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FULL-SIZED
PATTERN INSERT

Weekend Woodworking Projects™

September 1994
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- **P.O. Box Bank** • **Bird Feeder**
- **China Display Stand**
- **Victorian Shelf and Mirror**
- **Elephant Stack Toy**



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BLANKET CHEST



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This picture tells the story better than any words can. In our overstrike tests, the Stanley hammer outlasted the competitor's brand by a 4 to 1 ratio.*

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STANLEY
helps you do things right.

Weekend Woodworking Projects™



Seeds To Go, Page 7



Victorian Mirror and Shelf,
Page 18

Cover photograph: King Au

7 SEEDS TO GO

For this bird-feeding season, we kept our eye on functional hospitality as well as on styling. But practical though this feeder is, its contemporary good looks will set your neighbors chirping right along with the chickadees.

12 STACK-'EM-UP PACHYDERM

Meet Elliott the elephant, who has it all over Humpty Dumpty—because you can put Elliott back together again. In fact, he stacks up nicely in the hands of a three- to five-year-old.



Stack-'Em-Up Pachyderm, Page 12

16 KID-SIZED FLOOR SAFE

Turn little shavers into little savers with this novel bank project, which we modeled after an old-fashioned floor safe. The bank makes clever use of a surplus post-office box door, which features a captivating combination lock and a window that lets kids watch their investment grow.

18 VICTORIAN MIRROR AND SHELF

Try decking your halls with this striking pair of period pieces. The fanciful fretwork has enough presence to provide a focal point for any entryway. And, we offer several design options in our pattern insert.

22 BLANKET STATEMENT

How can a design this simple produce a chest this special? Well, maybe it's the easy-to-make box joints, or possibly the Old World appeal of the routed detailing. Whatever the case, its low profile makes it a great bench, yet there's still a cavernous space under the lid.



Grand Stand For China, Page 26

26 GRAND STAND FOR CHINA

It's a shame to hide fine china in the cupboard, showing it off only on special occasions. Instead, give your heirloom dinnerware a chance to stand up and be counted.



WWP: If it ain't broke, why fix it?

Two issues ago, we asked for your comments about our magazine's "new look" and about future changes we were considering. Your responses have pleasantly surprised us both in their quantity and detail. A few of you expressed healthy skepticism at our efforts, asking the question that entitles this column. Most of you, however, opted for change of one kind or another, so here's how we plan to act on your responses.

As for our new glossy paper, a resounding majority of you gave it a "thumbs down." One reader put it in a nutshell: "The gloss finish makes it hard to see. The glare could result in missed directions or misreading of dimensions. Keep WWP a shop tool, not something to put out in the den to impress visitors." Another of you had these complaints: "The new paper does not hold up, and the ink smears. It doesn't mail very well either."

The keynote we kept hearing in your responses—"Keep WWP a shop tool"—hit home with us. If you're not taking the magazine to the shop and "using it rough," chances are you're not building our projects. So, we've taken the hint. Starting with our next issue (November 1994), we'll go with a matte-finish paper that will be friendlier to your eyes and should stand up to hands-on use in the shop (as well as at the post office).

We also asked how you'd feel about a foldout pattern insert, if we were to offset the costs by adding four pages of adver-

tising. Well, the yea-sayers outvoted the nay-sayers three to one, with most of the comments echoing this reader's sentiments: "I hate to work on a project if I have to enlarge a grid or wait for patterns to show up in the mail." We didn't waste any time taking action on this one. Turn to the center of the magazine, if you haven't already, and behold the results.

To those of you who cautioned us about positioning the new ads in the magazine, your point is well taken. "It's nice to have a project continued from one page to the next," observed one reader, "instead of having to sort it out from the advertising." We plan to keep our ads in the front and back of the magazine, rather than breaking up the editorial content.

We thank all of you for your insights, inspirations, and outbursts. Maybe we can't hope to please every one of you on all fronts, but that doesn't mean we won't keep trying. Your candid opinions help us keep our ongoing efforts on target.

Calling All Scrollsawyers. If you enjoy dreaming up original designs for scrollsaw projects, and wouldn't mind picking up a hefty cash prize for your efforts, have a look at page 28. Along with *Super Scrollsaw Patterns* and *WOOD* magazine, we're co-sponsoring "The Great Scrollsaw Design Contest."

Our Pledge to You

Prior to publication, we build every project featured in *Weekend Woodworking Projects* step-by-step in our shop. Then, a seasoned team of editors reviews the how-to directions, technical drawings, illustrations, and Bill of Materials of each project to make sure the instructions we provide to you are clear, concise, and complete.

The *Weekend Woodworking Projects* Staff

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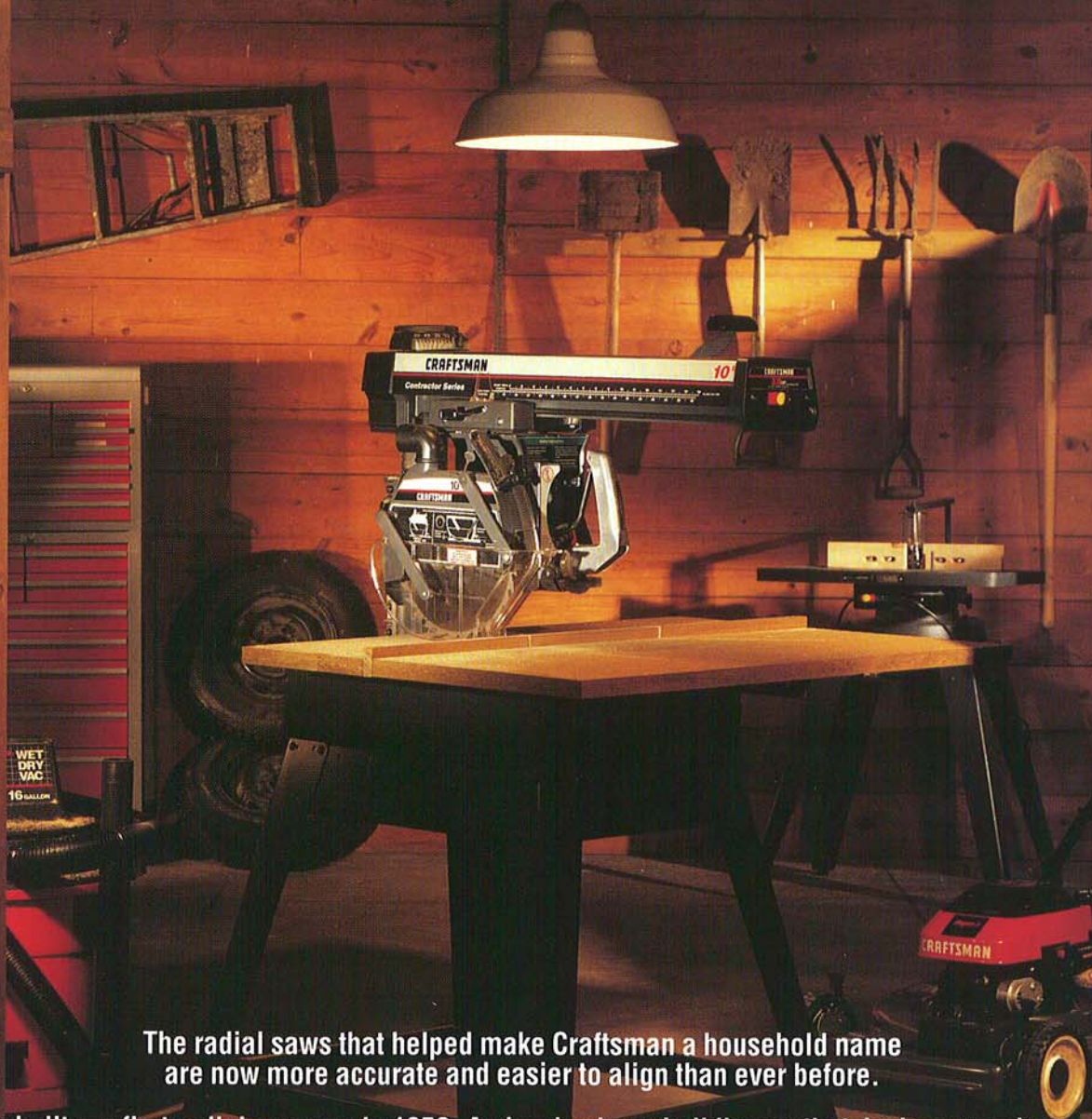
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Seeds To Go

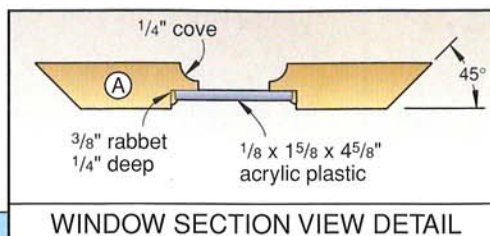
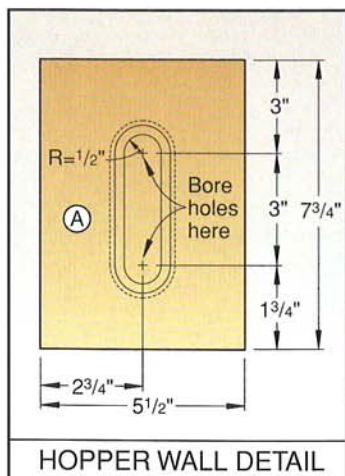
For this bird-feeding season, we kept our eye on functional hospitality as well as on styling. That's why we included retaining rails for tidiness and a fool-proof feeding system with ample drainage. Practical as it is, we're guessing that this feeder's contemporary good looks will set your neighbors chirping right along with the chickadees.

Let's Start with the Hopper

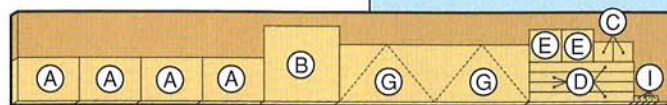
1 To make the hopper walls (A), first rip and crosscut a piece of $\frac{3}{4}$ "-thick stock to 6x32". (We selected redwood. Most S4S or "surfaced on four sides" redwood stock is milled to $\frac{1}{16}$ or $\frac{5}{8}$ " thick, either of which will work for this project.) Next, tilt your tablesaw blade to 45°, and bevel-rip both edges of this piece to 5½" wide. Now, crosscut four 7¾"-long hopper walls from this piece.

2 To make the hopper windows, first lay out and bore two 1" holes through each hopper wall where shown on the Hopper Wall detail that accompanies the Exploded View drawing on page 8. (We used a Forstner bit for this.) Connect the edges of the holes with straight lines, then cut out the waste between the holes. (We used our scrollsaw.) Now, sand the win-

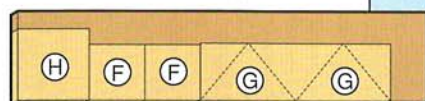
Continued



Note: Set miter gauge at 41° from square to cut complementary 49° miter on (G)



3/4 x 11 1/4 x 96" Redwood



3/4 x 11 1/4 x 60" Redwood

CUTTING DIAGRAM

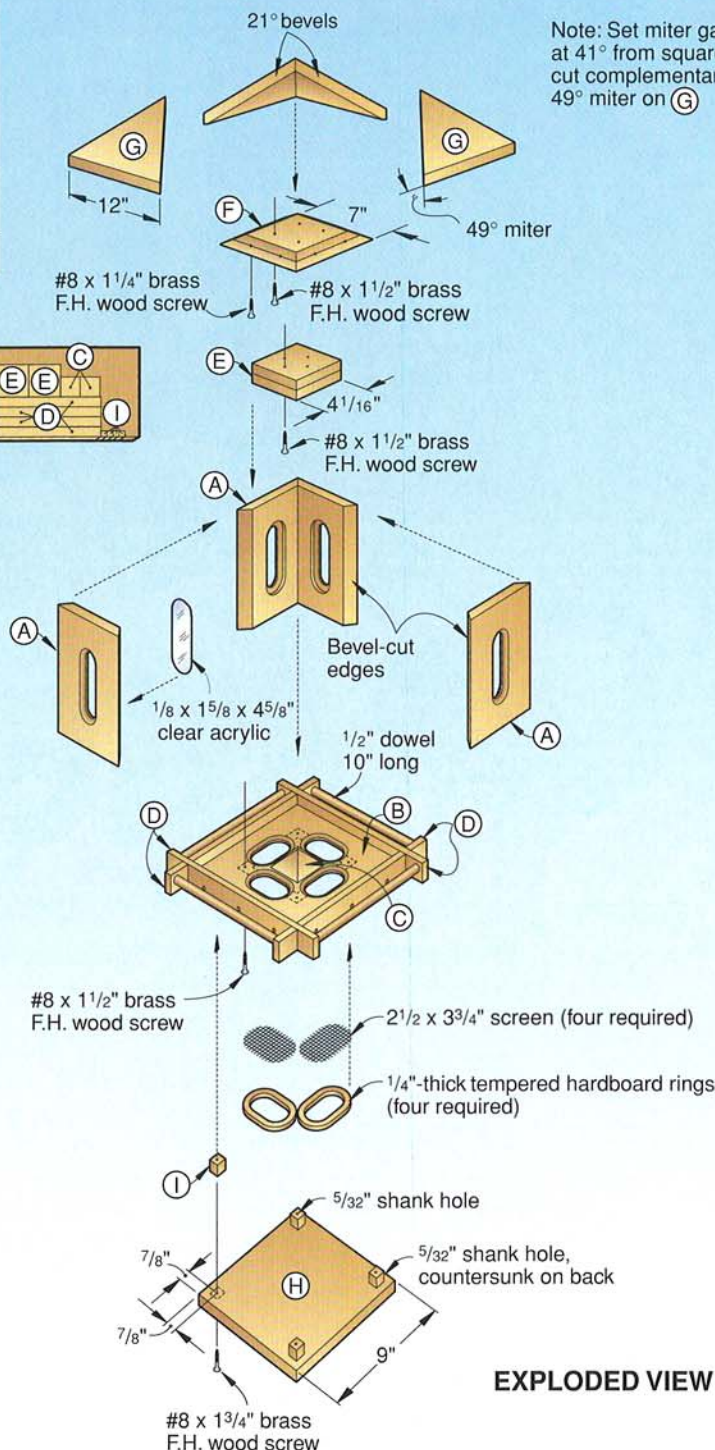
BILL OF MATERIALS

Part	Finished Size			Matl.	Qty.
	T	W	L		
A hopper walls	3/4"	5 1/2"	7 3/4"	R	4
B platform	3/4"	9 1/2"	9 1/2"	R	1
C feed slide	1 1/2"	2 1/2"	2 1/2"	RL	1
D rails	1/2"	1 1/4"	13 1/2"	R	4
E roof seat	1 1/2"	4 1/16"	4 1/16"	RL	1
F roof pedestal	1 1/2"	7"	7"	RL	1
G roof panels	3/4"	7 1/4"	12"	R	4
H mounting base	3/4"	9"	9"	R	0
I spacer blocks	3/4"	3/4"	3/4"	R	4

Please read all instructions before cutting.

Materials Key: R—redwood; RL—redwood lamination.

Supplies: #6x1", #8x1 1/4", #8x1 1/2", #8x1 3/4" brass flathead wood screws; 1/2" hardwood dowel stock; waterproof construction adhesive; 1/8"-thick sheet acrylic; siliconized acrylic caulk; galvanized window screen.



dow edges using a $\frac{3}{4}$ "-diameter drum sander on your drill press.

3 Designate and mark your walls "front" and "back." Next, fit your table-mounted router with a rabbeting bit, and rout a $\frac{3}{8}$ " rabbet $\frac{1}{4}$ " deep around the edge of the window on the back of each wall. (See the Window Section View detail shown with the Exploded View drawing.) Next, switch to a $\frac{1}{4}$ " cove bit, and rout a $\frac{1}{4}$ "-deep cove around the window on the front of each wall.

4 To make the windowpanes, first copy the full-sized Windowpane pattern shown on the pattern insert. Use the pattern to make a template from scrap hardboard, then lay out four windowpanes on $\frac{1}{8}$ "-thick clear acrylic plastic. Scrollsaw the panes to shape, then adhere them into the rabbeted space on the back face of each wall. (We applied a small bead of clear siliconized acrylic caulk around the rabbet to bed the windowpane, then applied another bead around the edge of the pane to seal it in position.)

