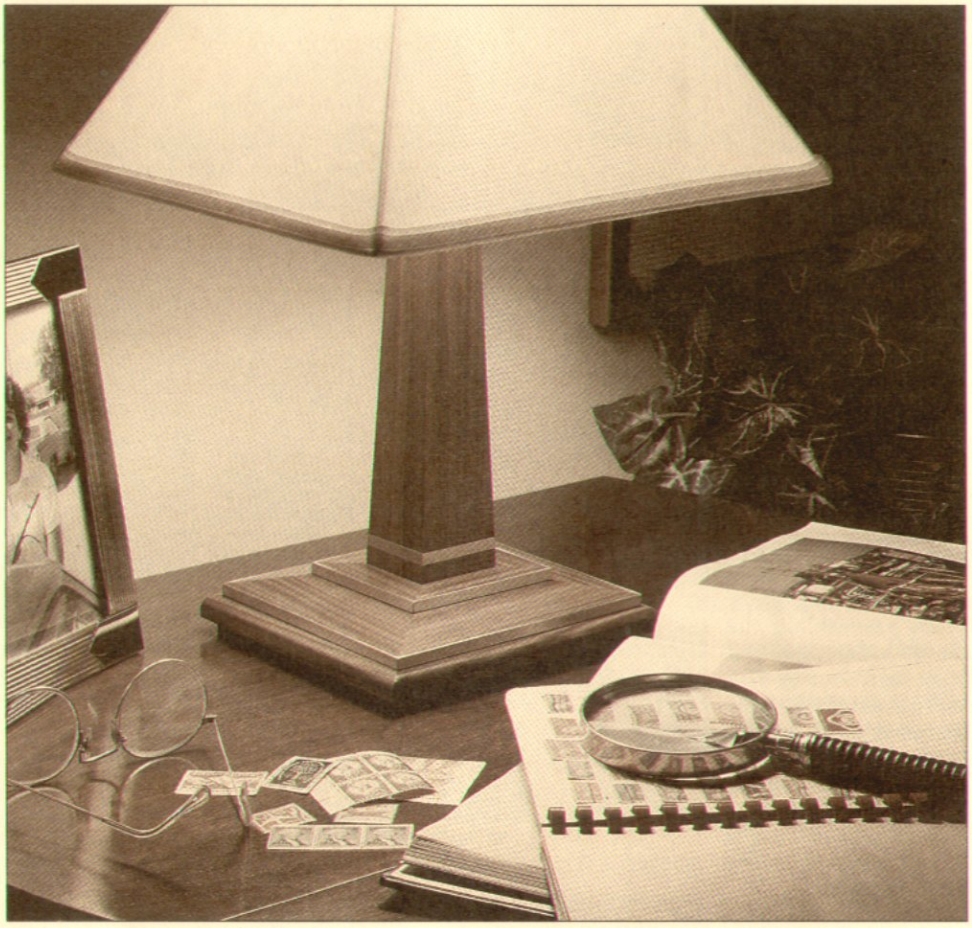
THREADED INSERTS. Now position the top and base upside down and center the arms on the cross braces. Make a punch mark through each shank hole to indicate the location of a hole for a threaded insert, see Fig. 18. Then drill holes for the inserts, see Fig. 18a.

INSTALL INSERTS. With all the holes drilled, install the threaded inserts in the cross braces. (For sources of bolts and inserts, see page 31.) Finally, attach the base to the top with 5/16" x 1½" machine bolts, see Fig. 18a.



Accent Lamp

There are three challenges to building this lamp — getting the cord through the post, tapering a short piece, and adding decorative strips — and all have surprisingly simple solutions.



Any time you build a lamp with a post, you're faced with the question of how to get the electrical cord through the post. Instead of using an extra long drill bit, or drilling a hole from both ends, I glued up the post from several pieces and left a channel in the center for the electrical cord.

TAPER. Another challenge with this project was to find a safe way to cut a taper on all four sides of the short post. To do this, I came up with a surprisingly simple jig that automatically sets the taper — *and* is safe to use. It's just a square block of wood with an off-center dowel (for more information, see page 13).

WOOD. After I made the original lamp out of walnut with brass strips (as shown in the photo above), we made several variations using different woods: oak and mahogany — and decorative strips made out of a variety of metals and contrasting woods.

FINISH. To protect both the lamp and the decorative strips, I used a spray can of Deft Satin Clear Wood Finish and sprayed on two coats.

HARDWARE. You should be able to purchase most of the hardware, the electrical supplies and the lamp shade at a local lighting store. Or *Woodsmith Project Supplies* is offering a hardware kit and the shade, see page 31.

POST

I began work on the lamp by making the tapered post. Instead of using solid stock and drilling a hole the length of the post for the electrical cord, it's easier to glue up four pieces, see Fig. 1. This way you can build in a channel for the electrical cord.

CUT POST PIECES. Start by cutting two **post sides (A)** from ¾"-thick stock to a finished width of 2" and rough length of 10", see Fig. 1. Then, cut two **post spacers (B)** from ½"-thick stock to the same length as the sides but only ¾"-wide. These spacers are sandwiched between the sides (A) to provide the channel for the cord. This also will create a post that starts out as a perfect square, see Fig. 1a.

GLUE-UP POST. The trick in gluing up the post is assembling all the pieces so the edges are flush. This forms the square channel for the cord in the center.

To do this, I inserted a short length of ½" dowel in each end as a temporary spacer. Then I glued and clamped the sides and spacers together as a unit, see Fig. 1a. After the glue dries, cut the post to a finished length of 9½".

TAPER JIG. The next step is to cut a taper on all four sides of the post. To do this, I made a simple jig to hold one end of the lamp post away from the rip fence as it's fed through the blade, refer to Fig. 3.

The jig is just a 2" x 2" block (the same size as the end of the lamp post), see Fig. 2. The trick is to mount a ½" dowel *off center* on the block to create an angle to taper the post.

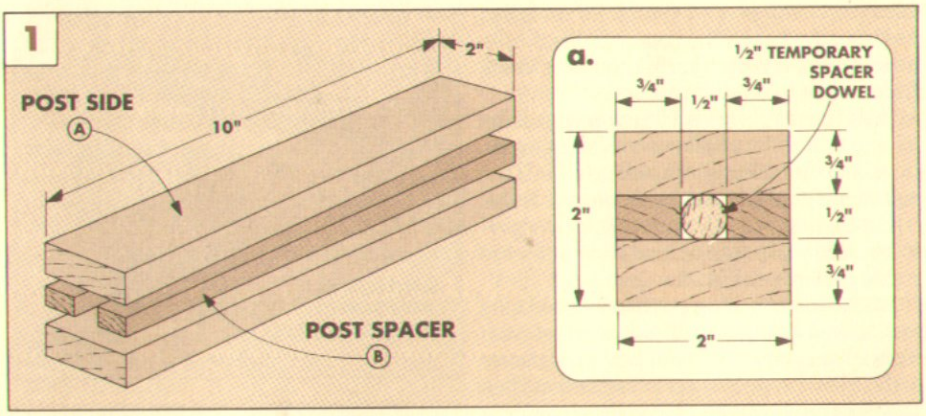
CUT TAPER. To use the jig, first insert the dowel in the top end of the lamp post, see Fig. 3. Now position the rip fence so the bottom end of the post fits tight between the saw blade and the fence, see Fig. 3a.

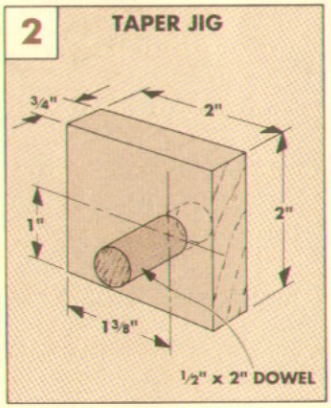
Then place the post against the rip fence, see Fig. 3. (Note: If your table saw has a short fence, you'll need to clamp or screw an auxiliary fence to the rip fence first so the post is supported through the entire cut.) Once the saw is set up, cut the first taper. (For safety, I used a push block, see Fig. 3.)

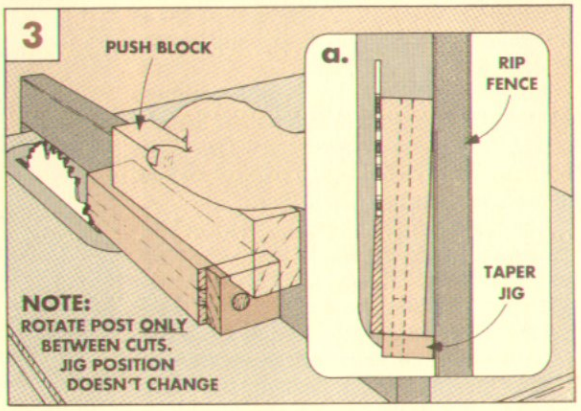
Since this jig works off the dowel in the end of the post, all you have to do is rotate the post between cuts. So after making the first cut, rotate the post 90° and make another cut. (Note: Do *not* rotate the jig between cuts. Always keep the edge of the jig that's farthest away from the dowel against the rip fence.)

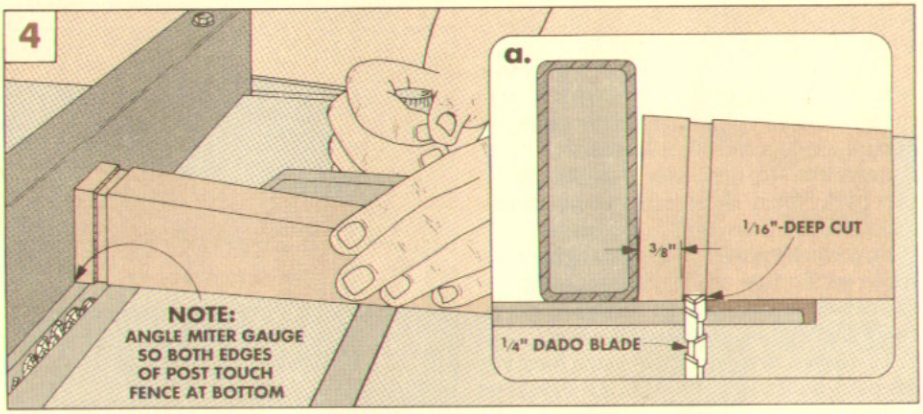
DADOES FOR INLAY. Once a taper is cut on all four sides of the post, cut shallow dadoes for inlay strips near the bottom. I did this on the table saw with a ¼" dado blade, see Fig. 4a. Use the rip fence as a stop by setting it ⅜" away from the saw blade. Then angle the miter gauge to match the angle of the tapered post, and push the post over the blade, see Fig. 4.

Shop Note: Since this is not a through cut, it's okay to use the rip fence as a stop.







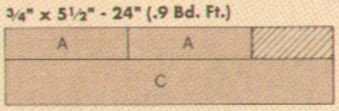


MATERIALS

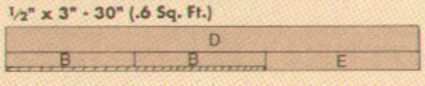
OVERALL DIMENSIONS (WITH SHADE)
12"W x 19"H x 12"D

A	Post Sides (2)	¾ x 2 - 9½
B	Post Spacers (2)	½ x ¾ - 9½
C	Platform Pieces (4)	¾ x 2⅞ - 6⅜
D	Frame Pieces (4)	½ x 1½ - 7
E	Feet (4)	¼ x 1 - 1

¾" x 5½" - 24" (.9 Bd. Ft.)



½" x 3" - 30" (.6 Sq. Ft.)



SUPPLIES

- .9 Bd. Ft. of ¾"-thick Walnut
- .6 Sq. Ft. of ½"-thick Walnut
- (5) 12" Brass Strips (0.064" x ¼")
- (1) 1 oz. Tube of "Instant" Glue
- (1) 6 foot Line Cord and Plug
- (1) 11" Straight Fixture Pipe (⅛" I.P.S.)
- (1) 1"-dia. Steel Washer (fits pipe)
- (1) Lock Washer and Nut (fits pipe)
- (1) 1⅛"-dia. Brass Check Ring
- (1) 7" Shade Harp with Finial
- (1) Push-Through Lamp Socket
- (1) Lamp Shade
- (4) No. 8 x ¾" Flathead Woodscrews
- (2) No. 8 x 1¼" Flathead Woodscrews
- (1) Can of Deft Satin Clear Wood Finish

LAMP BASE

Once the lamp post is complete, work can begin on the base. The base is built up from a ¾"-thick platform that sits on a ½"-thick frame, refer to Fig. 11.

Both the platform and frame are made by joining four mitered pieces to form squares. Instead of mitering short pieces to form the squares, it's safer to start with longer blanks.

CUT BLANKS. First, cut a blank for the platform pieces (see Fig. 5), and a blank for the frame pieces, see Fig. 6.

MITER SET-UP. After cutting these blanks to size, cut four mitered pieces off of each blank. To do this, I first screwed a long fence to the miter gauge to support the pieces. Then I set the miter gauge to 45° and clamped the blank to the fence so it wouldn't "creep" as the miter is cut. Now miter one end of each blank, see Step 1 in Fig. 7.

PLATFORM PIECES. To cut the **platform pieces (C)**, measure 6⅜" from the mitered point of the blank and make a mark. Then align the mark with the blade and clamp the blank to the fence, see Step 2 in Fig. 7.

You can cut four mitered pieces to identical lengths by using the rip fence as a stop, see Step 2 in Fig. 7. Clamp a block to the fence, and then position the fence so the block butts against the pointed end of the blank. (The block keeps the cut-offs from binding.)

After making the cut, unclamp the blank, turn it over, slide the point against the block, and make another cut. Then repeat this procedure for the remaining pieces.

CUT FRAME PIECES. To cut the **frame pieces (D)** to length, make a mark 7" from the mitered point. Then repeat the same procedure used for the platform pieces.

GLUE-UP. The next step is to glue up the pieces to form the platform and frame squares. (For more on this, see page 17.)

PLATFORM PROFILE. Next, an angled cut is made on the face of the platform to "raise" the center section with ¼"-high shoulders, while also leaving a ¼" lip at the base.

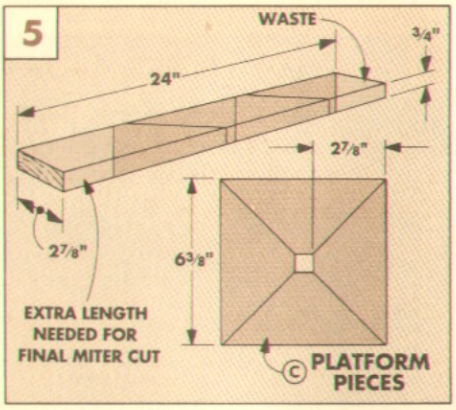
To do this, first adjust the blade for a ¼"-deep cut, and cut kerfs to form the shoulders of the raised center section, see Fig. 8.

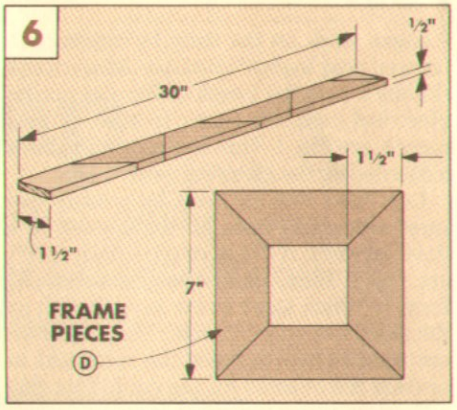
To support the platform for the angled cut, I used an auxiliary fence, see Fig. 9. Set the blade 1 7/16" high, tilt it to an 11° angle, and move the rip fence ¼" from the blade. Test this cut on a scrap piece, and then cut the platform, see Fig. 9. (Save the test piece for clamping the decorative strips later.)

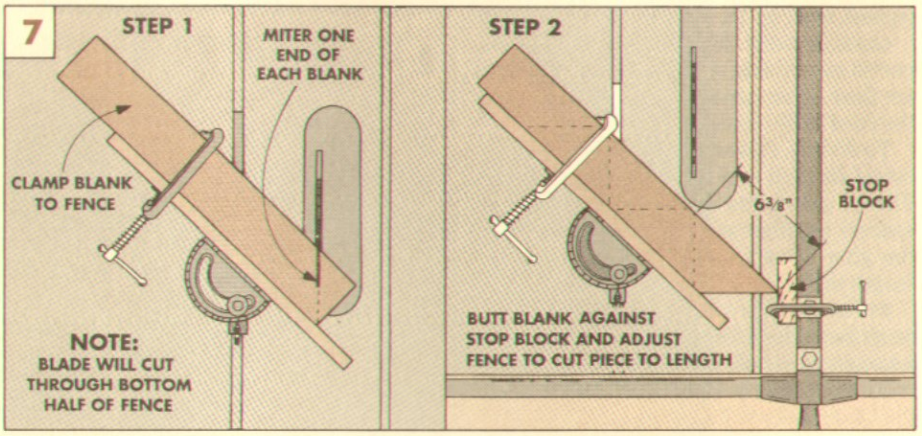
Safety Note: The narrow edge of the platform can slip into the opening along the blade. To prevent this, I made a wooden (zero clearance) insert that fits tight to the blade.

