

WEEKEND WOODWORKING PROJECTS™

NEAT THINGS YOU CAN BUILD IN A HURRY



United States puzzle

Hot-shot
clothes tree

Folding snack table

Contoured
keepsake box

Cozy cherry
candle lantern

CORNER SHOWCASE AND SHELF

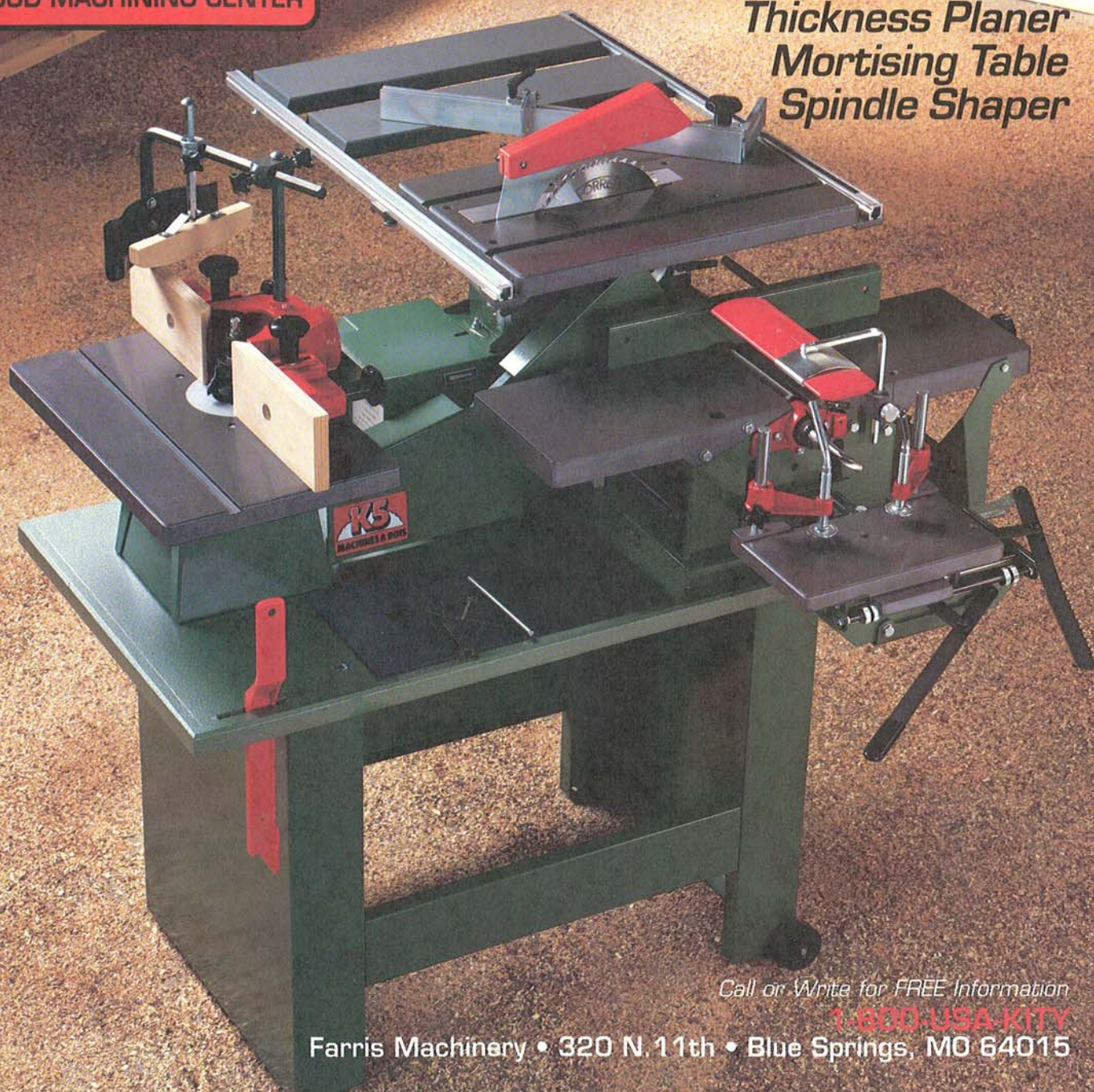
A fitting place for your
finest collectibles

FROM THE EDITORS OF WOOD® MAGAZINE



The Basics of Cabinetry In a Compact Combination

*Table Saw • Jointer
Thickness Planer
Mortising Table
Spindle Shaper*



Call or Write for FREE Information

1-800-USA-KITY

Farris Machinery • 320 N. 11th • Blue Springs, MO 64015

The Ideal Woodworking System For the Craftsmen of the '90's

The "Craftsmen of the '90's" (according to the experts) will fall into one of three categories; Executives looking for a hobby that will relieve the stress associated with long hours at a desk, Artist/Entrepreneurs who will seek to prove that quality furniture and home accessories don't necessarily come from an assembly line (and that you really can be your own boss), and Retirees who want to stay active while creating things of beauty for family and friends (either for extra income or just for the fun of it).

The K-5 offers every woodworker (even the ones the experts forgot) a perfect blend of precision, capacity, space economy and reasonable price. Our engineers have avoided gimmicks like electronic readouts and bulky attachments in favor of dynamically balanced cutterheads and a simple, straightforward drive system. Whether you're just starting out, or making a change in your shop, call now to find out why the K-5 is the fastest growing system on the market today.



CHECK OUT THESE TIPS AND JIGS

- Using L-brackets for clamping corners—page 24.
- Preventing chip-out while dadoing—page 27.
- Boring holes to make arched pieces—page 10.
- Clamping jig for gluing edging strips on curved surfaces—page 20.

Note: To find the tips and jigs, look for tinted steps on the above pages.

Dear Reader,



The gift of knowledge ranks as one of the best gifts a person can bestow on another. And when that gift comes in the form of a woodworking project, you know there's a caring woodworker lurking somewhere behind it.

In this issue, we developed such a project for your giving spirit—a United States map puzzle—that's as fun to assemble as it is educational. In fact, outside of traveling around the entire country by car, it may be the most effective means of teaching kids in the five- to ten-year-old range their states and capitals, as well as the locations and names of the Great Lakes. And just think of all the gas you'll save! Heck, when we made the project, I found myself relearning the names of capitals I had forgotten years ago.

Where's New York?

What first prompted us to do this project was the results of a 1988 international geography survey conducted by the Gallup research organization. In the survey, I came across the grim report that out of the seven industrialized nations that participated, youths in the United States scored in the bottom one-third. Those between ages 18 and 24 averaged 6.9 correct answers out of a possible 15. Believe it or not, only 55 percent of U.S. adults were able to identify New York state, and 14 percent could not identify the United States on a world map. In this day of a global economy, this news is hard to take.

Back to Basics



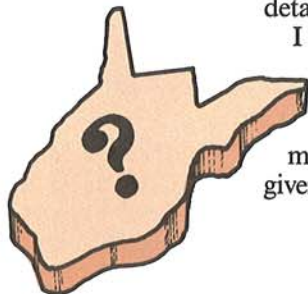
Whether you're a grandparent, parent, or just somebody who cares about *our* kids' education, I'm sure that you can see the value in this kind of project. To offer you still further encouragement, we went the extra yard so you can make the most professional-looking map puzzle possible.

To begin with, we looked closely at the map's design, deciding which of our smallest states would have to be grouped, and what might be the best way to cut out the parts using a standard-sized scrollsaw.

Then, we linked up with Meisel Hardware Specialties, a woodworking catalog company, to develop a complete set of adhesive-backed decals of the lake, state, and capital names. We also made two versions of the map pattern: a scaled pattern in the magazine, and a *free* full-sized pattern that you can order from us. (See the details inside.)

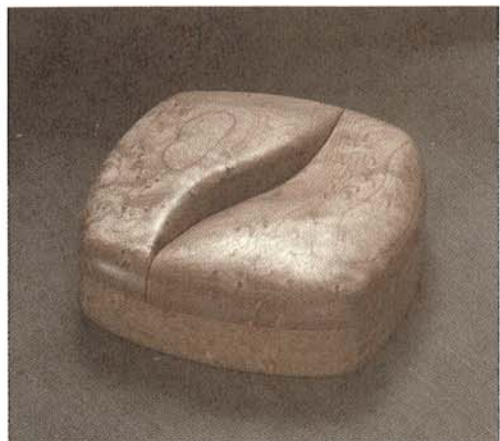
I suppose the only thing we decided against was cutting the puzzle parts for you on a scrollsaw. But then, that's half the fun right there.

And should you give the project to a child, please keep in mind that with it you're giving the gift of knowledge. Not only will the lucky recipient become more familiar with the world, but you can expect that he or she will hold the giver far more dear than the gift.



Jim Harrold

Jim Harrold
Managing Editor



6 CONTOURED KEEPSAKE BOX

Looking for an elegant home for your precious jewelry? Try this scrap-wood beauty, *left*, with its eye-catching contours.

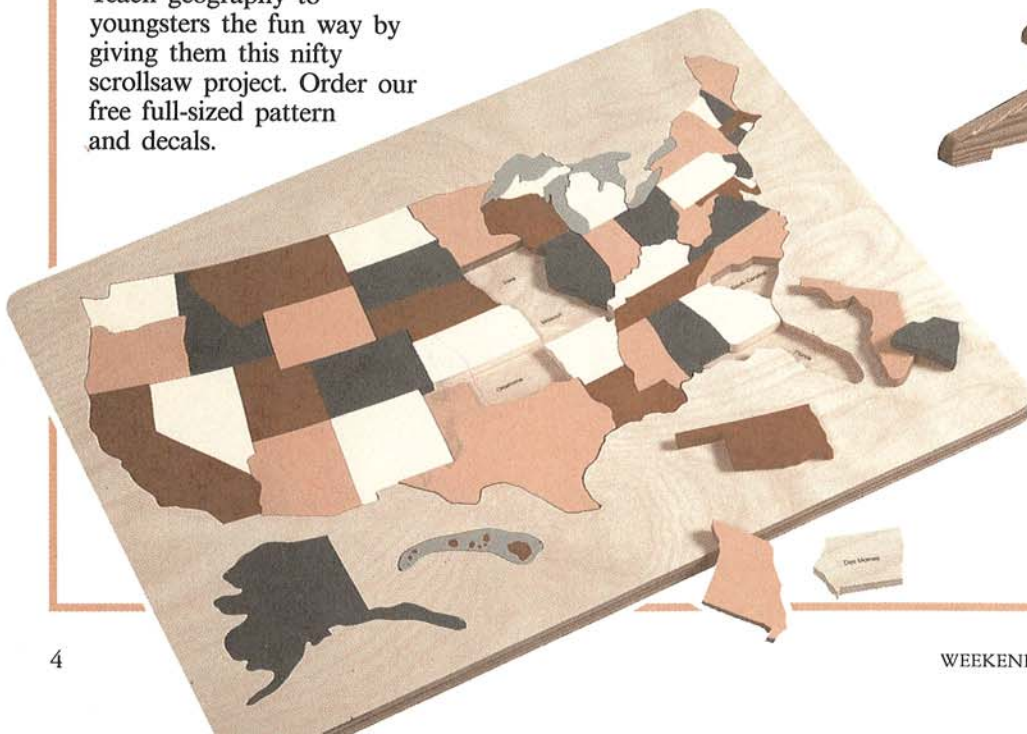
10 COZY CANDLE LANTERN

Add a warm glow to a bare windowsill or table with this cherry charmer. Six arched frames fitted with glue-chip glass provide lacy views of the burning candle.



14 U.S. PUZZLE

Teach geography to youngsters the fun way by giving them this nifty scrollsaw project. Order our free full-sized pattern and decals.



18 HOT-SHOT CLOTHES TREE

Some clothes trees just stand there and do nothing. Our Nerf basketball clothes tree, however, beckons kids to "shoot two" after hanging up their jackets or sweaters on the handy pegs.



22 FOLDING SNACK TABLE

Remember the two-part chair featured in the last issue? Here's a terrific matching oak table that, like the chair, folds to store easily in a small space. Cut the parts in an hour or two.



24 CORNER SHOWCASE AND SHELF

Bring new life to a drab corner in your dining room or kitchen with this exquisite oak cabinet and shelf. Here, we combined a rich blend of homemade traditional moldings.

Plans that Please!

EDITORIAL/ART STAFF

Editor

Larry Clayton

Managing Editor

Jim Harrold

Projects Editor

Charles E. Sommers

Projects Design Editor

James R. Downing

Art Director

C. L. Gatzke

Graphic Designer

Michael G. Harrington

Administrative Assistant

Louise Anderson

Project Builders

Don Wipperman, Kim Downing,

Jim Boelling, Steve Fleming

Editorial Director

Doris Eby

Publisher

William R. Reed

Circulation Director

Clem Sevede

Circulation Manager

Alan Brush

Production Services Manager

Steven Johnson

Editorial Production Supervisor

Joe Heuer

Editorial Research Director

C. Ray Deaton

WEEKEND WOODWORKING PROJECTS™ (ISSN 1042-6094) is published bimonthly in January, March, May, July, September, and November by Meredith Corporation, 1716 Locust Street, Des Moines, IA 50336. Second-class postage paid at Des Moines, Iowa. SUBSCRIPTION PRICES: One year \$24.97 in the United States and its possessions. Canada and other countries add \$6 per year. POSTMASTER: Send address changes to WEEKEND WOODWORKING PROJECTS™, P.O. Box 10815, Des Moines, IA 50336. To phone, call toll-free 1-800-678-2666.

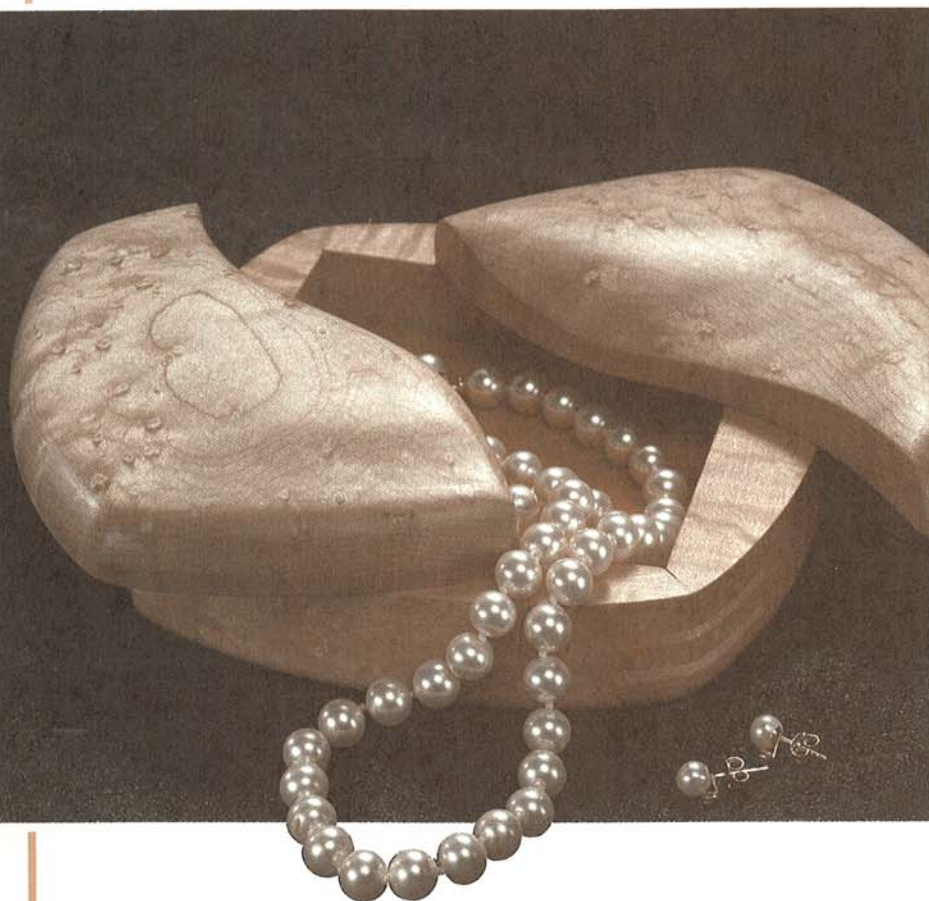
© COPYRIGHT MEREDITH CORPORATION, 1990. ALL RIGHTS RESERVED. PRINTED IN U.S.A.

OUR PLEDGE TO YOU

Prior to publication, we build every project presented in WEEKEND WOODWORKING PROJECTS step-by-step in our shop. Then, a seasoned 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™

MA



CONTOURED KEEPSAKE BOX

FOR SMALL TREASURES

The next time you give someone jewelry, consider gift-wrapping it in a smart-looking box like this one. We used bird's-eye maple for its showy appearance, added splines to enhance the corners, and machine-sanded contours into the lid. You can bet that the end result will be just as welcome as the treasure inside.

BUILD THE BOX FIRST

1 From $\frac{3}{4}$ " stock (we used bird's-eye maple), rip and crosscut a $1\frac{1}{4} \times 24$ " piece. (See the Cutting Diagram *opposite top*.)

2 Lower the blade on your table-saw to $\frac{1}{8}$ " above the table top and set the rip fence $\frac{1}{8}$ " from the inside of the blade. Rip a groove along one edge of the piece.

3 Elevate your tablesaw blade 1" above the table. To make the box side (A) parts (see the Box Assembly Drawing *opposite*), miter-cut four 5" lengths from the piece. Test the miter cuts on scrap first.

4 Resaw or plane a $\frac{3}{4} \times 4 \times 12$ " piece of stock (use this length for safe handling) to $\frac{1}{4}$ " thick. From it, rip and crosscut a $3\frac{1}{16}$ " square for the bottom (B). Reset your saw, and cut the $\frac{1}{8} \times \frac{3}{16}$ " rabbet along all four edges on one face of the bottom piece. Finish-sand the bottom and the box sides.