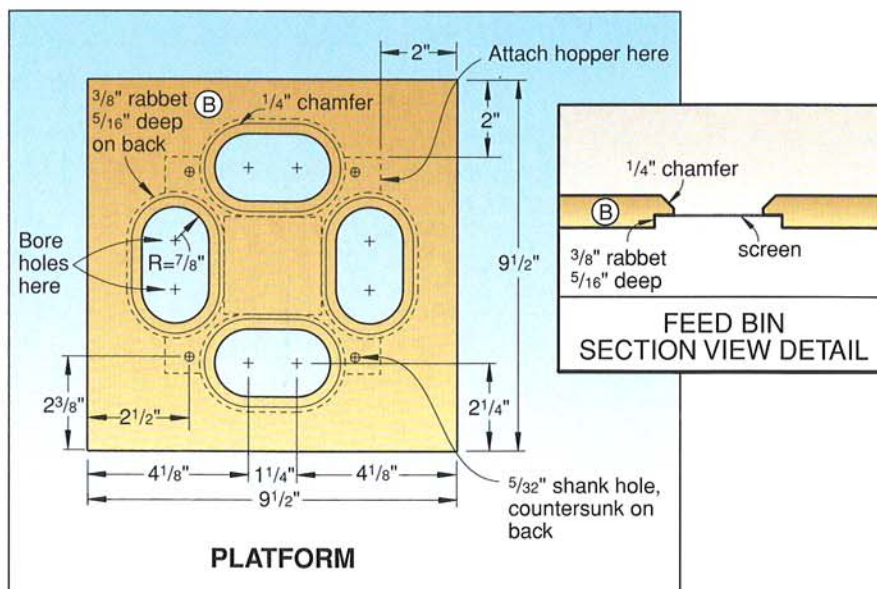
5 Dry-assemble the four hopper walls, and then check for square. Adjust as necessary, then glue and clamp the walls. (We used Franklin Titebond II, a water-resistant glue, and three band clamps.)

Next, Make the Platform And Feeding System

1 From your remaining $\frac{3}{4}$ "-thick stock, cut a $9\frac{1}{2}$ " square for the platform (B). Lay out the feed bins where shown on the Platform drawing above. Then, bore, cut out, and sand the holes using the same techniques you used to make the windows.

2 Mark the platform faces "top" and "bottom." Next, fit your router with the same rabbeting bit you used for the windows, but set it to cut $\frac{5}{16}$ " deep. Rout a rabbet around the edge of each feed bin on the bottom face of the platform. Now, switch to a 45° chamfer bit, and rout a $\frac{1}{4}$ "-deep chamfer around each hole on the top face. (For reference, see the Feed Bin Section View detail that accompanies the Platform drawing.)

3 Make four copies of the full-sized Screen Retainer Ring pattern shown on the pattern insert. Adhere them to $\frac{1}{4}$ "-thick tempered hardboard, then drill a start hole inside each



ring. Now, scrollsaw the interior waste from each, and then saw the four rings to shape.

4 Using one of your rings as a template, lay out four screen panels on galvanized window screen. Cut the four panels to shape using your tin shears, and adhere them into the rabbets on the bottom platform face. (We used Contech PL200, a waterproof construction adhesive we found at a local home center.) Apply a second bead of adhesive around the edge of each screen panel, then insert and clamp the retaining rings in place.

5 To make the feed slide (C), cut a pair of $2\frac{1}{2}$ "-square pieces from your stock, then glue and clamp them face to face to create a $1\frac{1}{2}$ "-thick block. When the glue has dried, bevel-cut all four edges of this block to form a four-sided pyramid, as shown in the illustration on page 10. (For help with this, also see Tip no. 1 at right.) Now, center, glue, and nail the feed slide between the four feed bins, using #17 $\times$ 1 $\frac{1}{2}$ " brads.

Now, Add the Rails and Perches

1 To make the rails (D), cut and resaw four pieces of stock to $\frac{1}{2}\times 1\frac{1}{4}\times 13\frac{1}{2}$ ". Next, lay out and bore $\frac{1}{2}$ " holes $\frac{1}{4}$ " deep on the inside faces where shown on the Rail detail that accompanies the Platform Assembly drawing. (We used a Forstner bit.)

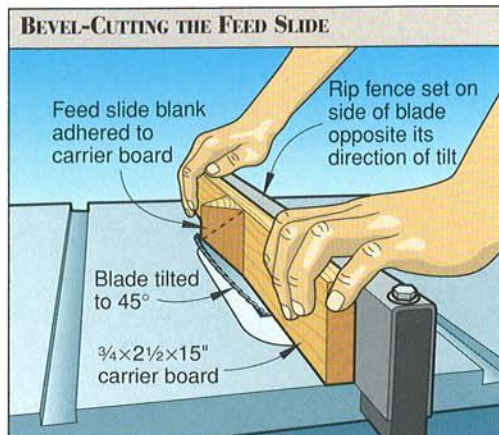
2 Fit your tablesaw with a $\frac{1}{2}$ " dado set, and elevate it to $\frac{5}{8}$ ". Then, cut notches in the edges of the rails where shown on the Rail detail. Dry-assemble the four rails, and check the lap joints for fit. (The rail edges should be

Continued

TIP no. 1—To bevel-cut the feed slide (C) to shape, we suggest adhering your laminated $2\frac{1}{2}$ "-square blank to a $\frac{3}{4}\times 2\frac{1}{2}\times 15$ " carrier board, aligning the edges as shown in the illustration. (We used double-faced carpet tape.) Move your tablesaw rip fence to the side of the blade opposite its direction of tilt. Next, tilt the blade to 45° , and set the rip fence to allow for the thickness of your carrier board. Then, bevel-cut one edge of the feed slide. Flip the carrier board over, and bevel-cut the opposite edge. Separate the feed slide from the carrier board, turn it 90° , and readhere it. Now, use the same technique to bevel-cut the two remaining edges, creating a four-sided pyramid. (**Note:** Use this same approach to bevel-cut the roof pedestal (F) later, but remember to change the cutting angle and the width of your carrier board.)

Seeds To Go

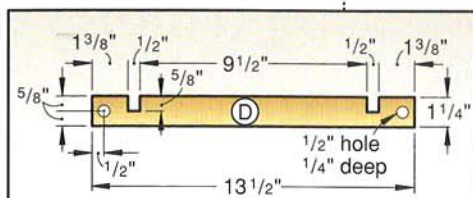
TIP no. 2—To center and attach the hopper to the platform, first cut 2×4" spacers from scrap plywood stock, and fit them around the edges of the platform. Position the hopper between the spacers, then flip the assembly over on your bench. (The spacers should be wedged in tightly enough to stay in position.) Lay out and drill 5/8" shank holes through the bottom of the platform near—but not right at—the hopper corners. Then, drill 3/4" pilot holes into the hopper, and drive #8×1 1/2" brass flathead woodscrews.



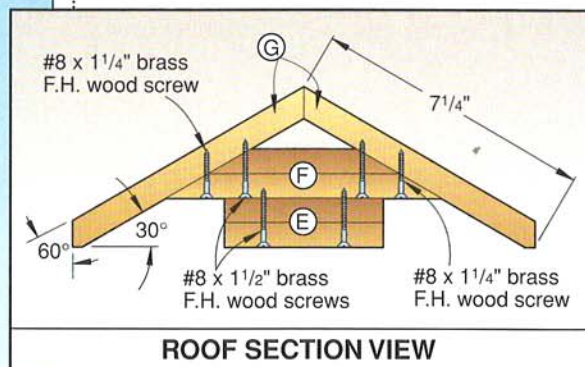
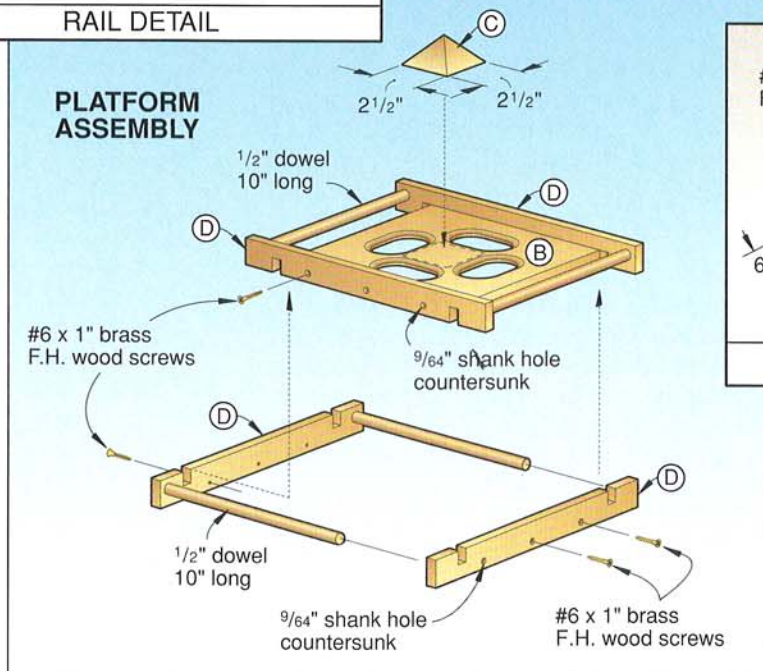
flush.) Sand a slight round-over on the rail ends, then finish-sand the rails and platform.

3 Lay out, drill, and countersink three 3/4" shank holes through the rails where shown on the Rail detail. (**Note:** Drill two of the rails along the notched edge and the other two along the opposite edge.) Next, center and clamp two matching rails along opposite edges of the platform. (See the Platform Assembly drawing.) Using the shank holes as guides, drill 3/32" pilot holes 1/2" deep into the platform.

4 Measure the distance between the rails, then cut two perches from 1/2" dowel to length, allowing for the 1/4"-deep holes. (Ours mea-



RAIL DETAIL



sured 10" long.) Next, glue and screw the rails to the platform, inserting the dowels into their holes as you do this. Now, repeat this procedure to attach the other two rails and perches, locking the lap joints together.

5 Attach the hopper to the platform using four #8×1 1/2" brass flathead wood screws. (For an easy way to do this, see Tip no. 2 at left.)

Build the Roof, Then Add The Mounting Base

1 To make the roof seat (E) and roof pedestal (F), first cut two pairs of pieces to 4 1/16" square and 7" square, respectively. Then, glue and clamp these pairs face to face, and allow the glue to dry.

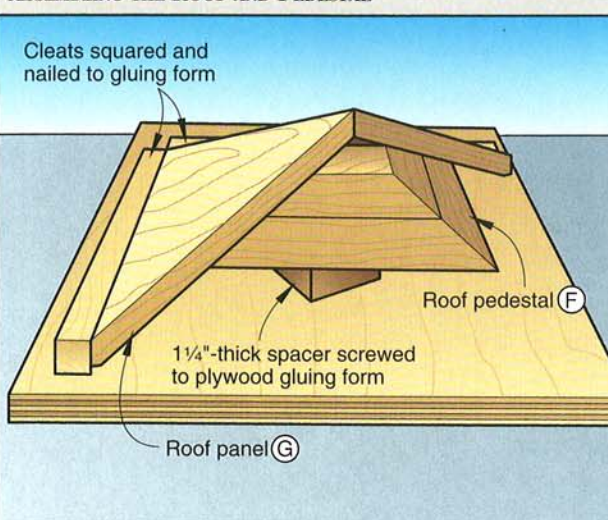
2 Using the same technique you used to bevel-cut the feed slide (D), bevel-cut all four edges of the roof pedestal to 30°. To do this, use a carrier board cut to the same width as the stock piece. (**Note:** This will leave a flat surface on top. See Tip no. 1 on page 9.)

3 To make the four roof panels (G), first rip and crosscut two pieces of stock to 8×30". Tilt your tablesaw blade to 30° from square, and bevel-rip one edge of each piece. Next, move the rip fence to the opposite side of the blade. Flip each piece over, stand it on edge, and bevel-rip the same edge along the opposite face. (These cuts will create 60° and 30° bevels

on the roof-panel edges where shown on the Roof Section View drawing above. Before proceeding, see Tip no. 3 opposite.)

4 Tilt your blade to 21° from square, and set your miter gauge at 41° from square, rotating it clockwise. (We verified our angles using an angle gauge. For reference, see Step One of the drawing entitled Compound-Mitering the

ASSEMBLING THE ROOF AND PEDESTAL



Roof Panels *below*.) Now, miter-cut one end of each 8x30" board where shown.

5 Move your miter gauge to the right-hand slot on your saw table. Reset it to 41° from square in the opposite direction, as shown in Step Two of the drawing. Now, mark off 12" along the beveled edge of each board, starting at the mitered corner. Position the stock so that the blade will enter at this 12" mark, then clamp on a stopblock to hold the board in place. Now, miter-cut the other end of the first and second roof panels. Repeat steps 5 and 6 to miter-cut the third and fourth roof panels.

6 To glue up the roof, first make a simple gluing form as shown *at right*. Next, resaw scrap stock to create a 1 1/4"-thick spacer roughly 4" square. Nail the spacer in the approximate center of the form, then place the roof pedestal (F) on top of it. Dry-assemble the roof panels around the pedestal, butting two of them against the squared cleats. Now, check for fit.

7 Apply construction adhesive to two roof panels, and assemble them in the form. Next, apply adhesive to the beveled pedestal edges, and center the pedestal under the two

panels so that they seat properly. Then, apply adhesive to the remaining panels, and assemble them. When all mating surfaces are properly joined, nail two more cleats to the form to enclose the roof. Now, apply weight to the roof, and allow the adhesive to cure overnight.

8 To make the mounting base (H), rip and crosscut a piece of 3/4"-thick stock to 9" square. Sand a slight round-over on all edges, and then finish-sand the base. Next, bandsaw four cubical spacer blocks (I). (Ours measured 1 1/16" on all sides.)

9 Lay out, drill, and countersink shank holes on the bottom of the base (H). (For dimensions and screw sizes, see the Exploded View drawing.) Next, drill centered shank holes through the spacer blocks. Insert screws through the base and blocks, then center the base on the bottom of the platform. Using the screws to mark centerpoints, drill pilot holes 1/2" deep in the platform. Now, glue and screw the base and blocks to the platform.

Add Some Last Touches, Then Open Your Cafe

1 After the roof adhesive has cured, screw the pedestal to the roof panels where shown on the Roof Section View drawing. Next, center, glue, and screw the roof seat (E) to the pedestal.

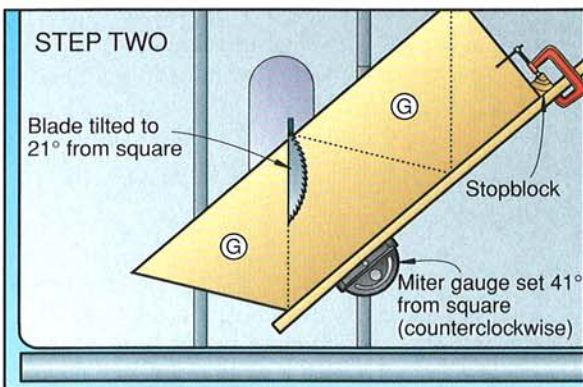
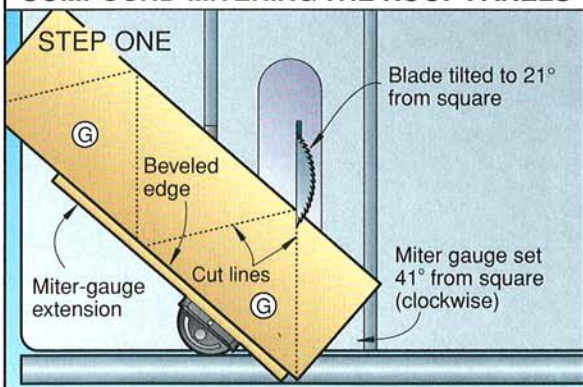
2 Finish-sand the roof and any other surfaces that still need it. Then, mount your feeder in a location that is protected as much as possible from predators and squirrels. (See Tip no. 4 *at right*.) ■

TIP no. 3—Before you compound-miter the actual roof panels, we suggest you make a mockup of the roof to verify the accuracy of your tablesaw setup.

TIP no. 4—To mount your feeder, we suggest using a 10' length of galvanized 1" plumbing pipe (1 1/4"-o.d.) threaded on at least one end. To set the pipe in the ground, first choose a location far enough from buildings and trees that squirrels and predators can't jump down onto the feeder. Next, dig an 8"-diameter hole 24" deep. Insert the pipe into the hole, and prop it to keep it perpendicular. Mix up a 60-lb. bag of pre-mixed concrete, and fill the hole with it, tamping it down as you work. Keep the surface of the concrete wet until it cures. Screw a threaded flange to the mounting base of the feeder, and then screw the flange and feeder onto the end of the pipe. This should protect the feeder from ground-dwelling predators and squirrels.

Project design: Bob Colpetzer, Doug Cantwell
Illustrations: Lorna Johnson, Carson Ode
Project builder: Don Wipperman
Photograph: King Au

COMPOUND-MITERING THE ROOF PANELS





STACK-'EM-UP Pachyderm

Meet Elliott the elephant, who has it all over Humpty Dumpty—because you can put Elliott back together again. In fact, he stacks up pretty nicely in the hands of a three- to six-year-old. As the kids get older, they can park Elliott on a night table or bookcase and still enjoy his company.

Start by Machining the Head

1 Remove the pattern insert from the center of the magazine, and copy the full-sized patterns for all elephant parts. (**Note:** Make two copies each of the upper body, lower body, and ear patterns.) Next, cut out the patterns (one copy each) for the head (A), upper body (B), and lower body (C), and adhere them to 1¾"-thick stock that has been surfaced on both faces. (We selected cherry. You can also laminate 5/4 or 4/4 stock to achieve this thickness, although the lamination lines may detract from the appearance of the project.)

