

Weekend Woodworking™

FROM THE EDITORS OF WOOD® MAGAZINE

March 1996
Vol. 9 No. 2 • Issue 50

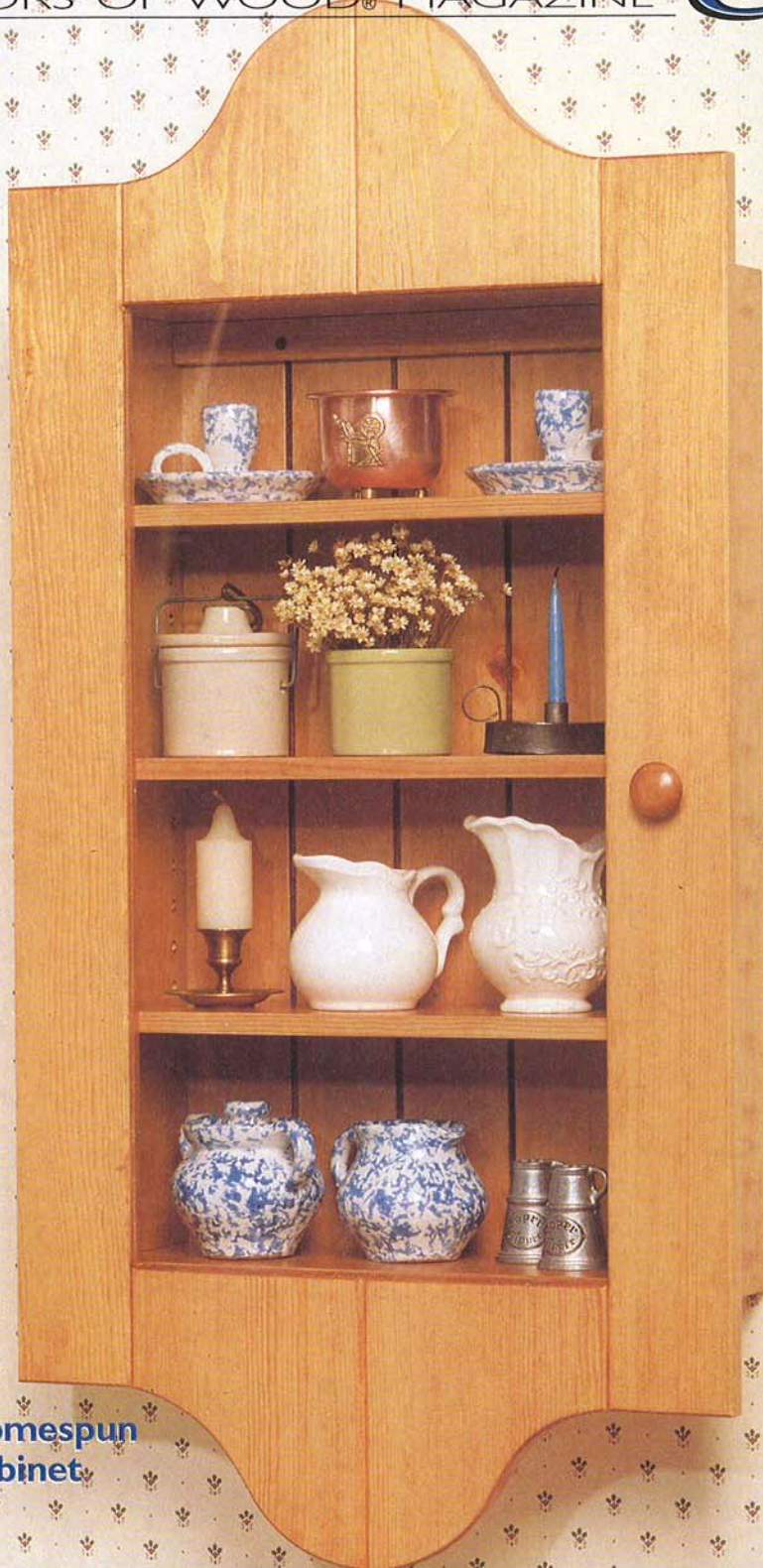
6 Super Projects

- ◆ Baseball Card Box
- ◆ Country Cabinet
- ◆ Doll Cradle
- ◆ Perpetual Calendar
- ◆ Candlestick Lamp
- ◆ Cat-motif Shelf

Plus! JIGS AND TECHNIQUES



- ◆ Tablesaw miter jig
- ◆ Finishing pointers
- ◆ Shop tips



Build this homespun
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(By Frank K. Wood)

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Weekend Woodworking™

FROM THE EDITORS OF WOOD® MAGAZINE

MARCH 1996

VOL. 9, NO. 2 • ISSUE 50

BASEBALL CARD BOX 6

You'll enjoy learning the new construction techniques featured in this collector's box. It's a solid hit among baseball and woodworking fans.

COUNTRY WALL CABINET 10

This cabinet combines timeless design with easy construction. No wonder the country style enjoys such enduring popularity.

DOLL CRADLE 16

Be a hero to the young ladies on your gift list with this heirloom project. It's designed for generations of creative play.

CANDLESTICK LAMP 19

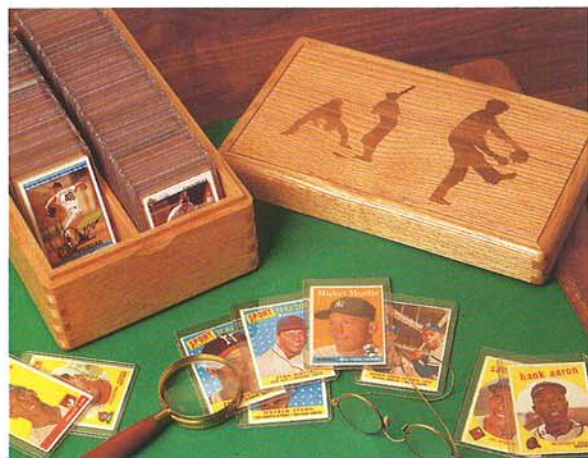
We discovered a source for the old-fashioned lampshade and follower so you can build this authentically styled favorite.

PERPETUAL CALENDAR 22

Here's a project that will never go out of date. And our shop tips help you save time when you build it.

CAT & BALL SHELF 27

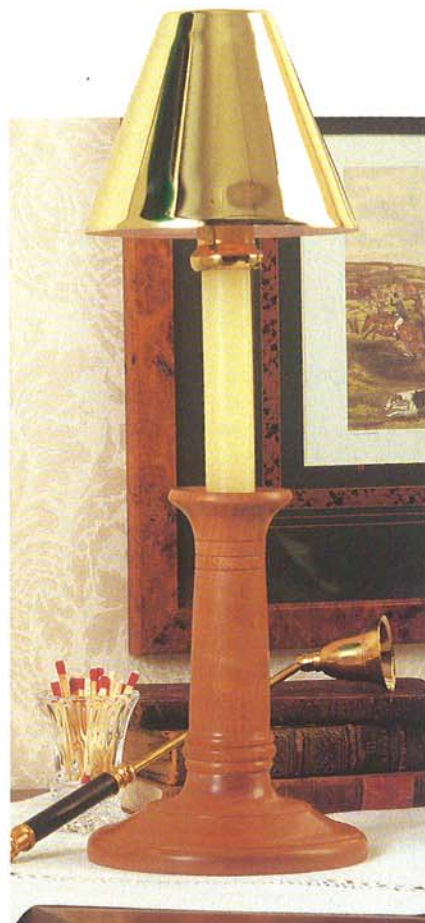
What home can't use a little more storage space? This whimsical shelf adds just the right decorating touch.



Page 6



Page 22



Page 19

SHOP-SMART TIPS

5

Shop-made glue brushes • Protecting your drill-press table • Strategies for parts identification • Stack-sawing tactic for reducing breakage

JIGS & TECHNIQUES

14

This versatile tablesaw jig cuts tight-fitting miters and lets you crosscut wide panels accurately. It's so easy to build there's no excuse not to have one in your shop.

FINISHING SCHOOL

30

Nothing else matches the warm glow that an oil finish gives to wood. We help you select the right product for your next project, and offer step-by-step application advice for great results.

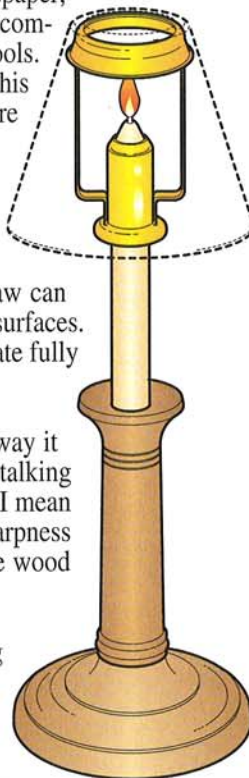
It's a Great Time to Try a Turning Project

Look through the classified tool ads in your Sunday newspaper, and you'll probably find tablesaws, jointers, routers, air compressors, and many other "I-wish-I-had-one-of-those" tools. But one machine you probably won't find among this assortment of used workshop iron is a lathe. If you're already a lathe enthusiast, you know why.

There is probably no other power tool that allows you more design freedom, creativity, and immediate satisfaction than the lathe. With a tablesaw, you're essentially restricted to straight cuts in flat lumber. A bandsaw can give you curved cuts, but you're still dealing with flat surfaces. Those limits disappear with a lathe. With it, you can create fully rounded objects of almost infinite variety.

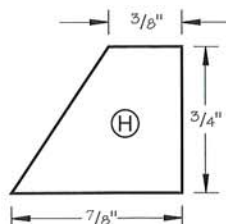
But perhaps the most alluring charm of the lathe is the way it puts you in touch with the wood itself. And I'm not just talking about the way you can spray shavings all over yourself. I mean the satisfaction you feel when the wood yields to the sharpness of the tool, or the immediate feedback you get when the wood objects to an unwanted advance.

If you're new to turning, our Candlestick Lamp, starting on page 19, is a wonderful introduction to both spindle and faceplate work. Turning novices and experts alike will enjoy the function of the finished project. Gravity moves the follower and lampshade down the candle as it burns. We have listed a mail-order source for these parts in the Buying Guide accompanying the story.



We have discovered an error in the Gumball Machine project that appeared in issue 48. The ramp (Part H) as originally shown is too large. If you have not built the project yet, use the full-sized pattern below. Here's how to correct a gumball machine you've already assembled: Lay the machine on its back on your drill-press table. Put spacers under it so the face of the case is level. Chuck a 5/8" Forstner bit into your drill press, and drill 1 1/4" into the tapered end of the ramp. To make the drilling easier, you might want to first insert a wedge-shaped piece into the ramp opening to give you a flat surface to start the drill bit.

Bob Settlin



FULL-SIZED PATTERN
(Make from 3/4" stock)

Weekend Woodworking™

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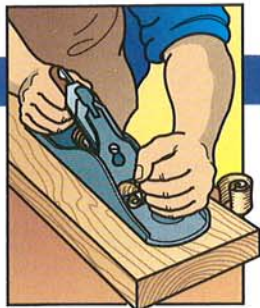
Our Pledge to You: Prior to publication, we build every project featured in *Weekend Woodworking*™ step-by-step in our shop. Then, a team of editors reviews the how-to directions, technical drawings, illustrations, and Bill of Materials of each project to make sure the instructions we provide to you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

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SHOP-SMART TIPS

SHARE YOUR FAVORITE SHOP TIPS, TECHNIQUES, & JIGS

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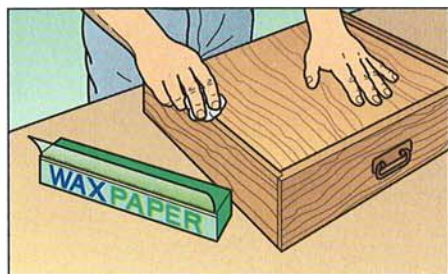
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Lubricate drawer runners the easy way

The drawers you just made have a sticking problem. They fit into the openings okay, but grab when you pull on them.

Crumple a sheet of waxed paper, and rub it briskly on the part. You'll get the lubri-



cation with virtually no mess. This tip also works to prevent rust on power tool tables and portable tool bases, but watch your fingers so you don't snag an exposed blade or cutter.

—Jim Downing, *WOOD* magazine
Design Editor

Stack-sawing tip reduces damage risk

Conventional wisdom says to use double-faced tape to hold a number of workpieces together for scrollsawing identical parts. But this can lead to exasperation if you break some of the delicate finished pieces while prying them apart.

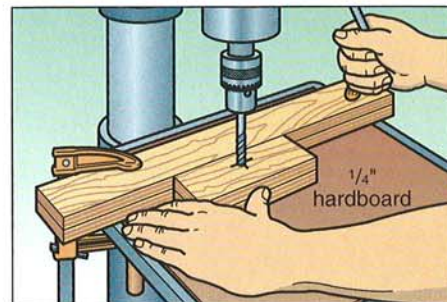
Glue the workpieces together with sparingly applied drops of cyanoacrylate (instant glue) in each corner or other waste areas, without gluing the cutout pieces together. Use medium-thickness gap-filling adhesive for best results.

—Larry Johnston, *WOOD* magazine
Senior Editor

Drill-table drill-through protection

Drilling holes with a drill press sometimes requires a lot of guesswork. You especially have to be careful that you don't drill through the workpiece and into the metal table. That could ruin a good bit—and the table.

You probably already have a scrapwood top for your drill-press table, but topping it with a scrap of contrasting-color wood will go even further to save your bits and table. I use 1/4" hardboard when drilling through light wood, and pine when drilling through walnut. That way, as



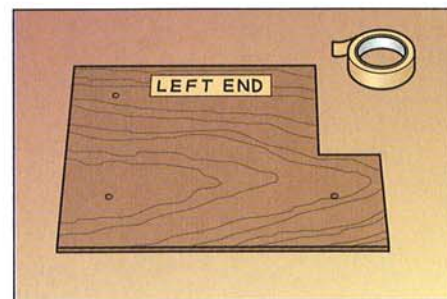
soon as I drill through, the contrasting sawdust shows up, telling me to stop.

—Marlen Kemmet, *WOOD* magazine
Senior Editor

The good and the bad of parts identification

You've marked your project parts with masking tape to identify them for confusion-free assembly. The only problem after assembly is that you've waited too long to remove the tape.

Rule one: always remember to keep the tape on no more than a few hours; otherwise, the sticky residue welds to the wood. Rule two: if this happens, remove the residue with a bit of lacquer thinner.



—Marlen Kemmet, *WOOD* magazine
Senior Editor

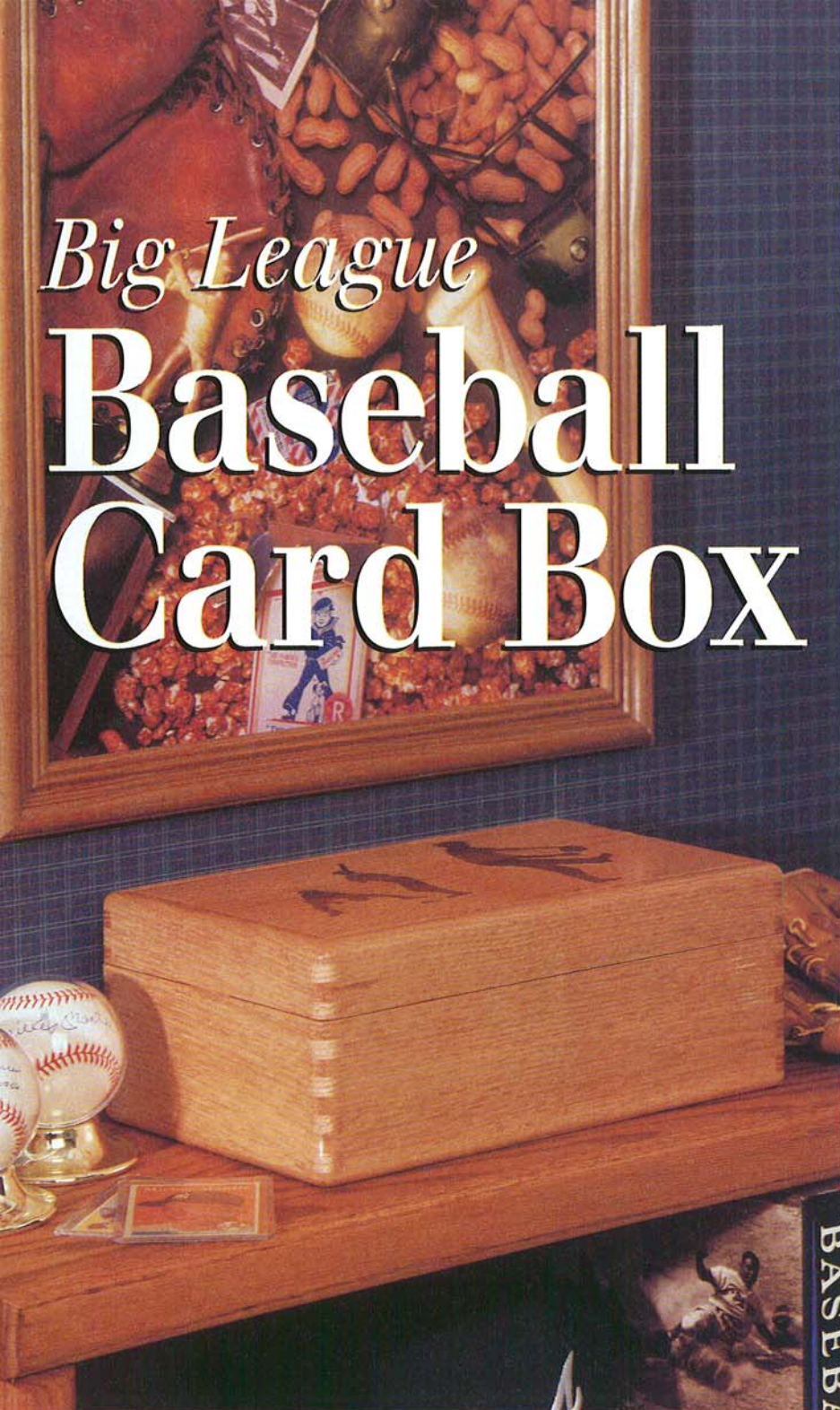
Homemade glue brushes when you need them

It's late, you're ready to glue your project together, and you discover you're out of flux brushes you normally use to apply glue. The stores are closed, so it's either shelve the project until morning or spread the glue with your fingers. Yuk!

Snip off a pinch of bristles from an old, clean paintbrush. Wrap masking tape around one end, trim the other with scissors. Your applicator is ready for action.



—Jim Harrold, *WOOD* magazine
Managing Editor



Big League Baseball Card Box

NOTE: You will need some thin stock for this project. Plane or resaw thicker stock to size. This box is designed to hold approximately 300 standard 2½×3½" sports cards in 3×4" top-load holders that are available through sports-card dealers and discount stores.

START BY GROOVING THE SIDES

1 Plane or resaw a 5½×48" piece of oak to ½" thick. Rip to 5½" wide, and sand the face that will be the inside of the box. Mark the unsanded face with a piece of masking tape. Chuck a ¼" straight bit into your table-mounted router, and set the bit ⅜" above the table. Next, adjust the fence ⅛" from the inner edge of the bit, and rout grooves into the sanded face for the top and bottom where shown on the Section View *opposite page, bottom right*.

2 Adjust the height of the router bit to ¼" above the surface of the table, and set the fence to 1¼" from the inner edge of the bit. Then, rout a groove into the same face of the stock as the grooves you cut in Step 1. **NOTE:** By studying the Section View, you can see that this groove will eventually become a rabbet in the top assembly. This rabbet will mate with another rabbet formed when you separate the lid as one of the last steps.

3 Tilt your tablesaw blade to 45°, and miter-cut the ends (A) and sides (B) of the box to the lengths shown in the Bill of Materials.