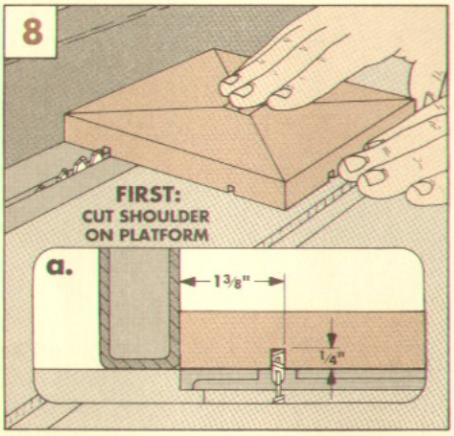
ROUND OVER FRAME. As for the base frame, round over the top edge with a ¼" round-over bit, see Fig. 10.

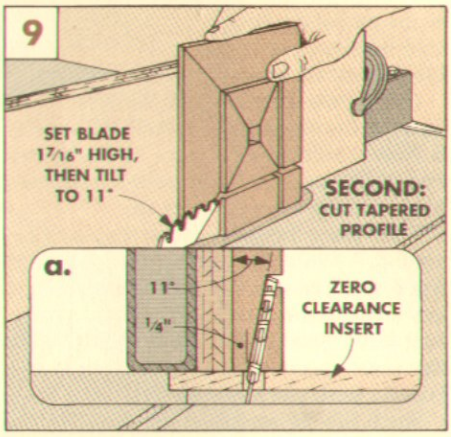
ASSEMBLY. To assemble the base, first screw the frame to the platform, see Fig. 11. Then glue on four 1"-square **feet (E)**.

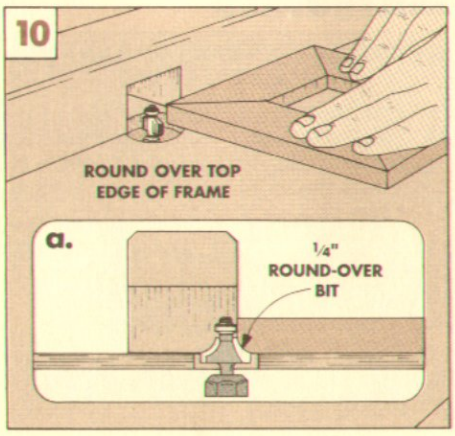


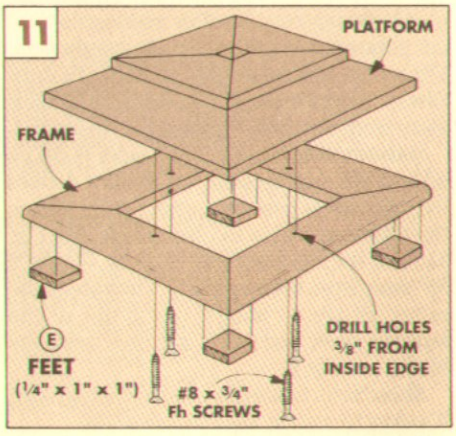












DECORATIVE STRIPS

After the base is assembled, the next step is to cut and miter ¼"-wide decorative strips. The strips fit in the dadoes in the post, and around the shoulders of the base, see Fig. 12.

I chose brass for the strips, but you could use thin strips of contrasting wood, see photo on Contents page. (For sources of brass, see page 31.) Whether you use wood or brass, you'll need five 1/16"-thick strips, each 12"-long, to make one lamp.

MITER JIG. To accurately cut and miter the strips, I made a simple jig. The jig has a ¼"-wide groove along the edge to hold the strip, see Fig. 13. Then one end is mitered at 45°, and a shallow kerf is cut near the other end.

BASE STRIPS. To use this jig, place a strip of brass in the groove and miter one end with a file, using the mitered end of the jig as a guide for the file, see Fig. 13.

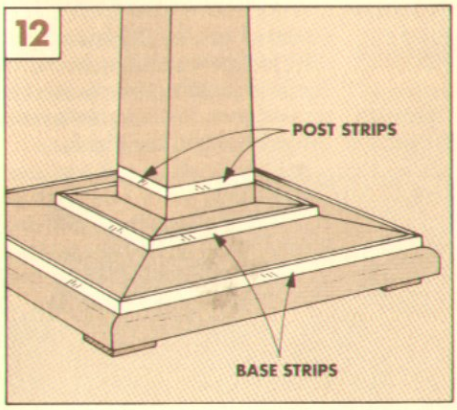
Then hold the strip against the base of the lamp and mark the rough length. Since brass is easy to file, I cut the strip oversize (about ⅛" too long). Then I mitered the cut-off end with a file. Note: Sneak up on the final length by periodically checking the fit of the strip against the base.

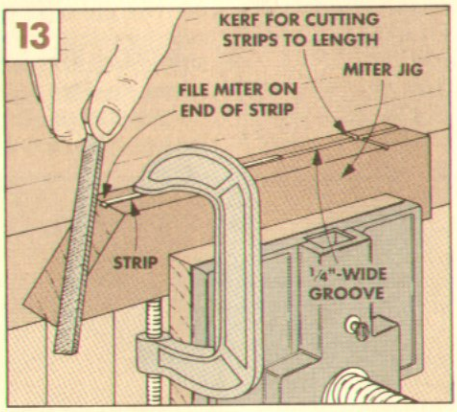
GLUE STRIPS. When the fit is exact, rough up the back of the strip with sandpaper and glue it in place (see Shop Notes on page 17 for more on this). I used an "instant" glue to glue on the strips (see Sources, page 31). Continue fitting and gluing on one strip at a time until the trim on the base is complete.

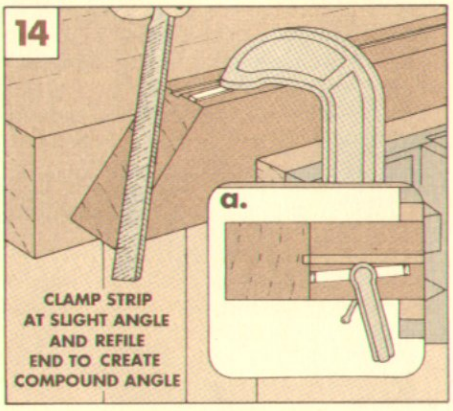
POST STRIPS. Since the post is tapered, the inlay strips that fit in the dadoes of the post require a compound miter.

To make this compound miter, first cut each strip to length and file a miter on both ends. Then place a strip on the jig so the strip is slightly skewed (about 2°) and refile the angle to a compound miter, see Fig. 14.

Next, turn the strip end-for-end, skew it in the opposite direction, and file another compound miter. Do this for each of the post strips and glue them into the dadoes.







ASSEMBLY

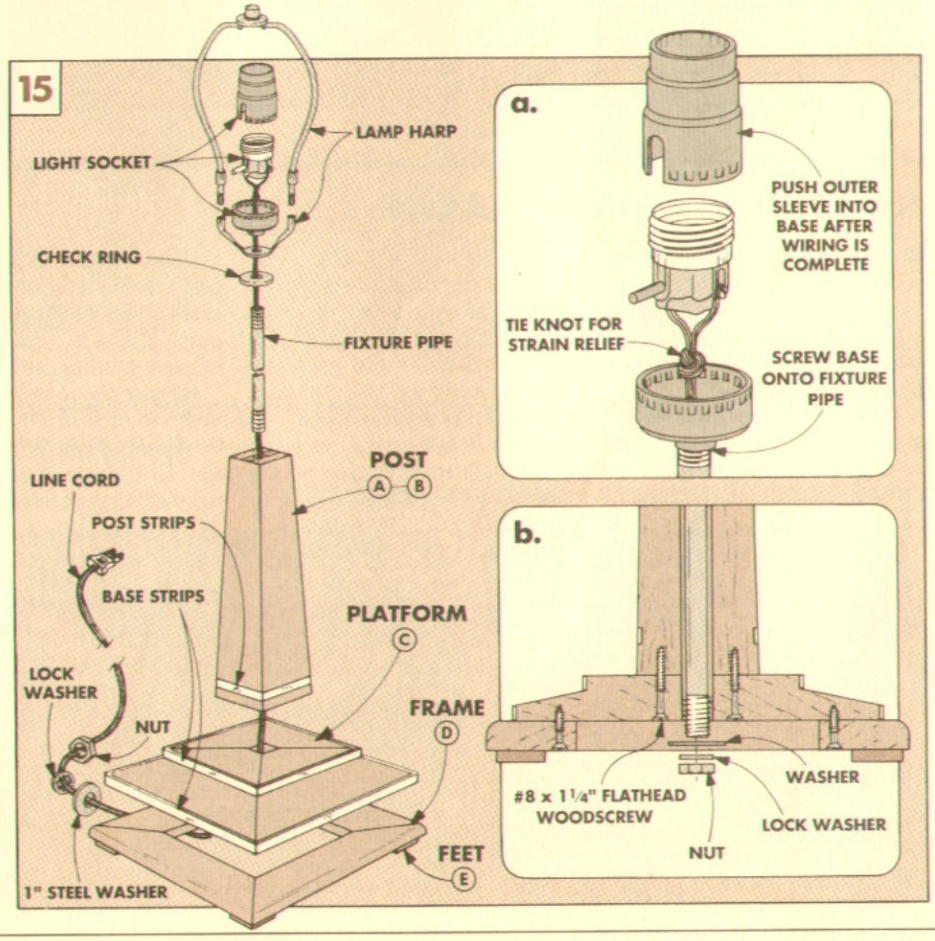
Before assembling the lamp, I applied the finish. I sprayed on two coats of Deft Satin Clear Wood Finish to the post and base. After the finish dried, I screwed the post to the base with two No. 8 x 1¼" flathead woodscrews, see Fig. 15b.

HARDWARE. Next comes the hardware. (*Woodsmith Project Supplies* is offering a complete hardware kit for this lamp, see Sources on page 31.) To install the hardware, start by screwing the threaded base of the light socket onto the straight fixture pipe, see Fig. 15a.

Then, slide the pipe through the "harp" and the 1⅛"-diameter check ring and slide this assembly into the square hole in the post, see Fig. 15. Next, use a flat washer, lock washer, and nut to secure the fixture pipe to the base, see Fig. 15b.

WIRING. The next step is to thread the wire through the pipe and up into the base of the socket. Then to provide strain relief for the cord, tie a knot near the cut end of the wire. Now separate the two wires and strip ½" of the insulation from each wire, see Fig. 15a.

Next, wrap a wire around each of the socket screws and tighten the screws, see Fig. 15a. To complete the assembly, push the light socket into its base so the tabs lock in place. Now add the light bulb and shade. Finally, before you turn the lamp on, make sure to plug it in.



Shop Notes

KERFING JIG

I ran into a problem as I was building the frame for the top of the Patio Table (page 6). The frame sections of the table top are mitered then joined with splines that fit in kerfs. But they're not just any splines — these splines are ½" thick and 4" long. Which means cutting some pretty serious kerfs. (I used a ½"-wide dado blade set to cut 2" deep.)

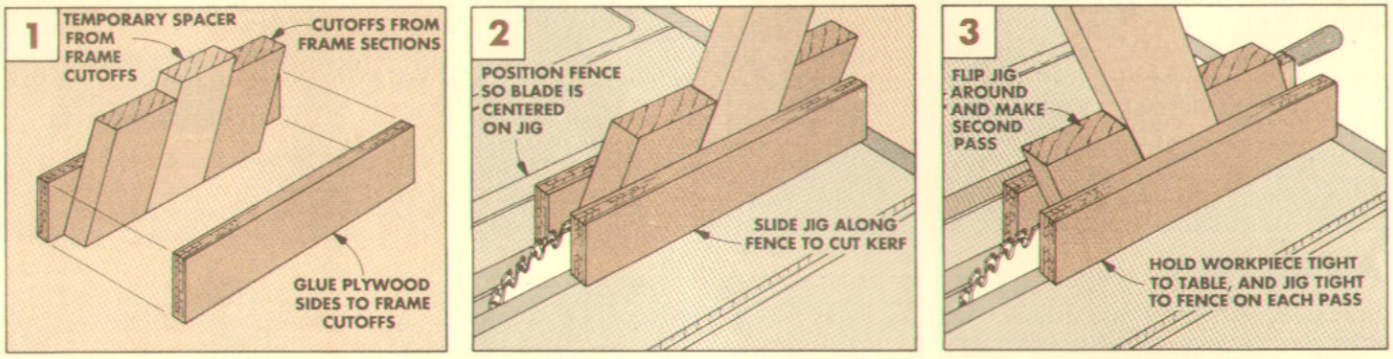
With that much blade exposed I wanted my hands in a safe position, but still in control of the workpiece. The jig I came up with securely supports the workpiece as it runs vertically along the rip fence. It also prevents chipout at the back end of the cut.

MAKING THE JIG. Two of the pieces needed to make this jig are cutoffs from the already-mitered frame sections. The other two parts of the jig are simply plywood strips that hold the jig together and create a "pocket" for the workpiece.

To make the kerfing jig, glue the two plywood sides to the mitered cutoffs with a third cutoff temporarily held in place as a spacer, see Fig. 1.

USING THE JIG. To cut a kerf on the end of a mitered workpiece, first raise the saw blade to the desired depth. Then position the jig against the rip fence and adjust the fence so the blade is roughly centered on the thickness of the jig, see Fig. 2.

To ensure the kerfs are centered on the thickness, cut each kerf in two passes. Just turn the jig around backwards for the second pass (without removing the workpiece), see Fig. 3.



ROUTER BEARING TRACKS

After rounding over the Patio Table frame (page 9), I noticed a shallow "track" left by the router bit bearing, see Fig. 1. A line of wood fibers in the soft redwood had been compressed.

I've seen this on other woods, and on plywood with softwood inner plies. (Sometimes it's not obvious until finish is applied.)

PREVENTING A TRACK. One way to prevent a track with a handheld router is to use an edge guide, see Fig. 2. The wide edge distributes the pressure more evenly so the bearing doesn't press into the wood.

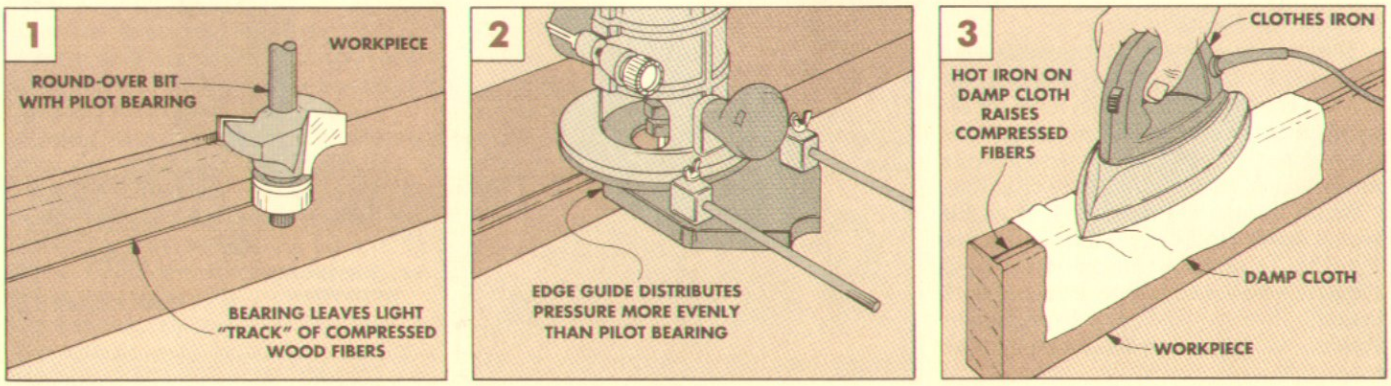
Note: When using an edge guide, adjust the guide so it's flush with the bearing.