2 Rip and crosscut the stock for the head to its finished dimensions of 4⅛" square. Next, fit your tablesaw with a ⅝" dado set elevated to cut ¾" deep, and cut a centered groove along both edges of the head blank. Now, save this saw setup for Step 5 on page 13.

3 Locate the “first hole” centerpoints for the trunk and ear holes where shown on the pattern and on the Head Side View drawing *below right*, and bore the $\frac{5}{8}$ " holes $\frac{3}{4}$ " deep. (For these and the remaining large-diameter holes, we used multi-spur bits, although Forstner bits will also work. We clamped the stock securely to our drill-press table before boring.)

4 Next, cut three $\frac{5}{8}$ " plugs $\frac{3}{4}$ " long from the same stock. (**Note:** You can also cut 1" lengths of dowel stock, but plugs give you a better fit.) Apply glue sparingly to the plug edges, and insert them $\frac{1}{4}$ " into the

Next, Shape the Body Parts

1 Bandsaw the head, upper body, and lower body to shape, keeping your blade outside the line. Then, sand to the line. (We used a $1\frac{1}{2}$ "-diameter drum sander.) Now, tilt your tablesaw blade to 15° from square, and bevel the top surface of the upper body where marked on the pattern. (See Tip no. 1 at right.)

2 Fit your table-mounted router with a $\frac{3}{8}$ " round-over bit, and rout all contoured edges on these three pieces. (See Tip no. 2 on page

Continued

TIP no. 1—The safest technique for bevel-cutting the upper body is to move your rip fence to the side of the blade opposite its direction of tilt. For example, if your blade tilts to the right, you should position your fence to the left of the blade.

BILL OF MATERIALS

Part	Initial Size			Mati.	Qty.
	T	W	L		
A* head	1 $\frac{3}{4}$ "	4 $\frac{1}{8}$ "	4 $\frac{1}{8}$ "	C	1
B* upper body	1 $\frac{3}{4}$ "	4 $\frac{1}{4}$ "	5 $\frac{1}{4}$ "	C	1
C* lower body	1 $\frac{3}{4}$ "	6"	5 $\frac{1}{2}$ "	C	1
D* lower spacer	$\frac{1}{4}$ "	5 $\frac{3}{16}$ "	4 $\frac{7}{8}$ "	C	1
E* upper spacer	$\frac{1}{4}$ "	3 $\frac{1}{2}$ "	4 $\frac{7}{8}$ "	C	1
F* ears	$\frac{5}{8}$ "	2 $\frac{5}{8}$ "	3 $\frac{7}{8}$ "	W	2
G* trunk	1 $\frac{1}{16}$ "	2 $\frac{3}{8}$ "	5 $\frac{3}{4}$ "	W	1

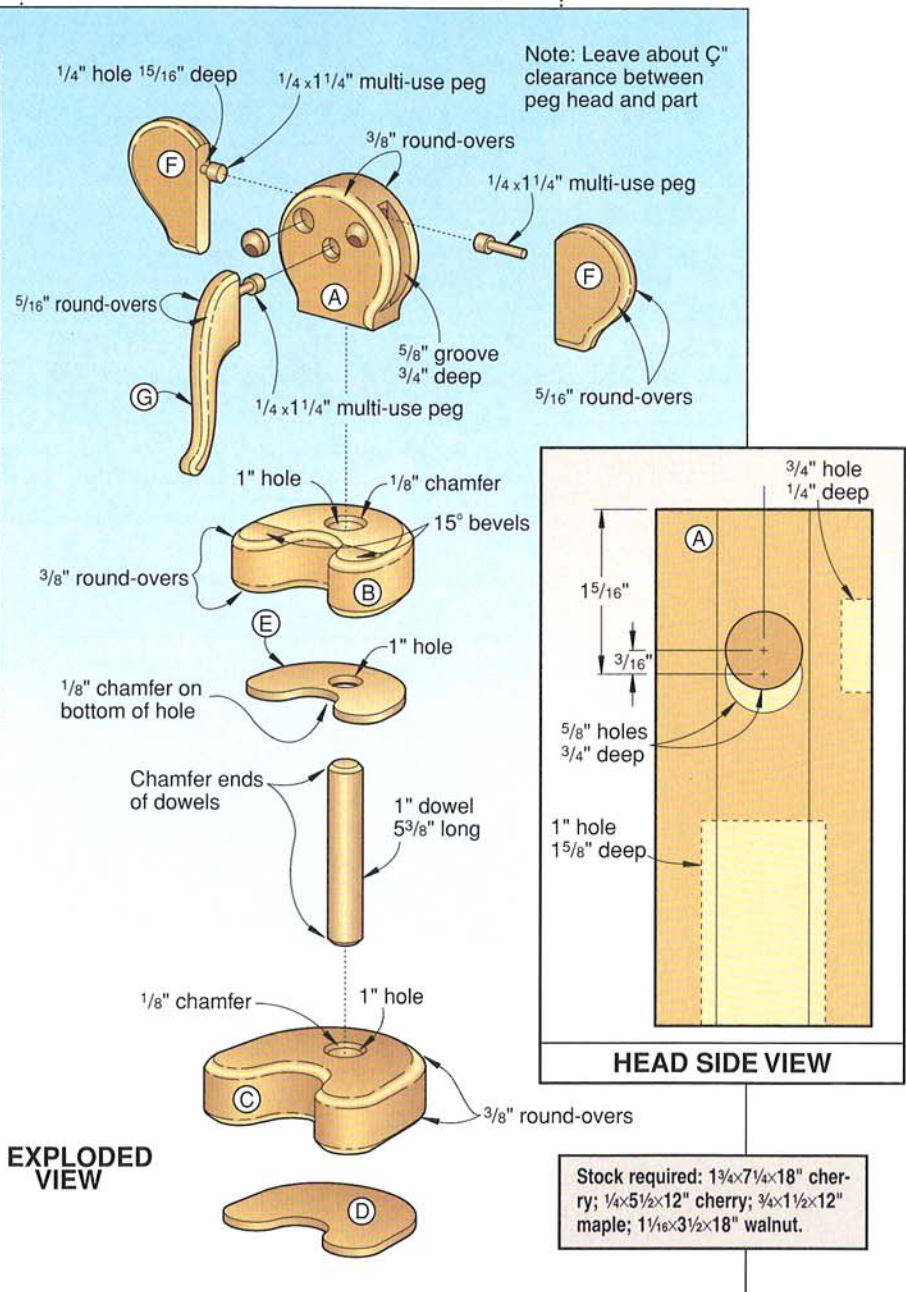
*Cut part to final shape during construction. Please read all instructions before cutting.

Materials Key: C—cherry; W—walnut.

Supplies: 1" cherry dowel stock; $\frac{5}{8}$ " cherry dowel stock (optional); $\frac{5}{8}$ " walnut dowel stock (optional); $\frac{1}{4}$ "x $1\frac{1}{4}$ " multi-use pegs; spray adhesive; oil finish.

holes. (We marked our plugs first to make sure we wouldn't insert them too far.) While the glue dries, bore the $\frac{3}{4}$ " eye holes where shown and dimensioned on the head pattern. Then, switch to a 1" bit, and bore a posthole in the head and through the lower body where dimensioned on the patterns.

5 Using the $\frac{5}{8}$ " dado setup you saved in Step 2 on page 12, rerun the ear grooves to trim the ear-hole plugs flush with the bottom of the grooves. Next, bandsaw and sand the trunk-hole plug flush with the face. Now, lay out the “second hole” centerpoints for the trunk and ear holes where shown on the patterns, and then bore these holes as dimensioned.



STACK-'EM-UP Pachyderm

TIP no. 2—To rout the round-over on the top edge of the upper body, first hold the piece firmly flat on its beveled surface. Rout this area, then rest the piece on its level surface to rout the remainder of the top edge.

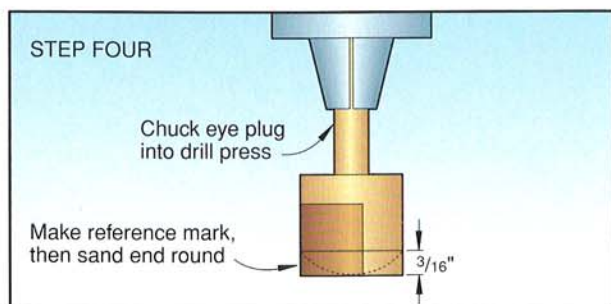
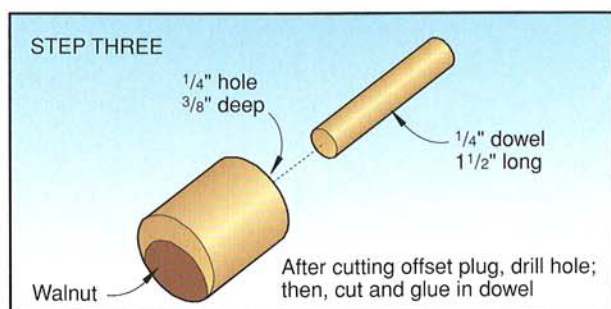
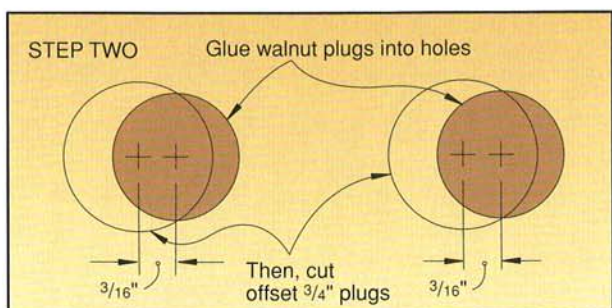
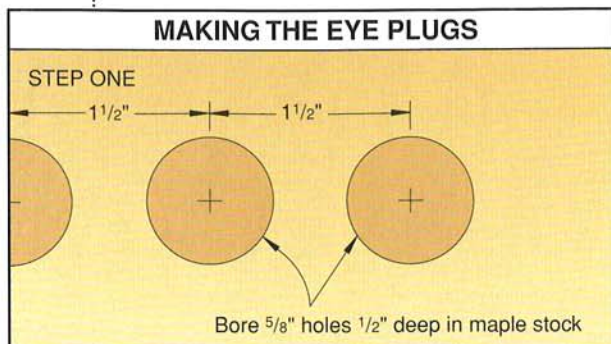
14.) Next, switch to a $\frac{1}{4}$ " round-over bit, and rout the front and back edges—but not the sides—on the base of the head. Now, finish-sand the head, upper body, and lower body.

3 To make the two spacers (D and E), adhere a second copy of both the upper and lower body patterns to a 6×10 " piece of $\frac{1}{4}$ "-thick cherry stock. (**Note:** Be careful to orient the patterns correctly with respect to the grain.) Locate the dashed cutline for each spacer, then

bandsaw and sand the spacers to shape. Next, sand both faces smooth. Now, glue and clamp each spacer to the bottom face of its respective body part. (To keep the spacers from sliding under clamping pressure, we drilled $\frac{1}{16}$ " pilot holes and then nailed them in position using $\#17 \times \frac{3}{4}$ " brads.)

4 When the glue has dried, drill the posthole through the upper body and spacer. (We used a backup board to minimize tear-out.) Next, fit your table-mounted router with a 45° chamfering bit set to cut $\frac{1}{8}$ " deep, and rout the posthole edges on all three parts, including both top and bottom on the upper body.

5 To make the post, cut a $5\frac{3}{8}$ " length of 1" cherry dowel. (**Note:** If your dowel is a full 1" in diameter, sand it until you can insert it easily into the postholes.) Then, sand a $\frac{1}{8}$ " chamfer on each end.



The Eyes Are Easier Than They Look

1 To machine the eyes, first rip and crosscut a $1\frac{1}{2} \times 12$ " piece of $\frac{3}{4}$ "-thick contrasting stock. (We chose maple.) Next, lay out six reference marks across one face of this piece at $1\frac{1}{2}$ " intervals where shown at left in Step One of the four-step drawing "Making the Eye Plugs." (We made six eyes to allow for error.)

2 Position and clamp a fence $\frac{3}{4}$ " from the center of the bit on your drill-press table. Using your combination square, make a reference mark on this fence that aligns exactly with the center of the bit. Now, align this mark with the first reference mark on your stock, and bore a $\frac{5}{8}$ " hole $\frac{1}{2}$ " deep. Repeat this operation to bore a total of six holes, then keep your fence in position for Step 4 below.

3 To make irises for the eyes, crosscut several $\frac{3}{4}$ "-thick end-grain slices of $1\frac{1}{16}$ "-thick walnut stock. (See Tip no. 3 opposite.) Next, cut six plugs from the end grain using a $\frac{5}{8}$ " plug cutter. Glue the plugs into the holes in your maple stock, then sand them flush.

4 Make a second set of reference marks $\frac{3}{16}$ " to the left of the first set on this piece. (See Step Two of the four-step drawing.) When the glue has dried, chuck a $\frac{3}{4}$ " plug cutter into your drill press. Align each of the offset reference marks with the mark on your fence, and cut a $\frac{3}{4}$ "-long plug at each location.

5 Clamp a scrap of $\frac{3}{4}$ "-thick stock to your drill-press table. Bore a $\frac{3}{4}$ " hole $\frac{3}{8}$ " deep in this piece, then switch to a $\frac{1}{4}$ " brad-point bit. Without moving the scrap piece, insert each eye plug into the hole with the walnut end down, and drill a $\frac{3}{8}$ "-deep hole. Now, cut six $1\frac{1}{2}$ " lengths of $\frac{1}{4}$ " dowel, and glue one into each plug. (For reference, see Step Three of the four-step drawing.)

6 When the glue has dried, chuck an eye plug into your drill press as shown in Step Four of the four-step drawing. With the drill running, make a reference mark $\frac{1}{16}$ " from the bottom edge of the plug. Then, sand the end of the plug round as far up as the reference mark. (We used a folded piece of 100-grit sandpaper.) Now, repeat this step for the rest of your plugs.

7 Bore a $\frac{3}{4}$ " hole $\frac{7}{16}$ " deep in a piece of $\frac{3}{4}$ "-thick scrap, then drill a $\frac{1}{4}$ " hole through this piece using the same centerpoint. Next, position your bandsaw fence $\frac{3}{4}$ " from the blade. Insert each plug into the hole as shown below, and trim it flush with the scrap piece. Now, select your best pair of eyes, and glue and clamp them into the eye holes in the head. (To do this, we used small spring clamps.)

Now, For the Ears, the Trunk, and the Finish

1 From $1\frac{1}{16}$ "-thick walnut stock, cut one piece to 3×8 " for the ears (F) and one to $2\frac{1}{2}\times 6$ " for the trunk (G). Next, resaw the piece for the ears to $\frac{5}{8}$ " thick, and sand it smooth. Cut out the full-sized Ear and Trunk patterns you copied from the pattern insert. Then,

adhere the ear patterns to the $\frac{5}{8}$ "-thick piece, aligning the flat edges of the patterns with one edge of the stock. (**Note:** We'll adhere the trunk pattern later after we taper the blank.)

2 Cut out the full-sized Trunk profile shown on the pattern insert, and adhere it to one edge of the trunk blank. Next, bandsaw the trunk taper to shape, keeping your blade outside the line. Sand to the line, then remove the profile pattern. Now, adhere the trunk pattern to the face of the blank, aligning the small end of the trunk with the tapered end of the stock.

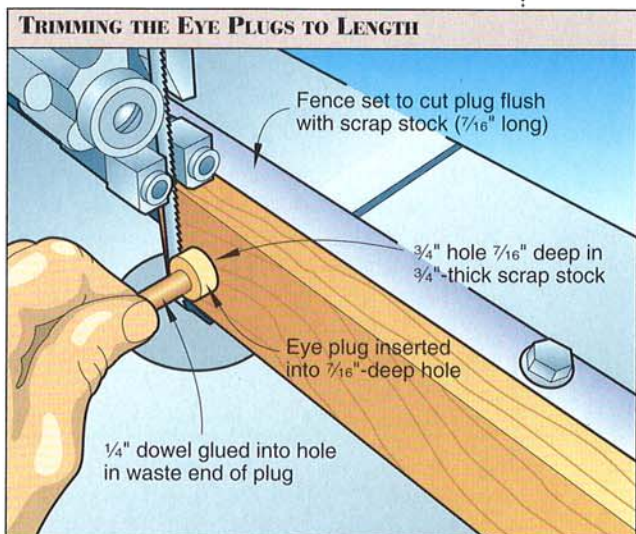
3 Lay out and drill a $\frac{1}{4}$ " peg hole $1\frac{5}{16}$ " deep in the trunk and ears where shown on the patterns. Before drilling, lay a large handscrew clamp flat on your drill-press table, and clamp the stock to hold it upright.

4 Bandsaw and sand the ears and trunk to shape. To hold the trunk level while cutting, adhere one of the tapered waste pieces to the back face of the blank. Next, remove the patterns and the tapered waste piece from the trunk, then fit your table-mounted router with a $\frac{5}{16}$ " round-over bit. Rout all contoured edges of the ears and trunk. (For safety, we adhered pieces of scrap stock to these parts for hand-holds before routing, using double-faced carpet tape.) Now, finish-sand the ears and trunk.

