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Kitchen set • Ladder shelf • Carousel toy
Special pattern offer see page 3

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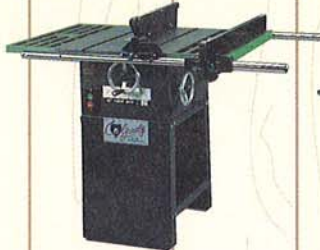
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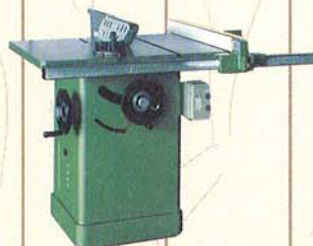
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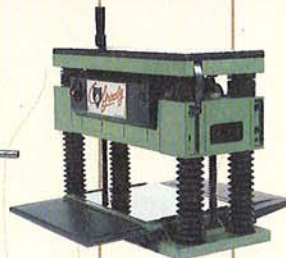
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FROM OUR SHOP

cover photograph: John Hetherington



DEAR READER,

Have you noticed around your neighborhood how everyone seems to be diving into the holiday spirit with yard ornaments? We certainly have seen a big surge in outdoor decorations everywhere we travel.

Knowing that you'd expect more from us than a candy cane or candle, we commissioned Kat Beals—who adores animals—to design the fun and colorful decoration on the cover of this issue. You can cut it from one 4x4' sheet of plywood.

And as sort of a bonus project—and for something a bit more traditional—we asked Minnesota artist Jim Stevenson to work up a design based on a sleigh. His old-fashioned horse and cutter, shown above, stretches

out to nearly 12' long and 4' high. It's an eye-catcher that will make a great big impression in your yard. (The cutter certainly becomes the largest project we've ever attempted!) For a complete set of instructions and full-sized drawings, send \$8.95 ppd. to:

Christmas Eve Sleigh Ride
Dept. WWP-SR
P.O. Box 9255
Des Moines, IA 50306

Carl Voss

WEEKEND WOODWORKING PROJECTS

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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

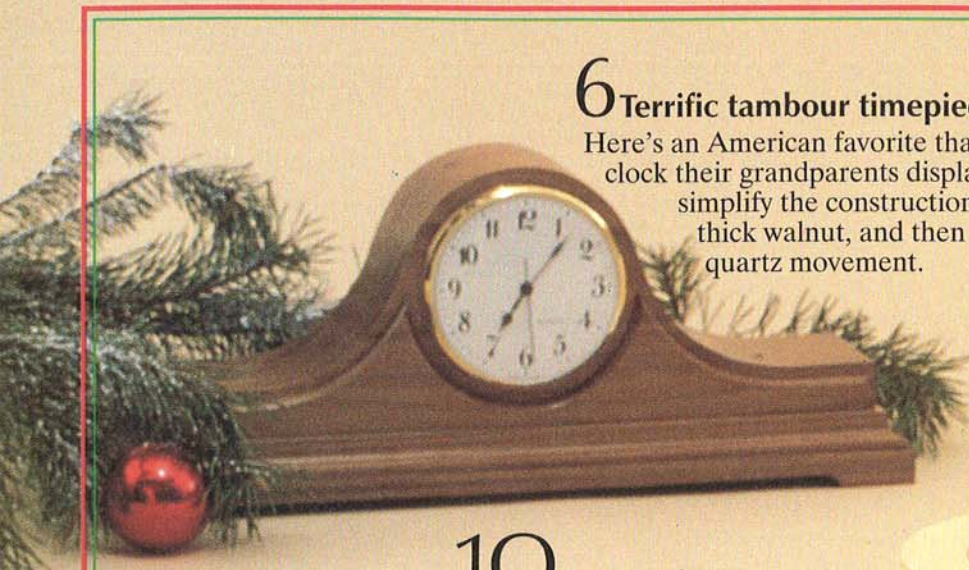
WPA

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EDITOR **LARRY CLAYTON**
 MANAGING EDITOR **CARL VOSS**
 PROJECTS EDITOR **CHARLES E. SOMMERS**
 PROJECTS DESIGN EDITOR **JAMES R. DOWNING**
 SR. GRAPHIC DESIGNER **MICHAEL G. HARRINGTON**
 ADMINISTRATIVE ASSISTANT **LOUISE ANDERSON**
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6 Terrific tambour timepiece

Here's an American favorite that will remind some readers of the clock their grandparents displayed on the living-room mantel. To simplify the construction, we laminated the body from $\frac{3}{4}$ "-thick walnut, and then called upon a battery-operated quartz movement.



10 Carousel toy

You can't beat carousels for long-lasting popularity with infants and their parents. Our colorful gift has all the right sights and sounds for the nursery.



14 Ladder shelf

Build this early American favorite one step at a time. At less than 16" wide, it offers ideal display space for a narrow spot on someone's wall.



18 Hark, the herald critters sing

Oh sure, you could buy holiday yard ornaments, but who wants their yard to look like all the others in the neighborhood? This unique and comical trio is bound to put a smile on everyone's face.



CHECK OUT THESE TIPS AND JIGS

- Rip thin stock with a carrier board—page 8.
- Sand perfect discs with a simple jig—page 10.
- A follow board prevents router chip-out—page 22.
- Stack thin material before scrollsawing—page 28.

Note: To find these tips, turn to the indicated pages and look for the tinted step numbers.

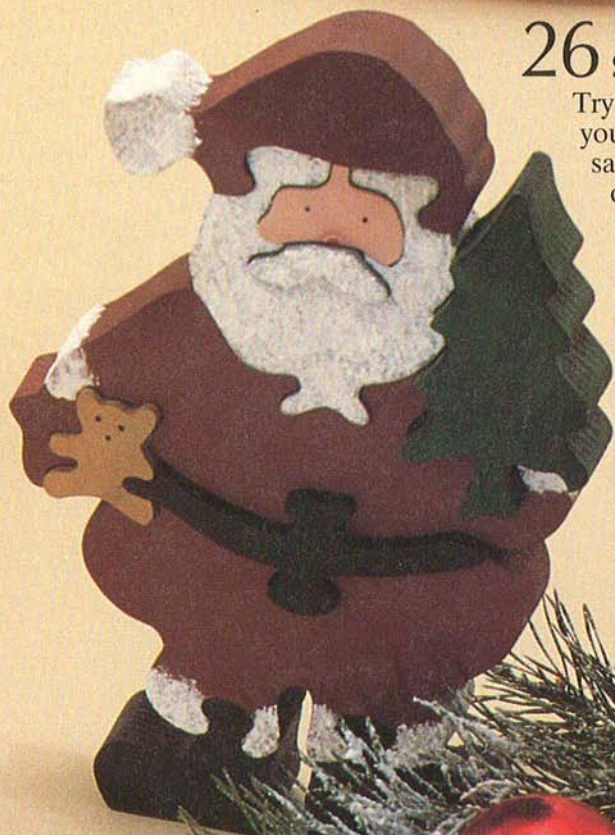
20 Kitchen collection

Three native hardwoods—walnut, cherry, and maple—will never look better than when they're laminated into set of practical kitchen accessories like these.



26 Santa puzzle

Try this fun project with your bandsaw or scrollsaw. Then, choose from one of our two painting schemes—or develop your own.



28 Scrollsawed tree ornaments

If you're searching for a Christmas project you can complete before the holiday rush, consider this collection. We'll show you how to zip through four sets at a time.



TERRIFIC TAMBOUR TIMEPIECE



We've combined the good looks of a tambour clock—long a favorite for the mantel—with the convenience of a reliable quartz movement that snaps into place.

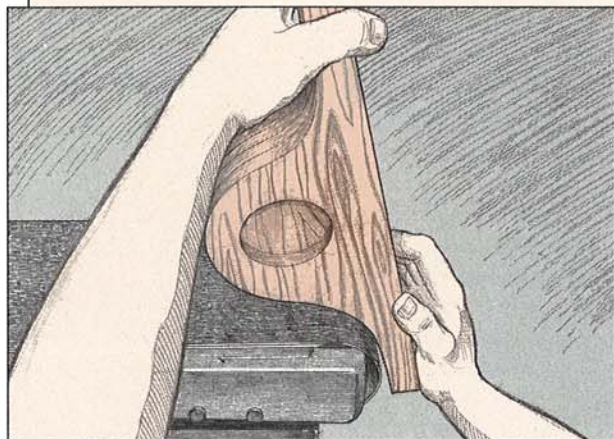
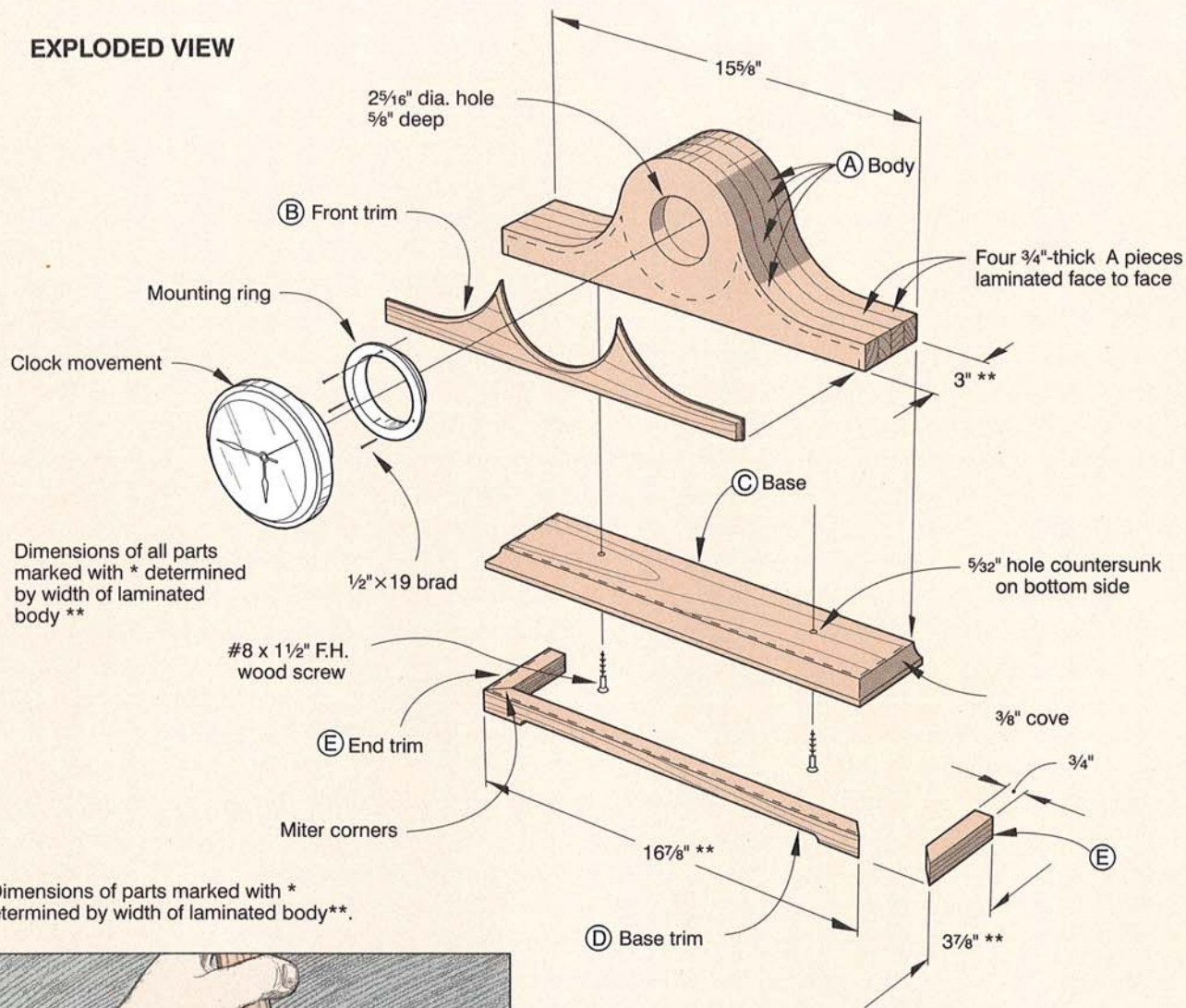
It's time to laminate the clock body

1 Transfer the Clock Body half-pattern on page 9 and the clock-opening centerpoint onto heavy paper and cut it to shape. (We used transfer paper to trace the pattern onto posterboard.)

2 Position and trace the pattern outline onto $\frac{3}{4}$ "-thick stock (we chose walnut). Flip the pattern over, align the top and bottom

edges, and trace the other half of the body outline onto your stock. See the Cutting Diagram on page 9 for our suggested board layout to minimize waste. Repeat the procedure three more times to form the remaining body parts (A). Next, transfer the centerpoint for the clock movement opening from the pattern onto the piece with the nicest grain. Use this piece for the clock front.

EXPLODED VIEW



3 Saw the four body pieces to shape on your bandsaw, cutting just outside the marked line.

4 You may form the opening for the clock movement two different ways. If you have a 2 $\frac{5}{16}$ " Forstner bit or would like to order one (see the Buying Guide for our

source), you can wait and drill the hole as described later in Step 7. Or, using a compass, mark the 2 $\frac{5}{16}$ "-diameter circle (1 $\frac{5}{32}$ " radius) on the front body piece, drill a blade start hole inside the circle, and

5 Spread a thin, even coat of glue then cut the hole to shape with a scrollsaw or jigsaw. If you cut this opening now, skip Step 7.

6 Spread a thin, even coat of glue over the mating surfaces of the body pieces, and then join and clamp them with the edges flush. (We used scrap pieces between the

clamp heads and body pieces to avoid marring the wood.)

6 Scrape off the excess glue. Sand or joint the bottom. Belt-sand the curved edges flush and to the line using the rounded end of a belt sander as shown at left. Now, hand-sand the lamination with progressively finer sandpaper to remove all sanding marks.

7 Chuck a 2 $\frac{5}{16}$ " Forstner bit into your drill press. With an awl, indent the marked centerpoint on the clock front. Center the bit over the centerpoint, and clamp the clock body to your drill-press table. Now, bore the 2 $\frac{5}{16}$ " hole $\frac{5}{8}$ " deep into the front face.

Continued

Tambour timepiece

Don't be late with the front trim

1 Using the same techniques described in steps 1 and 2 of the previous section, transfer the Front Trim pattern to the face of a $\frac{3}{4}$ ×4×16" piece of walnut stock. Following the pattern, bandsaw the front trim piece (B) to shape, and then sand to the pattern line. For a more striking effect, consider making this trim out of burlwood or a contrasting-colored stock.

2 Using double-faced tape, tape the trim piece to your workbenchtop. Rout a $\frac{1}{8}$ " chamfer around the perimeter of the piece. Do not rout the bottom edge.

