

WEEKEND WOODWORKING PROJECTS™

NEAT THINGS YOU CAN BUILD IN A HURRY

Mysterious turned teleidoscope

Christmas-tree candle holder

Keepsake shadow box

Colorful holiday blocks

Acrobatic clown toy

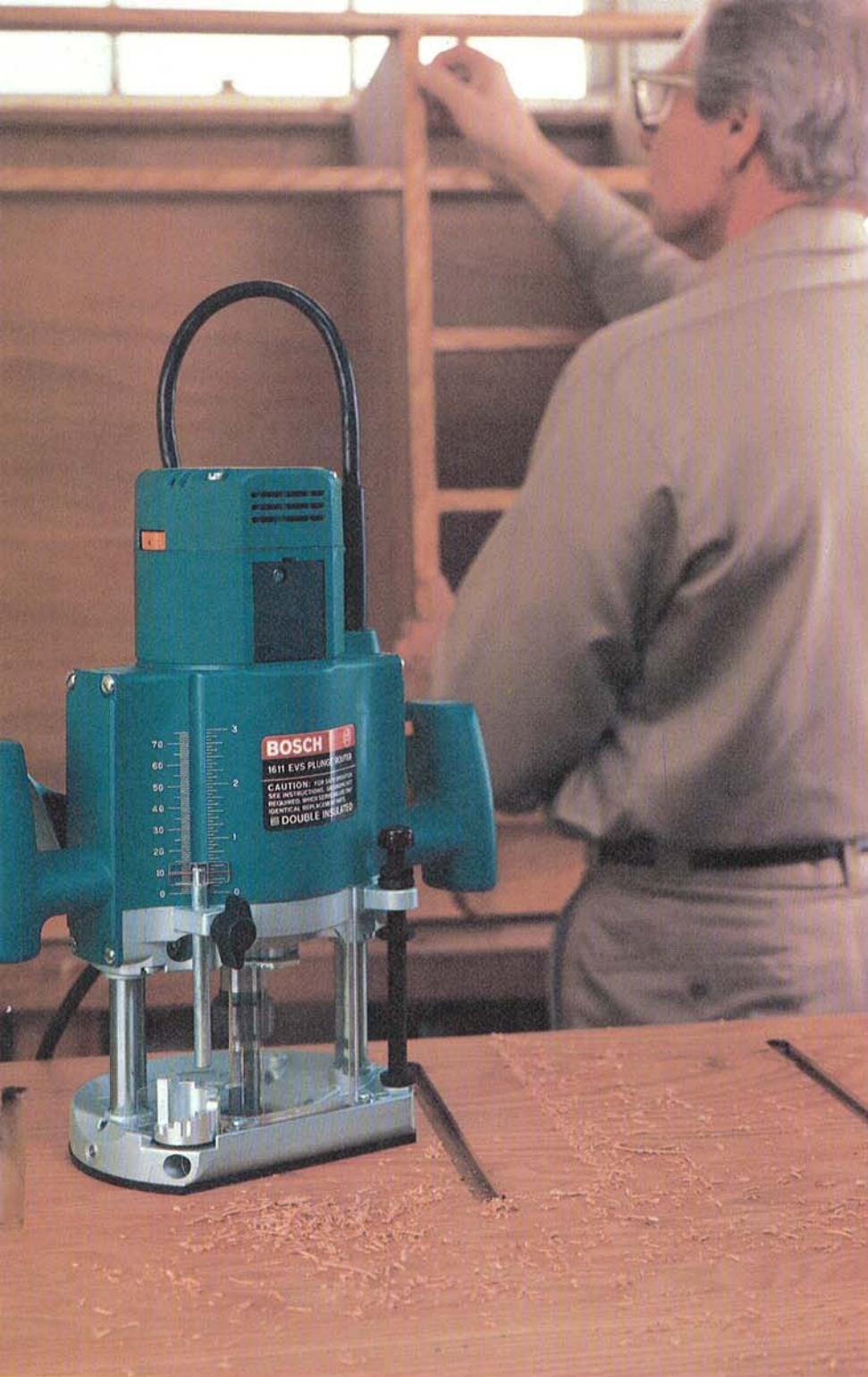
Exotic wood jewelry



ROCKABYE DOLL CRADLE

For That Special Someone

FROM THE EDITORS OF WOOD® MAGAZINE



and bit size — and get far better cutting results.

1611EVS electronics give you two more big advantages, too. "Soft start" when you press the trigger — no jarring "torque twist" means better control. And by monitoring RPM and feeding power as needed, it keeps you from bogging down, even in the toughest cuts.

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From the first moment you get your hands on the variable speed model 1611EVS or the single speed model 1611, you'll know what separates it from other plunge routers. The handle grips feel like they were molded especially to fit your hands. The trigger switch, built into the right handle, and the plunge lock mechanism by your left thumb, let you reach these controls without taking your hands off the router.

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The Bosch models 1611EVS and 1611 are available in cooler running, higher horsepower 220V models, too. Ask about them and the complete line of fine Bosch power tools for woodworkers, at your nearest Bosch power tool distributor. He's listed in the Yellow Pages under "Tools — Electric."

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excellent ergonomic design.

The Advantages Of Variable Speed.

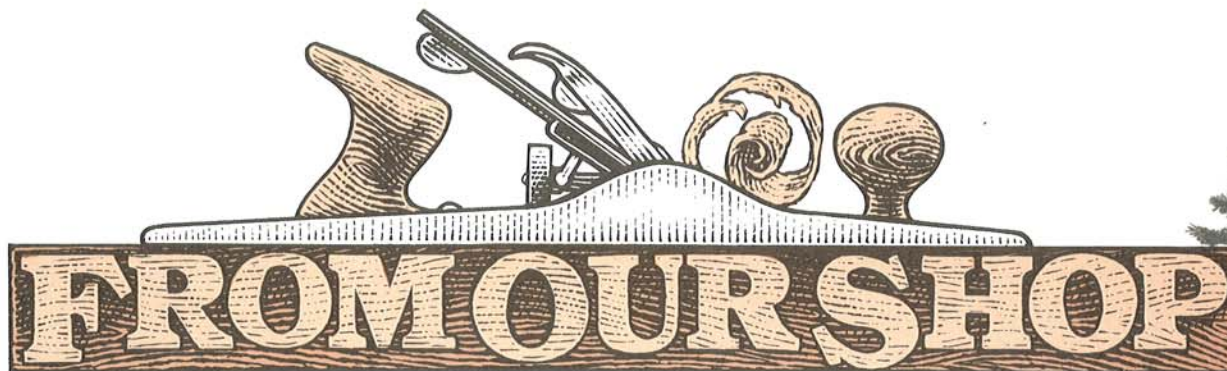
Select any speed, from 12,000 to 18,000 RPM, to match your material



BOSCH

"Quality You Can Hold On To."

©1989 Robert Bosch Power Tool Corporation



FROM OUR SHOP

Dear Reader,

WHAT WE'RE ALL ABOUT

About this time last year, **WOOD**® magazine, our parent publication, invited its readers to participate in a toy design contest. Participants were informed that all toys entered would be turned over to the U.S. Marine Corps' TOYS-FOR-TOTS program after the judging. This means that during this upcoming Christmas, these toys will be distributed to needy kids around the country. What a great concept!

The contest was well received by **WOOD** magazine readers, and as a result, we received over 400 different toy designs. (If you subscribe to **WOOD**, you can read about the contest entries, and the winners, in the October, 1989 issue.) The staffs of **WOOD** and **WEEKEND WOODWORKING PROJECTS**™ stood in awe of the creativeness, craftsmanship, and pure generosity of the contributing woodworkers. I, for one, could hardly keep my hands off the toys; the trick was to remind myself that I wasn't 10 years old anymore. It wasn't easy.

THE SPIRIT OF GIVING

Capturing the spirit of the contest is a story we heard concerning one of the contributors. His name: Dan Holly. At 58 years old, and a woodworker for over 15 years, Dan had fashioned a toy wood train for his entry. According to his daughter-in-law Mary Jo, Dan almost always gave away what he made, and here he was doing it again, helping some unfortunate youngster enjoy Christmas. Dan

designed each train car—there were six in all—as he went along, cutting the parts by hand with a coping saw and gluing them painstakingly together one at a time.

Then, the day before Dan intended to send in the project for the contest, he suffered a fatal heart attack. A few days

later, his son, Dan Jr., gathered up the train cars, carefully packaged them, and mailed them in his father's name.

Dan's entry did not win. But that's not to say he wasn't a winner. In truth, he's one of my heroes, the kind of unselfish person who makes Christmas, and every other special occasion, work. And if I were to name one trait that seems common among almost all woodworkers, it's this bighearted desire to make things of value for others to enjoy.

In this issue of **WEEKEND WOODWORKING**

PROJECTS, we offer several choice gift projects for your woodworking pleasure. In the spirit of Christmas and Dan Holly, I encourage you to try one or two of them (or some from previous issues that you may have not gotten around to building yet), and then give them as gifts to someone special to you. Let the folks around you know that Santa is alive and well. Have a happy and merry one!

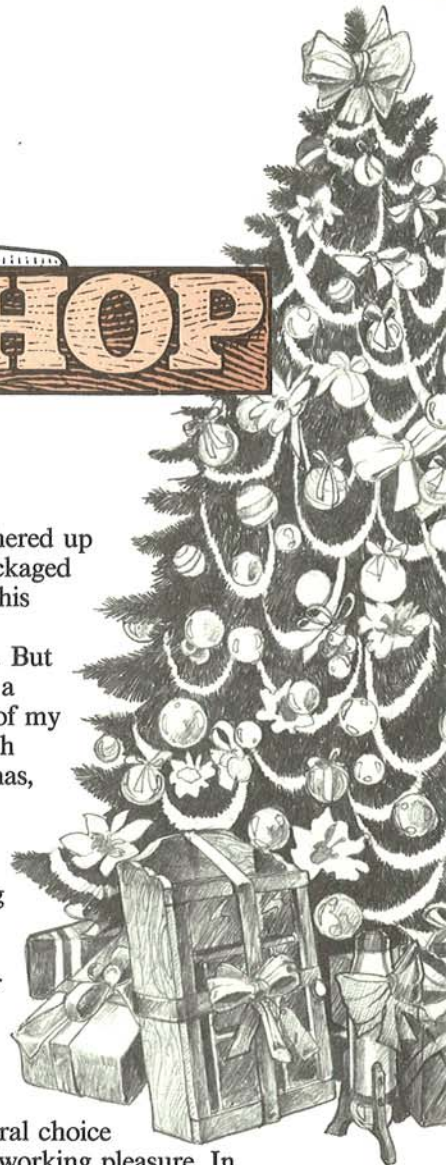


Jim Harrold
Managing Editor

CHECK OUT THESE GREAT TIPS

- Making a reversed pattern—page 12.
- Cutting veneer strips to width—page 14.
- Using your lathe as a clamp—page 20.
- How to apply a pickled finish—page 23.

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





6 COLORFUL CHRISTMAS BLOCKS

Celebrating Christmas means going all out to show your holiday guests that you're in the spirit. With these easy-to-make painted Christmas blocks, cut from a single turning square, you'll have the right accent for a mantel or tabletop display.

HANDCRAFTED GIFTS FOR ALL AGES

8 SHADOW-BOX SHOWCASE

Compartments of varying sizes offer ample room for your favorite collectibles in this fine walnut cabinet. See the complete plans inside.

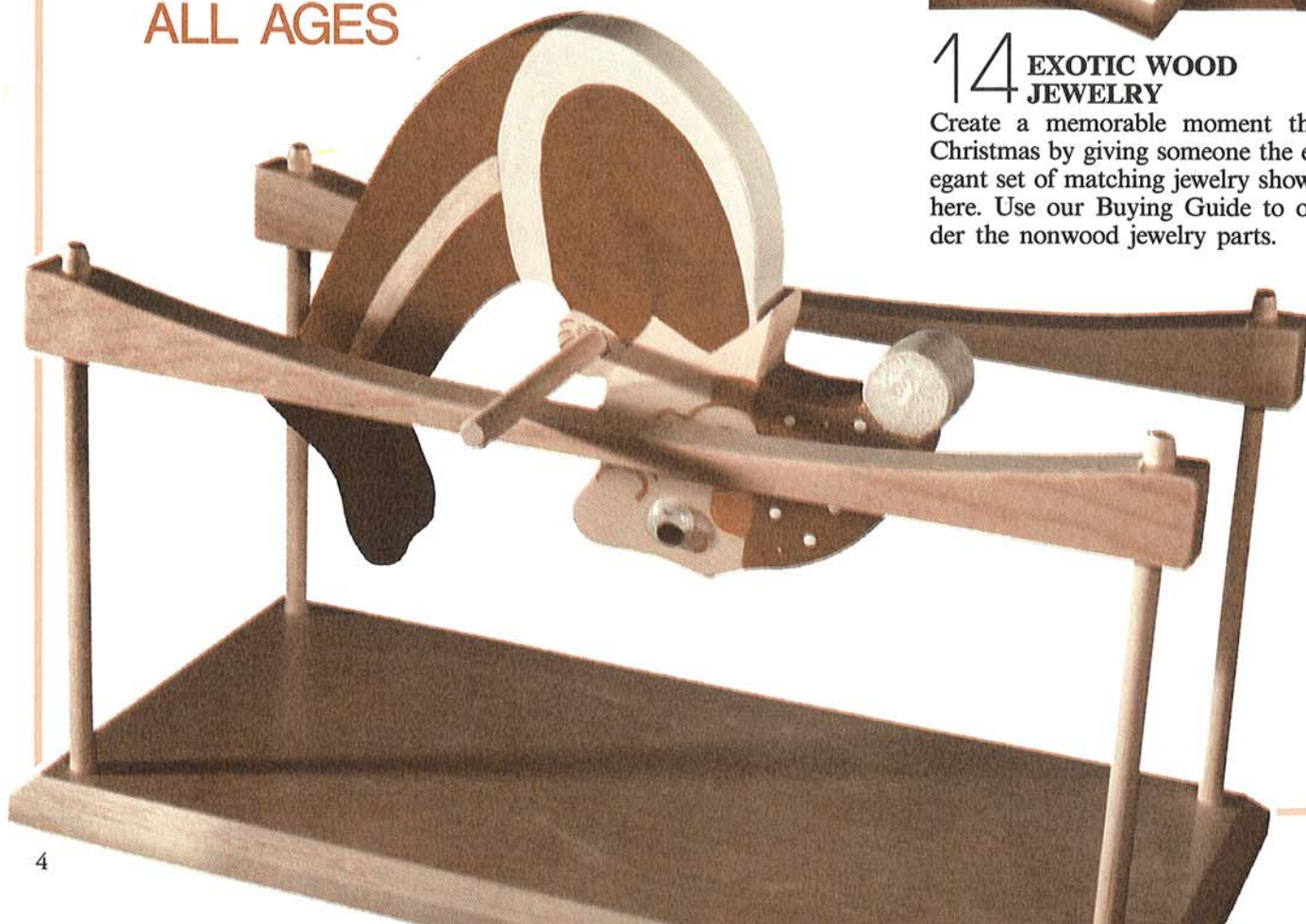
12 ACROBATIC CLOWN

This amusing scrollsawed clown will flip head over heels for you while going through his routine on the parallel bars.



14 EXOTIC WOOD JEWELRY

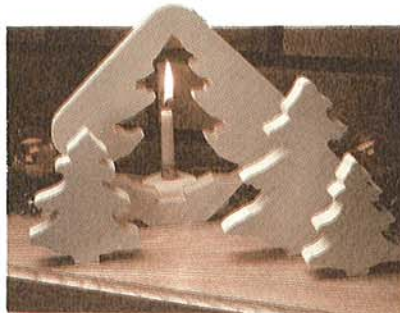
Create a memorable moment this Christmas by giving someone the elegant set of matching jewelry shown here. Use our Buying Guide to order the nonwood jewelry parts.