5 Dry-fit a $\frac{1}{4}\times 1\frac{1}{4}$ "-long multi-use peg into each of the holes you drilled in the trunk and ears. (We found our pegs at a local hardware store, but you can also find them at hobby shops and crafts stores.) Leave about $\frac{9}{32}$ " clearance between the peg head and the edge of the part. Next, assemble the ears and trunk with the head to check the fit. (The pegs should hold the parts snugly in place but should allow them to be lifted off easily.) Adjust the clearance as necessary, then make a reference mark on each peg shank. Now, apply glue, and insert the pegs into the holes as far as the reference marks.

6 Apply your choice of finish to all parts, including the post. (We brushed on a generous coat of Watco Natural Danish oil finish. After it had penetrated for 30 minutes, we applied a second coat. We then wiped all parts completely dry after 15 minutes.) ■

TIP no. 3—Although you can use $\frac{5}{8}$ " dowel stock for the irises of the eyes, we suggest cutting your own plugs. This will ensure that the parts are truly round and fully $\frac{5}{8}$ " in diameter. We recommend cutting them from end grain because this will greatly enhance their contrast with the surrounding stock once you apply an oil finish.



Project design: Don Mills, Lexington, Ky.
Illustrations: Roxanne LeMoine, Troy Doolittle
Project builder: Chuck Hedlund
Photograph: King Au



kid-sized Floor Safe

Turn little shavers into little savers with this novel bank project, which we modeled after an old-fashioned floor safe. Note the clever use of a surplus post-office box door, which features both a captivating combination lock and a window that lets kids watch their investment grow.

Let's Begin with the Carcass

1 From $\frac{1}{2}$ "-thick stock, rip and crosscut a piece to 4×15 ". (We selected birch for its paintability.) Then, crosscut the two sides (A) and the bottom (B) to the lengths listed in the Bill of Materials.

2 To make the top panel (C), first cut a $2\frac{3}{16} \times 12$ " piece of $\frac{1}{2}$ "-thick stock. From one edge of this piece, rip a $\frac{1}{8} \times \frac{1}{2} \times 12$ " slice. Then, cut two $1\frac{1}{2}$ "-long spacers from this slice for the money slot.

3 From the remainder of your $2\frac{3}{16} \times 12$ " piece (it should now measure $1\frac{5}{16}$ " wide), crosscut two $4\frac{1}{2}$ "-long pieces for the top panel. Glue the two spacers to the edge of one of these pieces, flush with the ends, to create a $\frac{1}{8} \times 1\frac{3}{4}$ " money slot. (See the Top Assembly that accompanies the Exploded View drawing.) Now, glue the other piece to the spacers, and clamp the assembled top panel (C).

4 After the glue has dried, trim the top panel to $4\frac{5}{16}$ " long, being careful to center the money slot between the ends. Next, dry-assemble and clamp the sides, bottom, and top (A, B, and C) to check for fit. Then, measure the back opening, and cut the back (D) to size. (Ours measured $3\frac{5}{16} \times 4\frac{3}{8}$ ".)

5 Epoxy and clamp the sides, bottom, and top. (We used quick-set epoxy.) After the epoxy has cured, test-fit your post-office box door in the opening, and glue in shims as necessary to achieve a snug fit. (To mail-order a post office box door, see our Buying Guide *opposite*.)

6 Epoxy and clamp the back into position. Next, drill $\frac{1}{16}$ " pilot holes 1" deep where shown on the Exploded View drawing. Drive #16 $\times$ 1" brads, then set the brads and fill the holes. Now, sand the carcass smooth.

7 From $\frac{1}{8}$ "-thick plywood, bandsaw the shelf (E) and shelf uprights (F) to size. Next, glue and clamp these inside the box where shown on the Exploded View drawing.

Now, Make the Wheel Brackets

1 To machine the brackets (G), first rip and crosscut a 1×12 " strip of $\frac{1}{2}$ "-thick stock. Fit your tablesaw with a $\frac{1}{4}$ " dado set elevated to $\frac{9}{16}$ ", then cut a centered groove along one edge of your 1×12 " blank. (For safety's sake, we used a pushstick.)

2 Copy the full-sized Wheel Bracket pattern shown on the pattern insert, and transfer it onto card stock or posterboard. Next, cut out this template, and use it to trace four wheel brackets (G) onto one face of the blank, aligning the top edge of the template with the ungrooved edge of the stock. Now, scroll- or bandsaw the brackets to shape, and then sand them smooth.

3 Lay out and drill a $\frac{1}{8}$ " axle hole through each bracket where shown on the pattern. To make the axle pins, cut four $\frac{1}{2}$ " lengths of $\frac{1}{8}$ " dowel stock. Insert a $\frac{3}{4}$ "-diameter wooden wheel into each bracket, then insert and glue an axle pin through the wheel and glue the pin in place. (We bought our wheels at a hobby shop, but you can also find them at craft stores. See Tip no. 1 above right.)

Add Some Finishing Touches, Then Paint Your Safe

1 Fit your table-mounted router with a $\frac{1}{4}$ " straight bit elevated to $\frac{1}{16}$ ". (See the Router Setup drawing below.) Set your fence $\frac{1}{8}$ " from the bit, then rout all edges of the box along both faces. Now, finish-sand all outside surfaces of the box.

2 Epoxy and clamp the wheel brackets to the bottom corners of the box where shown on the Exploded View drawing. Remove any squeeze-out, and allow the epoxy to cure.

3 Now, paint the safe. (We first applied two coats of sanding sealer, sanding after each coat with 320-grit sandpaper. Then, we sprayed the exterior with two coats of black gloss oil enamel. After this had dried, we brushed the interior of the box with gold enamel. With a small detail brush, we then painted the wheel centers, the bracket trim, and the routed corners with gold enamel as shown in the photograph.)

4 Lay out and drill pilot holes as required for the door. Then, attach the door using brass roundhead wood screws. ■

Project designer and builder:

James E. Boelling

Illustrations: Roxanne LeMoine

Photograph: King Au

TIP no. 1—Because of the weight of the post-office box door, we suggest that you glue your wheels and axle pins fast to the brackets to prevent the wheels from rolling. This will improve the assembled safe's stability.

BILL OF MATERIALS

Part	Finished Size			Matl.	Qty.
	T	W	L		
A sides	$\frac{1}{2}$ "	4"	$4\frac{3}{8}$ "	B	2
B bottom	$\frac{1}{2}$ "	4"	$4\frac{5}{16}$ "	B	1
C* top	$\frac{1}{2}$ "	4"	$4\frac{5}{16}$ "	EB	1
D* back	$\frac{1}{2}$ "	$3\frac{5}{16}$ "	$4\frac{3}{8}$ "	B	1
E shelf	$\frac{1}{8}$ "	2"	$3\frac{1}{4}$ "	P	1
F shelf uprights	$\frac{1}{8}$ "	2"	$2\frac{1}{2}$ "	P	2
G* wheel brackets	$\frac{1}{2}$ "	1"	$1\frac{3}{8}$ "	B	4

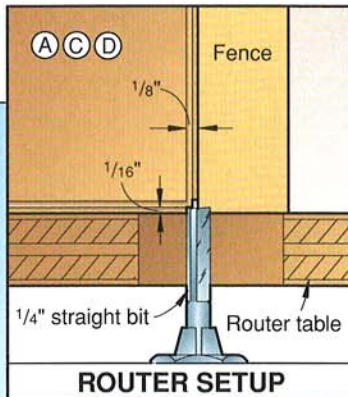
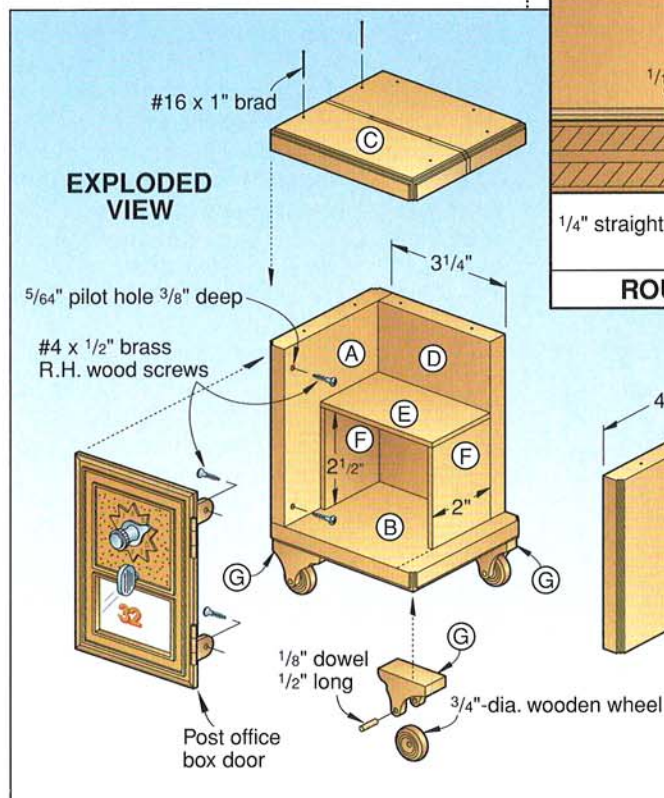
*Initially cut part oversized. Please read all instructions before cutting.

Materials Key: B—birch; EB—edge-joined birch; P—plywood.

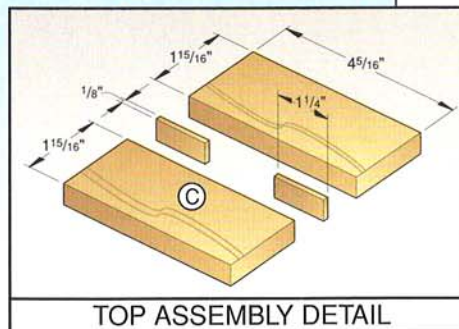
Supplies: #16x1" brads; #4x $\frac{1}{2}$ " brass R.H. wood screws; quick-set epoxy; $\frac{1}{8}$ " dowel; four $\frac{3}{16}$ x $\frac{3}{4}$ "-dia. wooden wheels; sanding sealer; black and gold oil enamels.

Buying Guide

Reconditioned Post Office Box Door. Cast bronze. $3\frac{5}{8}$ x5". Combination lock. Glass window. Greek classical-style trim. \$20.00 each ppd. \$19.50 each for two or more doors. Canada orders add \$3.00/door. Missouri residents add 6.725% sales tax. C.O.D. add \$5.50/order. Sorry, no credit card orders accepted. The Streeter Co., 114 N. Ogden Street, P.O. Box 241, Sturgeon, MO 65284-0241. Phone 314/687-3311.



Stock required: $\frac{1}{2}$ x $5\frac{1}{2}$ x36" birch; $\frac{1}{8}$ x2x9" plywood.



Note: Initially cut parts oversized for top (C), then trim to finished length



Victorian

Mirror and Shelf

Try decking your halls with this striking pair of period pieces. The fanciful fretwork has enough presence to provide a focal point for any entryway. And with the aid of our new pattern insert, we offer you full-sized patterns for several fretwork design options.

Let's Start with the Mirror

1 From $\frac{3}{4}$ "-thick stock, rip and crosscut two frame stiles (A) and two frame rails (B) to rough dimensions of $1\frac{3}{4}\times 31$ " and $1\frac{3}{4}\times 20$ ", respectively. (We selected Honduras mahogany.) Next, rip and crosscut two molding stiles (C) to $1\frac{1}{8}\times 32$ " and two molding rails (D) to $1\frac{1}{8}\times 21$ ". Now, resaw parts C and D to $\frac{1}{2}$ " thick. (You can also use $\frac{1}{2}$ "-thick stock.)

2 Cut mating spline grooves in the frame and moldings. To do this, elevate your blade to $\frac{3}{16}$ ", and set your rip fence $\frac{5}{16}$ " from the blade. Next, cut a centered $\frac{1}{8}$ "-wide groove along the outside edge of parts A and B where shown on the Mirror Section View drawing *opposite*. Then, reset your fence to $\frac{1}{2}$ " from the blade, and cut a centered groove along the inside faces of parts C and D.

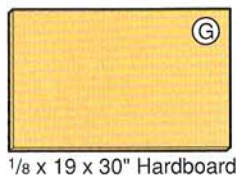
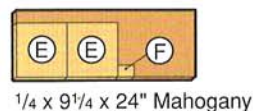
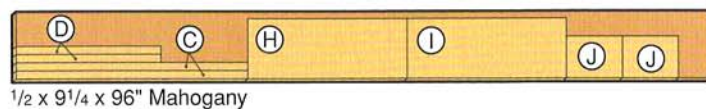
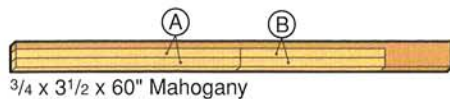
3 Fit your table-mounted router with a rabbet-ting bit and fence. Next, rout a $\frac{1}{8}$ " rabbet $\frac{3}{8}$ " deep along the back inside edge of parts A and B to receive the mirror glass. (See the Mirror Section View drawing.) Next, change to a $\frac{5}{32}$ " Roman ogee bit, and set it to cut a $\frac{1}{16}$ " shoulder. Then, rout an ogee along the front inside edge of parts A and B.

4 Miter-cut both ends of the frame parts (A and B) to finished length as listed on the Bill of Materials. To do this, attach a wooden extension to your miter gauge, and set the miter gauge to 45° . (We verified this setting using an angle gauge.) After miter-cutting one end of each part, flip the parts over, and move the miter gauge to the opposite slot on your saw table. To ensure uniform length, clamp a stop-block to your miter-gauge extension before miter-cutting the opposite ends.

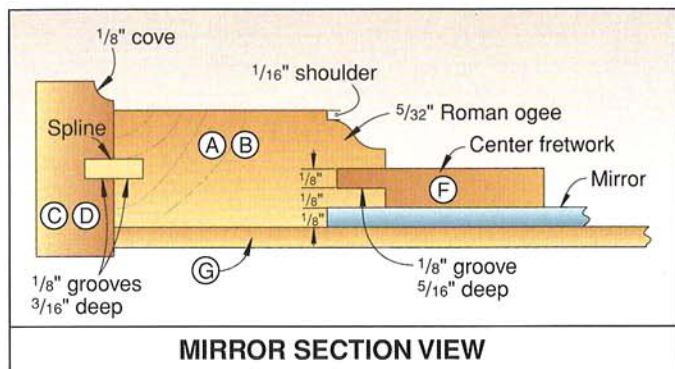
5 Rout a $\frac{1}{8}$ " groove $\frac{5}{16}$ " deep in one rail (B) and both stiles (A) where shown on the Frame Front View drawing on *page 20*. To do this, fit your table-mounted router with a slotting cutter and fence as shown in the illustration on the same page. (Also, see the Mirror Section View *opposite*.) To rout the two stiles, first lay out a stopped, $7\frac{1}{4}$ "-long groove along the inside edge of each. Mark start- and stop-lines for the two parts on your fence before routing. (We made all marks on masking tape.)

6 Glue, assemble, and clamp the frame parts (A and B). (We used corner clamps for this.) Now, check for square, remove any glue squeeze-out, and allow the glue to dry.