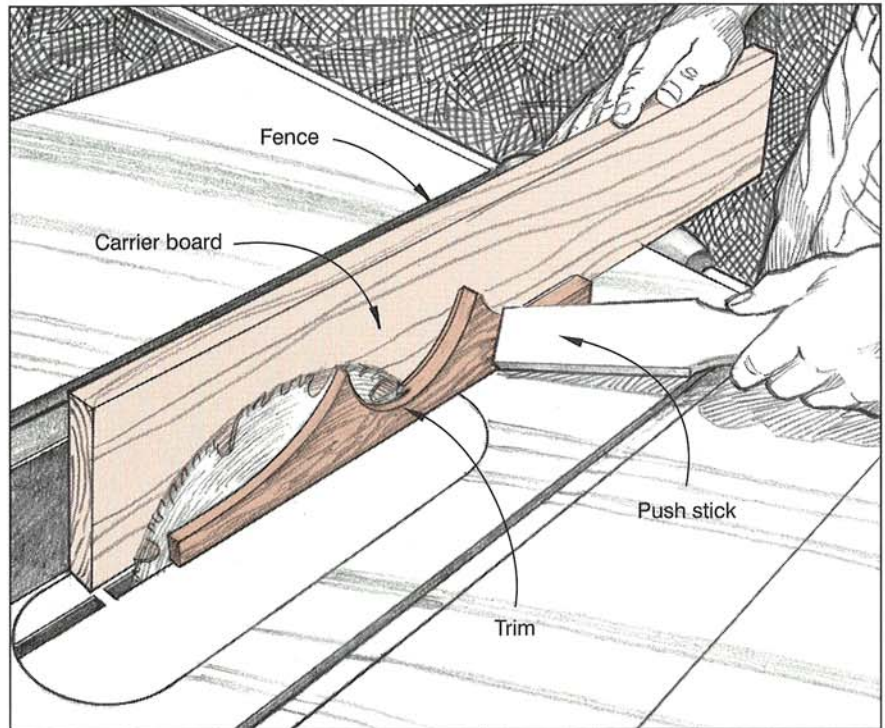
3 For safer resawing in the next step, cut a carrier board from a $\frac{3}{4}$ ×3×15½" piece of scrap. Using double-faced tape, adhere the chamfered side of the trim piece to the scrap. Set the saw's rip fence the width of the scrap plus $\frac{1}{4}$ " from the blade.

4 As shown at right, resaw the trim piece to $\frac{1}{4}$ " thick. Use a thin pushstick to help move the piece past the saw blade. To prevent chipping the two tips, feed the trim piece through the blade slowly. Now, remove the trim from the carrier board and make certain it fits flush against the clock body.

5 Glue and clamp the front trim piece to the clock-body lamination where shown on the full-sized pattern. Again, use clamp blocks to prevent denting the walnut. Remove glue squeeze-out immediately with a damp cloth.

The hour has arrived for the base and trim pieces

1 Before cutting the base piece (C) to size, measure the lamination length and width. (Not all $\frac{3}{4}$ " stock measures exactly $\frac{3}{4}$ ", so the width of your clock body could exceed 3".) Cut the base $\frac{3}{4}$ " wider and 1" longer than the lamination.



2 Rout a $\frac{3}{8}$ " cove along the front and sides (but not the back edge) of the base piece where shown on the Exploded View drawing on page 7.

3 Rip one 26" strip of $\frac{3}{4}$ " walnut stock to $\frac{3}{4}$ " wide. Next, miter-cut the ends so it fits under the front edge of the base for the base trim (D). Cut the two side trim pieces (E) to length, miter-cutting the appropriate end on each.

4 Transfer the pattern of the Base Trim part onto the front trim piece (D). Cut it to shape with a bandsaw or scrollsaw, and then sand the cut edge.

5 Glue and clamp the front base trim (D) to the base, allowing the front edge of it to extend $\frac{1}{8}$ " beyond the base edge. Later, remove the clamps, and then glue and clamp the side trim pieces (E) to the base.

6 Position and clamp or tape this base subassembly (C, D, and E) onto the bottom of the body

lamination (A, B). Drill and countersink a pair of screw holes through the bottom face of the base (C). Screw the two assemblies together using #8×1½" flathead wood screws.

Clear off the mantel—you're nearly finished

1 Finish-sand any areas needing touching up with 320-grit sandpaper. Look especially close for sanding marks remaining on the curved body surfaces created earlier with the belt sander.

2 Finish the clock as desired. (We applied two coats of water-based sanding sealer and two coats of water-based clear lacquer, sanding lightly after each coat.) Next, insert the clock-mounting ring into the body and secure it with ½×19 brads. Finally, install the battery, set the correct time, and then align and press the clock movement firmly into the mounting ring. ■

25/16" hole 5/8" deep

Centerline

(A)
CLOCK
BODY
PATTERN

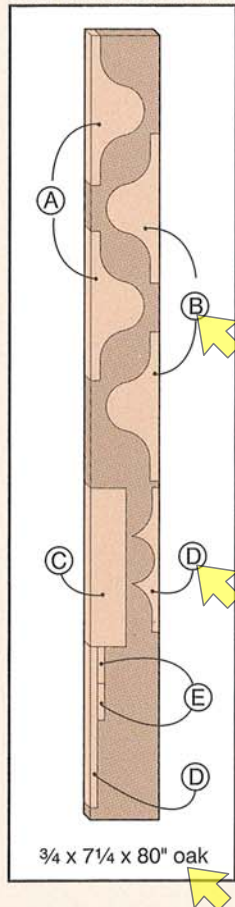
(B)
FRONT TRIM PATTERN

FULL-SIZED HALF PATTERNS

(D) BASE TRIM
PATTERN

(C) Base

CUTTING DIAGRAM



BILL OF MATERIALS

Part	Finished Size*			Matl.	Quan.
	T	W	L		
A* body parts	3/4"	5 5/8"	15 5/8"	W	4
B* front trim	1/4"	27/8"	15 1/8"	W	1
C base	3/4"	37/8"	16 5/8"	W	1
D* base front trim	3/4"	3/4"	16 7/8"	W	1
E* base side trim	3/4"	3/4"	37/8"	W	2

*Cut parts marked with an * oversized. Then, follow instructions and trim each part to finished size.

Material key: W—walnut

Supplies: 1/2" x 19 brads, yellow woodworker's glue, #8 x 1 1/2" flathead wood screws, clear finish.

Buying Guide: Quartz clock movement with 1.5V battery. Kit no. 71106. \$19 ppd. From: Klockit, P.O. Box 636, Lake Geneva, WI 53147, or call 800/556-2548 to order.

Forstner bit. 25/16" diameter, catalog no. 53135, \$36 ppd. From Klockit, address above.

1/8"

1/8"

1/4"



A dresser-top carousel

SWEET DREAMS MACHINE

You can't beat carousels for long-lasting popularity with infants and their parents. Here's a nursery gift with all the right sights and sounds.

Let's make the base first

1 From $\frac{3}{4}$ " pine, rip and crosscut two 8" squares for the base (A). Glue and clamp the two pieces face-to-face, alternating the grain direction for stability. See the Cutting diagram on page 13 for how we laid out and cut our stock.

2 Draw diagonal lines on the face of the lamination to find its centerpoint. Next, drill a $\frac{13}{64}$ " hole through the center of this lamination. Scribe a $\frac{37}{8}$ "-radius circle ($7\frac{3}{4}$ " diameter) on that face. Now, bandsaw the lamination to shape, cutting just outside the line.

3 Rip a 45° bevel along one edge of a $\frac{3}{4} \times 7 \times 24$ " board. Next, drill four $\frac{13}{64}$ " holes into the board as dimensioned on the Sanding Board drawing *opposite*. Clamp it to the table of your stationary sander. Next, insert a 2" long $\frac{3}{16}$ " dowel in the hole $3\frac{1}{2}$ " from the sander, and center the base over the dowel. Turn on the sander and press against the board to move the disc lightly against the belt as shown on page 11, and then slowly rotate the disc to sand its edge. Use this same technique to sand the edges on all of the discs.

4 Follow the steps on the two-step Base Lamination drawing *opposite* to form the base cutout.

5 From $\frac{1}{4}$ "-thick pine (we planed the squares for parts B and E to $\frac{1}{4}$ " thickness, and the strip for the horses [H] to $\frac{3}{8}$ " thickness before cutting them to shape), rip and crosscut a piece to $8\frac{1}{2}$ " square for the base ring (B). Find the center of the square, and using a compass, scribe a 3"- and a 4"-radius circle on its face. Bandsaw the 4"-radius (8" diameter) disc to shape. Drill a $\frac{13}{64}$ " hole in the center, and then sand the edge, using the same techniques used to sand your base. Now, scrollsaw away the center 3"-radius (6" diameter) area within the disc.

6 For the revolving platform (C), rip and crosscut a piece of $\frac{3}{4}$ "-thick maple to 8" square. Draw diagonal lines on both faces. Using a try square, section the platform's top into four quadrants. Scribe a $\frac{17}{16}$ "-radius circle, a $\frac{27}{8}$ "-radius circle, and a $\frac{37}{8}$ "-radius circle on the face. Mark the centerpoints for the eight dowel holes on the square where shown on the Platform Layout drawing at *right*.

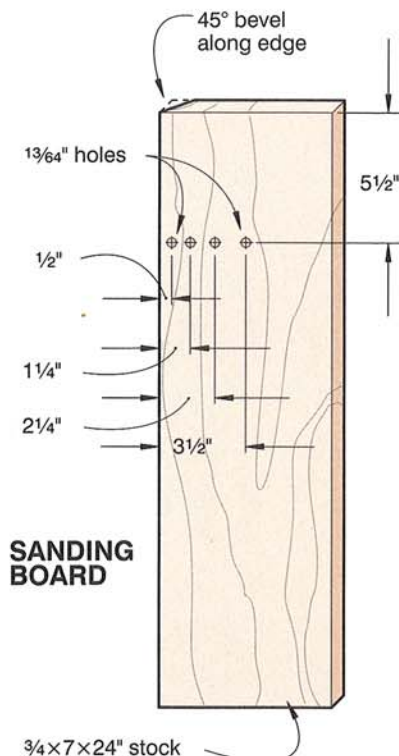
Bandsaw the $7\frac{3}{4}$ "-diameter platform round. Sand its edge.

7 Chuck a $\frac{1}{2}$ " round-over bit in your router, and rout a bead around the edge of the platform disc. (We made three passes, increasing the cutting depth with each pass to form a $\frac{1}{8}$ " lip on the top edge.)

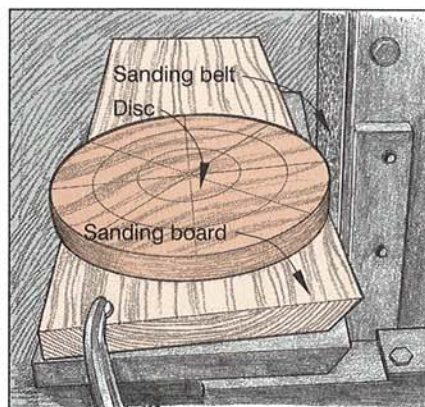
Next, we'll cut out the canopy parts

1 From $\frac{3}{4}$ " pine, rip and crosscut one $7\frac{1}{2}$ " square, one 6" square, and one $3\frac{1}{2}$ " square. From $\frac{1}{4}$ " pine, rip and crosscut a $7\frac{1}{2}$ " square. Now, mark the centerpoint on the bottom of each square. See the Canopy Assembly drawing on page 12 for additional details.

2 For part D, section the bottom face on the $7\frac{1}{2}$ " square into four quadrants with a try square. Next, scribe three circles on the bottom, using the dimensions on the Platform Layout drawing, page 11. Now, bandsaw the $6\frac{3}{4}$ "-diameter disc to shape, drill the center hole, and sand the edge. Plot the dowel-hole centerpoints in the bottom face, using the dimensions on the same drawing.



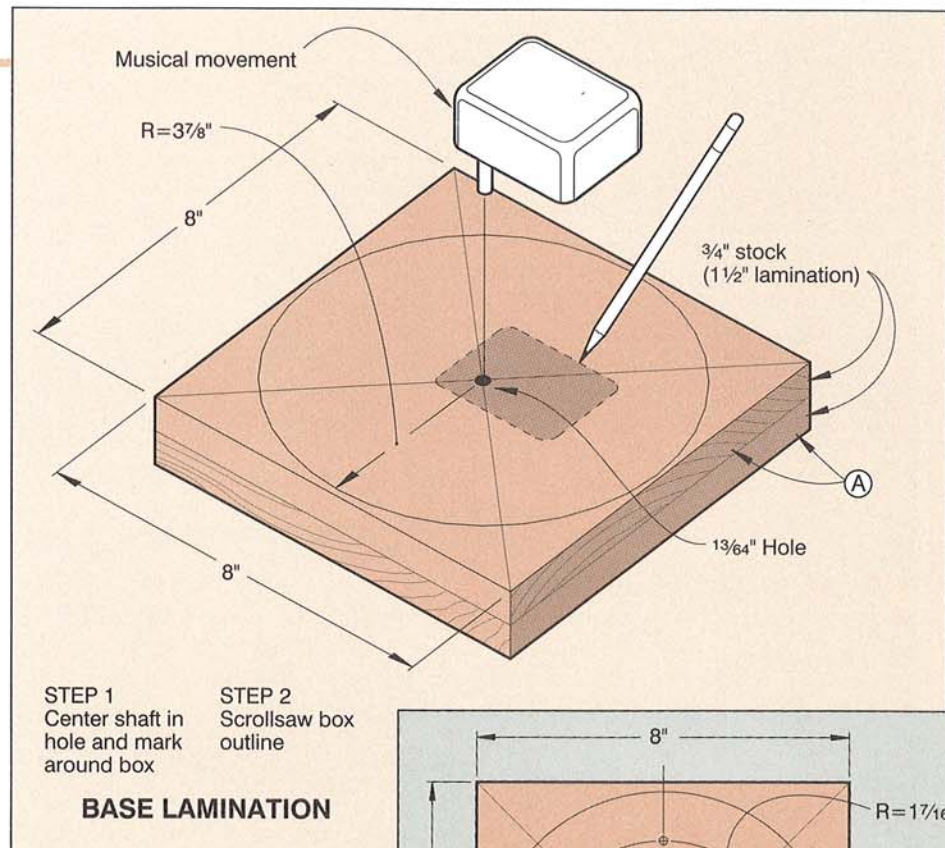
SANDING BOARD



3 Drill the eight $\frac{3}{16}$ "-diameter holes $\frac{3}{8}$ " deep into the platform (C) and into the canopy part D where marked.

4 For the canopy ring (E), scribe a $3\frac{1}{2}$ "-radius (7" diameter) circle on the $\frac{1}{4}$ "-thick square and saw it to shape. Drill the center hole and sand the edge.

5 Scribe a $2\frac{5}{8}$ "-radius ($5\frac{1}{4}$ " diameter) circle on the 6" square and then a $1\frac{3}{8}$ "-radius ($2\frac{3}{4}$ " diameter) circle on the $3\frac{1}{2}$ " square. Tilt the table on your bandsaw to 45° from horizontal. Next, saw the two beveled circles from those squares for parts F and G. Drill the center



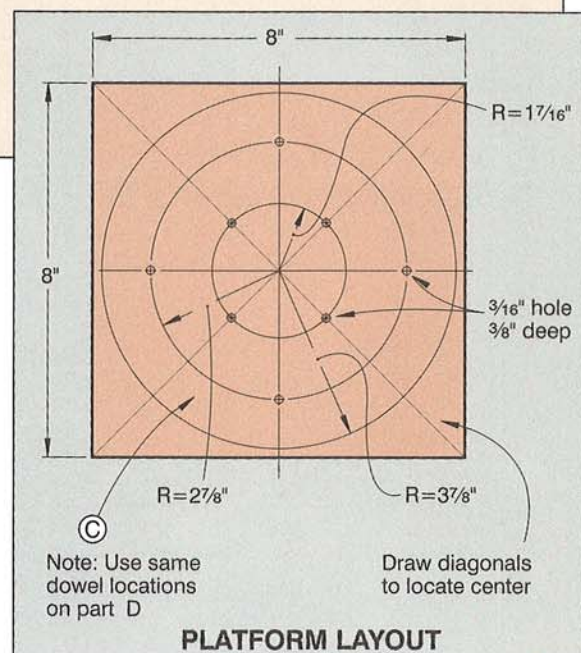
holes and finish-sand the edges. (To sand the bevel, we tilted our sander's table to 45°, repositioned the sanding board and dowel, and then rotated the disc's edge against the sanding belt.)