22 HOLIDAY CANDLE HOLDER

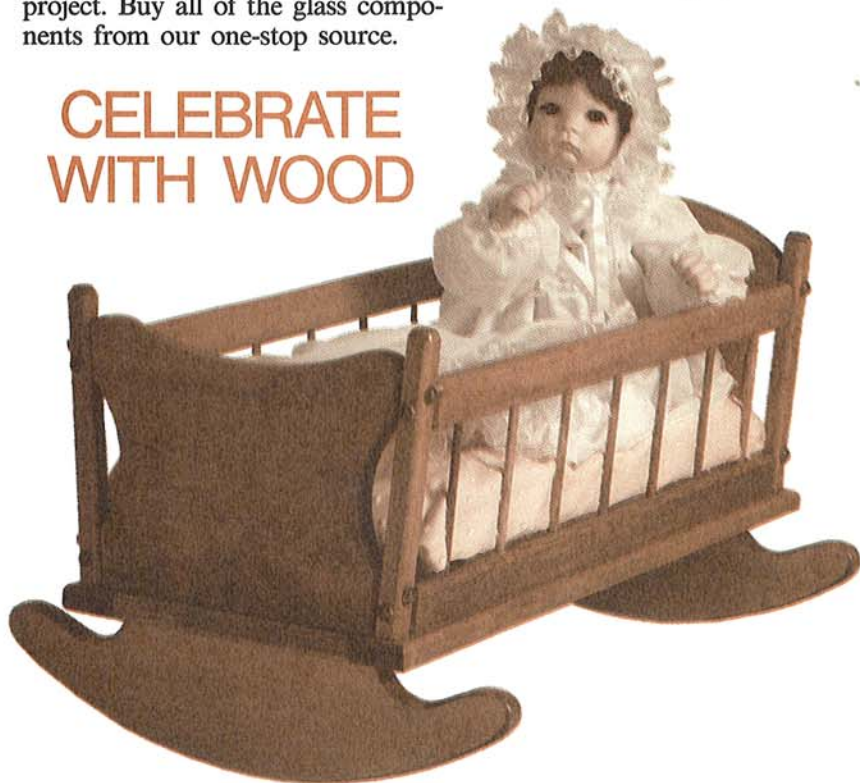
A lighted candle at Christmas adds atmosphere to the holiday. With one pine board, a scrollsaw, and our full-sized patterns, you can make a decorative arrangement just like the one below.



18 TERRIFIC TURNED TELEIDOSCOPE

Gather in a kaleidoscopic vision of the world with this nifty turning project. Buy all of the glass components from our one-stop source.

**CELEBRATE
WITH WOOD**



24 ROCKABYE DOLL CRADLE

Joined pine boards and birch dowels combine to make this classic Christmas project.

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OUR PLEDGE TO YOU

Prior to publication, we build every project presented in **WEEKEND WOODWORKING PROJECTS** step-by-step in our shop. Then, a team of editors reviews each element of each wood project—directions, illustrations, and bill of materials—to make sure the instructions we provide you are clear, concise, and complete.

The Staff of Weekend Woodworking Projects



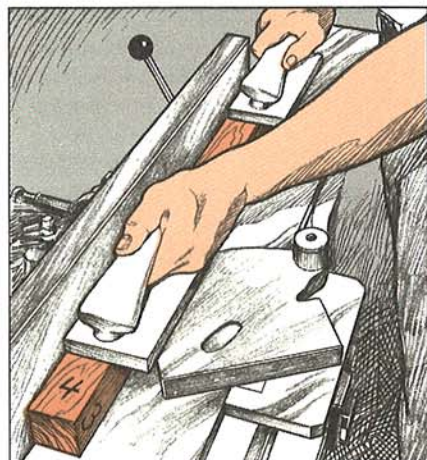
SAY IT WITH **CHRISTMAS BLOCKS**

Center our "Merry Christmas" blocks on the mantel over your fireplace, or some other ideal location, and spread the yuletide spirit. Made from maple, we cut each block $1\frac{3}{4}$ " square, and then finished them in holiday colors.

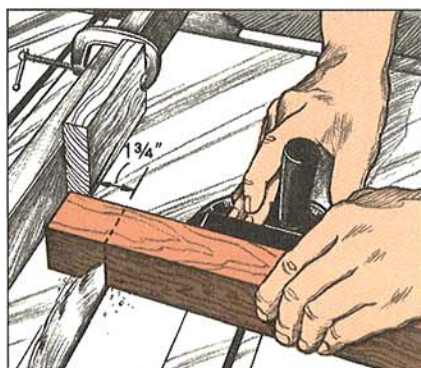
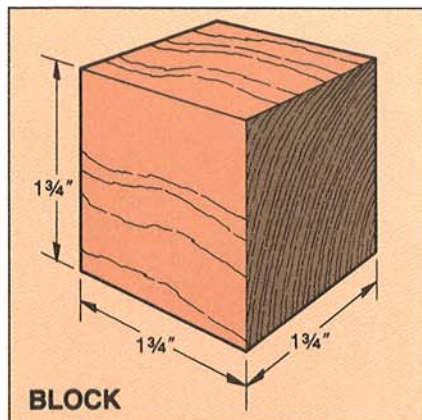
Note: To make the 14 blocks shown, we purchased a 2×2×36" turning square. (See the Buying Guide for our source.)

FIRST, MAKE THE BLOCKS

1 Number the sides of your turning square 1, 2, 3, and 4. Next, square your jointer's fence to the table. Using the jointer, surface side 1 of the square removing $\frac{1}{8}$ ". Place this side snugly against the jointer's fence and surface side 2 as shown *below*. Surface sides 3 and 4 to give the square the $1\frac{3}{4}$ " dimensions shown on the Block Drawing at *right*.



2 Mount a fine-tooth saw blade on your table saw and raise it 2" above the tabletop. Clamp a spacer to your fence. (We used scrap $\frac{3}{4}$ " material.) Next, set the fence so the spacer measures $1\frac{3}{4}$ " from the inside of the blade. Adjust your miter gauge for 90° crosscutting, and place the turning square against it. Turn on the saw and square-cut the end of the turning square. Butt the end of the turning square against the spacer, and then push the miter gauge and turning square forward to cut off the first block as shown *above right*. Saw slowly to minimize splintering. Stop the saw and remove the first block. Now, cut thirteen more blocks.



3 Hand-sand the sawed surfaces and edges. Wipe away the dust.

LET'S FINISH THE BLOCKS

1 Seal the blocks with a coat of clear finish (we used spray lacquer). This creates a smooth, even surface for the paint. (We sprayed the sides and tops, let them dry, then turned them and sprayed the bottoms.)

2 Using a 1- to 2"-wide brush, paint the blocks alternating green and red Christmas colors. (We used Apple Barrel Brand acrylic paints in evergreen and apple-spice colors, but you may prefer brighter colors.)

3 Once the paint dries, wrap a piece of scrap wood with 220-grit sandpaper and lightly sand the edges of each block with quick, short strokes. (This creates an antique look.) Remove the sanding dust.

Note: We purchased $1\frac{1}{4}$ " tall capital letter stencils (no. 28585) made by Simply Stencils at a local crafts supply store.

4 Center and firmly hold the stencil for one of the needed letters over a block face and dab on the paint with a stencil brush as shown *below*. (We used antique white for the letters.) Wipe off both sides of the stencil after painting each letter. Move to another block and paint a second letter. Alternate block colors when spelling out the greeting as shown in the photograph *opposite*.



5 Apply two protective coats of a flat matte lacquer or varnish finish. Now, show the blocks off this holiday season and enjoy!

Buying Guide

● **Hardwood turning square.** One maple 2×2×36", finished two sides, \$7.00 postage paid. Albert Constantine & Son, Inc., 2050 Eastchester Road, Bronx, N.Y. 10461. Phone: 212/792-1600.

Supplies: Clear finish; acrylic paints in red, green, and white; capital letter stencil; stencil brush.

Project Design: Chuck and Julie Wiemann, Des Moines, Ia.

Illustrations: Carson Ode

Photograph: Jim Kascoutas

SHADOW-BOX SHOWCASE

FOR YOUR CHOICE COLLECTIBLES



Most shadow boxes found at crafts fairs and antique shops offer lots of storage for small collectibles, and settling dust, too. But our upscale walnut version features a glass door that covers the individual compartments while keeping collectibles clean and in full view.

CUT THE CASE PARTS FIRST

Note: We used two walnut boards—one 48" long, and the other 60"—to make our shadow-box cabinet. (See the Cutting Diagram and the Bill of Materials on page 9.)

1 Plane the two boards to $\frac{1}{2}$ " thickness. Next, rip a $\frac{3}{4}$ "-wide strip from the 48"-long board and set the strip aside for later. Plane the rest of the 48" piece to $\frac{1}{4}$ " thickness.

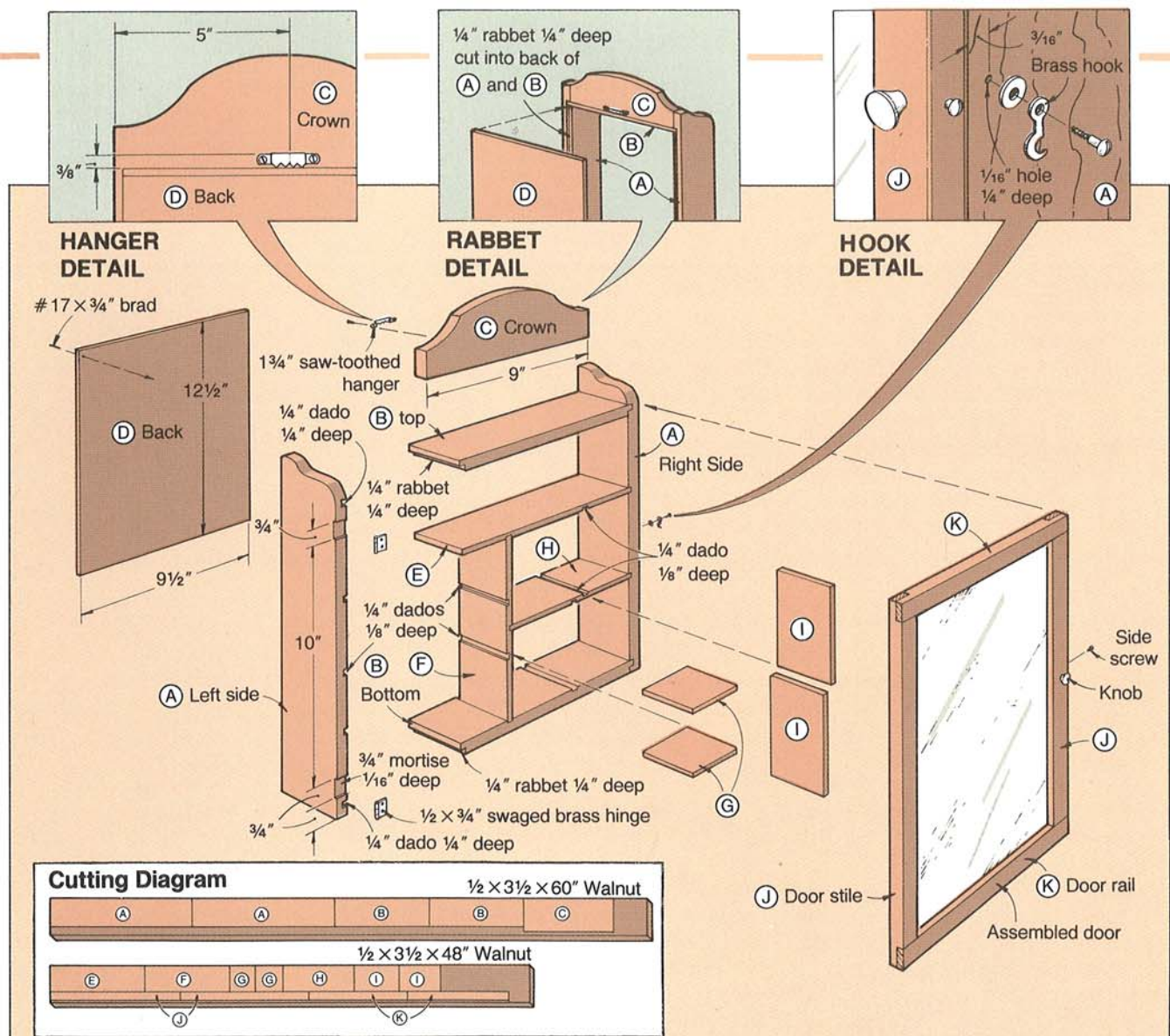
2 From the 60"-long board, cross-cut two $14\frac{1}{4}$ "-long pieces for the sides (A), two $9\frac{1}{2}$ "-long pieces for the top and bottom (B), and one 9"-long piece for the crown (C). (We used a hollow-ground planer blade for smooth crosscuts.) Next, reset the saw's rip fence and rip the two A and two B pieces to $2\frac{3}{4}$ " wide. Rip piece C to $3\frac{1}{4}$ " wide.

3 For the case back (D), rip and crosscut a piece of $\frac{1}{4}$ "-thick walnut plywood to $12\frac{1}{2}$ " long and $9\frac{1}{2}$ " wide. (We ran the grain vertically.)

4 To make the shelf dividers, rip the $\frac{1}{4}$ "-thick piece to $2\frac{1}{2}$ " wide. From this board crosscut one $9\frac{1}{2}$ "-long piece for part E, one $8\frac{1}{2}$ "-long piece for F, two $2\frac{5}{8}$ "-long pieces for G, one $6\frac{7}{8}$ "-long piece for H, and two $4\frac{1}{4}$ "-long pieces for I.

5 Mark the top and inside faces of the two side pieces (A). Using the dimensions on the Dado Drawing on page 11, mark the locations for the dados on both side pieces. Note there are five dados in the left side (as you face the case front) and four in the right side. Also, mark the front edges of the left side for the door hinge mortises (see the exploded-view drawing opposite).

6 Mount a $\frac{1}{4}$ " dado to your table-saw and set it to cut $\frac{1}{4}$ " deep. Test the cutting depth on a piece of scrap. Clamp a spacer block to the



rip fence, set the width (from the spacer block to the inside of the blade), and, using the saw's miter gauge, cut the dados in the inside faces of both side pieces as shown above. Cut the matching dado in the other side piece before moving the

fence for the next cut. Lower the blade to $\frac{1}{16}$ ", place the left side on its front edge and cut the $\frac{3}{4}$ "-wide hinge mortises.

7 Referring to the Dado Drawing again, mark the location of the dados in the case bottom (B) piece. Lower the dado blade to cut $\frac{1}{8}$ " deep and adjust the fence and spacer block. Cut the two bottom dados. Next, mark the location of the dados on the divider pieces E, F, and H. Cut those dados $\frac{1}{4}$ " wide.

Supplies: Two— $\frac{1}{2} \times \frac{3}{4}$ " swaged brass hinges, one brass hook, one brass pull knob, one $\frac{1}{8} \times 9\frac{1}{2} \times 12\frac{1}{2}$ piece of glass, one $1\frac{3}{4}$ " saw-toothed hanger, six glazing points, #17 $\times \frac{3}{4}$ " finish brads, tracing paper.

Bill of Materials

Part	Finished Size			Matl.	Qty.
	T	W	L		
A sides	$\frac{1}{2}$ "	$2\frac{3}{4}$ "	$14\frac{1}{4}$ "	W	2
B top/bottom	$\frac{1}{2}$ "	$2\frac{3}{4}$ "	$9\frac{1}{2}$ "	W	2
C crown	$\frac{1}{2}$ "	$3\frac{1}{4}$ "	9"	W	1
D back	$\frac{1}{4}$ "	$9\frac{1}{2}$ "	$12\frac{1}{2}$ "	WP	1
E divider	$\frac{1}{4}$ "	$2\frac{1}{2}$ "	$9\frac{1}{2}$ "	W	1
F divider	$\frac{1}{4}$ "	$2\frac{1}{2}$ "	$8\frac{1}{2}$ "	W	1
G divider	$\frac{1}{4}$ "	$2\frac{1}{2}$ "	$2\frac{5}{8}$ "	W	2
H divider	$\frac{1}{4}$ "	$2\frac{1}{2}$ "	$6\frac{7}{8}$ "	W	1
I divider	$\frac{1}{4}$ "	$2\frac{1}{2}$ "	$4\frac{1}{4}$ "	W	2
J door stile	$\frac{1}{2}$ "	$\frac{3}{4}$ "	13"	W	2
K door rail	$\frac{1}{2}$ "	$\frac{3}{4}$ "	10"	W	2

Material key: W-walnut; WP-walnut plywood.

continued

SHADOW BOX

8 Remove the dado blade from the tablesaw and mount the planer blade. Next, set the rip fence and cut the $\frac{1}{4}$ "-wide rabbets $\frac{1}{4}$ " deep on the inside back edges of side pieces (A), the top back edge of the bottom case piece (B), and the bottom back edge of the top piece (B). For details see the Rabbet Detail on the exploded-view drawing on page 9. (For better appearance, we sawed to the line, then squared out the corner with a wood chisel to finish the blind dado.)

CUT THE DOOR FRAME AND DECORATIVE CUTS

1 Cut the $\frac{1}{4}$ "-wide $\frac{1}{4}$ "-deep rabbet on one edge of the $\frac{1}{2} \times \frac{3}{4} \times 48$ " walnut strip you ripped and put aside earlier. From the piece, cross-cut two 13"-long pieces for the door stiles (J), and two 10"-long pieces for the door rails (K).

2 Next, cut the $\frac{1}{2}$ "-wide $\frac{1}{4}$ "-deep lap joints on the door frame pieces as shown in the Rabbet Detail on the Door Assembly Drawing at right. Be sure to cut the lap on the rails (K) on the front side, and on the back of the stiles (J). Now, set these pieces aside temporarily.