Continued



CUTTING DIAGRAM



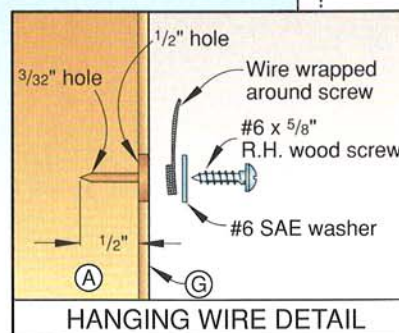
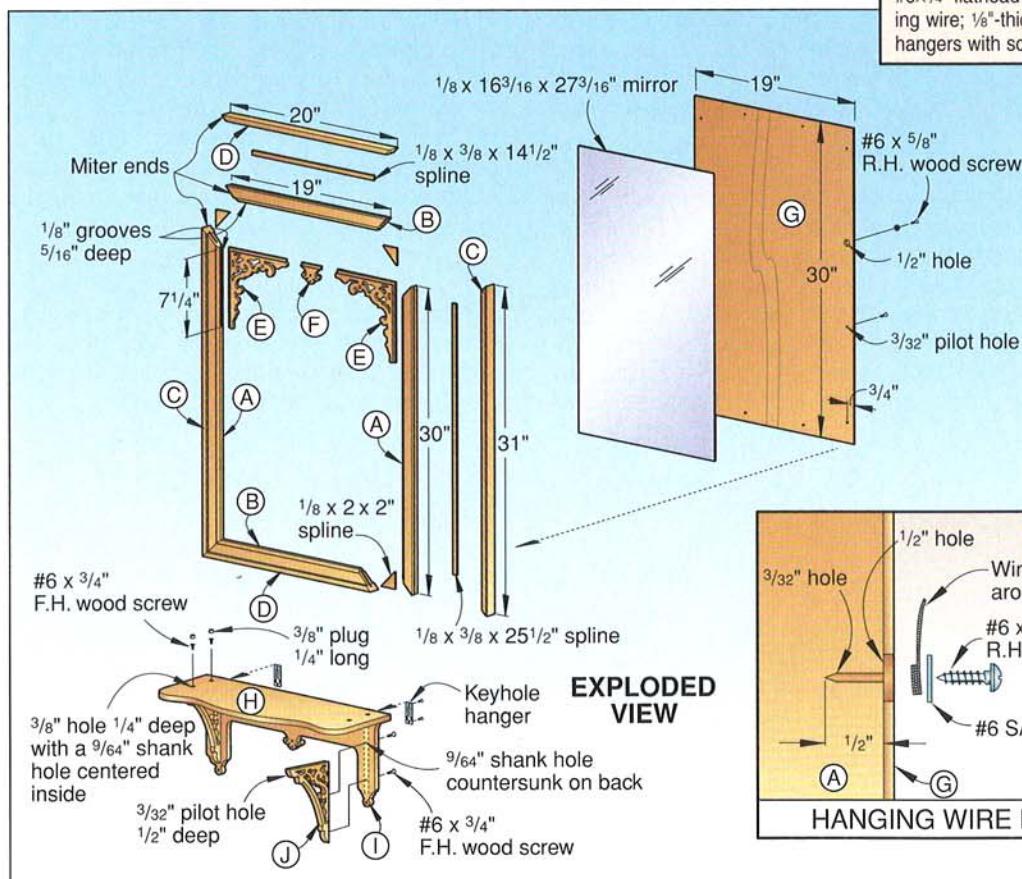
BILL OF MATERIALS

Part	Finished Size			Matl.	Qty.
	T	W	L		
	MIRROR				
A* frame stiles	¾"	1¾"	30"	M	2
B* frame rails	¾"	1¾"	19"	M	2
C* molding stiles	½"	1⅙"	31"	M	2
D* molding rails	½"	1⅙"	20"	M	2
E* corner fretwork	¼"	7½"	7"	M	2
F* center fretwork	¼"	2¼"	1⅝"	M	1
G back panel	⅛"	19"	30"	HB	1
	SHELF				
H* shelf	½"	7½"	22"	M	1
I* shelf back	½"	8⅙"	21"	M	1
J* brackets	½"	5¾"	7¾"	M	2

*Initially cut part oversized. Please read all instructions before cutting.

Materials Key: M—Honduras mahogany; HB—hardboard.

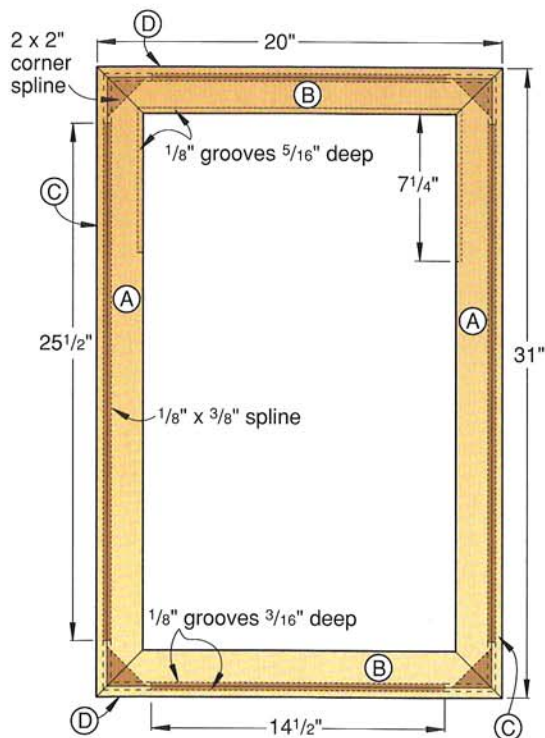
Supplies: #6x5/8" roundhead wood screws; #6x5/8", #6x3/4" flathead wood screws; #6 washers; picture-hanging wire; 1/8"-thick mirror glass (cut to size); two keyhole hangers with screws.



TIP no. 1—Before you scrollsaw the fretwork pieces, check out the optional design patterns shown on our new pattern insert. If you select any of the designs other than the one shown here, use the same pattern for both the corner fretwork on the mirror (F) and the shelf brackets (J). For the center fretwork piece (F), select a design that fits the space left by your chosen fretwork design, and remember to use this same pattern for the center device on the shelf back (I).

Victorian

Mirror and Shelf



FRAME FRONT VIEW

TIP no. 2—To make a corner-grooving jig as shown in the illustration opposite, first cut a 2x18" piece of 3/4"-thick scrap. Next, miter-cut this piece into two roughly equal lengths, and flip one piece edge for edge. Then, cut a 1/8" groove 1 3/8" deep along the bottom edge of both pieces. Screw these pieces along one edge of a 12x24" piece of 3/4"-thick plywood scrap as shown. Elevate your blade to 1 3/8", then fit the grooved jig pieces over the blade. Set your rip fence accordingly, and screw it to the plywood jig piece. To groove each corner, hold the frame flush against the plywood backboard, and lower the corner carefully into the blade, keeping the frame corner aligned with the corner of the jig cutout.

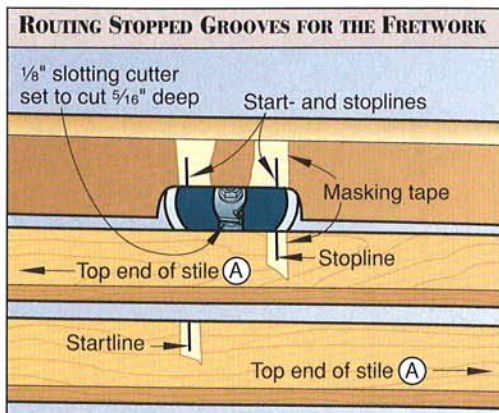
Now, Scrollsaw Some Fretwork

1 To make the corner fretwork (E) and center fretwork (F), first cut two blanks from 1/4"-thick stock, one to 7x8" and one to 7x11". Fit your table-mounted router with a rabbeting bit, and rout a 1/8" rabbet 1/4" deep along one end and an adjacent edge of each piece.

2 Crosscut the 7x11" blank to 8" long, then stack the two 7x8" blanks using double-faced carpet tape. (**Note:** Before stacking, make sure you've aligned the rabbets on the two blanks and that the rabbeted surface of each blank faces outward.) Next, photocopy the full-sized Corner and Center Fretwork patterns shown on the pattern insert. (See Tip no. 1 on page 19.) Adhere the corner

and the center pattern to the stacked blanks (the center pattern to the 3"-long waste piece you cut from the 7x11" blank. (Be careful to align the pattern edges with the appropriate edges of the stock.)

3 Drill the 1/4" and 1/8" holes where marked on the patterns, then drill 1/8" start holes in each interior waste area. (We used brad-point bits and a backup board to minimize tear-out.) Next, scrollsaw the interior cuts on both patterns. Then, scrollsaw the parts to shape, keeping your blade outside the line. Now, sand the contoured edges. Remove the patterns, separate the pieces, then finish-sand the three parts.



Next, Add the Splines, Moldings, And Fretwork

1 Unclamp your frame, then add corner splines to reinforce the corners. To do this, first make a simple jig as shown in the illustration opposite, and cut a 1/8" spline groove 1 3/8" deep in each frame corner. (For help in making the jig, see Tip no. 2 below left.) From 1/8"-thick hardboard, cut four triangular splines as dimensioned on the full-sized Corner Spline pattern. (See the pattern insert.) Now, glue the splines into the grooves. After the glue has dried, sand the splines flush with the frame.

2 Fit your table-mounted router with a 1/8" cove bit set to cut 1/8" deep. Then, rout a cove along the front inside face of the moldings. (See the Mirror Section View drawing.)

3 Measure the frame's actual outside dimensions. Next, miter-cut both ends of the moldings to fit these dimensions, using the same technique you used to miter-cut the frame parts in Step 4 of the first section. (**Note:** Make sure you orient your miter cuts so that the spline grooves will be on the inside faces.)

4 From 1/8"-thick hardboard, cut four splines as dimensioned on the Exploded View drawing. Then, dry-assemble the moldings to the assembled frame using the splines. Check for fit, and adjust as necessary. Now, glue, spline, and clamp the moldings to the frame. Remove any glue squeeze-out, and allow the glue to dry.

5 Unclamp the frame, then dry-assemble the fretwork pieces to the frame to check for fit. (**Note:** Make sure the rabbeted faces are on the back.) Adjust the fit if necessary, and then glue and clamp parts E and F to the frame.

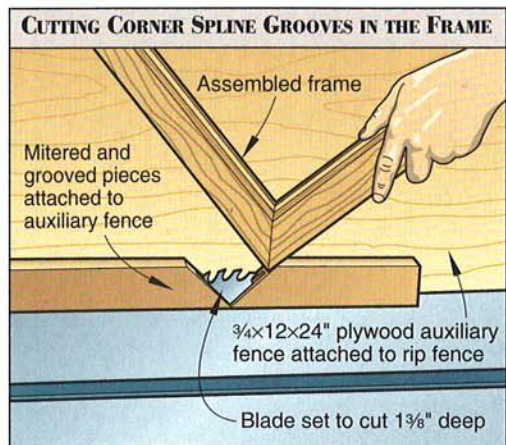
Now, for the Final Assembly

1 Finish-sand those parts of your frame that still need it. Then, apply your choice of finish. (We brushed on a coat of Minwax red mahogany stain, let it penetrate for 10 minutes, then wiped off the excess. After the stain had dried overnight, we sprayed on three coats of Defthane no. 2 satin polyurethane. Between coats, we leveled the finish using 0000 synthetic steel wool.)

2 After the finish has dried overnight, measure the inside dimensions of the back panel recess. (Ours measured 19x30".) Next, cut the

back panel (G) to fit from $\frac{1}{8}$ "-thick hardboard. Lay out and bore two $\frac{1}{2}$ " holes through the back panel where shown on the Exploded View drawing and accompanying Hanging Wire detail. Position the panel in its recess, then drill and countersink ten $\frac{3}{32}$ " pilot holes $\frac{1}{2}$ " deep evenly spaced around the perimeter and $\frac{3}{4}$ " from the edge. Now, center and drill a pilot hole (not countersunk) in each $\frac{1}{2}$ " hole for the wire-anchoring screws.

3 Measure the mirror rabbet on the back of your frame. (Ours measured $16\frac{1}{4} \times 27\frac{1}{4}$ ".) Have your local glass dealer or hardware store cut a piece of $\frac{1}{8}$ "-thick mirror glass $\frac{1}{16}$ " smaller than this recess (both in width and length). Set the mirror in the frame, then attach the back panel using #6 $\times\frac{3}{8}$ " flathead wood screws. Next, attach a 28" length of picture-hanging



wire using roundhead screws and washers. (See the Hanging Wire detail shown with the Exploded View drawing.)

The Shelf Is Easy Using the Patterns

1 To make the shelf (H) and back (I), cut two blanks from $\frac{1}{2}$ "-thick stock to $8\frac{1}{4} \times 22$ ". Next, lay out stopped dados on the two blanks where shown on the full-sized Shelf and Shelf Back half-patterns. (See the pattern insert.)

2 Fit your table-mounted router with a $\frac{1}{4}$ " straight bit set to cut $\frac{1}{4}$ " deep. Using a miter gauge and extension on your router table, rout the dados on the shelf and shelf-back blanks. (We used a fence as a guide.) To do this accurately, first establish and mark stoplines (for both the shelf and the back) on your router table surface. (We used a soft pencil.)

3 Make two copies each of the Shelf and Shelf Back patterns and one copy of the full-sized Shelf Bracket pattern. Tape the half-patterns together at the centerlines to make full patterns, then adhere them to the blanks, aligning the dados on the patterns with those on the stock. Next, drill the $\frac{1}{4}$ " holes in the shelf back where shown on the pattern. Then, bandsaw and sand the shelf and back to shape.

4 Drill counterbores on the shelf and countersunk shank holes on the shelf and back where dimensioned on the patterns. Next, lay out locations for your keyhole hangers on the shelf back. Then, bore $\frac{1}{8}$ "-deep holes as necessary to create space behind your hangers. (Our hangers required four overlapping $\frac{1}{2}$ " holes.) Also, lay out and drill pilot holes as needed for attaching the hanger screws.

5 To make the shelf brackets (J), first cut two 6×8 " blanks from $\frac{1}{2}$ "-thick stock. Fit your table-mounted router with a rabbeting bit and fence, then rout a $\frac{1}{4}$ " rabbet $\frac{1}{8}$ " deep along one end and an adjacent edge of both blanks. Next, rout the opposite faces of the blanks to create $\frac{1}{4}$ "-thick tongues.

6 Using double-faced carpet tape, stack the two blanks, aligning the rabbeted edges and ends. Next, adhere the Shelf Bracket pattern to one face, aligning the edges of the pattern with the appropriate edges of the stock. Drill the $\frac{1}{4}$ " hole where shown on the pattern, then drill start holes for the interior cuts. Now, scrollsaw these cutouts and then the outside contour to shape. Trim the tongue at each end where shown, then sand the edges as you did on the mirror fretwork.

7 Dry-assemble the brackets to the shelf and back, and adjust the fit if necessary. Next, clamp the pieces, and drill pilot holes in the brackets using the shank holes in the shelf and back as guides. Unclamp the assembly, then glue, reassemble, and clamp. Remove any glue squeeze-out, then drive #6 $\times\frac{3}{4}$ " flathead wood screws into the shelf and back.

8 Cut four $\frac{3}{8} \times \frac{1}{4}$ "-long plugs from scrap stock, and glue them into the counterbores on the shelf. After the glue has dried, sand the plugs flush, and then finish-sand all surfaces. Now, finish the shelf as you did the mirror frame. Allow the finish to dry overnight, then attach your keyhole hangers. (To wall-mount both pieces, see Tip no. 3 at right.) ■

TIP no. 3—To wall-mount your mirror and shelf, first locate a stud in your chosen wall location. Select a suitable height, then drive a #10 $\times$ 2" panhead wood screw into the stud, leaving the head protruding slightly from the wall. Hang the mirror from this screw. Next, measure the center-to-center distance between the keyhole hangers on your shelf, then drill two more holes centered beneath the mirror. Mount molly screws or plastic wall anchors in the wall, then install round- or pan-head screws that will fit snugly in the keyhole hangers.

Project design: Bob Colpetzer, Clinton, Tenn.
Illustrations: Roxanne LeMoine, Troy Doolittle
Project builder: Chuck Hedlund
Photograph: King Au



Blanket

STATEMENT

How can a design this simple produce a chest this special? Well, maybe it's the easy-to-make but elegant box joints, or possibly the old-world appeal of the routed detailing. With its low profile, it makes a great bench for putting on your socks and shoes, yet there's still a cavernous space for comforters and sweaters under the lid.

First, Let's Edge-Join Our Stock

1 From $\frac{3}{4}$ "-thick stock, cut 16 pieces to $1\frac{1}{2} \times 44$ " for the lid (A) and front and back (B). (We selected clear pine.) Next, cut 10 pieces of the same stock to $3\frac{1}{2} \times 19$ " for the ends (C). Then, cut five pieces of $\frac{3}{4}$ "-thick stock to $3\frac{1}{2} \times 42$ " for the bottom (D). (We chose aromatic red cedar for the bottom.)

2 Plane $\frac{1}{16}$ " from both edges of all pieces. (We used our jointer.) Next, arrange the pieces as follows: six 44"-long pieces for the lid; two sets of five 44"-long pieces for the front and back; two sets of five 19"-long pieces for the ends; and the five 42"-long cedar pieces for the bottom. (See Tip no. 1 opposite.)

3 Number the pieces in each set so you can remember how to arrange them. Now, fit your table-mounted router with a $\frac{1}{4}$ " slotting cutter, and rout stopped spline grooves along the edges of all pieces where shown and dimensioned on the Spline Layout drawing shown on page 24. (See Tip no. 2 opposite.)

4 From a 2x4' sheet of $\frac{1}{4}$ "-thick hardboard, cut 20 strips to $1\frac{5}{16} \times 48$ ". Next, cut splines from these strips as follows: five 39" splines

for the lid; eight 38" splines for the front and back; four 37" splines for the bottom; and eight 14" splines for the ends. Now, lay out a 1/2" radius on both ends of each spline, then band-saw all ends to shape. (See the Spline Layout drawing.)

5 Rearrange the panel pieces into sets. Next, glue, spline, and clamp the six panels, being careful to keep them flat. After the glue has dried, unclamp the panels, and sand them smooth. (We used our random-orbit sander.) Next, plane one edge of each, and then rip each

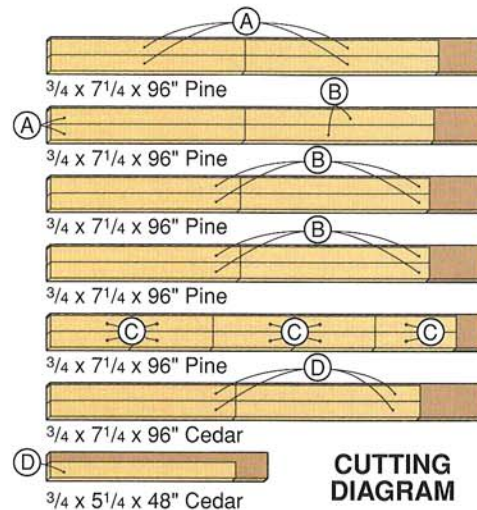
panel to finished width, removing an equal amount of stock from both edges. Now, cross-cut each panel to finished length.

