VOL. 6 NO. 2 • ISSUE 32

WEEKEND WOODWORKING PROJECTS®

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Tough-stuff dump truck

Collapsible travel alarm

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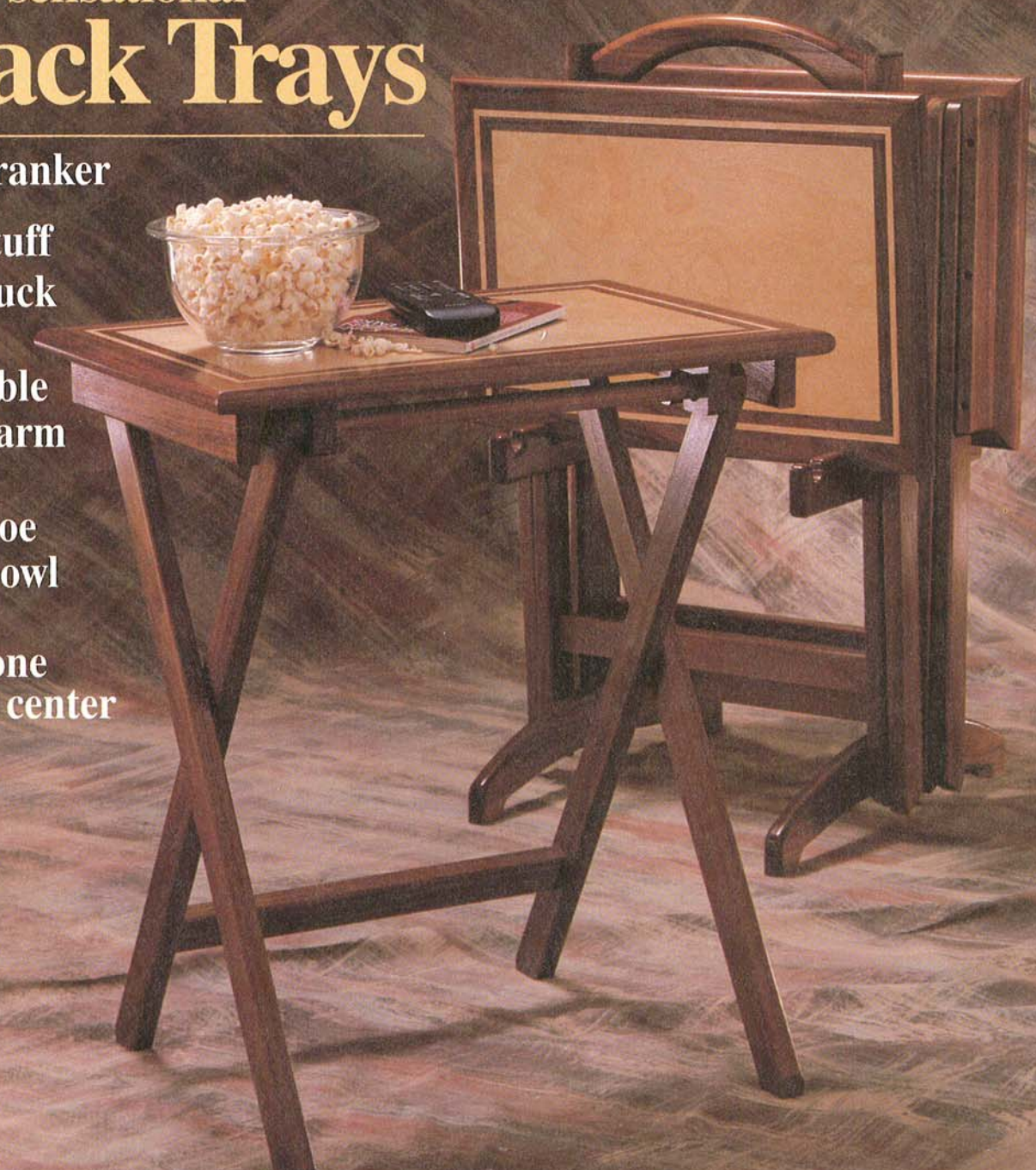
Wall phone message center



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FROM THE EDITORS OF WOOD® MAGAZINE