3 Make a complete pattern of the crown (C) piece using the full-sized half-pattern on page 11. (We folded a piece of tracing paper in half and aligned the folded edge with the centerline of the pattern. Next, we traced the half-pattern onto the tracing paper, then with scissors, cut around the three sides of the outline, and finally unfolded the paper.) Trace the full-sized pattern onto the piece cut for the crown (C). Now, trace the pattern for the end profile of the case side pieces (A) onto a piece of paper or cardboard. Transfer this pattern outline to the top end of one case side piece. Orient the pattern on the pieces as instructed by the pattern.

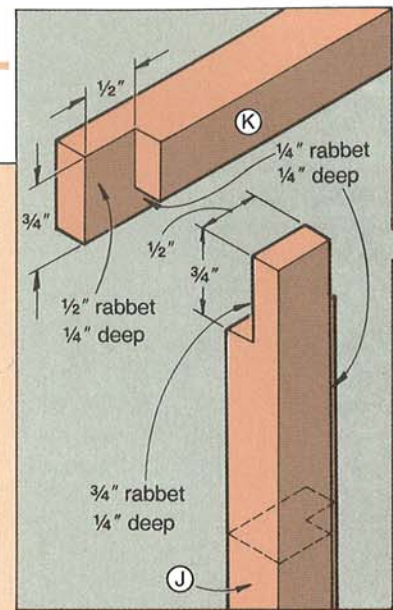
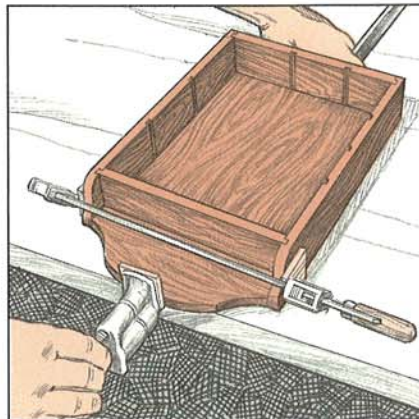
4 Using a bandsaw or scrollsaw, cut the crown, and the ends of both side pieces to shape. (We taped the two side pieces together with double-faced taped and sawed both at the same time, sawing slightly wide of the line.)

5 Sand all pieces with 150- and 220-grit sandpaper. (We sanded the curved edges to the cutline with a 2" drum sander and 120-grit paper; then hand-sanded all surfaces with 220-grit paper for the final sanding.)

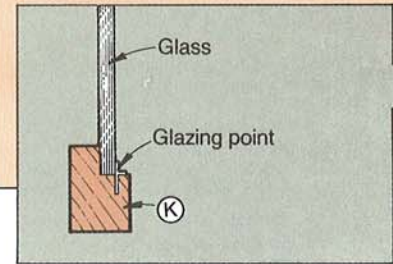
NOW LET'S ASSEMBLE THE CABINET

1 Dry-assemble the case and dividers to ensure you've oriented all parts correctly. Disassemble, laying the parts out in order.

2 Glue and clamp the sides, top, and bottom pieces together (we used yellow woodworker's glue). Next, glue and nail (we used #17 $\times\frac{3}{4}$ " finish brads) the plywood back in place. Drive the brads at a slight angle to prevent splitting the side pieces. Glue and clamp the top crown (C) in place as shown below (make sure it is flush with the back). Carefully wipe off any glue squeeze-out with a damp cloth. Check the case for square (we used a try square) and adjust the clamps if necessary. Set the assembly aside until the glue dries.



RABBET DETAIL



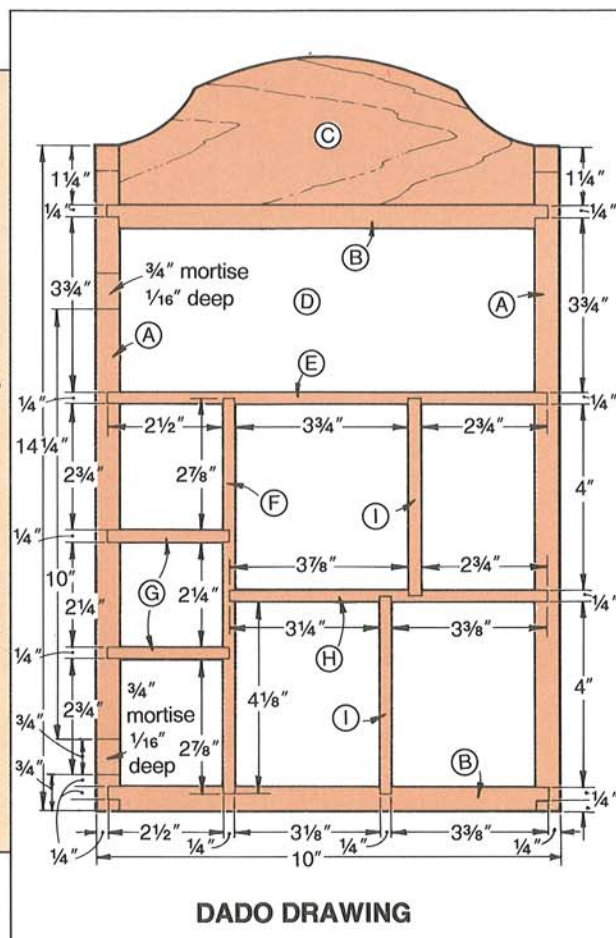
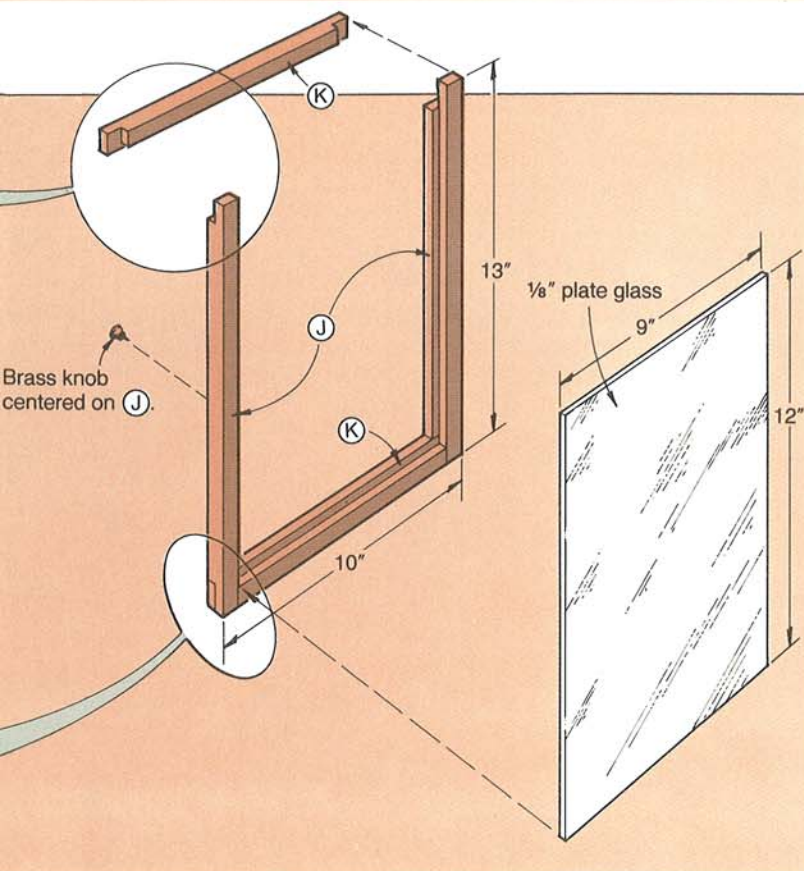
GLASS DETAIL

3 Apply the finish of your choice now. (We left our shadow-box cabinet unstained and applied three coats of matte-finish spray lacquer, sanding lightly between coats with 320-grit sandpaper.)

4 Fit the dividers in the cabinet. If they are snug you may sand the ends slightly or tap them lightly with a rubber mallet.

5 To assemble the door frame, apply glue to the lap joints and clamp as shown lower right. (For squaring, we cut a piece of plywood the same size as the glass [making sure the plywood corners were square], and placed it in the glass rabbets while the glue sets. After the glue dried, we removed the plywood and clamps.) Sand the door.

6 Finish the door frame as you did the shadow-box cabinet.



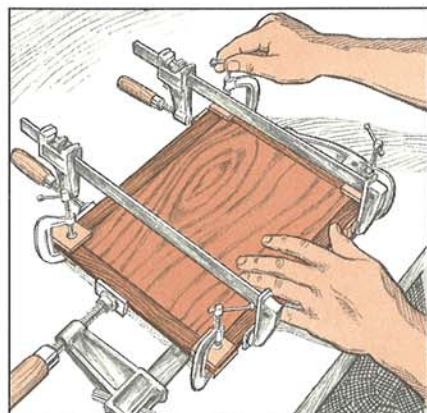
7 Screw the hinges into the mortises on the left side that you cut earlier. Let the barrels of the hinges protrude over the side edge. (We clipped the head off a finish nail, chucked it into a hand drill, and spun the nail into the wood to form pilot holes. We also waxed the screws to ease driving.) Next, lay the door over the face of the box and align. Make small marks along the frame's side where the hinges touch the door. Remove the hinges from the box and attach them to the

door, aligning them with the marks. Attach the pull knob, the hook, and the catch screw.

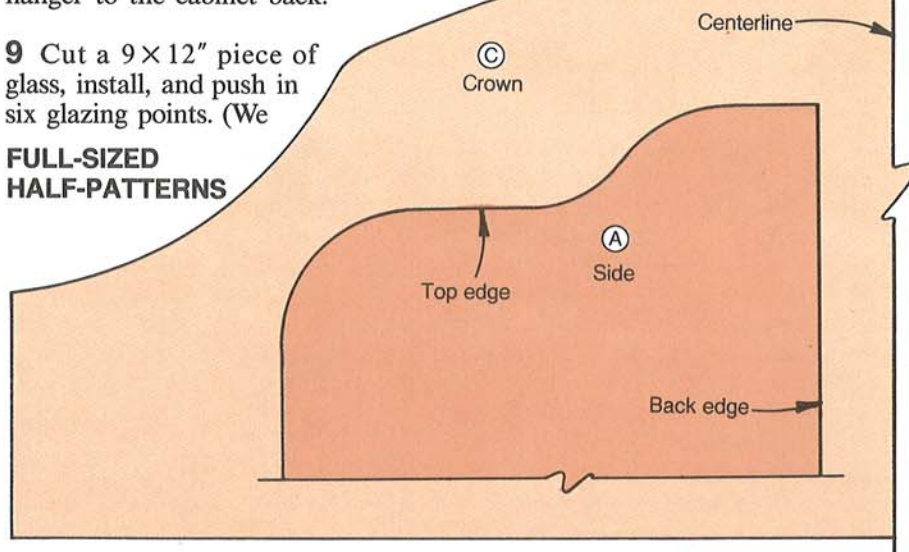
8 Center and mark the location of the sawtoothed hanger on the cabinet back where shown in the Hanger Detail on the exploded-view drawing. Attach the sawtoothed hanger to the cabinet back.

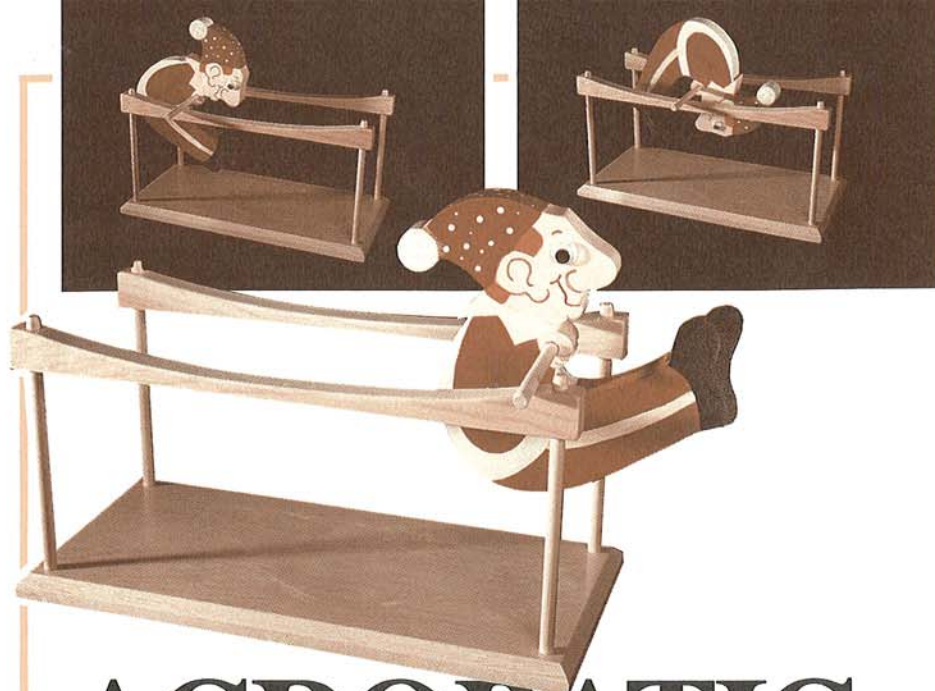
9 Cut a 9x12" piece of glass, install, and push in six glazing points. (We

filed the tips on the glazing points shorter so they would push into the walnut.) When inserting the points, push them in at only a gentle angle or the glass may break. Now, reattach the door.



FULL-SIZED HALF-PATTERNS





ACROBATIC CLOWN

HE'S A ONE-MAN SHOW

It's not really a perpetual-motion machine, but once launched, our rolling clown will spin and change directions on the parallel bars several times. Kids of all ages can't resist watching it.

Note: We cut all the parts from a $\frac{3}{4} \times 5\frac{1}{2} \times 24$ " piece of clear pine. To do this, we first cut out the clown, and then planed the remaining board to $\frac{1}{2}$ " thickness. (See the Cutting Diagram opposite.)

LET'S START WITH THE CLOWN CUTOUT

1 Transfer the full-sized pattern of the clown (A) shown *opposite*, onto a $\frac{3}{4}$ "-thick piece of clear pine. (We used carbon paper.) Include the detail lines for the clothing, hands, face, and the location of the $\frac{1}{4}$ " hole. Next, using a scrollsaw or bandsaw, saw the clown to shape.

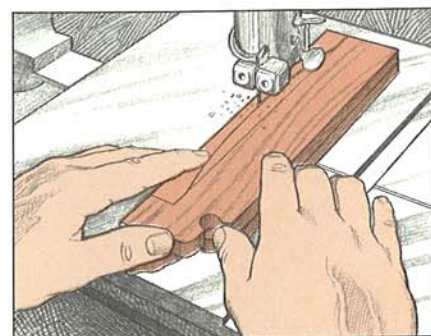
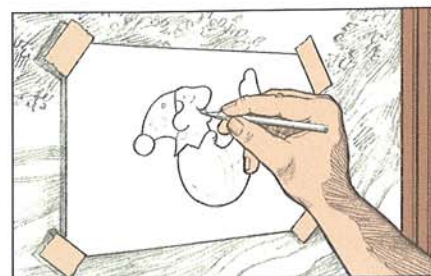
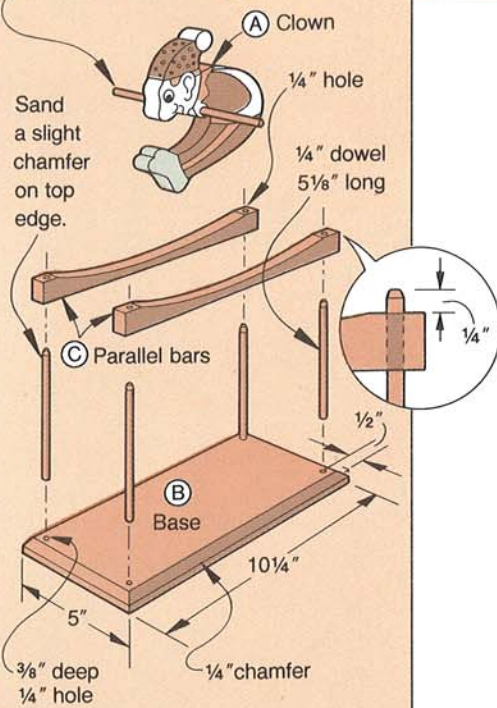
2 Chuck a $\frac{1}{4}$ " brad-point bit in your drill press, and drill the hole through the clown's hand. (We placed a piece of scrap under the workpiece to prevent chip-out.)

3 To transfer the pattern to the clown's second side, make another copy of the pattern and tape it to a window, pattern-side against the glass. Now, relying on daylight to make the pattern visible through the paper, trace over the clown pattern lines with a pencil as shown *middle right*. (This creates a *reversed* pattern.) Remove the copy from the window, place the reversed pattern on carbon paper, and cut around it. Next, tape it and the carbon paper to the unmarked side of the clown cutout, aligning all edges. Now, trace the pattern onto the cutout. Remove the pattern and carbon paper, and then set the clown aside.