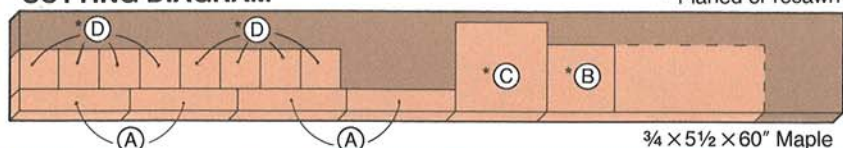
5 Apply glue to the mitered corners (we used yellow woodworker's glue), and fit the sides around the bottom to form the box. Do not glue the bottom. Clamp.

CUT AND INSTALL THE CORNER SPLINES

1 Make the jig shown on the Spline Slot Jig drawing *opposite*, to cut the spline slots in the corners of the box as shown on the exploded-view drawing on page 8. (We used a scrap piece of 2x4, outlined the 90° notch with a square, and then sawed it with our bandsaw.)

2 Set the rip fence $\frac{1}{2}$ " from the blade. Elevate the blade to a height of $1\frac{7}{8}$ ". Next, position the jig against the fence, and place the box in the V-shaped notch of the jig—

CUTTING DIAGRAM



* Planed or resawn

3/4 x 5 1/2 x 60" Maple

Bill of Materials

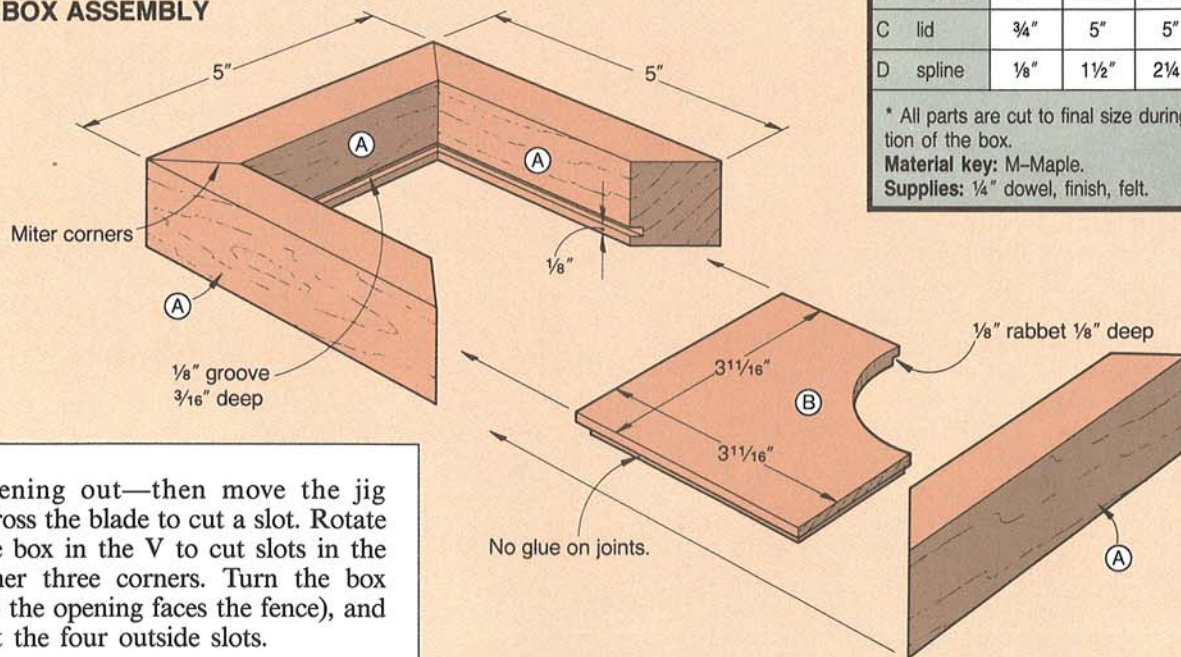
Part	Initial Size*			Mater.	Qty.
	T	W	L		
A box	3/4"	1 1/4"	5"	M	4
B bottom	1/4"	3 1/16"	3 1/16"	M	1
C lid	3/4"	5"	5"	M	1
D spline	1/8"	1 1/2"	2 1/4"	M	8

* All parts are cut to final size during construction of the box.

Material key: M-Maple.

Supplies: 1/4" dowel, finish, felt.

BOX ASSEMBLY



opening out—then move the jig across the blade to cut a slot. Rotate the box in the V to cut slots in the other three corners. Turn the box (so the opening faces the fence), and cut the four outside slots.

3 To make the slip feather splines (D) for the slots, first rip and crosscut a piece of 3/4" maple to 1 1/2 x 20". Resaw a 1/8 x 1 1/2" strip from it. Test fit the strip in one of the spline slots. Sand the strip for a smooth but not tight fit in the slot.

4 Crosscut the 1/8" strip into 2 1/4"-long splines. Working with one corner at a time, apply glue in the slots and on the splines. Insert the splines in the slots. Once the glue dries, trim off the splines, and then sand.

MAKE THE SCULPTED LID NEXT

1 From 3/4" stock, rip and crosscut a 5" square piece for the lid (C). Using carbon paper or a photocopier, make a copy of the lid pattern on page 9. Cut the pattern to shape, and adhere it (we used spray adhesive) to the top of the square, aligning all sides flush.

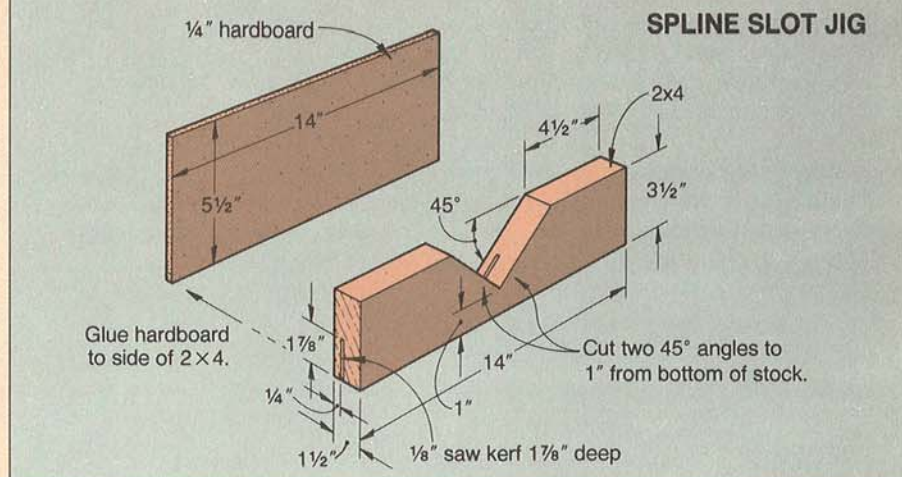
2 Follow the pattern's curved line for sawcut 1 and bandsaw the lid square into two parts. Rejoin the

two lid pieces into a square and tape them together. (We adhered double-faced tape along the edges of the saw cut to hold them together.)

3 Using the dimensions on the exploded-view drawing, mark the centerpoints for the two 1/4" holes in the top edge of the box. Drill them 1/2" deep. Insert dowel centers in the

holes, center the lid on the box, and press them together to transfer the centerpoints. Drill the two 1/4" holes in the lid 1/2" deep. Next, cut two 7/8"-long lengths of 1/4" dowel and glue them in the lid holes. Switch to a 9/32" bit and redrill the two holes in the box. Now, place the lid on the box, and tape the two parts together with masking tape.

SPLINE SLOT JIG



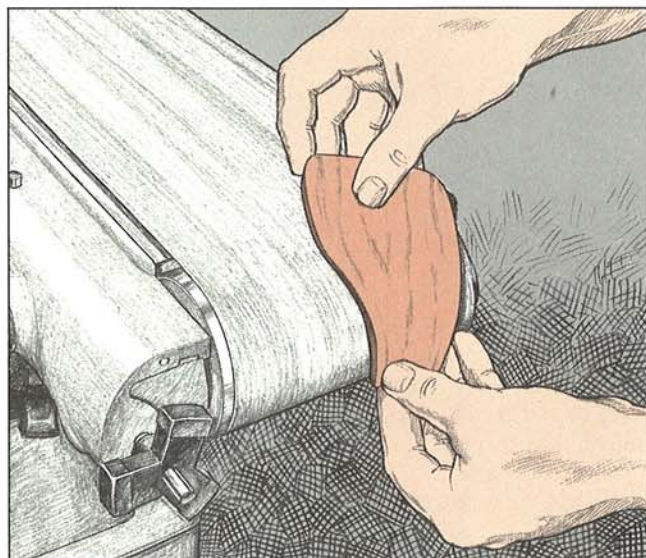
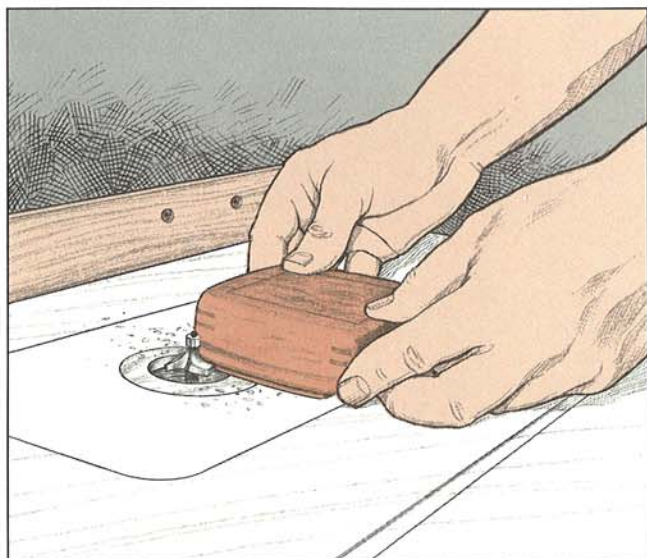
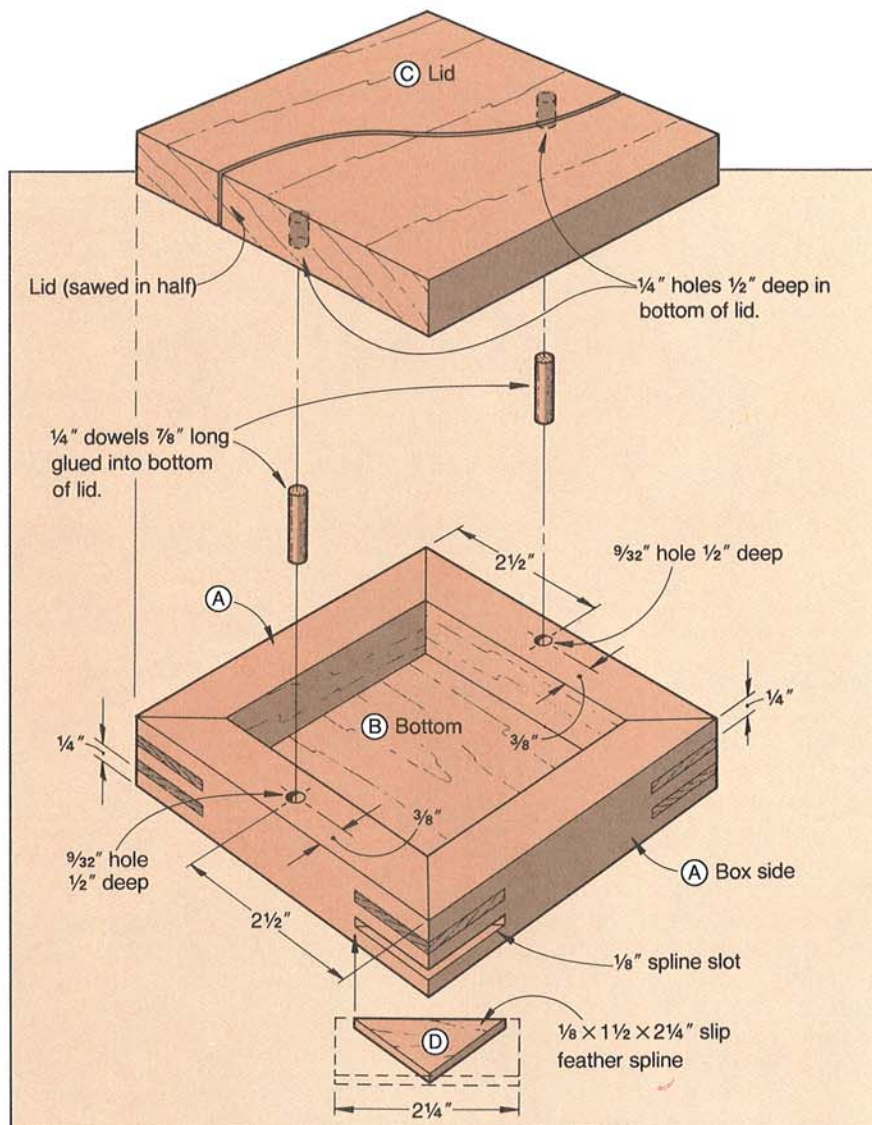
Continued

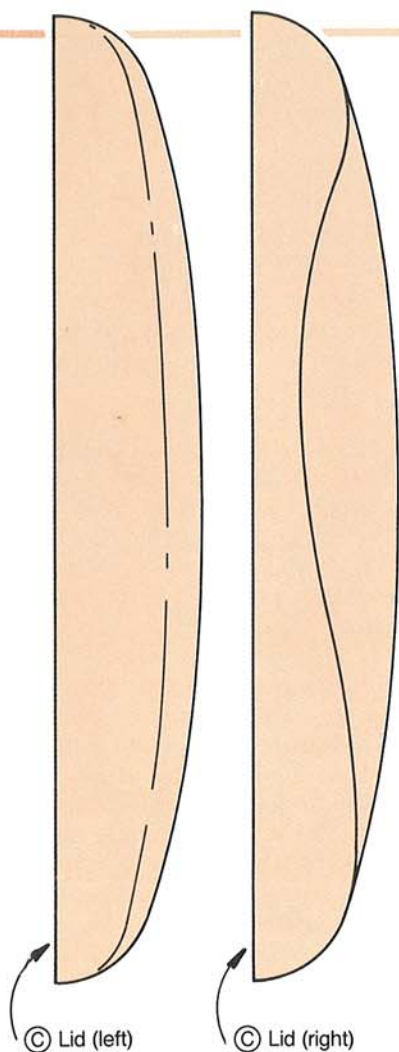
KEEPSAKE BOX

4 Follow the line for sawcut 2 and bandsaw the box and lid assembly to shape. (We sawed just outside the line.) Next, sand the box and lid outline to shape. (We sanded to the line with our disc sander.)

5 Chuck a $\frac{1}{2}$ " round-over bit in your table-mounted router, and raise it to leave a $\frac{1}{4}$ " shoulder on the top edge of the lid. (See the Routing Lid Detail on the Shaping the Lid and Bottom Drawing *opposite*.) Place box on its lid and rout around the top edge as shown *below*. Next, switch to a $\frac{1}{4}$ " round-over bit, turn the box top face up, and round-over the bottom edge.

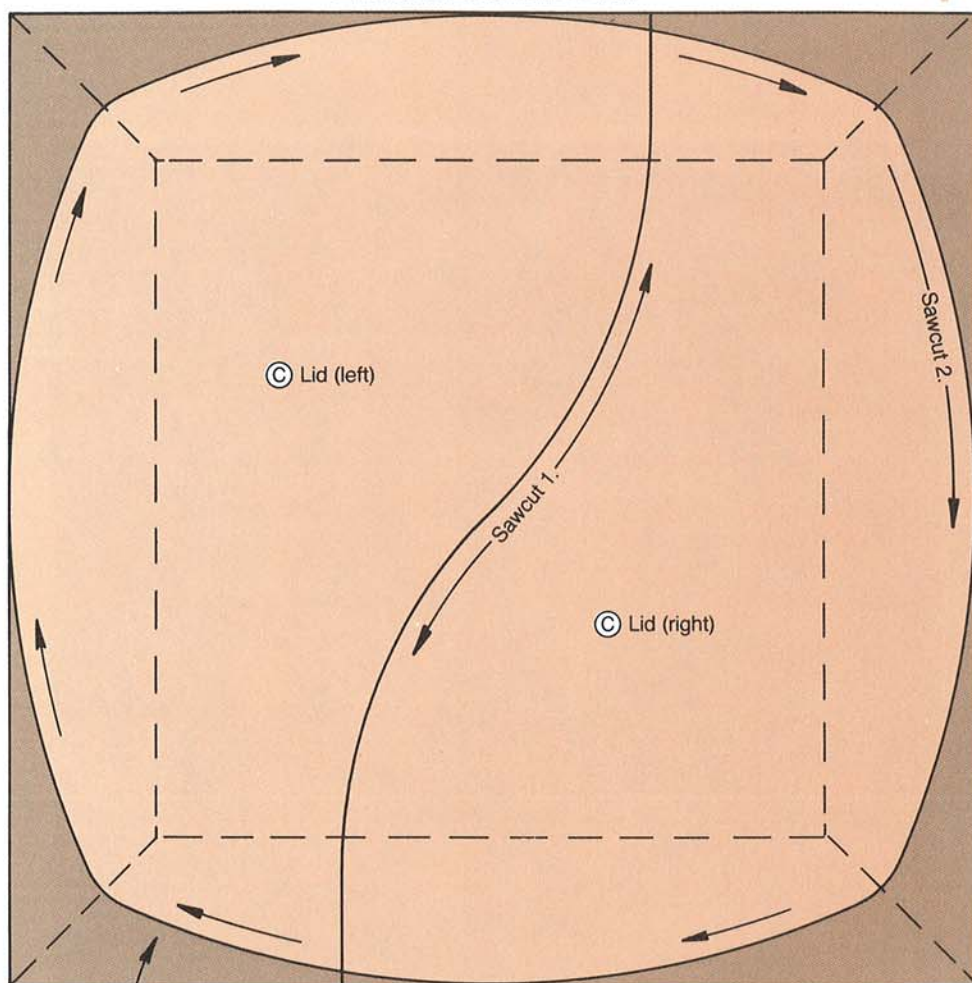
6 Remove the tape holding the parts together and separate them. Refer to the Shaping the Lid and Bottom Drawing again, and outline with a pencil the areas on the two lid parts to be rounded-over and sculpted to shape. Next, sand the contoured areas on both pieces as shown *lower right*. (A sanding drum chucked in a drill press will work too.) As you work, check the curvature of each piece against the Profile Guides *opposite*—you want continuous, smooth-flowing curves.