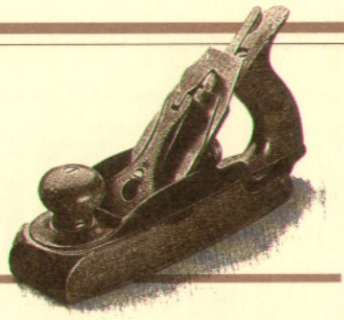
REMOVING A TRACK. If you can't avoid a router bearing track, there's a simple way to remove it. And it doesn't take a lot of extra sanding, either.

Restore the compressed wood fibers to their original shape by using a damp cloth and a hot iron, see Fig. 3. Steam causes the fibers to swell back to surface level.

To steam out a bearing track, put the damp cloth on the affected area of the workpiece. Then, with a medium heat settting, slowly run the iron over the cloth.

Keep the cloth damp and check the wood often to avoid scorching. Then, once the track is raised, sand the workpiece smooth as you normally would.





CLAMPING SOLUTIONS

I came across some interesting solutions to a couple of clamping problems that we experienced while making the Accent Lamp shown on page 12.

CLAMPING THE BASE

The first problem was how to keep the small mitered pieces of the frame and platform square when gluing up.

To solve this, I made a simple form, see Fig. 1. By repositioning the cleats, it can be used for both the frame and platform.

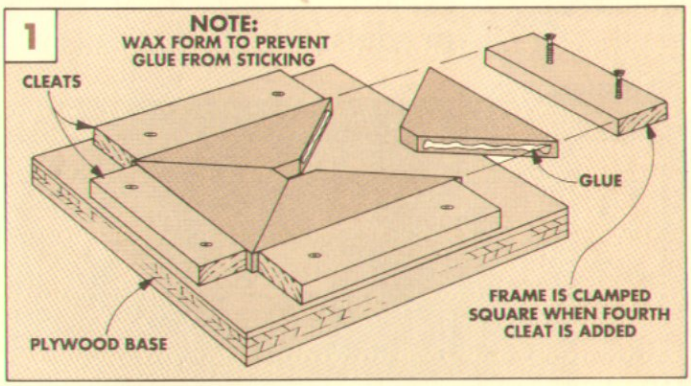
MAKE FORM. To make this form, draw an accurate square the same size as the frame to be clamped on the plywood base. Then cut four cleats to fit around the square. Next, position three of the cleats flush with the lines and screw them in place.

GLUE-UP. To glue-up the assembly, apply glue to all four pieces and set them in the form. Then, either screw or clamp the fourth cleat in place.

CLAMPING THE STRIPS

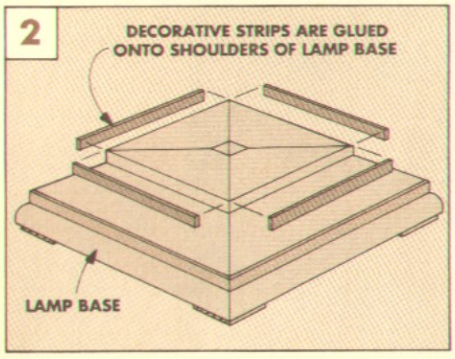
The second problem was how to clamp the decorative strips onto the shoulders of the lamp base during glue-up, see Fig. 2. Since the shoulders are only ¼" wide, it's tough getting a clamp to hold.

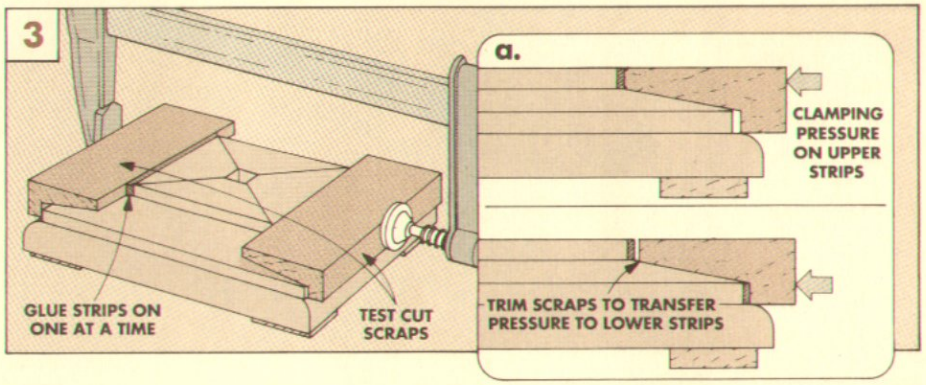
CLAMPING BLOCK. So I used a test piece I'd cut earlier setting up the profile for the platform. Turned over, this piece is a mirror image of the platform — a perfect clamping block, see Fig. 3.



CLAMP STRIPS. To use the blocks, apply glue to one strip and position it onto the shoulder. Then place a block on this and also the opposite shoulder, and clamp across the blocks, see Fig. 3a. Repeat this procedure for the remaining three strips.

To clamp the lower strips, trim the blocks narrower. This transfers the clamping pressure to their lower edges, see Fig. 3a.





REMOVING A ROUTER BEARING

The pilot bearing on a router bit helps guide the bit along the edge of a workpiece. But sometimes the bearing gets in the way.

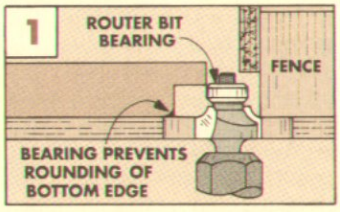
As I was building the Patio Table, I needed to round over the rabbeted ends of the top slats. But the bearing prevented the cutter from making contact with the workpiece, see Fig. 1.

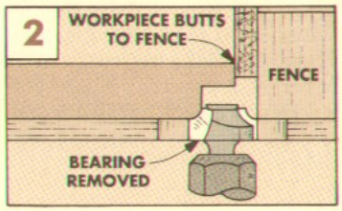
REMOVE BEARING. So I took the bearing off the bit by removing the screw that holds it in place, see Fig. 2. Note: On some router bits you *can't* remove the bearing — it holds the cutter in place.

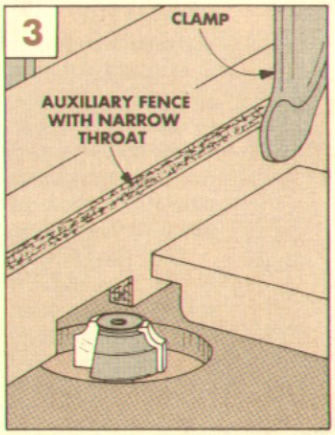
Without a bearing, you have to use an edge guide or a router table with a fence to guide the work. On the Patio Table slats, I used the router table.

But there was another problem — the throat opening on the fence is too wide for the slats. So the corner of the workpiece can get hung up in the opening.

AUXILIARY FENCE. To get around this problem, I made an auxiliary fence from Masonite with a smaller opening. Then I clamped this to the router table fence, see Fig. 3.

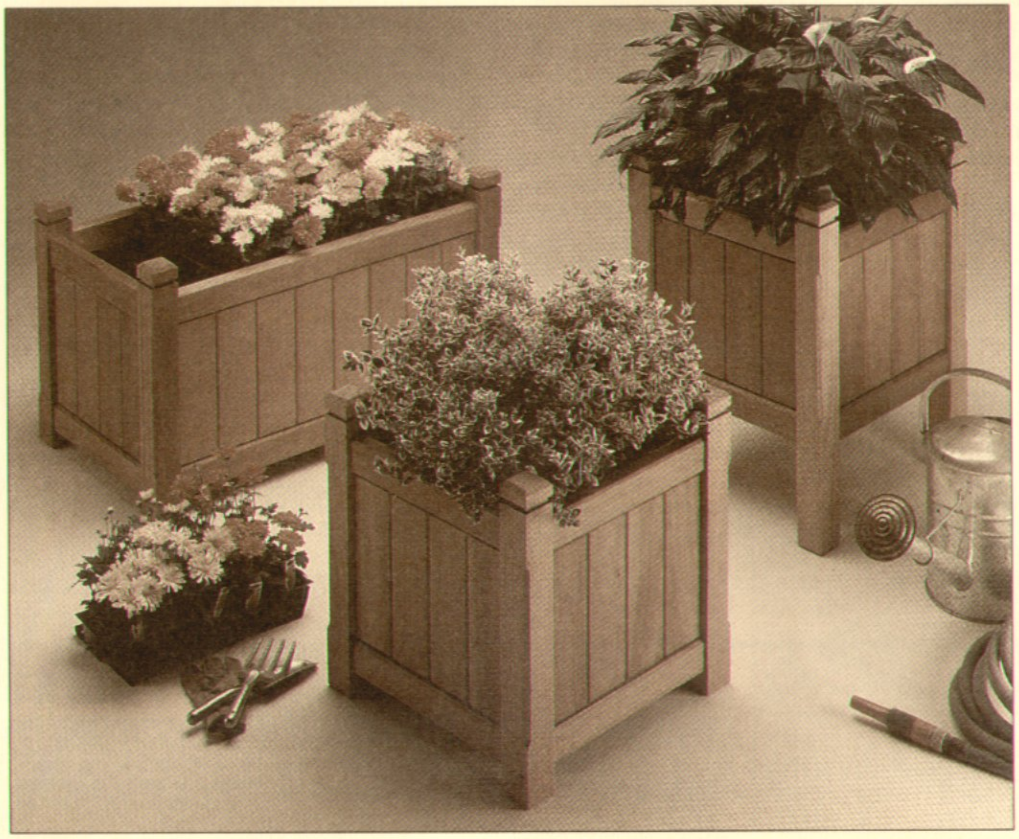






Redwood Planter

This versatile redwood planter fits into almost any garden or patio arrangement. There are four design options to build, and each has an adjustable shelf to accommodate plants of different sizes.



One of the most interesting things about the design of this planter is the options. The basic planter is a square unit. Building one that's twice as wide gives it a different look. And by adding one with longer legs, you can create an attractive grouping (see photo above).

ADJUSTABLE SHELF. Another nice thing about this planter is something you can't even see from the outside — the shelf. It's adjustable like the shelves in some bookcases, so you can change the height of the shelf to fit different-sized potted plants. This means the same planter can show off short plants in the spring and taller plants in the summer.

Also, the slats that make up the shelf have gaps between them. So rain water can't accumulate in the bottom and harm your plants. Or the planter.

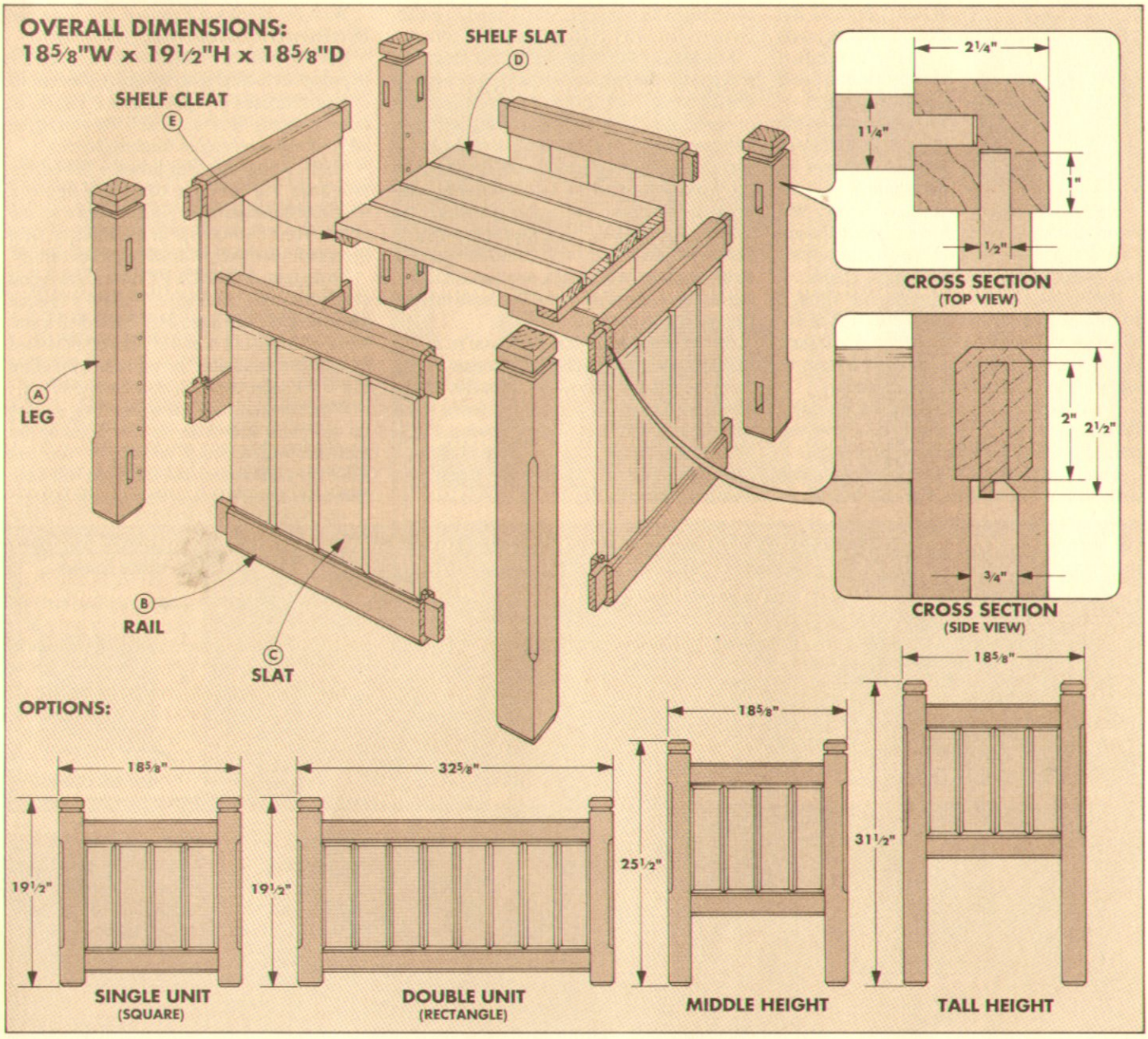
CONSTRUCTION. Since a planter has to be strong and stand up to the weather, I used water-resistant plastic resin glue in the mortise and tenon joints that connect the legs and rails.

For the sides, I did something different. The side slats have to be able to expand and contract with changes in humidity, so they aren't glued in place. They're held between the rails with tongue and groove joints.

WOOD. I built the planter out of redwood. It's an attractive, straight-grained wood that's resistant to rot. But there are other woods, like western red cedar and northern white cedar, that also stand up well to the weather. Or you could build one of fir or pine, then paint it (see Details, page 32).

FINISH. To keep the redwood looking good throughout the year, I finished it with a combination of spar varnish and tung oil. This seals the wood and allows a light sheen to build up. For more on this finish, see Sources, page 31.

EXPLODED VIEW



MATERIALS

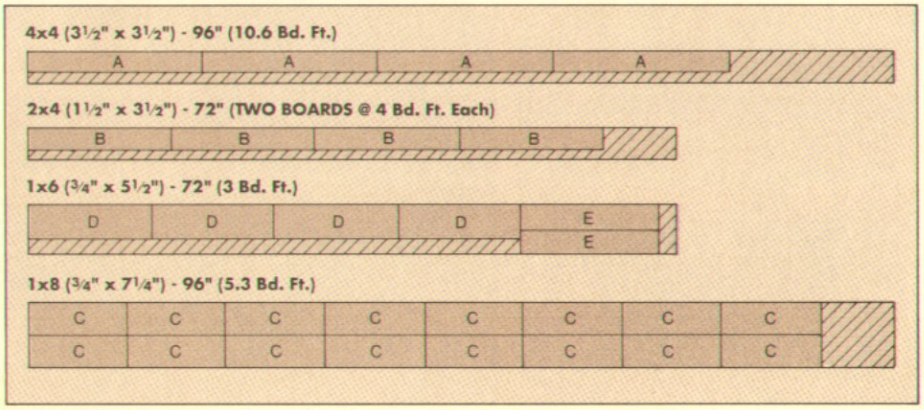
WOOD

A	Legs (4)	2¼ x 2¼ - 19½
B	Rails (8)	1¼ x 2½ - 16⅛
C	Side Slats (16)	¾ x 3½ - 11
D	Shelf Slats (4)	¾ x 3¾ - 13¾
E	Cleats (2)	¾ x 2½ - 15¾

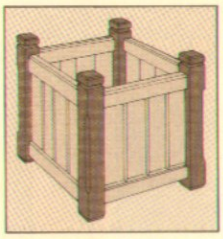
SUPPLIES

- (4) Shelf Support Pins
- Epoxy or Water-Resistant Glue such as Plastic Resin Glue
- Outdoor Finish or Outdoor Paint (For more information on finishes, see Sources page 31.)