Your carousel begins to take shape

1 Center the base ring (B) on the base top. If you intend to paint these parts different colors, temporarily tack them together with small brads or hotmelt adhesive at this time. If not, glue and clamp the parts.

2 Following the order shown on the Base Assembly drawing, center and attach the lazy Susan bearing to the base and then to the platform's bottom. See steps 8 and 9 on page 24 for details on how to install a lazy Susan bearing. See the Buying Guide on page 13 for a mail-order source. Now, separate the platform from the lazy Susan and lightly oil the bearing.

3 Remove the winding stem from the music box shaft (turn it counterclockwise). Insert the



movement box in the opening in the base with the shaft pointing up. Now, screw the turntable to the movement's shaft.

4 Make a copy of the horse and the flag patterns on pages 12 and 13. From $\frac{3}{8}$ "-thick stock, rip and crosscut four $2\frac{1}{2}$ "x3" rectangles. Stack the four rectangles together with double-faced tape and adhere the horse pattern to the top piece. Next, extend the hole centerline on the pattern across the top of the pieces. Drill a $\frac{3}{16}$ " hole vertically through the

Continued

Carousel toy

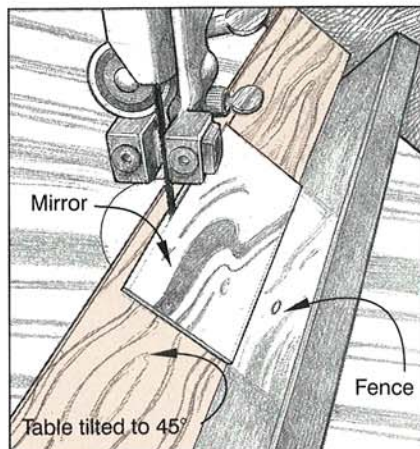
center of each piece on the line. Now, scrollsaw the four horses (H) to shape, and carefully separate them. Sand the cut edges.

5 For the flag (I), rip and cross-cut a piece of $\frac{3}{4}$ " pine to 1×2 ". Adhere the Top View pattern to the top edge of the block. With a try square, transfer the centerline of the $\frac{3}{16}$ " hole from the top down the side. Now, adhere the side pattern to the piece, aligning the hole centerline with the line scribed on the side.

6 Drill the $\frac{3}{16}$ " hole through the flag block. Scrollsaw the flag to shape, first sawing around the outline on the top pattern, and then around the outline of the side pattern. Finish-sand the flag.

7 Rip and crosscut four 2×5 " strips from the mirrored Plexiglas stock. See the Buying Guide. For best results, use a fine-toothed

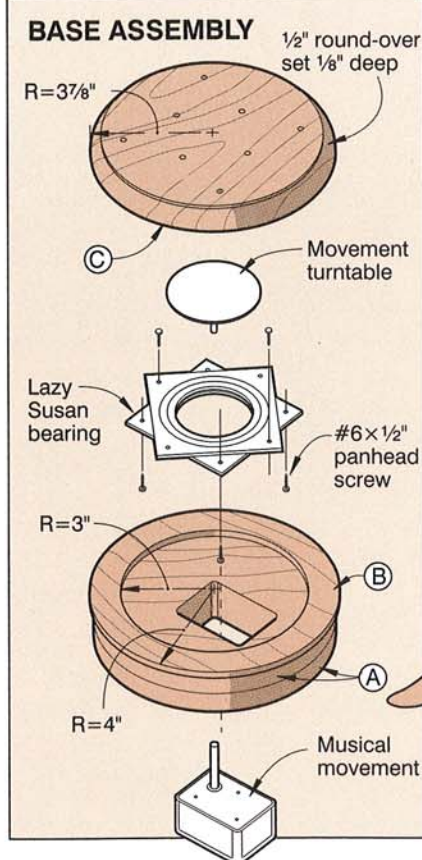
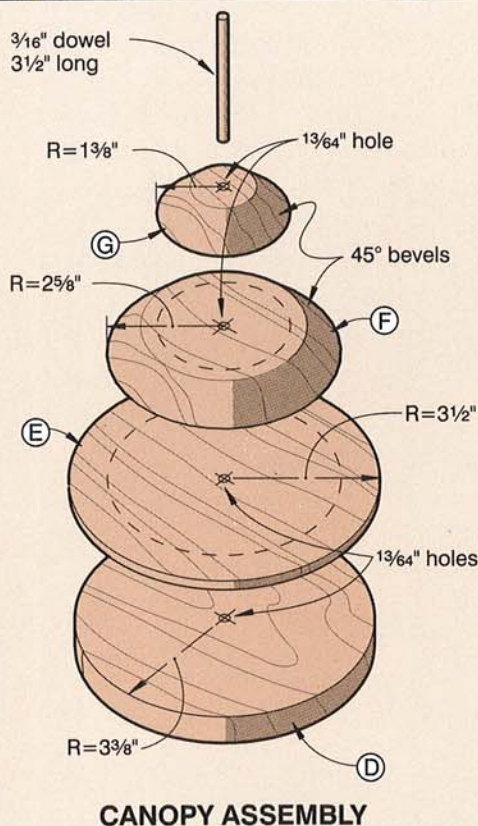
blade, place the Plexiglas on a piece of $\frac{1}{4}$ " plywood, and move the two together like a sliding table so you don't scratch the mirror surface. Next, tilt your band-saw table to 45° , and using a fence, bevel-cut the long edges of each piece as shown *below* to a final



width of $1\frac{7}{8}$ ". File the beveled edges of the Plexiglas.

8 From $\frac{1}{4}$ " scrap wood, cut two $8\frac{1}{8}$ "-square pieces. Sand the corners round. Next, form the four mirror sections into a square around these pieces and hold the mirrors together with rubber bands. Now, carefully remove the wood squares, and run a bead of clear silicone caulk down each mirror joint on the *inside*. Let the caulk set up overnight.

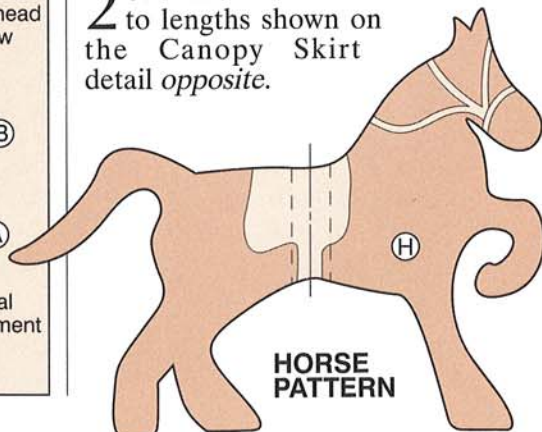
9 Center, and nail or glue one of the wood squares to the platform (C), and one to the underside of the top (D). Be sure to align the corners of each square with the dowel holes. Now, cross-cut eight $5\frac{3}{4}$ " lengths of $\frac{3}{16}$ " dowel, and one $3\frac{3}{4}$ " long. Insert the $5\frac{3}{4}$ " dowels through the horses, and the $3\frac{3}{4}$ " dowel through the hole in the flag.



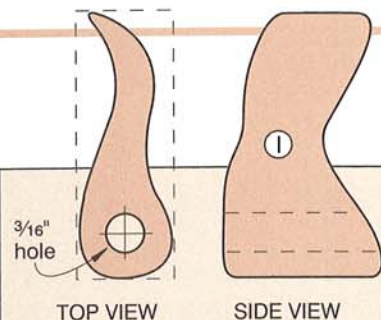
Paint the parts, then assemble the carousel

1 Paint or finish the exposed surfaces of the carousel parts. See the Canopy Color Key *below* the Canopy Skirt detail *opposite* for our color choices, or develop your own scheme. Do not paint surfaces that will be glued. (Our project painter sealed the wood with a water-based varnish first, and then brushed on acrylic paints.) You can buy acrylic paints at better-stocked crafts-supply stores.

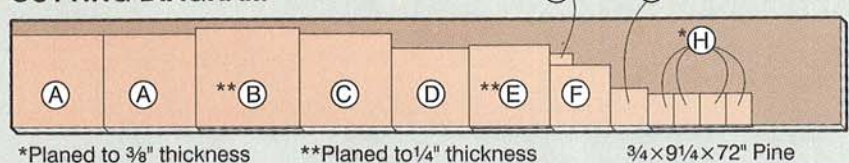
2 Saw the craft sticks to lengths shown on the Canopy Skirt detail *opposite*.



FLAG PATTERN



CUTTING DIAGRAM



BILL OF MATERIALS

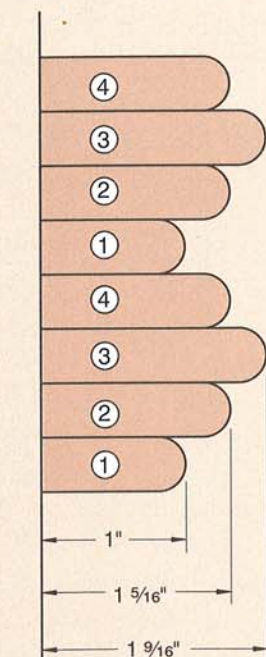
Part	Finished Size			Mati.	Quan.
	T	W	L		
A base	3/4"	7 3/4" dia.		P	2
B ring	1/4"	8" dia.		P	1
C platform	3/4"	7 3/4" dia.		M	1
D canopy base	3/4"	6 3/4" dia.		P	1
E canopy ring	1/4"	7" dia.		P	1
F canopy	3/4"	5 1/4" dia.		P	1
G canopy	3/4"	2 3/4" dia.		P	1
H horse	3/8"	2"	3"	P	4
I flag	3/4"	1"	2"	P	1
J skirt	1/8"	3/8"	*	CS	56

* Cut to lengths shown on Canopy Skirt detail.

Material key: M—maple; P—pine; CS—craft sticks
Supplies: 3/16" dowel, #6 x 1/2" panhead screws, silicone caulk, paint, finish.

Buying Guide

•**Carousel kit.** Includes one 4" lazy Susan bearing, one 18-note musical movement playing "Brahm's Lullaby", one turntable for musical movement, one 6 x 9" sheet of mirrored Plexiglas, and 40—3/8"-wide craft sticks. Order kit no. 9806. Price: \$10.95 per kit plus \$4.95 per order for shipping and handling. Order from: Meisel Hardware Specialties, P.O. Box 70-WEW, Mound, MN 55364-0070.

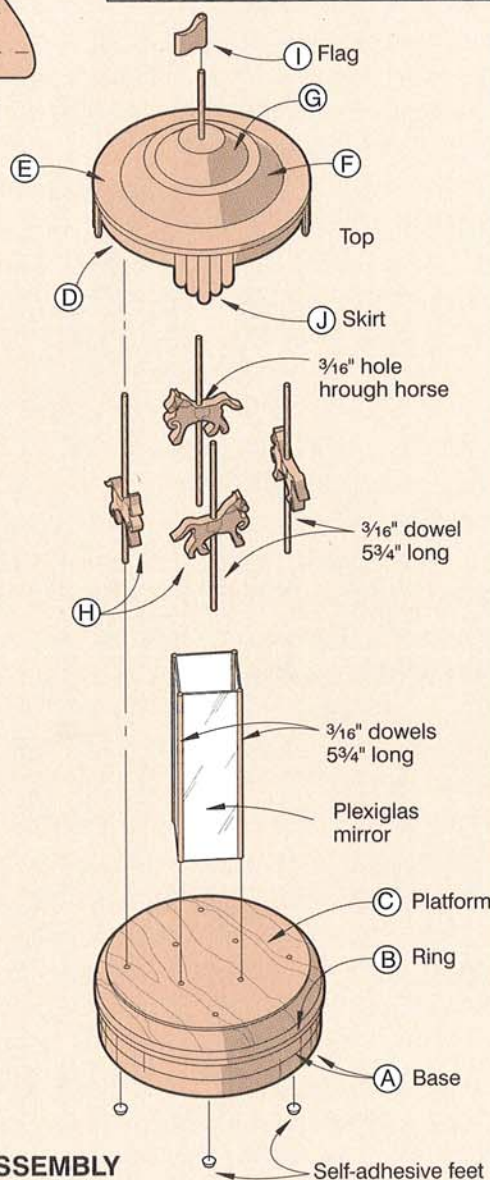


CANOPY SKIRT DETAIL

CANOPY COLOR KEY

1	Pastel Yellow
2	Apricot
3	Turquoise
4	Pink

FINAL ASSEMBLY



3 Glue and clamp canopy parts D, E, F, and G. (We inserted a 4"-long 3/16" dowel through the center hole to align these parts while gluing.)

4 Glue the craft sticks to the edge of D in the order shown on the Canopy Skirt detail above. (We stretched a 1/4"-wide rubber band around the edge of D to hold them in place while the glue set.) Finally, remove the dowel from the center of the canopy.

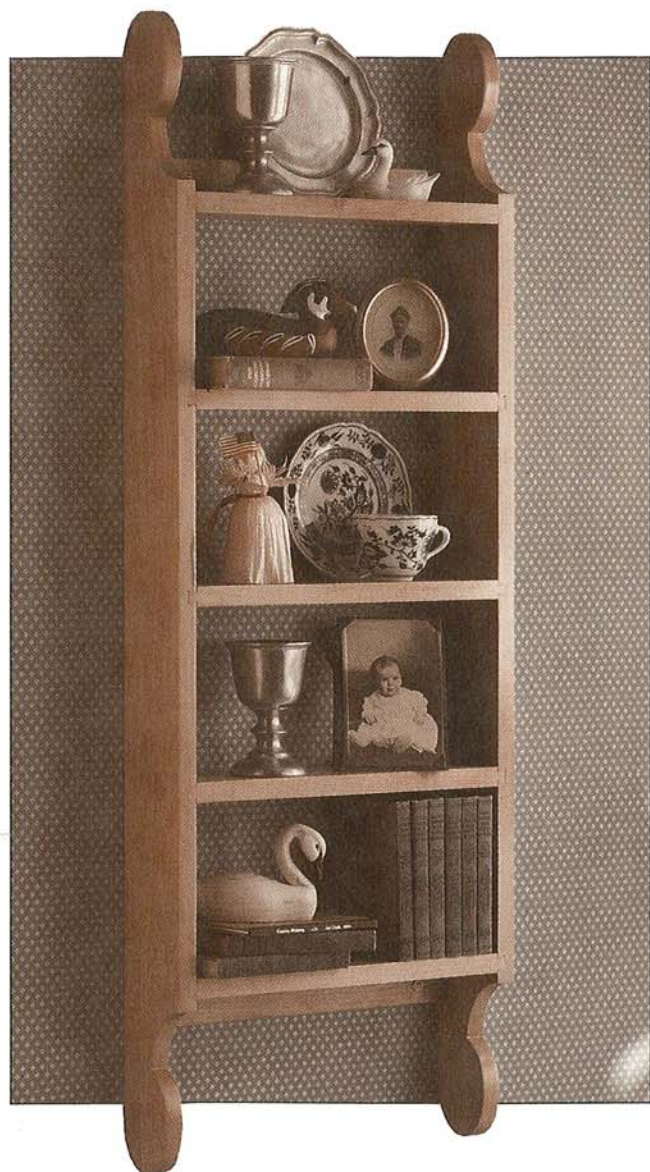
5 Place a bead of silicone sealant on the top of the musical movement turntable. Position the platform (C) on top of the base, turn it over, and using the 1/2" hole in the base, locate the four matching holes in the bearing plate and drive the screws to attach the bearing to your carousel platform.

6 Assemble the carousel by first placing the mirror over the square on the platform. Next, glue the horse dowels in the four outer

holes. Glue the remaining dowels in the holes nearest the center.