NOW, MAKE THE PARALLEL BARS AND BASE

1 If you start as we did, with a $\frac{3}{4} \times 5\frac{1}{2} \times 24$ " board, plane the re-

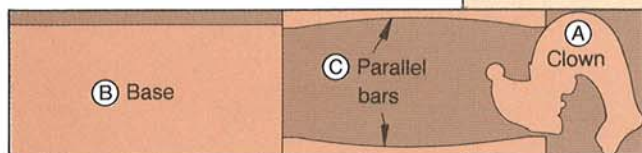
$\frac{1}{4}$ " dowel 6" long centered from side to side on (A).



maining piece to $\frac{1}{2}$ " thick. (Or purchase a piece of $\frac{1}{2}$ " pine.) Next, cut out the base (B), using the dimensions on the Bill Of Materials.

2 Chuck a chamfering bit in your router, and rout a $\frac{1}{4}$ " chamfer along the top edges of the base where shown on the exploded-view drawing *above top*. (We used a table-mounted router.)

Cutting Diagram



$\frac{3}{4} \times 5\frac{1}{2} \times 24$ " Pine

3 Rip the remaining piece of $\frac{1}{2}$ " stock to create two equal halves. Using double-faced tape, stick the pieces together, aligning the edges and ends. Make a full-sized pattern of the parallel bar (C), *lower right*, and trace it onto the face of one piece, aligning the bottom with the straight edge of the wood. (A photocopy of the pattern adhered to the wood with spray adhesive also works well.) Saw the parallel bars. (See *lower left*.) Lightly sand the curved surfaces of the pieces (we used a drum sander). Separate the pieces. Now, finish-sand all parts.

4 Chuck a $\frac{1}{4}$ " bit in your drill press. Clamp a fence on the table $\frac{1}{4}$ " away from the center of the bit. Next, place a mark $\frac{3}{8}$ " in from the ends on the top edge of each bar. Back the workpiece with scrap and drill the $\frac{1}{4}$ " holes through the pieces. (See the detail on the exploded-view drawing.)

5 Move the fence $\frac{1}{2}$ " away from the center of the drill bit. Adjust your drill press so the bit extends to $\frac{3}{8}$ " from the tabletop. Mark the centerpoints for the four $\frac{1}{4}$ " holes $\frac{1}{2}$ " in from each corner on the base. Drill the holes.

6 Cut four pieces of $\frac{1}{4}$ " dowel to $5\frac{1}{8}$ " long and one to 6" long. Sand a slight chamfer on one end of the four short dowels.

ASSEMBLE THE PROJECT AND APPLY THE FINISH

1 Apply glue to the unchamfered ends of the $5\frac{1}{8}$ "-long dowels and insert them into the holes in the base. (We used yellow woodworker's glue.) Apply glue in the holes in the parallel bars and slip them onto the chamfered ends of the dowels, and

push down until $\frac{1}{4}$ " of the dowels protrudes. Finally, apply glue in the hole in the clown, insert the 6"-long dowel through the hole, and then center the clown on it.

2 Finish the project. (We applied two coats of spray varnish to the parallel bars and base, and one coat to the clown to serve as a wood sealer. Then, we lightly sanded the top surface of the parallel bars crosswise with 80-grit sandpaper to

Buying Guide

● **Toy animal eyes.** $\frac{7}{16}$ " diameter, catalog no. ME-3, 20¢ each in lots of 1-49, plus 25¢ shipping and handling for two eyes, \$2 for 50. From Armor Products, Box 445, East Northport, NY 11731. Phone 516/462-6228.

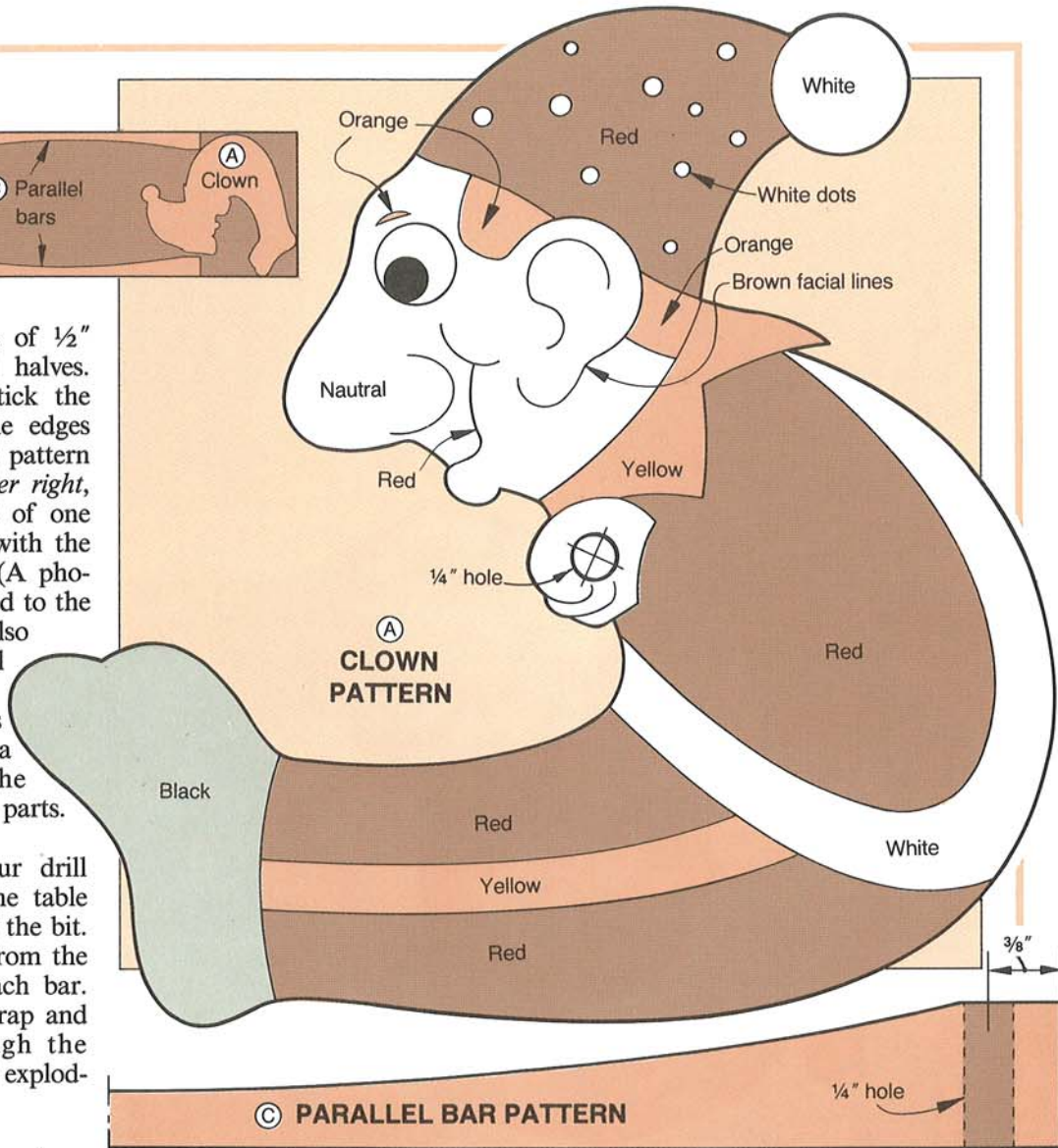
improve traction for the clown when rolling up the bar's incline. Following the transferred lines on the clown, we then painted it with acrylic paints. See the pattern for our color selections.) Apply a finish coat of varnish to the clown. Add the adhesive-backed toy eyes, or paint the eyes on. (See the Buying Guide for our source of eyes.)

Bill of Materials

Part	Finished Size			Mtrl.	Qty.
	T	W	L		
A clown	$\frac{3}{4}$ "	$5\frac{1}{2}$ "	$6\frac{1}{2}$ "	P	1
B base	$\frac{1}{2}$ "	5"	$10\frac{1}{4}$ "	P	1
C bar	$\frac{1}{2}$ "	$\frac{3}{4}$ "	10"	P	2

Material Key: P-pine

Supplies: Acrylic paints (6 colors), $\frac{1}{4}$ " dowel.



LAMINATED WOOD JEWELRY

THE PERFECT GIFT

Note: Because of the small size of the materials used, this project requires precise equipment, straight materials, and a sharp saw blade and router bit. Also, we used ebony and cardinal wood which may be expensive and difficult to obtain. Feel free to substitute with other contrasting hardwoods you may have in your scrap pile. 

FIRST, PREPARE THE LAMINATIONS

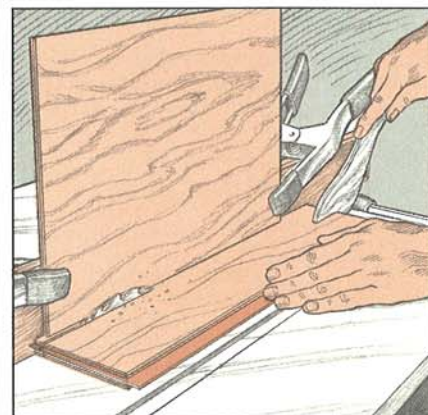
1 From $\frac{3}{4}$ " cardinal wood, rip a $\frac{1}{4}$ "-thick piece to 24" long. Next, turn the piece face down and rip a $\frac{5}{8}$ "-wide strip from it.

2 From a piece of ebony, rip two $\frac{3}{16} \times \frac{1}{4} \times 24$ " strips.

3 From $\frac{1}{32}$ "-thick maple veneer, cut two $\frac{1}{4}$ "-wide strips. (To saw the veneer cleanly, we first adhered double-faced vinyl carpet tape to the face of two pieces of 4"-wide scrap plywood, and sandwiched the veneer between them. Then, as shown *below*, we clamped a sheet of $\frac{1}{4}$ " plywood next to the blade to hold down the plywood and veneer sandwich while sawing. After cutting the veneer, we sponged the strips with lacquer thinner to remove the tape.) Next, dry clamp all of the strips you've cut together by wrapping masking tape once around each end. Cut off a 2"-long length and set it aside for the earrings.

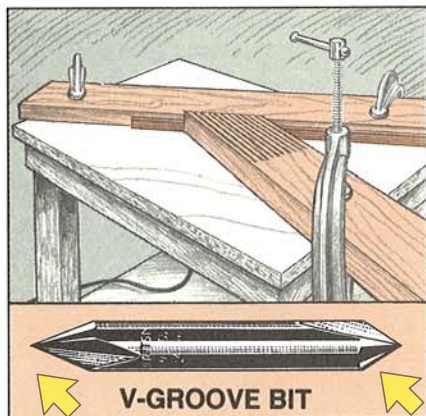
Jewelry makers, rejoice! Our three-piece jewelry ensemble, which includes a necklace, bracelet, and earrings, offers great looks and an opportunity to please someone special.

With our jewelry-making kit (see our Buying Guide), you can order all the non-wood items needed, and rely on your scrap pile for the remaining materials.

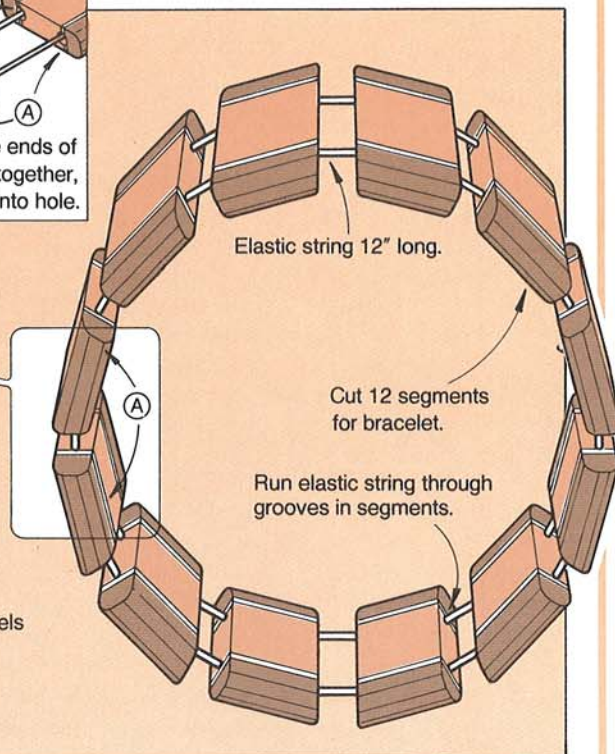
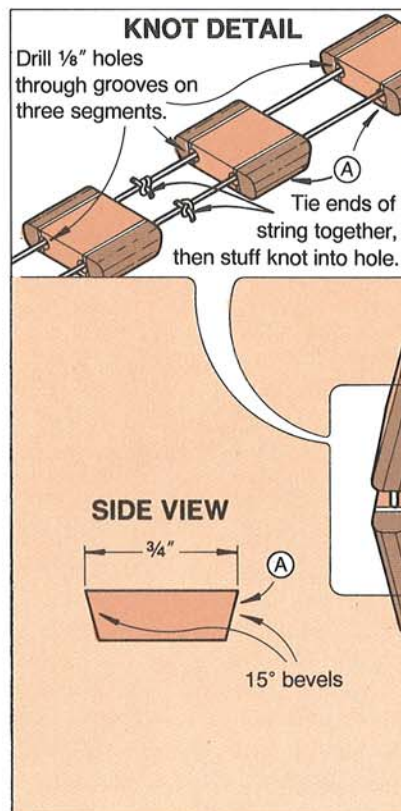
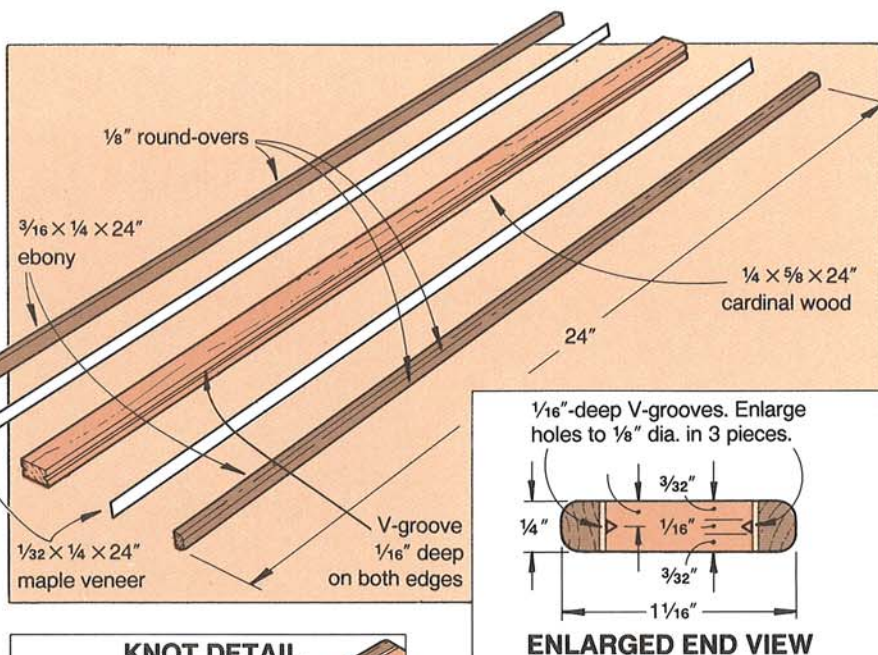
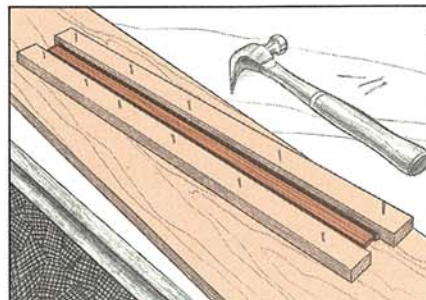


PREPARE THE LONG LAMINATION

1 Chuck a double-end V-groove bit (we used Sears no. 9 R 25545) into a table-mounted router (45° tip out). Rout $\frac{1}{16}$ "-deep V-grooves along the centerline on both edges of the remaining 22"-long strip of cardinal wood. (As shown below, we clamped a fence $\frac{1}{8}$ " from the center of the bit and a featherboard to the table to support the stock while routing.) Turn the piece end for end so the same face will be against the fence when routing the groove on the opposite edge. Clean all edges on the strips with lacquer thinner and arrange them as shown on the exploded-view drawing at right.



2 To glue the lamination, place a piece of $\frac{3}{4} \times 5 \times 24$ " scrap on your benchtop. Cover it with waxed paper. Nail a piece of $\frac{3}{4} \times 24$ " scrap (fence) to the top of the 5"-wide piece. Apply glue to the mating



edges of the strips (we used yellow woodworker's glue), but be careful not to fill the V-grooves. Position them on the waxed paper and against the fence in the same order. Now, as shown at left, place a second fence against the lamination, apply pressure against it, and then nail it in place.

Buying Guide

● **Jewelry kit.** For one necklace, bracelet, and four earrings, \$6.50 ppd. From Susan Long Designs, Pilot Point, TX 76258, 817/686-5034.