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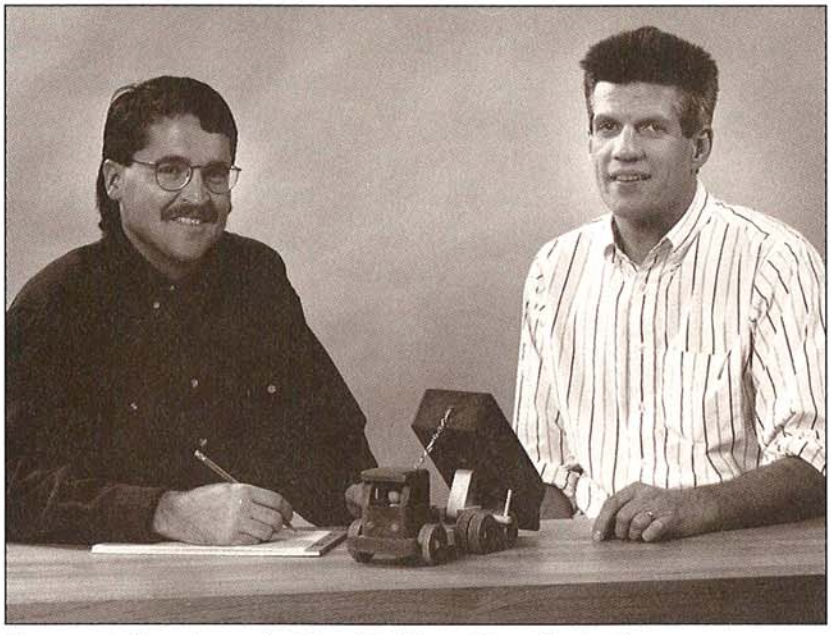
Welcome Aboard, Guys!

*Ple*ase join me in greeting two new faces on the *Weekend Woodworking Projects*® staff. Doug Cantwell, *right,* steps into the shoes of Chuck Sommers, who took early retirement after 30 years as a writer and editor for our company. Doug, a former college English instructor, joined our staff after working in Pennsylvania as a technical writer for an environmental engineering firm. Fortunately for us, he ably parlayed his lifelong interest in woodworking into a magazine job that fits him to a T. He's already hard at work on projects you'll be reading about this fall—and even scouting the country for projects we'll show you in 1994.

Joe Warwick, *left,* replaces Mike Harrington as our graphic designer. (Mike, our resident computer expert, recently left our staff to train other company employees in desktop publishing.) After working for advertising agencies in Des Moines and Tuscon, Joe decided that magazine publishing just might be more to his liking. He is a dedicated home remodeler who happens to be pretty savvy about computer design, too.



Photograph: John Hetherington

Our new staff members—Joe Warwick, left, and Doug Cantwell.

So, we're off and running. We don't have any other major changes in the works—just the same doable projects and high-quality designs you've come to expect from *Weekend Woodworking Projects.*

Carl Voss

Cover photograph: Wm. Hopkins

Print this article

WEEKEND WOODWORKING PROJECTS®

Our Pledge to You

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

The *Weekend Woodworking Projects* Staff

WE CARE!