7 Lay the canopy upside down on a flat surface, and apply glue in each dowel hole in D. Next, hold the assembly over it, and insert the ends of the dowels into their mating holes. When joined, turn your carousel upright and level the canopy. Adjust the height of each horse and apply glue to the dowels to hold them in place. Glue the flagpole in the top. Adhere four self-adhesive feet to the base.

8 To operate your carousel, turning the platform clockwise winds the movement's spring. Release the platform and your carousel will turn and play as the movement's spring unwinds. ■



EARLY - AMERICAN LADDER SHELF

*Build it one step
at a time*

Climb the ladder of decorating success with a shelf tailor-made to fit narrow spaces. We're confident that someone in your house will find just the right collectibles for each rung... er, shelf.

We'll shape the sides first

1 Select a piece of $\frac{3}{4}$ " stock that's at least 9" wide and 96" long. (We chose cherry wood because we wanted a natural-finished hardwood look. If you prefer to paint your shelf, consider pine or poplar stock.) Belt-sand both faces, graduating from 100- to 120- and finally 150-grit sandpaper. Next, square one edge and one end of the piece, and then crosscut a 44" length from it. See the Cutting diagram *opposite top*.

2 Using the dimensions on the Side View drawing *opposite*, mark the locations for the five shelf slots on one face of the 44"-

long piece. Next, from scrap $\frac{1}{2}$ " particleboard or plywood, make a straightedge to fit over the workpiece as shown *opposite* to guide the router. (We nailed 1x2" cleats onto the underside to help hold our guide square and aligned with the edges of the board.)

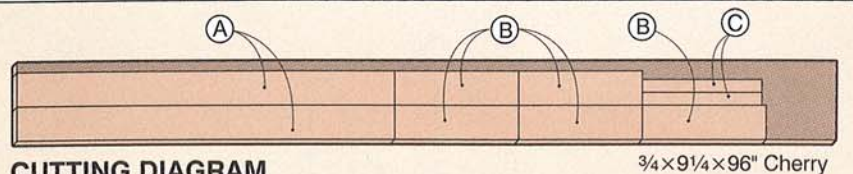
3 Chuck a $\frac{1}{2}$ " dovetail bit into your router, and adjust it to cut a $\frac{3}{8}$ "-deep dovetail slot as shown on the Dovetail Slot drawing *opposite*. Now, make a test-cut in scrap, and determine how far you need to position the straightedge from the center of the cut.

4 To cut the first dovetail slot, position the straightedge you

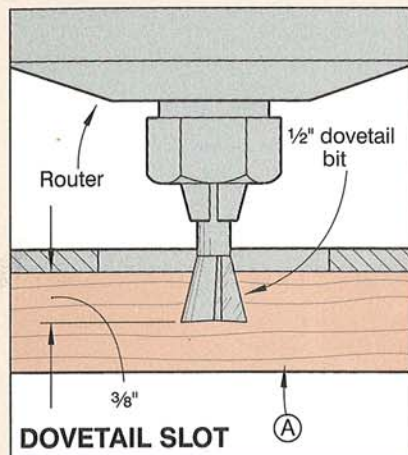
made in Step 2 at the required distance from the dovetail slot centerline, and clamp it in place on the board. (We used scrap pads between the stock and clamps to prevent marring.) Rout the dovetail slot across the width of the piece as shown *opposite*. Repeat the process to cut the other four dovetail slots.

5 Set your tablesaw fence at 4" and rip the two ladder sides (A) from the piece.

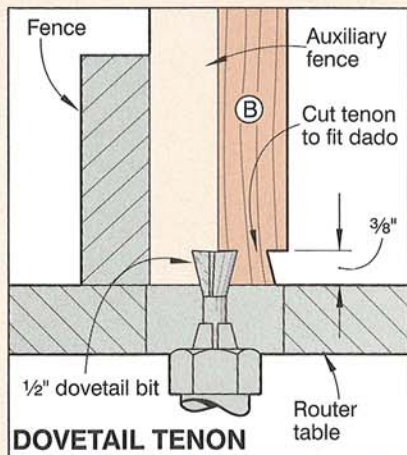
6 Make a copy of the full-sized End pattern on page 17. (We traced ours with transfer paper onto lightweight cardboard.) Cut the pattern to shape. Now, trace



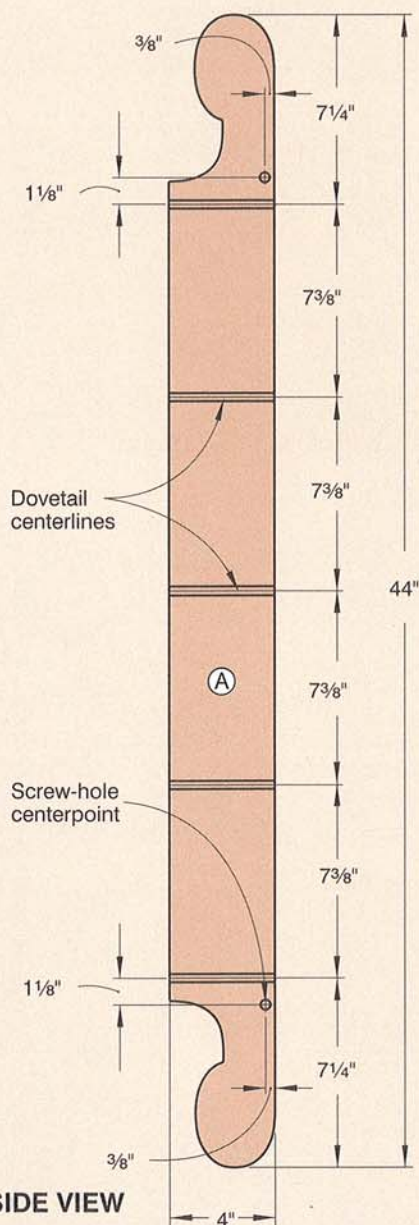
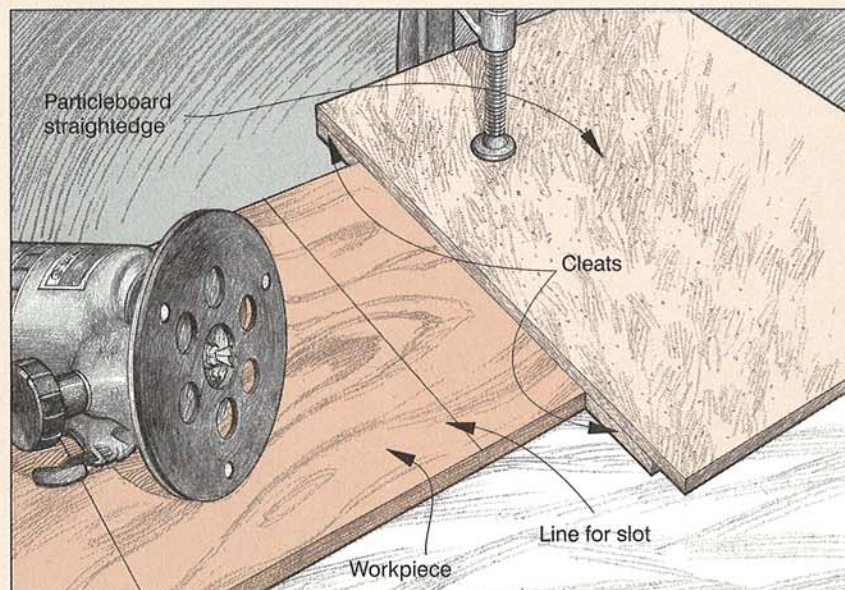
CUTTING DIAGRAM



DOVETAIL SLOT



DOVETAIL TENON



SIDE VIEW

the pattern outline and mark the hole centerpoints on the end of each side piece.

7 Scrollsaw or bandsaw the side ends to shape. (We sawed just outside the line, then sanded to the line. We used a 2" drum sander on our drill press to sand the curved surfaces.)

Let's make the shelves next

1 From the remaining 3/4" cherry, rip and crosscut five pieces to 4 1/2 x 14 3/4" for the shelves (B).

2 Finish-sand the edges. Next, mount your router to your router table. Set up the bit and fence to cut a dovetail tenon on the ends of each shelf as shown on the Dovetail Tenon drawing above. Size the tenon to fit snugly in the dovetail slots you cut into the sides. (We first tested the router setup on same-sized scrap material.) Now, rout the dovetail tenons on the ends of each shelf as shown on page 16. Finally, trim the shelves to 4" wide.

Continued

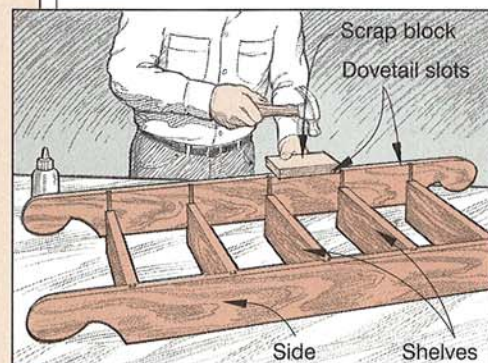
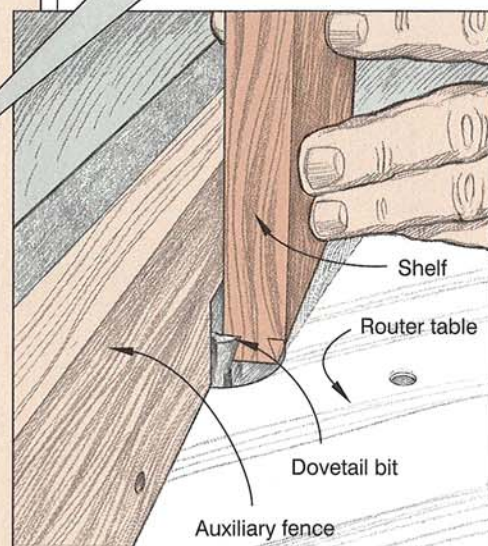
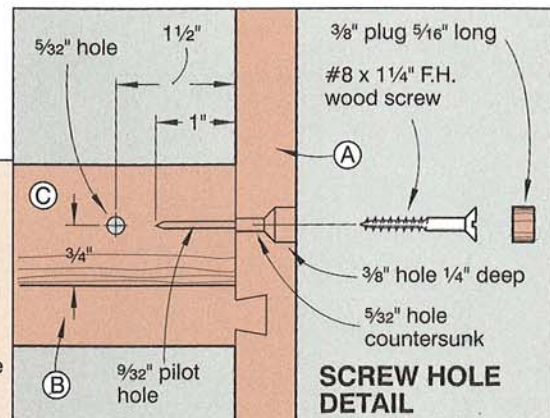
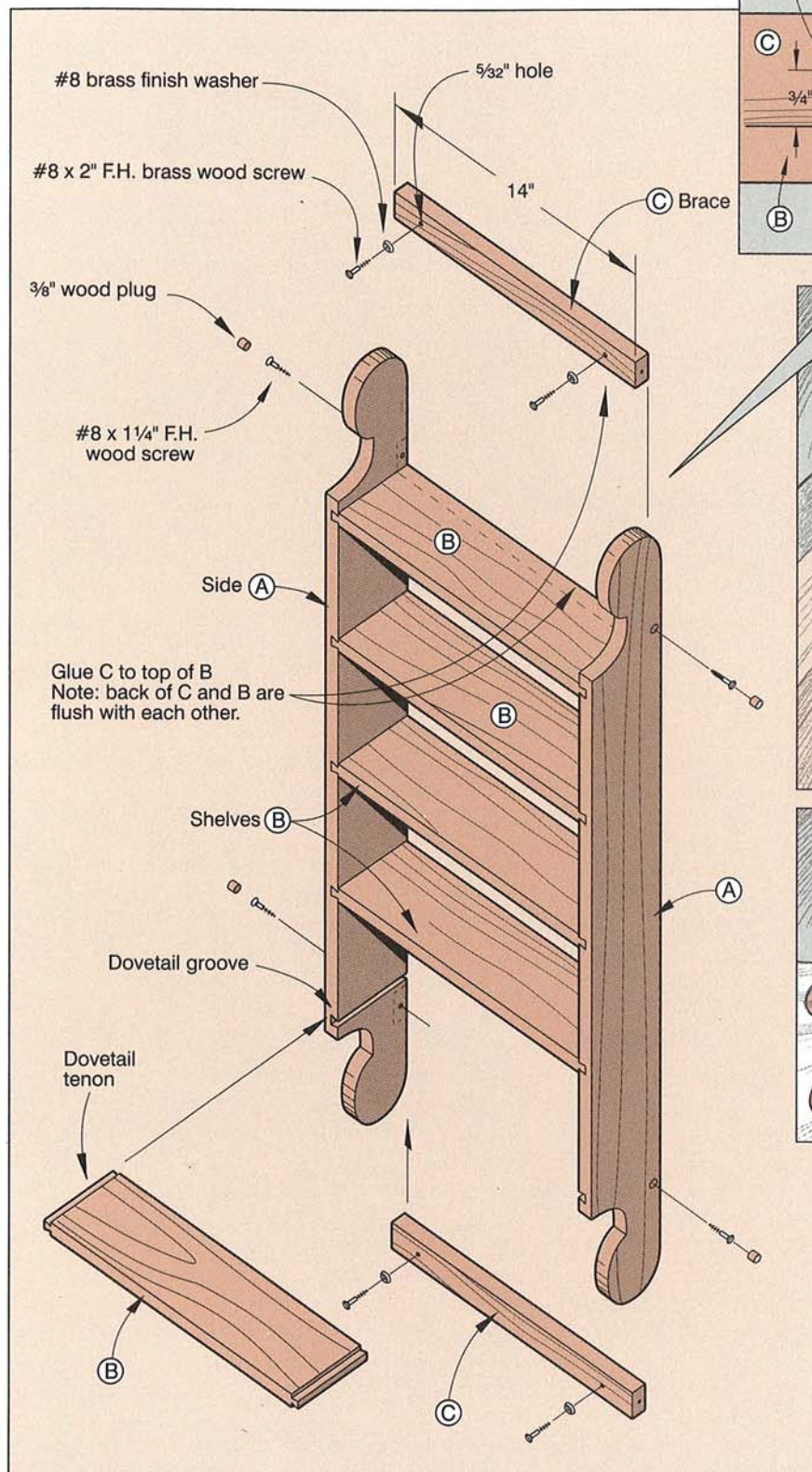
BILL OF MATERIALS

Part	Finished Size			Matl.	Qty.
	T	W	L		
A side	3/4"	4"	44"	C	2
B shelf	3/4"	4"	14 3/4"	C	5
C brace	3/4"	1 1/2"	14"	C	2

Material key: C-cherry

Supplies: Finish, #8x1" flathead wood screws, #8x2" roundhead brass screws, #8 brass finish washers.

Ladder shelf



Note: If you'd like to display plates on the ladder shelf, rout or dado 3/8 x 1/4" grooves into the tops of the shelves at this time. Adjust spacing between the edge and groove to fit the size of plates you'll display.

3 Locate the centerpoints for the screw holes you marked on the ends of each side earlier. Drill and counterbore these four holes as shown on the Screw Hole detail

associated with the Exploded View drawing *opposite*.