PROFILE PATTERNS FOR LID

LID AND BOX PATTERN



Outside lid and box pattern

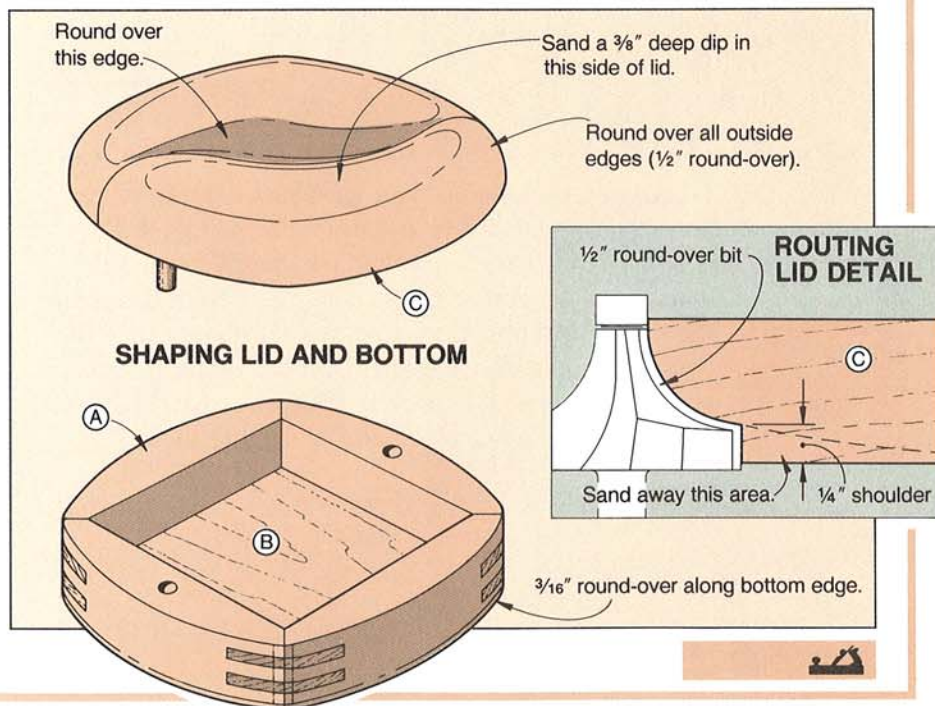
READY FOR FINISHING

1 Finish-sand the lid and box. (We used progressively finer grit sandpapers, ending with 220-grit.)

2 Apply a coat of lacquer sanding sealer, let dry, and then sand with 320-grit sandpaper. Apply a second coat of sealer and repeat the process. Next, apply two coats of semi-gloss lacquer, and sand between coats. Let the finish dry thoroughly.

3 If you wish to cover the bottom, cut a piece of felt or velveteen to fit, and adhere it in place.

4 Apply a coat of paraffin wax to the dowel pins for lubricant, and then reassemble the box.





COZY CHERRY CANDLE LANTERN

When we prepared to photograph this captivating project, a pretty lively debate developed over the choice of settings. Some felt we should show the lantern on a mantel; others saw it as the centerpiece for a dining table. The windowsill won out, but the truth remains—this beautiful candle lantern looks great anywhere. The arched windows, fitted with glue-chip glass, offer an especially charming look.

FIRST, MACHINE THE FRAME PIECES

Note: The joints on this box require very accurate saw cuts. We recommend that you use a sharp saw blade with 48 teeth or more.

1 To make the arched rails (A), rip and crosscut a piece of $\frac{1}{2}$ " hardwood stock (we used cherry) to 3×12 " (see the Cutting Diagram on page 13). If you can't buy $\frac{1}{2}$ "-thick stock locally, plane or resaw $\frac{3}{4}$ "-thick stock.

2 Lightly scribe a centerline lengthwise on one face of the piece cut in step 1. Measure in 2" from either end and mark a point on the centerline. From this point, measure over 3" and make a second mark, and then make a third mark 3" from that here. Using these marks, scribe three 2"-diameter circles.

3 With a combination square, scribe lines perpendicular to the outside edges of each circle across the width and both edges of the board. You'll use the lines as sawing guides to shape the arched rails in steps 8, 9, and 10.

4 Bore 2"-diameter holes through the piece at the three centerpoints you just marked. (We used a Forstner bit, but a hole saw will work.) Place scrap under the workpiece to minimize chip-out.

5 Rip the piece along the centerline to make two equal-width pieces.

6 Cut the rabbets in the arched rails, following the sequence as outlined here. (See the Arched-Rail Detail on the exploded-view drawing also.) First position your tablesaw's rip fence $\frac{3}{8}$ " from the inside of the saw blade. Now, lower the blade to $\frac{1}{4}$ " above the table top. Place the piece on the saw table inside face down and with the points of the

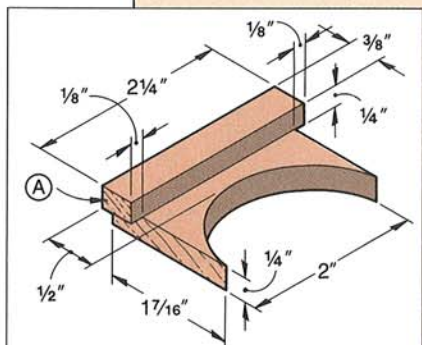
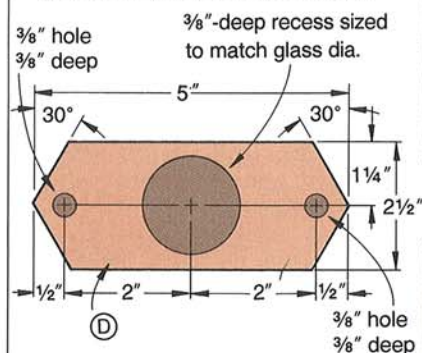
arches pointing away from the fence. Rip a $\frac{1}{4}$ "-deep kerf the full length of the piece. Rip a kerf in the second piece the same way.

7 To make the second cut of the rail's rabbet, set the rip fence $\frac{1}{4}$ " from the inside of the saw blade, and elevate your saw blade 1" above the table top. Now, turn one of the pieces on edge, arch-points down, and rip the piece as shown below. (Note that the saw kerf cut in step 6 should be visible to you.) Now, rip the second arched piece the same way.

8 Place the miter gauge in the table's groove to the left of the saw blade. Attach an auxiliary wood fence to the miter gauge so it extends several inches beyond the saw blade. Square the miter gauge and auxiliary fence to the blade. Next, raise the blade 1" above the table, turn on the saw, and run the auxiliary fence into the blade and cut a kerf in the fence. Now, stop the saw. Scribe a pencil line on the auxiliary fence $\frac{1}{8}$ " to the left of the saw kerf, and one $\frac{1}{8}$ " to the right of the kerf.

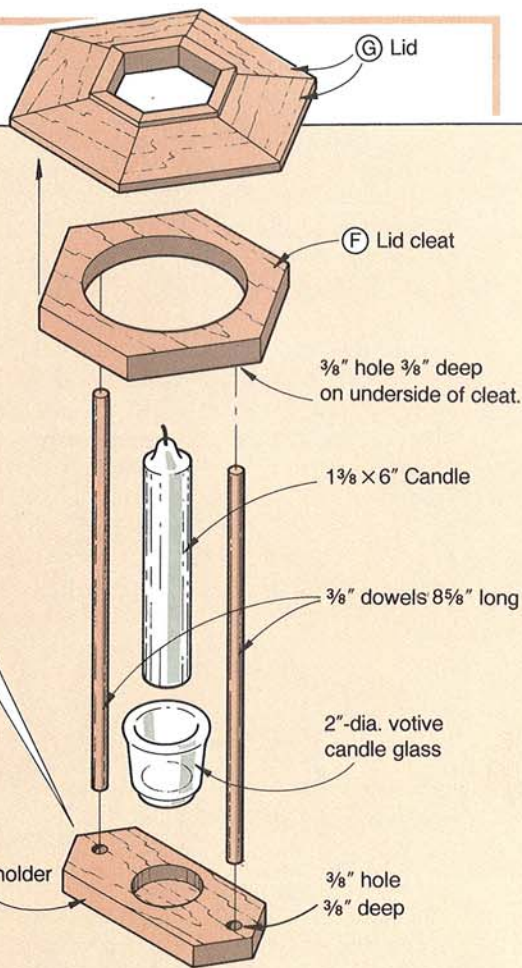
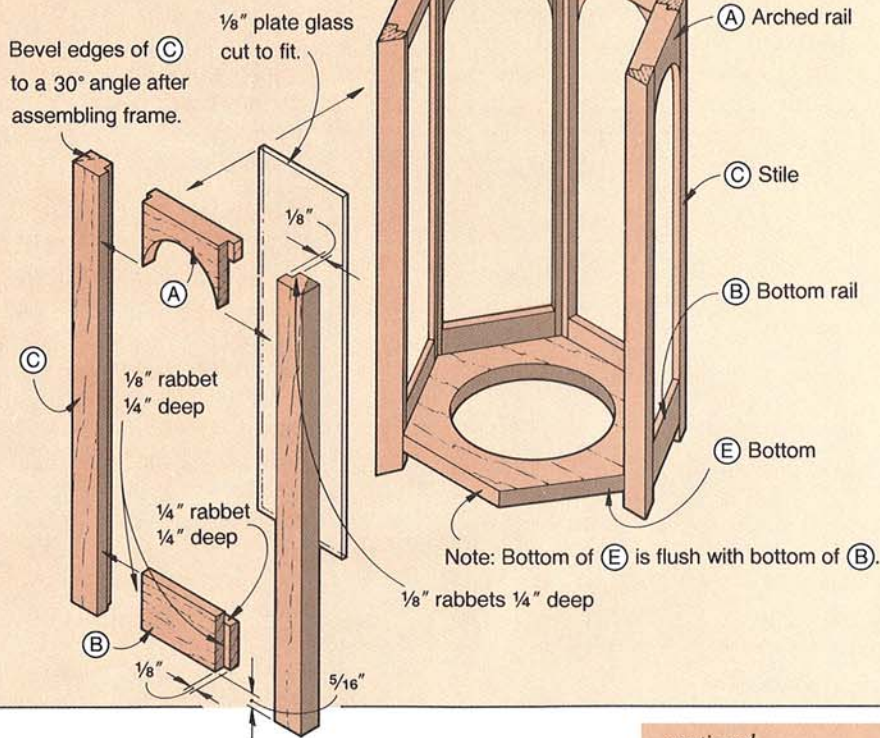


CANDLE HOLDER DETAIL



ARCHED-RAIL DETAIL

Bevel edges of (C) to a 30° angle after assembling frame.

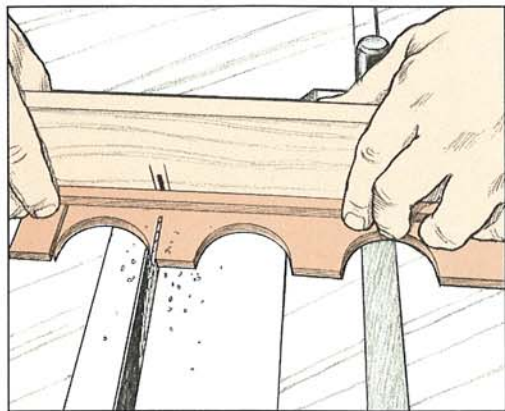


continued

CANDLE BOX

9 Lower the saw blade to $\frac{1}{4}$ " above the table. Align the pencil mark from the *right* edge of the first arch with the *left* edge of the saw kerf in the fence. Make the cut for a $\frac{1}{8}$ " rabbet $\frac{1}{4}$ " deep. Next, move the work piece to your right. Now, align the pencil line on the *left* edge of the first occurring arch with the

the first arch with the pencil line you scribed $\frac{1}{8}$ " to the *left* of the saw kerf in the auxiliary fence. Make the saw cut. Next, move the work piece to the *right*, align pencil line from the *left* edge of the arch with the pencil line $\frac{1}{8}$ " to the *right* of the kerf. Make the cut. Saw the other arched-rail pieces.



right edge of the saw kerf in your auxiliary fence. Make the cut as shown above. Saw the rabbet on the remaining five arches the same way.

10 Elevate the saw blade to $\frac{5}{8}$ ". To cut the arched rails to final length, align the *right* pencil line on

backed each piece with a scrap block to help hold them square to the fence when cutting the rabbet.)

12 For the frame stiles (C), rip and crosscut four lengths of $\frac{1}{2}$ " stock to $\frac{9}{16} \times 32$ ". Next, cut a $\frac{1}{8}$ "-wide rabbet $\frac{1}{4}$ " deep along one edge on each of the four pieces. Crosscut three $10\frac{1}{8}$ " lengths from each of the four pieces.

ASSEMBLING THE FRAMES COMES NEXT

1 Dry-assemble each frame. Next, glue (we used yellow woodworker's glue), assemble, and clamp the six frames individually. (We used a small bar clamp at each end.) Offset each of the bottom rails $\frac{5}{16}$ " from the bottom ends of the stiles. Square each frame (we used a try square). Wipe off any glue squeeze-out with a clean damp cloth.

2 After the glue dries, remove the clamps, and finish-sand

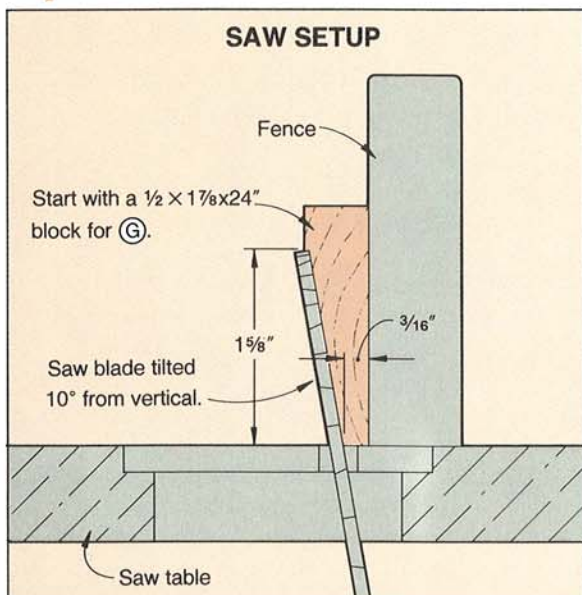
the inside surface of each frame. (We used 180-grit sandpaper on a 1" drum sander to sand the arches.)

3 Angle the blade on your tablesaw to 30° from perpendicular. Position the fence so you can bevel-rip the outside edges of each frame without changing the frame's width. Bevel-rip the edges. (We tested the blade's setting on scrap pieces.)

4 Dry-assemble the frames into a six-sided box to test their fit and alignment. Sand the beveled edges slightly if necessary for a good fit. Number the top edge of each frame so you can glue the box together in the same order.

5 To assemble the box, glue two sets of three mating frame members together, and clamp them with spring-type clamps. Next, finish the inside surfaces (we sprayed on two coats of lacquer). After the finish dries, place a bead of silicone caulk along the inside edge of the glass rabbet in the top and bottom rails, and install the glass. Next, glue these subassemblies together and clamp (using spring clamps again) to form the six-sided box.

SAW SETUP

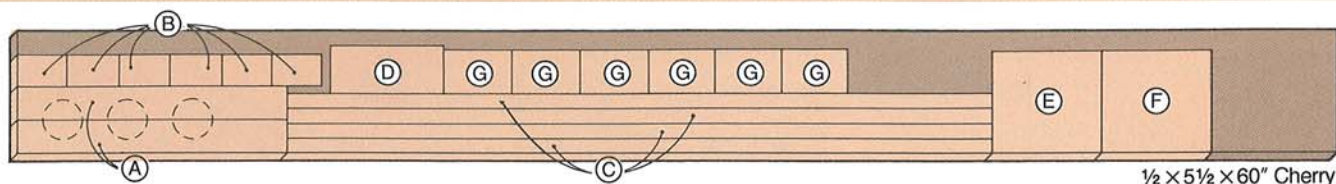


Bill of Materials

Part	Finished Size			Matl.	Qty.
	T	W	L		
A arched rail	$\frac{1}{2}$ "	$17\frac{1}{16}$ "	$2\frac{1}{4}$ "	C	6
B bottom rail	$\frac{1}{2}$ "	$1\frac{1}{4}$ "	$2\frac{1}{4}$ "	C	6
C stile	$\frac{1}{2}$ "	$\frac{9}{16}$ "	$10\frac{1}{8}$ "	C	12
D candle holder	$\frac{1}{2}$ "	$2\frac{1}{2}$ "	5"	C	1
E bottom	$\frac{1}{2}$ "	$4\frac{1}{2}$ "	$5\frac{1}{4}$ "	C	1
F lid cleat	$\frac{1}{2}$ "	$4\frac{1}{2}$ "	$5\frac{1}{4}$ "	C	1
G lid	$\frac{1}{2}$ "	$1\frac{7}{8}$ "	$3\frac{3}{8}$ "	C	6

Material key: C-Cherry.

Supplies: $\frac{3}{8}$ " dowel, $6\frac{1}{8}$ "-thick glass panels cut to fit frames, silicone caulk, small votive candle glass, $1\frac{1}{2} \times 6$ " candle.



1/2 x 5 1/2 x 60" Cherry

MAKE THE LID AND INTERNAL PARTS

1 To make the candle holder (D), rip and crosscut a piece of 1/2"-thick stock to 2 1/2 x 6". Using the dimensions on the Candle Holder Detail on the exploded view drawing on page 11, lay out the part. Size the recess to fit the votive candle glass (used to hold the candle and collect melted wax) you intend to use. (Our glass had an outside diameter of 2".) Bore the recess 3/8" deep for the glass. (We used a 2" Forstner-type bit.) Next, drill the two 3/8" dowel holes 3/8" deep where marked. Now, using your saw's miter gauge, cut the piece to final shape.