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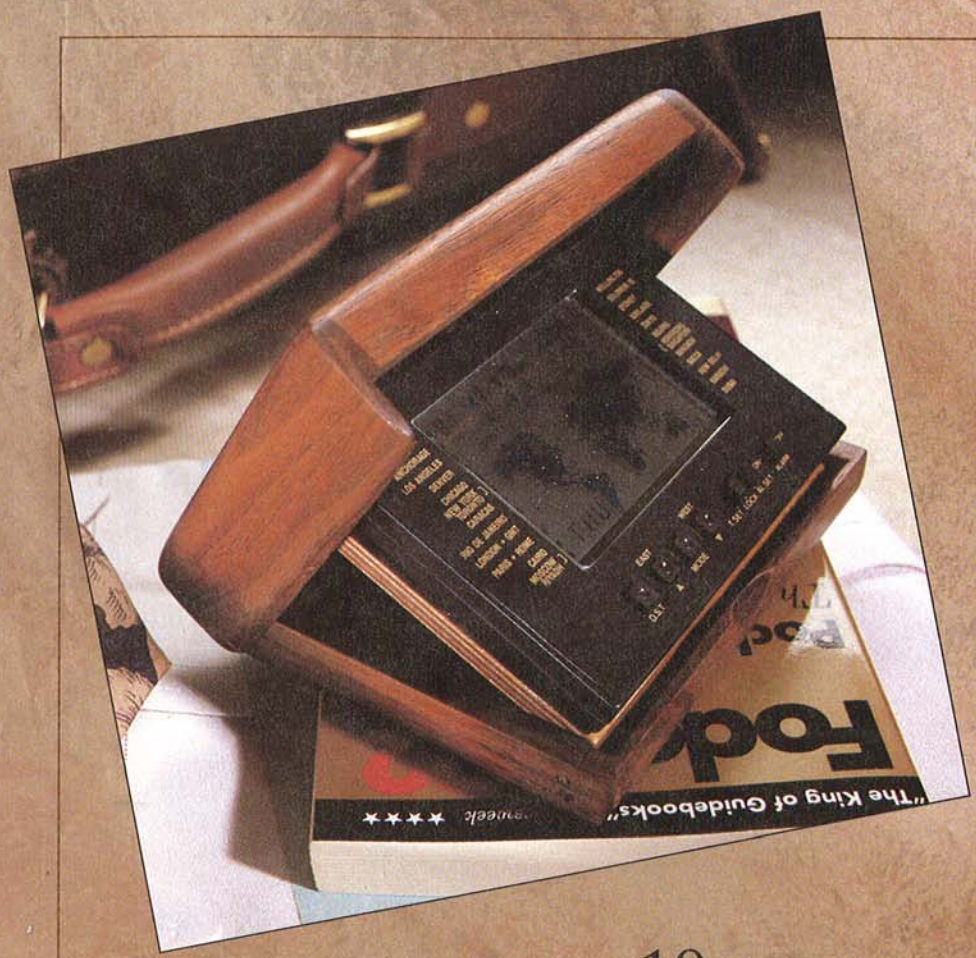
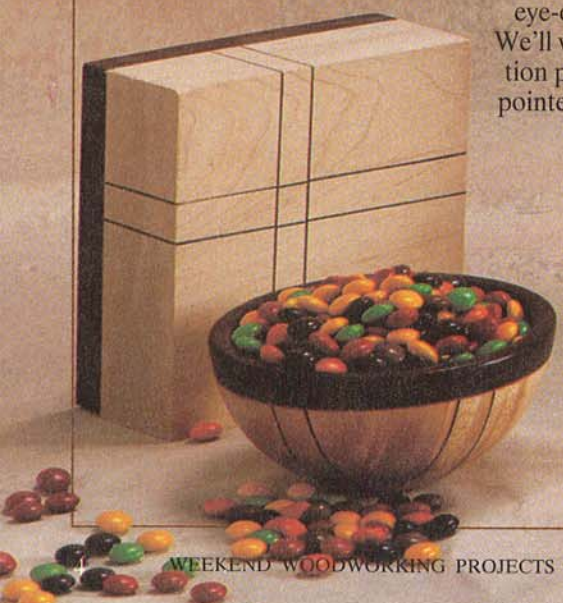
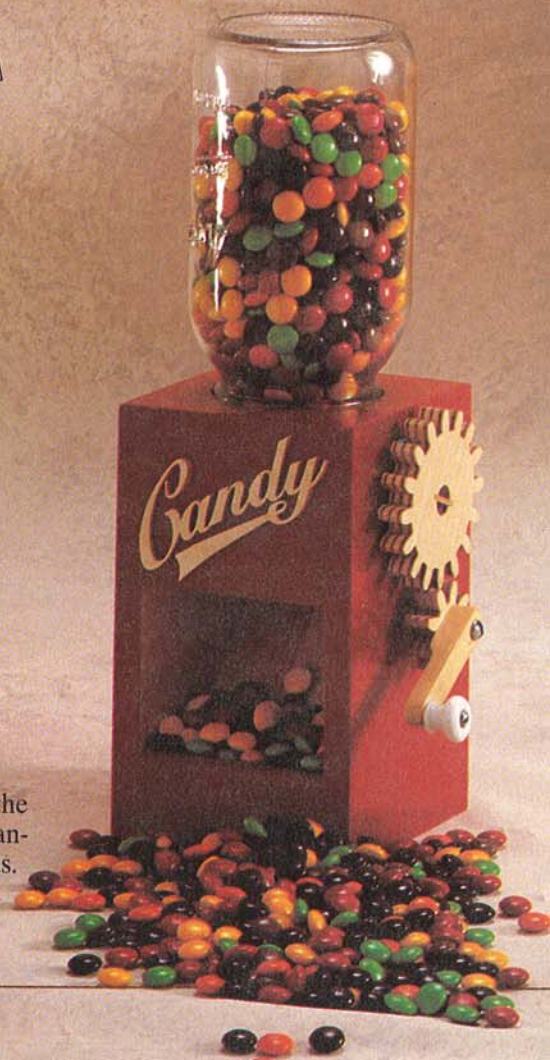
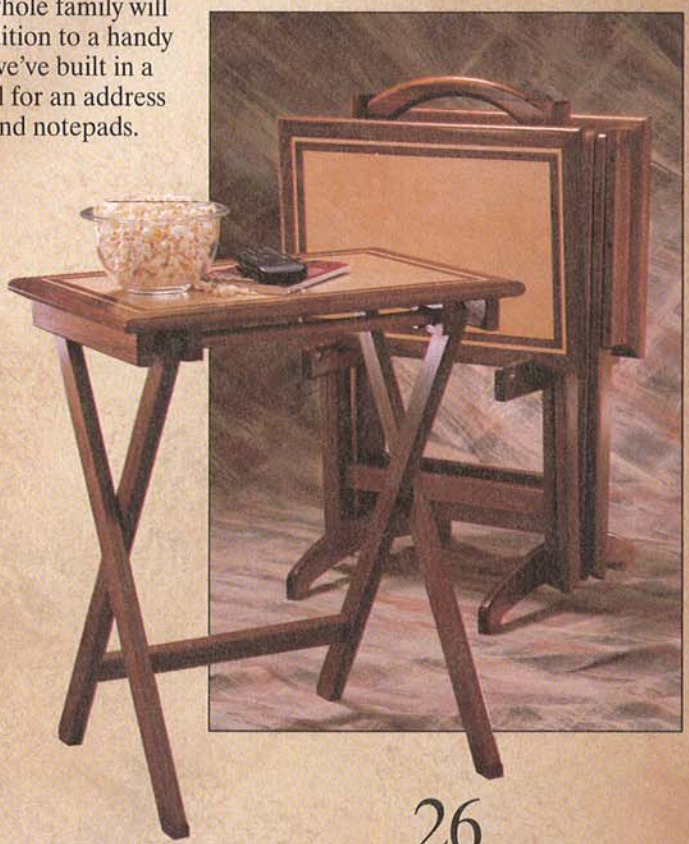