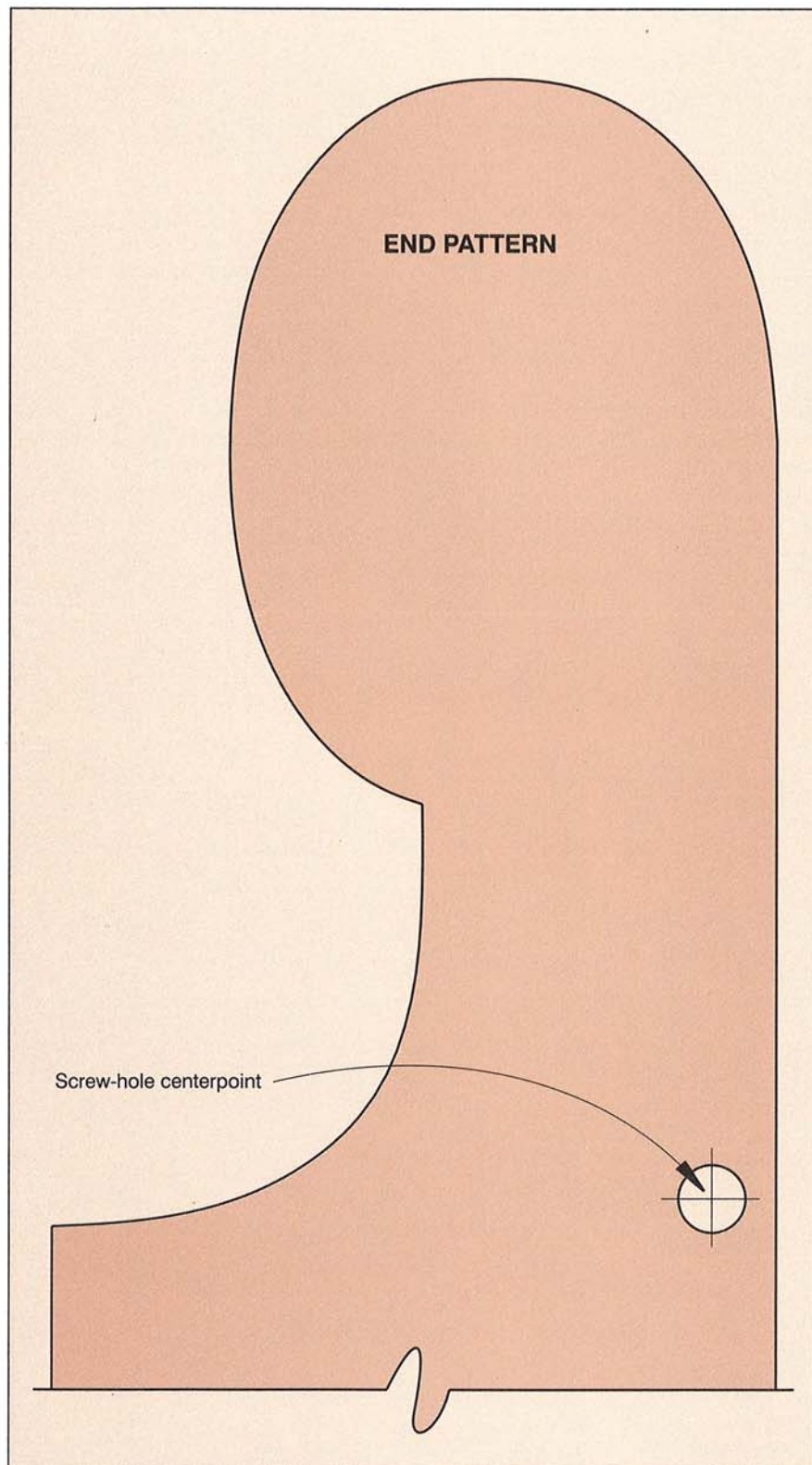
4 Working first on one side, apply yellow woodworker's glue in the dovetail slots, and then insert the dovetail tenon of each shelf in a slot. Next, apply glue in the slots of the second side, and start the shelf tenons in the slots. Now, as shown *lower left*, drive that side onto the shelf tenons. Align the shelves and sides. Clamp lightly and wipe off glue squeeze-out with a damp cloth. Check your assembly for square and adjust the clamps if necessary.

5 Rip and crosscut two $\frac{3}{4} \times 1\frac{1}{2}$ " cherry pieces for the backs (C) to fit between the sides. Locate and drill the $\frac{5}{32}$ "-mounting holes near the ends of both where shown on the Screw Hole detail. Finish-sand the pieces. Next, glue and screw both backs to the shelf where shown on the Exploded View, using #8 $\times$ 1 $\frac{1}{2}$ " flathead wood screws. Wipe off glue squeeze-out with a damp cloth. Using a $\frac{3}{8}$ " plug cutter, cut four plugs from cherry scrap. Glue one into each screw hole. Using 180-grit sandpaper, sand the plugs flush with the sides. Now, finish-sand the entire piece.

The final steps

1 Apply the finish of your choice. (We wanted a natural cherry look, so we left the wood unstained. First, we applied two coats of water-based sanding sealer, and then two coats of water-based satin lacquer, sanding with 220-grit sandpaper after each coat dried thoroughly.)

2 Attach the shelf to your wall as detailed on the Exploded View drawing with #8 $\times$ 2" roundhead brass screws and brass finish washers. If possible, position the shelf so you can drive at least one pair of screws into wall studs. If you can't, use wall anchors. ■



Hark, the Herald Critters Sing!

They're not the Kingston Trio, but these carolers will be a howling success when you prop them up in your front yard. Painting got you worried? No problem—it's as simple as a coloring book, only bigger.

Cut out the plywood and get primed for some fun

1 Transfer the pattern outlines onto a 4x4" sheet of 1/2" MDO plywood. (We placed a length of transfer paper between the pattern and the plywood, and using a ball-point pen, traced the pattern onto the plywood. The waxless and greaseless lines of transfer paper don't smudge like most carbon paper. Crafts and art-supply stores usually stock this material in rolls, as do many mail-order firms. You also may use a dressmaker's tracing wheel to mark the lines.)

2 Using an electric hand saber-saw equipped with a plywood-cutting blade, saw out the large body and the two tails. (We sup-

ported our plywood on two sawhorses.) Before making the two inside cuts, drill 1/2" blade start holes inside the areas.

3 From plywood scrap, cut two 2x12" cleats. Using #6x3/4" flathead wood screws, attach one cleat to each tail, and then attach them in place on the sides of each cat where indicated.

4 Fill any voids in the edges with wood putty. Next, paint the back and edges with two coats of exterior black paint. When dry, apply two coats of flat white exterior paint to the front surface. (Because of MDO's smooth surface, we roughed up the faces with 120-grit sandpaper before applying our first paint coat.)

A word about materials, brushes, decorative painting, and patterns

We painted this project on 1/2" medium-density overlay (MDO) plywood because of its exceptionally smooth surface and its well-deserved reputation among sign painters for withstanding winter's elements. What makes MDO different? A fiberlike paper treated with resin protects both surfaces. Many lumberyards stock MDO in 4x8 sheets and sell it for about \$42. You may also find Medex, a vinyl-coated plywood selling for about \$32, in some parts of the country. If you choose less expensive exterior plywood, you'll have to spend more time preparing the surface.

For the decorative painting, we chose acrylic paints, available from crafts stores and some hardware and variety stores. Our paint names correspond to Ceramcoat by Delta colors; you may need your retailer's color conversion chart to find names for similar colors sold by other paint manufacturers. To simplify the project, we stuck to basic "color book painting"—no shadows or highlights. For good coverage you may have to apply two or more coats of paint. However, because acrylic paints dry in about 20 minutes, you can move right along. Just keep in mind that the paints will dry quickly in the brush, too. So, wash your brushes frequently.

We used three brushes for this project: a 1"-wide flat brush for large areas such as the jackets, a #7 round brush for painting smaller areas and to bring paint right up to the edge, and a #3 brush for details such as the holly leaves. So, it wouldn't be unusual for you to use two brushes to paint some of the areas.

A Sanford Sharpie marker or Speedball acrylic Painter marker works great for the black lines that outline the clothing and animals.

Because of the ornament size, we can't present a full-sized pattern in the magazine, but please refer to the gridded pattern on page 19. If you'd like a full-sized pattern, send \$3.95 ppd. to:

Holiday Trio
Dept. WWP-HT
P.O. Box 9255
Des Moines, IA 50306

5 After these paints have dried, position the patterns on the cutout. Using the same technique described in Step 1, transfer all of the pattern details onto the cutout.

Begin with the ginger cat

Face: Paint White. Add Black whisker dots, muzzle, and eyes. Paint tongue Lisa Pink. Highlight nose with White.

Fur, paws: Orange with Burnt Sienna stripes.

Ears: Burnt Sienna with Lisa Pink inside.

Jacket: Kelly Green.

Pants: Forest Green.

Scarf: Kelly Green, Yellow stripes.

Shoes: Raw Sienna with Burnt Sienna soles.

Song book: White with Kelly Green leaves. Naphthol Red Light poinsettia and Yellow berries.

It's the dog's turn next

Face: White with Red Iron Oxide spot. Paint whisker dots, muzzle, and eyes Black. Add Lisa Pink tongue and White nose highlight.

Ears, paws: Red Iron Oxide.

Turtle neck: Mix Colonial Blue and White 1:1. Add stripes with technical pen or marker.

Jacket: Laguna with Yellow buttons.

Pants: Mix Colonial Blue and Prussian Blue 1:1.

Shoes, songbook: See ginger cat.

Now, the gray tabby sings

Face: As previously painted.

Fur: Hippo Gray with Black stripes.

Ears: Black with Lisa Pink inside.

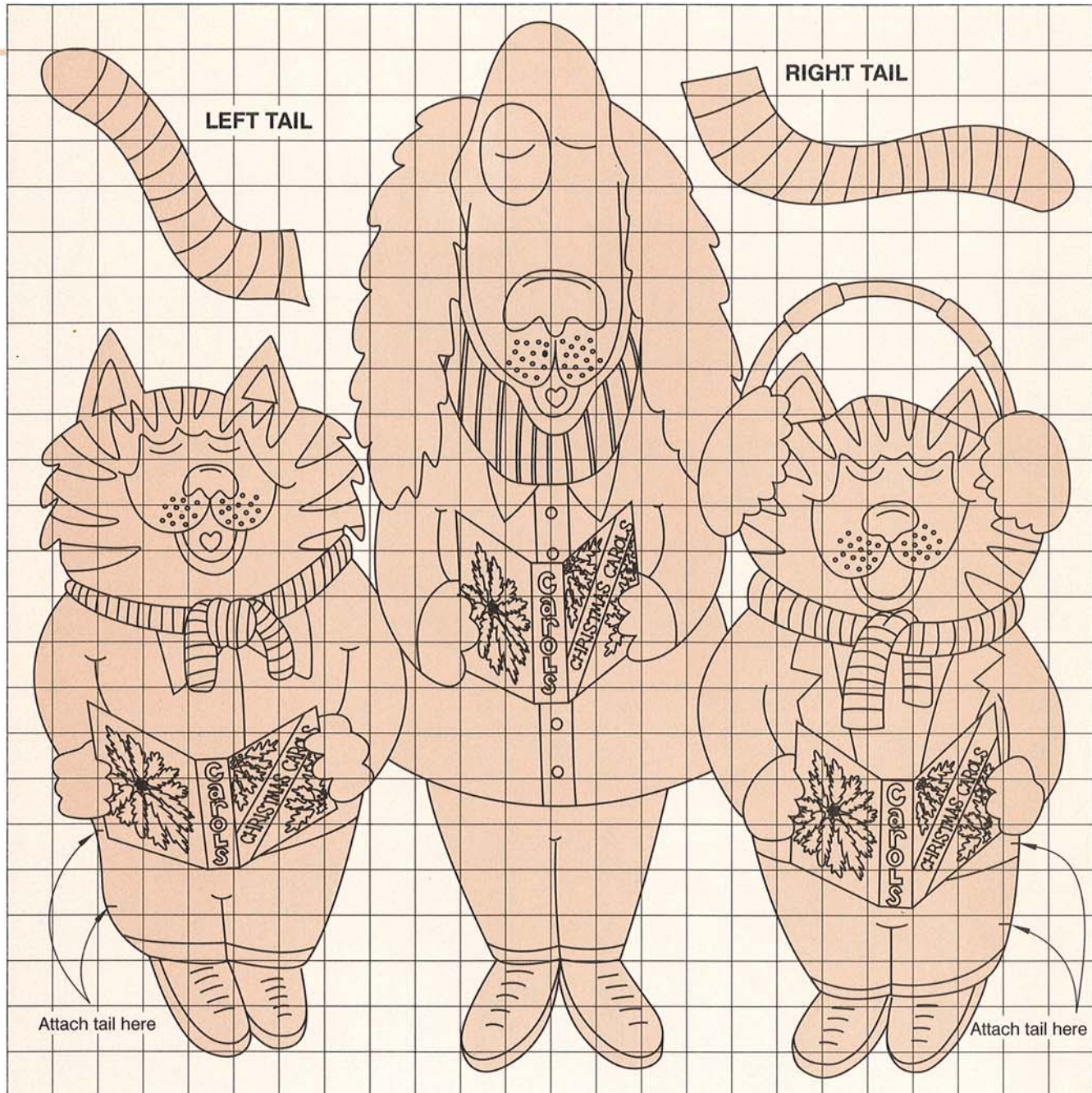
Sweater: Lisa Pink.

Jacket: Vintage Wine.

Pants: Liberty Blue and Lisa Pink mixed 1:1.

Scarf, ear muffs: Lilac Dusk with Vintage Wine stripes on scarf. Raw Sienna metal bands with Burnt Sienna adjusters.

Shoes, songbook: See ginger cat.



Each square = 2"

Just a few finishing touches left

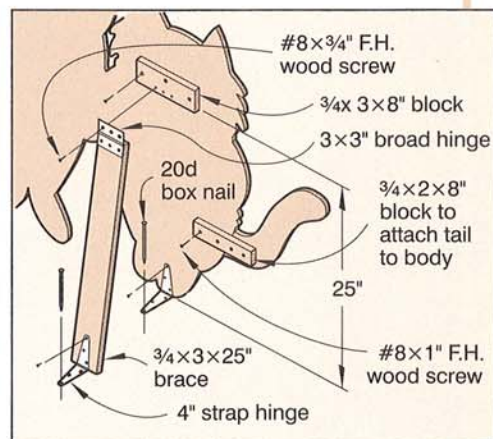
1 Using the cover photo and your pattern as a guide, apply the black outlines and markings with a Sanford Sharpie marker, a Speedball acrylic Painter marker, or similar black marker. Touch up the black-painted edge of the cutout as necessary.

2 After the paint dries, lightly sand the surface with a Kraft paper sack to remove the fuzz raised by the acrylic paint. Next, apply two protective coats of

clear, exterior grade polyurethane. Let the finish dry thoroughly between coats.

3 With glue and screws, attach the 1x3" pine or plywood scrap braces to the back of the ornament as shown at *right*. Rip and crosscut two 3x25" braces and hinge them to the cleats. Attach the strap hinges where shown.

4 To anchor the ornament in your yard, fold back the support braces and drive 20-penny nails through the holes in the hinges and into the ground. ■





KITCHEN COLLECTION

Laminate three favorite domestic hardwoods into a kitchen quartet

Let's begin with the salt and pepper shakers

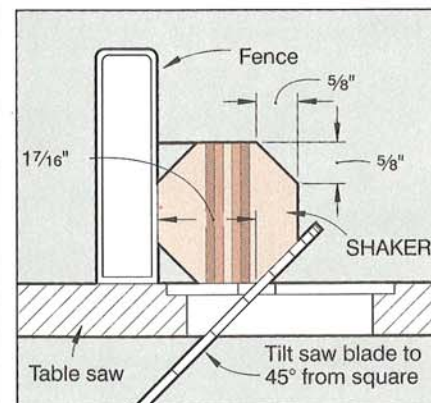
1 Rip two pieces of $\frac{3}{4}$ " maple to $2\frac{1}{4}$ " wide and 12" long. Next, plane or resaw two pieces of cherry, two pieces of walnut, and one piece of maple to $\frac{1}{8} \times 2\frac{1}{4} \times 12$ ".