2 To make the identical bottom plate (E) and the lid cleat (F), rip and crosscut a piece of 1/2" stock to 4 1/2 x 12". Using the dimensions on the Bottom and Lid Cleat Drawing at right, lay out the two parts on the board. (To find the centerpoints for the dowel and vent holes, we first placed the candle holder (D) on top of the two parts and aligned. Next, we drove small brads through the center of the dowel holes in the candle holder to mark matching centerpoints in the face of the lid cleat. We also marked the centerpoints for the large center holes in both pieces with the same technique.)

3 Drill the 3/8" holes 3/8" deep in the lid cleat where marked. Next, with a compass, scribe the 1 11/16" radius holes in both pieces. Drill 1/4"-start holes through these center circles in both parts, and then scrollsaw the circles to shape. Now, saw both parts to final shape. Sand the edges. Slightly taper the six outside edges of the lid cleat so it fits easily inside the top of the box.

4 For the lid (G), rip and crosscut a piece of 1/2" stock to 1 7/8 x 24". Next, set your tablesaw and rip fence as shown on the Saw-Setup

Drawing on page 12. Rip the 1 5/8" high, 10° bevel the length of the piece. Crosscut the 24" piece into six 4"-long lengths. Set the miter gauge to 30° from center, and miter-cut one end on each piece. Reset the miter gauge to 30° in the opposite direction and miter-cut the other end, cutting the pieces to final (3 1/8" long point to long point) length. (We test-cut several scrap pieces to check the miter setting before cutting the cherry.)

5 Place the mitered pieces you just cut on waxed paper on a flat surface, and form the six-sided lid. Apply glue to all mating edges and reassemble the lid. Place a large rubber band around the edge of the assembly to hold the parts together while the glue dries. Wipe off any glue squeeze-out with a damp cloth.

YOU'RE READY FOR FINAL ASSEMBLY AND FINISHING

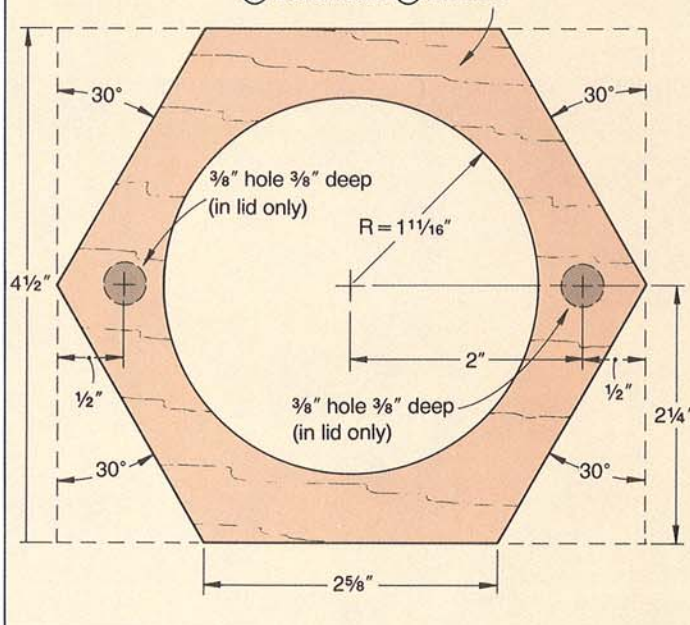
1 Glue the cleat (F) to the underside of the lid, centering it and aligning the points. Clamp until the glue dries. Finish-sand.

2 Crosscut two 3/8" dowels to 8 1/2" long. Glue them in the holes in the lid cleat, and then glue the candle holder to the opposite ends.

3 Test-fit the bottom (E) piece in the opening in the bottom of the box. Sand edges if necessary for a good fit. Mark one edge and the mating frame so you can reassemble it in the same position. Next, glue

BOTTOM and LID CLEAT DRAWING

(E) Bottom and (F) Lid cleat



and clamp the bottom in place, carefully aligning it with the bottom edges of the bottom frame rails. (We used a small woodscrew clamp.)

4 Cut six sheets of paper slightly larger than the frame openings, and insert them over the glass panels to mask the glass. Apply several coats of finish to the outer surface of the candle box, and to all the other parts, lightly steelwooling between coats. Remove the paper masks.

5 Insert a votive candle glass in the recess in the candle holder. Trim the bottom of your candle flat (if it isn't), place it in the glass, and then put the assembly in the candle box. (To help hold the candle in the glass, we melted a few drops of wax into the bottom of the glass, and then set the candle on the soft wax. For safety, we recommend you not use candles taller than 6".) To light or to extinguish the flame, lift the lid and candle holder assembly high enough to reach the candle's wick.





UNITED STATES PUZZLE

A FUN WAY TO TEACH KIDS THEIR STATES AND CAPITALS

What's the capital city of Vermont? Can you identify the shape of Utah? If not, here's your chance to become a geography expert, help some favorite youngster become one, and have a lot of fun doing it. But before beginning the project, consider ordering the inexpensive stick-on U.S. map decals (state and capital names) from our Buying Guide source, and our free map pattern.

Note: Using the full-sized puzzle pattern and the cutting sequence indicated, we cut out our puzzle on a benchtop scrollsaw with a 16" throat. If your scrollsaw's throat measures less than 16", you may need to drill more start holes than we did, and cut out smaller sections of the continental United States before cutting the sections into individual states.

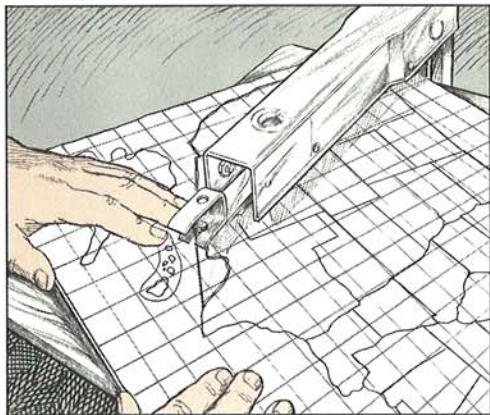
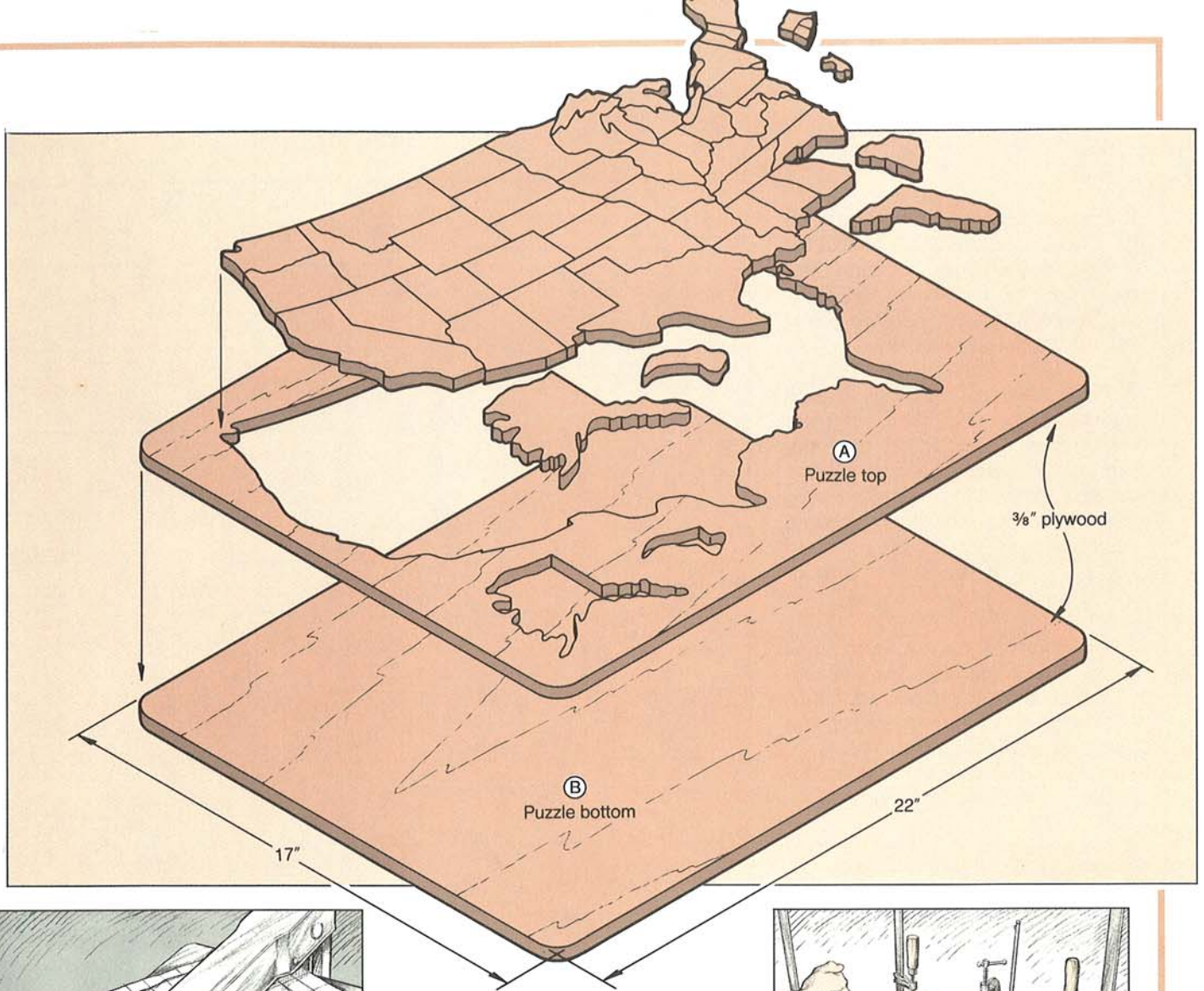
FIRST, MAKE THE PUZZLE PARTS

1 Cut two pieces of $\frac{3}{8}$ "-thick birch plywood to 17×22", one to serve as the puzzle top (A), the second one for the bottom (B). Now, set the bottom aside.

2 Increase the size of the map pattern on pages 16 and 17 to 200 percent on an enlarging-type photocopying machine. (You will have to copy separate areas of the pattern, and then align and tape these copies together to form a complete pattern.) Easier still, order our free full-sized pattern. (See page 17 for details on how to order the pattern.) Trim the pattern along the borders, and then spray adhesive onto the back of the pattern. Now, align the pattern with the edges of the puzzle top (A), and adhere it.

3 Chuck a $\frac{1}{16}$ " drill bit in your drill press, and bore the eight start holes where indicated on the pattern. (We backed the puzzle top piece with scrap while drilling to prevent chip-out.)

4 Using a scrollsaw and a fine blade (ours had 20 teeth/inch), insert one end of the blade through start hole #1 in the puzzle top, and reattach it to the blade clamp. Turn on the saw and cut in the direction indicated on the pattern for cut #1, as shown at *right*. When you reach Texas, turn off the saw and carefully back the blade to start hole #1.

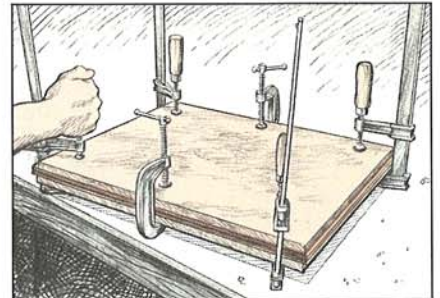


Next, make cut #2 along the northern border to Lake Superior, and then along the Mississippi River to the point of Texas.

5 Remove the blade from the kerf and insert it through start hole #2. Reattach the blade, and then make cuts #3 and #4. Doing this allows you to lift out the large section of

western states. Continue sawing in this fashion until the lakes and eastern states section, Alaska, and the Hawaiian Islands are cut out. Now, cut the individual states to shape.

6 Cut two scrap pieces of $\frac{3}{4}$ "-thick plywood or particleboard to $16\frac{1}{2} \times 21\frac{1}{2}$ ". Brush an even, moderate film of yellow woodworker's glue onto the underside of the puzzle top. Now, place the puzzle top on the puzzle bottom and align the edges. Sandwich this lamination between the scrap pieces, and clamp as shown at *left*. Remove the adhered pattern from the puzzle top and all pieces. (We used lacquer thinner to dissolve the adhesive.)



7 After the glue dries, remove your clamps and scrap pieces from the lamination. Next, sand $\frac{5}{8}$ " radii on the corners following the dotted lines on the pattern. (We used a disc sander.) Hand- or belt-sand the remaining edges, removing all unevenness and glue squeeze-out.

NOW, FINISH THE PUZZLE

1 Finish-sand the lamination with fine sandpaper (we used 220 grit). Wipe off the dust and set the pieces on a clean surface, top side up.

Continued

U.S. MAP

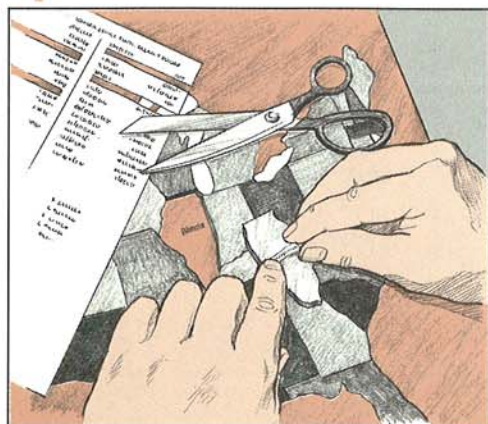
2 Spray a coat of clear lacquer on the pieces and lamination to seal the wood for painting. Let dry, and then turn the pieces over and spray the bottoms. Again, sand the pieces smooth with fine sandpaper.

3 Paint the edges and tops of each state and lake piece. Use our color key on page 17 and follow the numbers on the pattern, or use your own color scheme. (We applied two coats of non-toxic spray enamel paint to each puzzle piece.) Sand any paint from the bottom surface of the pieces.

4 To eliminate having very small pieces, glue Massachusetts, Connecticut, and Rhode Island, together. (We used quick-setting epoxy but other glues will also work.) Glue the Maryland and Delaware pieces together for the same reason.

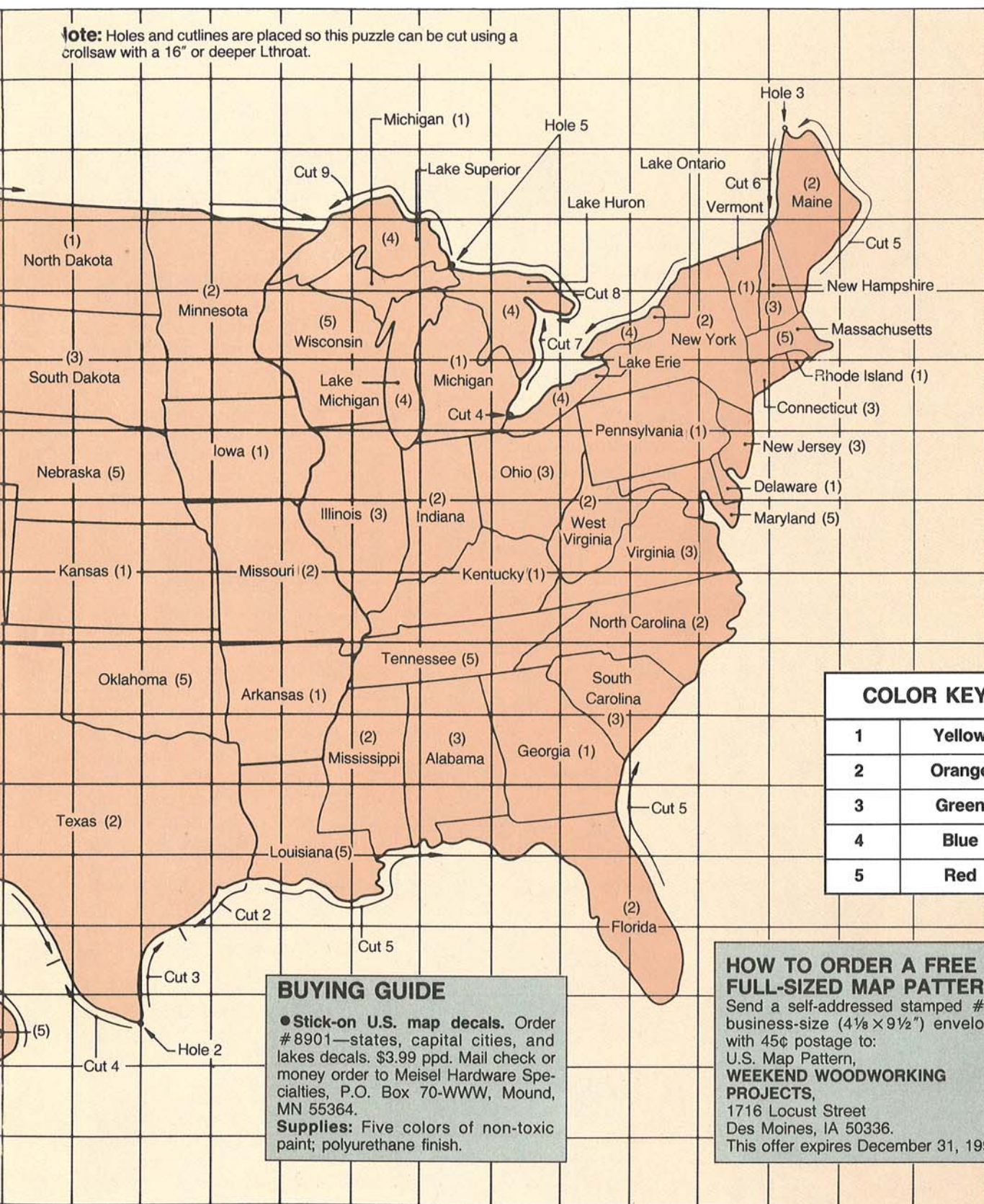
5 Now, spray a final coat of clear finish (we used semigloss lacquer) over the entire lamination. Let dry.