4 Rout a stopped dado centered in each box end as shown in the Routing the Stopped Dado drawings *opposite page, middle left*. Use a chisel to square the end of each dado.

MAKE THE DIVIDER, TOP, AND BOTTOM

1 Dry-assemble (no glue) the box ends and sides with a band clamp to check the fit of the miters. Double-check the dimensions of the divider (C), then rip and crosscut it to size.

2 Double-check the size of the top (D) and bottom (E). Refer to the Section View to see that these parts do not bottom out in the grooves. These pieces are ripped and crosscut ⅛" shorter and narrower than the maximum groove-to-groove dimension.

3 To make the inlaid top, start by ripping and crosscutting one piece each of walnut and oak to size from ⅜"-thick stock.

Continued

If you like discovering new construction techniques, you'll really enjoy building this baseball card collector's box. You'll learn how to easily create a lid with mating rabbets, make splined slots at the corners without a jig, and craft an eye-catching inlaid top with seamless results. We covered all the bases to give you big-league results.

BILL OF MATERIALS					
Part	Finished Size			Matl.	Qty.
	T	W	L		
A ends	½"	5⅞"	7½"	O	2
B sides	½"	5⅞"	12¾"	O	2
C divider	¼"	2"	12¼"	O	1
D top assembly	¾"	6¾"	12"	O/W	2*
E bottom	¼"	6¾"	12"	H	1

*Start with one piece each of oak and walnut to make the inlaid-top assembly. Please read all instructions before cutting.

Materials Key: O—oak; W—walnut; H—hardboard.

Materials Key: O—oak; W—walnut; H—hardboard.

 $\frac{1}{2} \times 7\frac{1}{4} \times 96"$ Oak *Plane or Resaw to thickness listed in Bill of Materials

 $\frac{3}{8} \times 7\frac{1}{4} \times 24"$ Walnut **Also needed: $\frac{1}{4} \times 12 \times 12"$ hardboard

ROUTING THE STOPPED DADO

STEP 1

Startblock

Stopblock

2"

3 3/4"

Stopped dado

1/4" straight bit

Box end

Location of grooves in inside face of box end

STEP 2

Startblock

Box end

Feed direction

Stopblock

EXPLODED VIEW

Route $\frac{3}{8}$ " round-overs on all exposed edges before separating lid.

$\frac{1}{4}$ " groove $\frac{1}{4}$ " deep cut prior to assembling box.

2" $12\frac{1}{4}$ "

$\frac{1}{4} \times 2$ " dado $\frac{1}{4}$ " deep

Route $\frac{3}{8}$ " round-overs on all exposed edges before separating lid.

Sand angled finger access.

Oak spline

$7\frac{1}{2}$ " $12\frac{3}{4}$ "

$\frac{1}{4}$ " groove $\frac{3}{16}$ " deep

The diagram illustrates the exploded view of a wooden box and its lid. The lid (D) is shown at the top, with a note to route $\frac{3}{8}$ " round-overs on all exposed edges before separating it. A $\frac{1}{4}$ " groove $\frac{1}{4}$ " deep is cut prior to assembling the box. The box is composed of several parts: the front panel (A), the side panels (B), the back panel (C), the bottom panel (E), and the internal divider (A). The dimensions are given as 2" for the height of the side panels, $12\frac{1}{4}$ " for the length of the side panels, $7\frac{1}{2}$ " for the width of the front panel, and $12\frac{3}{4}$ " for the length of the front panel. A $\frac{1}{4} \times 2$ " dado $\frac{1}{4}$ " deep is shown on the side panels. The bottom panel (E) has a $\frac{1}{4}$ " groove $\frac{3}{16}$ " deep. The internal divider (A) is shown with a sand angled finger access. An oak spline is used to secure the front panel (A) to the side panels (B). The lid (D) is shown with a $\frac{1}{4}$ " groove $\frac{1}{4}$ " deep cut prior to assembling the box. The lid (D) is shown with a $\frac{1}{4}$ " groove $\frac{1}{4}$ " deep cut prior to assembling the box.

SECTION VIEW

Diagram illustrating the internal structure and dimensions of a wooden box assembly, showing various grooves, rabbets, and components labeled A through E.

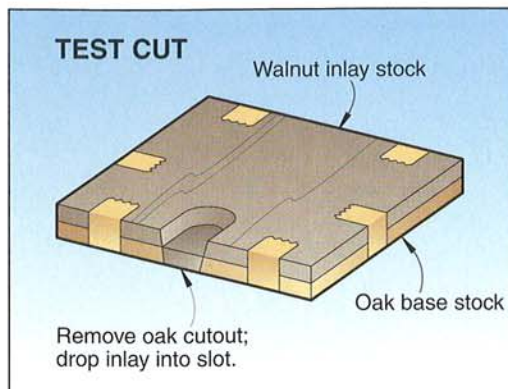
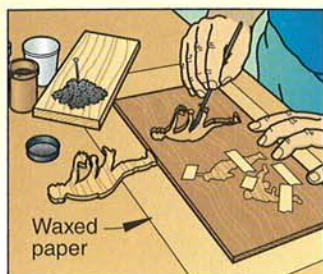
Dimensions and Features:

- Top Edge:** 1/2" width; 3/16" rabbet 1/8" deep on part D; 1/16" reveal.
- Top Groove:** 1/4" groove 3/16" deep 1/8" from edge; 1/4" groove 1/4" deep cut before box assembly; 1 1/4" height.
- Bottom Groove:** 1/4" groove 1/4" deep cut after box assembly; 1/4" groove 3/16" deep 1/8" from edge.
- Internal Structure:** 1/4" thick vertical divider (C); 2" height; 3 1/4" width; 6 3/4" width; 7 1/2" total width.
- Bottom Edge:** 3 3/8" height; 5 1/8" total height.

Baseball Card Box

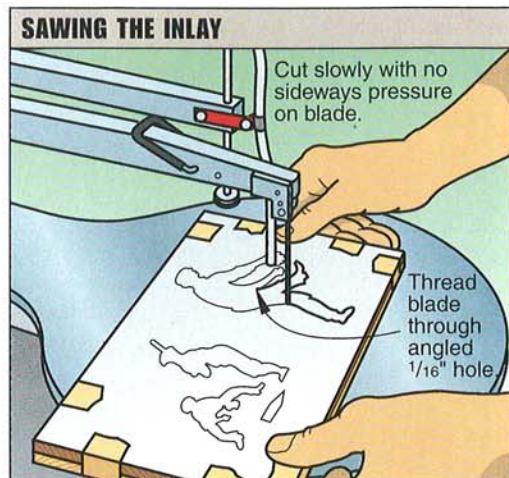
Shop Tip

No. 1—Use the “scraps” from the inlaid top to make another top with oak figures on a walnut background. The parts will not fit together tightly, but you can use this fact to decorative advantage. Add a small amount of powdered toner from a photocopy machine to epoxy to make a black adhesive. Brush onto the walnut cutline as shown below, then insert the oak figure. Center it, then tape into position until the epoxy cures. The result will be inlaid figures with thin black outlines.



5 Use masking tape to join scrap cutoffs into a test blank. Put a No. 5 blade into your scrollsaw, and tilt your scrollsaw table (2° is a good starting point) to make the first test cut as shown in the Test Cut drawing above. If your scrollsaw table tilts left (as you face it), cut clockwise; if the table tilts right, cut counterclockwise. If the test inlay piece does not seat fully into the base stock, decrease the tilt angle. If the inlay piece goes too deep, increase the tilt. **NOTE:** Change the tilt angle of the table in very small increments between test cuts. Use no sideways pressure on the blade because that can distort the effective angle of the cut. Do not hurry this test procedure. Your completed inlay will not fit any better than your test cut.

6 When you are satisfied with the test cut, drill angled blade start holes through the top assembly where shown on the pattern. Use a hand-held drill, “eyeballing” the angle, or use a bevel gauge. Be sure that the tilt of the blade start holes corresponds with the tilt direction of your saw table.

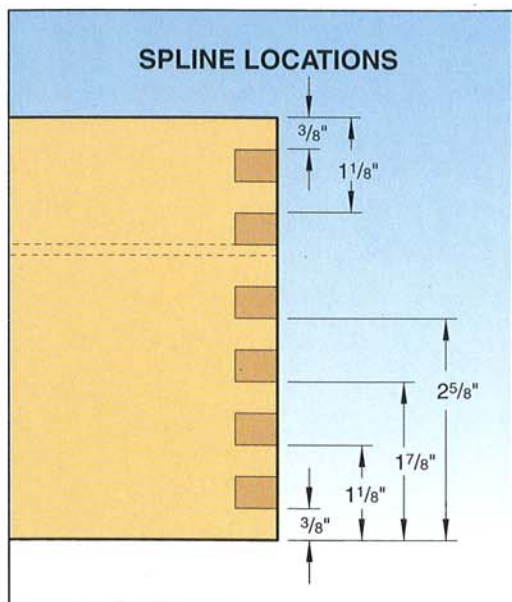


7 Cut the inlay pieces, then remove the pattern. Next, separate the walnut and oak stock. Use a toothpick to apply a thin coat of glue on the cut oak edges, then press the walnut inlays into place. Let the glue dry, then sand both faces of the inlay assembly. See Tip No. 1 left for an idea about using the scraps to make another box lid.

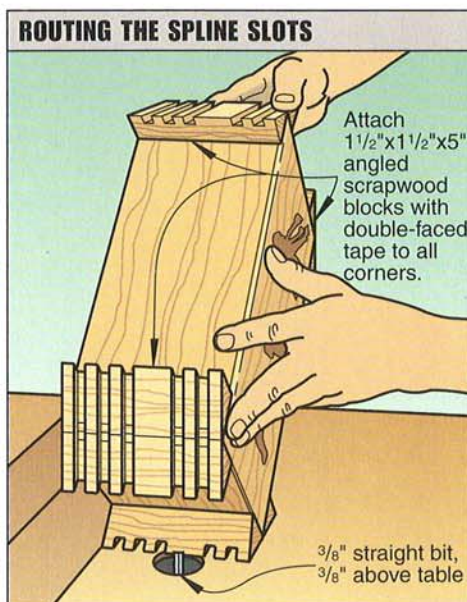
8 Chuck a $\frac{3}{8}$ " straight bit into your table-mounted router, and set it $\frac{1}{8}$ " above the table. Adjust your fence to make a cut $\frac{3}{16}$ " wide. Make a test cut in scrap stock to verify the setting, checking the fit of the piece into the groove in the box. Rout the rabbet along the ends and edges of the inlaid top. **NOTE:** Make sure that you rout the rabbets with the inlaid top facedown on the router table. Otherwise, all of the players will become southpaws!

9 Rip and crosscut the bottom from $\frac{1}{4}$ "-thick plywood. Dry-clamp the box assembly with the divider, top, and bottom in place. When you are satisfied with the fit, glue and clamp the assembly with two band clamps. Adjust the position of the top so that there is a consistent reveal where shown in the Section View. Check that the assembly is square and flat, then allow the glue to dry.

SPLINE LOCATIONS



ROUTING THE SPLINE SLOTS



ROUT THE SPLINE SLOTS

1 Tilt your tablesaw blade to 45° , and bevel-rip scrapwood for the eight blocks shown in the Routing the Spline Slots drawing left. Return the blade to vertical, and cut the blocks 5" long. Attach them to the box assembly with double-faced tape.

2 Chuck a $\frac{3}{8}$ " straight bit into your table-mounted router, and set it $\frac{3}{8}$ " above the table. Clamp a 4"-high fence to your router table $\frac{3}{8}$ " from the inner edge of the bit. Holding the bottom of the box against the fence as shown in the Routing the Spline Slots drawing, rout a slot through the scrapwood blocks and across each corner. Next, turn the box so that the top is against the fence, and repeat the process. See the Spline Locations drawing *opposite page, bottom left* for reference. Adjust the fence to $1\frac{1}{8}$ " from the bit, and rout slots with the top against the fence, then with the bottom against the fence. Rout the two remaining sets of slots (for a total of six at each corner) by holding the bottom against the fence when it is positioned at $1\frac{1}{8}$ " and $2\frac{5}{8}$ " from the bit. Remove the scrapwood blocks.

3 Plane a $1\frac{1}{4}\times 24$ " length of oak to $\frac{3}{8}$ " thick, working it to a snug fit in the spline slots. Rip a $\frac{1}{2}$ "-wide strip, then crosscut 24 splines $\frac{3}{4}$ " long. Glue the splines into the slots, making certain that each spline is fully seated into the bottom of the slot. Let the glue dry.

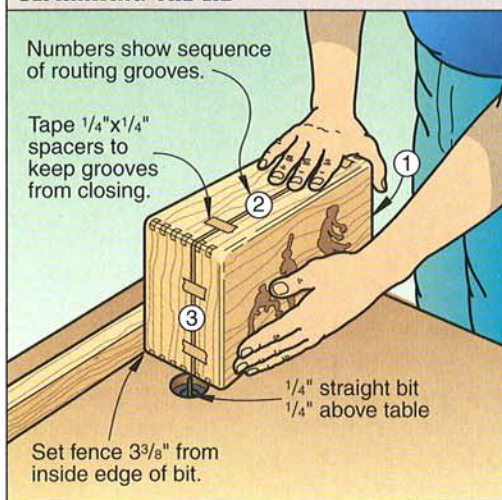
4 Trim the splines flush with the ends and sides with a fine-toothed saw (we used an offset backsaw). Then, sand the assembly.

5 Chuck a $\frac{3}{8}$ " round-over bit into your table-mounted router. Next, round-over all edges of the box assembly. Then, sand the box to final smoothness.

SEPARATE THE LID, THEN FINISH

1 Chuck a $\frac{1}{4}$ " straight bit into your table-mounted router, and set it $\frac{1}{4}$ " above the table. Then, clamp a fence $3\frac{3}{8}$ " from the inside

SEPARATING THE LID



edge of the bit. See Tip No. 2 *right* for a way to double-check this set-up.

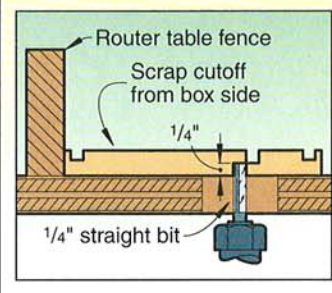
2 Rout the grooves in the sequence shown in the Separating the Lid drawing *above*. After you rout each groove, use masking tape to hold a $\frac{1}{4}\times\frac{1}{4}$ " spacer in the groove. The spacers keep the grooves from pinching shut. See Tip No. 3 *right* for advice on dealing with a lid that does not separate completely.

3 Build the jig shown in the Sanding Jig Exploded View *below left*. Chuck a $2\frac{1}{2}$ " sanding drum into your drill press, and sand an angled finger-hold centered in each box end as shown on the Exploded View.

4 Do any finish sanding necessary, then apply your choice of finish. We sprayed three coats of Deft Semi-Gloss Clear Wood Finish, sanding between coats with 320-grit sandpaper, and removing dust with a tack cloth. After the first coat of finish, we filled the blade start holes in the lid with colored putty. ■

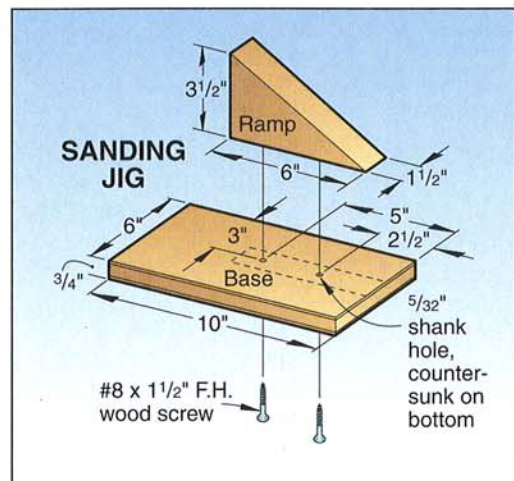
Shop Tip

No. 2—Use a scrap cutoff from the side to double-check the set-up for the lid separation as shown in the drawing below. You'll be able to check the position of the fence and height of the bit quickly and accurately.

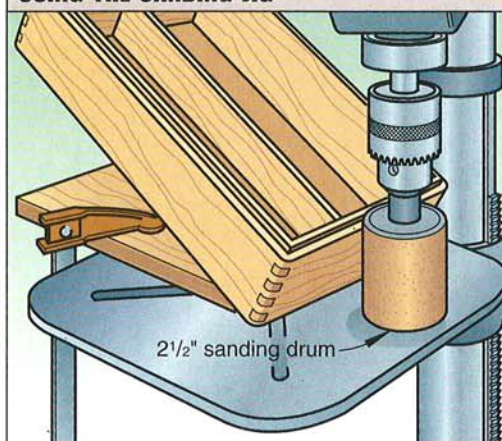


Shop Tip

No. 3—Use a utility knife to free a lid that does not separate after routing the grooves. You'll probably discover that your router set-up was off by a tiny amount, and that only a few wood fibers are holding the lid in place. Cut cleanly all around the box, resisting the temptation to twist the lid free. Twisting will rip the wood fibers, forcing you to sand the area smooth.

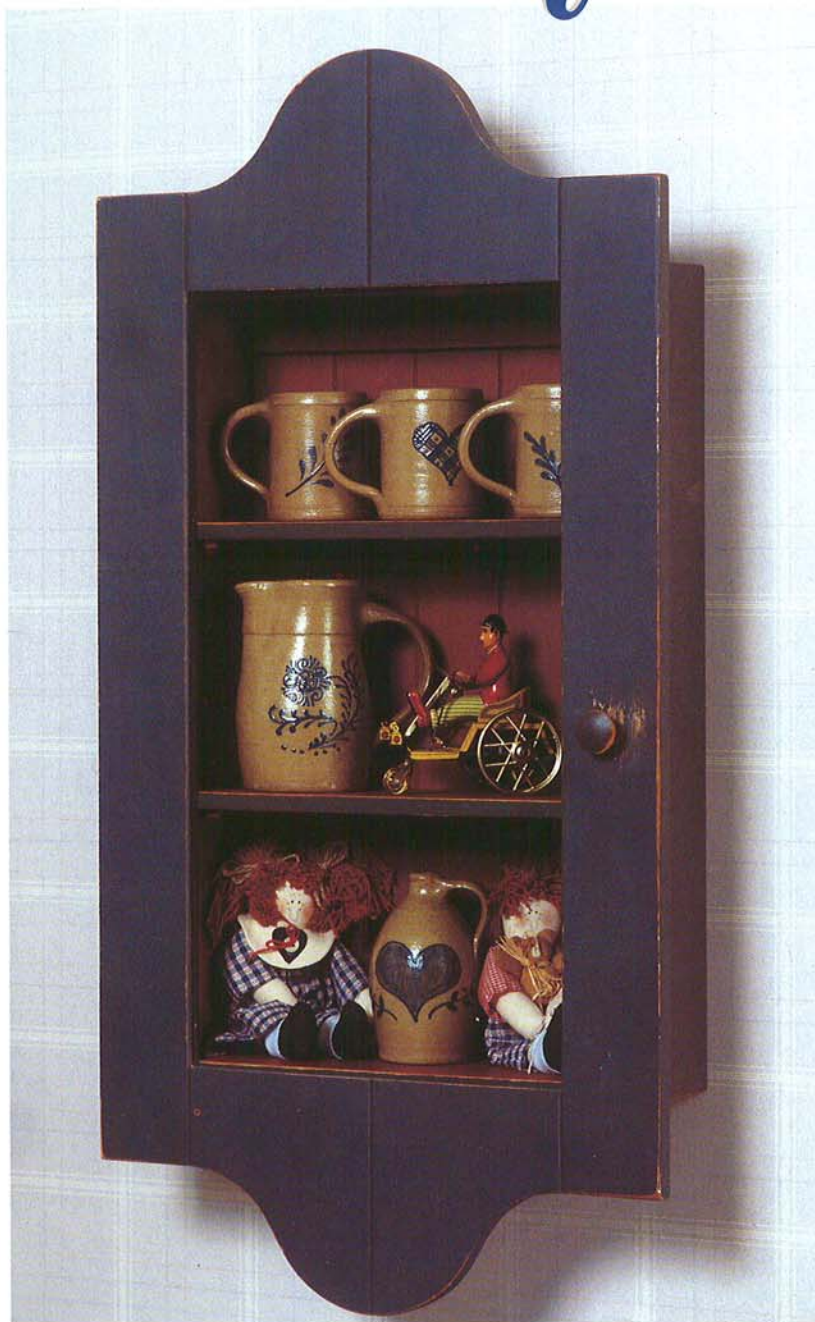


USING THE SANDING JIG



Project design: Robert J. Settich
Illustrations: Roxanne LeMoine, Carson Ode
Project builders: Rick Hutcheson, Bill Wright
Photograph: Craig Carpenter

Homespun Country Cabinet



Capture the essence of country furnishings with this charming wall cabinet. The glass door not only keeps dust out, but also shows off your cherished collectibles inside.