2 Lay out the pieces in the order shown on the Shaker Lamination drawing *opposite*. Glue and clamp the lamination. After the glue dries, remove the clamps, and then plane or resaw the lamination to 2×2 " thick as shown. Now, finish-sand the lamination.

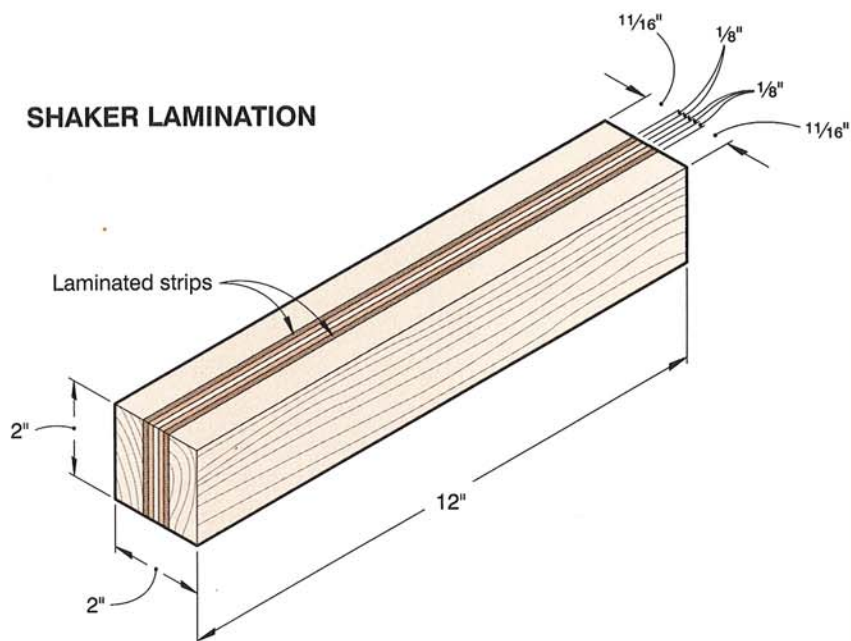
3 Set up your tablesaw as shown *below*. Now, bevel-rip the four corners of the lamination to form an eight-sided blank.

4 Set your tablesaw blade perpendicular to the table and adjust your miter gauge to 90° . Crosscut one end of the blank to square it, and then crosscut two $4\frac{3}{4}$ "-long pieces from it.

5 Draw diagonal lines to find the center on both ends of each blank. Next, using your drill press, bore out the inside of both shaker blanks as detailed on the three-step Shaker Section View drawing *opposite top*. (We secured each blank, bottom end up, in a hand-screw clamp, and squared it perpendicular to the table. Next, we centered the bit [see drawing for bits used] on the centerpoint, and then fastened the clamp hold-



SHAKER LAMINATION



ing the blank to the drill-press table with another clamp.)

6 After boring the insides, turn the shakers over, and with a 1/16" bit, drill four holes in the end of the pepper shaker and five in the salt shaker as shown on the Hole detail *lower right*. Use the diagonal lines to locate the holes.

7 Mount a 1/4" round-over bit in your table-mounted router and round over the top edges. Now, finish-sand all shaker edges with 220-grit sandpaper.

8 Apply the finish of your choice. (We applied two coats of sanding sealer and followed with two coats of clear polyurethane to the outer surfaces, sanding with 320-grit sandpaper. To the inside surface, we applied two coats of Behlen's Salad Bowl Finish.) Insert #12 cork stoppers; you can buy them at most hardware stores.

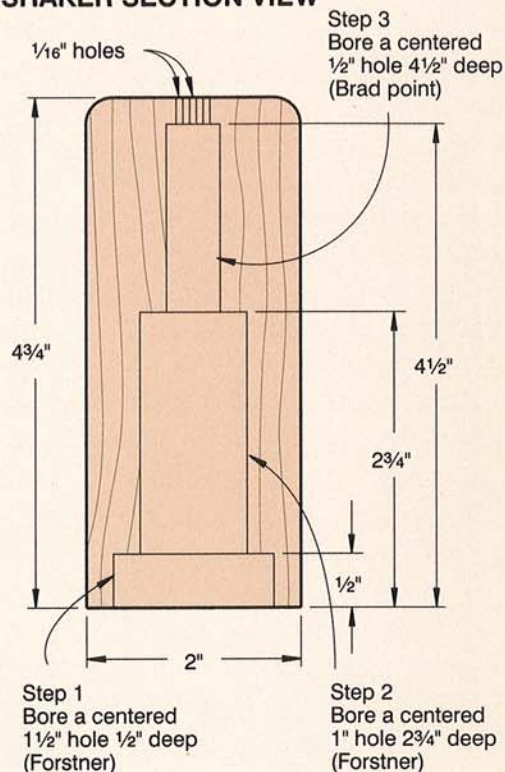
Supplies: Finish and #12 corks.

Try the napkin holder next

1 Using 13"-long pieces of 3/8"-thick stock, rip the seven strips to make up the lamination shown

Continued

SHAKER SECTION VIEW



Laminated wood strips

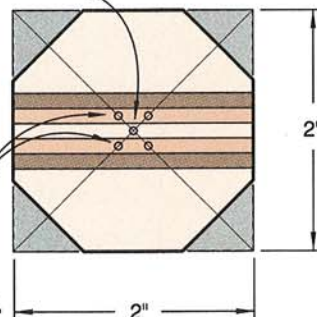
Round over top edge

#12 Cork

Note: Center hole only on salt shaker

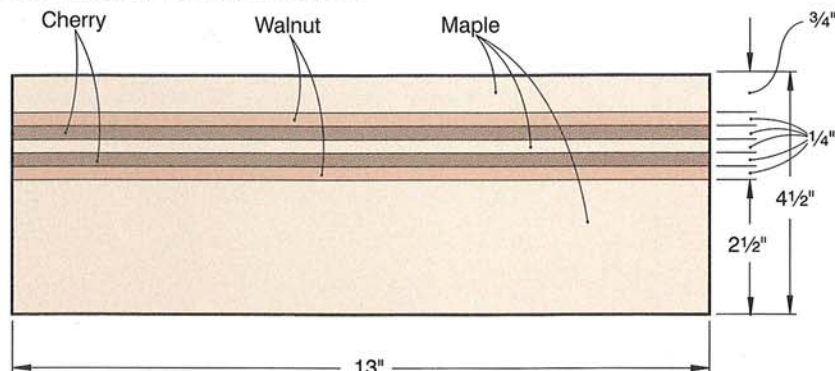
1/16" holes

HOLE DETAIL



Kitchen collection

NAPKIN HOLDER LAMINATION

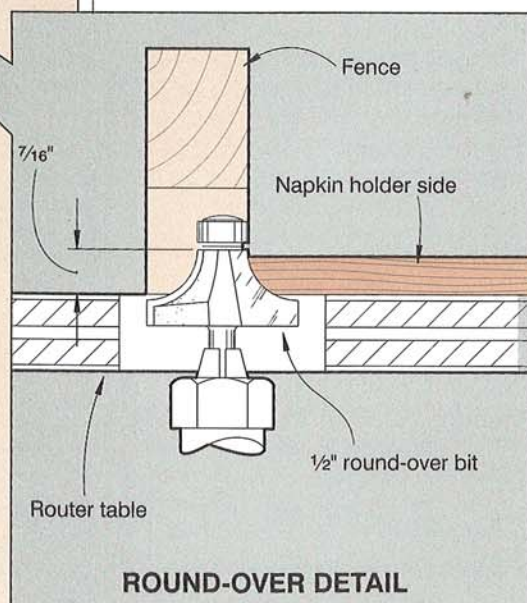
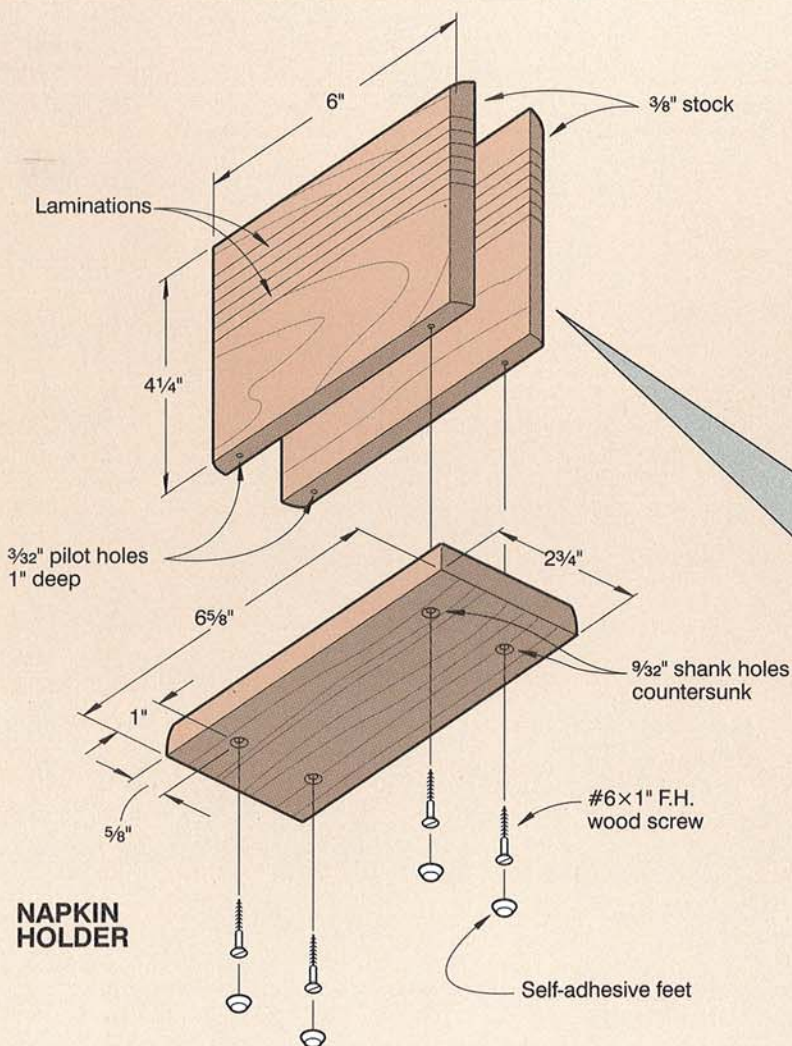


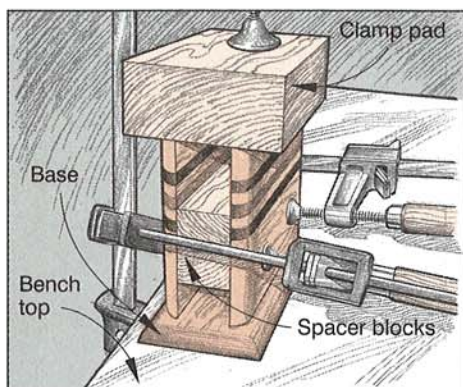
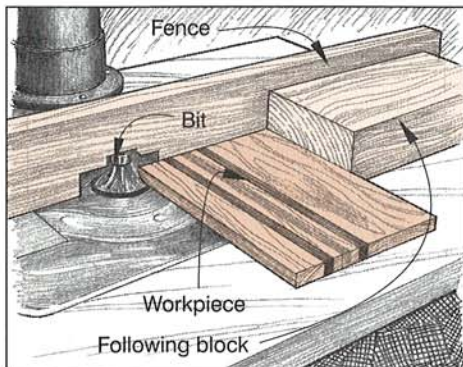
on the Napkin Holder Lamination drawing at *left*. Edge-glue the strips in the order shown, aligning the ends. Clamp the lamination and let the glue cure.

2 Scrape off glue squeeze-out and belt-sand both lamination sides. Now, square the bottom edge and one end, and then rip and crosscut two $4\frac{1}{4} \times 6$ " sides from the lamination.

3 For the base, rip and crosscut a $2\frac{3}{4} \times 6\frac{5}{8}$ " piece from $\frac{1}{2}$ "-thick maple. Using the dimensions on the Napkin Holder drawing *lower left*, mark centerpoints for the screw holes on the base. Now, drill and countersink these holes as dimensioned on the drawing.

4 Chuck a $\frac{1}{2}$ " round-over bit into your table-mounted router. Adjust bit height and set the fence as shown on the Round-Over detail *below*. Next, rout along the outside top and ends of both side pieces and around the top edges on the base. (As shown *top right*, we used a following block to guide the pieces past the bit and to prevent chip-out on the ends.) Sand all of the routed edges.





5 Make two $1\frac{1}{8} \times 6$ " spacer blocks from scrap and place them between the sides. Now, align and dry-clamp the sides. Apply glue to the lamination bottoms, center them on the base, and then clamp as shown above.

6 After the glue has cured, remove the top clamp and place the assembly upside down in your vise. Next, using the holes already drilled in the base, drill $\frac{3}{32}$ " pilot holes 1" into the sides. Now, drive #6 $\times$ 1" flathead wood screws through these holes in the bottom and into the sides.

7 Apply the finish of your choice. (We brushed on two coats of sanding sealer followed by two coats of polyurethane, and sanded with 320-grit sandpaper between coats.) After sanding the last coat, adhere the self-adhesive feet to the base where shown.

Supplies: #6 $\times$ 1" flathead wood screws, finish, self-adhesive feet.

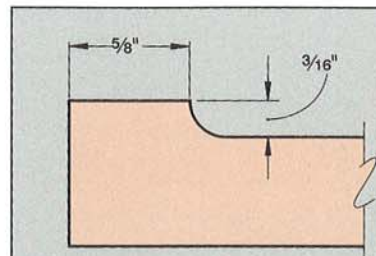


PLATE PROFILE

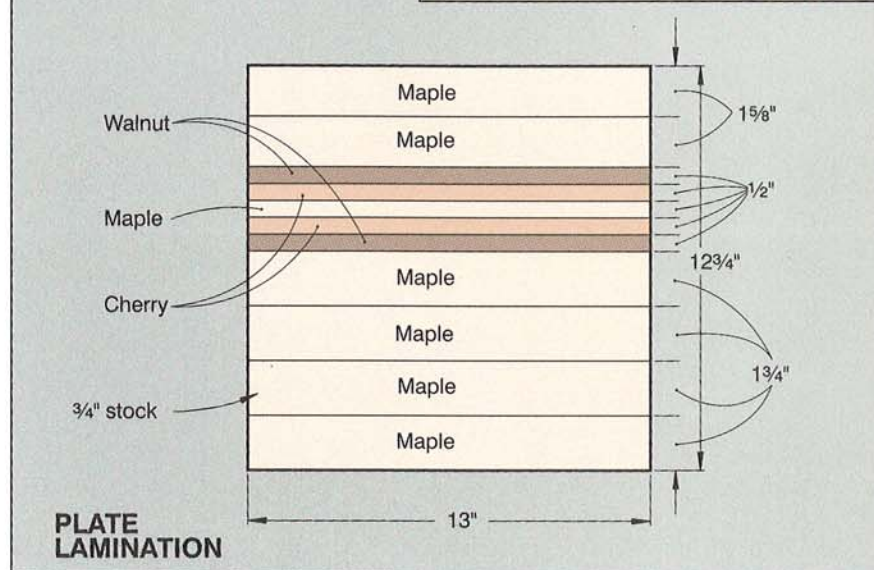
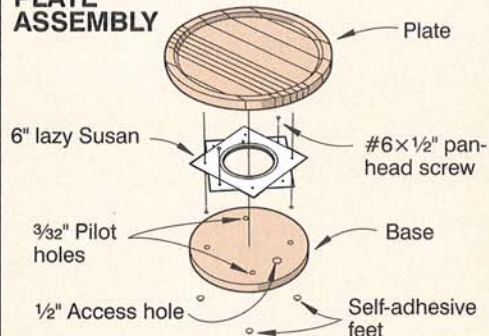


PLATE LAMINATION

PLATE ASSEMBLY



A lazy Susan tray adds a nice touch to any table

1 For the plate lamination, rip and crosscut four 13"-long strips of $\frac{3}{4}$ "-thick maple to $1\frac{3}{4}$ " wide, and two to $1\frac{5}{8}$ " wide. From 13"-long pieces of $\frac{3}{4}$ "-thick stock, cut two strips of cherry, two walnut, and one maple to $\frac{1}{2}$ " wide. Now, laminate the strips in the order shown on the Plate Lamination drawing above. Align the ends and clamp as shown on page 24 to ensure a flat plate.