6 Place the puzzle pieces in the lamination's recesses. Now, working with one state at a time, cut out the stick-on decals for that state. Peel off the backing and apply the state decal to the top face of the lamination's bottom. Next, apply the capital city decal to the underside of each state as shown below. Press the decal onto the wood, and burnish it for a strong bond. Finish applying all of the decals and you'll soon be ready for your first geography quiz.



Note: Increase the size of this gridded map by 200 percent. Or, order our free full-sized map pattern. See address opposite.

Note: Holes and cutlines are placed so this puzzle can be cut using a crowsaw with a 16" or deeper Lthroat.



COLOR KEY

1	Yellow
2	Orange
3	Green
4	Blue
5	Red

BUYING GUIDE

● **Stick-on U.S. map decals.** Order #8901—states, capital cities, and lakes decals. \$3.99 ppd. Mail check or money order to Meisel Hardware Specialties, P.O. Box 70-WWW, Mound, MN 55364.

Supplies: Five colors of non-toxic paint; polyurethane finish.

HOW TO ORDER A FREE FULL-SIZED MAP PATTERN

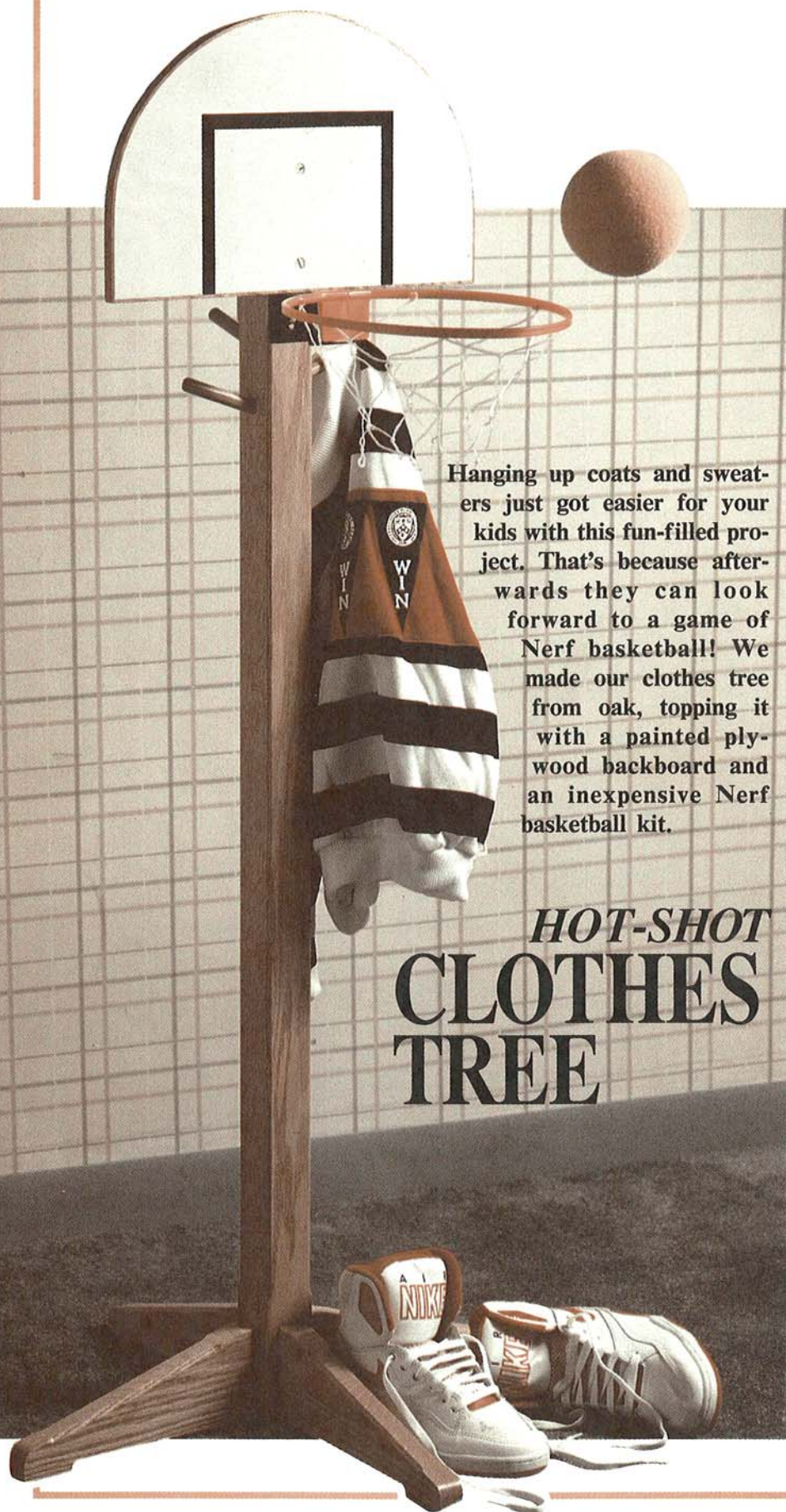
Send a self-addressed stamped #10 business-size (4 1/8 x 9 1/2") envelope with 45¢ postage to:

U.S. Map Pattern,
WEEKEND WOODWORKING PROJECTS,

1716 Locust Street
Des Moines, IA 50336.

This offer expires December 31, 1990.





Hanging up coats and sweaters just got easier for your kids with this fun-filled project. That's because afterwards they can look forward to a game of Nerf basketball! We made our clothes tree from oak, topping it with a painted plywood backboard and an inexpensive Nerf basketball kit.

HOT-SHOT CLOTHES TREE

Note: If you wish, you can build the clothes tree without the basketball hoop. Doing this allows room for one more clothes peg. However, you will need to bevel-cut all edges at the top end for the best look.

LET'S START WITH THE POST AND LEGS

1 From 1"-thick oak stock (see the Cutting Diagram located on page 21), cut two $2 \times 46\frac{1}{2}$ " pieces. Apply glue (we spread on yellow wood-worker's glue) to a 2" face of one piece, and then join it to the second piece to make the 2"-square post (A). Align the pieces along the edges and at the ends, and clamp them together until the glue dries.

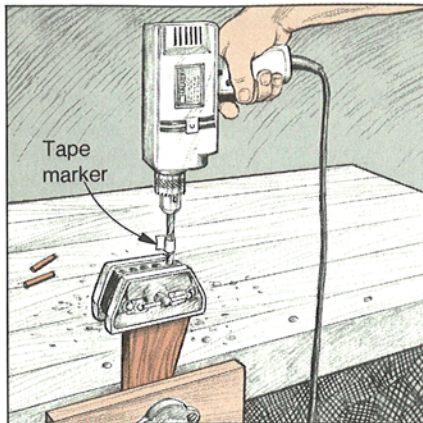
2 Make two copies of the leg pattern on page 21, using either carbon paper or a photocopier.

3 Next, cut four pieces of 1"-thick oak to the dimensions listed in the Bill of Materials for the legs (B). Make two stacks with two pieces in each, adhere the pieces together with double-faced tape, aligning the edges and ends of the boards flush. Now, adhere a leg pattern (we used spray adhesive) to the top of each stack, aligning the pattern's ends and edges with those of the stacks.

4 Drill a $\frac{1}{2}$ "-diameter hole through each stack where indicated on the pattern. (We placed scrap under each stack to prevent chip-out.)

5 Bandsaw the legs to shape. (We cut outside the line, and then sanded to the line using a belt sander.) Separate the legs and remove tape.

6 Clamp one of the legs in a bench vice with the wide end up. From dimensions on the Leg/Post Detail on the exploded-view drawing *opposite*, mark the centerpoints for the two $\frac{1}{2}$ " dowel holes on the leg's wide end. Using a doweling jig as shown

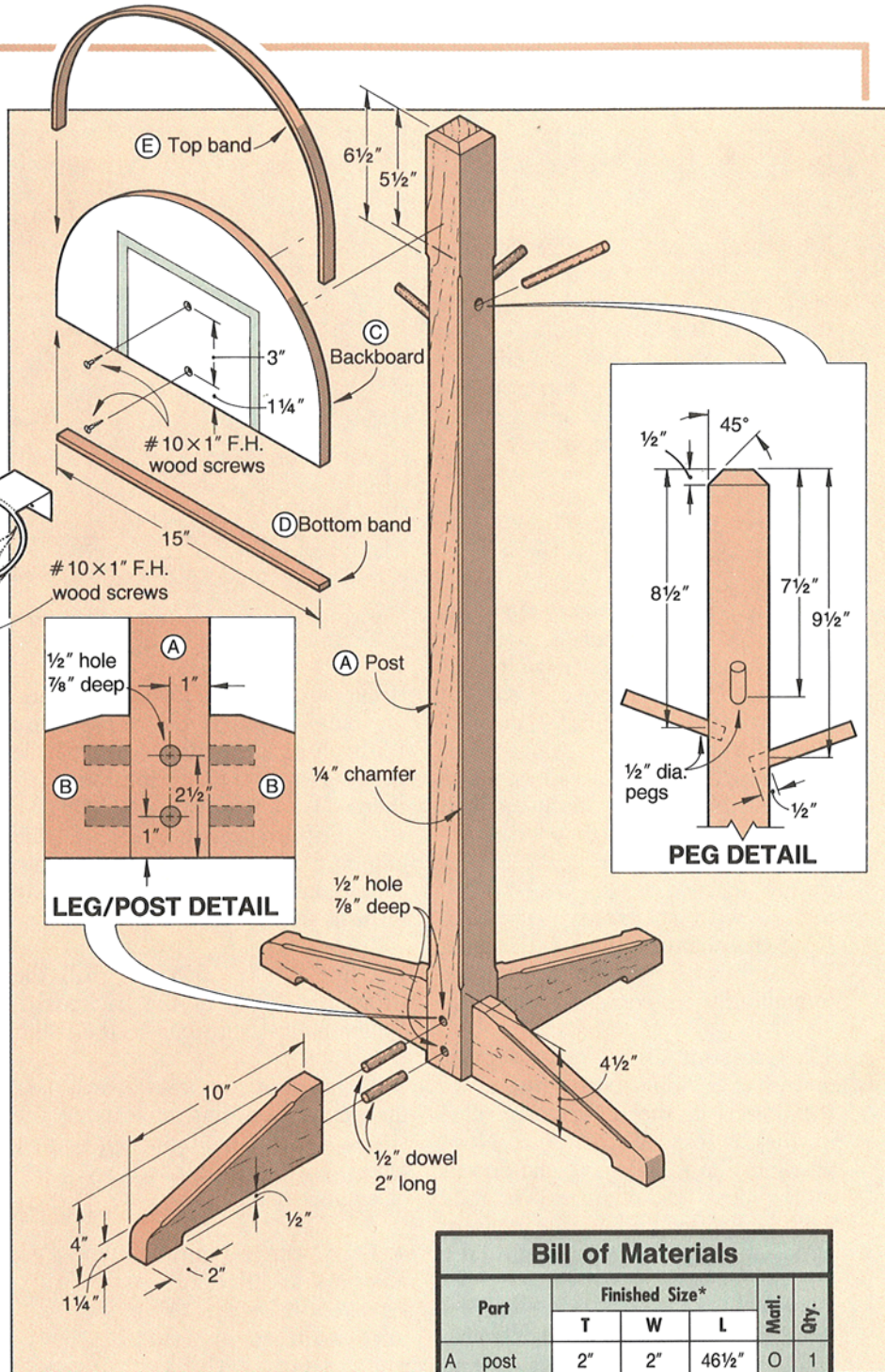


above, drill the two holes $1\frac{3}{16}$ " deep. (We wrapped tape around the bit at that length to help us gauge the hole depth.) Now, drill the holes in the other three legs.

7 After the glue dries, remove the clamps from the post, and scrape and sand the joined surfaces. Relying on the Leg/Post Detail and the Peg Detail drawings at right, mark the hole locations for both the leg joint dowels at the post bottom, and the angled dowel pegs located at the top end of the post.

8 Using your doweling jig and hand-held drill (or drill press), drill the eight $\frac{1}{2}$ "-diameter holes $\frac{7}{8}$ " deep on the four sides at the post bottom. If your drill press table rotates, adjust it to a 20° angle. If it does not, make the jig shown in the 20° -Angle Drill Jig Drawing on page 21 from a piece of scrap 2×4 . Use it to drill the three $1\frac{1}{2}$ "-deep peg holes where marked. If you do not plan to attach the basketball backboard, drill the fourth side also.

9 To bevel-cut the post top, first square the miter gauge to the table-saw's blade, and then angle the saw blade to 45° . Next, measure $\frac{1}{2}$ " down from the top of the post and, using a try square, mark a cutline at this location around the post's perimeter. Place the post on your table-saw against the miter gauge, and bevel-cut the post top on the three sides where you have drilled peg holes. (See the exploded-view drawing above right, for details.)



10 Chuck a piloted chamfer bit in your router, and adjust it to cut a $\frac{1}{4}$ "-wide chamfer. (To get the right adjustment, we tested the router's setting on scrap.) Next, mark the stop/start points of the chamfers on all four post corners and on the top edges of the legs. Use the dimensions on the full-sized Leg Pattern and the exploded-view drawing to mark the stop/start points.

Bill of Materials					
Part	Finished Size*			Matl.	Qty.
	T	W	L		
A post	2"	2"	46 $\frac{1}{2}$ "	O	1
B* leg	1"	4"	10"	O	4
C* back-board	$\frac{1}{2}$ "	9 $\frac{1}{4}$ "	15"	P	1
D** bottom	$\frac{1}{8}$ "	$\frac{1}{2}$ "	15"	O	1
E** top	$\frac{1}{8}$ "	$\frac{1}{2}$ "	31 $\frac{1}{2}$ "	O	1

*Parts cut to final shape during construction.
 **Adjust length of the part to fit part C.
 Material Key: O-oak; P-fir plywood.
 Supplies: 2-#10x1" flathead wood screws; 2-#6x $\frac{1}{2}$ " sheet metal screws; $\frac{1}{2}$ "-diameter oak dowel; Nerf basketball hoop and ball.

CLOTHES TREE

11 Clamp a leg (top edge up) and a $\frac{3}{4}$ "-thick piece of scrap in a bench vise, aligning both flush along the top edge. Rest the router's base plate midway between the chamfer marks on the piece, turn on the tool, and rout the chamfer along one corner. Do not machine beyond the stop/start marks. Next, turn the piece in the vise, and rout the opposite top edge the same way. Now, chamfer the other three legs.

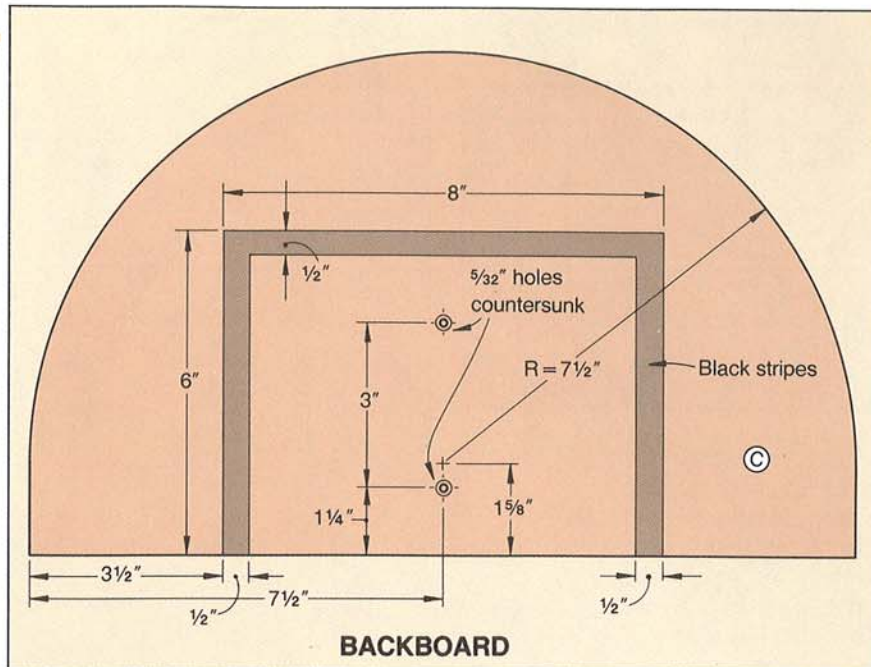
12 Place the clothes post along the edge of your workbench. Measure the distance from the edge of the chamfer bit to the outside edge of your router's base plate. Position stop blocks this distance from the chamfer stop/start marks located on the post. Now, clamp both the post and the stop blocks to your workbench or table. (Position the clamps toward the ends so they do not interfere with the router's travel.) Rout the chamfer along the corner. Repeat this same setup to rout the remaining three corners of the post.

13 Crosscut eight $\frac{1}{2}$ "-diameter dowels to 2" long. Next, glue all of the dowels in the holes you drilled in the bottom of the post. Now, glue-join the four legs to the dowels in the post, and clamp. (We used bar clamps secured to the ends of opposing legs to obtain a tight fit.)

14 Crosscut three (four if you don't use the basketball backboard) $\frac{1}{2}$ " dowels to $4\frac{1}{2}$ " long. Glue, and tap them into the peg holes near the top of the post. (For easier fitting, we first sanded a slight taper on the ends, and then inserted them into the peg holes.)

NEXT, MAKE THE BACKBOARD

1 Cut an 11×17 " sheet of $\frac{1}{2}$ " fir plywood for the backboard (C). Lay out the backboard on the plywood, using the dimensions shown on the



Backboard Drawing above. Include the centerpoints of the screw holes. With either a bandsaw or portable sabersaw, cut the backboard to shape. (We cut just outside the line, and then sanded the piece to the line on a disc sander.) Set the scrap cutout aside to use as a clamping form later (in step 7).