Build a Simple Box-Joint Jig, Then Machine Your Panels

1 To make an indexing jig for cutting the box joints, first cut a 16"-long piece of 2x6 stock, then center and screw it to your miter

TIP no. 1—To help minimize warpage, arrange your stock for edge-joining so that the annual rings (visible at the end of each piece) alternate in their curvature (faceup, facedown, and so on).

TIP no. 2—To rout stopped spline grooves, first make two vertical marks on your router-table fence to indicate the slotting bit's profile. Then, lay out the grooves on the stock. As you rout each groove, start and stop the rout by bringing the layout mark on the stock into alignment with the appropriate reference mark on the fence.

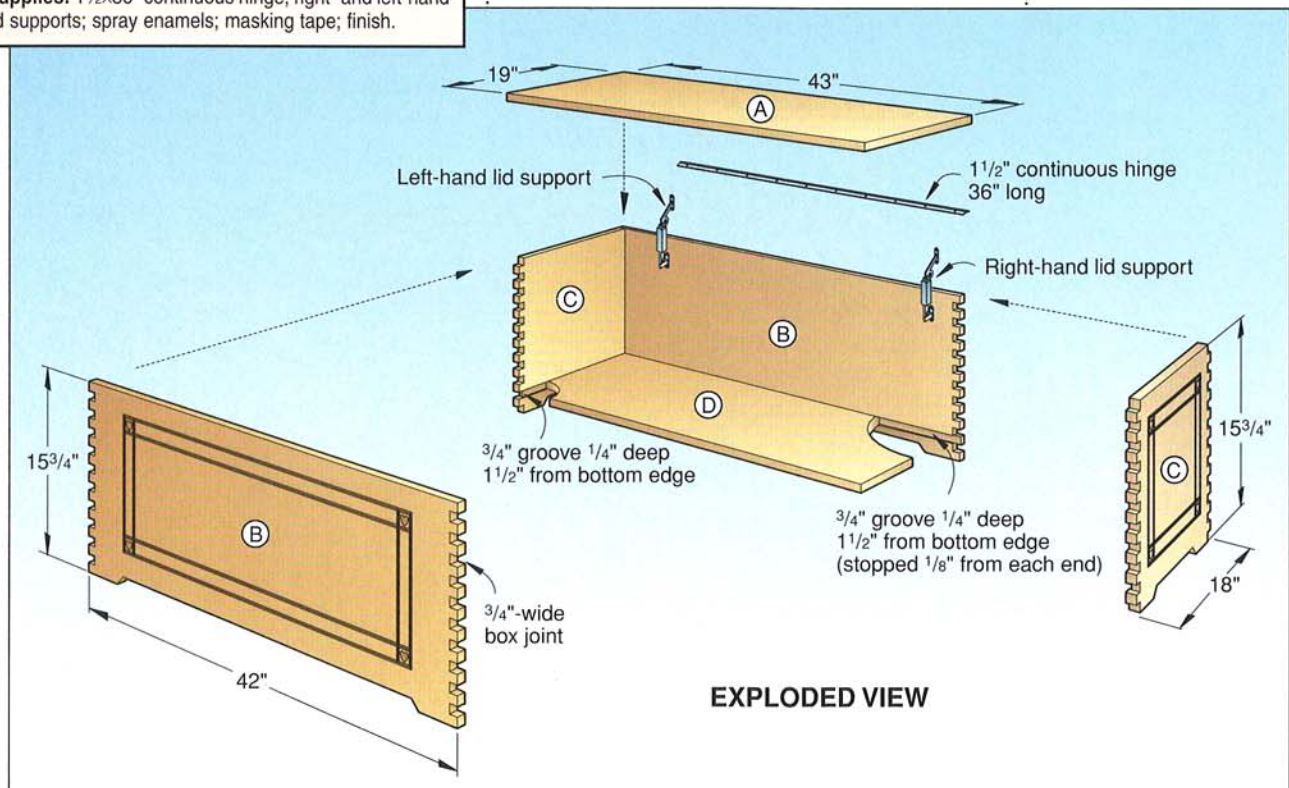


BILL OF MATERIALS					
Part	Finished Size			Mtl.	Qty.
	T	W	L		
A* lid	3/4"	19"	43"	EP	1
B* front and back	3/4"	15 3/4"	42"	EP	2
C* ends	3/4"	15 3/4"	18"	EP	2
D* bottom	3/4"	17"	41"	EC	1

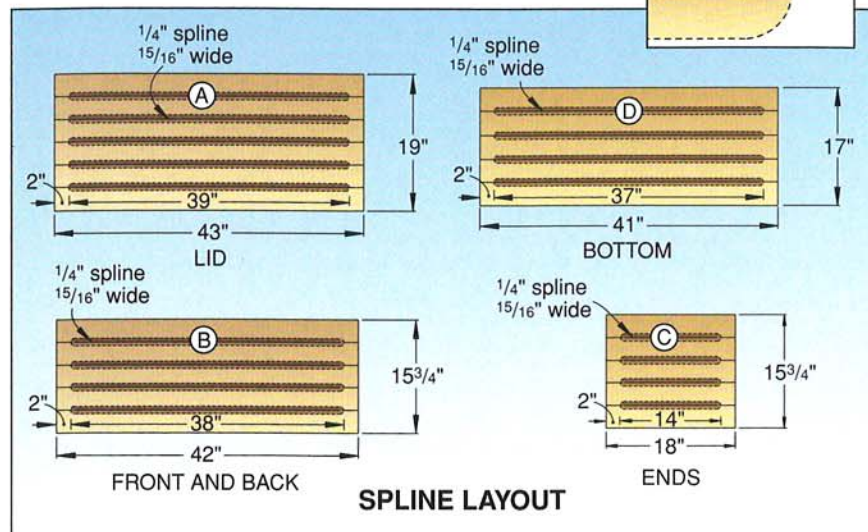
*Initially cut part oversized. Please read all instructions before cutting.

Materials Key: EP—edge-joined pine; EC—edge-joined aromatic red cedar.

Supplies: 1 1/2x36" continuous hinge; right- and left-hand lid supports; spray enamels; masking tape; finish.



Blanket STATEMENT

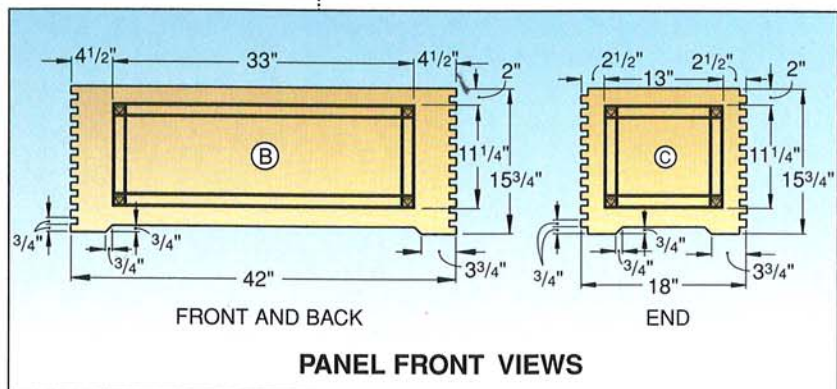


TIP no. 3—To set your cutting height for the box joint notches, we suggest adding 1" to the actual thickness of your stock. This will ensure that the ends of the joint fingers will protrude far enough beyond the mating panel face to give you a little sanding leeway.

gauge. Next, fit your tablesaw with a $\frac{3}{4}$ " dado set. Measure the actual thickness of your $\frac{3}{4}$ "-thick pine stock, and set the cutting height to equal this thickness plus $\frac{1}{32}$ ". (See Tip no. 3 at left.) Now, cut a notch in the jig.

2 Unscrew the jig from the miter gauge. Then, cut a 3"-long indexing peg to fit the width and depth of your jig notch. Now, glue or screw it into the notch so that it protrudes out $1\frac{1}{2}$ " in front of the 2x6.

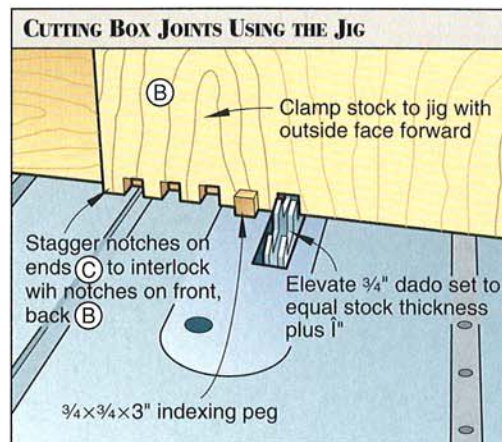
3 Measure over $\frac{3}{4}$ " from the indexing peg, and make a mark on the jig. Align this mark with the right edge of your dado set, then reattach the jig to the miter gauge. Next, test the jig by cutting joints in two pieces of scrap and assembling them. To do this, butt your workpiece up against the peg, and cut the first notch. Move your stock over $\frac{3}{4}$ ", and insert the peg into this notch. Now, cut a second notch, and then repeat until you've notched the entire length as shown at right.



4 To verify that your notches are exactly $\frac{3}{4}$ " apart, cut a $15\frac{3}{4}$ " length of scrap plywood, and cut joints in the entire length. A full 10 notches and 11 fingers should fit cleanly into this length. If they don't, check the width of your dado set and indexing peg as well as the distance between them. Adjust these dimensions as necessary.

5 Cut box joints in the ends of the front, back, and end pieces (B, C). (**Note:** To make the joints interlock, you'll need to stagger the notches on the ends (C) with respect to those on the front and back (B), as shown on the Panel Front View drawing below left.) To minimize noticeable tear-out, orient each panel so that the blade enters its outside face. Also, clamp the panel to the jig to keep it upright.

6 Lower your dado set to $\frac{1}{4}$ ", and cut a through groove along the inside face of each end (C) to support the bottom (D). (See



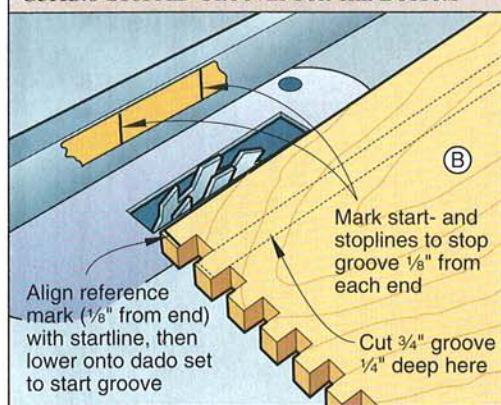
the Exploded View drawing.) Next, cut a mating stopped groove along the front and back (B), as shown opposite top. To do this, first mark start- and stoplines on your rip fence so you can stop the groove $\frac{1}{4}$ " from each end.

7 Rip or plane $\frac{1}{8}$ " from the top edge of the back panel to allow space for the continuous hinge. Then, lay out and bandsaw the feet on all four panels where dimensioned on the Panel Front View drawing.

Assemble the Box, Then Rout the Detailing

1 Dry-assemble the front, back, and ends around the bottom panel to check both the box joints and the bottom (width, length, and

CUTTING STOPPED GROOVES FOR THE BOTTOM



thickness) for fit. Adjust the parts as necessary, then glue and clamp the box, allowing the bottom to "float" in its groove without glue. (See Tip no. 4 at right.)

2 While the glue dries, lay out the router templates on $\frac{1}{2}$ "-thick plywood, and cut them to shape. (For dimensions, see the Router Templates drawing below right.) To make the interior cuts, use your tablesaw, starting and stopping the cuts inside the lines. Then, saw to the corners using a dovetail saw. For the inserts, rip $\frac{1}{2}$ "-wide strips from the edges and ends of the interior waste pieces. Now, copy the full-sized Heart Template pattern shown at right, and adhere it to a 6×10 " piece of plywood. Drill a start hole, then scrollsaw and sand the heart to shape.

3 Unclamp the box, and sand the joints flush. Next, center and clamp the templates in position (one at a time) on the front, back, and ends. Then, fit your router with a $\frac{1}{4}$ " V-groove bit and a $\frac{5}{8}$ "-o.d. guide bushing. Set the bit to cut $\frac{1}{8}$ " deep (plus the thickness of the template), and rout around the interior edge of each template. To cut the inside V-grooves, adhere or clamp the inserts in position, and rout again. (We used double-faced carpet tape.)

4 Remove the templates, then find and mark the center of each corner square (enclosed by the V-grooves) by drawing diagonal lines. Center and clamp the heart template over each square. Change to a $\frac{3}{8}$ "-o.d. bushing and a $\frac{1}{8}$ " straight bit set to cut $\frac{1}{8}$ " deep (plus the template thickness). Now, rout the entire heart.

Trim the Lid to Size, Then Finish Your Chest

1 Clamp a $1\frac{1}{2} \times 36$ " continuous hinge to the back edge of the lid. (We found ours at a local hardware store.) Lay out and drill pilot

holes to fit the screws, then temporarily attach the hinge to the lid using three or four screws. Next, repeat these steps to attach the hinge to the top edge of the back panel. Now, lay out and drill these pilot holes, then attach the hinge to the back panel.

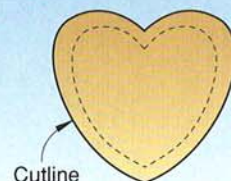
2 Position your lid supports (one right- and one left-hand), and lay out pilot holes as required. (We used Brainerd supports, catalog nos. R1089XC and L1089XC, which we found at a local hardware store.) Next, drill the holes, and attach the supports. Check the hinge and support action, and adjust if necessary. Now, remove the hardware, and finish-sand the lid.

3 If you used aromatic cedar for the bottom, mask it to protect it from the finish. Next, apply a coat of finish to the other surfaces to seal the wood. (We sprayed on Deft semigloss lacquer. This helped prevent the spray enamel from bleeding into the wood.) After it has dried, sand the finish using 320-grit sandpaper.

4 Mask around the V-grooves, and then paint them. (We used newspaper and masking tape for this. We then sprayed on two coats of Krylon True Blue aerosol enamel.) When the paint has dried, remove the mask. Then, mask around the hearts, and paint them. (We masked the area surrounding each heart, then cut out the heart shape using an X-acto knife. We then sprayed on two coats of Krylon Cherry Red.)

5 Remove the masks and tape from the hearts, then sand lightly over the hearts and V-grooves to remove any excess paint. Next, apply the rest of your finish. (We sprayed on three more coats of Deft semigloss lacquer, sanding between coats with 320-grit sandpaper.) After the finish has dried overnight, remove the masking from the cedar bottom. Now, reattach the hinge and lid supports. ■

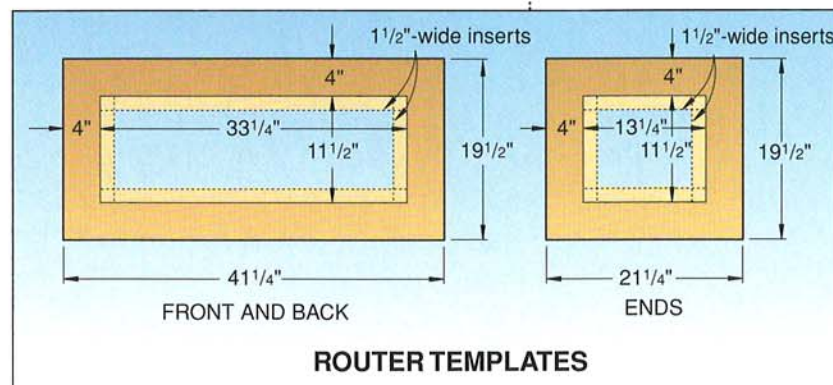
Adhere pattern to center of $\frac{1}{2} \times 6 \times 10$ " plywood, then drill start hole and scrollsaw to shape



FULL-SIZED HEART TEMPLATE PATTERN

TIP no. 4—We suggest that you find a second pair of hands to assist you with the glue-up, unless you're extraordinarily fast. Either way, we recommend using white woodworker's glue for longer open time.

Project design: James R. Downing
Illustrations: Lorna Johnson, Troy Doolittle
Project builder: Chuck Hedlund
Photograph: King Au





Grand Stand for China

It's a shame to hide fine china in the cupboard, showing it off only on special occasions. Instead, give your heirloom dinnerware a chance to stand up and be counted. WOOD® magazine's Jim Boelling, inspired by the shape of an artist's pallet, set out to enhance the elegance of porcelain with the richness of finely crafted hardwood.