CUTTING DIAGRAM



LEGS



When I bought the 4x4 redwood posts to make the legs, I learned something about redwood — 4x4 posts are rarely kiln dried. So they're likely to be wet on the inside.

WET REDWOOD. Working with very wet wood can be a real problem. So to avoid having the posts twist or bend as they dried out, I dealt with the posts in three stages.

First, to speed up the drying time, I trimmed an equal amount (¼" to ½") of dry wood off all four faces. Then I rough cut each leg 2" longer than the finished length to allow for some checking on the ends.

Next, I put the wood aside for a few days. (Don't put it out in the sun, or hurry the process — that'll create more problems.)

Finally, I trimmed all the posts again, this time to final dimensions. To make the pieces as straight as possible, you'll need to establish two flat sides that meet at a 90° corner.

SQUARE, FLAT SIDES. To do this, begin by placing the flattest side of each piece against the rip fence. Now trim a narrow strip off the opposite side (A), see top drawing in Fig. 1. (Because the posts are too thick to cut all the way through in one pass, you'll have to turn the workpiece end-for-end and finish trimming the first strip with a second pass.)

Next, to cut side (B), position side (A) down on the table and rip off another narrow strip, again in two passes, see second drawing in Fig. 1. Side (A) and (B) should now be flat and 90° to each other.

CUT TO FINISHED SIZE. Now you're ready to cut the leg to finished thickness. To do this, set the rip fence 2¼" from the blade. Then, with side (A) against the fence, rip a strip from side (C), see third drawing, Fig.1.

Then roll the leg one last time, making a pass with side (B) against the fence, see fourth drawing in Fig. 1.

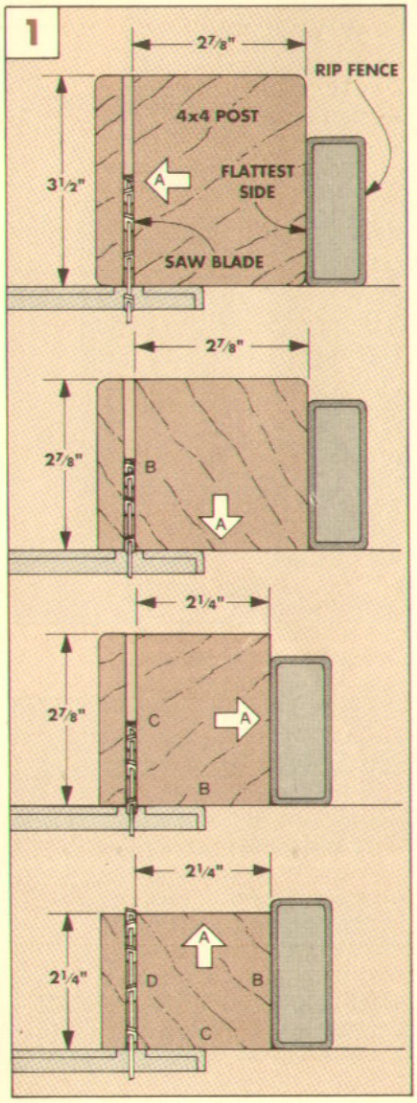
With the blanks cut square, the legs can be trimmed to finished length, see Fig. 2.

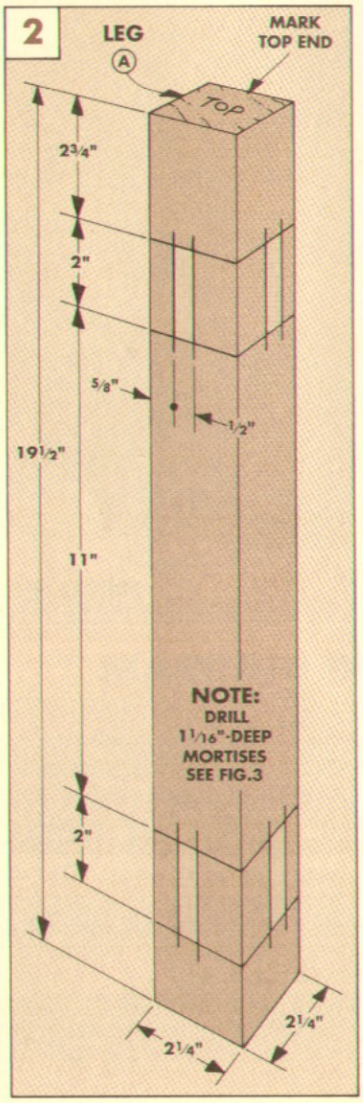
LAY OUT AND CUT THE MORTISES. Once the legs are cut to final size, lay out the locations of four mortises on each leg, see Fig. 2. (It helps to mark the top of each leg and make all your measurements from that end.)

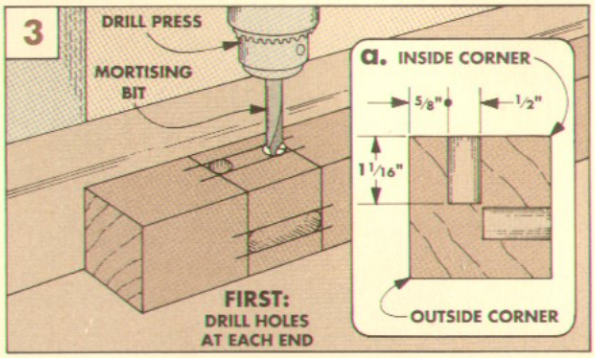
Then, using the drill press, I bored the mortises 1/16" deeper than the desired length of the tenon, see Fig. 3a. This way, the tenon won't bottom out in the mortise, and the assembled joint will pull together tightly.

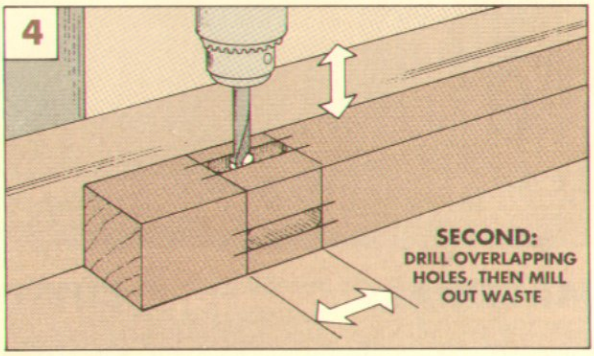
To do this, first drill a ½" hole at each end of the mortise, see Fig. 3. (I used a special mortising bit, see page 31.) Then drill a series of overlapping holes in between the end holes. Now "mill out" the mortise by sliding the workpiece from side to side, see Fig. 4.

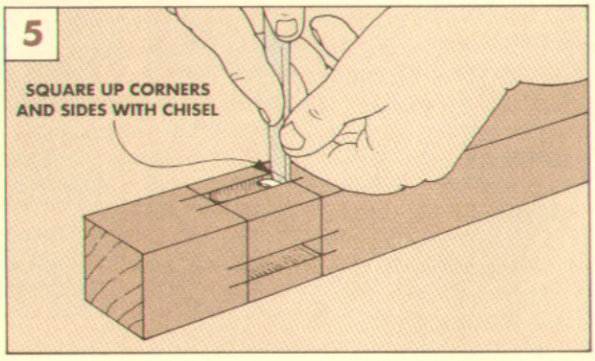
When the mortises are drilled out, square up the ends and clean up the sides of the mortises with a chisel, see Fig. 5. You can leave the ends round, but then you will have to round off the edges of the mating tenons.











LEGS CONTINUED

DECORATIVE CUTS. After cleaning up the mortises I made a series of decorative cuts on the legs. Begin by cutting a slot around the top end of the legs. This is actually a 3/8" dado that's cut around all four sides.

To make this continuous dado, first set your dado blade to cut 1/4" deep. Then position the rip fence 1 1/8" from the blade, see Fig. 6a. Shop Note: Using an auxiliary fence on your miter gauge will give you better control of the leg, and also prevent chipout as you cut the dadoes, see Fig. 6.

With the end of the leg butted to the fence, cut the dadoes on all four sides of each leg.

STOPPED CHAMFER. The next step is to rout the decorative "stopped" chamfers on the outside corner of each leg, see Fig 7. (Note: The outside corner is the corner formed by the sides *without* mortises.)

You could rout this chamfer with a handheld router. But since I was going to chamfer the top and bottom of the legs on the router table, I cut this stopped chamfer there, too.

Start by setting the height of the chamfer bit so it's 5/16" above the router table, see Fig. 8a. Then align the face of the fence so it's flush with the bearing on the bit.

To indicate the extremes of the stopped chamfer, I made two marks on each leg. One mark (5" from the top end) indicates where to plunge the router to start the chamfer. The second mark (15 1/2" from the top) indicates the stopping point. Then I made a reference mark on the router fence to indicate the centerpoint of the router bit.

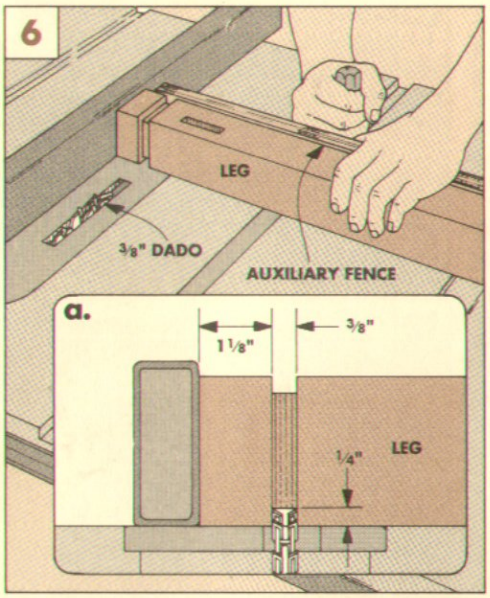
Now turn on the router, and with a pivoting motion, plunge the leg against the fence so the first mark on the leg lines up with the mark on the fence, see Fig. 8. Then slide the leg to the left. When the second mark on the leg lines up with the reference mark on the fence, stop and pivot the leg away from the fence, see Fig. 9.

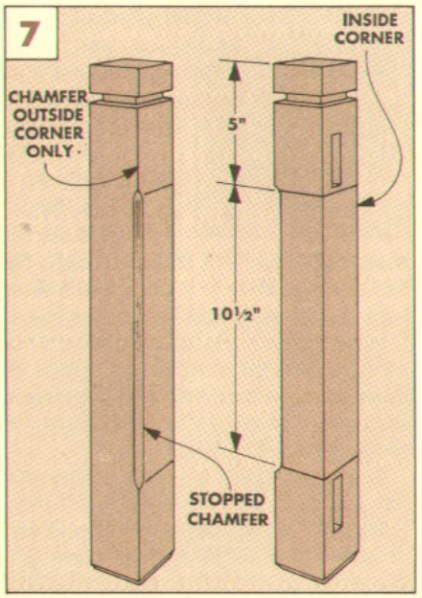
TOP CHAMFERS. Once the corner chamfers are completed, you can cut the chamfers on the top end of each leg. This is also a 5/16"-wide chamfer so you don't have to change the router bit, see Fig. 10a.

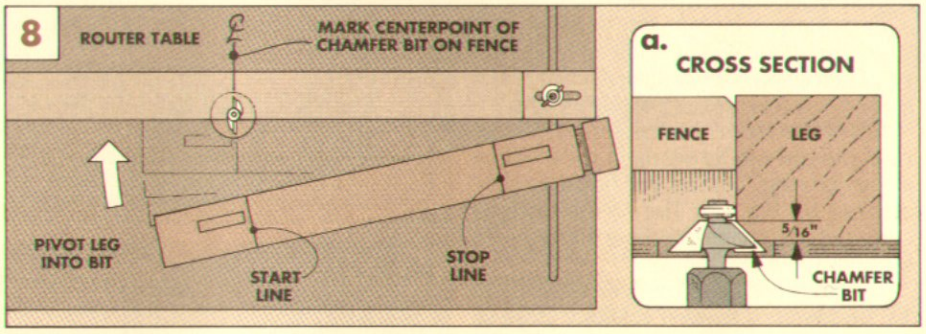
To make cutting the chamfers more accurate, I used a 8" x 8" square piece of 3/4"-thick plywood as a push block, see Fig. 10. The push block keeps the legs square to the router table fence, and helps prevent chipout on the back edge of the cut.

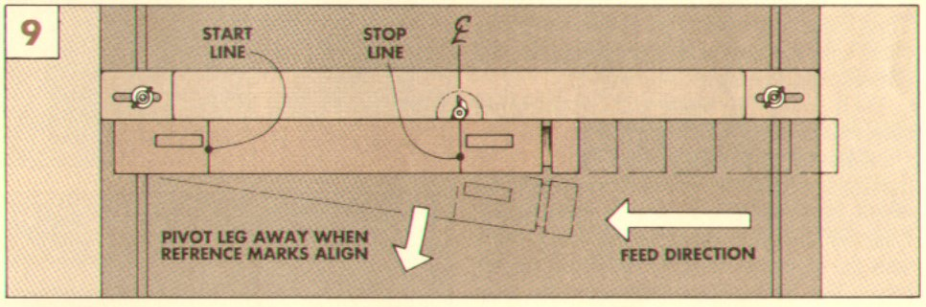
Now cut the chamfers on the top of each leg, holding the leg firmly to the router table fence and plywood push block. Again, feed the leg from right to left.

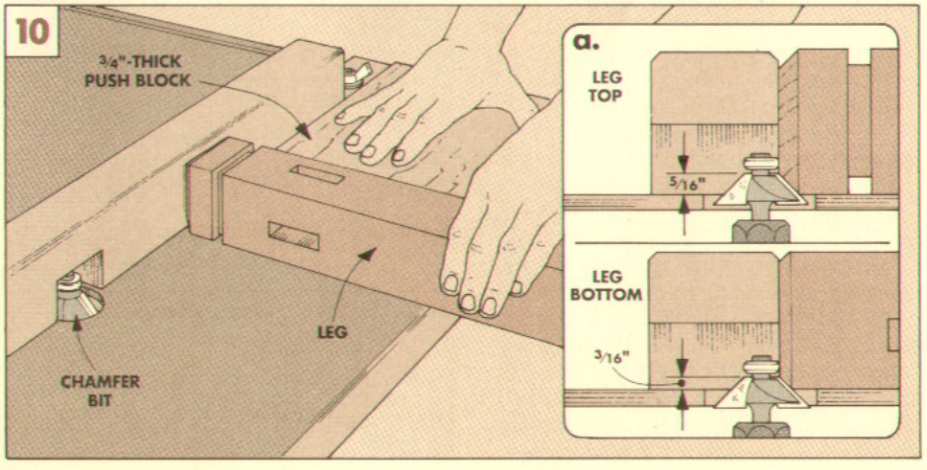
BOTTOM CHAMFERS. Finally, to prevent the legs from splintering when the box is dragged across the ground, I routed smaller chamfers on the bottom ends of the legs. To do this, set the height of the router bit to 3/16", see Fig. 10a. Then feed the legs over the bit, see Fig. 10.



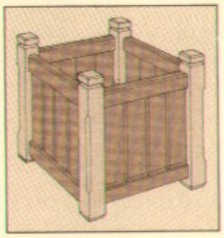








SIDES



Once the legs are complete, you can start work on the sides. Each side consists of two rails and four slats held in place with tongue and groove joints.

RAILS. I started by resawing (from 2x4 stock) enough pieces for the **rails (B)** to 1¼" thick. Then cut eight rails to final width and length, see Fig. 11.

TENONS. The rails have a 1"-long tenon on each end to fit the mortises in the legs. To set up the saw, position the rip fence as a stop so the outside edge of a dado blade is 1" from the fence, see Fig. 12a.

Now, to create a centered tenon, make a pass on each face of a piece of scrap rail stock. Slowly sneak up on the final thickness of the tenon until it just fits the mortise. Then the tenons can be cut on the rails by making a series of passes over the dado blade.

To create shoulders on the top and bottom edges, re-set the height of the dado blade to ¼". Then stand the workpiece on edge and make a series of passes over each edge.

TONGUES. Once the tenons are cut on the rails, the saw can be set up to cut a tongue along one edge. This tongue holds the slats in place, see Fig. 13a. The ¼"-thick tongue is off-center on the thickness of the rail—it's set back ⅝" from the face.

To make the tongue, the dado blade has to be "buried" in a wooden auxiliary fence so only ¼" of the blade is exposed, see Fig. 14. Then raise the blade ⅝" above the table. Now, with the face side of the rail down, cut one side of the tongue, see Step 1.

Then, lower the blade and cut the other side, leaving a ¼"-thick tongue, see Step 2.