CUT THE BASIC CABINET PARTS FIRST

1 From $\frac{3}{4}$ "-thick stock, cut two sides (A) and the top and bottom pieces (B) to the dimensions listed in the Bill of Materials. We used pine, but other woods such as poplar, fir, or cottonwood would also work if you wish to paint the cabinet.

2 Select the outside surfaces of the parts, and cut or rout $\frac{3}{4}$ " rabbets $\frac{1}{4}$ " deep along the inside top and bottom edges of the side pieces (A) where shown on the Exploded View *opposite page* and Parts View *page 12, top right*. Next, cut a $\frac{1}{4}$ " rabbet $\frac{1}{4}$ " deep along the back inside edges of the two side pieces and along the back edges of the top and bottom pieces (B) to accommodate the back panel (C).

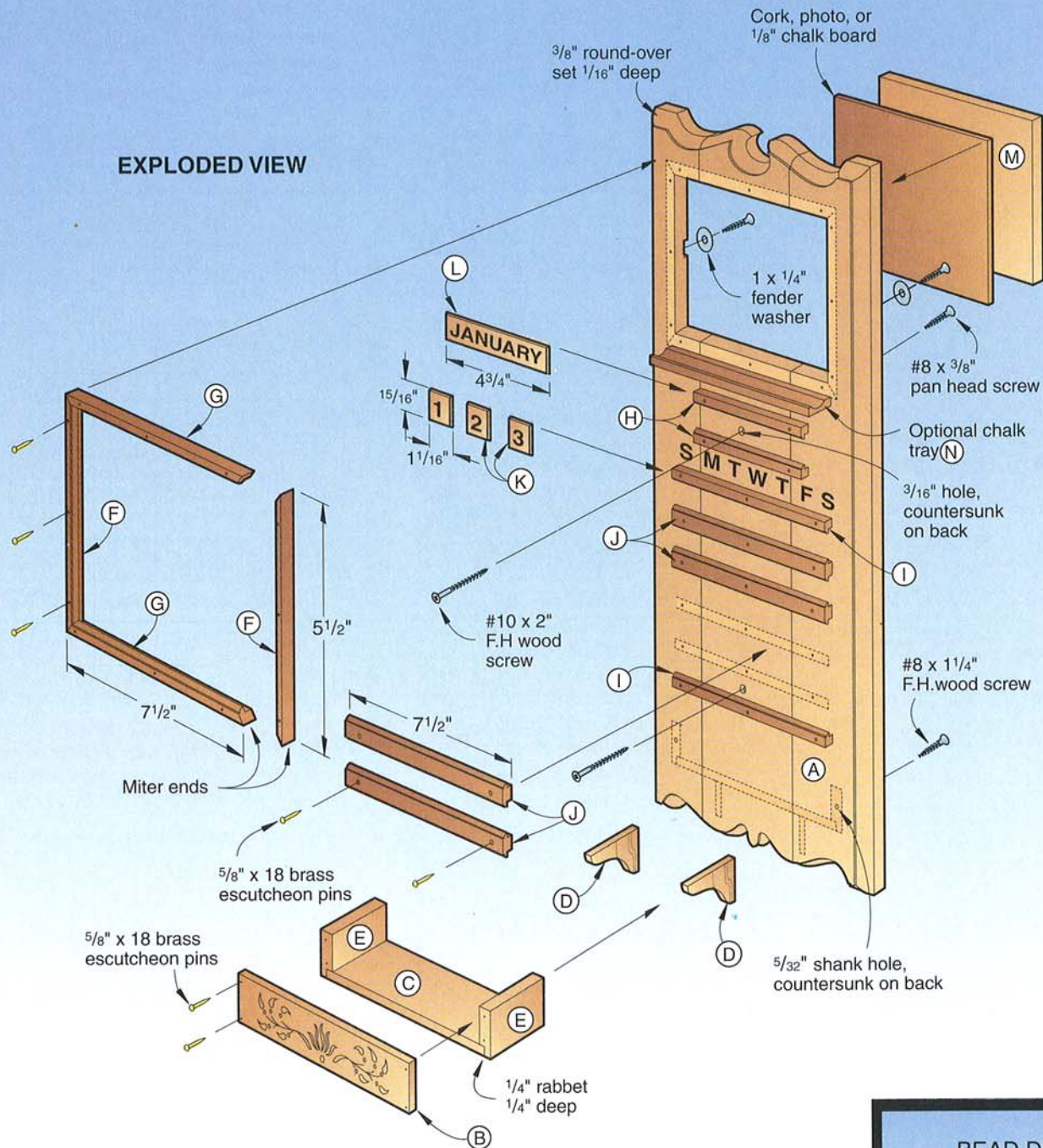
3 Using the dimensions on the Parts View for reference, lay out the centerpoints for the bottom pair of shelf-support holes on the inside face of each side. *NOTE: These pieces are mirror images of each other, not identical.* We laid them side-by-side with the inside faces up, and aligned the bottom ends. Then, using a carpenter's square to guide us, we drew a line across both pieces 5" from the bottom.

4 To drill the holes in the sides, make a jig to the dimensions shown on the Drilling Jig drawing *page 12, bottom left*. To use the jig, first place the bottom edge of it above the line you marked on the inside face of one side, and clamp it. Using a depth stop, drill four $\frac{1}{4}$ " holes through the four jig holes $\frac{3}{8}$ " deep into the side piece. We used our drill press. Drill the second side piece in the same way.

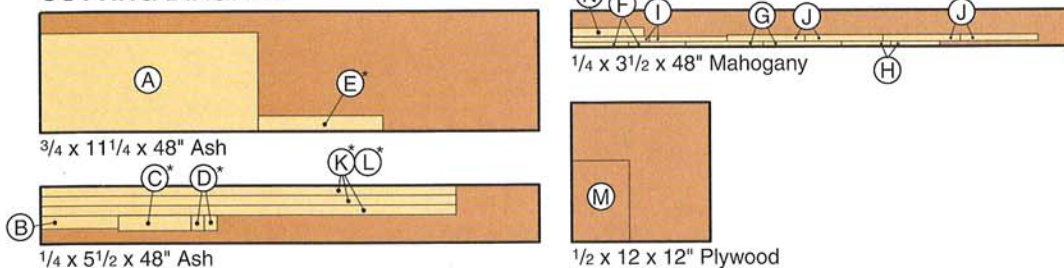
5 Cut two $\frac{1}{2}$ " lengths of $\frac{1}{4}$ " dowel. Sand the ends on each so they will easily fit into the $\frac{1}{4}$ " holes in the jig as pins. Insert the dowel pins into one pair of holes in your jig. Place the jig on one of the sides so the dowels fit into the topmost pair of holes you just drilled. Drill through the open jig holes. Move the jig up so the pins register in the newest pair of holes, and drill the next pair. Continue this process until you have drilled 13 pairs of holes. Now turn the jig, and drill the pair of holes at the bottom of the side piece, making a total of 14 pairs.

Continued

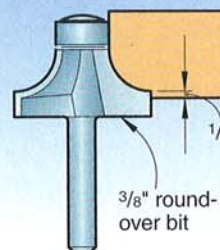
EXPLODED VIEW



CUTTING DIAGRAM



BEAD DETAIL

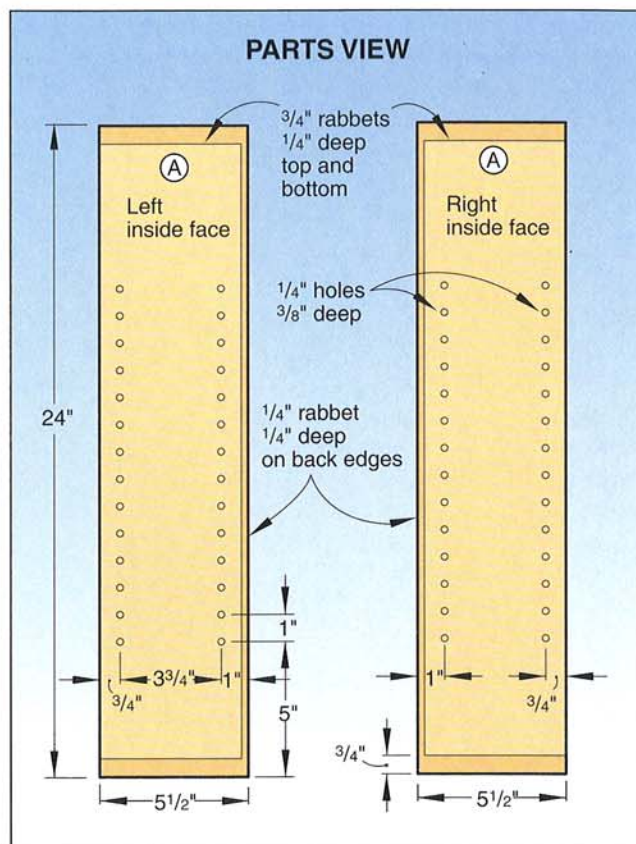


Country Cabinet

6 Dry-assemble (no glue) the sides, top, and bottom. Measure the back's rabbeted opening, and cut a $\frac{1}{4}$ " plywood back (C) to fit into this opening.

7 To make the back appear like it is a tongue and groove panel, set up your tablesaw as shown on the Cutting V-Grooves drawing *bottom right*. Cut grooves into the inside face of the back piece where shown on the Exploded View. To cut the two outside grooves, we locked the rip fence 3" from the blade tip. To cut the two inside grooves, we locked the fence $5\frac{3}{4}$ " from the blade tip.

8 Glue, assemble, clamp, and nail the sides, top and bottom. Square the cabinet assembly, adjusting the clamps if necessary. We measured diagonals to square the box. When the measurements were equal, the box was square. Next, glue and attach the back in place with brads.



9 Rip and crosscut three shelves (D) and the mounting cleat (E) to size. **NOTE:** We planed $\frac{3}{4}$ " material to make the $\frac{1}{2}$ " stock needed for these parts. Drill and countersink the two $\frac{5}{32}$ " shank holes through the mounting cleat where shown on the Exploded View drawing. Now, glue it to the cabinet back.

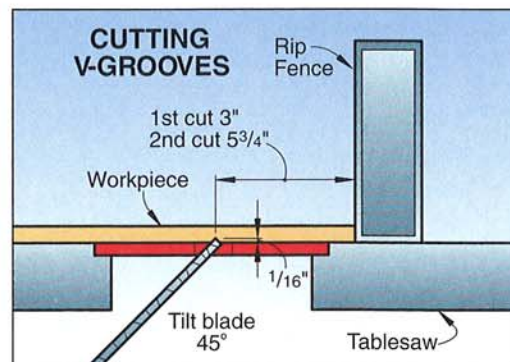
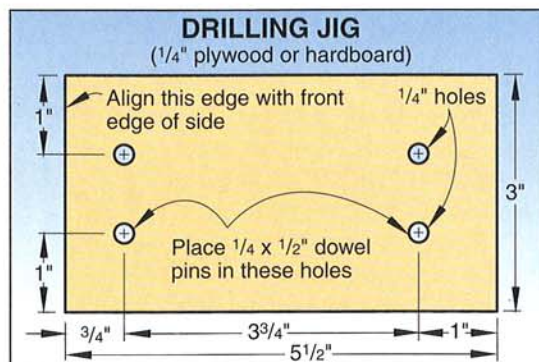
2 Make two photocopies of the full-sized rail pattern in the WW PROJECT PATTERNS insert in the center of the magazine.

3 Stack the two rails face-to-face, using double-faced tape. Adhere the rail pattern to the top piece. Bandsaw both rails to shape, cutting just to the waste side of the line. Then, sand to the pattern line. Now, separate the rails.

NEXT, MAKE THE CABINET DOOR

1 From $\frac{3}{4}$ "-thick stock, cut two door stiles (F) to the size listed in the Bill of Materials. Next, cut four pieces to $6 \times 7\frac{1}{2}$ ". Noting the grain, edge-join these pieces to make two $12 \times 7\frac{1}{2}$ " door rails (G).

4 Glue, assemble, and clamp the door stiles and rails. Wipe off glue squeeze-out with a damp cloth. Check the door for square by measuring diagonals. Then, clamp the door assembly to a flat surface until the glue has dried.



5 Remove the clamps, and lay the door facedown on a flat surface. Again, clamp the door to your workbench to prevent its moving. Then, rout a $\frac{1}{2}$ " rabbet $\frac{1}{2}$ " deep along the back inside edge of the door where shown on the Exploded View. With a chisel, square the corners of the door rabbet.

6 From $\frac{1}{2}$ "-thick stock, cut two door cleats (H) to size. From the same stock, rip one $\frac{3}{8} \times \frac{1}{2} \times 28$ " strip and two $\frac{3}{8} \times \frac{1}{2} \times 25$ " strips for glass stops (I, J). Drill and countersink the holes in each door cleat where dimensioned on the Exploded View. Set the strips for the glass stops aside for now—you'll cut them to final length later.

7 Position the door cleats on the back of the door where shown on the Door drawing. Then, clamp, and screw the cleats to the door. Remove the clamps.

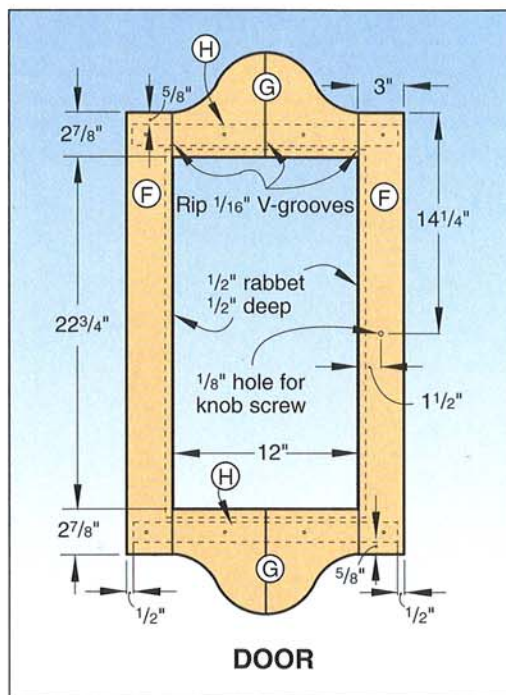
8 Set your tablesaw again as shown on the Cutting V-Grooves drawing. However, this time lock the rip fence 3" from the center of the saw tip. Turn the door front facedown on the saw table, and rip a $\frac{1}{16}$ "-deep V-groove along the inside edge of the left door stile where shown on the door drawing. Turn the door edge-for-edge. With the same face down, cut a V-groove along the inside edge of the right door stile. Reset the fence 9" from the blade's tip, and rip a V-groove through the center of both door panels where shown.

NOW, ASSEMBLE AND FINISH YOUR CABINET

1 Temporarily attach the butt hinges to the cabinet where shown on the Exploded View. Next, center the door on the cabinet, and temporarily attach the hinges to the door. Locate the centerpoint for the round magnetic catch centered in the edge of the right side. Drill and insert the catch. Now, measure and transfer the location of the catch's centerpoint to the door stile. Drill a $\frac{1}{8}$ " hole through the stile for the doorknob screw. Then, remove the hinges in preparation for finishing.

2 Crosscut twelve 2" lengths of $\frac{1}{4}$ " dowel stock to make the shelf supports.

3 Do any touch-up sanding necessary on the cabinet. Then, apply the finish. If you are going to stain the cabinet, you may want to use a pre-stain conditioner to help prevent blotchy results. We used Minwax Wood Conditioner,



then applied Bartley brand stain, honey color. Then we sprayed three coats of Deft Semi-Gloss Clear Wood Finish, sanding between coats with 320-grit sandpaper. After the final coat dried, we rubbed it with 0000 steel wool for a satin finish.

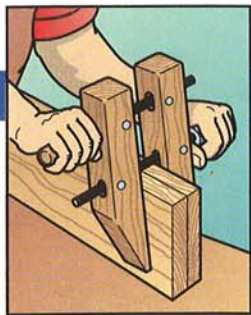
4 As an alternative, you may want to try a painted finish for the cabinet. To give the project an antique look, sand some of the paint away in areas that normally receive heavy wear, such as along the door and shelf edges, and around the door knob. Then, seal the entire piece with a clear finish. Make sure the clear finish will adhere to the paint by testing on a piece of scrap.

5 Cut a piece of single-strength glass to fit into the door rabbet. Then, cut the glass stops (I, J) to fit into the rabbets. Next, drill pilot holes through the glass stops, and nail them in place with #17 $\times\frac{3}{4}$ " brads where shown on the Glass Stop detail accompanying the Exploded View.

6 Reattach the door to the cabinet. Screw the wooden knob to the door, placing a #6 washer under the screw head to increase the metal-contact surface with the magnetic catch.

7 Attach the cabinet to your wall with two #8 $\times\frac{1}{4}$ " screws. Insert the shelf-support dowels into the cabinet sides. Now, place the shelves on the support dowels. ■

Project design: Doug Nicolet
Illustrations: Roxanne LeMoine
Project builder: Chuck Hedlund
Photograph: John Hetherington



How To Make Our Tablesaw Cut-off Jig

This is a jig that you'll use virtually every time you go into your shop.

Build this jig, and you'll get tighter-fitting miters and crosscuts that are right on the mark. The edge of the jig shows you exactly where to place the cutline. By using a stopblock clamped to the fence, you can cut identical parts quickly and accurately. In addition, this jig lets you crosscut panels too wide to handle with your miter gauge.