2 When the glue has cured, remove the clamps, scrape off glue squeeze-out, and sand one face flush.

3 Draw diagonal lines from the corners to mark the center of the lamination. Using a compass,

scribe a 3"-radius (6" diameter) and a 6"-radius (12" diameter) circle on the bottom face. Bandsaw the blank round, sawing outside your disc's 12"-diameter line.

4 Cut a 6"-diameter disc from $\frac{3}{4}$ " scrap plywood and screw it to a 6" faceplate. Center and glue the 12"-diameter blank (bottom) to the plywood faceplate. (We used gap-filling cyanoacrylate glue.)

5 Using a 1" gouge, turn the 12" plate round. Switch to a $\frac{1}{2}$ " or 1" roundnose scraper, and taking thin cuts, turn the face of the plate to the shape as detailed on the Plate Profile drawing above. With the plate still mounted on the lathe, finish-sand the rim and your plate's face smooth using 180-, 220-, and 320-grit sandpaper.

Continued

Kitchen collection

6 Using a chisel and mallet, separate the plate from the plywood faceplate. Next, finish-sand the bottom but do not lose the centerpoint. (We deepened it with a small nail.)

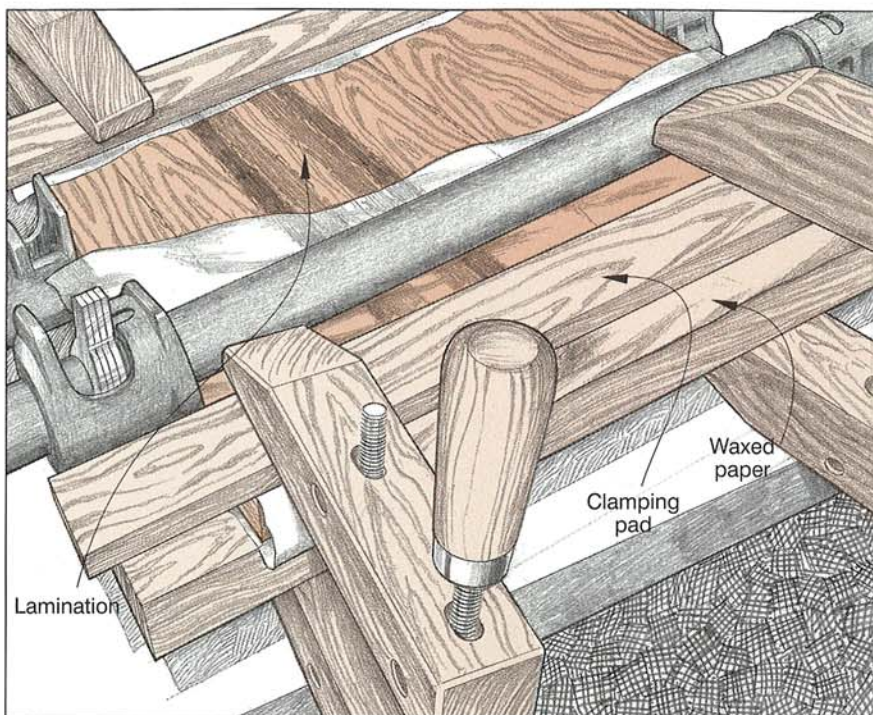
7 For the lazy Susan base, edge-join enough $\frac{3}{4}$ "-thick maple to make a 10" square. Glue and clamp the blank. Next, draw diagonal lines to find the blank's center, scribe a $4\frac{1}{2}$ "-radius (9" diameter) circle, and bandsaw it round, cutting just outside the line. Finish-sand.

8 Place the 6" lazy Susan bearing on the base top. You can buy bearings at many hardware and building-supply stores. Align the corners of the bearing with those diagonal lines, centering it from corner to edge. Mount the bearing to the base. (We drove #6 $\times$ $\frac{1}{2}$ " panhead screws at the corners.) Now, swivel the bearing top plate 90° and poke a pencil or awl through one of the mounting holes to mark its centerpoint. Bore a $\frac{1}{2}$ "-diameter access hole through the base at this centerpoint.

9 Center the base and bearing assembly on the plate bottom. (We scribed a 9" circle on the bottom, then centered the base over it.) Working through the $\frac{1}{2}$ " access hole in the base, drive a #6 $\times$ $\frac{1}{2}$ " panhead screw through each hole in the steel bearing and into the plate bottom. (We used our magnetic screwdriver extension to hold the screws on the tip.)

10 Disassemble and finish-sand all parts. Apply the finish. (We applied two coats of sanding sealer and two coats of clear polyurethane, sanding after each coat dried with 320-grit sandpaper.) Assemble the lazy Susan tray and adhere four self-adhesive feet to the bottom of the base.

Supplies: 6" lazy Susan bearing, #6 $\times$ $\frac{1}{2}$ " panhead screws, finish, and self-adhesive feet.



Every kitchen needs a knife block

1 From a 60" length of $1\frac{1}{16}$ "-thick maple, rip a 3"-wide strip. From this, crosscut five $11\frac{7}{8}$ "-long pieces. Now, plane or resaw the pieces to 1" thick.

Note: Our block will accommodate knives with blades measuring up to 10" long. If you have longer-bladed knives, please increase the length of your block accordingly.

2 Plane or resaw two pieces of walnut, two pieces of cherry, and one piece of maple to $\frac{3}{8}$ " thick. Now, rip and crosscut each piece 3" wide and $11\frac{7}{8}$ " long.

3 Number and arrange the strips in the order shown on the Knife Block Top View drawing opposite. Next, mount a $\frac{5}{8}$ " dado to your tablesaw. Cut a $\frac{5}{8}\times\frac{5}{8}$ " groove centered the length of Segment 1. Now, use the dimensions on the Knife Block Top View drawing to dado the grooves where detailed in segments 4, 7, 8, 9, and 10. Sand the grooves.

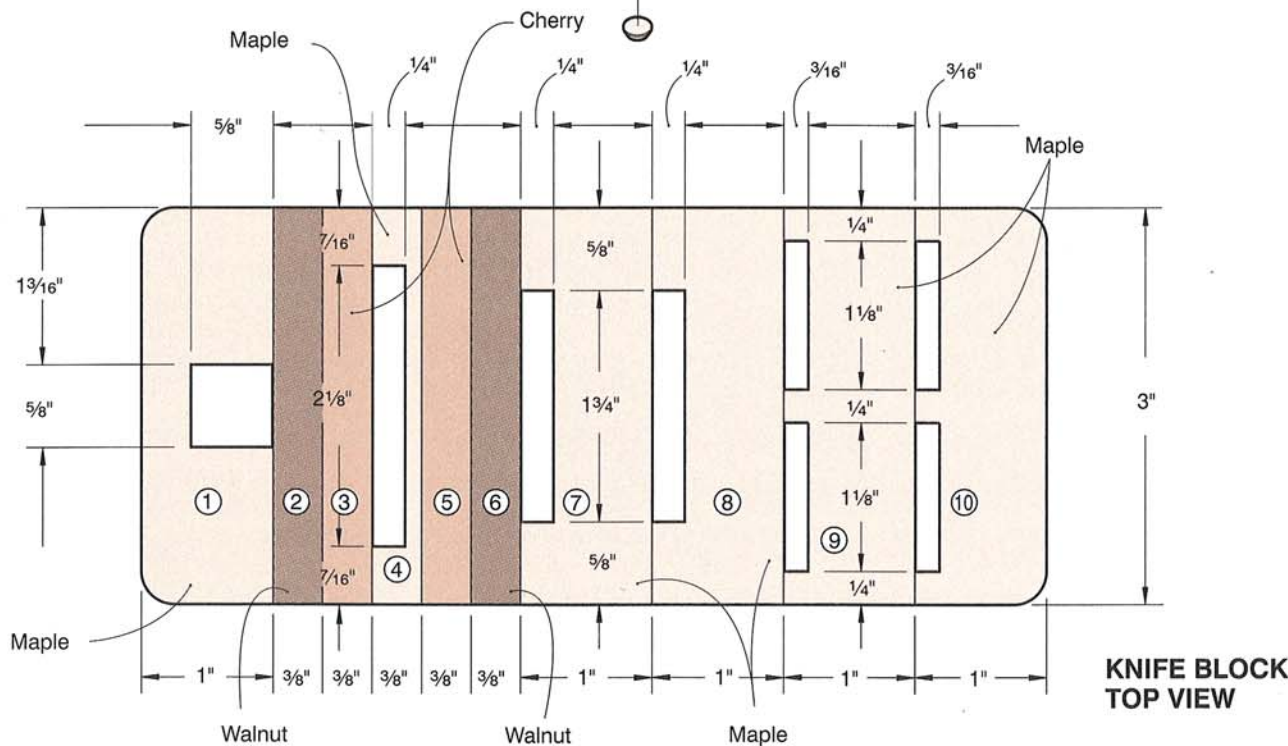
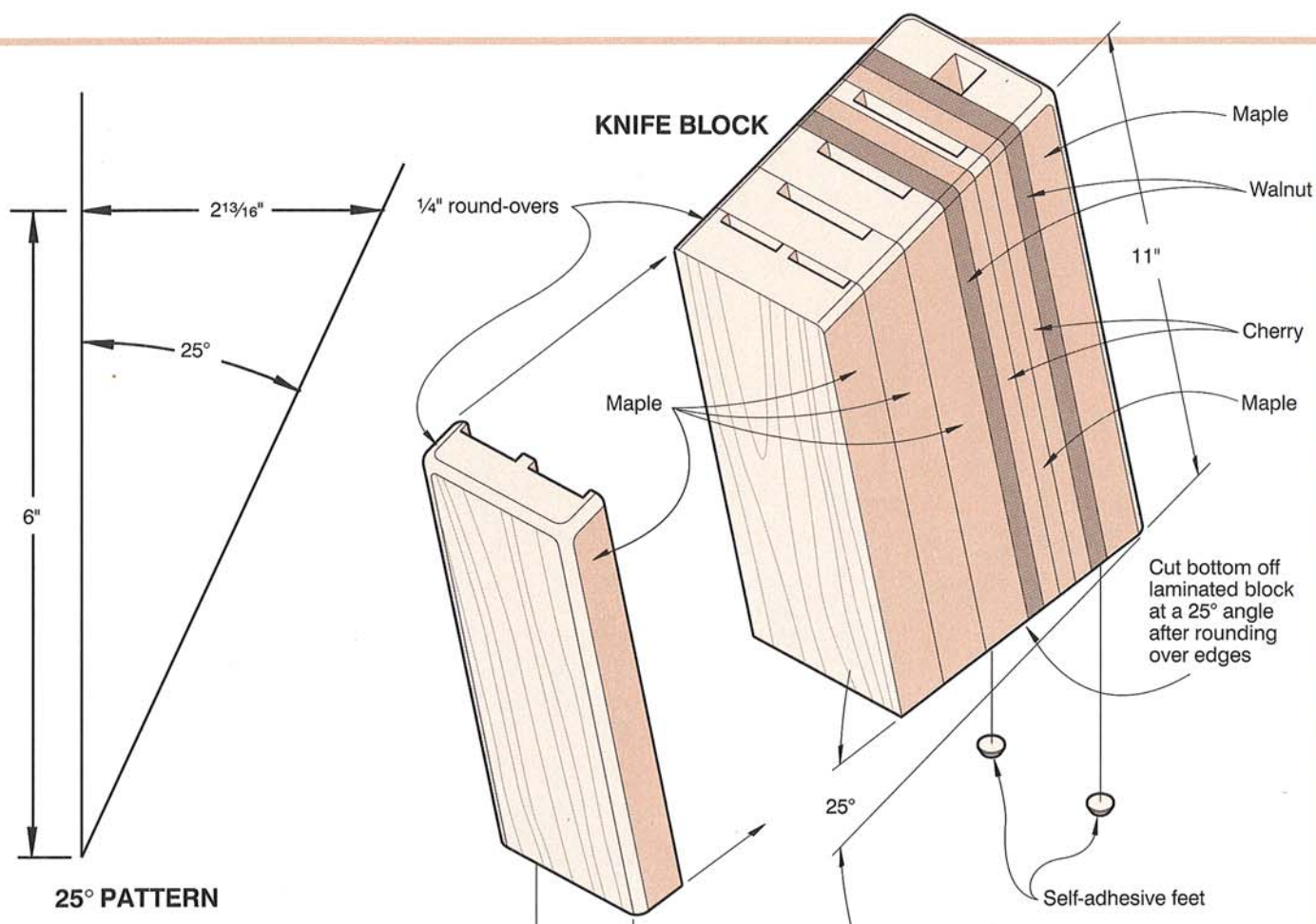
4 Line up the pieces in numerical order. Apply glue sparingly to all mating surfaces to avoid excessive squeeze-out. Align the pieces, and then clamp the block.

5 After the glue cures, remove the clamps and scrape off any glue squeeze-out. Finish-sand all surfaces, and then trim the top square. Using a $\frac{1}{4}$ " round-over bit, round over all edges of the block except along the bottom.

6 Make a pattern from the 25° drawing opposite, and use it to mark the angle on the block as shown on the Knife Block drawing. Make this cut on your bandsaw. Finish-sand the sawed surface with 220-grit sandpaper.

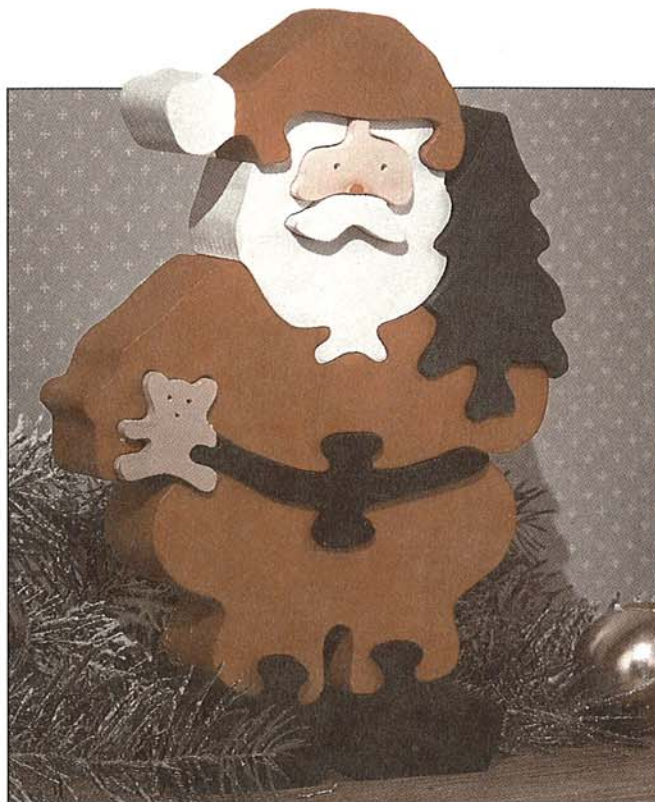
7 Apply the finish of your choice. (We applied two coats of sanding sealer followed by two coats of clear polyurethane, and sanded with 320-grit sandpaper between coats.) Finally, adhere four self-adhesive feet to the bottom.