18
Fabulous Phone Facility

Surround your wall telephone with convenience the whole family will appreciate. In addition to a handy writing surface, we've built in a drawer that's ideal for an address book, pencils, and notepads.

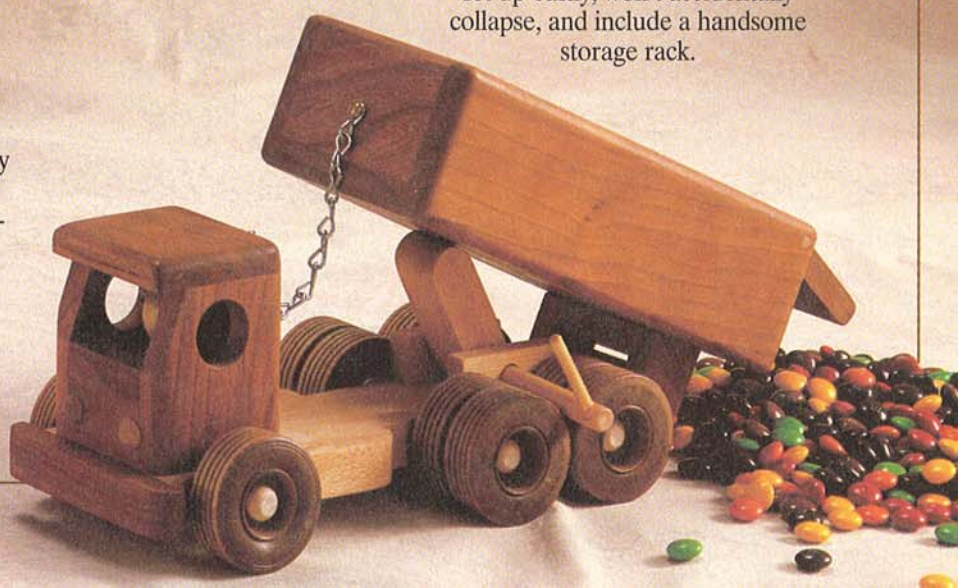


26
Simply Sensational Snack Trays

Toss away those flimsy television tables! Our portable snack tables set up easily, won't accidentally collapse, and include a handsome storage rack.

22
Tough-Stuff Dump Truck

Truck on down to your shop and start building this sturdy toy designed for rough play. The easy-to-operate hoist guarantees hours of imaginative keep-on-truckin' fun.



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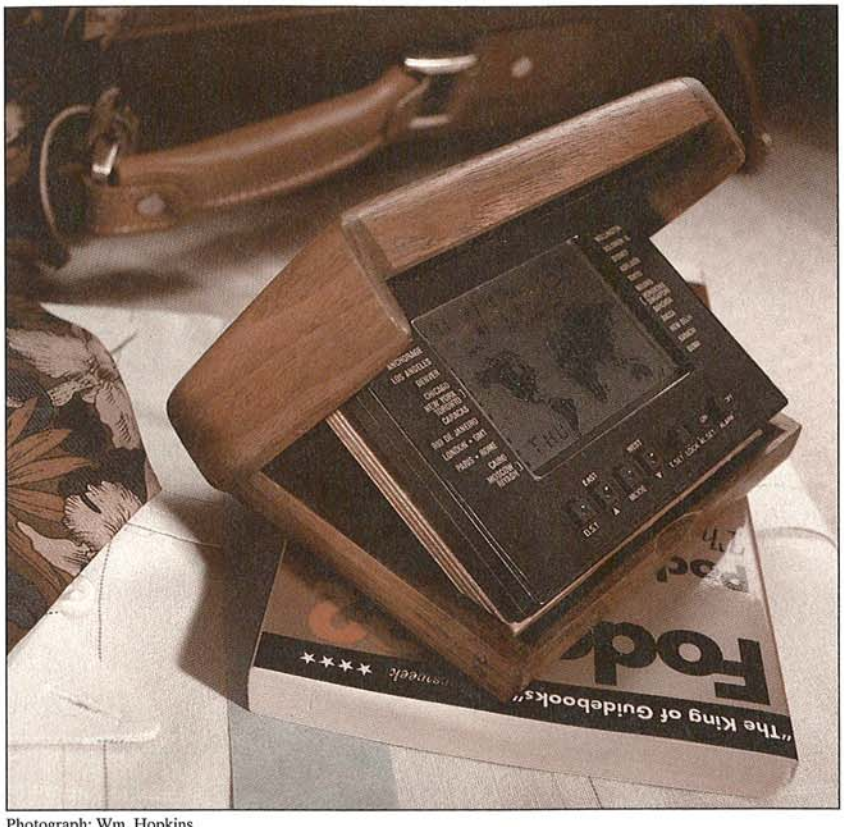
Alarmingly simple