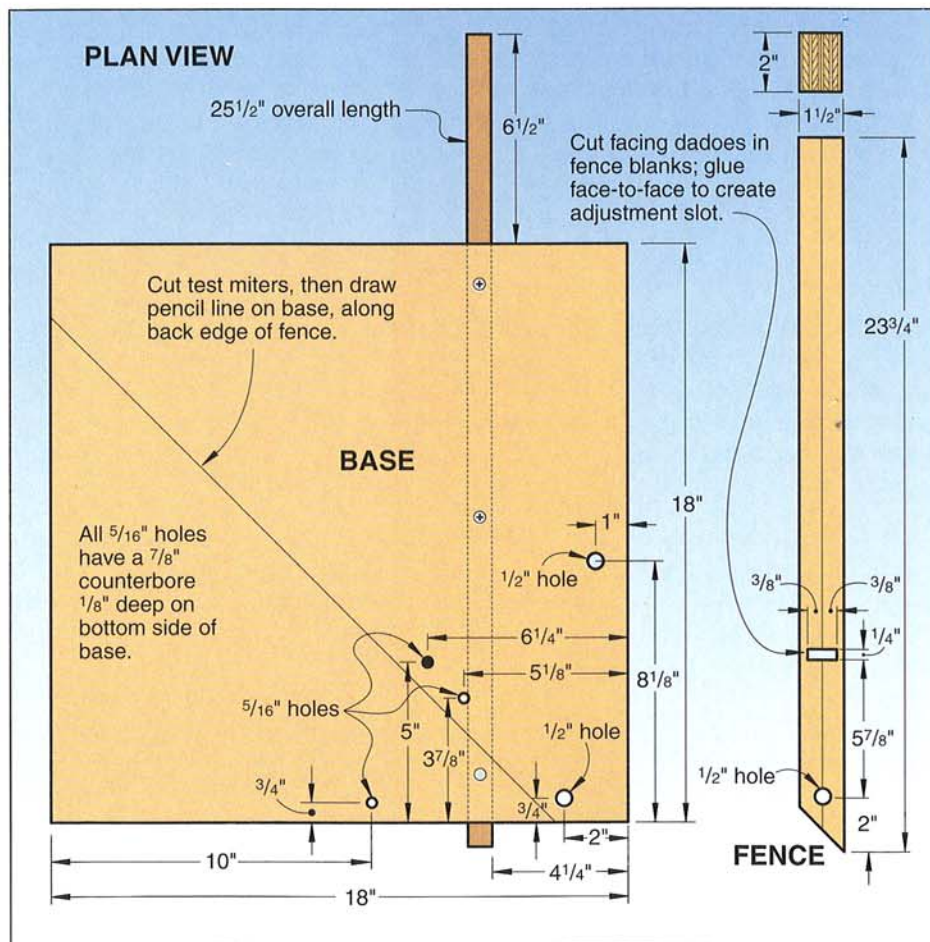
HOW TO CUSTOM-FIT THE JIG TO YOUR TABLESAW

This jig was designed for a tablesaw with a miter-gauge slot $4\frac{1}{4}$ " from the edge of a standard blade. Check this dimension against your saw; if necessary, move the guide bar.

It's easy to build the jig by following the notes on the Exploded View *opposite page*, right and the Plan View *right*.

•Rip the guide bar slightly wider than your miter-gauge slot, then use your jointer to sneak up on a perfect friction fit. Your goal is to have no side-to-side play in the guide bar's fit in the miter-gauge slot. Make light jointing passes until you can fit the guide bar into the miter-gauge slot, then move it back and forth. High spots on the sides of the bar will have a shiny appearance. Sand these spots, and then test again. Stop the procedure when there is still some friction in the sliding action. When the jig is assembled, you'll have the leverage you need to overcome this last bit of resistance.

•Apply an oil finish to the jig to protect it from humidity and dirt. We used two coats of Minwax Antique Oil Finish. A coat of paste wax on the guide bar and the bottom of the base will make using the jig almost effortless.



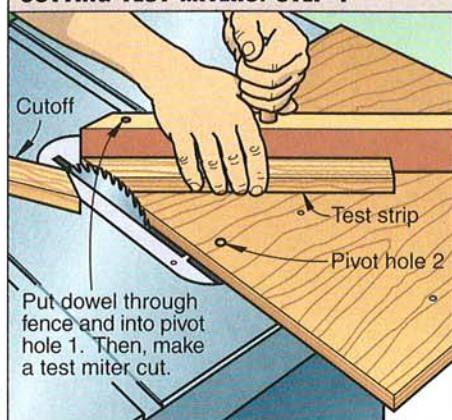
NOW, CUT TEST MITERS TO FINE-TUNE YOUR JIG

The adjustment slot in the fence lets you zero in your jig for perfect cuts. You can set the three positions of the fence by making test cuts or with measuring tools. The test-cut procedure will produce more

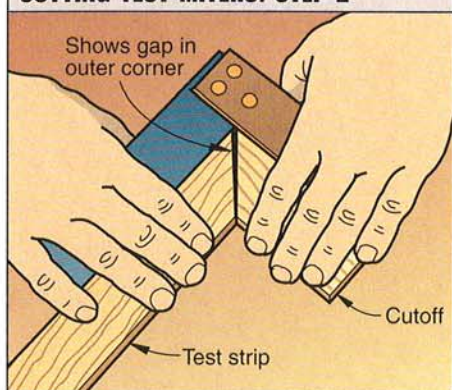
reliable results than measuring. Refer to the Cutting Test Miters drawings below. Take your time when you follow this procedure. The few minutes you invest now to get a precision fit will result in time, labor, and stock saved later. Make test cuts with the fence in both pivot hole

locations. When you have the fence exactly where you want it in each miter position, make a pencil reference mark on the backboard along the back edge of the fence. In the 90° crosscut position, the back of the fence should exactly match the edge of the base. ■

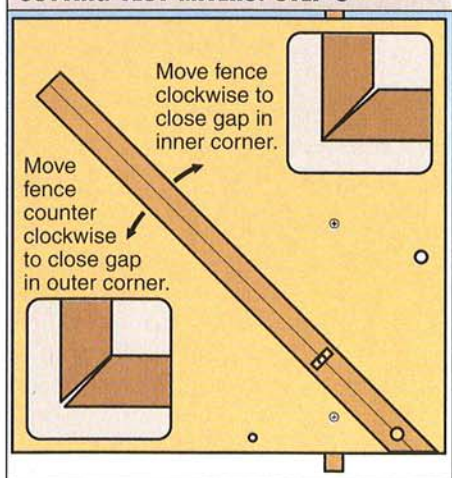
CUTTING TEST MITERS: STEP 1



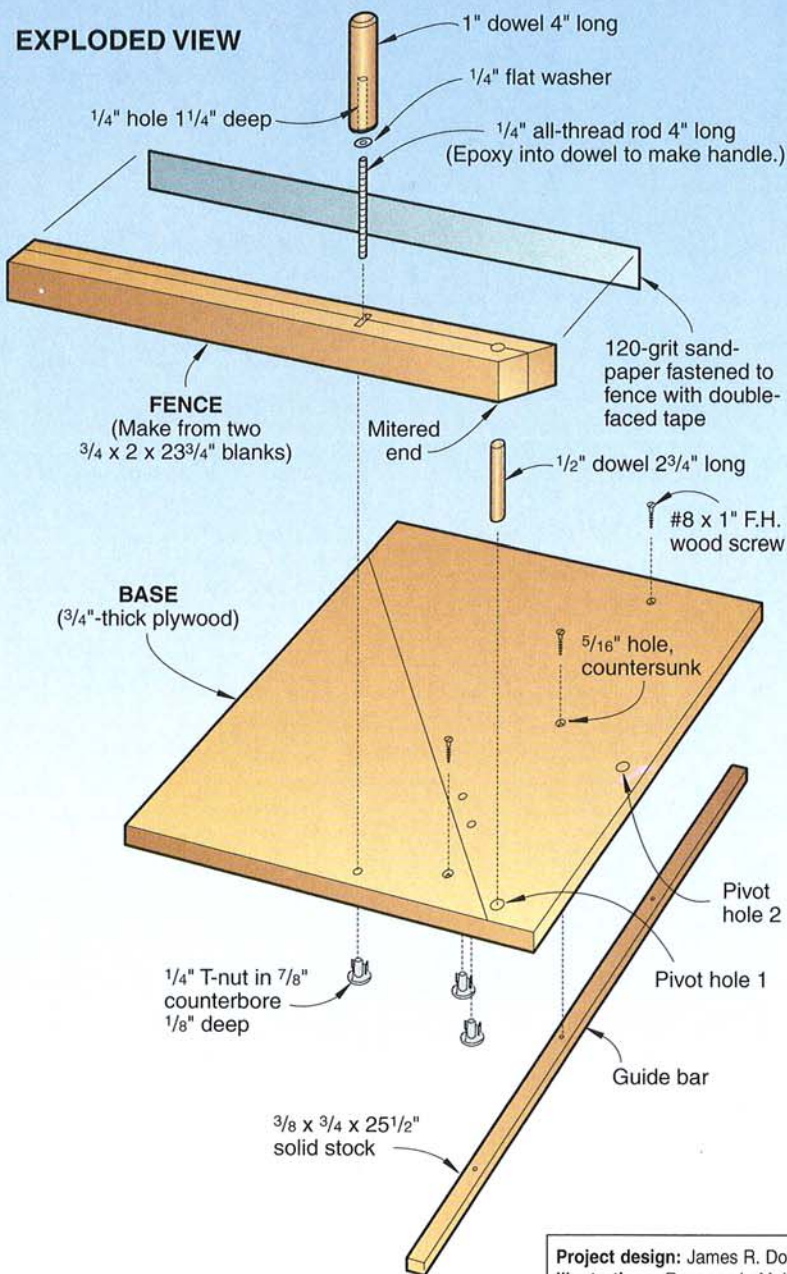
CUTTING TEST MITERS: STEP 2



CUTTING TEST MITERS: STEP 3



EXPLODED VIEW



Project design: James R. Downing
Illustrations: Roxanne LeMoine,
Carson Ode
Project builder: James R. Downing
Photograph: Craig Carpenter



Sweet-Dreams DOLL CRADLE

Now that you've given your kids (or grandkids) armloads of dolls and stuffed animals, they're probably ready for some pint-sized furniture for their make-believe friends. Our full-sized patterns take the guesswork out of constructing this child-pleaser.

EDGE-JOIN STOCK TO FORM THE HEADBOARD

1 Form the headboard (A) by edge-joining 1 two or three pieces of $\frac{3}{4}$ "-thick stock, making a 12x12" panel. After the glue dries, trim the panel to 11 $\frac{1}{2}$ " square.

2 Mark the centerpoints for the three large holes on the headboard panel where shown on the Parts View *page 17, left*. Next, mark the centerpoint for the top 6 $\frac{1}{8}$ " radius. Using a compass, draw the arc. Then, using the dimensions on the same drawing, mark the centerpoints for the four $\frac{3}{8}$ " counterbores on the outside face of the headboard.

3 Bore the decorative holes in the headboard. Using Forstner bits, we drilled the center hole first, then the two smaller holes. Next, drill and counterbore the four screw holes where dimensioned on the Parts View.

4 Bandsaw the headboard radius just to the waste side of the line, then sand to the line.

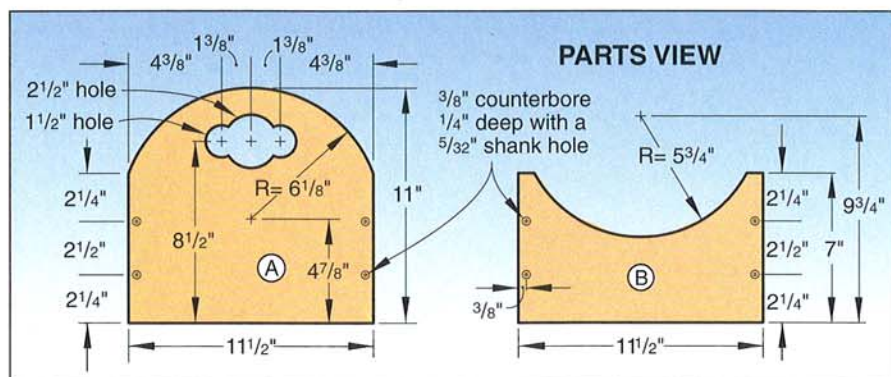
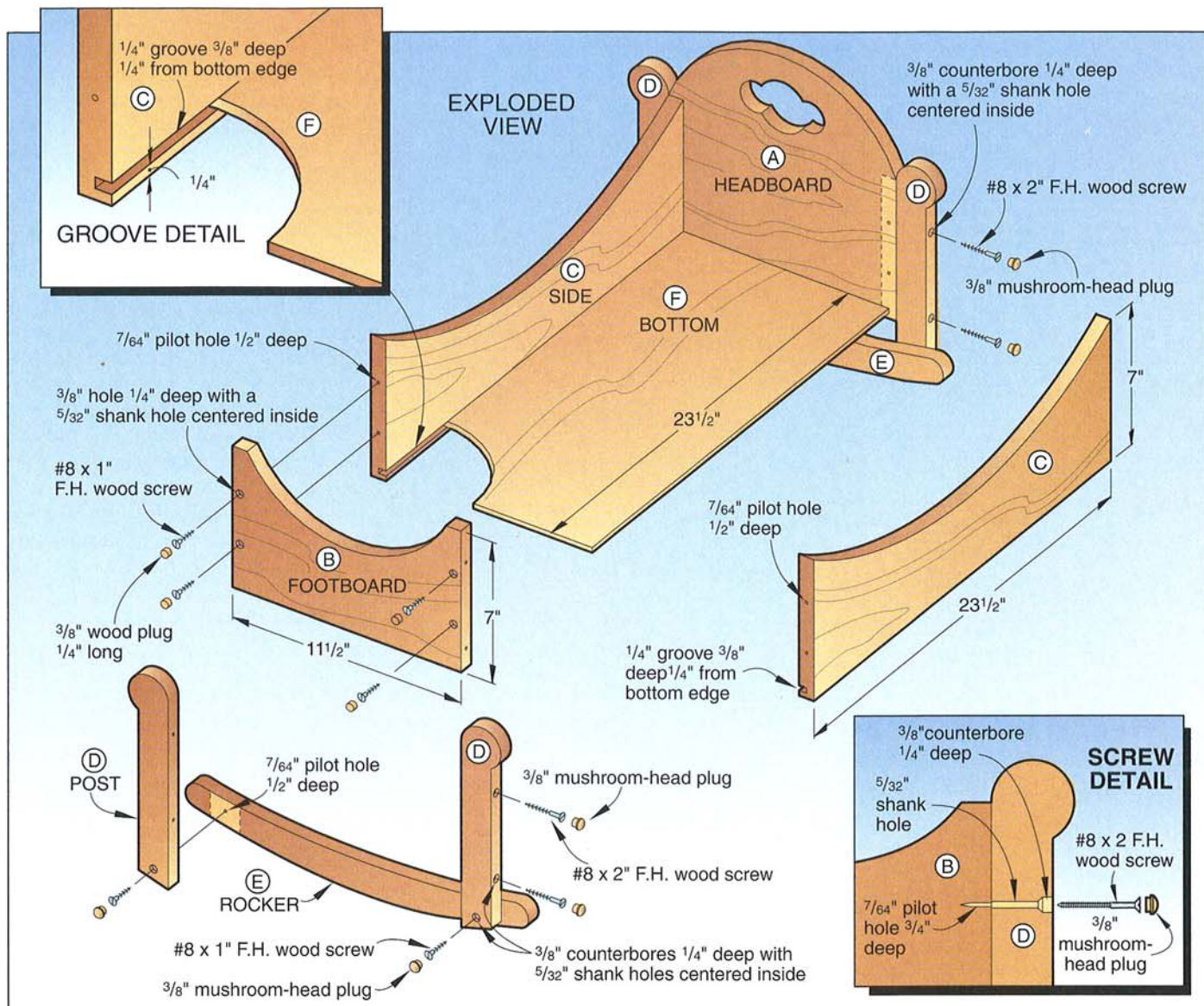
LET'S CUT THE REMAINING CRADLE PARTS

1 From $\frac{3}{4}$ "-thick stock, rip and crosscut blanks for the footboard (B), two sides (C), four posts (D), and the rockers to the dimensions listed in the Bill of Materials. Then cut the $\frac{1}{4}$ "-thick plywood bottom to size.

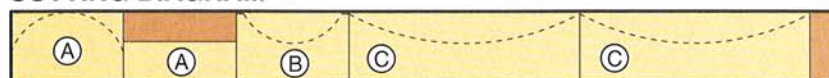
2 Using dimensions on the Parts View, locate the centerpoint for the radius on the footboard. Draw the radius, using a beam compass or trammel points. Mark the centerpoints for the four screw holes on the front face of the footboard. Drill these holes the same way as you did those located on the headboard. Now, bandsaw the footboard's radius, and sand the cut edge.

3 Stack the two side pieces (C) with their ends and edges flush, and join them face-to-face with double-faced tape. On the top piece, lay out the radius where dimensioned on the Side View. Saw the radius, then sand the cut edge. Now, separate the pieces.

4 Chuck a $\frac{1}{4}$ " straight router bit into your table-mounted router, and adjust the fence $\frac{1}{4}$ " from the inner edge of the bit. Then, rout a groove $\frac{3}{8}$ " deep. We routed in several passes, raising the bit between cuts.



CUTTING DIAGRAM



3/4 x 7 1/4 x 84" Cherry



3/4 x 7 1/4 x 48" Cherry

Ⓕ is cut from 1/4" plywood

BILL OF MATERIALS

Part	Finished Size			Matl.	Qty.
	T	W	L		
A* headboard	3/4"	11"	11 1/2"	EC	1
B footboard	3/4"	7"	11 1/2"	C	1
C sides	3/4"	7"	23 1/2"	C	2
D* posts	3/4"	2"	10 1/4"	C	4
E* rockers	3/4"	2 3/8"	17 1/4"	C	2
F bottom	1/4"	10 3/4"	23 1/2"	PW	1

*Parts are cut to size or laminated during construction. Please read all instructions before cutting.

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

Supplies: 8—#8x2" flathead wood screws; 8—#8x1" flathead wood screws; 8—3/8" mushroom-head plugs; finish.

Doll Cradle

5 Make two photocopies of the full-sized patterns for the post in the WW PROJECT PATTERNS insert in the center of the magazine. Then, make and assemble a photocopy of the rocker pattern.

6 Adhere two pairs of post blanks face-to-face with double-faced tape. Then, adhere a photocopy of the post pattern to the top of each stack with spray adhesive. Adhere the rocker blanks together in a similar manner, and attach the pattern. Bandsaw just to the waste side of the pattern line, then sand to the line. Remove and discard the rocker patterns, then separate the rockers. Don't remove the post patterns yet.

7 Use a square to transfer the location of the counterbored holes to the center of the outside edge of each post. Next, use a scratch awl to mark the centerpoint of the counterbored hole on the face of each post. Remove the pattern, and hold it in place on the face of the bottom post of each stack, and mark the centerpoint of the counterbored hole. *NOTE: This procedure will correctly place the counterbores on opposite faces of the posts to correspond with the two corner mounting positions of the posts.* Drill the counterbores, then drill the holes centered inside them as shown in the Screw detail accompanying the Exploded View. Remove and discard the patterns, then separate the posts. Next, finish-sand all parts.

2 Glue, assemble, and clamp the cradle parts, and check the assembly for square. Using the holes in the headboard and footboard as guides, drill the pilot holes into the ends of the sides. Then, drive a #8x1" flathead wood screw into each hole. Unclamp the assembly.

3 Glue and clamp the posts to the cradle assembly where shown on the Exploded View. Make certain that the posts are flush, then, using the holes in the posts as guides, drill the $\frac{7}{64}$ " pilot holes $\frac{3}{4}$ " deep into the headboard and footboard as shown in the Screw detail accompanying the Exploded View. Drive the screws, then remove the clamps.

4 Clamp the rockers centered on the posts where dimensioned on the Front View and Exploded View. Using the holes in the posts as guides, drill pilot holes into the rockers. Then, drive the screws and unclamp.