Supplies: Lacquer thinner, double-faced vinyl carpet tape, epoxy, cyanoacrylate glue, thread, natural oil finish.

continued

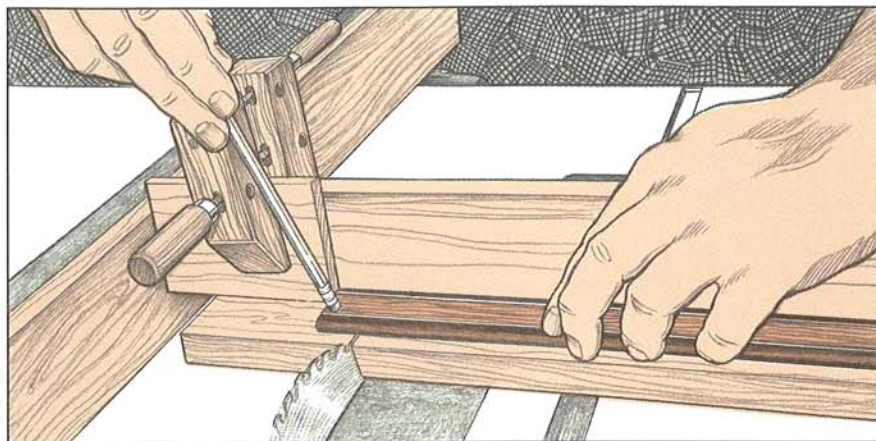
3 Rout a $\frac{1}{8}$ " round-over on all four edges of the lamination. Finish-sand the piece, using progressively finer-grit sandpapers.

NEXT, CUT THE BRACELET PARTS

1 Make the L-shaped miter gauge jig shown *below*. Place the miter gauge in the saw table's slot. Screw the jig to the miter gauge so it extends 4" beyond the saw blade. Tilt the blade 15° from perpendicular, and then raise it to cut through the jig's base and $\frac{1}{4}$ "-thick lamination.

2 Clamp a spacer block onto the end of the miter-gauge jig so it measures $\frac{3}{4}$ " from the saw blade. Place the lamination on the jig, and make the first crosscut to saw a bevel on the end of the lamination. Throw the cutoff piece away. Turn the lamination over, and saw the first bracelet part. Its side view should look like the one shown in the Side View Detail on the Bracelet Assembly Drawing on page 15. (To avoid chipping the edges on the pieces, we used the eraser-end of a pencil as shown *above right*, to hold the part safe and secure on the jig base while cutting.) Cut the remaining 11 bracelet pieces. (We adhered the pieces onto a strip of double-faced tape in the order they were cut.)

3 Using 150-grit sandpaper, sand a slight round-over on all sharp edges.



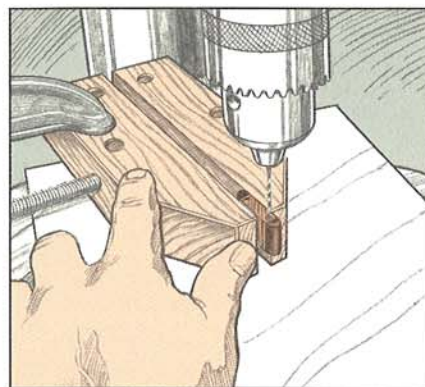
4 Chuck a $\frac{1}{8}$ " bit into your drill press. Clamp one of the bracelet segments in a handscrew clamp as shown at *right*, and drill both V-grooves to enlarge the holes. (Enlarging the holes allows you to conceal the knots in the string.) Drill the holes in the next two consecutive segments the same way.

5 To finish, string the bracelet segments on a wire in order. Apply several coats of oil finish (we used Watco Natural Oil), let the finish dry, and then rub between coats.

6 To assemble the bracelet, remove the segments from the wire in order and thread the elastic strings (see our Buying Guide) through each segment, as shown on the Knot Detail of the Bracelet Assembly Drawing. Pull the string enough to create some tension and then tie a square knot. Tie the other string with equal tension. Stretch the bracelet over a tin can in order to expose the knots. Apply a drop or two of cyanoacrylate glue to the knots. After the glue cures, push the knots into the enlarged holes in a segment to hide them.

NOW, MAKE THE NECKLACE

1 Return to the tablesaw, remove the jig and spacer block, and adjust

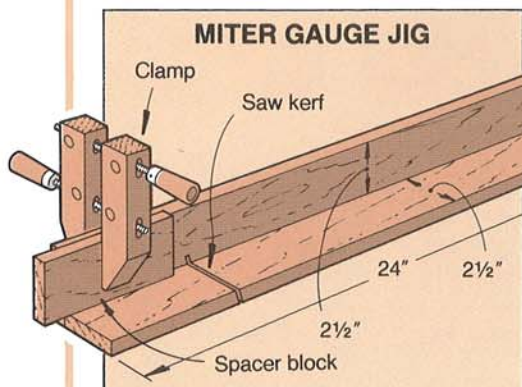


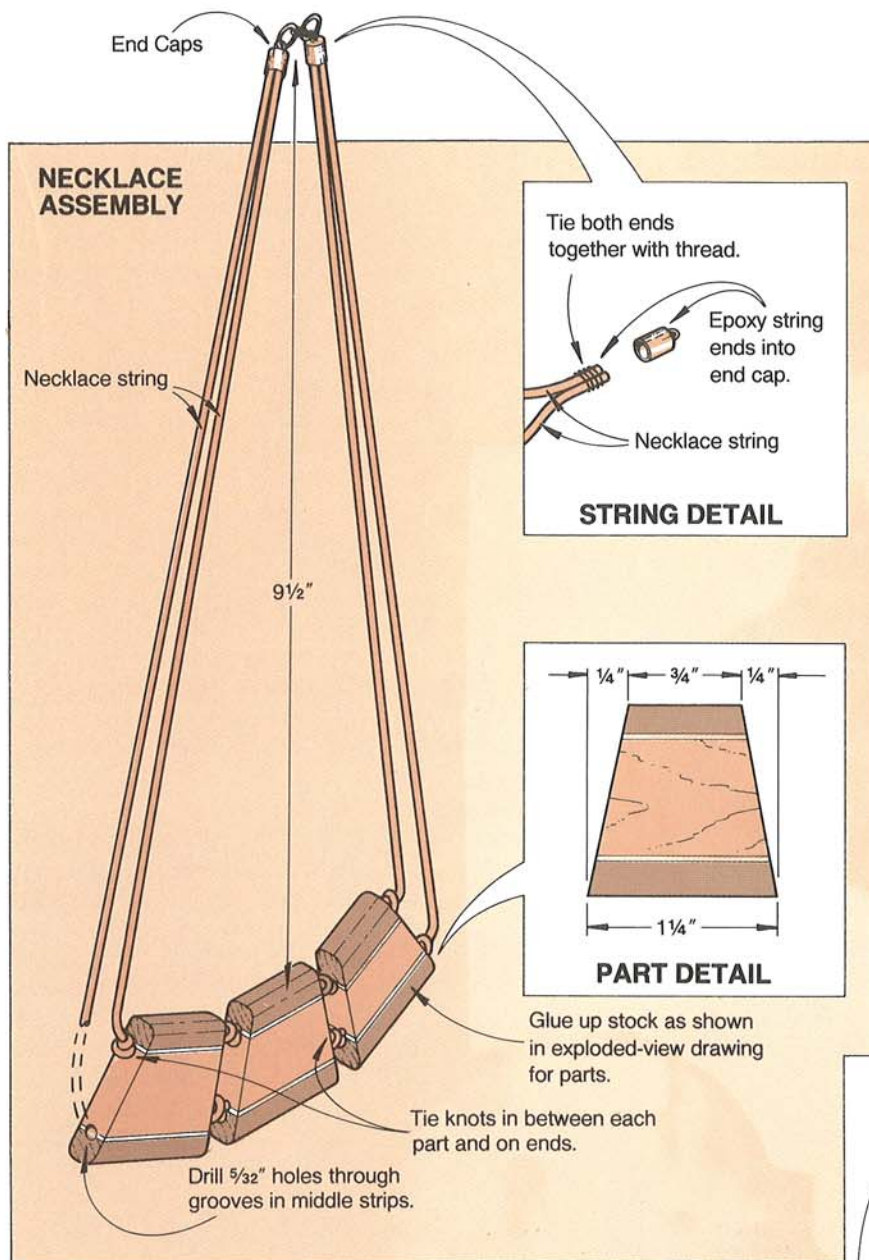
the miter gauge and jig to 10° off center. From the remaining piece of lamination, angle-cut three necklace parts to the dimensions shown on the Part Detail Drawing *opposite*. Sand slight round-overs on all of the sharp edges.

2 Chuck a $\frac{5}{32}$ "-diameter bit into your drill and, one by one, clamp each part in a handscrew clamp and enlarge the two V-groove holes.

3 Finish the three necklace segments. (We used the same finish as used on the bracelet.)

4 To assemble the necklace, first thread the string through the top hole of one part. Bring the ends of the string together and center the part on the string. Tie a loop knot at both ends of the part.





5 Thread the remaining two necklace parts onto the string—one on each side of the center part. Tie knots on the outside of these parts as shown on the Necklace Assembly Drawing, above. Thread the second or lower string through the three parts, tying knots at the same locations as on the upper string.

6 Pull the upper strings taut, and then cut the ends 9½" from the knots. Now, angle the upper strings at 45° and bring the lower strings

alongside them. Pull the strings together on one side, mark where the upper string ends on the lower string, and snip the lower string at this point. Repeat this process on the opposite set of strings to match their length. Next, make sure the strings are not tangled or crossed, and bind the ends of each pair of strings together with some sewing thread. Now, epoxy or glue the strings in the jewelry end caps as shown in

the String Detail on the Necklace Assembly Drawing at left.

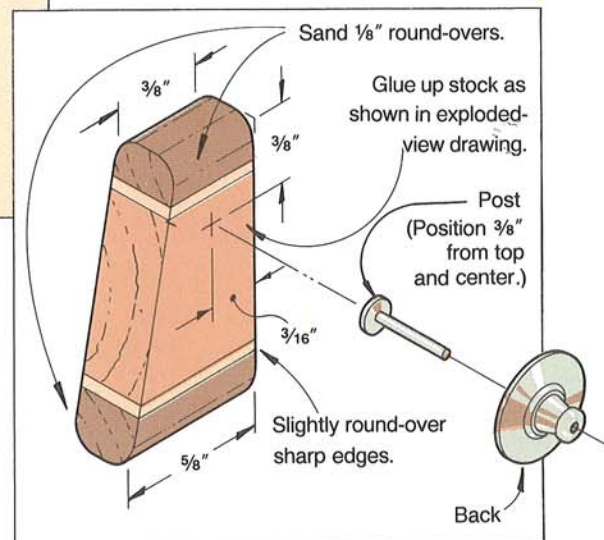
NOW, MAKE THE EARRINGS

1 Take the 2" length of lamination strips you put aside earlier and carefully clean all mating edges with lacquer thinner. Next, glue and assemble the strips using the same technique you used to make the long lamination. After the glue dries, tape the short lamination to a piece of scrap (we used double-faced tape), and then carefully belt-sand it to ¼" thickness.

2 Using the dimensions on the Earring Drawing below, lay out the earring shapes on the lamination. Scrollsaw the pieces to shape. Finish-sand and round-over the edges.

3 Mark the location for mounting the backs on the back of both pieces. Now, stick or epoxy the cup of the earring posts at these points.

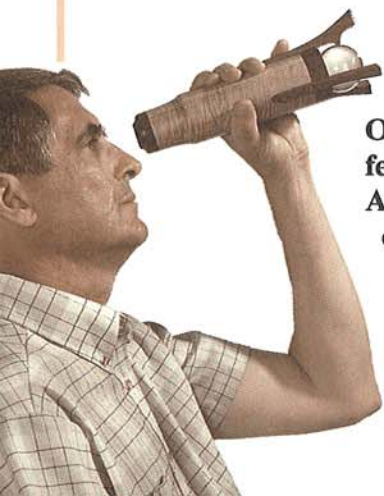
4 Finish the earrings. (We applied the same finish as used on the bracelet and necklace.)



Project Design: Susan Long Designs, Pilot Point, Texas.
 Illustrations: Kim Downing; Carson Ode
 Photograph: Jim Kascoutas

TURNED TELEIDOSCOPE

FOR A NEW LOOK AT THINGS



Old familiar kaleidoscopes charm the eye with multiple images of colored glass chips. Our related "teleidoscope," goes one better, offering multiple images of the world around you. Aim it, like a telescope, at a cloud formation, or at the face of your favorite pet and you'll be spellbound by the view. Use our source to order all the glass parts needed.

SHAPE THE END CAPS

1 To make the end caps (A and B on the exploded-view drawing *opposite*), rip and crosscut two $\frac{3}{4}$ "-thick pieces of stock (we used cardinal wood) to 3" square.

2 Mark diagonal lines on one face of both squares to find the centers. Using a compass, scribe $1\frac{1}{4}$ "-radius ($2\frac{1}{2}$ "-diameter) circles on both. Next, drill $\frac{1}{16}$ " pilot holes $\frac{1}{4}$ " in from the edge on two corners of each piece. Nail one to a larger piece of $\frac{3}{4}$ " scrap. Chuck a $1\frac{1}{2}$ "-diameter Forstner bit in your drill press, center the nailed end cap under the bit, and clamp it firmly in place. Now, bore through the piece, and then remove it from the scrap. This part we'll designate as the bottom end cap (A).