Globe-Trotting Travel Clock



Photograph: Wm. Hopkins

Here's a compact gift for the traveler in your family, that's infinitely more reliable than a hotel clerk's wake-up call. We built our compact walnut case around a digital alarm-clock module that tells you the local time and the corresponding time in 20 different time zones around the world.

START BY FORMING THE BASIC BOX

Note: *You'll need 1/8"- and 1/4"-thick stock for this project. As shown on the Cutting diagram on* page 8, *we cut all of the parts from a 1/4×5 1/2×18" piece of walnut. For this material, you can plane or resaw thicker stock to size or buy it from a mail-order supplier. See the Buying Guide on page 8 for one source. If you resaw or plane your own stock, let it sit for several days to see if it warps. For best results, the thin stock you use must be straight and flat. Also, see the Buying Guide for our source for the $19.95 clock module.*

1 Finish-sand both surfaces of your 1/4" stock. Then, cut a 1x18" strip from it. (We chose walnut for our travel clock case.) From this strip, crosscut box front and back pieces (A) to 4 1/8" long and the side pieces (B) to 4 1/2" long.

2 To form the ends (B), cut 1/4"-wide dadoes 1/8" deep 3" apart (inside measurement) across both pieces (B). The dadoes become rabbets after you complete the next two steps.

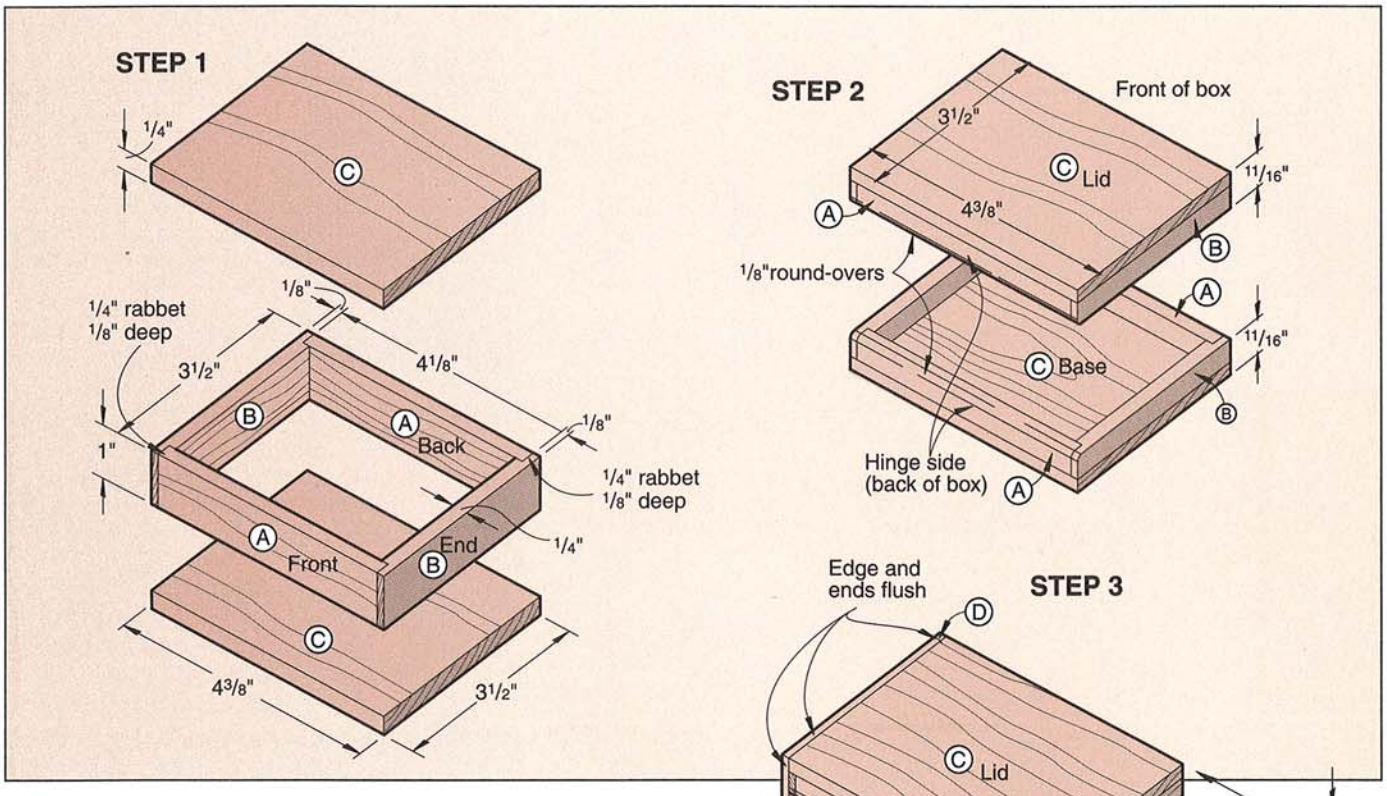
3 Glue and clamp the ends of the box front and back into the dadoes cut into the two end pieces. (As shown *opposite,* we clamped this assembly in our bench vise, and squared the box corners with a square.)