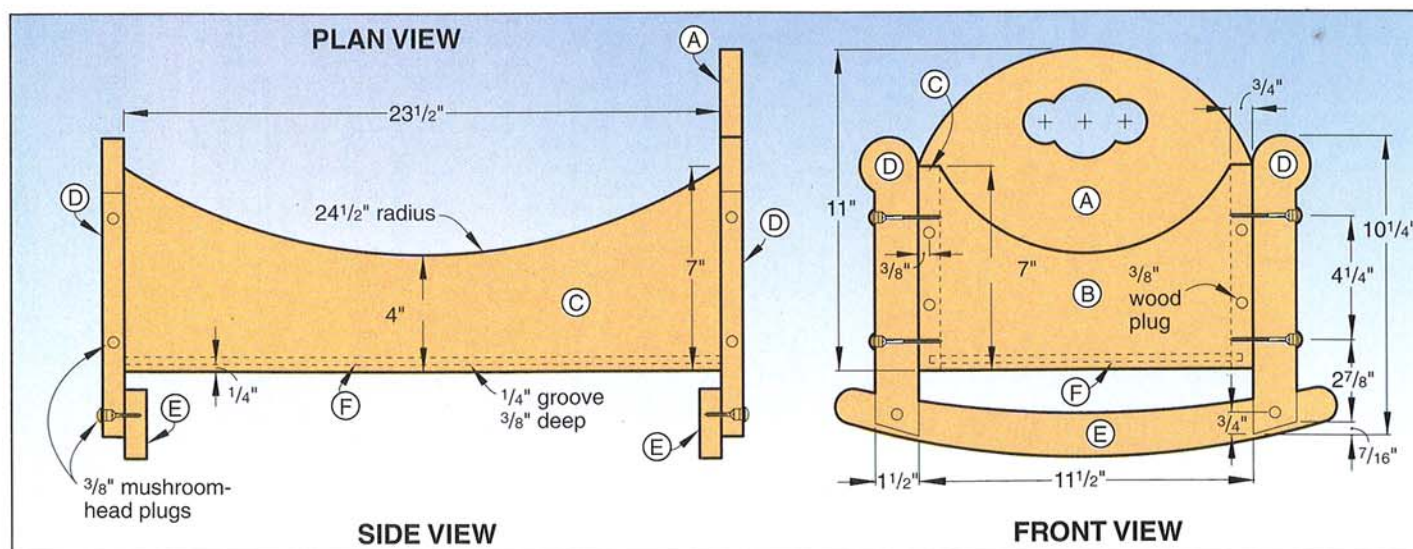
5 Using a plug cutter, cut eight plugs from $\frac{5}{16}$ "-thick cherry scrap. (We resawed thicker stock.) Glue the plugs into the counterbores in the headboard and footboard, aligning the plugs so that their grain matches the surrounding wood. After the glue dries, sand the plugs flush. Glue $\frac{3}{8}$ " mushroom-head plugs into the counterbores in the posts. Use glue sparingly to avoid messy squeeze-out.

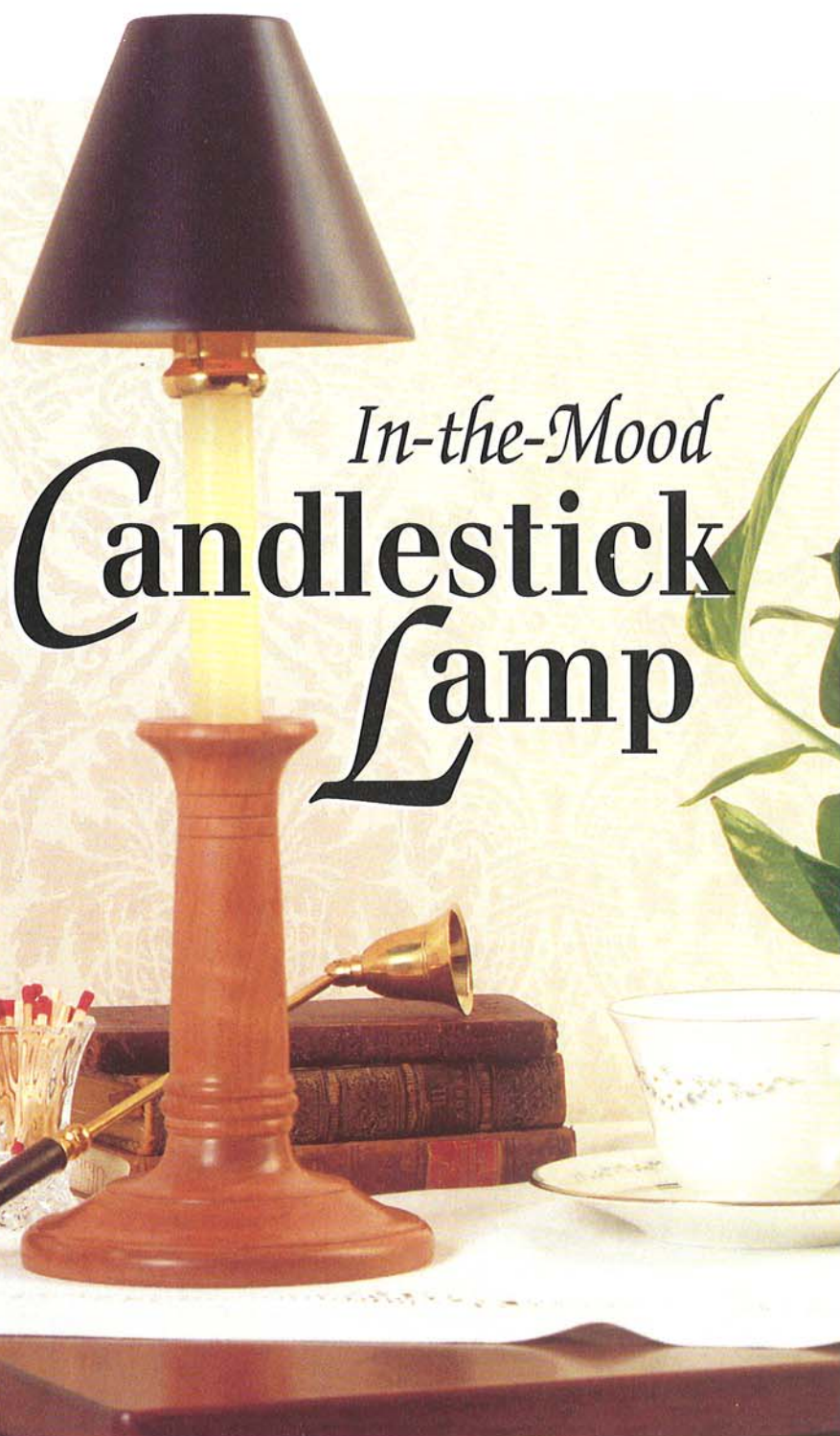
6 After a final touch-up sanding, apply the finish. We sprayed three coats of Deft Semi-Gloss Clear Wood Finish, sanding between coats with 320-grit sandpaper. For smooth results, we used a tack cloth between coats to remove dust. ■

Project design: Doug Nicolet
Illustrations: Jamie Downing,
Roxanne LeMoine
Project builder: Chuck Hedlund
Photograph: John Hetherington

YOU'RE READY TO ASSEMBLE THE CRADLE

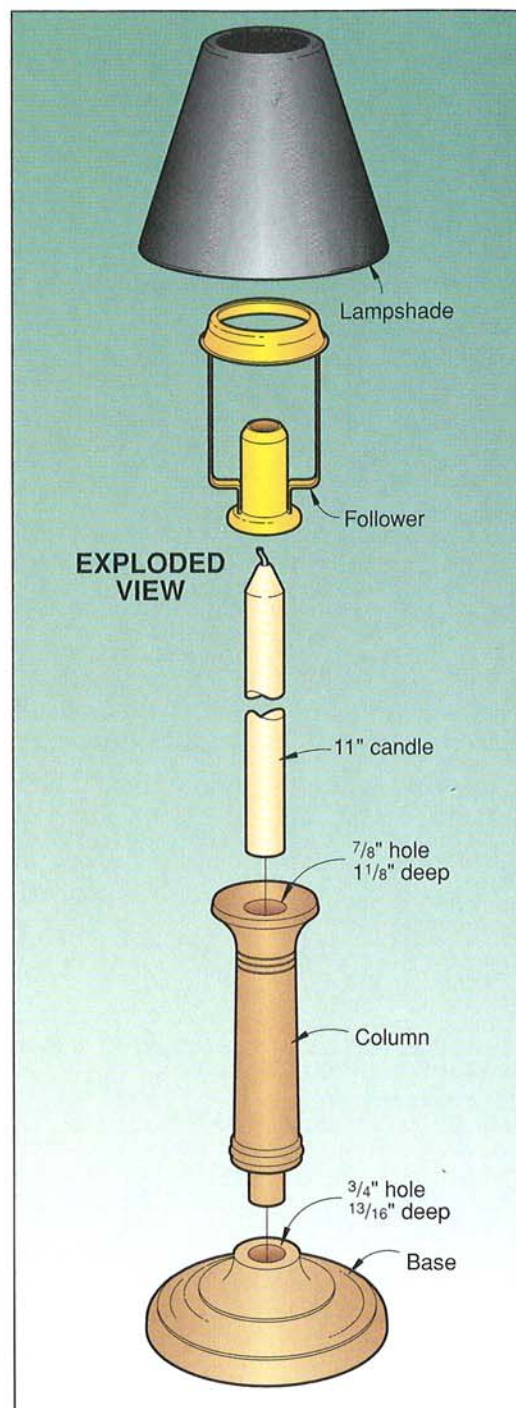
1 Dry-assemble (no glue) and clamp the headboard, sides, footboard, and bottom to check the fit of all the parts.





In-the-Mood Candlestick Lamp

OK, all you turners (and would-be turners). Here's your chance to combine two simple turnings—one faceplate, the other spindle—into a decorative and useful item. Our step-by-step instructions, full-sized patterns, and helpful shop tips make this a can't-miss winner.



Note: To build this project, you will need a 6" square of 1/2"-thick stock, and a 6 1/4" length of 2 1/2"-square stock. We used cherry.

START BY TURNING THE BASE

1 Bandsaw a 6"-diameter blank for the base (A) from 1/2"-thick stock. Bandsaw a 3 1/2"-diameter scrapwood auxiliary faceplate, drill

Continued

Candlestick Lamp

FIGURE 1

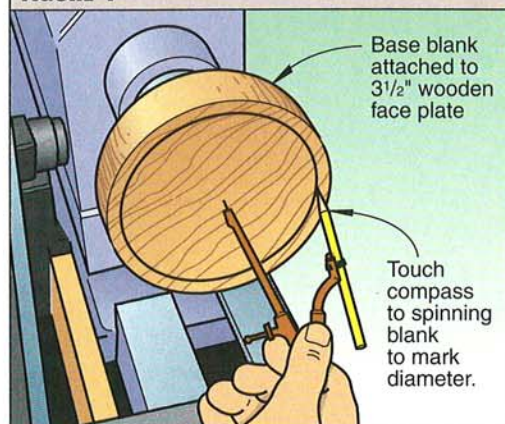
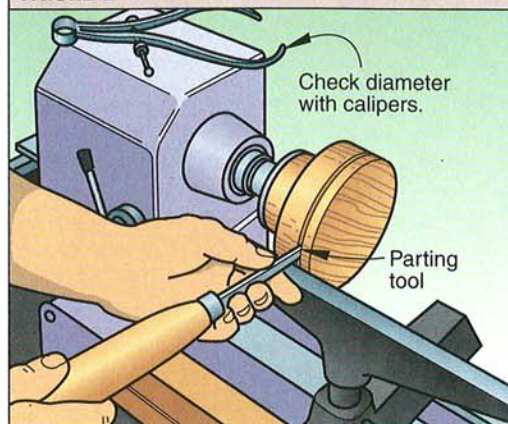


FIGURE 2



Shop Tip

No. 1—A 1/8"-wide parting tool tends to bind less in deep cuts than wider tools. If you must use a wide parting tool, occasionally widen the cut to eliminate friction.

mounting holes, and attach it to your 3" lathe faceplate with screws. Then, glue and clamp the base blank, centering it on the auxiliary faceplate. Let the glue dry thoroughly, preferably overnight. **Note:** If you want to start turning right away, you can attach the blank to the auxiliary faceplate with cyanoacrylate (instant glue) and spray-on accelerator. The drawback to this method is that the brittleness of a cyanoacrylate bond can result in joint failure if the blank is subjected to sudden shock, like from a tool edge catching on the blank.

2 Set your lathe's speed to 750 rpm. Touch a pencil to the face of the spinning base blank to find its center. Then, set your compass to a 2 1/2" radius, and mark the diameter of the base on the spinning blank as shown in Figure 1 above. Next, use a gouge to turn the blank to 5" in diameter.

3 Make a photocopy of the base template pattern in the WW PROJECT PATTERNS insert in the center of the magazine, and tape it to the wall behind your lathe. Hang the pattern in the same direction as the blank on your lathe to reduce the possibility of mistakes. Mark the layout lines on the edge of the blank where shown on the pattern. Now, using a parting tool as shown in Figure 2, establish the depth of the cuts. Use calipers frequently to check your progress. See Tip No. 1 above left for a suggestion on turning-tool selection.

4 Set your compass, and mark the 1 3/8" diameter on the face of the base. Then, shape the profile of the base, cutting downhill (from the center of the lathe toward the headstock) as shown in Figure 3.

5 Tighten a 3/4" Forstner bit into the Jacob's chuck mounted in your tailstock, and drill a hole 1 3/16" deep into the center of the base as shown in Figure 4. If you do not have a chuck for your lathe, simply form the hole with lathe tools. Make certain that the area surrounding the hole is flat, or even slightly undercut as described in Tip No. 2 opposite page, top right. Sand the base, then remove the faceplate/auxiliary faceplate/base assembly from the lathe.

NEXT, SHAPE THE COLUMN

1 Crosscut a blank for the column (B) from 2 1/2"-square stock. Mark diagonals on each end to find the centers. Mount the blank between centers on your lathe, and form a 2 1/4"-diameter cylinder. Use a lathe speed of 1000 rpm for rough shaping of the cylinder, then increase to 1500 rpm for turning the column to final shape.

2 Use your parting tool and calipers to size a 2 3/4"-diameter tenon 3/4" long at the tailstock end of the column blank. Before removing the column to test-fit the tenon into the base, refer to Tip No. 3 opposite page, bottom right for a suggestion on repositioning the column.

3 Establish the sectional diameters on the column with your parting tool and calipers. Then, create the curve at the top of the column by again working downhill (from the largest diameter to the smallest).

4 Form the beads at the base of the column. Incise the small v-grooves at the top of the column where shown on the pattern. Finish-sand the column.

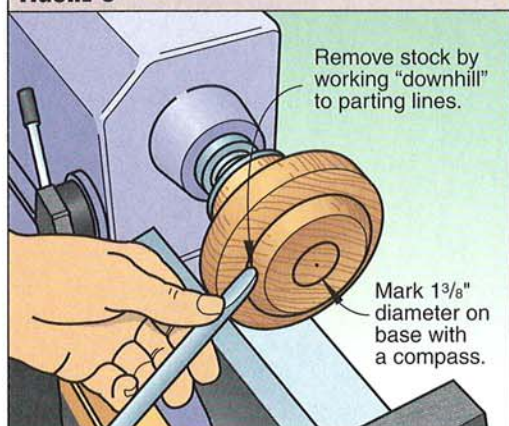
Buying Guide

Follower and lampshade.

Choose steel follower at \$6.00 each, or brass follower at \$10.05 each; select black shade at \$9.95 each or brass shade at \$13.95 each. Add \$6.95 shipping and handling to each order. (Iowa residents add 5% sales tax.). The Lamp Shop, 3215 Forest, Des Moines, IA 50311. For credit card orders, call 515/255-7170.

Use 7/8"-dia. candles with the follower and lampshade. We purchased candles 11" long at a local store.

FIGURE 3



NOW, JOIN THE PARTS TOGETHER

1 Remove the column from the lathe, and replace it with the faceplate/auxiliary faceplate/base assembly. Brush glue into the hole and on the tenon, then assemble the parts. You can use your lathe's tailstock to clamp the column into the hole in the base. Let the glue dry thoroughly before continuing.

FIGURE 5

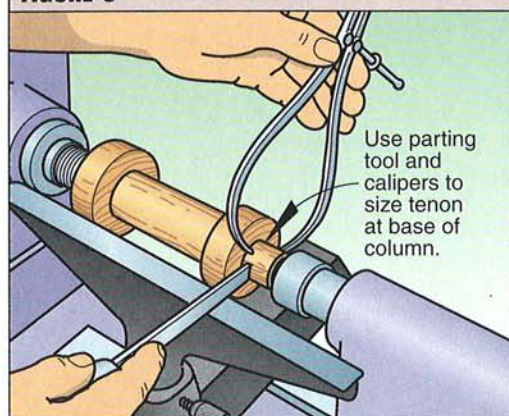


FIGURE 6

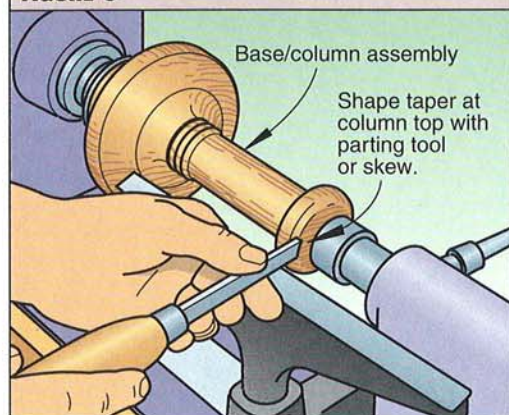
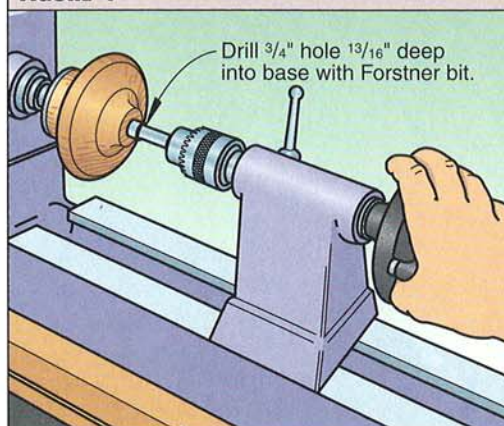


FIGURE 4

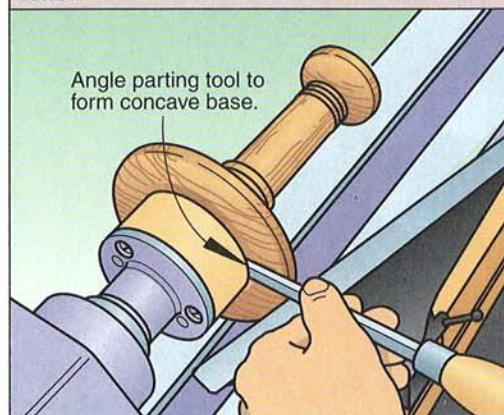


2 Turn the taper at the top end of the column with a parting tool or skew as shown in Figure 6. Then, tighten a $\frac{7}{8}$ " Forstner bit into your lathe's tailstock chuck, and drill the hole centered in the end of the column.

3 Finish-sand the column and base. We used a sanding block to eliminate dips and bumps on the column. Next, apply your choice of finish. We rubbed in several coats of paste wax. The friction of the spinning assembly against the wax-charged rag liquifies the wax for a quick and durable finish. Then, we completed the process by buffing the candlestick with a soft cloth.

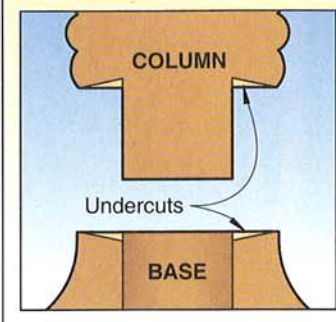
4 Remove the completed candlestick from the auxiliary faceplate by using your parting tool as shown in Figure 7. Holding the parting tool at an angle gives a slightly concave shape to the bottom of the base, as shown on the pattern. This ensures that the candlestick does not rock. Sign your name and date on the bottom, then apply several coats of wax. ■

FIGURE 7



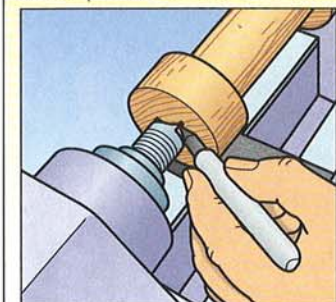
Shop Tip

No. 2—Slightly undercut the mating surfaces on the base and column for a tight joint line. Refer to the drawing below. Also, be certain that the tenon does not bottom out in the hole.