2 Using a $\frac{5}{32}$ " drill bit, drill the two screw holes in the backboard. Countersink each hole on the front.

3 Finish-sand the backboard, and then apply masking tape along the edges. Paint the front and back faces white. (We applied two coats of enamel paint.)

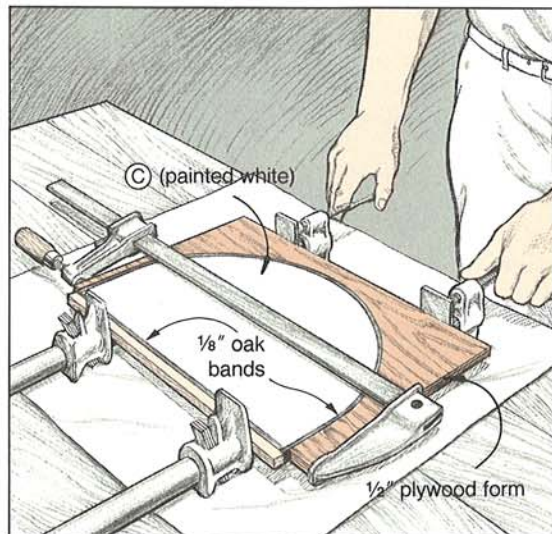
4 From the remaining oak stock, slice off a $\frac{1}{2} \times \frac{3}{4} \times 45$ " strip. (You may want to cut this piece slightly thicker than $\frac{1}{2}$ " and belt-sand off the saw marks.) Now, resaw the piece to make a $\frac{1}{8} \times \frac{1}{2} \times 45$ " banding strip (for D,E).

5 Hold the band along the bottom edge of the backboard and flush with one corner. Mark where the opposite corner touches the band.

Crosscut it to this length. Glue, and then clamp it to the bottom edge.

6 Now, starting at one corner (and overlapping band D), wrap the remaining oak strip around the backboard's radius, and mark it at the opposite corner. (We were able to bend the strip around the backboard by heating it with a heat gun.) Cut the band (E) to length.

7 Retrieve the plywood scrap form cut away in step 1 and fit the backboard loosely inside of the arc. Apply glue onto the backboard's edge, and then sandwich the oak band (E) in between the backboard and the



scrap form. When you have positioned the band and backboard correctly, clamp the assembly as shown *lower left*. (We placed a 15"-long piece of scrap along the bottom band to prevent marring the trim while clamping.)

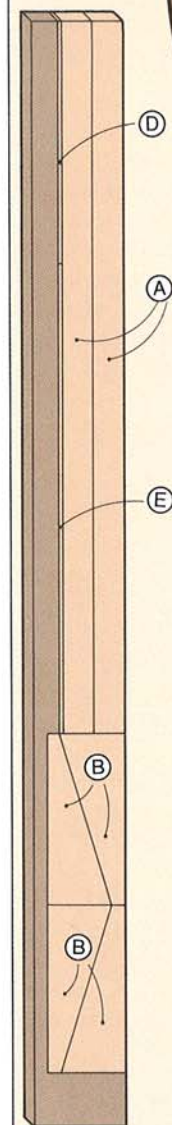
YOU'RE READY TO FINISH AND ASSEMBLE

1 Sand and finish the stand, and the oak bands (D,E) on the backboard. (We brushed on two coats of semigloss polyurethane.)

2 Using the Backboard Drawing for reference, lay out the borders for the 1/2"-wide black stripes on the backboard. Next, paint the stripes, using a straightedge to mask the outline. (We used enamel paint.)

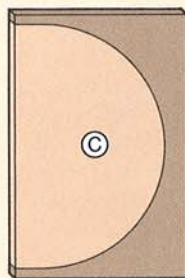
3 Place a mark 5 1/2" down from the top of the post on the unpegged side. Position the backboard on the post, carefully aligning its bottom edge with the mark. Square the backboard to the post, and mark all screw holes on the post. Drill pilot holes (see the Post-Top Detail), and attach the backboard with two #10x1" flathead wood screws.

4 Attach the toy basketball hoop (available at KMart and other large chain toy stores) directly below the backboard with sheet metal screws, and play ball.



1 1/16 x 5 1/2 x 72" Oak

CUTTING DIAGRAM

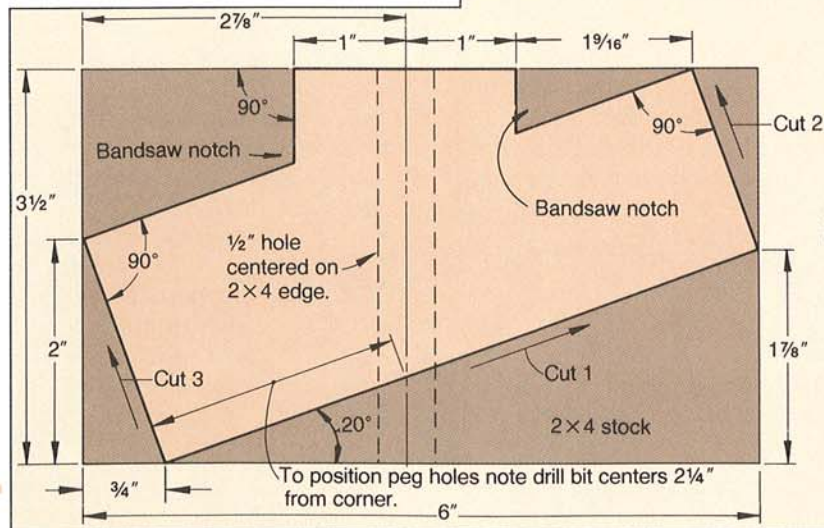


1/2 x 11 x 17" Fir Plywood

(B) Leg

Chamfer top edges

Saw out this area.



20°-ANGLE DRILL JIG

Steps to make:

1. Drill 1/2" hole through center of 2x4.
2. Lay out cut lines.
3. Bandsaw cut 1.
4. Crosscut cuts 2, 3.
5. Bandsaw notches for clamps.

1/2" hole

1 1/4"



Note: Before beginning the table, consider sending for the full-sized leg pattern offered on page 23.



FOLDING OAK TABLE

THERE WHEN YOU NEED IT

When company comes, whether your event takes place indoors or out, having an extra surface to set things on can be a big help. That's why we developed this stylish oak folding table. For those who made the two-part chair from issue 14, you'll find this table a perfect companion for it.

BEGIN MAKING THE LEGS

1 Draw a 1"-square grid on a 4×27" sheet of paper. Following the Gridded Leg Pattern *opposite*, draw the leg pattern on the gridded paper. (Or, start with our free full-sized leg pattern.) Now, cut around the pattern with scissors.

2 Rip and crosscut four pieces of ¾"-thick oak to 4×27". (See the Cutting Diagram *opposite*.) Apply double-faced tape to the top surface of two pieces and stack the remaining pieces on these. Apply spray adhesive to the back of the pattern and adhere it to the top of one stack. Saw out the two legs simultaneously. (We used a bandsaw and cut just outside the line.)

3 Sand the legs to the line while taped together. (We used a drum sander for the inside curve; a disc sander for the outside curve and the rounded ends.)

4 Place the leg set on the remaining stack and pencil around it to transfer the shape. Cut out and sand the second set of legs.

5 Chuck a 1/16" bit into your drill press. Now, stack the legs with the pattern onto the other set, align, and then drill holes through the top set and into the bottom where indicated by the pattern. Separate the two sets. Next, drill ¾" holes through the top end and middle of one set where marked by the small holes. (We backed the legs with

scrap to prevent chip-out.) Drill a ¾" hole through the top end *only* of the other set. (See the exploded-view drawing *opposite*.)

6 Switch to a 13/16" bit and drill through the center of the second leg set (inside pair) where marked. Remove the pattern, separate the legs, remove the tape, and finish-sand.

MAKE THE TABLETOP

1 Rip and crosscut two oak pieces to dimensions listed in the Bill of Materials for the tabletop supports (B). Using the Tabletop-End Detail on the exploded view, mark the centerpoints for the 13/16" holes at each end of the supports. Drill the holes.

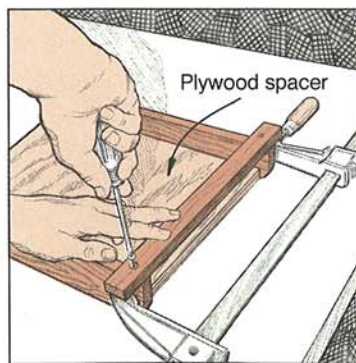
2 Using a compass, scribe the 7/8" radius at each end. Bandsaw and sand the ends. Mark and bandsaw the notch in each support.

3 From ¾" oak, rip and crosscut 15 pieces to the dimensions listed in the Bill of Materials for table slats (C). (You'll use one of these as a spacer later.) Sand the pieces.

4 Using a 3/8" countersink/counterbore bit, drill holes 13/8" in from the ends and centered on the top face. (We set up a fence and stop block to drill holes at the same location.)

5 Saw a piece of ¾" plywood scrap to 11½×20" for use as a spacer. Place the table supports (B) on their bottom edge and parallel to one another on a flat surface. Insert the plywood spacer between the supports and square the supports with a square. Clamp with bar clamps.

6 Center and align the first slat flush at one end of the supports. Next, drill a 7/64" hole through the countersunk/counterbored hole at one end of the slat and ¾" into the support. Screw one slat to the support as shown at *left*. Attach the slat at the opposite end.



Bill of Materials

Part	Finished Size*			Matl.	Qty.
	T	W	L		
A* legs	3/4"	4"	27"	O	4
B tabletop supports	3/4"	2"	20 1/2"	O	2
C** slats	1/2"	1"	15"	O	15

*Parts cut to final size during construction.

**Included is one extra slat used as a spacer.

Material Key: O-oak

Supplies: 28—#8×1" flat head wood screws, 2d finish nails, 2—3/4"-dia. oak dowels, 1—1/4"-dia. oak dowel.

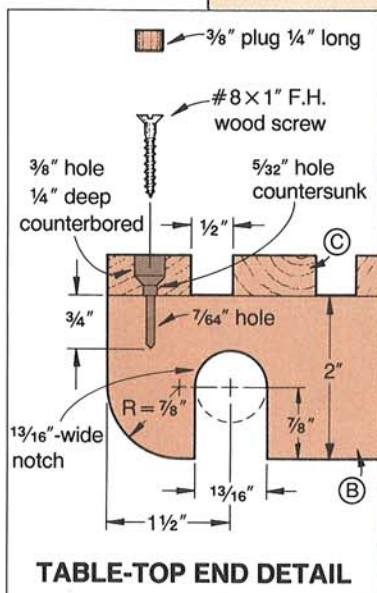
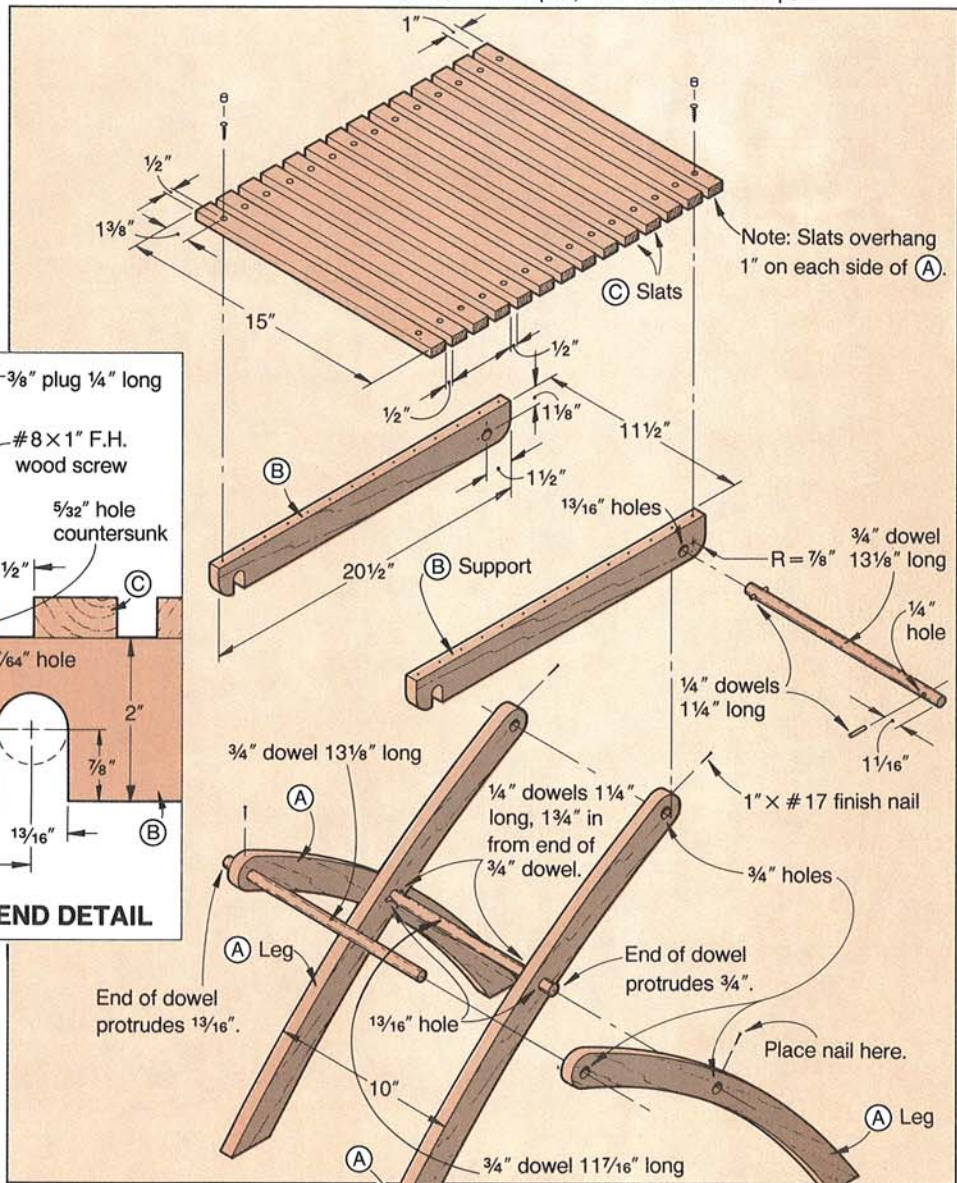
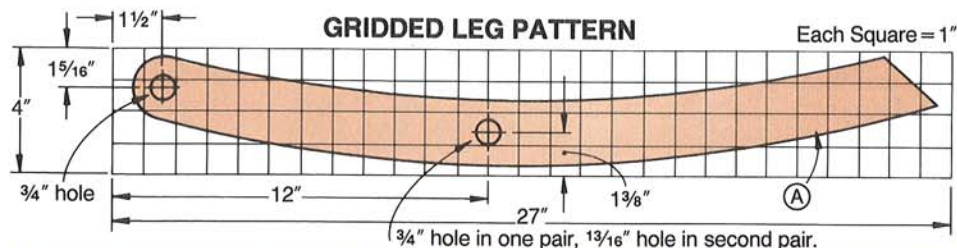
7 Place the 1/2"-wide spacer cut in step 3 on edge against the inside edge of the first slat and position the second slat alongside it. Center, drill, and screw it in place. Install the remaining slats. Place the last slat flush with the supports at the opposite end.

ASSEMBLE THE TABLE

1 From a 3/4" dowel, cut two 13 1/8" lengths and one 11 1/2" length. Cut four 1 1/4" lengths from a 1/4" dowel.

2 Cut a V-block from a 2×4 scrap measuring 12" long. Using the exploded-view drawing for reference, mark the centerpoints for the 1/4" holes on the 13 1/8"-long dowel at the unnotched end of the table, and on the center leg hinge dowel. Next, place one of the dowels in the V-block, align the drill bit with one of the hole centerpoints, and drill the hole. Drill the other hole. Finally, drill the holes in the remaining dowel the same way.

3 Lay the tabletop upside down. Place the drilled ends of the inside legs along the inside of the unnotched ends of supports B. Slip the 13 1/8"-long dowel through the supports and leg end holes. Center the dowel. Next, drill pilot holes through the ends of the legs for 2d finish nails. Drive nails into the holes, set the nails, and fill holes.



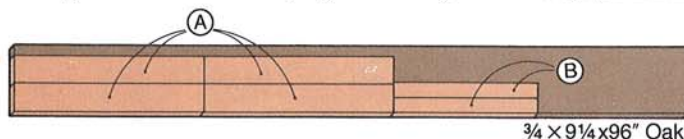
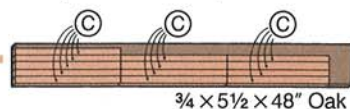
4 Place the outside legs alongside the inside legs and insert the 11 1/2"-long dowel through the leg holes. Nail the outside legs to the dowel. Insert the remaining dowel through the end holes of the outside legs, center, and nail. Glue and insert the 1/4" dowels in place.