4 Remove the box frame from the vise, and trim the side pieces (B) flush with the edges of the front and back (A) as shown on the Step 1 drawing *opposite*. (We cut away the excess with our bandsaw. This forms the corner rabbets.) Next, sand the top and bottom of the box so all edges will be flush. Cut two 3 9/16"-wide by 4 1/2"-long pieces for the box top and bottom (C). (Note that we initally cut these pieces slightly larger than the sizes listed in the Bill of Materials.)

5 Center, glue, and clamp the box top and bottom (C) onto the box frame. After the glue dries, remove the clamps, and sand the edges and ends of the top and bottom pieces flush with the frame. When sanding, do not reduce the thickness of the box front, back, or sides.

NEXT, SLICE THE BOX IN TWO

1 Set up your tablesaw as shown on the Box Section drawing on *page 8*. Then, saw along each box edge, cutting the box into two parts and forming the box lid and the box base.



2 Fit your table-mounted router with a 1/8" piloted round-over bit. Now, rout the two outside mating edges of the back parts (A) where detailed on the Step 2 drawing *above right,* and the Step 3 drawing and Lid detail at *right*.

3 Center and sand a 1/16"-deep finger recess 3/4" long in the front and back of the base piece where shown on the Exploded View drawing on *page 8*. (To locate them, we first marked a centerpoint on the two edges. Next, we chucked a 1"-diameter sanding drum into our drill press and used it to form these finger recesses where marked on both of the edges.)

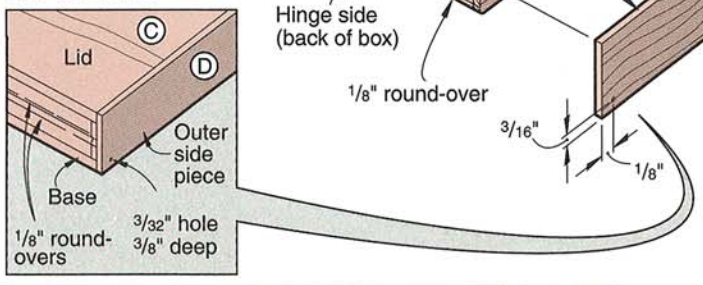
Add the Side Pieces and Make The Clock-Mounting Board

1 From a 1/8"-thick walnut strip, cut the two outer side pieces (D) to size.

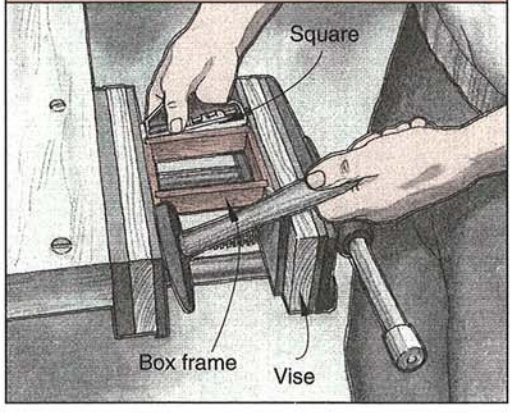
2 Glue and clamp the outer side pieces to the box lid as shown on the Step 3 drawing. After the glue dries, remove the clamps, and then sand the edges and ends of these outer side pieces flush with the lid edges.

Continued

LID DETAIL



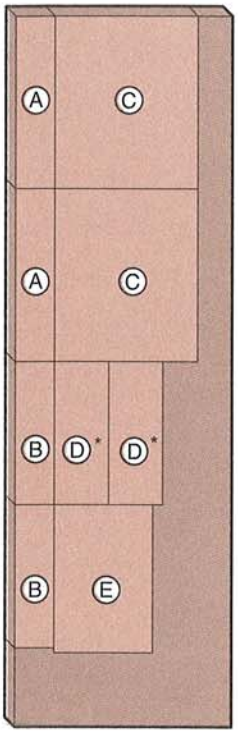
CLAMPING THE CASE SETUP



TIP **You'll get best results when sanding the box frame edges as directed in steps 4 and 5 on page 6 if you sand the parts on a flat surface. We suggest adhering a sheet of 180-grit sandpaper to a piece of plywood and then lightly rubbing the entire frame across the sandpaper.**