For Starters, Let's Make The Plate Rests

Note: Our china display will accommodate a five-piece place setting. You can build it as shown or reverse the cup/saucer position by reversing the pattern. Before you proceed, we suggest you make some mockup plate rests and trial-fit the dishes you intend to display. You may find it necessary to adjust the depth of the notches in the uprights (A), the lengths of the three spreaders (B, C, D), and/or the diameter and location of the saucer hole in the base (E). In addition, you may need to reposition the plate rests on the base to show off your china to best advantage. For additional suggestions on custom-fitting, see Tip no. 1 opposite.

1 To make the uprights (A), first rip and crosscut a 2x24" piece of 1/4"-thick stock. (We selected cherry, although we suggest you choose a hardwood that complements your particular china pattern. We purchased 1/2"-thick stock and resawed the piece for the uprights to

thickness.) Crosscut this piece in half, and stack the two halves face to face using double-faced carpet tape.

2 Make three copies of the full-sized Upright pattern and one copy of the full-sized Base pattern, both of which are shown on our pattern insert. (Set the base pattern aside for now.) Adhere the upright patterns to the stock, aligning the long edge of the pattern with one edge of the stacked pieces. Next, bandsaw the uprights to shape, keeping your blade outside the line. Then, sand to the line. (We used our 1" belt sander.) Now, remove the patterns, and separate the stacked pieces.

3 Rip and crosscut a $\frac{3}{4}$ ×24" piece of $\frac{1}{2}$ "-thick stock. From this piece, cut the three spreaders (B, C, and D) to the lengths that best fit your dishes. (We made ours 4", 4½", and 5" long, respectively.) Next, epoxy and clamp a pair of uprights to the ends of each spreader. (We used quick-set epoxy.) Remove any squeeze-out, and allow the epoxy to cure.

4 Lay out and drill a $\frac{1}{4}$ " hole $\frac{3}{4}$ " deep in both ends of each upright where shown on the pattern. To do this, attach a fence to your drill-press table, and clamp each assembled stand to it to keep it perpendicular. (We used a brad-point bit.) Next, bandsaw six $\frac{7}{8}$ " lengths of $\frac{1}{4}$ " hardwood dowel stock, and glue them into the holes. (We used regular woodworker's glue for this operation.) After the glue has dried, trim and sand the dowels flush. Now, hand-sand a slight round-over on all nonmating edges of each stand. (We used 220-grit sandpaper.)

Build the Base, Then Assemble Your Display

1 To make the base (E), start by edge-gluing and clamping two pieces of $\frac{1}{2}$ "-thick stock to form a 10×13" blank. After the glue has dried, scrape and sand both faces smooth.

2 Adhere the Base pattern to one face of your blank, then drill a $\frac{1}{4}$ " start hole in the saucer hole. (At this point, see Tip no. 1 at right.) Next, scrollsaw the hole to shape. Now, scroll- or bandsaw the base to shape, then sand the edges of the hole and base smooth. (We used a 2"-diameter drum sander.)

3 Lay out, drill, and countersink a $\frac{5}{32}$ " shank hole centered on the top edge of each spreader (B, C, D). With the Base pattern still

in place, reposition the plate rests according to your arranged layout. Then, using the shank holes as guides, drill $\frac{3}{4}$ " pilot holes $\frac{1}{4}$ " deep in the base.

4 Fit your table-mounted router with a 45° chamfer bit, and rout a $\frac{1}{4}$ " chamfer along the outside bottom edge of the base. Next, finish-sand the base and plate rests.

5 Before assembling the display, apply your choice of finish to all parts. (We sprayed on three coats of Minwax Fast-Drying Satin polyurethane, leveling the finish between coats with 0000 synthetic steel wool.) After the finish has dried overnight, cut $\frac{1}{8}$ × $\frac{1}{4}$ " pieces of adhesive foam weather stripping, and adhere them in the notches in each plate rest to protect the plate edges. Finally, attach the plate rests to the base (without glue) using #8×1" brass flathead wood screws. Rotate each rest for best position before you tighten it down. ■

Project designer and builder:
James E. Boelling
Illustrations: Roxanne LeMoine
Photograph: King Au

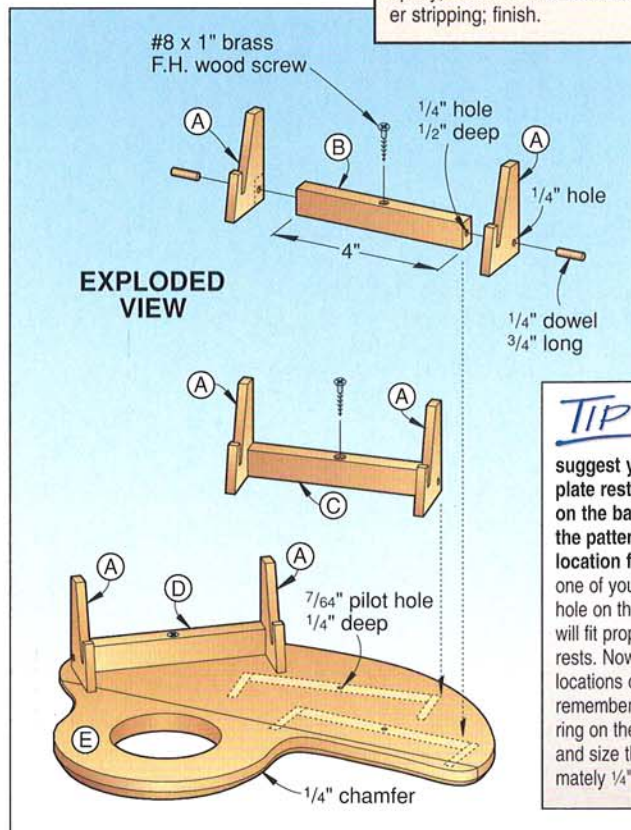
BILL OF MATERIALS

Part	Finished Size			Matl.	Qty.
	T	W	L		
A* uprights	$\frac{1}{4}$ "	1¾"	2½"	C	6
B* short spreader	$\frac{1}{2}$ "	$\frac{3}{4}$ "	4"	C	1
C* medium spreader	$\frac{1}{2}$ "	$\frac{3}{4}$ "	4½"	C	1
D* long spreader	$\frac{1}{2}$ "	$\frac{3}{4}$ "	5"	C	1
E* base	$\frac{1}{2}$ "	9½"	12½"	EC	1

*Initially cut part oversized. Please read all instructions before cutting.

Materials Key: C—cherry; EC—edge-joined cherry.

Supplies: #8×1" brass flathead wood screws; quick-set epoxy; $\frac{1}{4}$ " hardwood dowel stock; adhesive foam weather stripping; finish.



TIP no. 1—Before you cut the saucer hole, we suggest you arrange your three plate rests (with plates installed) on the base blank (after adhering the pattern) to establish the best location for each rest. Then, center one of your saucers over the saucer hole on the pattern to make sure it will fit properly with respect to the rests. Now, lay out the plate-rest locations on the pattern. Also, remember to measure the protruding ring on the bottom of your saucers and size the saucer hole approximately $\frac{1}{4}$ " larger than this diameter.

HERE IT IS THE GREATSCROLLSAW DESIGNCONTEST

SCROLLSAWYERS, here's your chance to win as much as \$1,500 in cash for your best original design.

Show us your best work in these three categories

Send us your best original scrollsaw project for a chance at these great prizes. For judging, we'll divide entries into three categories—Put-Together Projects, Clever Cutouts, and Kids' Stuff.

Put-Together Projects will include items assembled from multiple scrollsawed parts, such as boxes or multi-layer plaques. Items may be either functional, such as clocks and weather stations, or purely decorative, such as wall hangings.

Anything cut from a single piece of wood—fretwork or silhouettes, for example—will fall into the **Clever Cutouts** category. A single cutout may be mounted on a base or plaque, and you may use a clock insert or similar hardware. Cutouts can be painted or unpainted.

Kids' Stuff entries may be either assembled projects or cutouts intended primarily as playthings or items for children. Toys, traditional jigsaw puzzles, or decorations suitable for a child's room would be just some of the items eligible for this group.

Five great cash prizes are up for grabs

We'll award five cash prizes totalling \$5,250. A grand prize of \$1,500 will be awarded to the single best entry regardless of category.

In addition, each of the three category winners will receive \$1,000. And, the entry that best reflects a holiday theme (any holiday) regardless of category will win \$750.

If it's scrollsawn, you can enter it

The scrollsaw must be the main or only tool used to create entries. If scrollsaw work merely serves as an incidental element or decorative accent, an item won't qualify.

Enter as many times as you like. Be sure to include a separate entry blank *below* (or photocopy of one) for each item entered. Entry deadline is November 30, 1994. Please read the rules *at right* before entering.

Sorry, entries cannot be returned.

1. Entries must be original, unpublished designs, not to include minor variations on published patterns or plans.
2. The scrollsaw must be the principal or only tool used for construction of entries.
3. Entries must be received at our offices by the end of the business day on November 30, 1994. All entries must be shipped prepaid; we will not accept collect shipments. Enclose an official entry blank (or photocopy) for each item. Label each item with your name and address. Entries cannot be returned.
4. By entering the contest, you grant your permission to use your name, hometown, and photographs of your entry for editorial or promotional purposes. Employees of Meredith Corporation, its affiliates and subsidiaries, and employees' family members are not eligible.
5. Judging will be by a panel including representatives from the sponsoring publications, professional craftspeople, and scrollsaw manufacturers. Entries will be judged on originality and craftsmanship. Judges may reassign an entry to a different category. Judges' decisions are final.
6. Winners will be selected on or about Dec. 15, 1994, and notified by mail on or about Jan. 15, 1995. Taxes are sole responsibility of winners. For a list of winners, send a self-addressed stamped envelope to Scrollsaw Project Design Contest, 1912 Grand Ave., Des Moines, IA 50309-3379.
7. Subject to all local, state, and federal laws and regulations. Void where prohibited.

THE GREAT SCROLLSAW DESIGN CONTEST

Sponsored by:

Weekend Woodworking Projects®, WOOD® magazine, and Super Scrollsaw Patterns™

Please place my entry in:

- ☐ Put-Together Projects
- ☐ Clever Cutouts
- ☐ Kids' Stuff

Name _____

Address _____

State _____ ZIP _____

Telephone _____

I certify that the enclosed entry is my original work.

Signature _____

Send to: Scrollsaw Project Contest, 1912 Grand Ave., Des Moines, IA 50309-3379

WE DIDN'T BUILD IT AS A LOW-PRICED MITER SAW. WE BUILT IT AS A DELTA.



You're looking at the lowest-priced 10" Power Miter Saw we make. Packed with all the stamina and precision you'd expect to find in a more expensive saw. At a glance you can see more features than you're paying for. So what's the catch?

No catch. It's just that we have miter saws down to a science. We've built more configurations of power miter saws than anyone. So you benefit from efficiencies in design and cost of manufacturing that allow us to build professional quality saws at a less-than-professional price.

This one weighs only 28 pounds, so you can take it right to the job. Crosscuts a 2x6 or 4x4 at 90°. Mitters a 2x4, flat or on edge, in a single pass at 45°. A rigid



cast iron head support ensures accuracy. D-handle design with a trigger switch gives you positive on-off control. Electric blade brake automatically stops the blade when you let go. However, we should probably warn you: This isn't a saw you'll want to let go of, once you get your hands on it.

For the name of the nearest dealer, home center or hardware store carrying Delta tools, call Delta International Machinery Corp., 800-438-2486. In Canada, 519-836-2840.