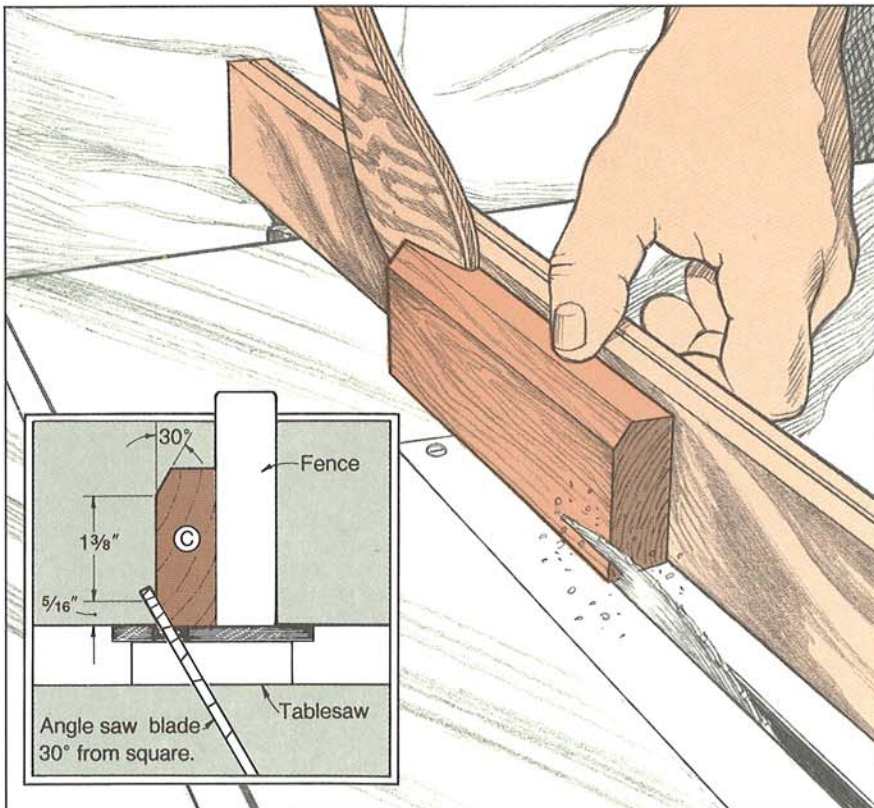
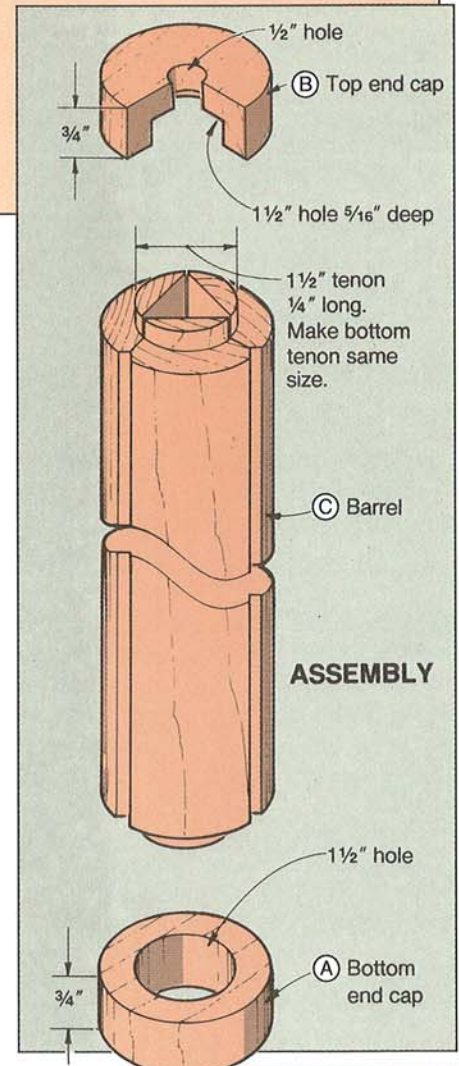
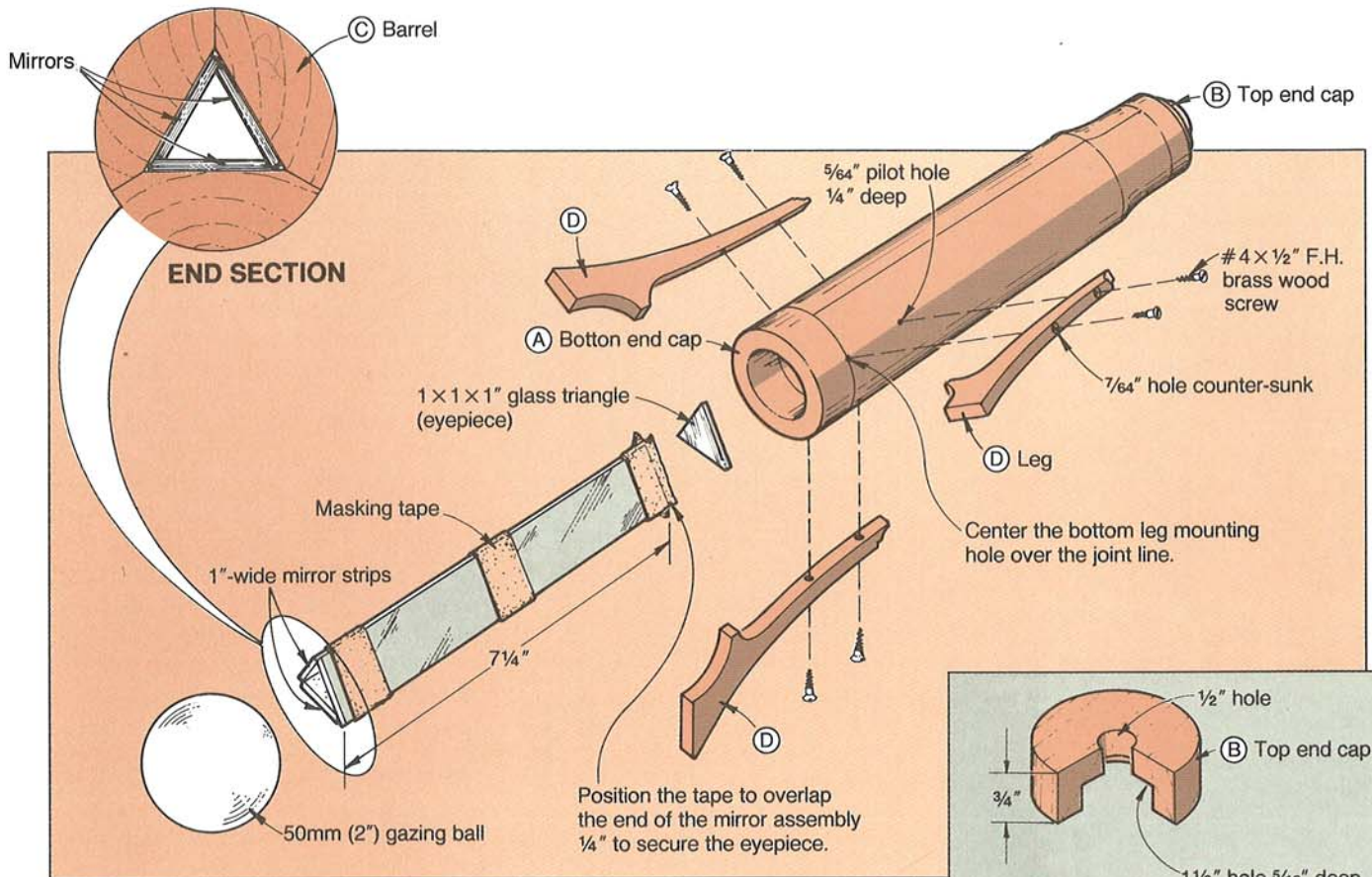
3 Next, nail the top end cap piece (B) to the scrap, center and clamp it under the bit, and drill $\frac{5}{16}$ " deep into the cap. (See the Assembly Drawing on page 19 for dimension details.) Switch to a $\frac{1}{2}$ " bit, position it in the centerpoint left by the Forstner bit in the step above, and drill through the top end cap. Remove the caps from the scrap. Finally, bandsaw both end caps making $2\frac{1}{2}$ "-diameter discs.

MAKE THE BARREL

1 Rip and crosscut three pieces of $\frac{3}{4}$ "-thick stock (we used quilted maple found locally) to 2" wide and 8" long for the barrel sections (C).

2 Position the saw blade and rip fence as shown at *right*. Bevel-cut both inside edges on each section. The flat surface between the bevels must be exactly $1\frac{3}{8}$ " wide for the mirrors (installed later) to fit.

3 Apply glue (we used yellow woodworker's glue) to the beveled edges on each barrel piece and

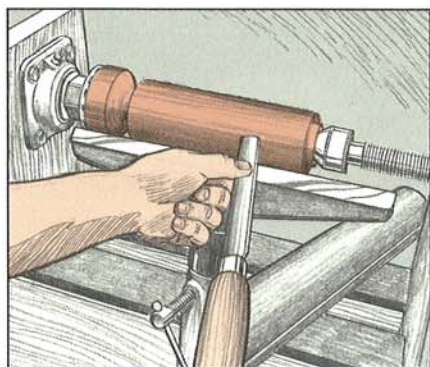


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TELEIDOSCOPE

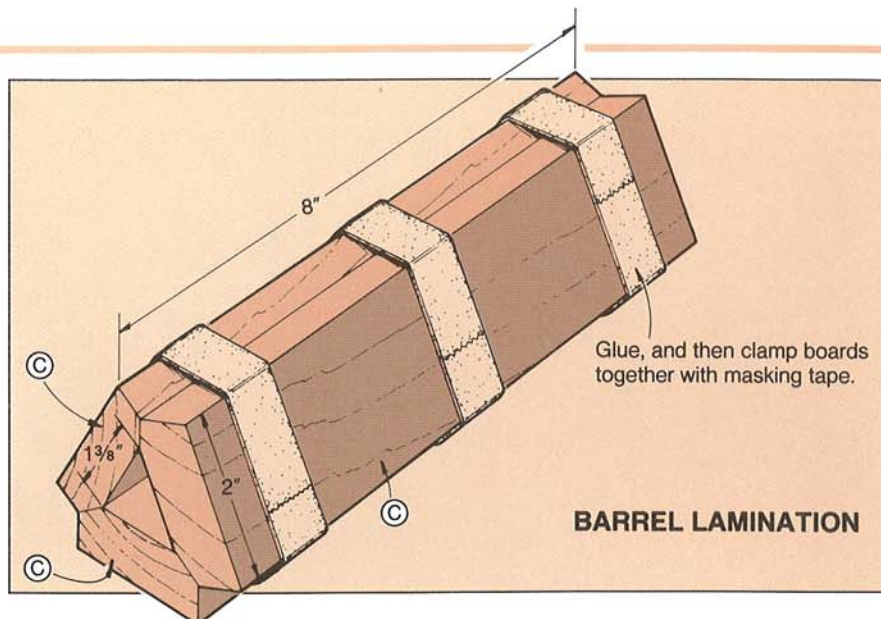
assemble the pieces as shown on the Barrel Lamination Drawing at right. Align the pieces keeping the inside edges and ends flush. Wrap the assembly with masking tape to clamp. Wipe away any beads of glue squeeze-out that form along the joints inside the barrel. (We inserted a small piece of cloth wrapped around a $\frac{1}{8}$ "-diameter dowel and secured it with a rubber band to wipe away any glue.) After the glue dries, remove the tape and trim both ends of the barrel square to a $7\frac{3}{8}$ "-finished length.

4 Screw a $1\frac{1}{2}$ "-thick piece of stock to your 3" faceplate (we used a $3\frac{1}{2} \times 3\frac{1}{2}$ " piece of a fir 2x4). Turn the auxiliary faceplate to the shape shown on the Barrel Turning Drawing on page 21, forming a tenon $\frac{7}{8}$ " long to fit snugly inside the triangular opening in one end of the barrel.



5 Mount the barrel lamination between centers on your lathe. Using a $\frac{1}{2}$ " gouge or skew chisel and a lathe speed of about 800 rpm, turn the barrel to $2\frac{1}{2}$ " diameter as shown above.

6 Next, using a parting tool and a lathe speed of about 1,000 rpm, turn a $\frac{1}{4}$ " long, $1\frac{1}{2}$ "-diameter tenon on both ends of the barrel. (See the Assembly Drawing, page 19.) Stop frequently while turning and check the tenons for a snug fit in the $1\frac{1}{2}$ " holes bored in end caps A and B.



BARREL LAMINATION

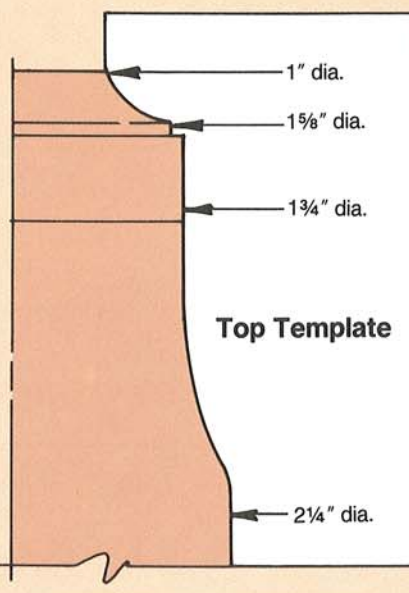
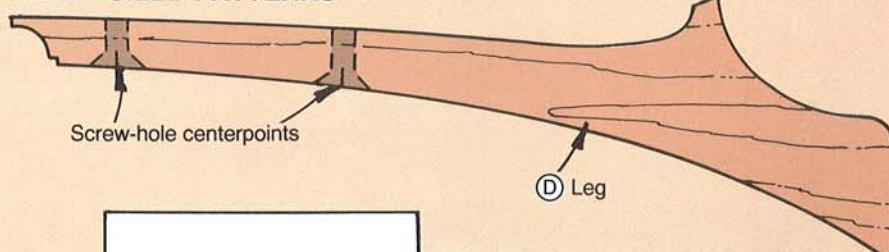
7 Glue a cap onto each end of the barrel. Be careful not to get any glue in the triangular opening. Next, clamp the assembly between the lathe's headstock and tailstock until the glue dries.

8 Now, finish-turn the barrel and bottom end cap to $2\frac{1}{4}$ " diameter (we checked the diameter with an outside caliper). Make a template

from the Top Pattern below (we used carbon paper to transfer the shape onto cardboard), and use it to shape the top of the barrel. Or, use an outside caliper to check the diameters while turning.

9 With the lathe turning about 1,500 rpm, sand the barrel smooth with 100-, 150-, and 220-grit sandpaper. Turn the lathe off, and sand

FULL-SIZED PATTERNS



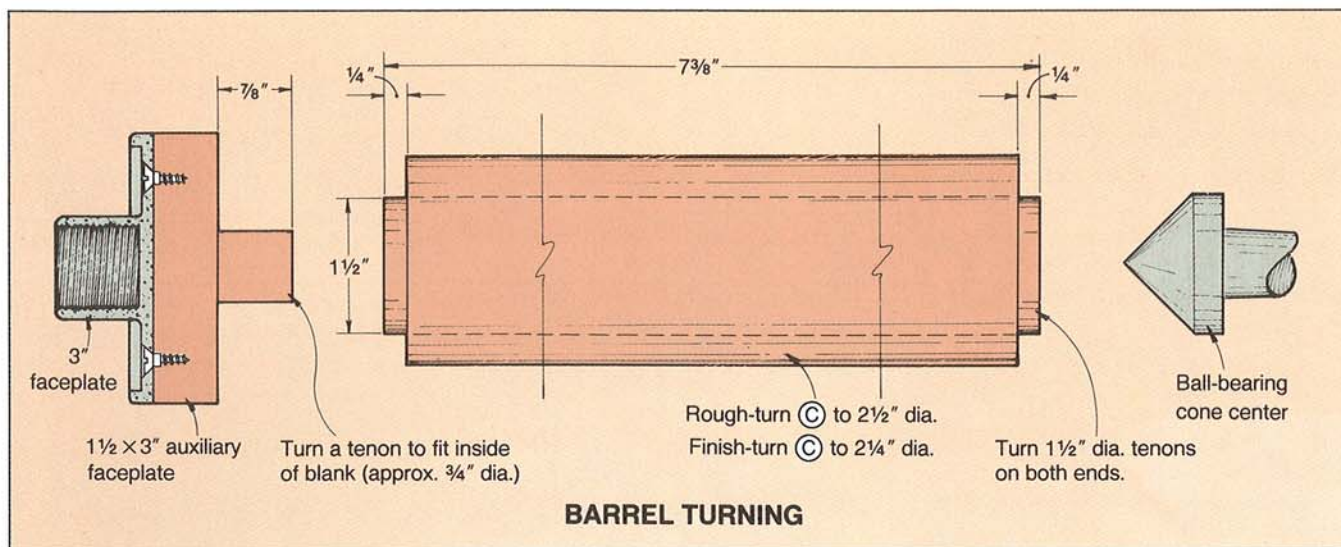
Bill of Materials

Part	Initial Size*			Matl.	Qty.
	T	W	L		
A bottom end cap	$\frac{3}{4}$ "	3"	3"	C	1
B top end cap	$\frac{3}{4}$ "	3"	3"	C	1
C barrel section	$\frac{3}{4}$ "	2"	8"	M	3
D legs	$\frac{3}{8}$ "	$1\frac{1}{2}$ "	$4\frac{1}{2}$ "	C	3

*Trim parts to finished size following the instructions in the text.

Material Key: M-maple, C-cardinal wood

Supplies: masking tape, #4 x $\frac{1}{2}$ " flathead brass wood screws, #0000 steel wool, finish.



with the grain using 220- and 320-grit sandpaper. Next, apply the finish. (After stopping the lathe, we brushed on three coats of lacquer, and buffed lightly between coats with #0000 steel wool.)

NEXT, ADD THE LEGS

1 Cut a piece of $\frac{1}{2}$ " or $\frac{3}{4}$ " stock to 2" wide by 15" long. (We used cardinal wood to match the end caps.) Plane or resaw the piece to $\frac{3}{8}$ " thick. Next, crosscut the piece into three 5"-long pieces, and then stick and stack them together using double-faced tape. Transfer the leg pattern to the top piece (we used tracing paper), including the location of the hole centerpoints. With a scrollsaw or a bandsaw, cut the legs (D) to shape. Sand the edges, and then separate the pieces and remove the double-faced tape.

2 Locate the screw-hole centerpoints on the outside edges of the legs and drill the two $\frac{1}{64}$ " countersunk holes in each leg. (We placed scrap beneath the leg being drilled, letting the barb hang over the edge.)

3 Space, and lightly mark the leg locations equidistant around the barrel. (We used a cloth tape to measure the circumference, divided the measurement into three, and then spaced them approximately $2\frac{11}{32}$ " apart.) Center the lower mounting hole of one leg over the

bottom cap/barrel joint line where shown on the exploded-view drawing. Square the leg, and using the previously drilled holes in the legs as guides, drill $\frac{5}{64}$ " pilot holes $\frac{1}{4}$ " deep into the barrel.

4 Temporarily attach the three legs to the barrel. Now, stand the barrel upright and check to see if it stands square to the benchtop. If not, sand leg tips slightly to level them. Now, mark the legs so you can reattach them in the same place.

5 Remove the legs and apply the finish. After the finish dries, screw two of the legs to the barrel. (You'll attach the third leg and gazing ball after installing the mirrors.)

INSTALL THE GLASS PARTS

Note: For the best viewing, use front-surface mirror (silver on the front surface of the glass). See the *Buying Guide* at the end of the article for our source for the mirror parts. When handling the front-surface mirror pieces be careful not to touch or scratch their delicate surfaces or cut yourself on their sharp edges.

1 Carefully lay the three mirror pieces so the silvered sides face down on a clean, soft cloth or towel. Space them about $\frac{1}{8}$ " apart. Next, cut three 5"-long strips of masking tape and place them across the backs of the three mirror pieces.

2 Gently pick up the three taped mirrors and shape them into a triangle. (See the End Section and exploded-view drawings for details.) Overlap the tape and then trim it to secure the mirrors. Next, check the fit of the mirror assembly in the triangular hole in the barrel. If it jiggles, wrap more tape around the mirror pieces. When fitted, carefully remove the mirror assembly, and tape the 1" equilateral glass triangle (the telescope's eyepiece) to the top end of the mirror assembly as shown on the exploded-view drawing. Insert the mirror assembly into the barrel. Finally, blow any dust out of the assembly.

3 Clean the glazing ball. Holding the barrel upside down, place the ball on the bottom of the end cap and between the two attached legs. Attach the third leg.