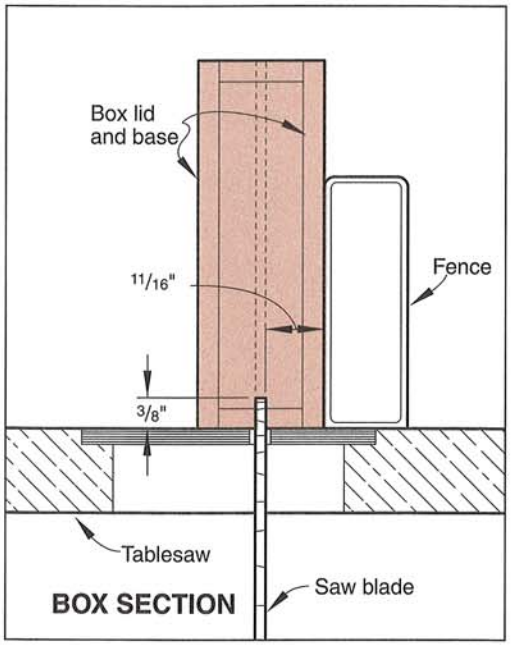
TRAVEL CLOCK

CUTTING DIAGRAM



1/4 x 5 1/2 x 18" Walnut

*Plane, resaw, or sand to 1/8" thick



BILL OF MATERIALS

Part	Finished Size*			Matl.	Qty.
	T	W	L		
A* front, back	1/4"	1"	4 1/8"	W	2
B sides	1/4"	1"	3 1/2"	W	2
C* top & bottom	1/4"	3 1/2"	4 3/8"	W	2
D ends	1/8"	1 3/8"	3 1/2"	W	2
E* mounting board	1/4"	2 1/2"	3 7/8"	W	1

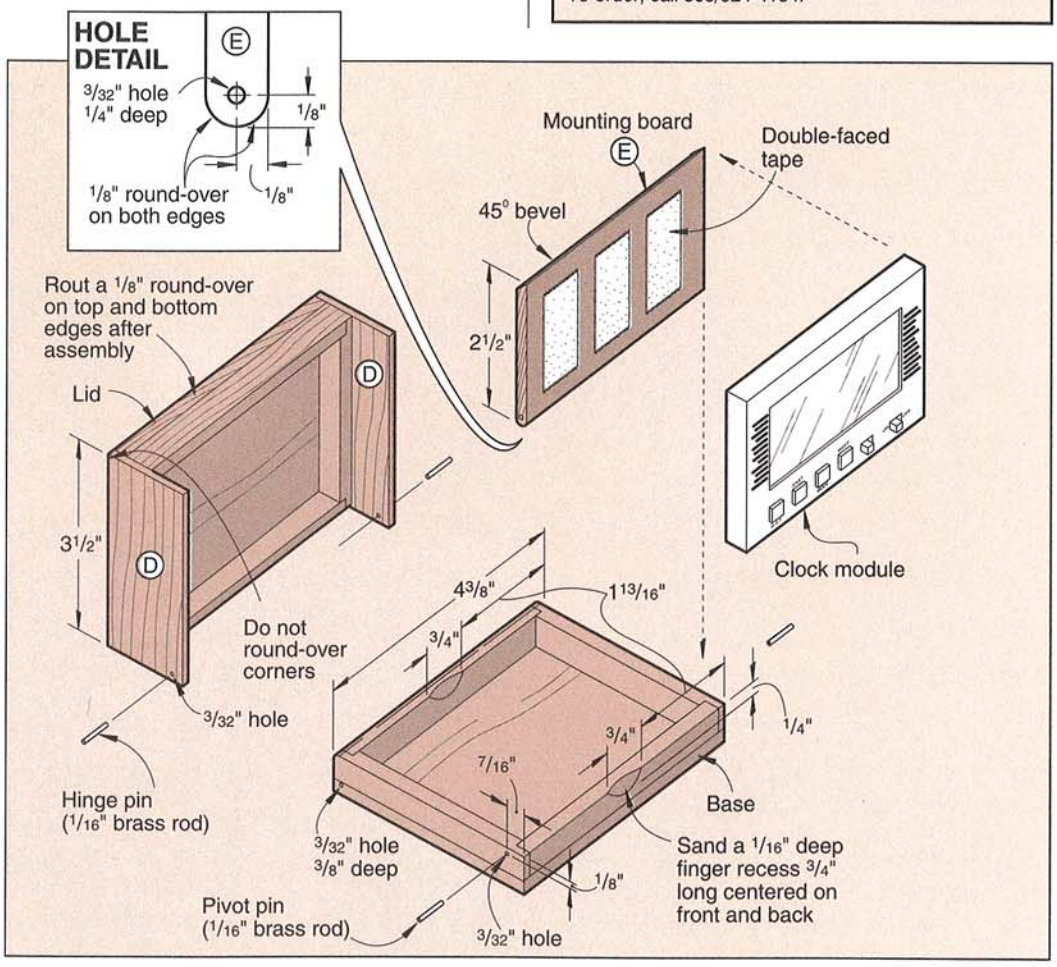
*Cut parts marked with an * to size during construction. Please read all instructions before cutting.
Material Key: W—walnut.