THE POWER OF THE PROS

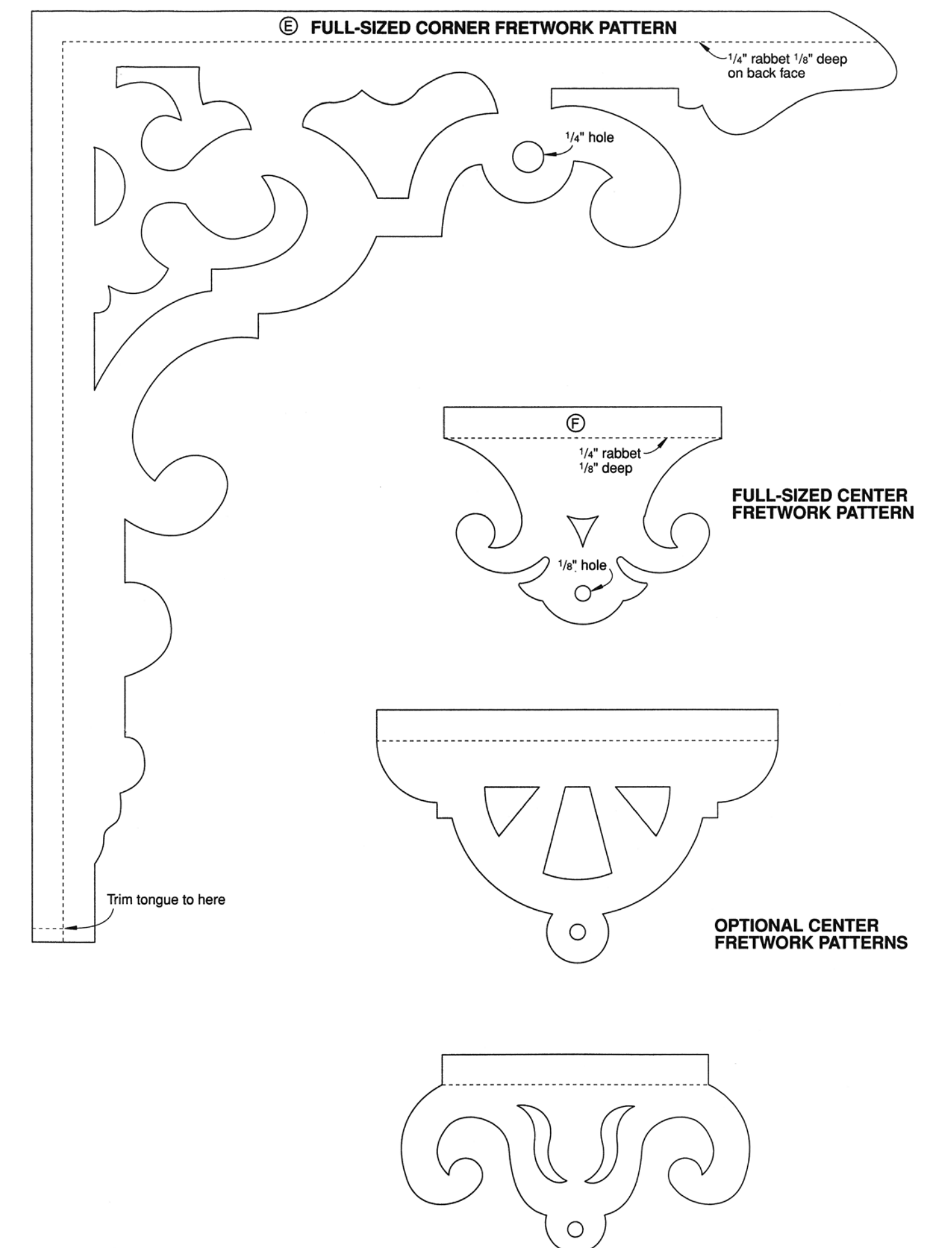
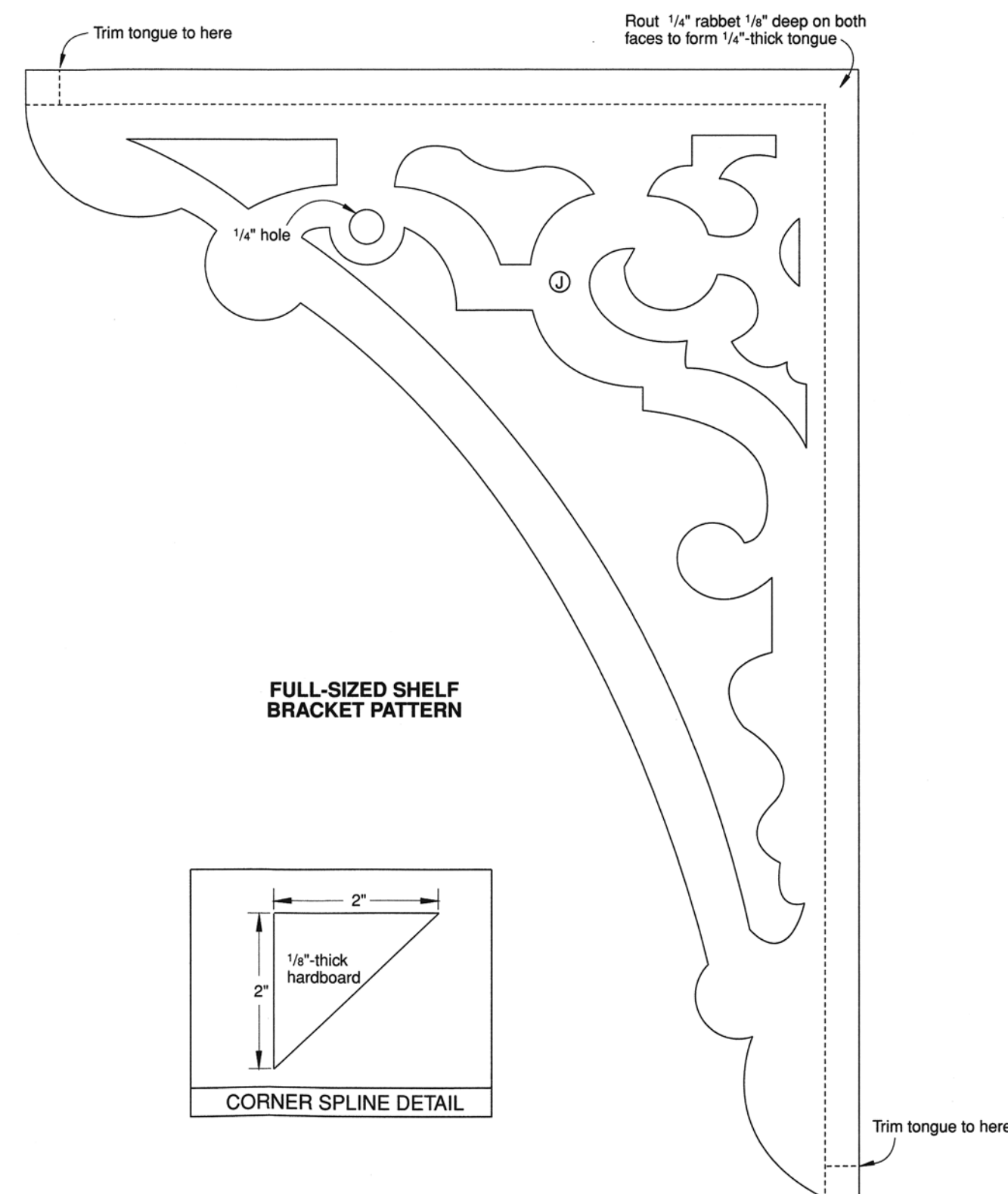
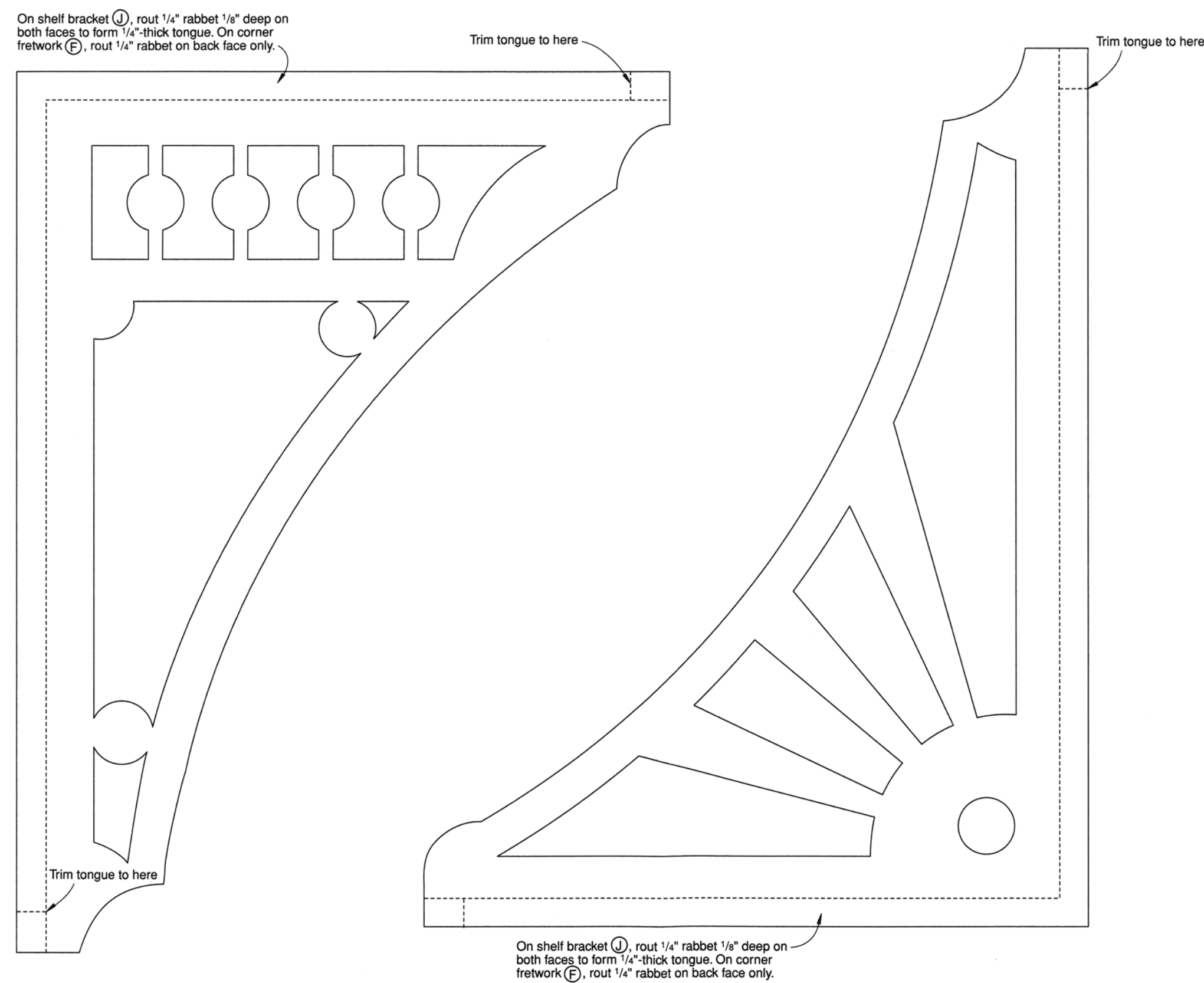
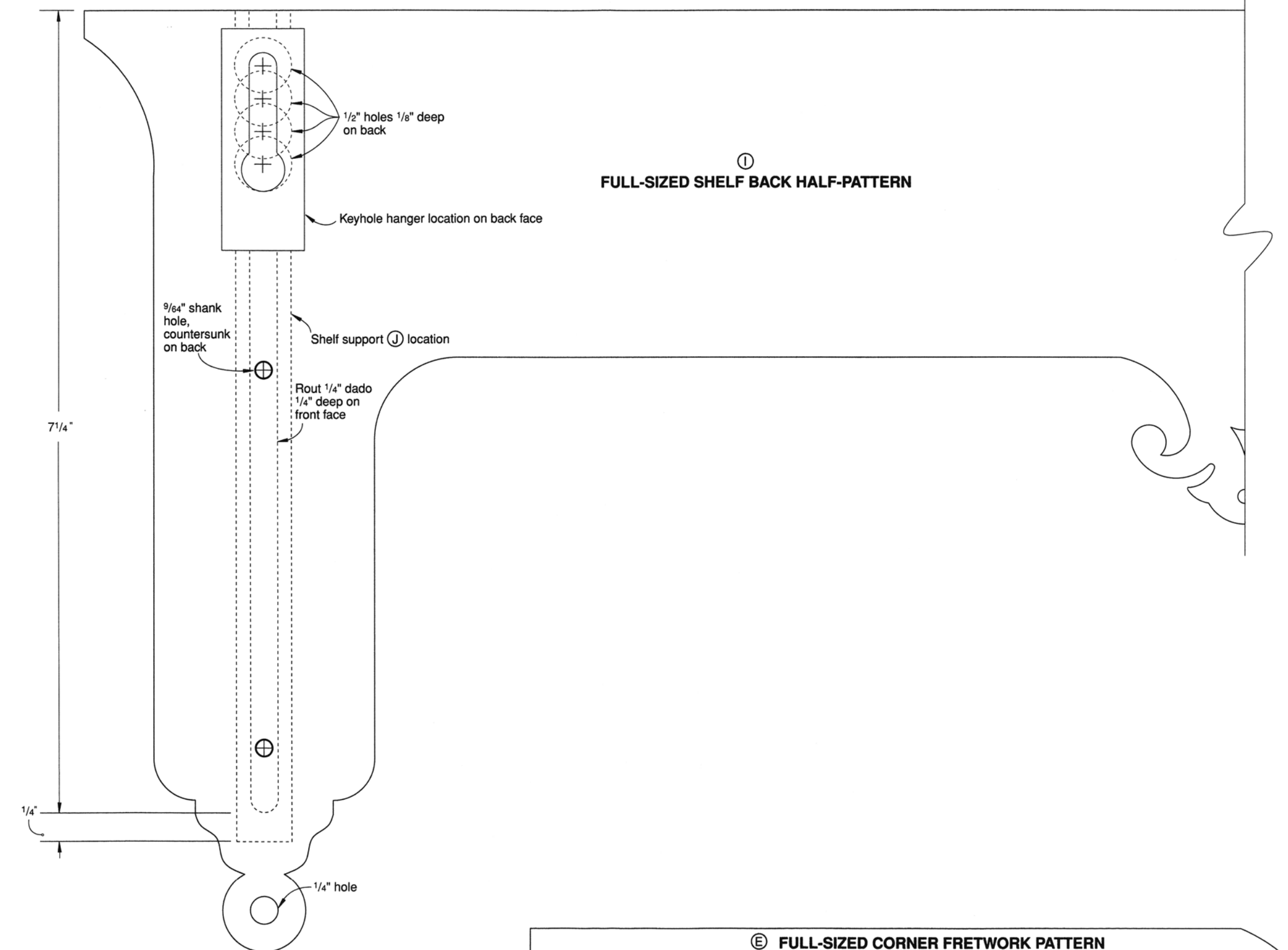
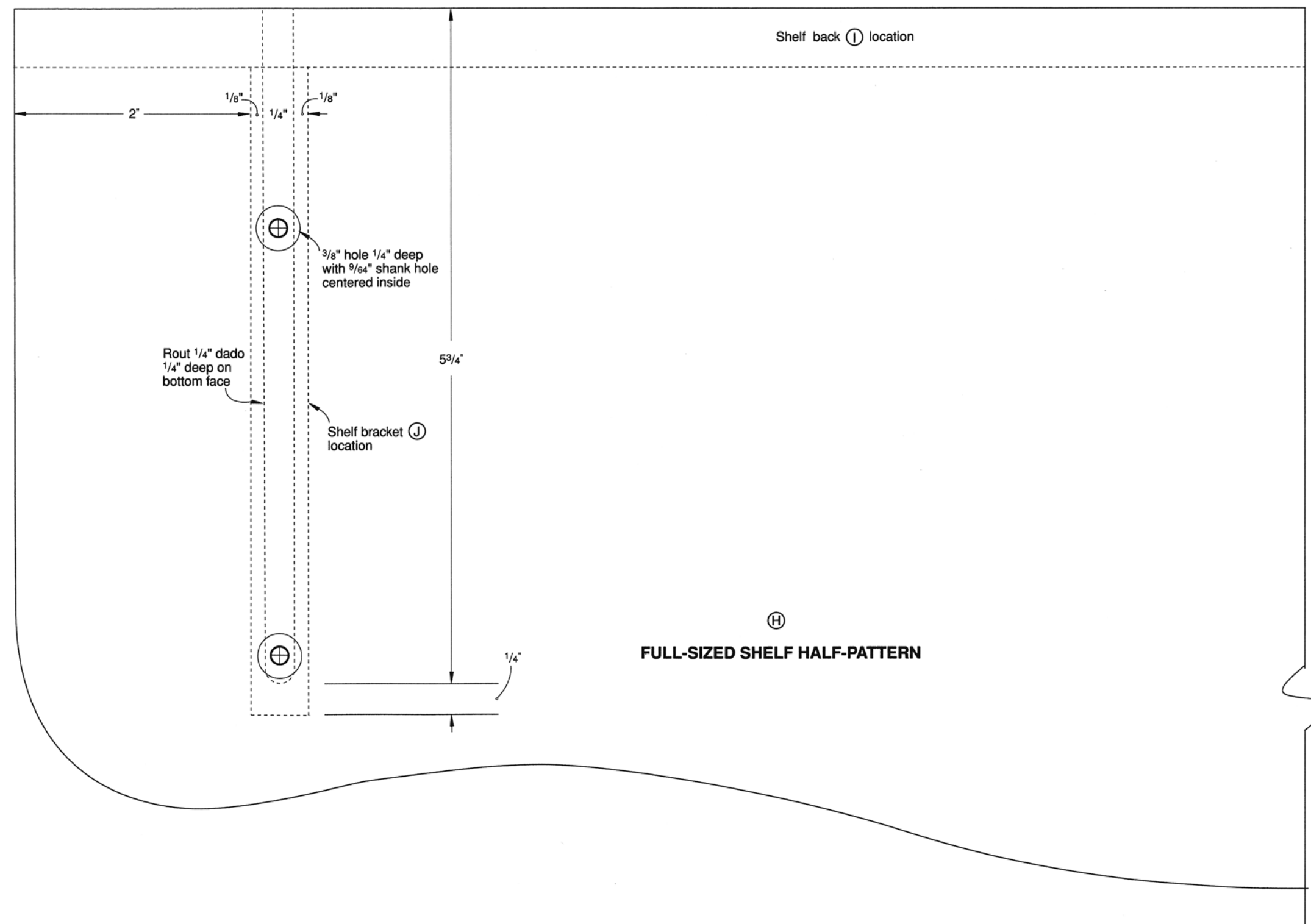
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Delta funds these national PBS programs.

The New Yankee Workshop with Norm Abram.

The American Woodshop with Scott Phillips.





**FULL-SIZED SHELF /
MIRROR PATTERNS**

Trim tongue
to here

On shelf bracket (J), rout $\frac{1}{4}$ " rabbet $\frac{1}{8}$ " deep on both faces to form $\frac{1}{4}$ "-thick tongue. On corner fretwork (F), rout $\frac{1}{4}$ " rabbet on back face only.

Trim tongue to here

Technical drawing of a rectangular plate with three circular holes. The plate has a total width of $1\frac{1}{16}$ inches. The top hole is $\frac{3}{4}$ inch in diameter and $\frac{1}{4}$ inch deep. The middle hole is $\frac{5}{8}$ inch in diameter and $\frac{3}{4}$ inch deep. The bottom hole is 1 inch in diameter and $1\frac{1}{8}$ inches deep. The holes are spaced $\frac{3}{16}$ inch apart from the top and bottom edges. A circled 'A' is in the top left corner.

ELEPHANT HEAD SIDE VIEW

4 1/8"

5/8" groove
3/4" deep

5/8" groove
3/4" deep

3/4" holes
1/4" deep

(A)

Second hole:
5/8" hole 3/4" deep

5/8" hole
3/4" deep

First hole: 5/8" hole 3/4" deep;
plug with 5/8" dowel 1/4" long

1" hole
1 5/8" deep

FULL-SIZED ELEPHANT HEAD PATTERN

Diagram of the Trunk (C) showing a trapezoidal shape. The top width is labeled as $1\frac{1}{16}"$ and the bottom width is labeled as $\frac{5}{8}"$. The label "TRUNK (C)" is centered within the shape.

FULL-SIZED PROFILE

1/4" hole
15/16" deep,
centered

TRUNK C

FULL-S
PATT

**FULL-SIZED
PATTERNS**

1/4" hole
15/16" deep,
centered

EAR ⓔ

EAR (F)

Trim tongue
to here



A diagram of a screen retainer ring, which is a large, vertically oriented oval shape with a thick border. The text "SCREEN RETAINER RING" is centered within the oval.

FULL-SIZED BIRD FEEDER PATTERNS



WINDOWPANE

WINDOWPANE

ank hole, centered
untersunk

Ⓔ Base

FULL-SIZED CHINA DISPLAY PATTERN

 $R = 1 \frac{11}{16}''$

Note: Before cutting the saucer hole, arrange the plate rests (with plates) on the base to establish the best location for each. Then, center a saucer over the hole layout on the pattern to make sure it will fit with the plates and rests. Also, measure the protruding ring or the bottom of your saucers and size the hole approximately $\frac{1}{4}$ " larger than this diameter.

Adhere foam w/
stripping here

/ (A)

**FULL-SIZED
PATTERN**

Attach spreader.

The diagram shows a large, symmetrical, teardrop-shaped outline representing the 'FULL-SIZED PATTERN' for the 'ELEPHANT UPPER BODY'. A horizontal line bisects the pattern. At the top center, there is a circular feature with a crosshair in the middle. This feature is labeled with '1" hole' pointing to the outer circle and '1/8" chamfer top and bottom' pointing to the top and bottom edges of the circle. To the left of this feature, an arrow points to a dashed line labeled 'E SPACER'. At the bottom center, there is a small indentation labeled '15° bevel' with arrows pointing to the sloped sides of the indentation. The entire pattern is enclosed within a larger, irregular dashed outline.

E SPACER

$\frac{1}{8}$ " chamfer
top and bottom

11

ELEPHANT

FULL-SIZED PATTERN

④ SPACER

1" hole
1/8" chamfer
on top only

ELEPHANT
LOWER BODY ©

FULL-SIZED PATTERN

**FULL-SIZED WHEEL BRACKET
PATTERN FOR FLOOR SAFE**