4 Point the telescope at something colorful and then view it through the telescope's eyepiece.

Warning: The gazing ball can act as a magnifying glass. Do not leave the telescope in direct sunlight.

Buying Guide

• **Telescope kit.** Three front-surface mirrors, glass triangle, 50mm crystal gazing ball, \$29 ppd. Gray and Gray Woodwrights, 2970 Sourdough Rd., Bozeman, MT 59715.

"O' CHRISTMAS TREE" HOLIDAY CANDLE HOLDER



Help create a festive holiday spirit with this charming accent. Made from pine, our scrapwood Christmas tree display will brighten any flat surface such as a tabletop or mantel. The set includes the tree-silhouetted candle holder, and three varying-sized trees.

Note: All wood parts for this project can be cut from a $\frac{3}{4} \times 5\frac{1}{2} \times 12$ " piece of pine. See the Cutting Diagram opposite.

FIRST, SAW OUT THE PARTS

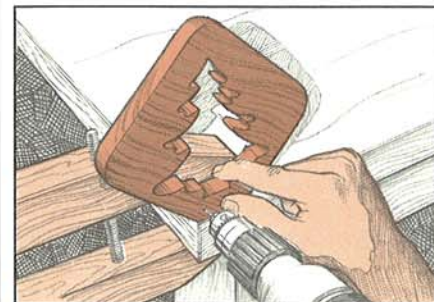
1 Place a sheet of carbon paper on a $\frac{3}{4} \times 5\frac{1}{2} \times 12$ " piece of pine. Trace the patterns shown on page 23 for the base (A), the face (B), and the three trees (C, D, E) on the pine.

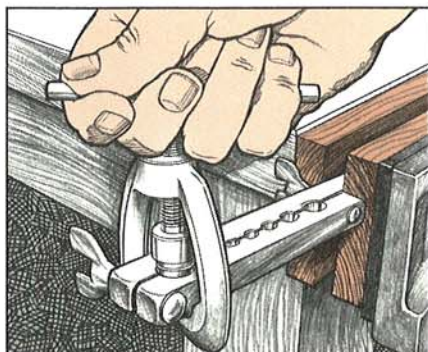
2 Next, drill the $\frac{1}{2}$ " hole $\frac{5}{8}$ " deep in the base where indicated.

3 Using a scrollsaw equipped with a $\frac{1}{8}$ " blade, cut out the five shapes. (To cut out the large tree, we first drilled a $\frac{1}{8}$ " hole through the workpiece at the tree's tip, inserted the blade through the hole, and then attached the blade to the upper blade clamp.) Next, sand the cut edges smooth to remove the saw marks.

ASSEMBLE THE CANDLE HOLDER AND FINISH IT

1 Attach the face (B) to the base (A). (We clamped the front edge of the base $\frac{3}{4}$ " in from the edge of our workbench. Next, we placed the vertical face piece against it, drilled the pilot holes as shown below, applied glue [we used yellow woodworker's glue] to the mating surfaces, and then nailed the two pieces together with a pair of #16 $\times$ 1" brads.) Set the brads, and plug the holes with wood putty.



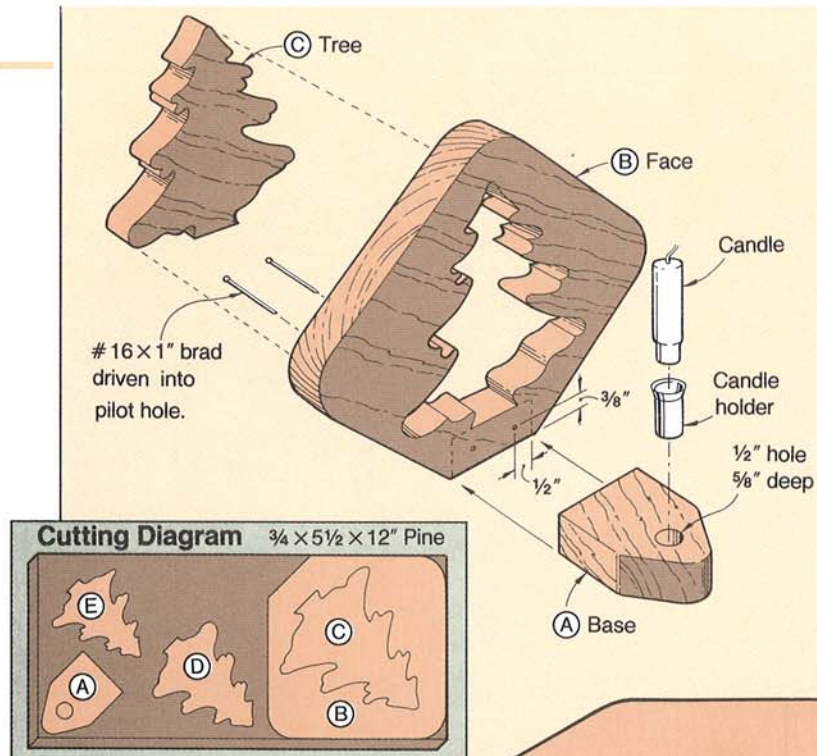


2 Apply the finish of your choice to the candle holder and trees. (We used a white, translucent "pickled" finish. To do this, we first diluted a water-based white latex paint and brushed it on the surface. Then, with the paint still wet, we wiped some of it off with a rag, letting some wood grain show through. Once dry, we sprayed on a coat of polyurethane.)

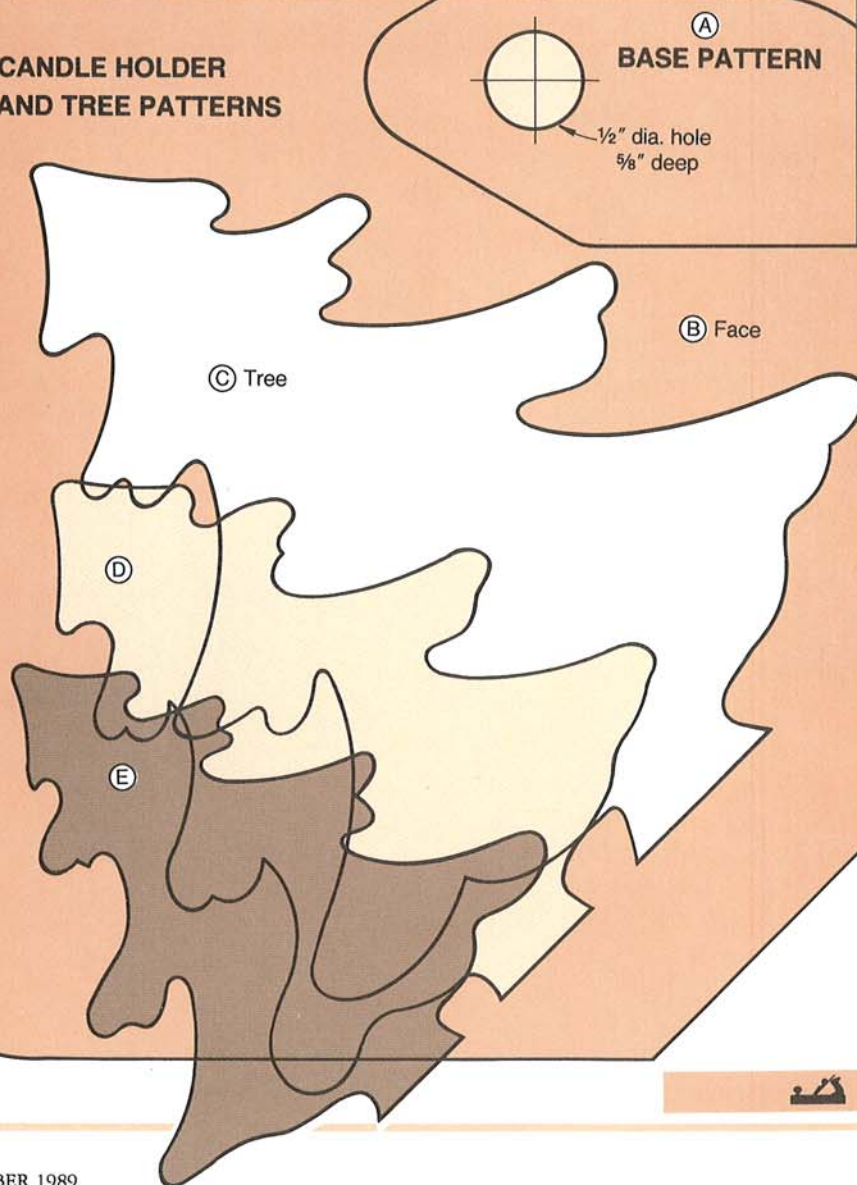
3 Using a pipe cutter, cut off a 1" length of $\frac{1}{2}$ " outside diameter flexible copper pipe. Ream the ends to smooth them with the reamer attachment on the pipe cutter. Next, clamp the piece of pipe in a flaring tool and flare one end as shown above. Remove the pipe and friction-fit it in the hole in the base. Insert a candle. (We purchased a $\frac{1}{2}$ " diameter candle from a crafts store and trimmed it with a knife to fit.)

Supplies: White latex paint, pipe cutter, flaring tool for $\frac{1}{2}$ " pipe, $\frac{1}{2}$ " candle.

Project Design: Pat Darcy,
With Joy, Inc., Edmond, Okla.
Illustrations: Carson Ode
Photograph: Jim Kascoutas



CANDLE HOLDER AND TREE PATTERNS



ROCKABYE DOLL CRADLE



If you want to be known as the "world's greatest woodworker" at your house, surprise that special someone with this delightful doll cradle for a favorite doll. Our pine beauty measures 24" long and 14" high, and you'll find the work made easy by our full-sized half patterns and detailed assembly instructions.

START WITH THE FRAME

1 From $\frac{3}{4}$ " stock (we used pine), rip and crosscut two pieces to $1\frac{3}{4} \times 24\frac{1}{4}$ " for the frame sides (A) of the cradle bottom, and two pieces to $1\frac{3}{4} \times 7\frac{3}{4}$ " for the frame ends of the cradle bottom (B). (See the Cutting Diagram on page 27.) Next, arrange these pieces as shown on the Bed-Frame Drawing *opposite*, and mark the locations of the two $\frac{3}{8}$ " dowel holes on the ends of the B pieces as dimensioned.

2 Using a doweling jig and a $\frac{3}{8}$ " brad-point bit mounted in an electric hand drill, drill the two dowel holes in each end of both B pieces $1\frac{1}{4}$ " deep. Next, drill the mating holes in the side frame members (A) the same way.

3 Crosscut eight pieces of $\frac{3}{8}$ " dowel to $2\frac{3}{8}$ " long. Glue a dowel in each of the holes in the ends of both B pieces. (We used yellow woodworker's glue.) Next, apply glue in the holes in frame members A. Assemble the frame, and clamp with bar clamps to squeeze it gently together. Wipe off any squeeze-out.

4 After the glue dries, remove the clamps. With a $\frac{1}{4}$ " round-over bit in your router, round over all outside edges on the frame. Set the frame aside, but leave the router set up to use later.

MAKE THE CRADLE SIDES

1 From $\frac{3}{4}$ "-thick pine, rip and crosscut two pieces to $1\frac{3}{8} \times 22$ " for the top rails (C). Next, tilt the saw blade 5° from horizontal and bevel-rip two bottom rails (D) to $1\frac{3}{8}$ " wide. Adjust the blade back to 90° and crosscut the two D pieces to 22". Now, using the same router set-up, round over the edges on the rails where shown on the Cradle-Side Assembly Drawing on page 25.

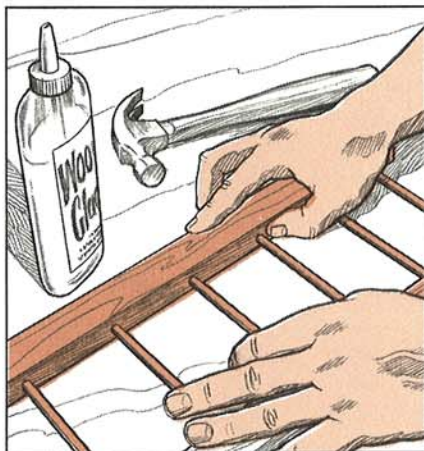
RAIL DETAIL

Sand edges off both
ends of rails (C) and (D)

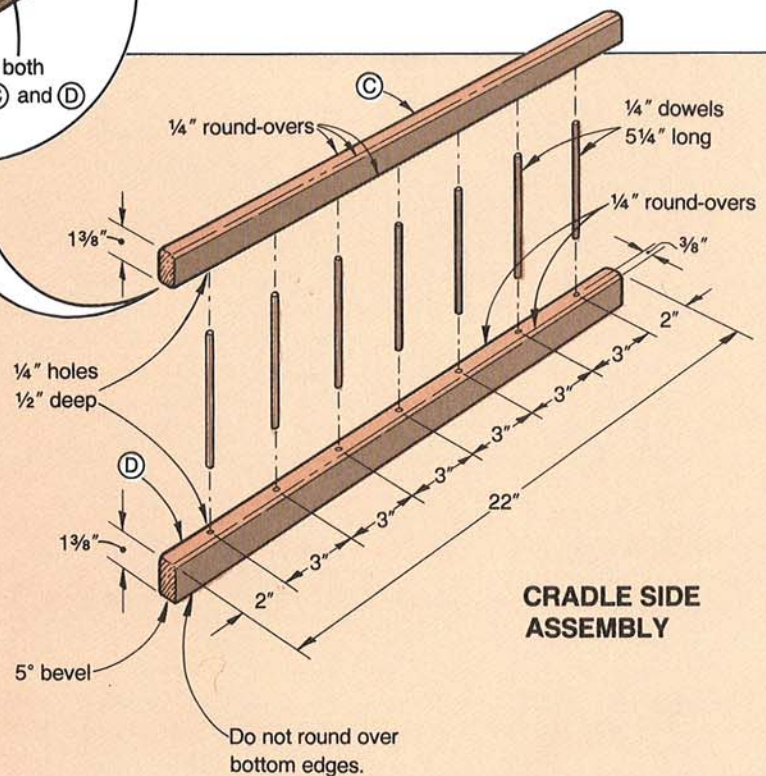
2 Using the dimensions for the dowel holes on the Cradle Side Assembly Drawing, mark the hole locations along the bottom edge of the top rails (C) and along the top edge of the bottom rails (D). (To mark them, we aligned and clamped both pairs of rails together; then, using a square, we measured and scribed lines across their edges.) Chuck a $\frac{1}{4}$ " drill bit in your drill press, clamp a fence to the table $\frac{3}{8}$ " from the center of the bit, and adjust it to drill a $\frac{1}{2}$ "-deep hole in the rails. Place each rail against the fence and drill the holes on the lines.

3 Bevel-sand both ends of each rail piece as shown in the Rail Detail accompanying the Rail Assembly Drawing. (We used a disc sander.)

4 Next, crosscut 14— $\frac{1}{4}$ "-diameter dowels to $5\frac{1}{4}$ " long, and sand a slight taper on the ends of each. Brush a small amount of glue onto the ends of the dowels, insert them in the holes, and assemble both sets of rails as shown below. Clamp the assemblies until dry.

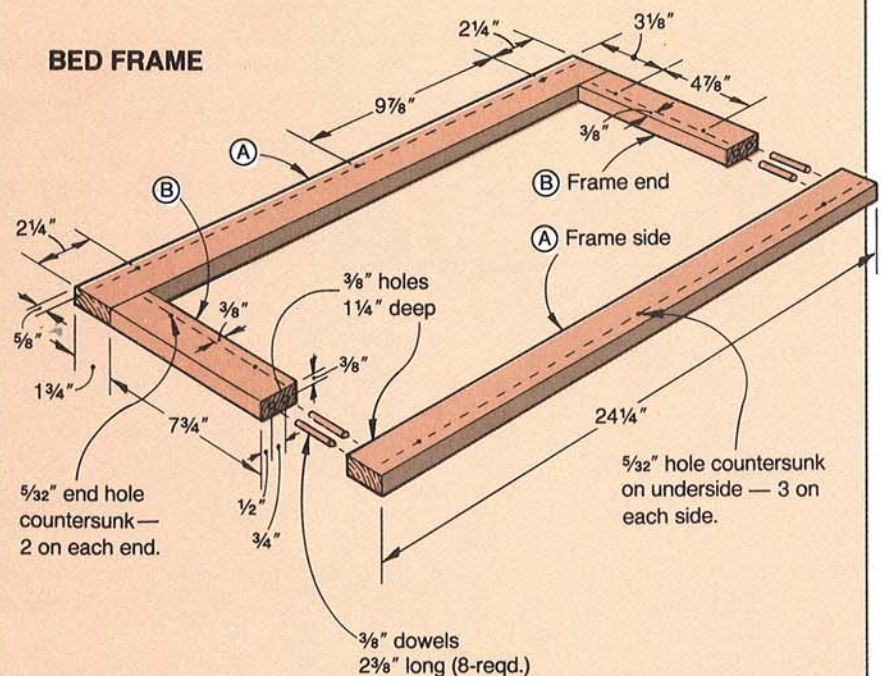


5 To make the posts (E), first rip and crosscut a $\frac{3}{4} \times \frac{3}{4} \times 36$ " piece of pine. Using the same router setup



**CRADLE SIDE
ASSEMBLY**

BED FRAME

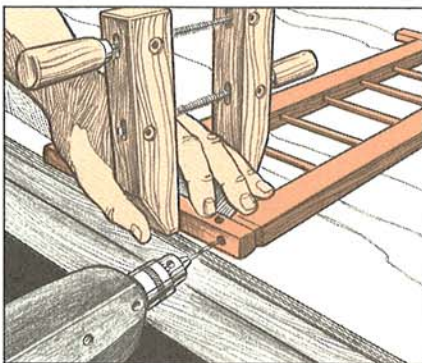


continued

described earlier, round over all edges on the piece. Set your saw's miter gauge to 5° from perpendicular with the saw blade, and angle-cut the piece into four 9"-long pieces. (The angled ends form the bottoms of the posts.) Now, square the miter gauge to the saw blade, and one by one, crosscut the square ends to attain a final post length of 8½". (We clamped a spacer block to the fence to ensure a uniform length when cutting each piece.) Bevel-sand the top ends of the posts as shown on the exploded-view drawing and Post Detail, *opposite*.