Shop Tip

No. 3—Identify one spur and its mating mark on the column end with a permanent marker before removing the column to test-fit the tenon. That way, you'll be able to return the column to its exact position on the lathe.



Project design: Jan Hale Svec
Illustrations: Kim Downing, Carson Ode
Project builder: Phil Brennon
Photograph: Craig Carpenter



Make a Date to Build This Perpetual Calendar

Our full-size pattern insert makes this perpetual calendar as easy as 1-2-3. Simply put the pattern for the back on your wood, and mark the decorative top and bottom ends. You'll be amazed how quickly the project goes together.

BILL OF MATERIALS

Part	Finished Size			Matl.	Qty.
	T	W	L		
A* back	¾"	9½"	21"	A	1
B box front	¼"	1¼"	7½"	A	1
C box bottom	¼"	1½"	7"	A	1
D brackets	¼"	1½"	1¼"	A	2
E box ends	½"	1¼"	1½"	A	2
F* frame sides	¼"	¾"	5½"	M	2
G* frame top/bottom	¼"	¾"	7½"	M	2
H month molding	¼"	¾"	4¾"	M	2
I single date mold.	¼"	¾"	7½"	M	2
J double date mold.	¼"	1½"	7½"	M	4
K date tiles	⅛"	1½"	15½"	A	33
L month tiles	⅛"	15½"	4¾"	A	12
M frame insert	½"	6½"	4½"	P	1
N**chalk tray	¼"	¾"	7"	M	1

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

Materials Key: A—ash; M—mahogany; P—plywood.

Supplies: Vinyl letters and numbers as described in Buying Guide below; 2—#8x1¼" flathead wood screws; 2—#10x2" flathead wood screws; 2—#8x¾" panhead screws; #18x⅝" brass escutcheon pins; 5x7" piece of ¼"-thick cork; 2—fender washers 1" o.d.x¼" i.d.; finish.

Buying Guide

Vinyl letters and numbers. Two packages each of Chartpak ½" black vinyl letters and ½" black vinyl numbers, and one package of Chartpak ¼" black vinyl numbers. Package of all five sheets (stock no. TAS) \$13.75 ppd. from The Art Store, 600 M. L. King Pkwy., Des Moines, IA 50312, or call 800/652-2225 or 515/244-7000 to order.

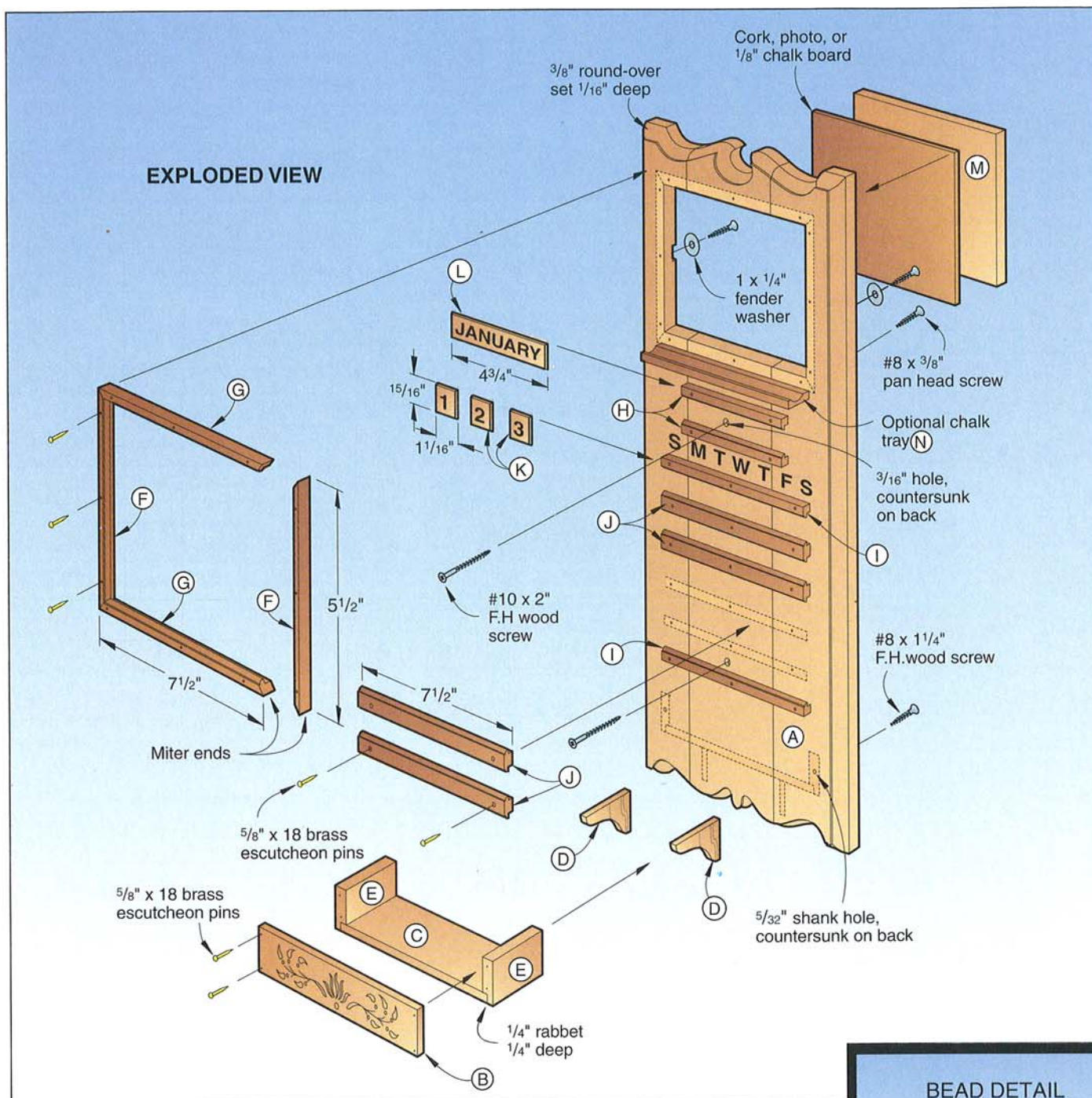
NOTE: You'll need some thin stock for this project. Plane or resaw thicker stock to size.

BEGIN WITH THE BACK

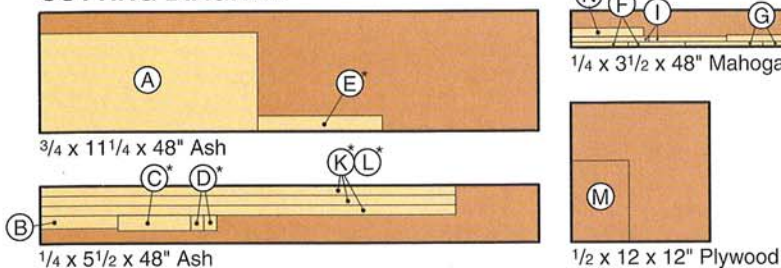
1 Rip and crosscut a piece of ¾"-thick ash stock to 9½x22" to make an initially over-length blank for the back (A).

2 Make a photocopy of the back pattern in the WW PROJECT PATTERNS insert in the

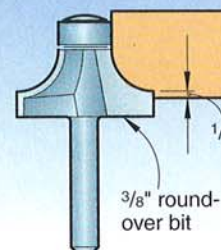
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CUTTING DIAGRAM



BEAD DETAIL



Perpetual Calendar

center of the magazine. Adhere the pattern to the blank with spray adhesive.

3 Mark all hole centerpoints with a scratch awl. *NOTE: Do not mark the centerpoints for mounting the optional chalk tray (N) unless you will be installing this part. The centerpoints of the 1" holes near the framed opening are on the rear surface of the back, and will be located by measurement later.* Next, drill and countersink the holes to the sizes indicated on the pattern. *NOTE: The $\frac{3}{16}$ " mounting holes are countersunk on the front surface; the $\frac{5}{32}$ " holes for attaching the box assembly are countersunk on the rear surface of the back.* Clip the head off a #18 brad, and use it as a bit to drill pilot holes at the escutcheon pin locations.

4 Thread a No. 7 scrollsaw blade through the blade start hole, and cut the opening in the back. Next, scrollsaw the pattern at the ends of the back. For best results, saw just to the waste side of the line, then sand to the line with a $\frac{1}{2}$ " drum sander chucked into your drill press. Remove the pattern from the back.

5 Locate the centerpoints of the 1" counterbores on the rear surface of the back, and drill them $\frac{3}{16}$ " deep with a Forstner bit. Double check the fit of the fender washer that will go in the counterbore. Then, drill $\frac{7}{64}$ " pilot holes $\frac{3}{8}$ " deep centered in the counterbores.

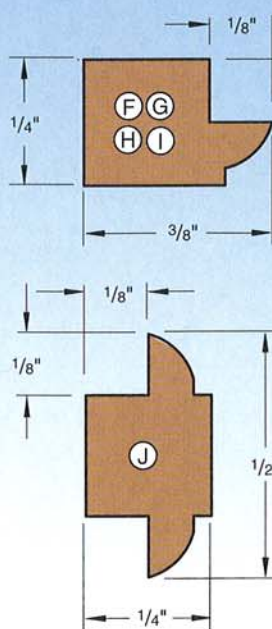
6 Chuck a $\frac{3}{8}$ " round-over bit into your table-mounted router, and set its height to cut a $\frac{1}{16}$ " shoulder. Then, rout the ends and edges of the back. Refer to the Bead detail accompanying the Exploded View page 23, bottom right. *NOTE: We used two strategies to help prevent chip-out. First, we routed in three steps, gradually raising the bit between cuts. Second, we always routed the end grain at the bottom and top of the back before doing the sides.* Next, finish-sand the back, and set it aside for now.

NOW, MAKE THE BOX ASSEMBLY

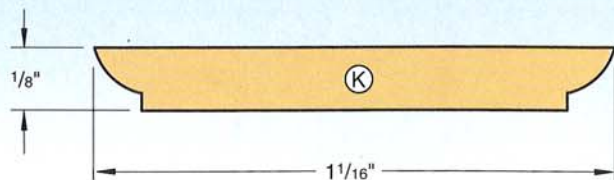
1 Rip and crosscut the box front (B) from $\frac{1}{4}$ "-thick stock to the size listed in the Bill of Materials. Make a photocopy of the full-sized pattern in WW PROJECT PATTERNS, and adhere it to the stock with spray adhesive. Drill the holes where shown, and scrollsaw the design with a No. 7 blade. Remove the pattern.

2 Rip and crosscut the box bottom (C) from $\frac{1}{4}$ "-thick stock to the size listed in the Bill of Materials.

3 Rip and crosscut two blanks $1\frac{1}{2} \times 1\frac{1}{4}$ " from $\frac{1}{4}$ "-thick stock for the brackets (D). Make a photocopy of the full-sized pattern in WW PROJECT PATTERNS, and adhere it to one blank with spray adhesive. Temporarily fasten the other bracket blank with double-faced tape



MOLDING SECTION VIEW (Shown 2x actual size)



Shop Tip

No. 1—A carrier board can improve the performance of your thickness planer when working with thin stock. Make a carrier from a flat piece of $\frac{3}{4}$ "-thick plywood. Attach the wood to be planed to the carrier board with cloth double-faced tape. You do not need to tape the entire length of the board: 2" at the front and back end will hold the stock securely.

under the one with the pattern. Scrollsaw the brackets, and remove the tape. Then, remove the pattern, and sand the parts.

4 Rip and crosscut a blank $1\frac{1}{2}\times 12$ " from $\frac{1}{2}$ "-thick stock for the box ends (E). *Note: Cutting this blank initially long will make the rabbeting operation safer.* Install a dado blade in your tablesaw, and cut a $\frac{1}{4}\times \frac{1}{4}$ " rabbet along one edge of the blank. Then, crosscut the box ends to their finished length.

5 Glue and clamp the box ends to the box bottom. When the glue is dry, unclamp the assembly. Then, glue and clamp the box front to the assembly. Using the escutcheon pin holes previously drilled in the box front as guides, drill pilot holes into the box ends.

6 Remove the clamps when the glue is dry, and sand the box assembly smooth. Next, drive the $\#18\times \frac{5}{8}$ " escutcheon pins to attach the box front to the box ends.

7 Clamp the box assembly to the back, positioning it where shown on WW PROJECT PATTERNS. Using the holes that you previously drilled through the back as guides, drill $\frac{3}{32}$ " holes $\frac{1}{2}$ " deep into the box ends. Unclamp, then glue and screw the box assembly to the back. Use glue sparingly to avoid squeeze-out.

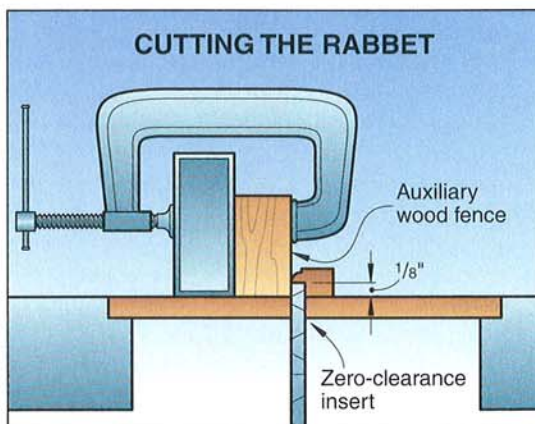
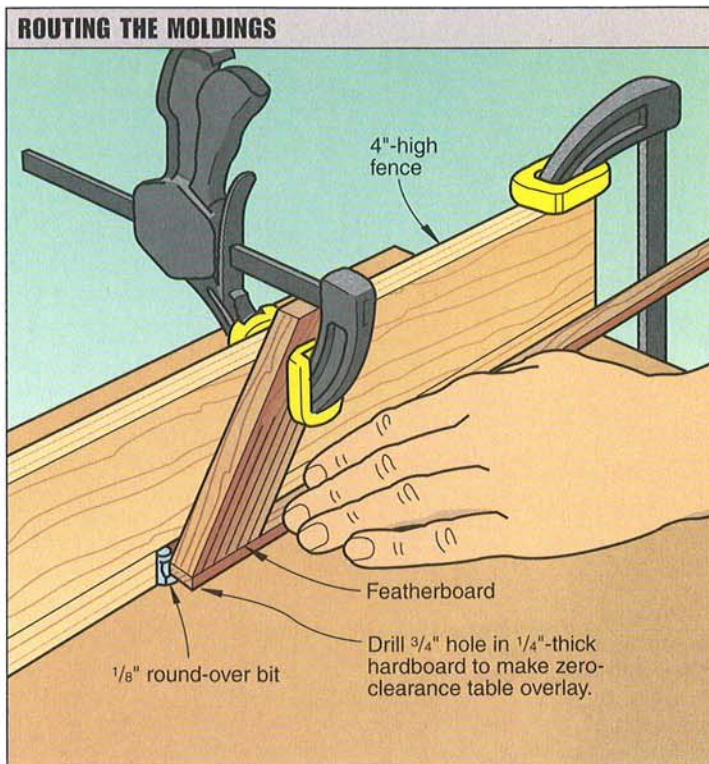
8 Glue the brackets to the box assembly and back where shown on WW PROJECT PATTERNS. We used yellow woodworker's glue, which sets faster than white glue.

MILL THE MOLDINGS, THEN ATTACH THEM

1 Start with a $\frac{1}{4}\times 3\frac{1}{2}\times 18$ " piece of mahogany, and then rip four strips $\frac{3}{8}$ " wide and two strips $\frac{1}{2}$ " wide.

2 Chuck a $\frac{1}{8}$ " round-over bit into your table-mounted router as shown in the Routing the Moldings detail accompanying the Moldings Section View *opposite page, bottom*. We drilled a $\frac{3}{4}$ " hole in a piece of $\frac{1}{4}$ "-thick hardboard to create a zero-clearance table overlay. Clamp a 4"-high fence to the router table, positioning its edge flush with the router bit's bearing.

3 Make a photocopy of the full-sized pattern of the featherboard in WW PROJECT PATTERNS, and adhere it to a $1\frac{1}{2}\times 7$ " piece of $\frac{1}{2}$ "-thick stock with spray adhesive. Use your bandsaw to cut the featherboard to shape, then



saw the kerfs. Clamp the featherboard to the fence as shown in the Routing the Moldings drawing *top*.

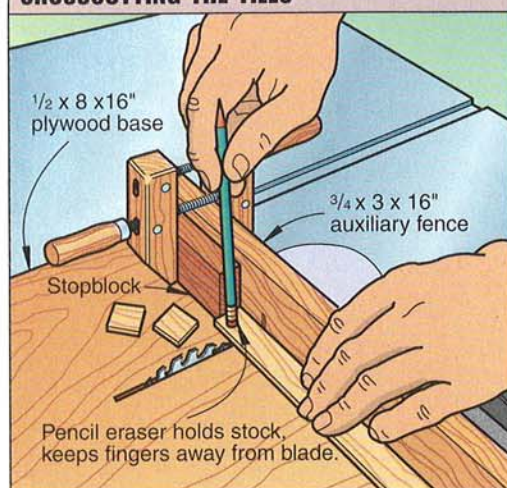
4 Rout one edge of each $\frac{3}{8}$ "-wide strip and two edges of each $\frac{1}{2}$ "-wide strip where shown on the Moldings Section View. Leave the router-table setup undisturbed; you will use it again later.

5 Clamp an auxiliary fence to your tablesaw's rip fence as shown in the Cutting the Rabbit drawing *above*, and cut the $\frac{1}{8}\times \frac{1}{8}$ " rabbet along the edge of the moldings where shown in the Moldings Section View.

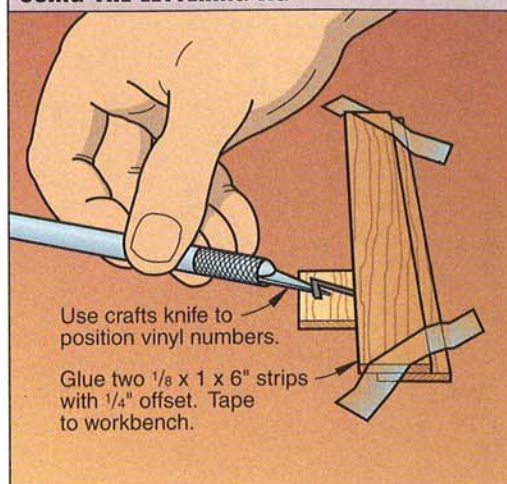
Continued

Perpetual Calendar

CROSSCUTTING THE TILES



USING THE LETTERING JIG



Shop Tip

No. 2—To finish the end grain of the tiles, spray a lint-free cloth, then dab the tiles. We cut a small cloth, and put it into a clean tuna can as shown below.



6 Miter-cut parts F and G to the lengths listed in the Bill of Materials. Crosscut parts H, I, and J to finished length.

7 Refer to the full-sized pattern, and mark the location of the escutcheon pins in parts F through J. Using a #18 brad for a bit as you did before, drill holes through the moldings. Attach the moldings to the back with glue and escutcheon pins.

MAKE THE DATE AND MONTH TILES NEXT

1 Rip and crosscut three 15/16 x 40" blanks from 1/8"-thick stock for the date tiles (K) and the month tiles (L). See Tip No. 1 on page 24, left for a suggestion on thickness-planing thin stock. Double-check the thickness of the stock in the moldings attached to the back.

2 Rout two edges of one blank, referring to part K on the Moldings Section View. Finish-sand the three blanks, then apply finish to the blanks and the completed back assembly. We sprayed three coats of aerosol Deft Semi-Gloss Clear Wood Finish. Between coats, we sanded with 320-grit paper and picked up dust with a tack cloth.

3 Make a simple crosscutting jig as shown in the Crosscutting the Tiles drawing above. Cut the two pieces of the jig to size, and then assemble by driving screws through the bottom of the base into the bottom of the auxiliary fence. Be sure that the screws are out of the blade's path. Next, screw the jig to your table-saw's miter gauge.