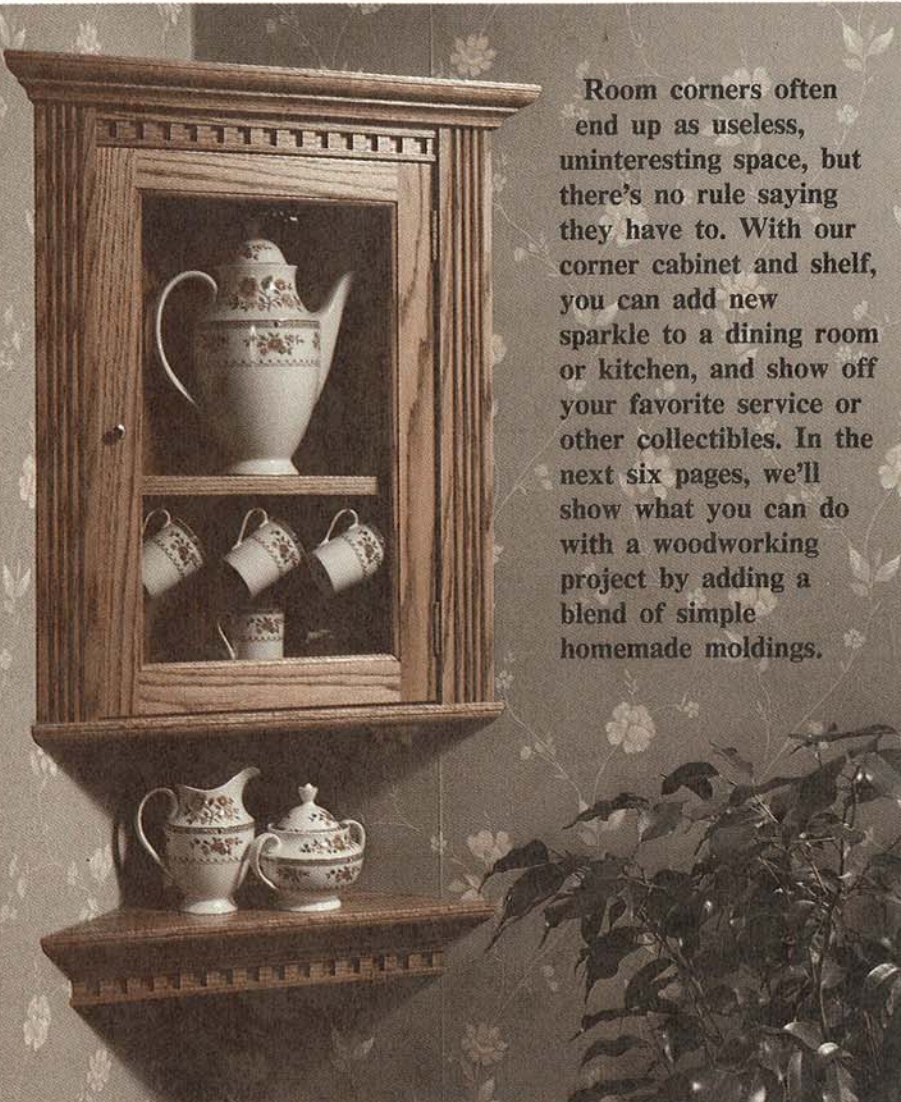
5 Finish-sand the project and apply the finish of your choice. (We applied two coats of polyurethane.)

TO ORDER THE PATTERN

For a free full-sized leg pattern, send a self-addressed #10 business-sized (4 1/8×9 1/2") envelope and 45 cents postage to: **Folding Table, WEEKEND WOODWORKING PROJECTS, 1716 Locust St., Des Moines, IA 50336.** This pattern offer expires December 31, 1990.

Project Design: James R. Downing
Illustrations: Kim Downing; Carson Ode
Photograph: Bill Hopkins





Room corners often end up as useless, uninteresting space, but there's no rule saying they have to. With our corner cabinet and shelf, you can add new sparkle to a dining room or kitchen, and show off your favorite service or other collectibles. In the next six pages, we'll show what you can do with a woodworking project by adding a blend of simple homemade moldings.

BUILD THE CARCASS FIRST

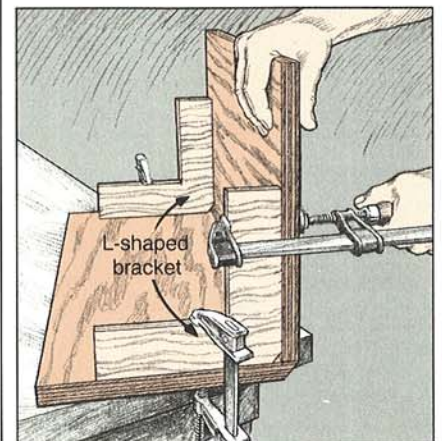
1 Rip a 24×48" sheet of $\frac{3}{4}$ " oak plywood in half lengthwise. (See the Cutting Diagram on page 29.) From one of the pieces, crosscut two 22 $\frac{3}{4}$ " lengths for the side panels (A,B). Next, bevel-rip the front edge of each plywood panel at 45°, cutting both to final widths as dimensioned in the Bill of Materials on page 27. Now, bevel-rip $\frac{1}{2}$ " off the back outside edge of panel A for inside corner clearance.

2 Lay out and drill the holes for the shelf supports on the inside face of the two panels (see the exploded-view drawing *opposite* for details).

3 Assemble the panels with L-shaped corner brackets as shown *below*. Glue (we brushed on yellow woodworker's glue), clamp, and screw the panels together. Wipe off any glue squeeze-out.

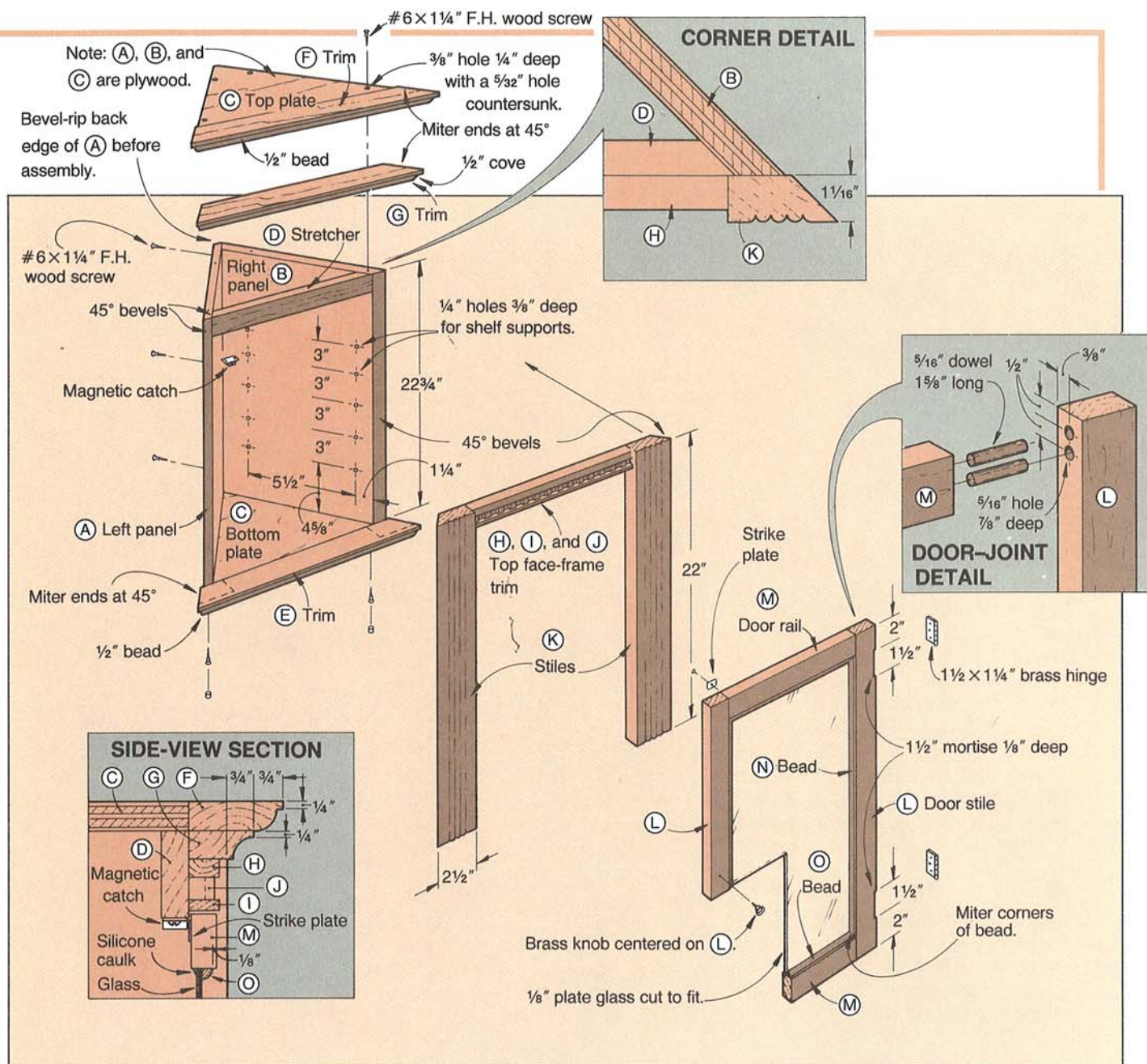
4 Set the assembled carcass upright on the remaining sheet of oak plywood. Next, align the front edges of the panels flush with the plywood's edge. Trace its triangular outline to form the top (C) and bottom (D) plates. Bandsaw the two pieces to shape, cutting to the line.

5 Drill, glue, and screw the top and bottom plates to the assembled pan-



CORNER SHOWCASE AND SHELF

*A FITTING PLACE
FOR YOUR FINEST
COLLECTIBLES*



els. (We held the plates in place with 4d finish nails while drilling and countersinking the holes.)

6 From $\frac{3}{4}$ "-thick oak, rip and miter-cut the stretcher (D) to dimension. Glue it in position where shown on the Corner Detail and the exploded-view drawing.

SHAPE, AND INSTALL THE MOLDINGS

Note: Several of the moldings for the cabinet and display shelf share identical dimensions (except length). To

save work, we machined these moldings at the same time. Also, when cutting the horizontal trim pieces, we first fit them to the cabinet to determine their exact length, and then added $\frac{1}{2}$ " to that length. This provided $\frac{1}{4}$ " on each side of the cabinet for adjusting and fitting it into a nonsquare corner.

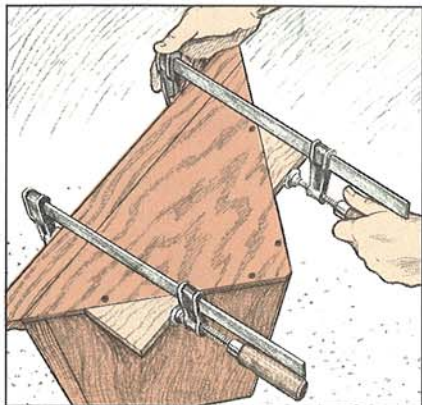
1 To make the top and bottom trim pieces (E,F), rip and crosscut a $\frac{3}{4}$ " piece to $2\frac{1}{2}$ " x 48". For the shelf's edge trim (S), cut a second piece to $2\frac{1}{2}$ " wide and 20" long.

2 Rout a bead (as dimensioned on the Side-View Section above, left) along one edge of both pieces. (We used a $\frac{1}{2}$ " quarter-round bead bit, and tested the router settings on scrap first.) Finish-sand the pieces. Now, set the 20" length (S) aside.

3 Crosscut the 48"-long piece in half. Set one piece (F) aside. Rip the other piece (E) to $1\frac{1}{4}$ " wide. Miter-cut it to fit the front of the bottom plate (C) plus $\frac{1}{2}$ ". Center, glue, and clamp it (shown on page 26) to the bottom plate. (To provide a parallel

continued

CORNER CABINET



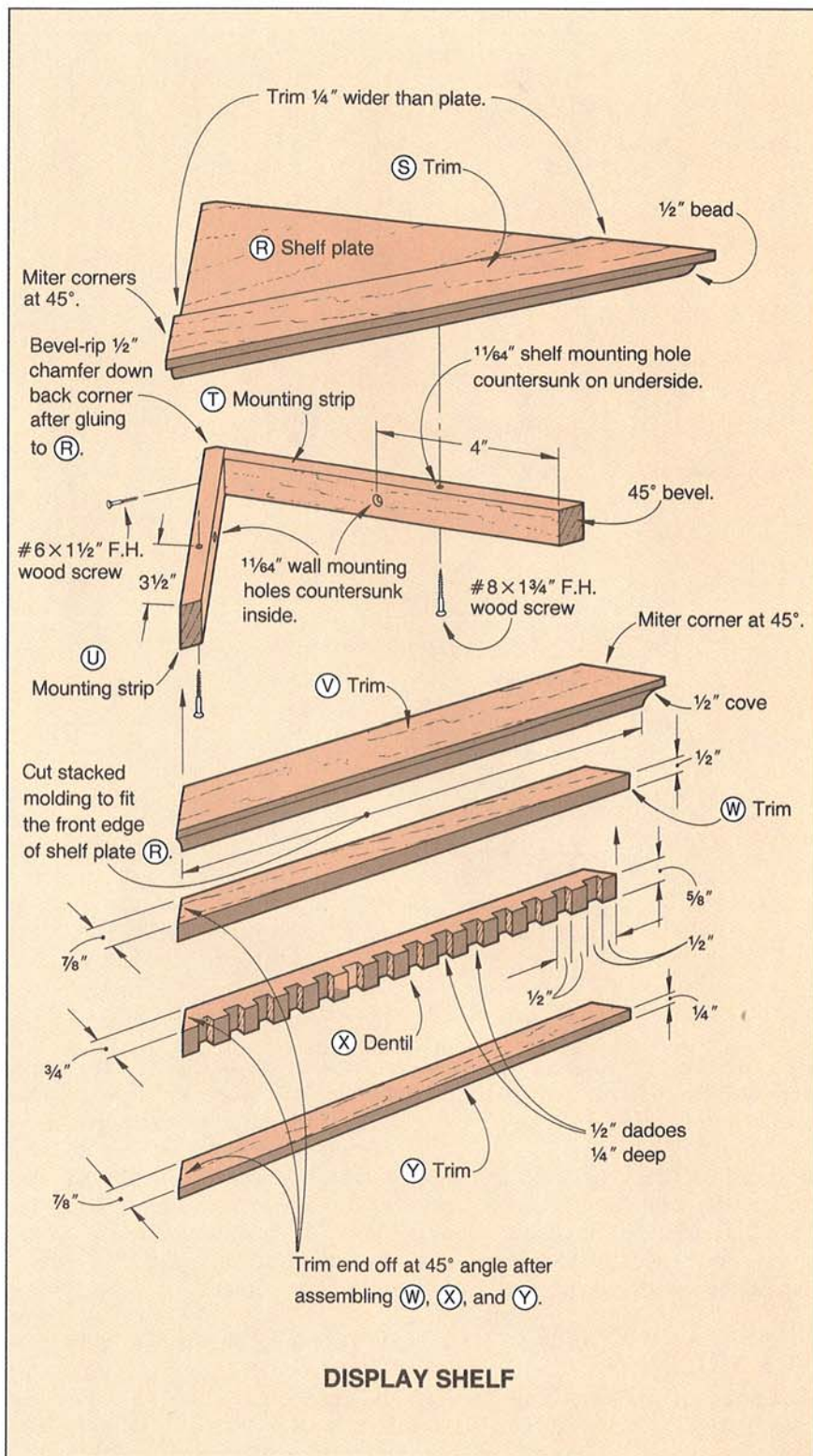
surface for clamping the trim, we cut two small triangles from scrap and tacked them to the sides temporarily with hot-melt glue.)

4 To make the trim piece (G) and the matching trim (V) for the display shelf, rip and crosscut one piece of $\frac{3}{4}$ " oak to $1\frac{3}{4} \times 21$ ", and a second to $1\frac{5}{8} \times 18$ ". Rout a cove (we used a $\frac{1}{2}$ " cove bit) along one edge on both pieces. Finish-sand. Put the shorter piece (V) aside.

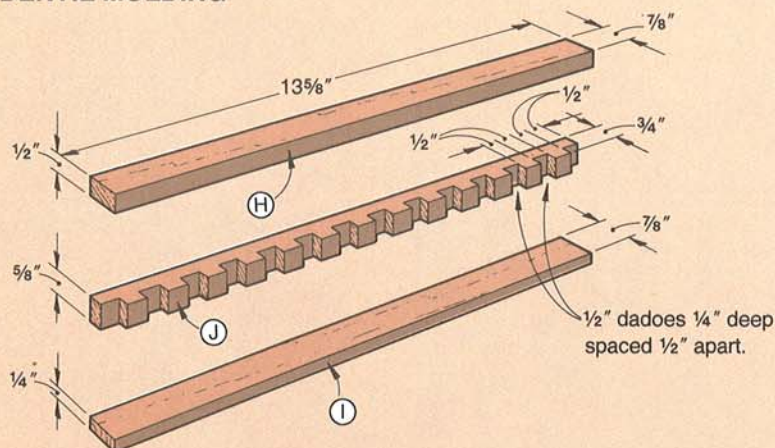
5 Assemble the top stacked molding by gluing and clamping the 21"-long piece (G) you cut in step 4 to the bottom face of trim piece (F). Align both pieces along the back edges and at one end.

6 Miter-cut this stacked molding (F,G) to length. Cut its length so the molding extends $\frac{1}{4}$ " beyond both edges of the top plate. Now, center it along the front of the top plate and stretcher, and then glue and clamp it in place.

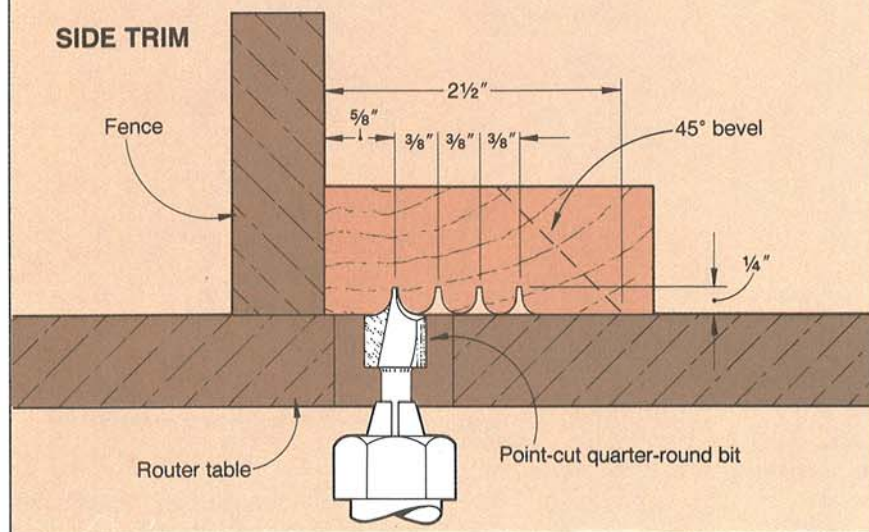
7 To make the dentil molding (H,I,J for the cabinet, and W,X,Y for the shelf), first rip and crosscut two pieces of $\frac{3}{4}$ " oak to $\frac{7}{8} \times 30$ ". Resaw or plane one of the pieces to $\frac{1}{2}$ "-thick (for H,W), and the second to $\frac{1}{4}$ " thick (for I,Y). (See the Display-Shelf Drawing at right, and the Cabinet Dentil Molding Drawing



DENTIL MOLDING



SIDE TRIM



shown above, top.) Next, cut a third $\frac{3}{4}$ "-thick piece of oak to $\frac{3}{4} \times 30$ ", and then resaw or plane it to $\frac{5}{8}$ " thick for J and X.