CHAMFER THE RAILS. The last step in making the rails is to chamfer three of the four edges (*not* the edge closest to the tongue). Chamfer the *other* edge on the tongue side with the fence set back ¼" from the bit, see Step 1, Fig. 15. For the remaining edges, align the bearing flush with the fence, see Step 2.

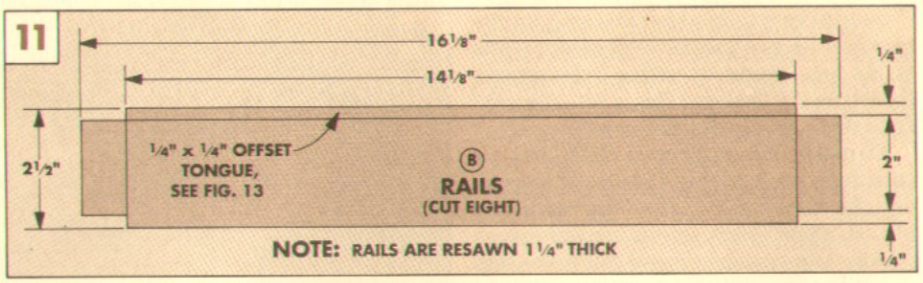
SLATS. After the tongued rails are complete, the grooved **slats (C)** can be made to fit between the rails, refer to Fig. 13. (There are four slats on each side.)

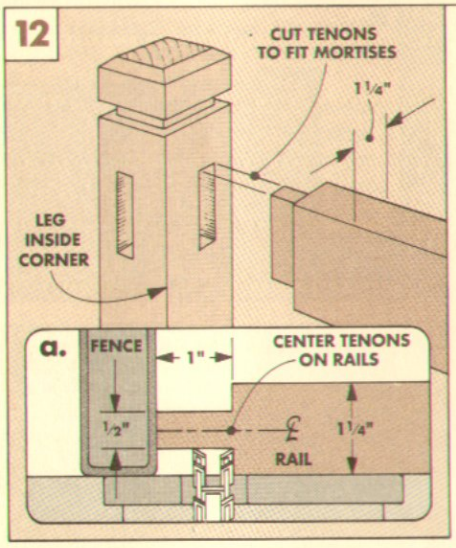
To determine the width of each slat, measure the shoulder-to-shouder length of a rail (14⅛") and subtract ⅛" to allow for expansion. Then divide by four. (This made each of my slats 3½" wide, see Fig. 16.)

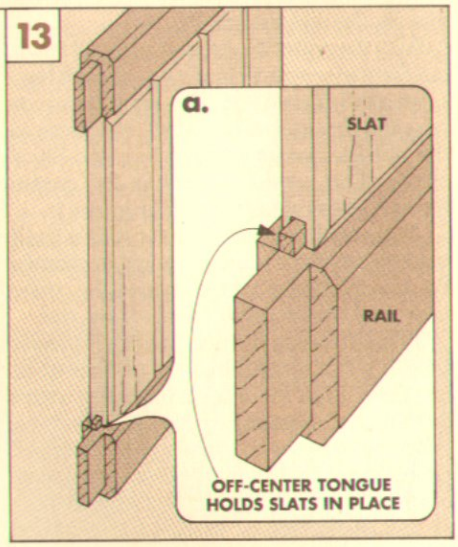
Now cut the slats to length to equal the distance between the mortises on the legs.

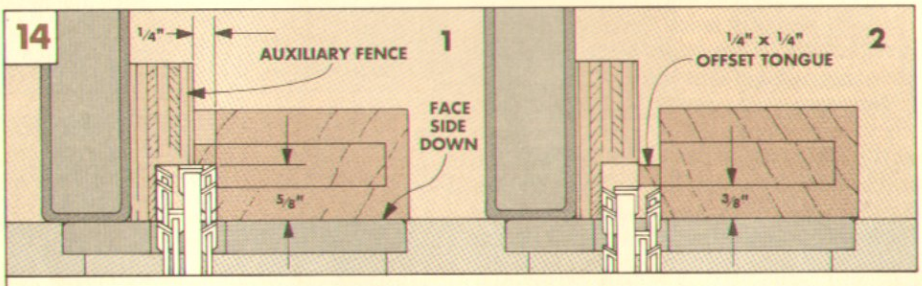
GROOVE THE SLATS. With the slats cut to size, cut a ¼"-wide groove in the ends to fit the tongues on the rails, see Fig. 16. Note: Offset the groove ⅜" from the front face, see Fig 16a.

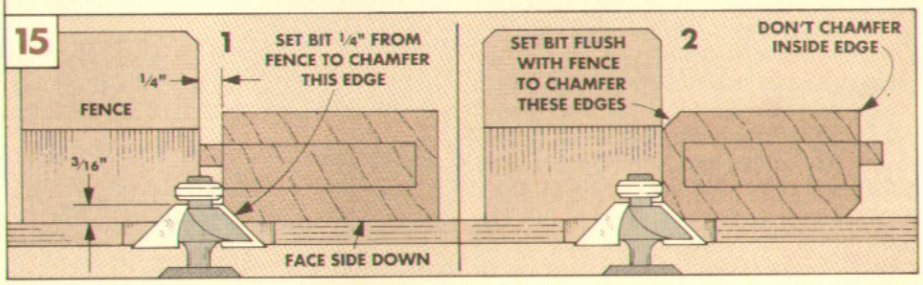
CHAMFER. To complete the side slats, chamfer all four edges on the face side.

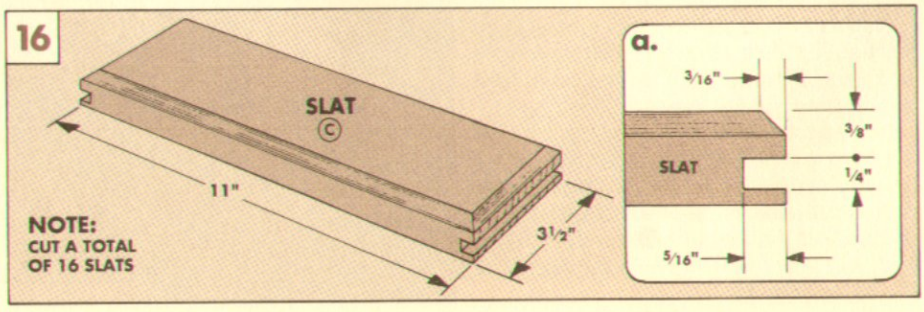












ASSEMBLY

After all the pieces are cut, the planter can be assembled. But first, I laid out and drilled ¼" holes on each leg for pin supports.

PIN HOLES. The pins support an adjustable shelf, refer to Fig. 20. To position the holes, stand the legs up and mark the inside corner so the sets of holes will face each other (that is, mirrored sets). Then drill ½"-deep holes at the locations shown in Fig. 17.

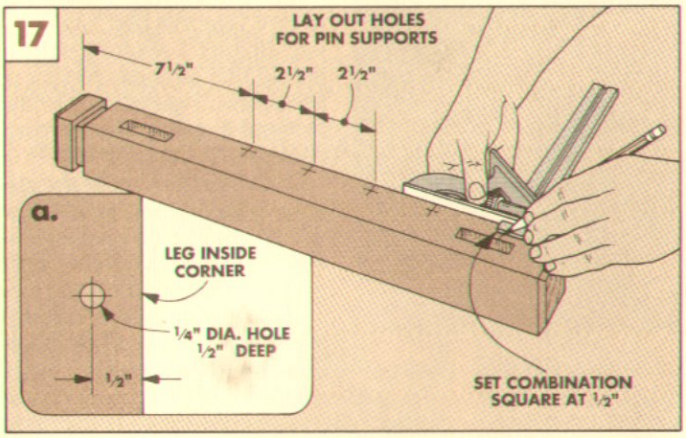
ASSEMBLE SIDES. The easiest way to assemble the planter is to first put together two of the side units, then connect these by adding rails and slats for the other sides.

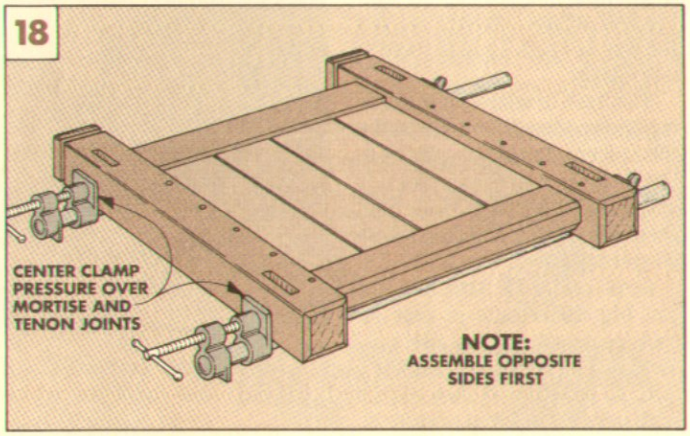
Begin by applying glue to the tenons on the ends of two rails, and in the mortises in one leg. Insert the tenons, making certain the tongues on the rails face each other.

Next, slide (but *don't* glue) the slats onto the tongues of the rails. (The slats need room to move with changes in humidity.) Then apply glue to the other two tenons and to the mortises of another leg, and fit the pieces together.

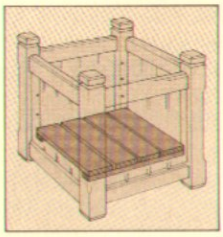
Next, clamp the side assembly together using two pipe clamps, see Fig. 18. Lay the assembly on the pipe clamps with the inside facing up. This way the clamp pressure will be centered directly on the mortise and tenon joints, see Fig. 18. Now, assemble another side the same way.

ASSEMBLE THE PLANTER. Finish assembling the planter by connecting the two completed side units with the remaining rails and slats.





ADJUSTABLE SHELF



After assembling the sides, only one step remains before the planter is complete – making the adjustable shelf. The shelf consists of four slats and two cleats, see Fig. 19.

CLEATS. Cut the **cleats (E)** from ¾"-thick stock to a width of 2½". To determine the length of the cleats (E), measure the distance on the inside of the planter from side slat to side slat and subtract ⅜" for clearance. (This made my cleats 15¾" long.)

SLATS. Next, cut the shelf **slats (D)**. To allow water to run off between the slats, I left ¼" gaps between each slat, see Fig. 19.

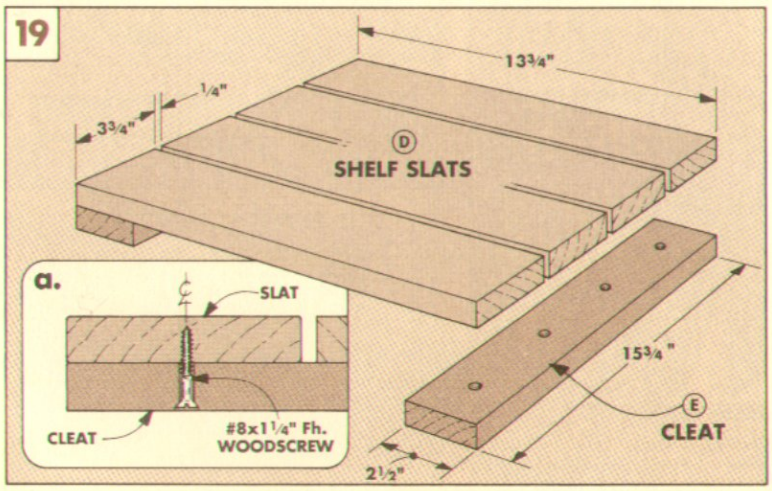
So, to determine the width of each slat, subtract ¾" from the length of the cleat (for the three ¼" gaps). Then divide this measurement by four (for the four slats). In my case, this made each slat 3¾" wide, see Fig. 19.

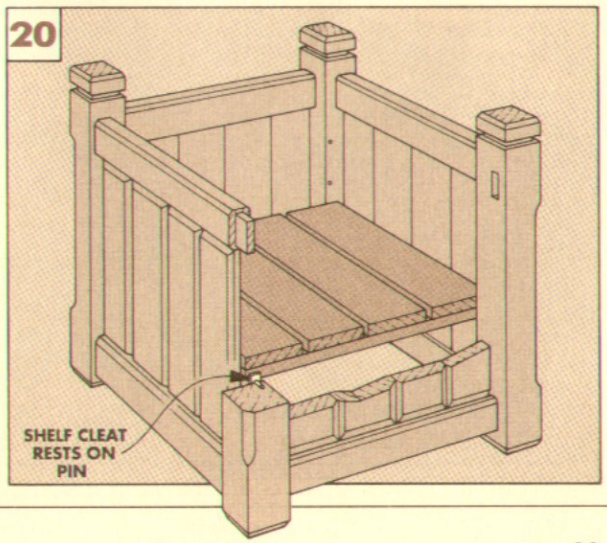
To determine the length of the slats, measure from the drilled side of one post to the drilled side of the opposite post and subtract ⅜". (My slats are 13¾" long.)

ASSEMBLY. I completed the shelf asssembly by screwing the cleats to the slats. The screws go through the cleats and are centered on the width of each slat, see Fig. 19a.

To put the shelf in place, tip one end down into the planter. Then set the ends of the cleats on the shelf pins and let the other end of the shelf drop into place, see Fig. 20.

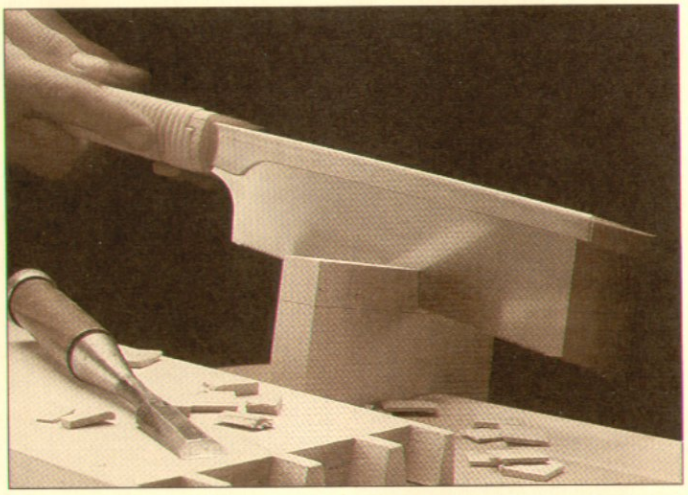
FINISH. To finish the planter, I used an equal mixture of spar varnish and tung oil, see page 31. It seals the wood and darkens it only slightly so the deep red tones of the redwood remain visible. It also builds up a soft sheen after two coats.





Japanese Saws

When I first picked up a Japanese saw, I was intrigued. It was so light, and thin, and the teeth were incredibly sharp. I thought I would ruin the thin teeth with the first stroke. Muscle was not the way to use it, I had to learn to use finesse.



You have to adjust your thinking and approach, even to make the first cut. Japanese saws have long, thin handles, usually wrapped with rattan. You hold them more like a hammer than a western saw.

CUTS ON PULL STROKE. But the big difference is that Japanese saws cut on the *pull* stroke. The teeth are angled back toward you, so as you pull they dig into the wood with only the lightest pressure.

Why did the Japanese design their saws to cut on the pull stroke? Actually, when you think about it, the question should be, why do western saws cut on the push stroke?

For a western saw blade to cut on the push stroke, the blade has to be thick, stiff, and quite strong so it won't buckle when forced through the wood, see Fig. 1.

The pull stroke of Japanese saws actually makes more sense. As the teeth are pulled through the wood, it pulls the blade under tension, in effect straightening it out and affording greater control. Also, since the blade is under tension, it can be considerably thinner and it doesn't take near the effort to use — all of which means more accurate cuts.

But, you have to make some adjustments in your approach to a Japanese saw. Cutting on the pull stroke with a thin, light saw means changing how you hold the saw, how much pressure you apply, and even how you use the weight of your body.

TEETH. With the first stroke you take, you'll feel how sharp the teeth are, and how quickly they slice through wood with surprisingly little effort.

Each crosscut tooth on a Japanese saw has three bevels, while Western-style crosscut teeth have only two, see Figs. 1a and 1b. That third bevel across the tip of each tooth on a Japanese saw is ground at such a steep angle that each tooth is like a knife point.