6 Using the dimensions on the Post Detail, mark the centerpoints for the four holes on each post. Drill the ⅜" holes ¼" deep. Next, drill ⅝" holes through the centers of the ⅜" holes, backing the pieces with scrap to prevent chip-out.

7 Orient the angled bottom ends of the posts to match the bevel-cut bottom edges of the bottom rails (D) and align. Attach the posts to the rail ends as shown *below*, drilling ⅞" pilot holes, and drive #8×1¼" flathead wood screws.



NEXT, MAKE THE HEADBOARD, FOOTBOARD, AND ROCKERS

1 To make the headboard (F) and footboard (G), rip and crosscut six 3⅝×10⅝" pieces of ¾" pine. Edge-join the pieces into two panels

of three pieces. Clamp the panels (we used bar clamps) and wipe off any glue squeeze-out. After the glue dries, remove the clamps, and sand.

2 Make a full-sized pattern of the headboard by placing a sheet of tracing paper over the half pattern on page 28. Align the left edge of the paper with the centerline, and then trace the outline of the half-headboard pattern onto the paper. Next, remove it and tape a second piece of paper to the left edge of the tracing paper with the half pattern and fold it back under. Cut out the half pattern with scissors, and then unfold it to make a full pattern. Make a pattern of the footboard, using the same technique.

3 Spray adhesive onto the backs of the two patterns, and adhere them to the panels. Bandsaw both pieces to shape. Remove the patterns.

4 Sand the cut edges smooth (we used a 2" drum sander). Next, using the same router setup, round over the top and sides (but not the bottoms) of both pieces. Finish-sand both pieces.

5 Rip and crosscut two ¾"-thick pieces of pine to 4×17". Using double-sided tape, stick the pieces together, face to face, aligning the edges. Make a full-sized pattern of the rocker on page 28 using the technique described in step 2. Adhere the pattern to the top piece. Bandsaw the rockers (H) to shape, cutting just outside the line, and sanding to the line. (We used a disc sander to sand the outside curves, and a drum sander on the inside curves.) Separate the rockers and remove the tape. Round over the curved edges where indicated. Sand.

6 For the cradle bottom (I), rip and crosscut a ¼"-thick piece of plywood to 9×22". Finish-sand.

ASSEMBLE THE CRADLE

1 Mark one face of the frame to designate it as the bottom side. Next, using the dimensions on the Bed Frame Drawing, lay out the six side holes and four end holes. Drill and countersink the holes. (We backed the frame with scrap to prevent chip-out when drilling.)

2 Screw and glue the rockers to the underside of the frame where shown in the End View Detail on the exploded-view drawing, aligning the inside face of the rocker with the inside edge of the frame. (We used #8×2" flathead wood screws.)

3 Attach the cradle sides to the footboard and headboard, using #8×1¼" flathead wood screws. (We used large rubber bands to temporarily hold the parts together. We then checked the assembly with a square, drilled the ½"-deep ⅞" pilot holes into the head- and footboards, and drove the screws.)

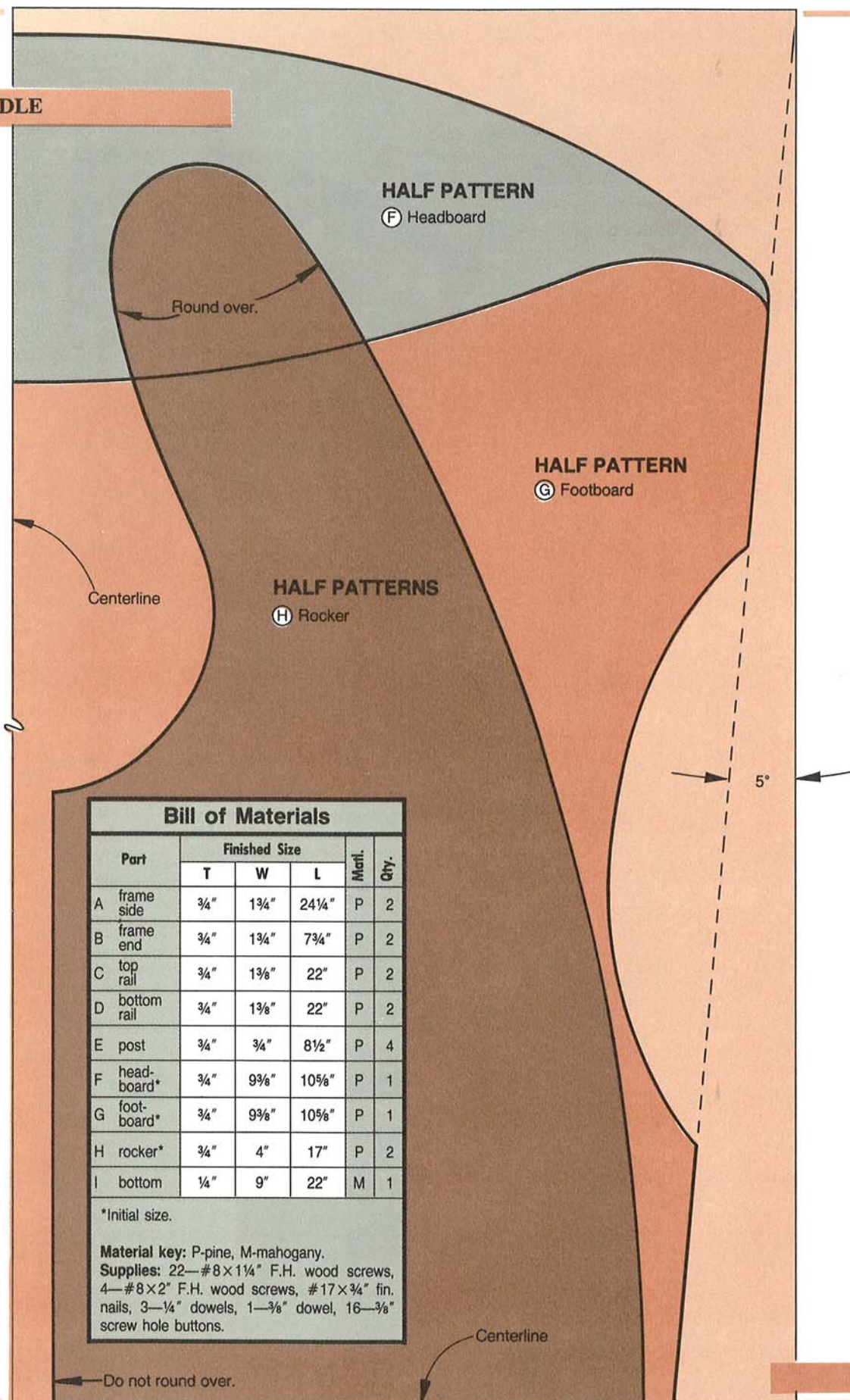
4 Turn the assembly upside down, apply glue to the bottom edge, and center the bed frame and rockers assembly on it. (We had ⅜" relief on each side and ¼" on the ends.) Clamp this assembly in position. (We used two small C-clamps on each side.) Now, drill pilot holes ½" deep through the holes along the frame sides and into the bottom rails of the cradle sides. Drive the #8×1¼" wood screws.

5 Glue the ⅜" screw hole buttons in the screw holes in the posts.

6 Place the plywood bottom you cut earlier into the cradle. Nail it in place with 2d finish nails.

7 Finish-sand, and apply the finish of your choice. (We stained our cradle a medium maple, and then sprayed on two coats of glossy polyurethane, sanding between coats.)

DOLL CRADLE



Reader's Corner

Because this is your magazine, it's important that you have an opportunity to sound off. Here, you can register your suggestions, criticisms, and, if you wish, a kind word or two. We may not be able to publish every letter, but we'll get in what we can. Send your letters to:

Reader's Corner
WEEKEND WOODWORKING PROJECTS™
1716 Locust St.
Des Moines, IA 50336

LOOKING FOR THE MISSING ARROWS?

In your July 1989 issue, you had directions for making a child's rocking chair. The instructions for the rush seating said there would be arrows on the illustrations but they seem to be missing. Can you help?

Ada Kenney, Jefferson, Texas

Ada, we inadvertently left the arrows off the rush seating illustrations. But to make amends and make sure you and other readers have all the information you need, we're running the revised illustrations below. We apologize for any inconvenience our oversight may have caused.

A BURNING ANSWER FOR THE GIRAFFE PROJECT

I made three "Safari-Sunset" wall plaques as shown in the July 1989 issue [pages 16-19], and each turned out great. However, instead of using knotty pine or other special wood for effect, I used my propane torch to burn in the giraffe

spots. It worked out fine, and any kind of appropriately-colored grained wood may be used. I also recommend practicing on scrap wood before burning the workpiece.

Thanks a bunch for providing great weekend project patterns.

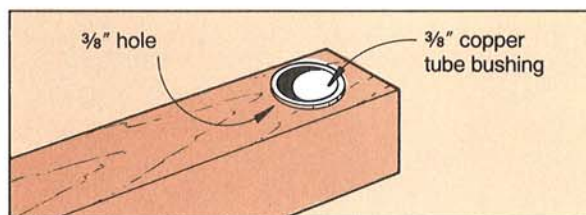
Robert Frantz, Arroyo Grande, Calif.

Robert, we're happy to hear of your enthusiasm for the "Safari-Sunset" wall plaque. Thanks, too, for the wood-burning tip. We'll pass it along.

STURDY IMPROVEMENT FOR THE HANGING PLANTER BASKET

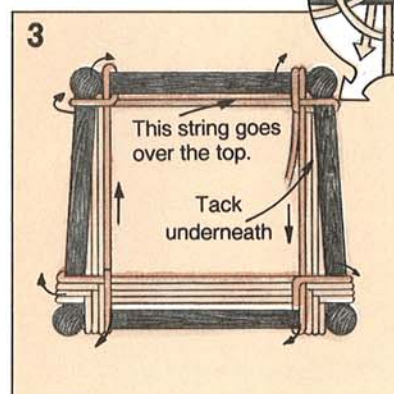
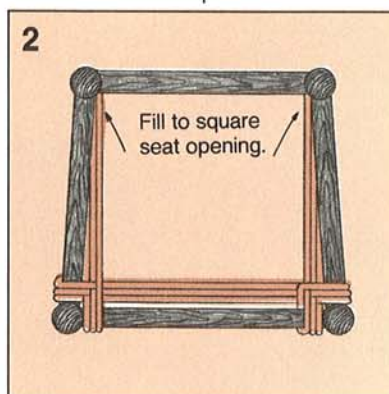
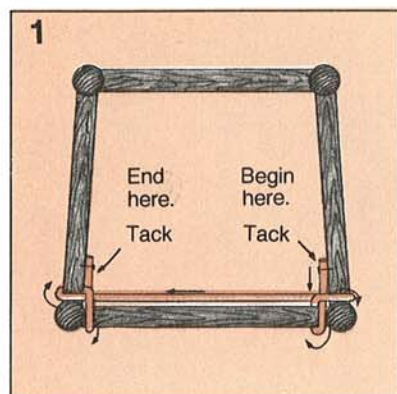
Following directions from the July 1989 issue of your fine magazine, I built four of the hanging planter baskets [pages 4-7]. The only problem I encountered was that the rings holding the heavy basket and arm together cut through the soft vertical grain of the redwood. I solved the problem by cutting $\frac{3}{4}$ "-long lengths of $\frac{3}{8}$ " rigid copper tubing, and using them for bushings.

Jack Osborne, Chattanooga, Tenn.



The copper bushing (above) is a great solution to the problem, Jack. We'll share it with our readers.

—JH



EDGE-JOINING BOARDS *A PRIMER*



Knowing how to expertly edge-join boards offers several advantages. First, it lets you make wider (and more stable) slabs of solid wood than you can buy. And, by gluing up stock, you can often use scrap material and save money. You'll note several projects in this issue require laminations made up of edge-joined boards. Typically, we use the butt joint for most, and that's the process we'll focus on here.

START STRAIGHT AND TRUE

Often, quality edge-joining results depend on the quality of your boards, and how well you prepare their mating edges. For the best grain and coloration, get all of the pieces you can from one long board. Avoid boards with bows, cups, splits, or checks.

Crosscut the pieces slightly longer (by 1") than needed for the finished lamination. You need enough pieces that, when placed side by side, they measure wider than the finished lamination by about $\frac{1}{2}$ " or more. This provides enough waste to enable you to square the lamination.

If the board has uneven edges, you first need to straighten one edge. Nail a straightedge to it, and rip it on your tablesaw as shown in drawing 1. If you'll run the boards across a jointer later, allow addition-

al width to compensate for the thickness that will be removed.

You can minimize cupping by staying with boards narrower than 6". For most projects, we prefer to work with board widths in the 3- to 5-inch-wide range.

MAKE THE LAMINATION

Lay the ripped lengths of stock next to each other on a flat surface, arranging the pieces for appearance. Also, to minimize warping, alternate the end grain on adjoining pieces.

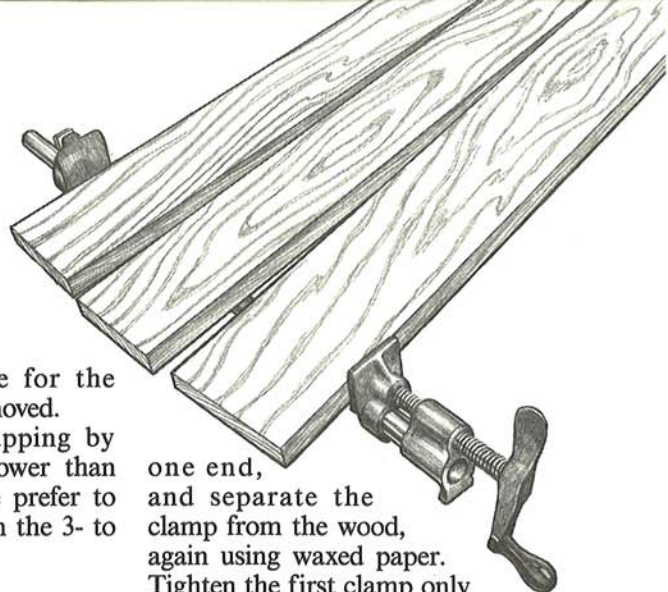
Check the boards for a snug edge-to-edge fit. If you find any irregularities, resaw or joint the edges.

Next, align the boards and mark the face with a large "V." Now, lay down a pair of scrap 2x4s, cover them with waxed paper, and place the boards across them.

READY FOR THE GLUE

One by one, spread an even, moderate film of glue along the mating edges. (We use a small glue brush.) Use a fast-setting aliphatic glue (such as yellow woodworker's glue) for small jobs. For bigger, more complex jobs, turn to white woodworker's glue, which offers a longer set time.

Start at one edge, place the glued edges against each other, and align them with the V. When all boards are in position, check alignment, and then start clamping. Start at



one end, and separate the clamp from the wood, again using waxed paper. Tighten the first clamp only enough to draw the boards fully together. Then, move down about 12" (or half the length if less) and place another clamp on the opposite face of the lamination. Tighten it with the same pressure as the first. Apply the remaining clamps as needed, alternating clamping direction and side.

Check the surface of the boards to level them. We use a hammer and piece of scrap (see drawing 2), and tap them into alignment.

Tighten all clamps to a uniform pressure. Don't overclamp—too much pressure may bend or distort the lamination. We prefer to clean up the glue squeeze-out while it is semisolid, using a chisel or scraper.

For many glues, clamping for 30 minutes will be enough, but follow the manufacturer's instructions. After the glue sets up, remove the clamps. Scrape the joints with a hand scraper to even them, pulling the scraper toward you as you work, as shown in drawing 3. If a lot of material must be removed from the surface to make it even, we'll use a belt sander.