4 Crosscut the 33 date tiles (K) to 15/16" long. Crosscut blanks for the 12 month tiles (L) 6 1/16" long. **NOTE:** You will crosscut the month tiles to their final length after applying the lettering.

5 Use the 1/2" vinyl numbers to make one date tile for each number 1 through 31. (Refer to the Buying Guide accompanying the Bill of Materials for our mail-order source.) Next, use the 1/4" numbers to make combination tiles for the dates 23/30 and 24/31 as shown in WW PROJECT PATTERNS. Build a jig to help you align the letters and numbers. Refer to the Using the Lettering Jig drawing above. When you make the month tiles, roughly center the month name on the blank by eye, then complete the centering process by trimming the tile to final length.

6 Rip and crosscut the frame insert (M) to the size listed in the Bill of Materials. If you are making a cork board, attach 1/4"-thick cork with contact adhesive, then use a utility knife to trim the cork flush with the edges of the frame insert. Attach the frame insert with fender washers and screws as shown in the Exploded View. You can make a chalkboard by spraying the frame insert with special chalkboard paint available at many hardware stores. To make the optional chalk tray (N), refer to the Moldings Section View.

7 Attach the back to your wall with #10x2" screws or hollow-wall anchors. Insert the correct month tile, and arrange the date tiles. Store spare tiles in the box. ■

Project design: Jan J. Chanko
Illustrations: Roxanne LeMoine, Carson Ode
Project builder: Chuck Hedlund
Photograph: Craig Carpenter

LET'S START WITH THE SCROLLSAWN INSETS

1 Photocopy the cat and ball patterns on the WW PROJECT PATTERNS insert in the center of the magazine. Use spray adhesive to adhere the pattern for the cat (A) to $\frac{3}{4}$ "-thick maple, and adhere the ball pattern to $\frac{3}{4}$ "-thick cherry. See Shop Tip No. 1 on page 29, top right for a suggestion on making removable patterns. Scrollsaw the pieces to shape, making only the outer cuts. We cut the details after routing to reduce the possibility of breakage.

2 Hand-sand any rough spots left from the scrollsaw. Temporarily remove the patterns, and set aside. Now, chuck a $\frac{1}{8}$ " round-over bit into your table-mounted router, and round over the face edges of (A) and (B) **NOTE:** For safety, use a pushblock or the end of a sanding belt cleaning stick to guide the ball near the router bit.

3 Reapply the patterns to (A) and (B). Scrollsaw the details for the legs, tail, and eye on the cat, and the yarn lines on the ball. To cut the eye detail, drill a $\frac{1}{16}$ " blade start hole where shown on the WW PROJECT PATTERNS. Finish-sand (A) and (B), and set aside.

NOW, MACHINE THE SHELF SIDES

1 Rip and crosscut $\frac{1}{2}$ "-thick walnut to form the back stretchers (C), the shelf (D), and the blanks for the sides (E) to the dimensions listed in the Bill of Materials.

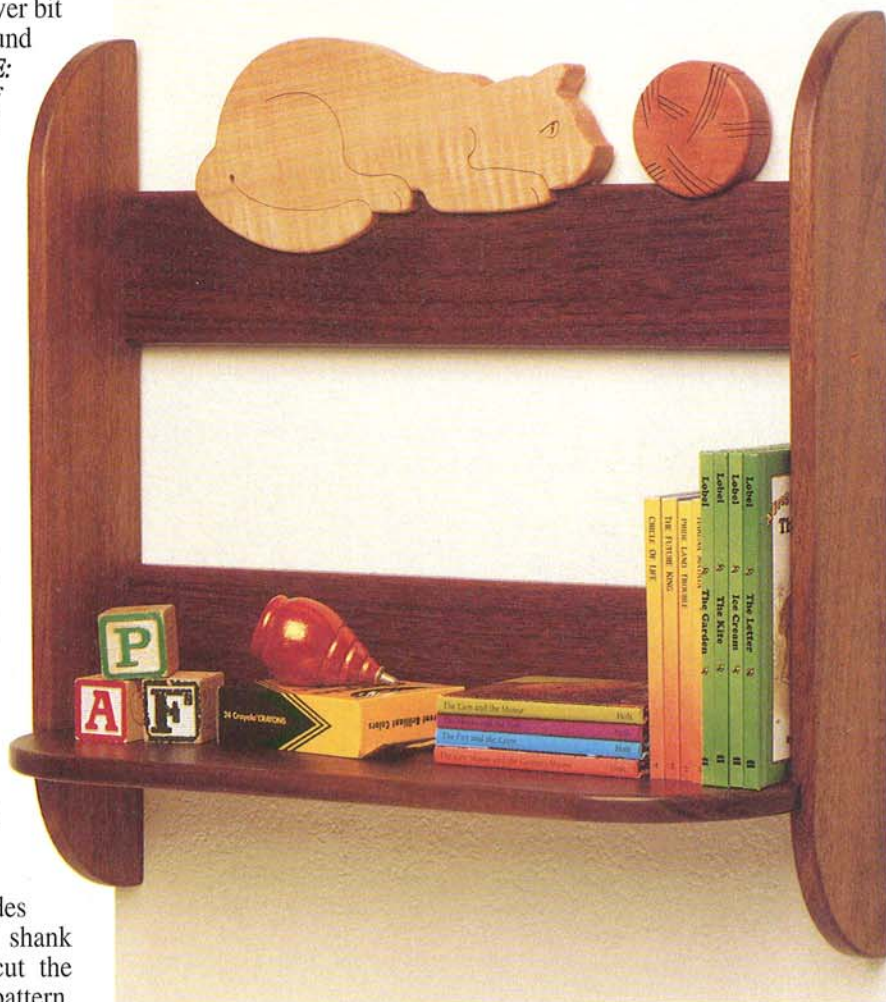
2 Adhere the blanks for (E) together face-to-face with double-faced tape. Make a photocopy of the full-sized pattern of the side, and adhere it to the top piece with spray adhesive.

3 Mark the hole centerpoints in the sides (E) with a scratch awl. Drill $\frac{5}{32}$ " shank holes through both sides. Next, radius-cut the ends of (E) on a bandsaw. Remove the pattern. Sand the edges to a smooth curve, then separate the pieces.

4 Chuck a $\frac{3}{8}$ " Forstner bit into your drill press, and counterbore the holes in the outer faces of (E) $\frac{1}{4}$ " deep as shown in the Screw Hole detail accompanying the Exploded View drawing on page 28. **NOTE:** The sides are mirror images of each other, not identical. Make

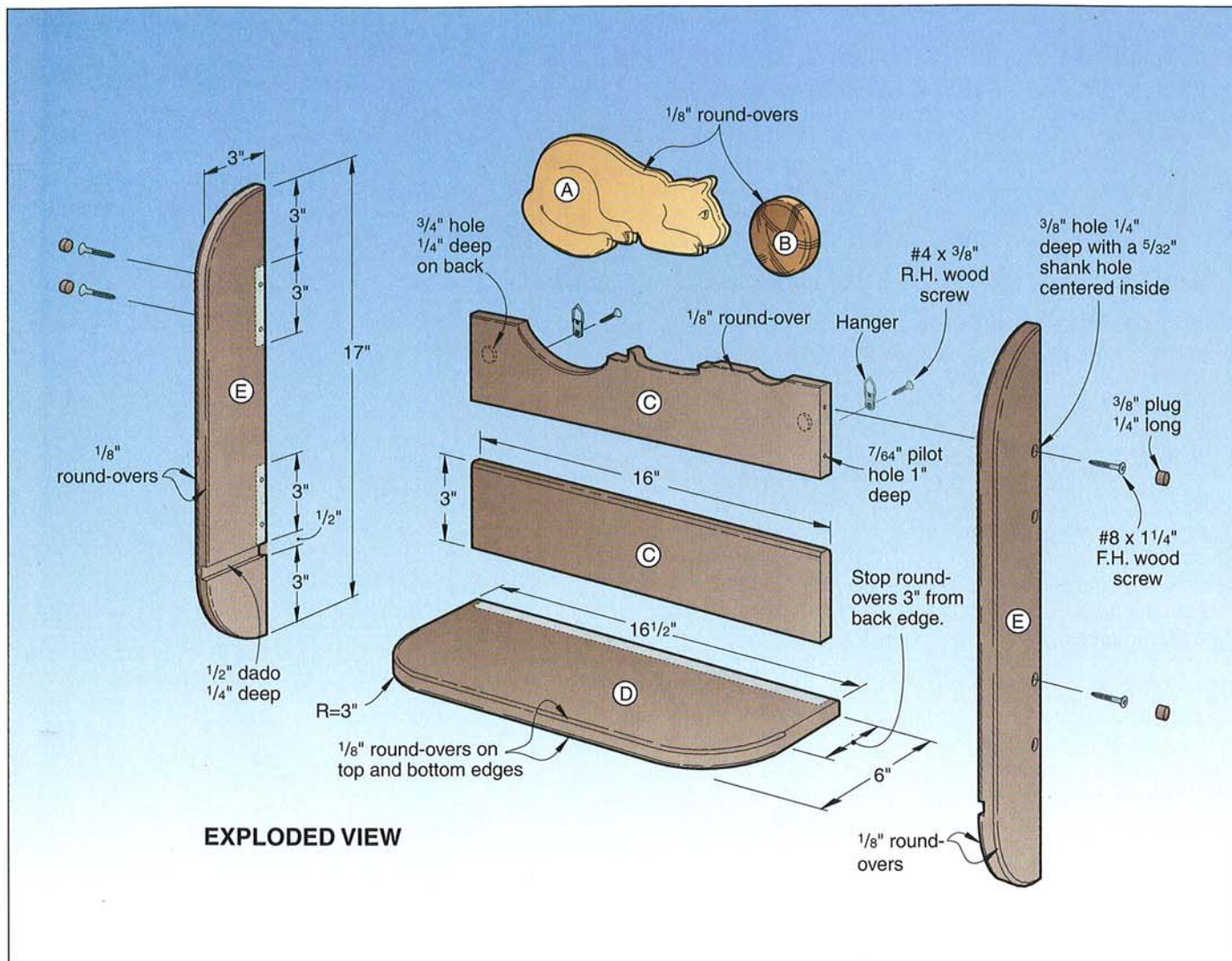
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Whimsical Cat & Ball Shelf



This attractive shelf unit will make a fine gift for your cat-loving friends. And the contrasting maple and cherry ornaments are easy to make. All it takes is a little time with your scrollsaw to cut the contours and detail lines.

Cat & Ball Shelf



BILL OF MATERIALS					
Part	Finished Size			Matl.	Qty.
	T	W	L		
A* cat	3/4"	4 1/4"	9"	M	1
B* ball	3/4"	2 1/2" dia.		C	1
C stretchers	1/2"	3"	16"	W	2
D shelf	1/2"	6"	16 1/2"	W	1
E sides	1/2"	4"	17"	W	2

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

Materials Key: C—cherry; M—maple; W—walnut.

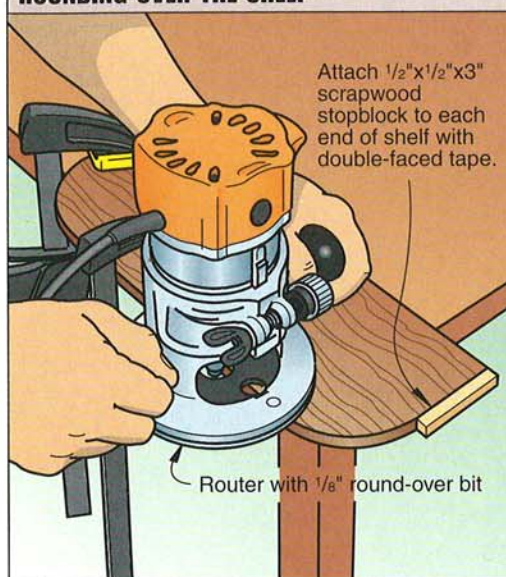
Supplies: 8-#8 x 1 1/4" flathead wood screws; 2-triangle hangers; 2-#4 x 3/8" roundhead wood screws.

CUTTING DIAGRAM

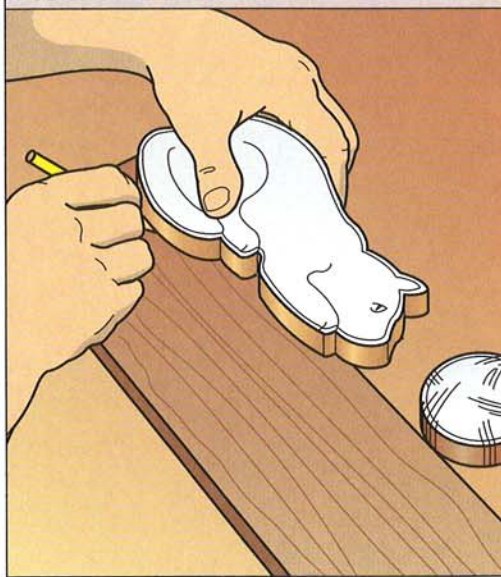


Refer to Bill Of Materials for parts (A) and (B)

ROUNDING OVER THE SHELF



POSITIONING THE CAT



Shop Tip

No. 1—To create a removable pattern, lightly spray the paper, and then wait for a full minute before adhering the pattern to the wood. We used 3M brand Spray Mount Artist's adhesive.

sure you machine a right and left piece, with the counterbored outer surfaces facing away from each other.

5 Position the cat and the ball on the top stretcher, using the full-sized pattern as a reference. Draw the outline of both pieces on the stretcher as shown in the Positioning the Cat drawing above. Now, remove the cat and ball, and scrollsaw the drawn outline to shape. Carefully sand or file the cutouts to ensure a tight fit.

6 Locate the centerpoints of the 3/4" hanger clearance holes in the back of the top stretcher where shown on WW PROJECT PATTERNS. Then, drill the holes 1/4" deep.

7 With a 1/8" round-over bit in your router, round over the surfaces of the shelf assembly that will be visible in the completed project. You'll need to round over the top and bottom edges of the upper stretcher (C), the top edge of the lower stretcher (C), and the radiused ends of (E).

8 Install a 1/2" dado set in your tablesaw, and adjust the blade height to 1/4". Then, cut the dadoes into the inside faces of the sides (E) where shown on WW PROJECT PATTERNS. Use an auxiliary fence on your miter gauge to prevent tearout.

9 Temporarily adhere 1/2"x1/2"x3" pieces of scrap to the ends of (D) as shown in the

Rounding Over the Shelf drawing above. Clamp the shelf to the edge of your workbench, and round over the exposed edge of the shelf, letting the scrapwood stopblocks stop the cut where the shelf fits into the dadoes. Unclamp, reposition, and reclamp to round over the corresponding bottom edge.

ASSEMBLE AND FINISH YOUR SHELF

1 Dry-assemble (no glue) the stretchers (C), shelf (D) and ends (E). Drill 7/64 pilot holes through the holes in (E) 1" deep into (C). Then, glue and screw the assembly together with the shelf (D) glued and clamped into place under the bottom stretcher.

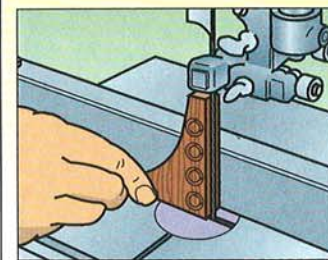
2 Glue the cat and the ball into place on the shelf back (A). We used masking tape to "clamp" the scrollsawn pieces in place until the glue dries.

3 Use a 3/8" plug cutter to make plugs from walnut stock. Install plugs in the counterbored holes in the shelf ends, taking care to match the grain and color of the plugs to the surrounding wood. See the Shop Tip No. 2 at right for a plug-cutting suggestion. Sand the plugs flush with the sides.

4 Apply the finish (we used two coats of Minwax Antique Oil). When the finish has dried, screw the hangers in place on the back of the shelf as shown in the Hanger Detail accompanying the Exploded View drawing. ■

Shop Tip

No. 2—To help ensure a good grain and color match for the plugs, we made them from the shelf cutoffs. Drill 3/8" deep with your plug cutter, then set your bandsaw fence to free the plugs from the stock as shown below.



Written by: Jon Greising
Project design: Dave Ashe
Illustrations: Roxanne LeMoine, Carson Ode
Photograph: Craig Carpenter



FINISHING SCHOOL

Oil Finishes: They Let Your Project Shine

Regardless of the wood you apply them to, you'll discover that oil finishes bring out the grain pattern and provide a rich, mellow sheen seldom seen in other finishes. And you'll find that they minimize surface flaws. You can apply an oil finish with a rag, brush, sponge, or even a paper towel.

Oil finishes have only two drawbacks to consider: they have a strong odor while drying, and the time between coats is usually 24 hours or more.

YOUR OIL FINISH CHOICES

Of the three types of oil finishes, we prefer **penetrating oil** because you can apply it more quickly and easily than linseed or tung-oil finishes. Frequently referred to as "danish" oil finish, it consists of a mixture of oils, resins, and thinners. You can apply multiple coats, but two plus a coat of wax usually suffice.

Linseed oil comes in two types—pure and boiled. Pure linseed oil takes up to seven days per coat to dry, and requires a lot of rubbing. It works well for resisting water, heat, and scratches. The distinctive odor lingers a long time.

The third type, **tung oil**, can provide a stunning deepening of the wood color, but a good finish can require up to five coats, each one adding to the gloss. Tung oil odor lasts a long time, but its finish is the most durable of all three types.

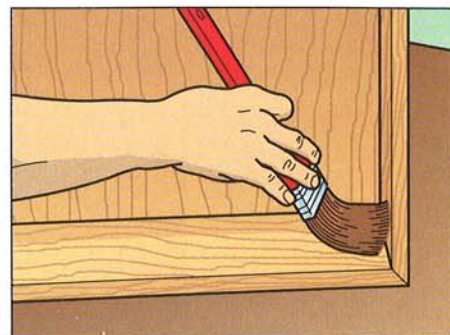
PREVENT A FIRE WITH SAFE DISPOSAL

Oil-soaked rags can pose the threat of spontaneous combustion. You can prevent a fire by always following a safe disposal routine. First, hang the rag out to dry in a well-ventilated area. Make sure the cloth is not bunched so the air can circulate freely around it. Then, when the finish evaporates, you can safely toss the rag into the trash. ■

HERE'S HOW TO APPLY A PENETRATING-OIL FINISH



▲ Use an inexpensive sponge or a lint-free rag to soak the wood with oil, using a circular motion, then rubbing with the grain. Add oil to dry spots.



▲ Use an inexpensive paintbrush to apply penetrating oil into corners and curved or grooved sections, adding oil to end grain (it soaks it up rapidly).



▲ After the wood has absorbed all it can, save excess oil by picking it up with a sponge and squeezing it back into the container.



▲ Put your applicator brush and sponge into plastic sandwich bags so you don't have to clean them between coats of finish.



▲ After the first coat dries, apply the second, wet-sanding the surface with the grain, using 600-grit wet-or-dry sandpaper. Wipe dry after application.



▲ For extra luster and added protection, apply a coat of wood finishing wax after the penetrating-oil finish has dried for the recommended time.

OK, Hold It.



Now Spread 'Em.