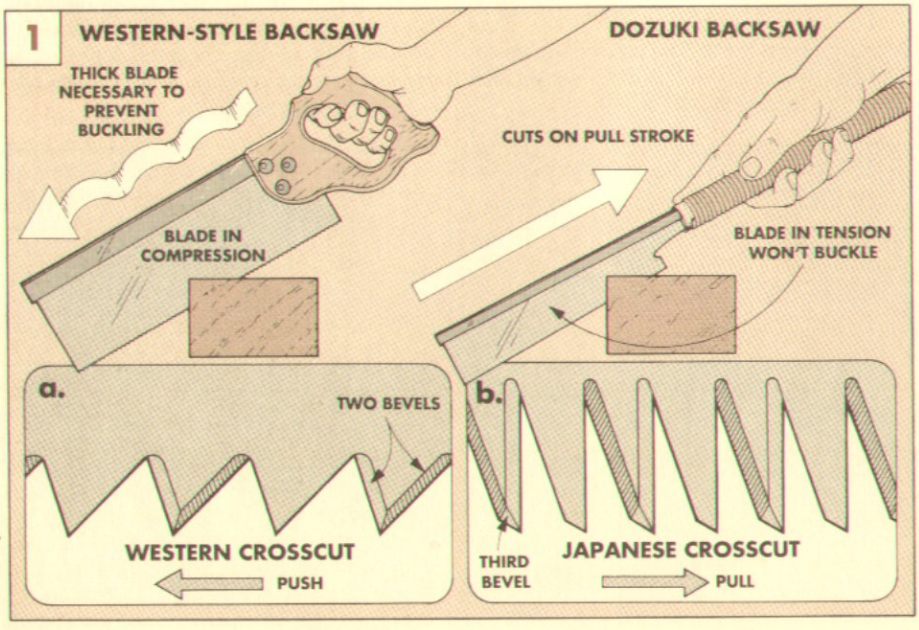
GETTING STARTED. If you want to try a Japanese saw, where do you begin? I started with a dozuki (the Japanese version of a backsaw). I wanted to see how it would work on cutting dovetails. (It works great.)

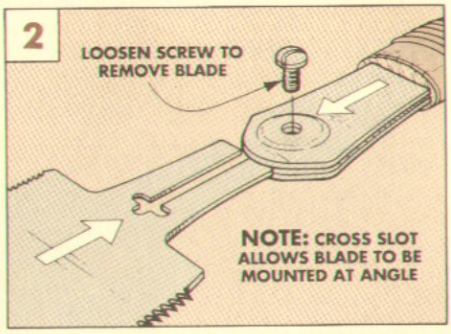
Once I got that out of my system, I began to use the dozuki for small trimming jobs, and gradually became comfortable with the pull stroke and the fine teeth.

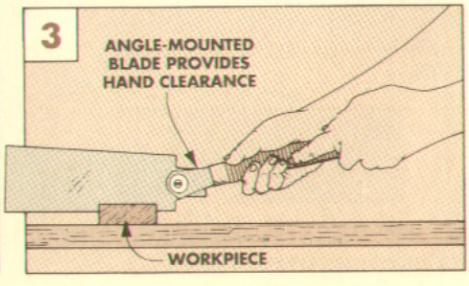
How much should you pay for a saw? Don't buy the most expensive saw — although the beauty of the better saws is tempting. One of the reasons for the higher price in Japanese saws is that they have thinner blades — great in the hands of experience, but also easy to break or deform. I would buy a saw in the $20 to $40 range. (For sources, see page 31.)

REPLACEABLE BLADES. One of the best approaches is to get a saw with a replaceable blade, see Fig. 2. One advantage here is that some replaceable blades can be inserted into the handle at an angle which you may find easier to work, see Fig. 3.

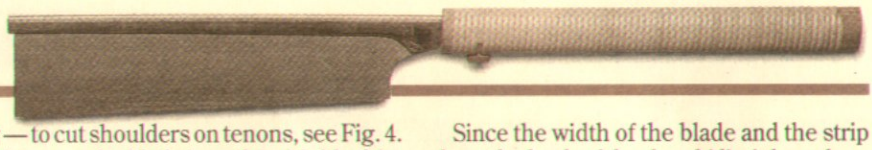
Get one and try it to see if it fits your style of work. If you like a light touch with a fine cut, you'll probably like Japanese saws.







DOZUKI



One of the most popular Japanese saws is the dozuki (DOZE-ou-key) backsaw. It's the most similar to its western counterpart, and a good one to start with. It consists of a thin blade that's supported by a metal "back" along the top edge of the blade. And it has a high number of teeth per inch, usually about 26. The teeth have almost no set, so they cut a very narrow kerf. This makes the dozuki especially good for doing fine work.

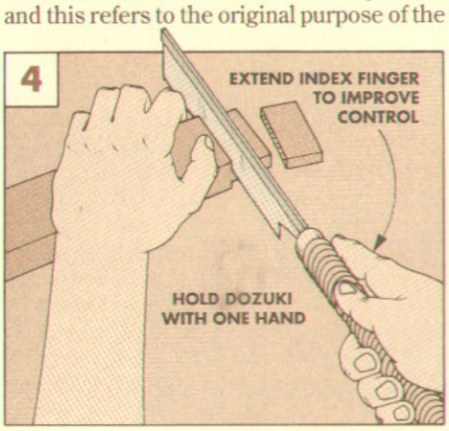
Dozuki means "shoulder" in Japanese, and this refers to the original purpose of the saw — to cut shoulders on tenons, see Fig. 4. But because the blade is so thin, it's ideal for cutting dovetails and other precision joinery.

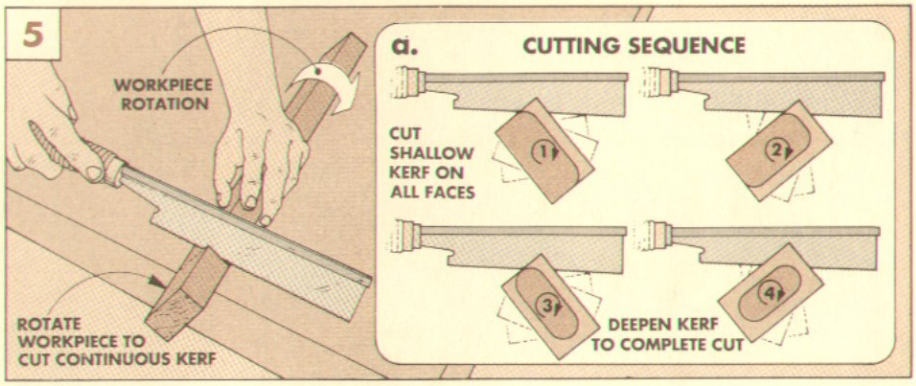
GRIP. To use the dozuki, hold it in one hand, see Fig. 4. You can use a light grip and still have good control. To help keep the saw aligned when cutting, extend your index finger on the side of the handle.

CROSS-CUTTING. To start a cut, align the blade just to the waste side of the cut line at the far corner of the workpiece. (Note: Use your thumbnail or knuckle as a guide.)

Since the width of the blade and the strip along the back of the dozuki limit how deep you can cut, you'll need a different technique to cut through stock that's thicker than the width of the saw blade.

To do this, start a kerf on one face, see Fig. 5. Then, without stopping the cutting motion, rotate the piece 90° and continue the kerf along the cut line, see Fig. 5a. Keep rotating the piece until you have a continuous kerf all the way around. Now, deepen the kerf on each face until you've cut through.





RYOBA

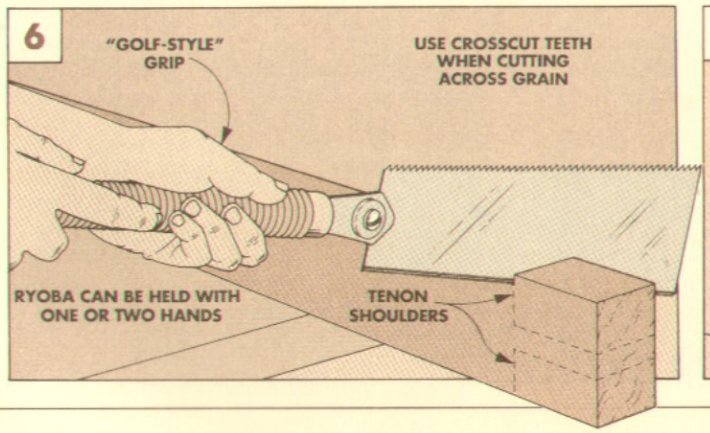
If nothing else, a ryoba (RYE-oh-bah) saw will considerably lighten your tool box. That's because it can replace two western saws, a rip saw and a crosscut saw.

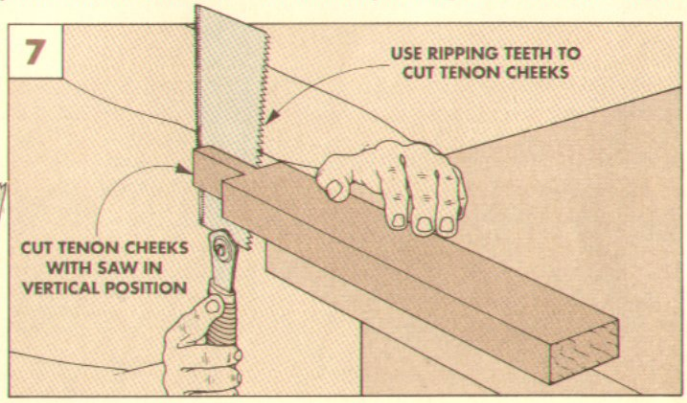
Ryoba means "double" and refers to the blade — it has crosscut teeth on one side, see Fig. 6. And ripping teeth on the other, see Fig. 7. Ryoba saws come in several different lengths — the longer the saw, the longer the teeth. The longest saws (13" or more) are designed for timber framing. The teeth on the medium length saws (11" to 12") are designed for carpentry work. The shorter saws (7" to 9½") are for joinery.

GRIP. The ryoba can be held in one hand like the dozuki, or with both hands, see Fig. 6. When using both hands, try a "golf-type" grip with one or both index fingers extended. While it may seem awkward at first, I find using this grip helps keep the saw aligned. I also notice that when ripping thick stock, using both hands is less tiring.

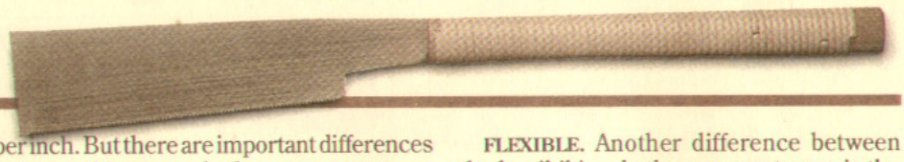
RIPPING TECHNIQUE. Like the dozuki backsaw, the smaller ryoba saws can be used for doing fine work. And when you need to do a particularly accurate cut, try ripping with the saw in a vertical position, see Fig 7.

To do this, first lay out a cut line on the top and bottom faces of the workpiece. Then, hold the piece so it extends off the bench. Start the cut using the teeth near the handle, then turn the piece over and continue the kerf from the other side. Now turn the piece over several times to advance the cut. As you near the end of the cut, move the full length of the saw vertically through the wood, see Fig. 7.





KUGIHIKI



Usually, when I counterbore a screw to hide the head, I fill the hole with a dowel or plug. But after gluing the dowel in the hole, I'm faced with the problem of trimming it flush with the surface. It's a problem because I want to avoid scratching the surface of the workpiece when trimming.

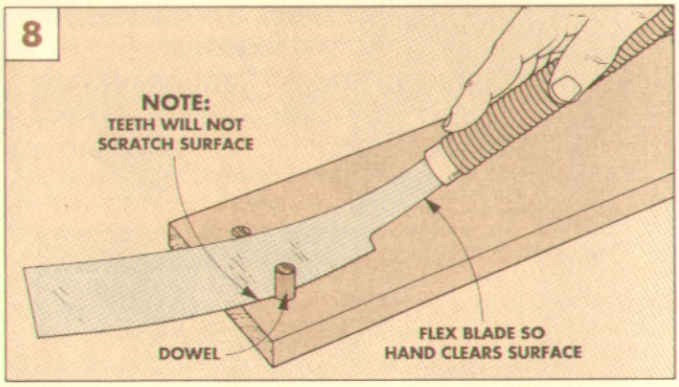
One way to solve this problem is to use a kugihiki (COU-ghee-HEE-kee), a Japanese flush cut saw, see Fig. 8. The name means "to cut nails" (wooden nails or dowels). The kugihiki is a crosscut saw with 20-26 teeth per inch. But there are important differences between this saw and other cross-cut saws.

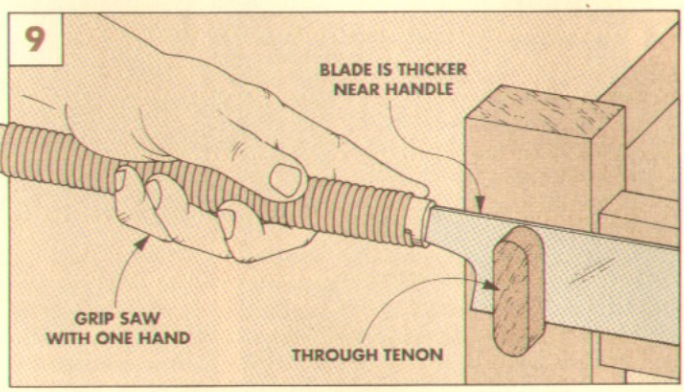
NO SET. The first difference is the teeth on the kugihiki have no set — they cut a kerf the same width as the blade. This is both good and bad. It's good because the teeth won't scratch the surface of the workpiece. But it also means the blade can bind in the kerf.

This isn't a problem when cutting dowels. However, if you flush-cut a tenon, the binding can be severe (since a tenon is longer and thicker than a dowel), see Fig. 9.

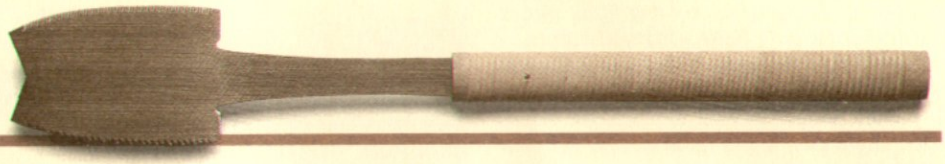
FLEXIBLE. Another difference between the kugihiki and other crosscut saws is the blade is much more flexible. This means care must be taken to not break or "kink" the blade — a serious limitation in a blade that often binds in the kerf.

Since a kugihiki costs $40 and is tricky to use, it certainly isn't the first Japanese saw I'd buy. In fact, if you have a dozuki, try flush cutting with it. Since its teeth are set, they won't bind in the kerf. Just be careful to protect the workpiece from scratches.





AZEBIKI



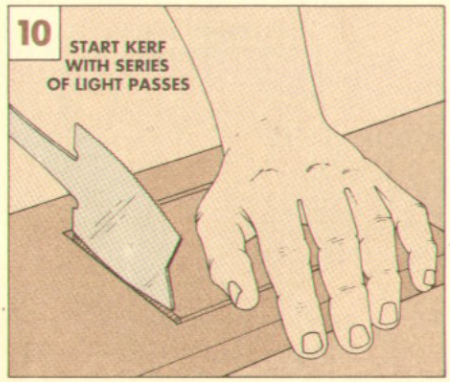
There's another ryoba-style saw that has no direct western equivalent. It's called the azebiki (EH-zeh-BEE-kee), see Fig. 10. It has a short double-edged blade centered on the end of a long neck. Like the ryoba, the azebiki has crosscut teeth on one side of the blade and ripping teeth on the other side.

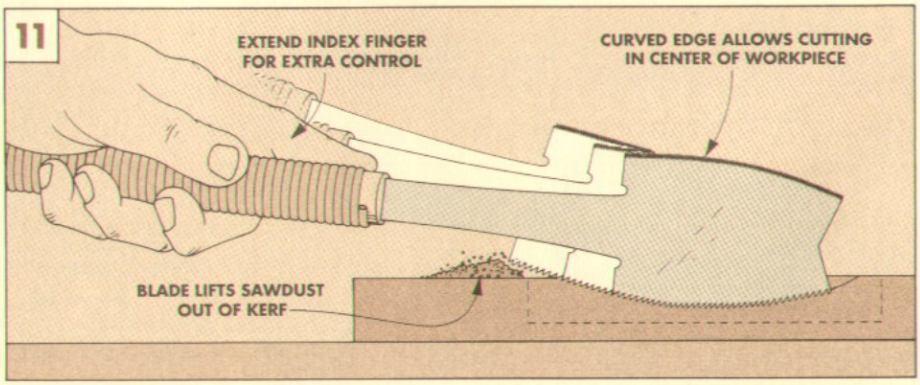
UNIQUE SHAPE. The azebiki is most often used to cut mortises and grooves in the middle of a board, and sliding dovetails. But because of its unique shape, small size, and light weight, it can also be used to make cuts in very tight situations. So it's helpful when you're doing furniture, boat, or home repair work because you can use it in close spaces without damaging surrounding surfaces.