8 Chuck a $\frac{1}{2}$ " straight bit in your table-mounted router, and elevate it to $\frac{1}{4}$ " above the table surface. Take the last piece you cut in step 7 (J,X) and mark $\frac{1}{2}$ " intervals along one edge. Next, rout $\frac{1}{2}$ "-wide, $\frac{1}{4}$ "-deep dadoes in the face of the piece at every other half-inch mark. (We attached an auxiliary wood fence to the front of our miter gauge.)

9 Finish-sand the three pieces. Next, sandwich them together (J/X in the middle), align them along the back edges, and glue and clamp.

10 For the cabinet stiles (K), rip and crosscut two pieces of $1\frac{1}{16}$ " oak to $2\frac{3}{4} \times 24$ ".

11 Chuck a point-cut quarter-round bit (we used a Sears bit, catalog no. 9R25567) in your router. Now, using the dimensions shown on the Side-Trim Drawing above, rout both stiles.

12 Set your tablesaw blade to 45° from vertical, and the rip fence to make a $2\frac{1}{2}$ " wide cut. Next, bevel-rip both stiles as shown on the Side-Trim Drawing. Crosscut both to fit between the top and bottom moldings. Now, glue and clamp them to the carcass, aligning so the beveled edges extend $\frac{1}{4}$ " beyond the outside

Bill of Materials

Part	Finished Size*			Matl.	Qty.
	T	W	L		
Cabinet					
A left panel	¾"	11¼"	22¾"	OP	1
B right panel	¾"	10½"	22¾"	OP	1
C plate	¾"	8"	16"	OP	2
D stretcher	¾"	2¼"	13¾"	O	1
E* trim	¾"	1¼"	19"	O	1
F* trim	¾"	2½"	21½"	O	1
G* trim	¾"	1¾"	20"	O	1
H* trim	½"	⅞"	13⅝"	O	1
I* trim	¼"	⅞"	13⅝"	O	1
J* dentil	⅝"	¾"	13⅝"	O	1
K* stile	1⅛"	2½"	22"	O	2
L door stile	¾"	1½"	20½"	O	2
M door rail	¾"	1½"	10½"	O	2
N* bead	¼"	¼"	17½"	O	2
O* bead	¼"	¼"	10½"	O	2
P inside shelf	¾"	6½"	13"	OP	1
Q* trim	⅛"	¾"	13¼"	O	1

Display shelf

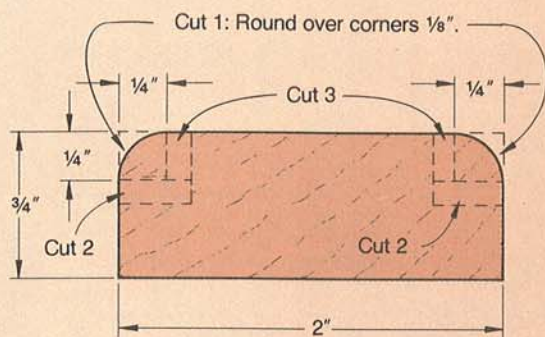
R plate	$\frac{3}{4}$ "	$6\frac{1}{2}$ "	13"	OP	1
S* trim	$\frac{3}{4}$ "	$2\frac{1}{2}$ "	$18\frac{1}{4}$ "	O	1
T mounting strip	$\frac{3}{4}$ "	$1\frac{1}{4}$ "	$8\frac{7}{16}$ "	O	1
U mounting strip	$\frac{3}{4}$ "	$1\frac{1}{4}$ "	$9\frac{3}{16}$ "	O	1
V* trim	$\frac{3}{4}$ "	$1\frac{5}{8}$ "	$16\frac{5}{8}$ "	O	1
W* trim	$\frac{1}{2}$ "	$\frac{7}{8}$ "	$15\frac{1}{4}$ "	O	1
X* dentil	$\frac{5}{8}$ "	$\frac{3}{4}$ "	$15\frac{1}{4}$ "	O	1
Y* trim	$\frac{1}{4}$ "	$\frac{7}{8}$ "	$15\frac{1}{4}$ "	O	1

* Measure and cut all of the parts marked with an * to length to fit your cabinet and shelf. Read all instructions before cutting.

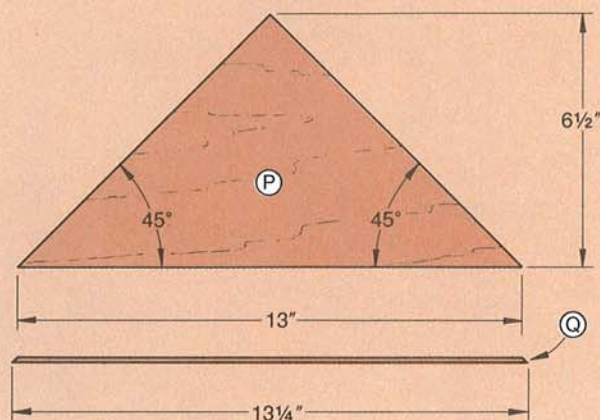
Material code: O—oak; OP—oak plywood.
Supplies: $\frac{1}{4}$ " dowel, $\frac{5}{16}$ " dowel, $2\frac{1}{2} \times 1\frac{1}{4}$ " (Stanley) solid brass ornamental door hinges, $1\frac{1}{2} \times \frac{3}{8}$ " (Stanley) bright brass knob, magnetic catch and strike plate, $\frac{1}{8}$ " double-L-strength plate glass, 4— $\#8 \times 2$ " flat head Lwood screws or 4— $\frac{3}{8}$ " toggle bolts, finish.

continued

3-CUT BEAD



CABINET SHELF (TOP VIEW)



face of the carcass panels. Square them with the top molding.

13 Measure and crosscut a length of the stacked dentil molding (H,I,J) to fit the top of the cabinet where shown on the Side-View Section. Center the dentil trim. Glue and clamp the molding. Set the remaining piece of dentil molding aside.

NOW, MAKE THE DOOR

1 Using the dimensions listed in the Bill of Materials, rip and crosscut 3/4" oak stock for two door stiles (L) and two door rails (M).

2 Mark the centerpoints for the dowel holes where dimensioned on the Door Joint Detail on page 25. Drill the 5/16" holes. (We used a self-centering doweling jig.)

3 Crosscut eight 5/16" dowels to 15 1/8" long. Assemble the door frame, gluing the dowels in the holes. Clamp and check the frame for square. Keep the frame flat. Later, remove clamps and sand the frame.

4 From a 3/4 x 2 x 30" piece of oak, make the door-frame bead (N,O) by following the 3-Cut Bead Drawing above. (We used our table-mounted router fitted with a 1/8" round-over bit, and a tablesaw for this.)

5 Miter-cut the bead strips to fit the inside of the door frame. Glue all strips in place, recessing them 1/8" from the front face of the door. (We used a combination square for setting the offset, and masking tape to hold the strips in place.)

6 Using the dimensions on the exploded-view drawing, chisel in the hinge mortises. Temporarily screw the hinges to the door. Place the frame in the opening, center it, and mark the hinge screw holes on the door stile. (We recessed the door 1/4" from the front of the stiles.)

7 Attach the magnetic catch to the underside of the stretcher. (We drilled the first hole 1 1/4" in from the left edge.) Attach the strike plate to the door.

8 Drill the pilot hole for the door nob. (We centered it on the left door stile.) Remove all hardware.

THE SHELVES COME NEXT

1 Lay out the triangle for the cabinet's inside shelf (P) on the 3/4" oak plywood. (See the Cabinet Shelf Top-View Drawing above for dimensions.) Saw the piece to shape. Next, rip a 1/8 x 14" strip (Q) from 3/4" oak stock. Next, glue and clamp the strip along the long (front) edge of the triangle. Remove the clamps after the glue dries. Trim the strip flush with the shelf's edges.

2 To make the display shelf, first lay out the triangular plate (R) on the 3/4" oak plywood as dimensioned in the Bill of Materials. Saw the piece to shape.

3 To make the mounting bracket for the display shelf, saw the mounting strips (T,U) from 3/4" oak by first ripping a strip to 1 1/2" wide and 20" long. Miter-cut it to the lengths listed in the Bill of Materials. Drill

and countersink the holes as shown on the Lower-Shelf Drawing.

4 Glue and screw the mounting strips together. (We aligned the mounting strips flush with the edges of the shelf plate, and temporarily clamped them to the underside of the plate while the glue dried. We also drilled the screw pilot holes in the underside of the shelf at this time.) Do not glue the strips to the shelf. Now, saw a $\frac{1}{2}$ " chamfer on the back corner of the shelf.

5 Glue and clamp the molding pieces (S,V,W,X, and Y) together as shown on the Display Shelf Section-View Drawing at *right*. Remove the clamps after the glue dries.

6 Hold the stacked molding you assembled in step 5 to the front of the shelf plate, and mark the length. Miter-cut it to length. Center, glue, and clamp it to the front edge of the shelf plate.

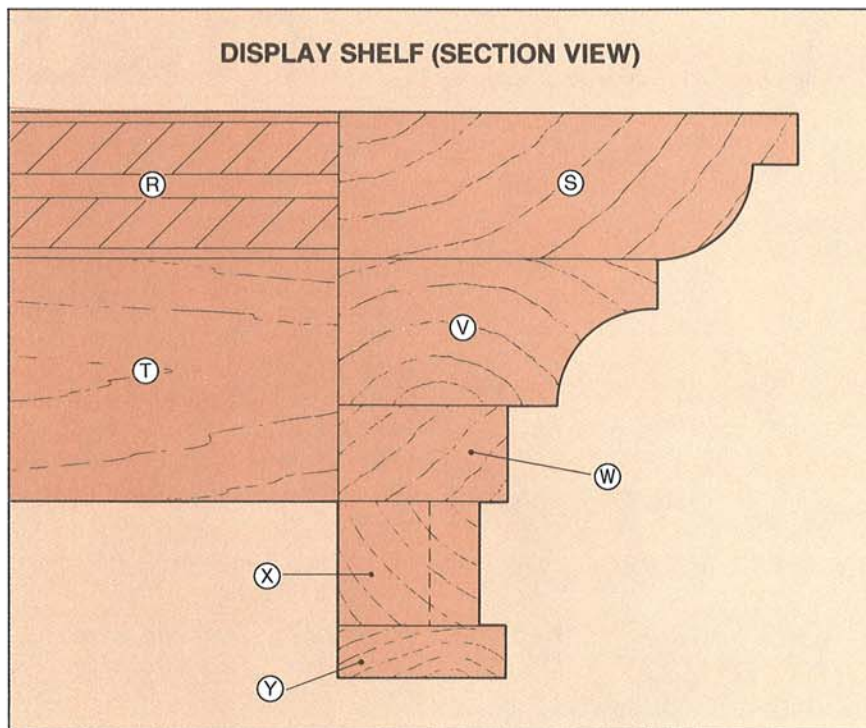
THE FINISHING STEPS

1 Apply the finish of your choice to the cabinet and shelves. (We applied a coat of dark oak oil stain, and then sprayed on four coats of satin lacquer, sanding between coats with 320-grit sandpaper.)

2 Cut a piece of $\frac{1}{8}$ " double-strength glass to fit in the door and install. (We secured it with a continuous bead of silicone caulk along the glass edges and frame.) Now, attach the hinges and knob.

3 Crosscut four 1"-long lengths of $\frac{1}{4}$ " dowel for shelf supports.

4 Attach the cabinet and the shelf mounting bracket to the wall corner. If possible, screw the cabinet and bracket directly to wall studs using #8 $\times$ 2" flathead wood screws. If you cannot locate studs, attach it with toggle bolts. If the



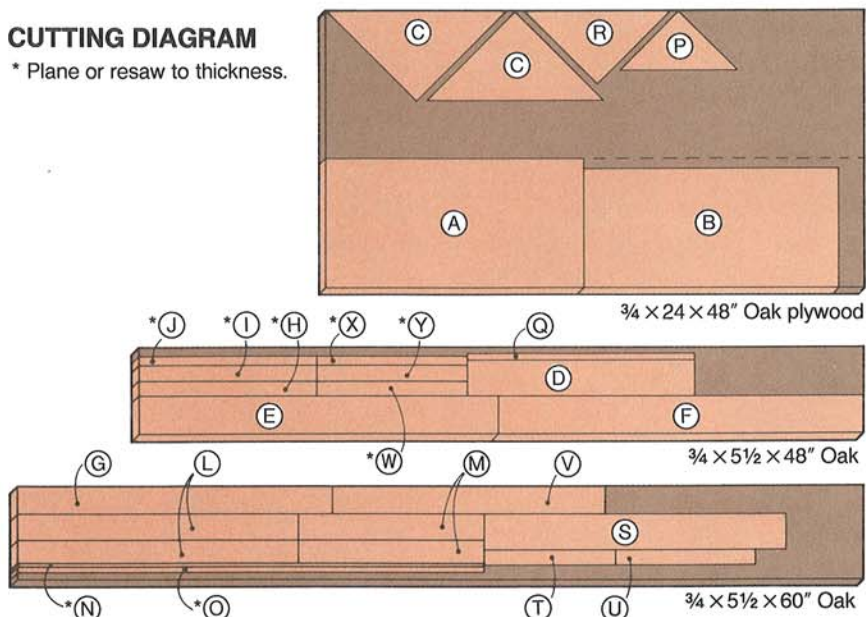
corner isn't square, you may trim the cabinet to fit by sanding or planing on the back side of the trim extending beyond the carcass. Next, test-fit the display shelf to the wall and trim it (by sanding or planing)

if needed. Screw the shelf to the shelf mounting bracket.

5 Attach the door to the case. Position the shelf inside the cabinet with the short lengths of $\frac{1}{4}$ " dowels.

CUTTING DIAGRAM

* Plane or resaw to thickness.



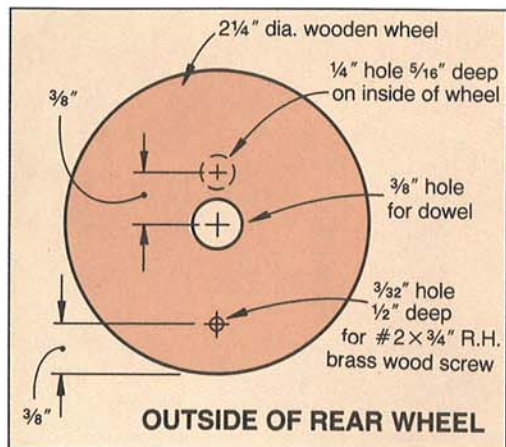
Because this is your magazine, it's important that you have an opportunity to sound off. Here, you can register your suggestions, criticisms, and, if you wish, a kind word. We may not be able to publish every letter, but we'll get in what we can. Send your letters to:

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

READER'S CORNER



Return Of The Grasshopper



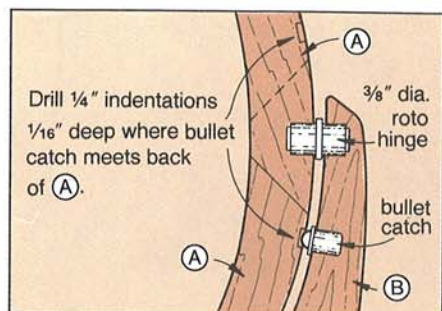
I made four of the Hop-Along Grasshopper toys featured in the January 1990 issue of your magazine. They were fun to make, but when I got all done, they would not work.

After looking things over, I found that the holes in the rear wheels were not in the right place. In your drawings [page 19], both the offset axle holes and the screw holes for the leg were above the centerline of the wheel. You should have one above the centerline and one below. See my drawing.

Hugh F. Hanson, Waukegan, Illinois

Hugh, as you point out, without the correct offset holes, the wheels won't turn. We've double-checked our drawings and the information on the hole locations seems okay. That we did not put the screw-hole and axle-hole centerpoints on the same wheel apparently caused confusion. Your drawing, which we reproduced, should clear this up. Also, because of the project's light weight, you'll find the toy operates better on carpet than on vinyl.

Our Hourglass, One More Time



If you've tried building the hourglass project on pages 6 and 7 in issue 10, then you know how precise you need to be in order to mount the C-arm to the upright support. We've looked around for an alternative approach, and, by golly, we found one.

Note the use of the $\frac{3}{8}$ "-diameter roto hinge. (See the drawing at left.) You can use it in place of the bored dowel and screw device designed in the original. We tapped the hinge at one end with a punch to tighten the fit of the rotating wood rings. Because the installed roto hinge drew the C-arm closer to the support, you can eliminate the bullet catch.

Order the $\frac{3}{8}$ "-diameter roto hinge, catalog number E3600 from The Woodworker's Store, 21801 Industrial Boulevard, Rogers, MN 55374-9514. Include \$5.15 for item cost and handling.

Make And Shake

I made a number of the salt and pepper shakers for gifts from your July 1988 issue 4. While making the shakers, I came up with a modification. Instead of drilling the shaker holes according to your circular pattern, I drilled several holes that made a "P" on the pepper shaker, and an "S" on the salt shaker. The recipients seemed impressed.

Gerald A. Hart, Palm City, Florida

Gerald, Our readers should find this helpful. —JH