Supplies: Finish and four self-adhesive feet. ■



2x8 and great TREE-TOTING SANTA

Here's a holiday suggestion. We know you can saw out Ol' St. Nick in the blink of an eye and get him decked out in a red suit in a jiffy. But wouldn't it be even more fun if a favorite youngster joined you for an afternoon project? Santa's easy painting scheme practically guarantees success for young and old.



Let's prepare the stock

1 Select a piece of clear 2x8 stock and crosscut a 10"-long length from it. (We used clear pine, but other softwoods also would work.) Sand both surfaces with 150-grit sandpaper.

2 Copy or trace the Santa pattern *opposite*. (We photocopied ours.) Next, adhere the pattern to the stock. (We used spray adhesive sparingly.) With a 1/8" bit, drill through the blank to form Santa's eyes and the bear's eyes and nose.

3 Scrollsaw or bandsaw around the outline first. (We prefer using a bandsaw with a 1/8" blade.) Make relief cuts in from the edges to the outline to remove waste and ease strain on the saw blade. Next, saw away separate pieces, such as the tree, boots, body, cap, and beard. Now, remove the pattern

and sand the edges. (We soaked the pattern with lacquer thinner.)

Paint Santa your way

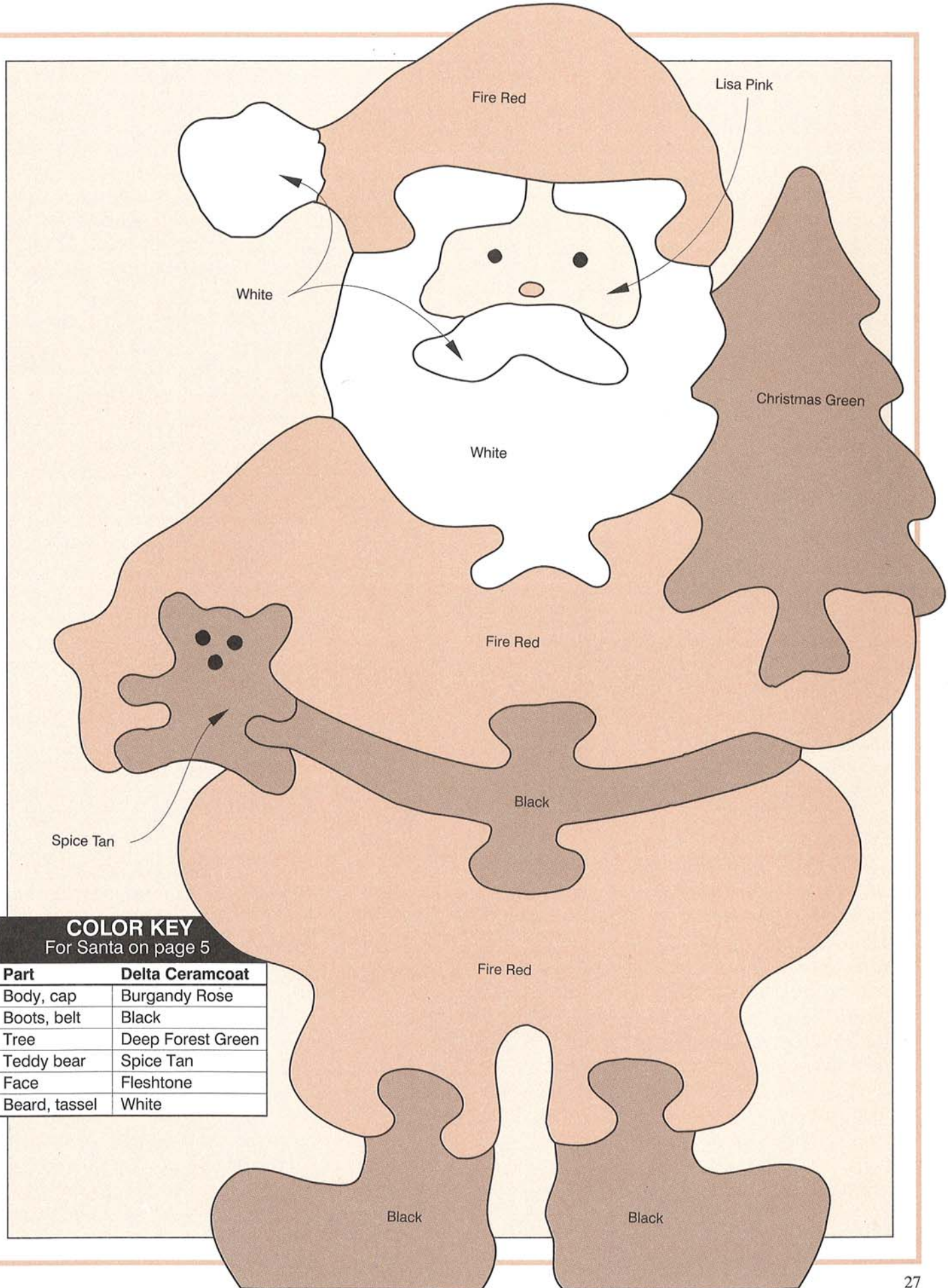
1 Group the parts according to color. If spraying, mask the tassel from the rest of the cap, and paint the two areas separately.

2 Apply two coats of gloss latex enamel paints readily available at paint, hardware, and discount stores. You also may use acrylic paints, such as Delta Ceramcoat or FolkArt brands, commonly found at crafts and variety stores. Apply the paints with either a bristle or sponge brush, or spray. Check the color key *opposite* for the acrylic paint colors used on the Santa shown on page 5. Paint colors used on the Santa pictured *above* appear on the pattern. Or, develop your own color scheme.

Note: Santa's designers, Rita and Dan Stefureac, apply two coats of latex enamel without sealing the wood. Our project painter Susan Henry seals the wood with a water-based varnish before applying Delta Ceramcoat acrylic paints.

3 Paint a red dot where indicated on the pattern for Santa's nose. (We painted Santa's face on both sides of the puzzle.) To texture his beard, tassel, and cuffs (see the Santa on page 5), daub white modeling paste (Susan applied Liquitex brand modeling paste) on these areas, using a stiff-bristled fabric brush.

4 Assemble your Santa puzzle. For interesting illusions of space and depth, try different versions offsetting some of the puzzle pieces, such as the tree, teddy bear, belt, and beard. ■



COLOR KEY

For Santa on page 5

Part	Delta Ceramcoat
Body, cap	Burgandy Rose
Boots, belt	Black
Tree	Deep Forest Green
Teddy bear	Spice Tan
Face	Fleshtone
Beard, tassel	White

TWELVE *Scrollsawed* DAYS OF CHRISTMAS



If you're like most of us, you spend more hours in the shop between now and December 25 than any other time of the year. So we thought you'd enjoy a project you can whip up in an afternoon—four gifts at a time.

1 Rip and crosscut $\frac{1}{8}$ " or $\frac{5}{32}$ " birch plywood into eight strips 4" wide and 18" long. (See the Buying Guide for a source.) Next, make two stacks of four strips, and align the edges and ends. To secure the stacks, drive 4d nails through the pieces.

2 Make copies of the 12 ornament patterns on pages 29 and 30. (We photocopied our patterns.) With spray adhesive, adhere the patterns to the stacks.

3 Drill $\frac{1}{16}$ " start holes in the backgrounds, and $\frac{3}{32}$ " ribbon holes in the tops. Scrollsaw the pieces to shape. (We used a #5 scrollsaw blade for all of our cuts.

By stack-cutting the ornaments, we minimized the problem of the blade wandering in thin stock.)

4 Sand to remove fuzz created by the scrollsawing. (We hand-held our palm sander fitted with 120-grit sandpaper.)

5 Finish as desired. (Because the ornaments will be handled only once or twice a year, we left ours unfinished. However, you may prefer the appearance of a painted or sprayed satin finish.) Finally, tie a $\frac{1}{4}$ " ribbon or gold braid through each hole. Hang as desired. ■

Buying Guide: Two 2×2' sheets $\frac{5}{32}$ " Finnish birch plywood, . Enough for 96 ornaments. \$15 ppd. From: Meisel Hardware Specialties, P. O. Box 70-WEW, Mound, MN 55364.

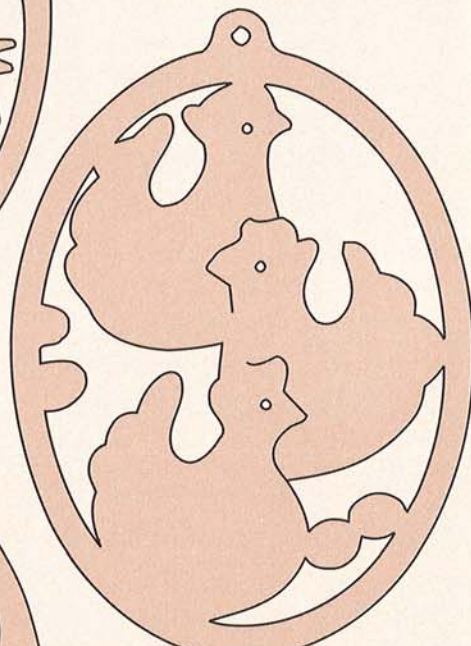
TURTLE DOVES



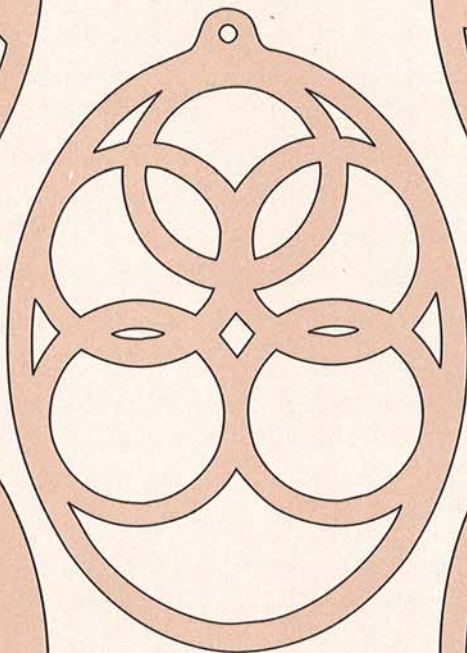
PARTRIDGE



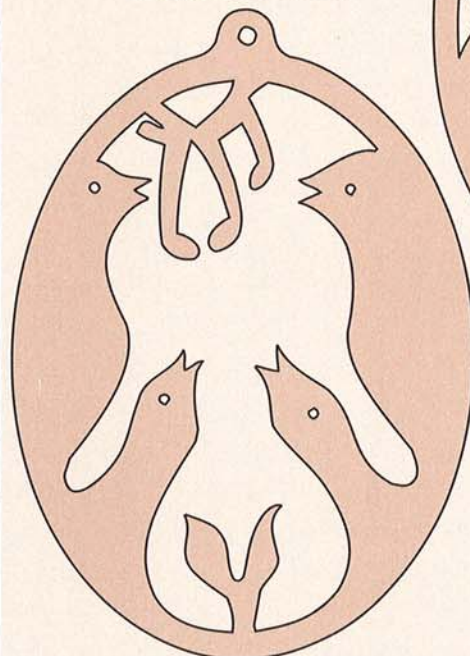
FRENCH HENS



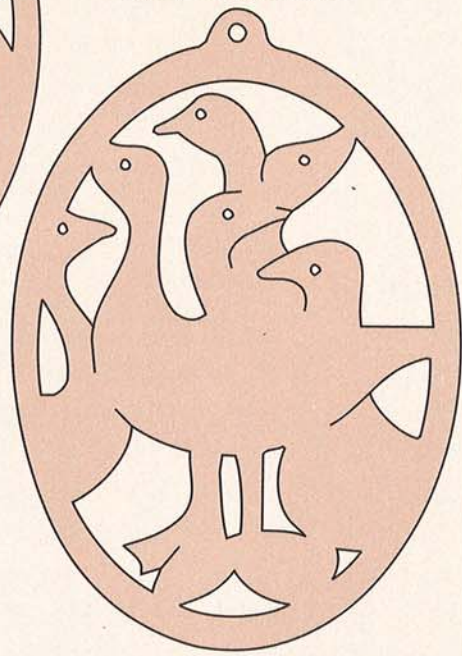
GOLDEN RINGS



CALLING BIRDS



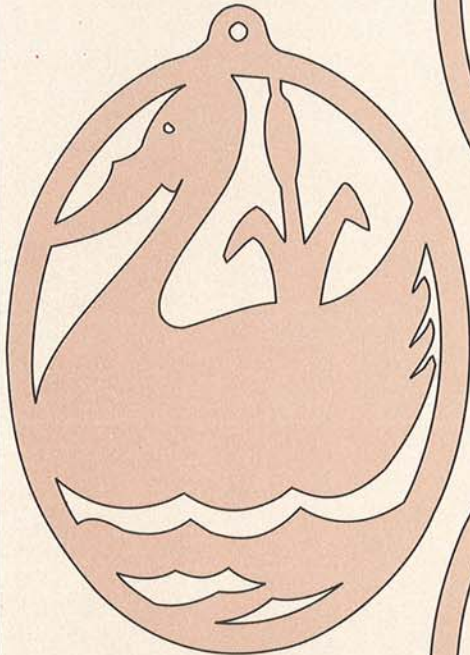
GEESE A-LAYING



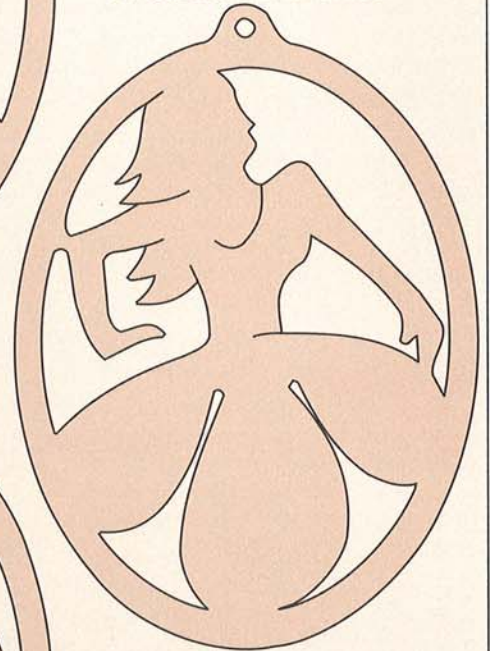
MAIDS A-MILKING



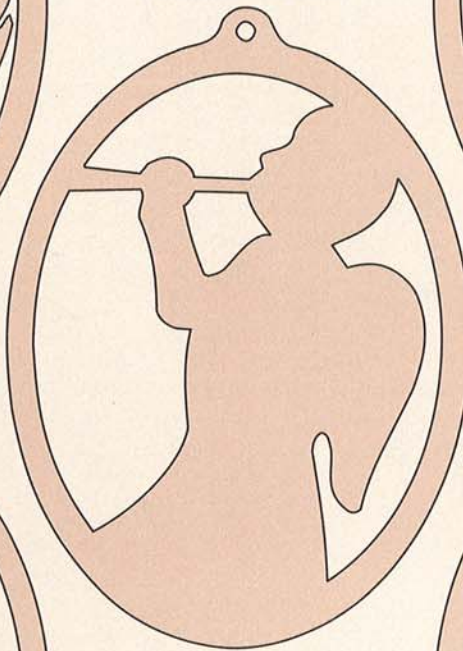
SWANS A-SWIMMING



DANCERS DANCING



PIPERS PIPING



LORDS A-LEAPING



DRUMMERS DRUMMING



Project design: Mary Lou Hanson, Grimes, Ia. Illustrations: Kim Downing Photograph: John Hetherington Builder: Rick Hutcheson