The azebiki's curved blade allows you to start a cut in the middle of a board (or any work surface, like a wall or the floor), see Fig. 10. And since it has rip teeth on one side and crosscut teeth on the other, the azebiki can cut with the grain or across it.

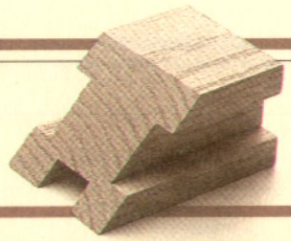
USING THE AZEBIKI. To cut a mortise or a slot in the middle of a board, start by making a series of light cuts or scrapes along the cut line to get the kerf established. Then apply more pressure as the kerf gets deeper.

To clear out the sawdust, it helps to rock the azebiki in the kerf as you cut , see Fig. 11. This is one of the real advantages of a curved blade over a straight blade. A dozuki can cut grooves in mid-panel. But its straight blade won't clear the sawdust. The curved blade of the azebiki, however, lifts the sawdust out of the kerf. This makes the cutting faster and the saw easier to control.





CUTTING GUIDES



Among the tools you might find in a traditional Japanese toolbox are block gauges or cutting guides. These are small wood or steel blocks that help start a saw cutting at the proper angle, see Fig. 12. I like using them with Japanese saws, and they can be a big help with western saws, too.

I have two sets of blocks in my toolbox – one for cutting miters and dovetails in ½"-thick stock and another for cutting both joints in ¾"-thick stock. (Note: Each guide can be used for only one thickness of stock.)

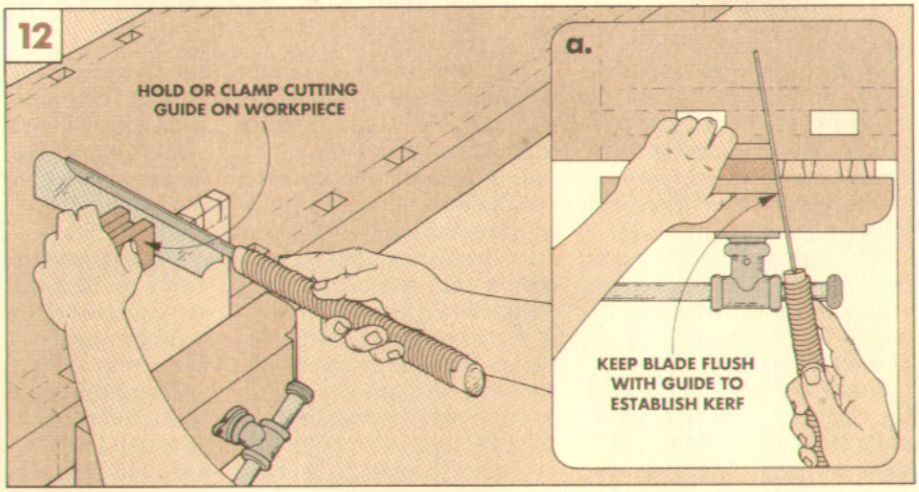
One block in each set guides cuts for 45° and 90°, see photo. The second block guides 10° cuts for making dovetails, see Fig. 12. I made the guide blocks from oak, but any dense-grained hardwood would work well.

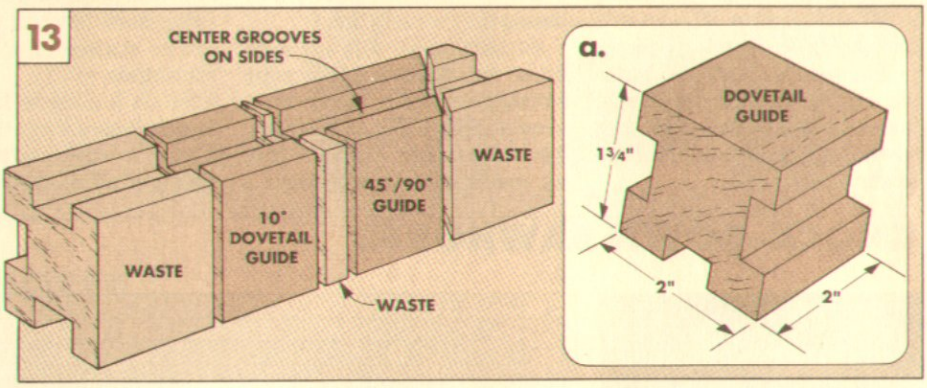
MAKING THE GUIDES. To make a set of guide blocks, start out with a 12"-long piece of stock, 1¾"-thick, and 2"-wide. The length is longer than you need for two blocks, but the extra length makes it safer to cut the grooves and angles.

First, cut three grooves to fit over the edge of a workpiece. To do this, set the dado blade for the thickness of the stock you will be working on (for example, ¾").

The next step is to cut the piece into guide blocks with angled sides. To do this, I used the table saw. First, for the 45°/90° guide, tilt the blade to 45° and make a cut close to one end, see Fig. 13. Then set the blade back to 90° and make a cut 2" from the first. Next, to cut the dovetail block, reset the blade for 10° and then make two parallel cuts about 2" apart. (A guide with two parallel angled sides will let you cut both angles of the tails and pins by just turning the guide block around.)

USING THE GUIDES. To use a guide block, set the groove in the block over the edge of the workpiece where you want to make a cut. You can clamp the cutting guide to the workpiece, or just hold the block in place as you saw, see Fig.12.



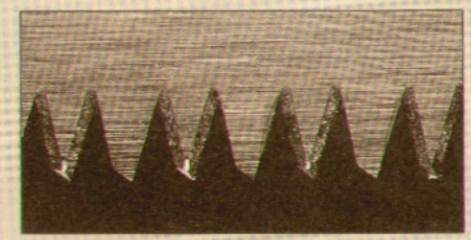


Now start your cut, keeping the saw blade flush against the block until the kerf is well-established. Then you can remove the block, or keep it there to complete the cut if your saw blade is wide enough.

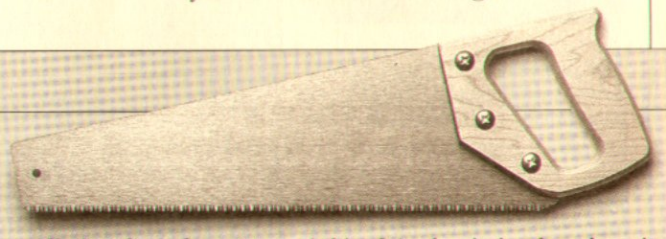
EAST MEETS WEST

On a recent visit to my local hardware store, I discovered some western-style saws with Japanese-style teeth, see photo at right.

Instead of having two bevels as on most western saws, this saw has long, sharp, three-bevel Japanese teeth, see photo at left.



"Short Cut" saw teeth have three bevels like Japanese saws. But they point straight down to cut on both push and pull strokes.



One manufacturer, Stanley, calls their line of hybrids "Short Cut" saws, and makes them in Pennsylvania. The line includes panel saws, backsaws, and a "Tool Box" saw.

Stanley has made some changes to the traditional Japanese crosscut tooth design. The most obvious change is that the teeth point down, not back like a Japanese saw, or forward like a western saw. This means the blade cuts on both the push and pull stroke, which Stanley says "cuts the wood 50% faster than conventional saws."

I tested this claim by timing how long it took to make a cut with the 15"-long "Tool Box" saw, and then timing the same cut with a traditional western crosscut saw. The "Tool Box" saw did make it through with 50% fewer strokes, but it took me the same length of time as with the traditional saw – cutting on both strokes is hard work.

The surface left by the "Tool Box" saw is very rough. But on the whole, I like it for making *rough* cuts in hardwood and for cutting construction grade lumber.

Sawhorses

Response to the sawhorse contest (announced in *Woodsmith* No. 73) was surprising. We thought we were familiar with most types of sawhorses, but couldn't believe the wide variety we received.

Hundreds of readers sent in their sawhorse plans. They ranged from simple boxes to complex designs that were more like workbench modules.

THREE GROUPS. Then came the challenge — how to make order of all this, and actually pick some sawhorses to feature here. (We originally had this scheduled to fill one page of *Woodsmith*, but you can see what happened.)

We quickly noticed most plans fit into one of three groups: knock-down sawhorses, folding sawhorses, and conventional sawhorses.

The differences between the three groups are mainly related to stability, load-bearing strength, and portability.

KNOCK-DOWN. Our favorite knock-down sawhorse is the simplest to build — you just draw the pattern onto plywood and cut it out, refer to Fig. 1.

And since it knocks down, it's perfect for someone with limited storage space. In comparison to the other groups, the knock-down design is probably the most limited in stability and strength. (Though after building a pair, we were surprised how strong they actually are.)

FOLDING. The folding sawhorse we chose is significantly stronger than the knock-down version, refer to Fig. 2. And since it folds up neatly, it doesn't take up much more space than a knock-down sawhorse.

What I like most about this folding model is that it goes together quickly. And when it's assembled, it's almost like a having a conventional sawhorse.

CONVENTIONAL. If you don't mind giving up storage space, you can build a conventional sawhorse, refer to Fig. 3.

These sawhorses are typically made from construction lumber: 2x6's, 2x4's and 1x6's. This one is no exception. And if you make more than one, they can be stacked on top of each other.

Since it's made from larger dimension stock, it's the strongest and most stable of all three types. Maybe that's why you see beat-up old sawhorses like this still in use on construction sites.

NEXT CONTEST

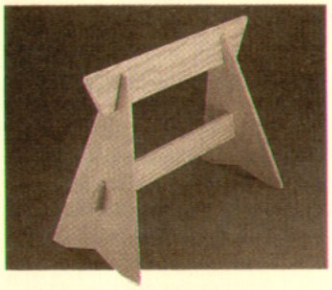
SHARPENING TIPS

Oilstones, waterstones, grinding wheels, and sharpening aids — how do you organize them so they're easily accessible and can be cleaned up quickly? If you have any storage ideas, or any unique sharpening tips, we'd like to see them.

We'll publish the best sharpening tips and storage ideas in upcoming issues. Winners will receive **$100** and a *Woodsmith* **Master Try Square**. Duplicate or similiar entries will be considered in the order we receive them.

Send your sharpening tips and storage ideas (postmarked no later than July 15, 1991) to Shop Tips Contest, *Woodsmith*, 2200 Grand Ave., Des Moines, Iowa 50312.

KNOCK-DOWN SAWHORSE

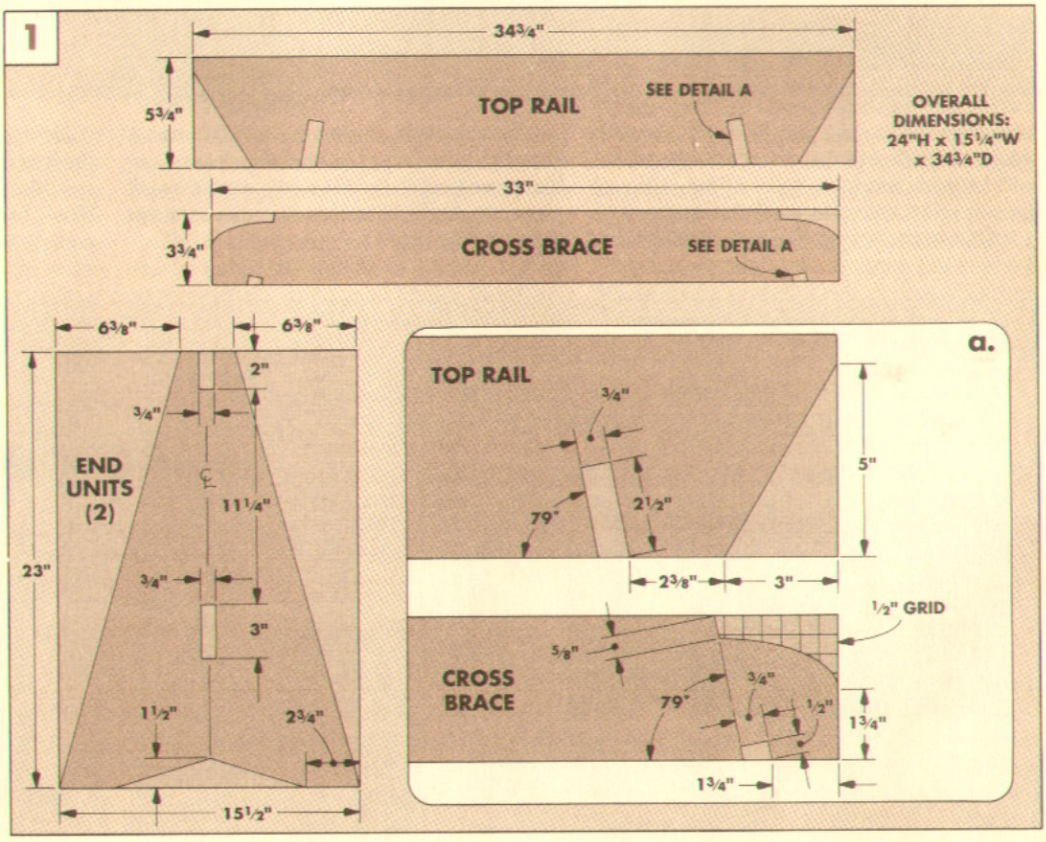


The problem with most knock-down sawhorses is they're not very sturdy — they wobble if you put much force on them.

But the design sent in by **Joe Torrez** of Madera, California minimizes this problem by using a set of tabs that fit in slots to "lock" the pieces together.

CONSTRUCTION. To make a single sawhorse, draw the pattern directly onto ¾"-thick plywood and cut out the pieces. If you're building more than one, use these pieces as a template.

ASSEMBLY SEQUENCE. Start by inserting the cross brace into the holes in the legs. Then, match the slots in the top to the legs, and slide the top in place.



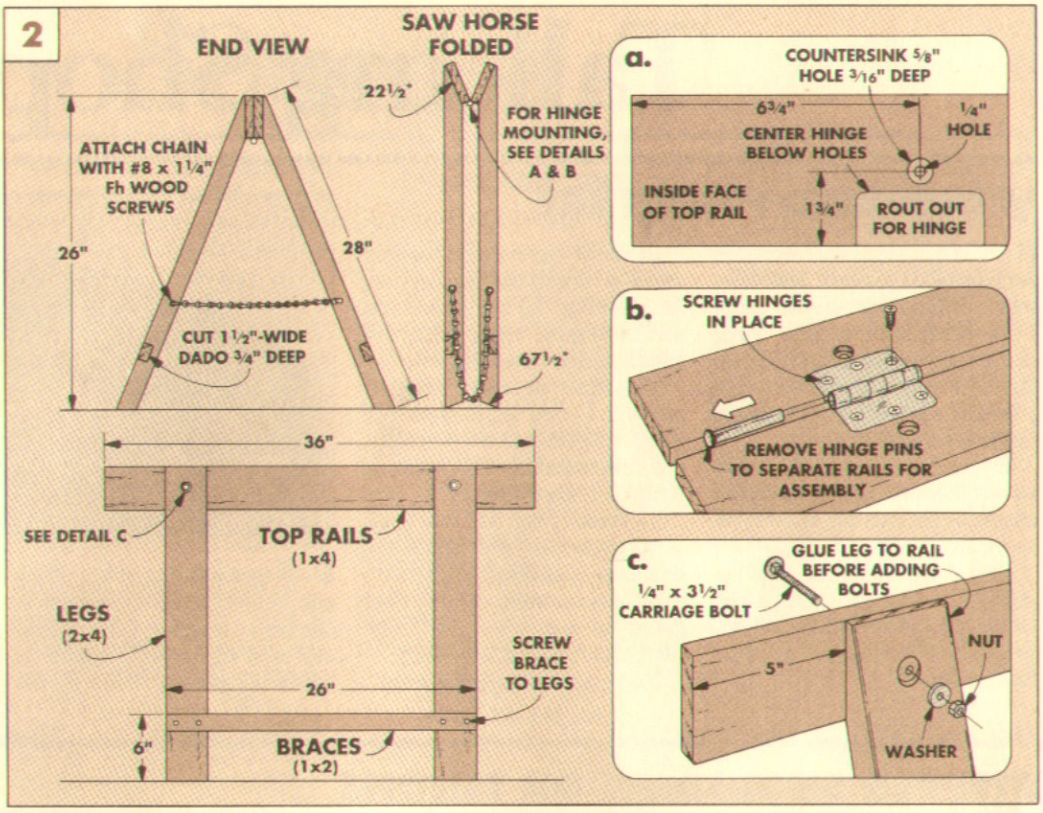
FOLDING SAWHORSE

One reason we picked the folding sawhorse sent by **Don Paul** of Arthur, North Dakota is the unique way it folds and unfolds.