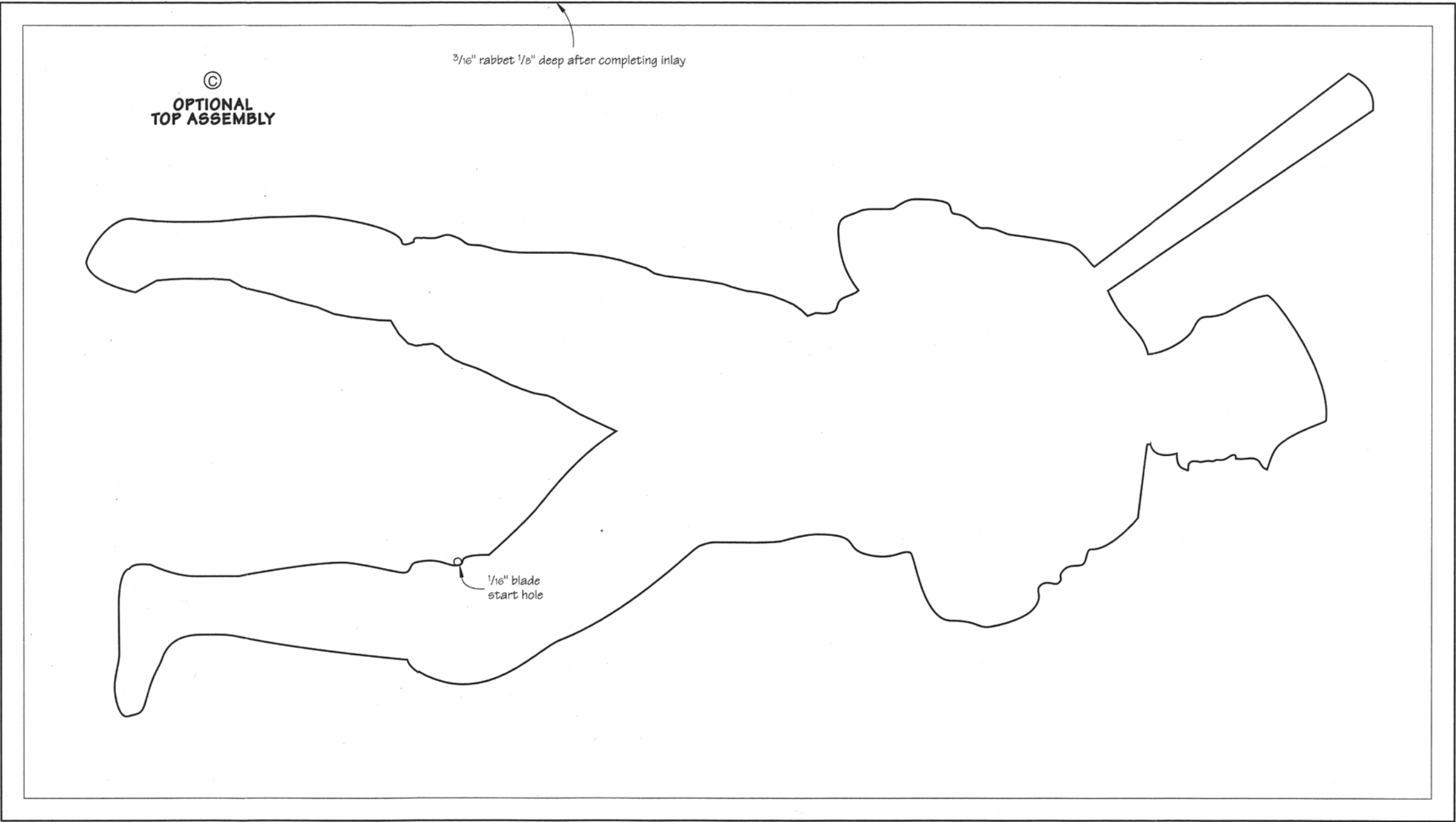
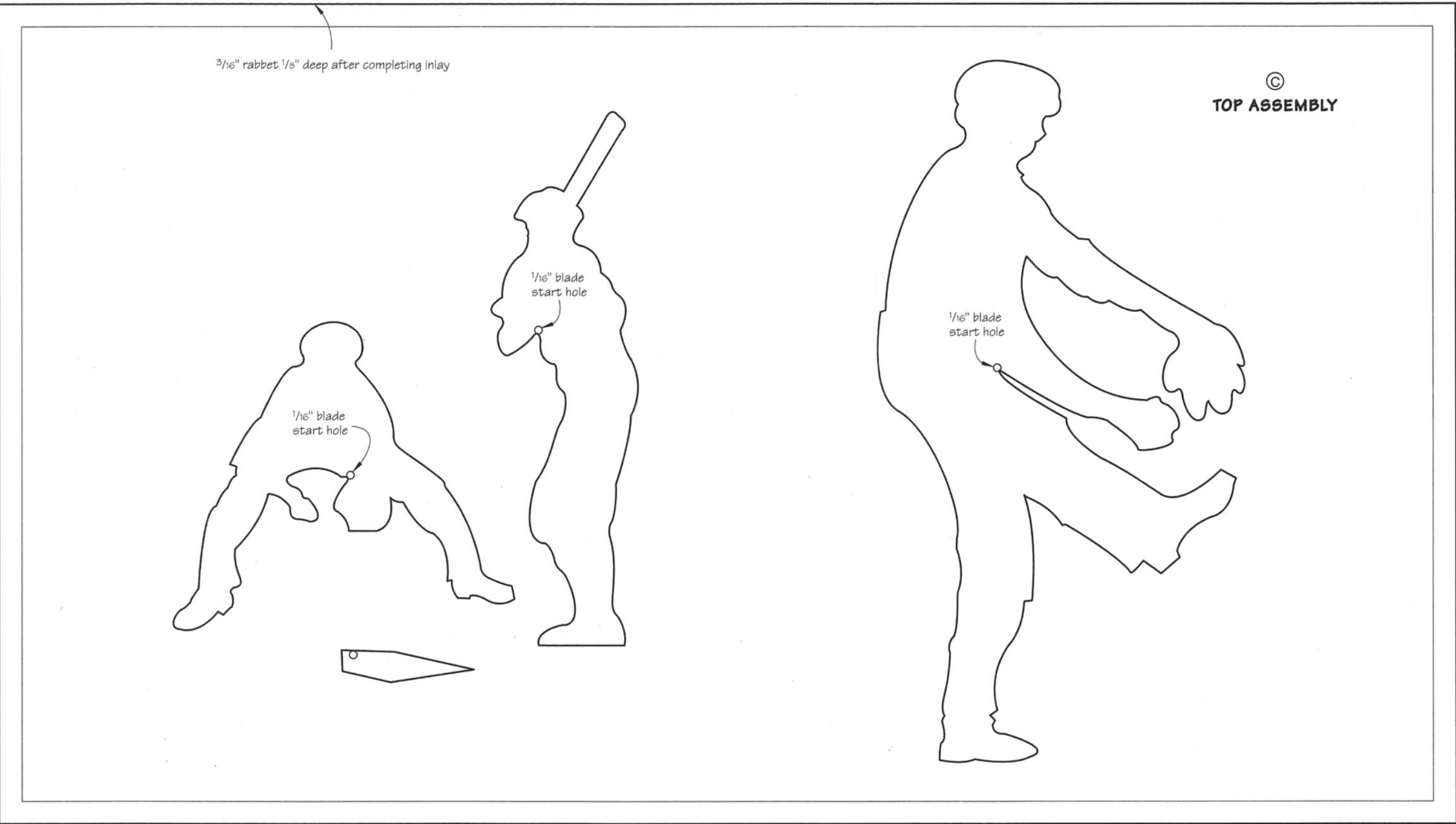


The innovative POWER PRESS™ Pipe Clamp, from the makers of QUICK-GRIP® Bar Clamps, is more than just a pipe clamp. By simply reversing the two movable clamping sections, it quickly becomes a spreader. Perfect for all kinds of woodworking applications, the POWER PRESS Pipe Clamp can do anything a regular pipe clamp can do, only faster. It works on both threaded and unthreaded pipe. And two rubber pads keep gripping surfaces from marring your work. The most versatile pipe clamp to hit the shelves, the POWER PRESS Pipe Clamp is going to revolutionize the way you work.

Look for it wherever quality tools are sold.

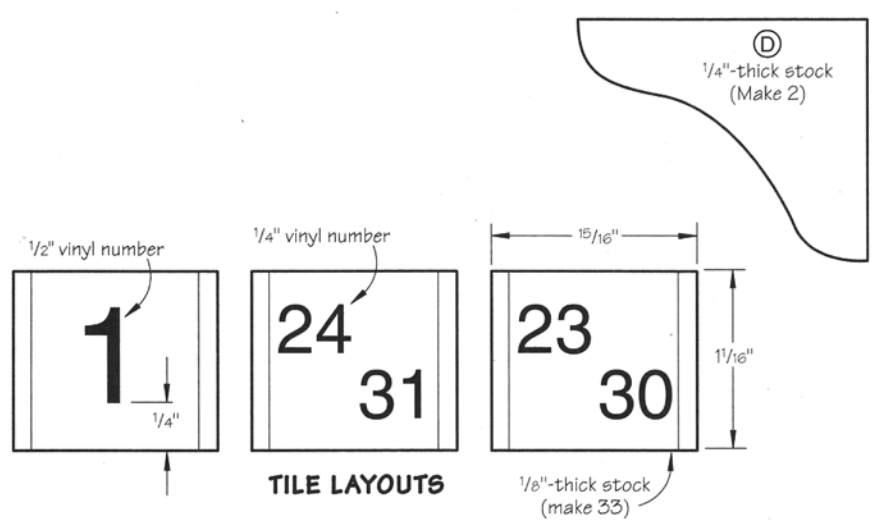
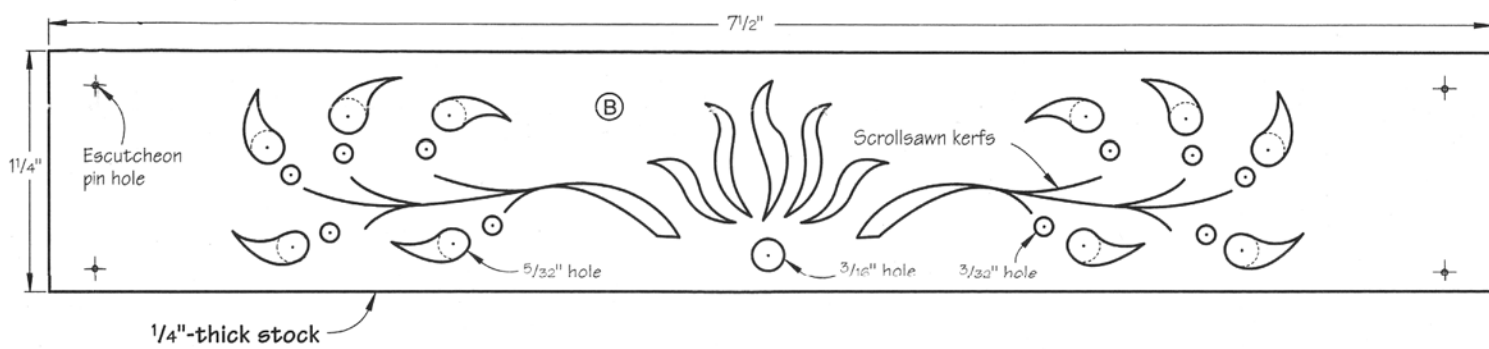
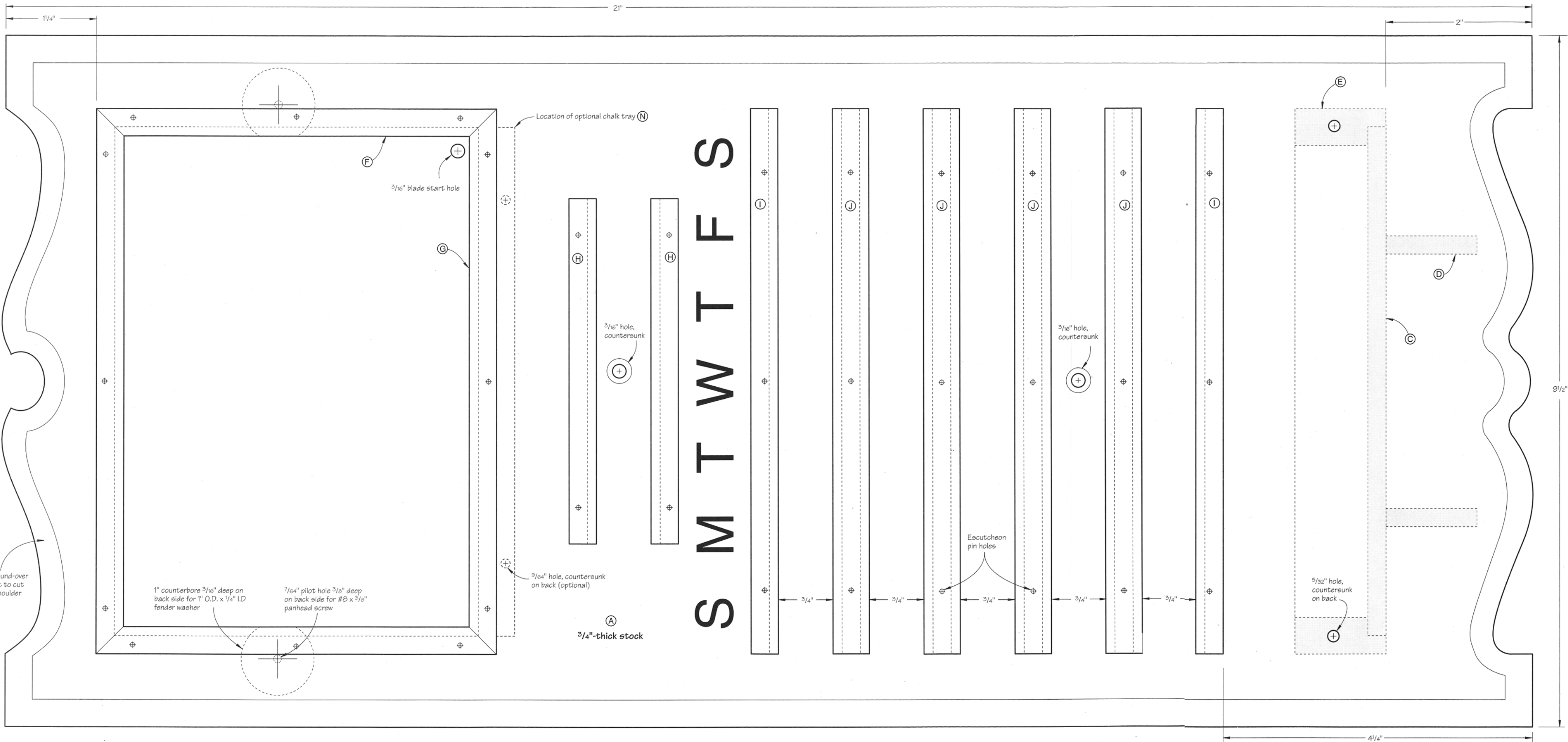


FROM THE MAKERS OF QUICK-GRIP® BAR CLAMPS

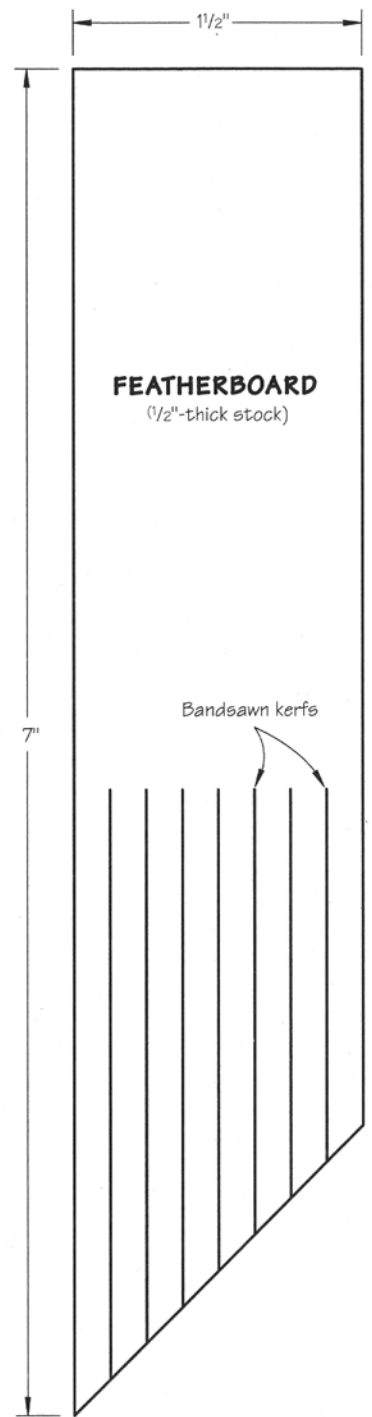


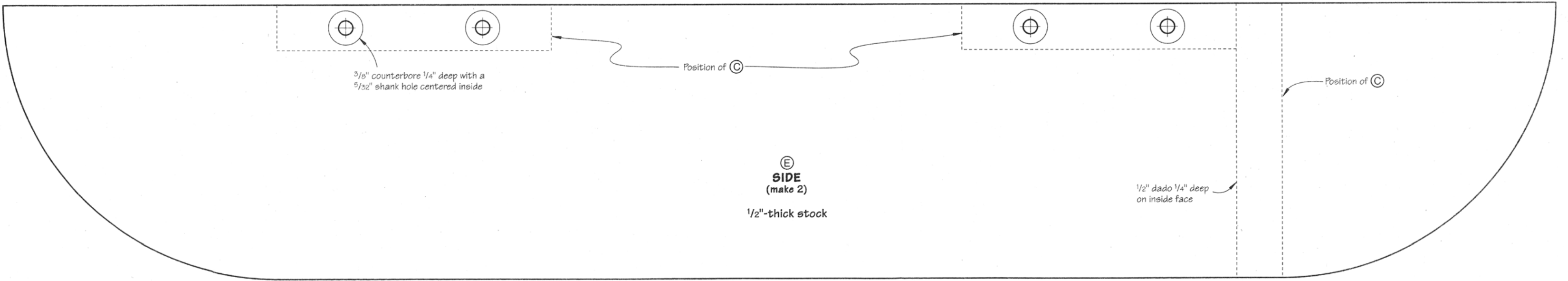
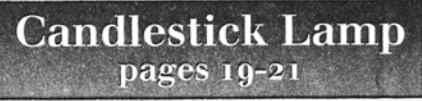
Baseball Card Box
pages 6-9

1/4"-thick stock



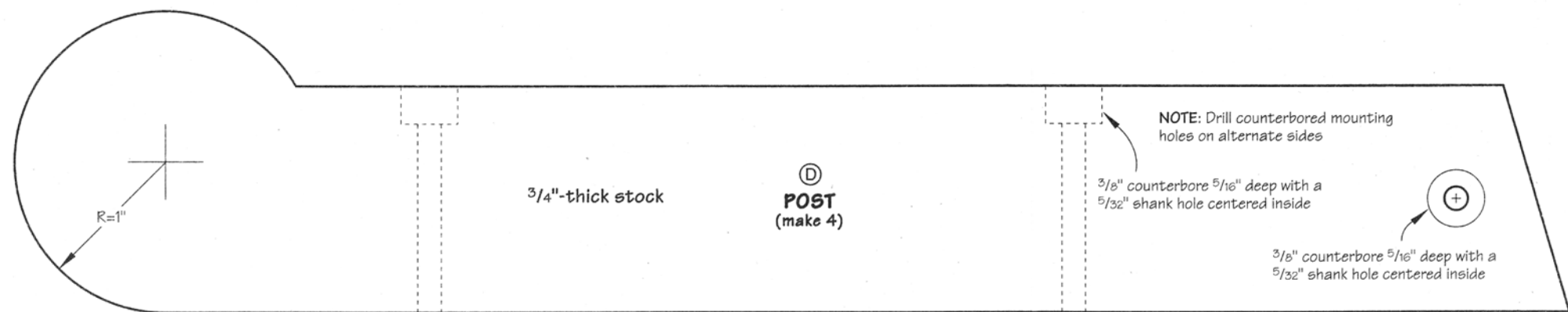
Perpetual Calendar
pages 22-26





Cat & Ball Shelf

pages 27-29



Doll Cradle

pages 16-18