If you pick it up by reaching under the top rails, the legs close up. To use it, just squeeze the top rails together and the legs spring open.

CONSTRUCTION. The tricky part to this sawhorse is the hardware. When it's folded up, there isn't enough clearance to install the bolts or hinge screws.

To solve this, first screw the hinges to the top rails. Then remove the hinge pins. Now the legs can be bolted to the rails and the hinge pins re-installed.

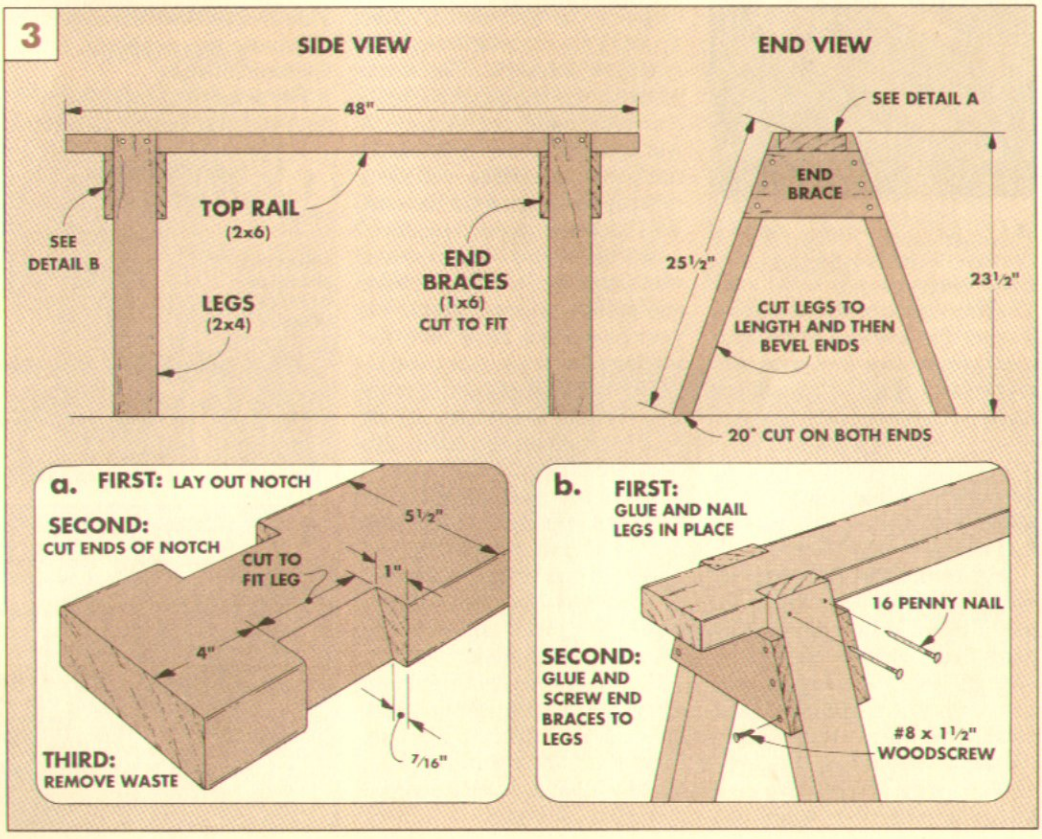


CONVENTIONAL SAWHORSE

A well-built conventional sawhorse gets its stability from legs that are splayed from end to end and from side to side. To make a sawhorse like this means cutting compound miters.

Our favorite design gets around this. It came from **Rick Schertz** of Moweaqua, Illinois, see Fig. 3. The legs are splayed *only* from side to side. But it's got end to end stability too — not from compound cuts on the legs, but from notches in the top rail.

CUTTING THE NOTCH. The tricky part to this sawhorse is cutting these angled notches. I cut the ends or limits of the notch with a handsaw and removed the waste with a chisel.



Talking Shop

WEATHERED FURNITURE

■ After we built the redwood Adirondack furniture last summer, we left it out on the patio. This spring I noticed that some of the redwood had turned gray. It gave me the opportunity to test a couple methods for restoring outdoor furniture.

If you like the gray color redwood takes on, you can just rinse and lightly scrub the wood to remove any dirt, see photo A.

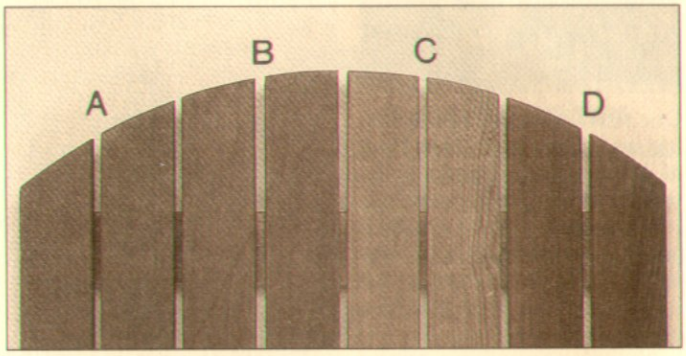
ONE-STEP METHOD. To remove the gray and lighten the wood, I tried a "deck cleaner-brightener" available at most home centers.

In most cases, you simply spray or brush the product on. After letting the solution work, scrub the wood with a stiff brush and then rinse (not shown).

TWO-STEP METHOD. Another method I tried (and preferred since it offers more control) is recommended by the California Redwood Association.

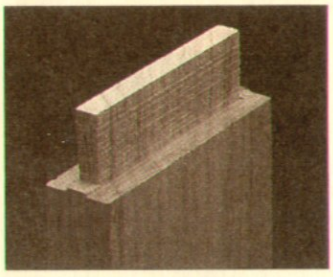
To remove the dirt and gray, scrub the wood with a solution of one cup trisodium phosphate (TSP is a common cleaner) per gallon of water, see B. Then, rinse and repeat if necessary.

Now, to lighten the color, brush on a solution of ½ cup oxalic acid crystals dissolved in one gallon of water. (TSP and oxalic acid are both available at hardware stores.) Then let the solution dry and rinse, see C.



REFINISH. When the wood is completely dry, you can refinish, see D. I applied two coats of the original finish, see page 31.

STEPPED SHOULDERS ON TENONS



■ *I'm having trouble cutting four-shouldered tenons using a dado blade on my table saw. The face cuts are OK, but when I place the workpiece on edge and make the 3rd and 4th shoulder cuts, the shoulders come out uneven. What gives?*

Bert Allaire
Zeeland, Michigan

I experienced the same problem when making the legs for the Patio Table in this issue.

THE PROBLEM. A "stepped" shoulder is created when the four shoulders of a tenon don't align. This can be caused by several situations: the way you're using the table saw, the condition of the workpiece, and the way the table saw is set up.

TECHNIQUE. There are two things to remember when you cut tenons on the table saw. Keep the workpiece butted against the rip fence as you make a cut. And make sure sawdust doesn't build up along the fence between cuts.

THE WORKPIECE. The workpiece may also be part of the problem. If the ends aren't square, it won't butt flush to the fence. So each cut you make will be a different distance from the end. This causes stepped shoulders.

SET UP. If your technique and workpiece check out, but you're still getting stepped shoulders, your rip fence is most likely the problem (as it was in my case).

The face of the fence is probably leaning *toward* the blade — it's not 90° to the table. (It's shown exaggerated in Fig.1.) But you won't notice this problem until you cut a tenon with four shoulders. Here's why.

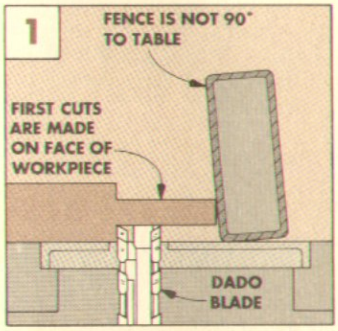
When you cut the (wide) shoulders on the faces of the piece, the piece contacts the fence near the bottom, see Fig. 1.

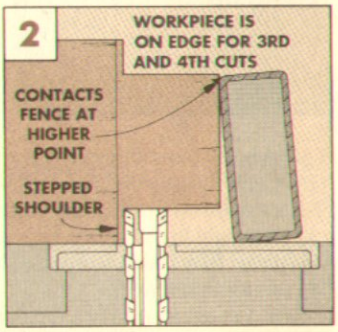
But when you flip the piece on edge to cut the (narrow) shoulders, it contacts the fence higher up. This pushes the piece away from the saw blade creating a stepped shoulder, see Fig. 2.

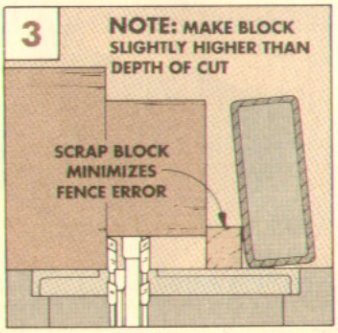
SOLUTIONS. We temporarily solved the problem by clamping a block to the fence, see Fig. 3. This method doesn't completely eliminate the problem, but it does minimize it.

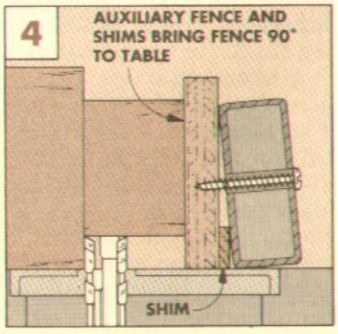
For a more permanent solution, you may be able to correct the problem by adjusting the rip fence or the rails on your saw.

If they're not adjustable, you can attach an auxiliary fence to the rip fence, see Fig. 4. Then by placing shims between the fences, you can bring the auxiliary fence 90° to the table top.









Sources

ACCENT LAMP

Woodsmith Project Supplies is offering a hardware kit for the Accent Lamp shown on page 12. The kit includes all the electrical parts and support hardware. The brass inlay strips, "instant glue," and shade can be ordered separately, see below. (Note: This kit does *not* include wood, assembly screws, or finish.)

Accent Lamp

775-100 Accent Lamp Hardware Kit $7.95

- (1) Six Foot Cord and Plug (Gold Colored), UL Approved
- (1) Straight Fixture Pipe, 11" Long, ⅛" I.P. Thread, Threaded Both Ends, Brass-Plated
- (1) Brass Hex Nut and Steel Lock Washer, Fits Fixture Pipe
- (1) Steel Washer, 1" Dia.
- (1) Check Ring, Brass-Plated, 1⅛" Dia.
- (1) Shade Harp, Two Piece, Brass-Plated, 7"
- (1) Light Socket, Brass-Plated, Push-Through On-Off Switch, UL Approved
- (1) Finial Cap, Brass-Plated

BRASS STRIPS. The Lamp shown on page 12 has decorative brass strips. We bought the original strips from a hobby shop. **Woodsmith Project Supplies** is also offering the brass strips.

775-150 Brass Accent Strips, .064" Thick, ¼" Wide, 12" Long, Box of Eight ..... $5.95 per box

INSTANT GLUE. After some experimenting, we found out that epoxy glue didn't hold the brass strips to the wood very well. So we tried using a variety of "instant" (cyanoacrylate) glues. The one we chose sets up in 20 to 50 seconds and held the brass strips securely in place.

This instant glue has the consistency of cold honey so it fills gaps. We recommend you also order the solvent to remove glue from your hands and clothing.

775-210 Special 'T' Glue, 2 oz. bottle..... $9.95

775-220 Ultra Solvent, 2 oz. bottle..... $4.95

LAMP SHADE. Lamp shades can be purchased at many department stores. Finding a square shade may be more difficult, but we found ours at a local lighting shop. **Woodsmith Project Supplies** is offering the high quality square linen shade shown in the photo on page 12.

775-175 Lamp Shade, 12" Sq. x 8" High, White Linen ... $27.95

PATIO TABLE

Woodsmith Project Supplies is offering the threaded inserts and bolts for the Patio Table.

Patio Table

775-300 Patio Table Hardware Kit $2.95

- (4) 5/16" x 1½" Machine Bolts
- (4) Washers
- (4) 5/16" Threaded Inserts

MORTISING BITS

To drill the mortises for the Redwood Planter, we used special mortising bits made by Vermont American. These are similar to a Forstner bit, but have a long flute to pull the chips out of a mortise. We use them on the drill press, see Fig. 3 on page 20.

Woodsmith Project Supplies is offering three individual sizes of these bits (you need a ½" bit for the Planter), or they can be purchased as a set.

278-647 ¼" Bit.....$8.95
278-650 ⅜" Bit.....$9.95
278-653 ½" Bit.....$10.95
278-654 Set of 3 Bits.....$28.95

OUTDOOR GLUE AND FINISHES

Since both the Patio Table and Planter are likely to sit out in the rain and sun, I wanted to use glue and finish that would stand up to these conditions.

EPOXY. A two-part epoxy glue is the strongest waterproof glue, but it's expensive and cured epoxy won't come off anything very easily. It's difficult to scrape off squeeze-out without tearing up splinters of soft redwood.

PLASTIC RESIN. Another option is a moisture-resistant plastic resin glue (such as Weldwood Plastic Resin). Plastic resin is an inexpensive tan powder that's mixed with water. It should stand up to most outdoor conditions and is available at home centers, hardware stores, or the sources below.

FINISH. To finish these outdoor projects, I applied two coats of a 50/50 mixture of McCloskey's Man O'War Satin Spar Varnish and McCloskey's Stain Controller & Wood Sealer. (This is a thinned down tung oil.) These products are sold at home centers and hardware stores, or can be ordered from The Woodworkers' Store, see below.

PAINT. On the back cover we're showing a pine Planter Box primed with a coat of Rust-Oleum's light gray Wood Saver Primer. Then it was sprayed with two coats of Rust-Oleum's birch white Wood Saver Enamel from an aerosol can.

Rust-Oleum's Wood Saver products are available at many paint stores and home centers.

JAPANESE SAWS

Japanese saws (shown on pages 24 to 26) are available from the following catalogs. Please call each company for a catalog or more information.

The Japan Woodworker
800–537–7820

Hida Japanese Tool, Inc.
415–524–3700

The Woodworkers' Store
612–428–2199

Constantine's
800–223–8087

Garrett Wade
800–221–2942

Grizzly Imports
800–541–5537

Woodcraft
800–225–1153

ALTERNATE CATALOG SOURCES

Similar hardware and supplies may be found in the following catalogs. Please call each company for a catalog or information.

Bridge City Tool Works
800–253–3332
Instant Glue

Constantine's
800–223–8087
Lamp Parts, Brass Strips, Instant Glue, Inserts, Spar Varnish, Plastic Resin Glue

Craftsman Wood Service Co.
800–543–9367
Lamp Parts, Threaded Inserts, Plastic Resin Glue

Leichtung Workshops
800–321–6840
Lamp Parts, Instant Glue, Threaded Inserts

Meisel Hardware
800–441–9870
Lamp Parts

Paxton Hardware, Ltd.
301–592–8505
Lamp Parts, Shades, Threaded Inserts

Wood Finishing Supply
315–597–3743
Spar Varnish

Woodcraft
800–225–1153
Instant Glue, Threaded Inserts, Mortising Bits, Plastic Resin Glue

The Woodworkers' Store
612–428–2199
Instant Glue, Threaded Inserts, Spar Varnish, Wood Sealer, Plastic Resin Glue

Woodworker's Supply of New Mexico
800–645–9292
Instant Glue, Inserts

ORDER INFORMATION

BY MAIL

To order by mail, use the form enclosed with a current issue. The order form includes information on handling and shipping charges, and sales tax. Send your mail order to:

Woodsmith Project Supplies
P.O. Box 10350
Des Moines, IA 50306

BY PHONE

For fastest service use our Toll Free order line. Open Monday through Friday, 8:00 AM to 5:00 PM Central Time.

Before calling, have your VISA, Master Card, or Discover Card ready.

1-800-444-7002

Note: Prices subject to change after August, 1991.

Final Details

Accent Lamp

▲ *An Accent Lamp looks good just about anywhere you display it. Choose the woods to contrast or coordinate with other furniture in the room.*

Planter Box

▲ *This Planter Box is made from pine then painted white. But the paint doesn't hide the decorative chamfered edges on the legs and side slats.*

Japanese Saws

▲ *The blades on Japanese saws are very thin and flexible. This means they produce fine kerfs and give you precise, tight-fitting joints.*

Patio Table

▲ *Splines on the corners of this Patio Table aren't just for good looks. They also strengthen the miters and make it easier to assemble the eight-sided frame.*