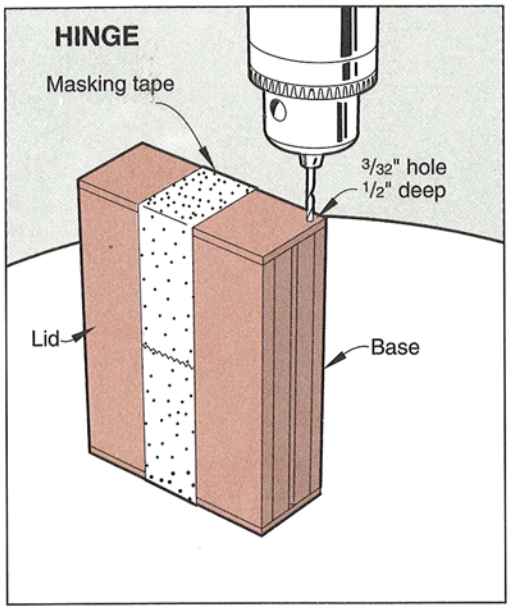
Supplies: 1/8" brass rod, clear finish.

Buying Guide

•Digital world-time alarm clock, with battery, and instructions. $19.95 ppd. New Products, 15 West Street, Spring Valley, NY 10977. (Sorry, no telephone orders.) When ordering, please give your street address (not a P.O. box) for shipping.

•Thin stock. 1/4×5 1/2×18" walnut. $6.95 ppd. for one ($15.50 for two). Part no. WWP3208W. Or, $7.95 ppd. for lacewood ($14.50 for two), WWP3208L. Heritage Building Specialties, 205 North Cascade, Fergus Falls, MN 56537. To order, call 800/524-4184.





3 Fit the box lid onto the base, holding it together with masking tape. Next, using the dimensions on the Step 3 drawing, mark the hinge-pin hole centerpoints with an awl.

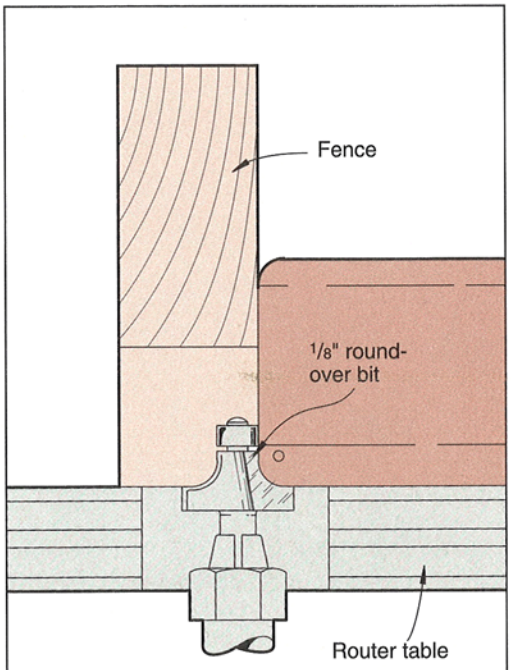
4 Using the dimensions on the Hinge drawing *above* for reference, drill a hinge-pin hole through the outer side piece and into the rear corner of the base. Now, turn the box end-for-end, and drill an identical hinge-pin hole in the opposite end of the base.

5 Saw the clock mounting board (E) to size plus ½" additional length. Sand or saw a 45° bevel along the top edge. Next, using your router and a ⅛" round-over bit, round over the bottom edge of the mounting board where dimensioned on the Hole detail accompanying the Exploded View drawing *opposite*. Now, saw the board to final length, and then mark and drill the 3/32" holes in the ends of the mounting board where shown on the same drawing.

6 Mark the centerpoints, and drill the 3/32" pivot-pin holes through the base where dimensioned on the Exploded View drawing.

You're Down To The Final Assembly

1 Crosscut four ¾" lengths of 1/16" brass rod. Using the end of a stick pin or toothpick, place a drop of instant glue (cyanoacrylate) in the two pivot-pin holes in the mounting board.



ROUTER DETAIL

Next, insert 1/16" brass rods into the pivot-pin holes in the base sides. Now, hold the mounting board inside the base, and then drive the pivot pins through the base sides and into the mating holes in the mounting board. Remove any glue squeeze-out. Snip off the ends of the brass rods, and file them flush with the sides.

2 To attach the lid to the base, first apply glue in the hinge-pin holes in the base. Next, place the lid over the base, align the hinge-pin holes, and then drive the brass rods into these holes. Finish the hinge-pins as described above.

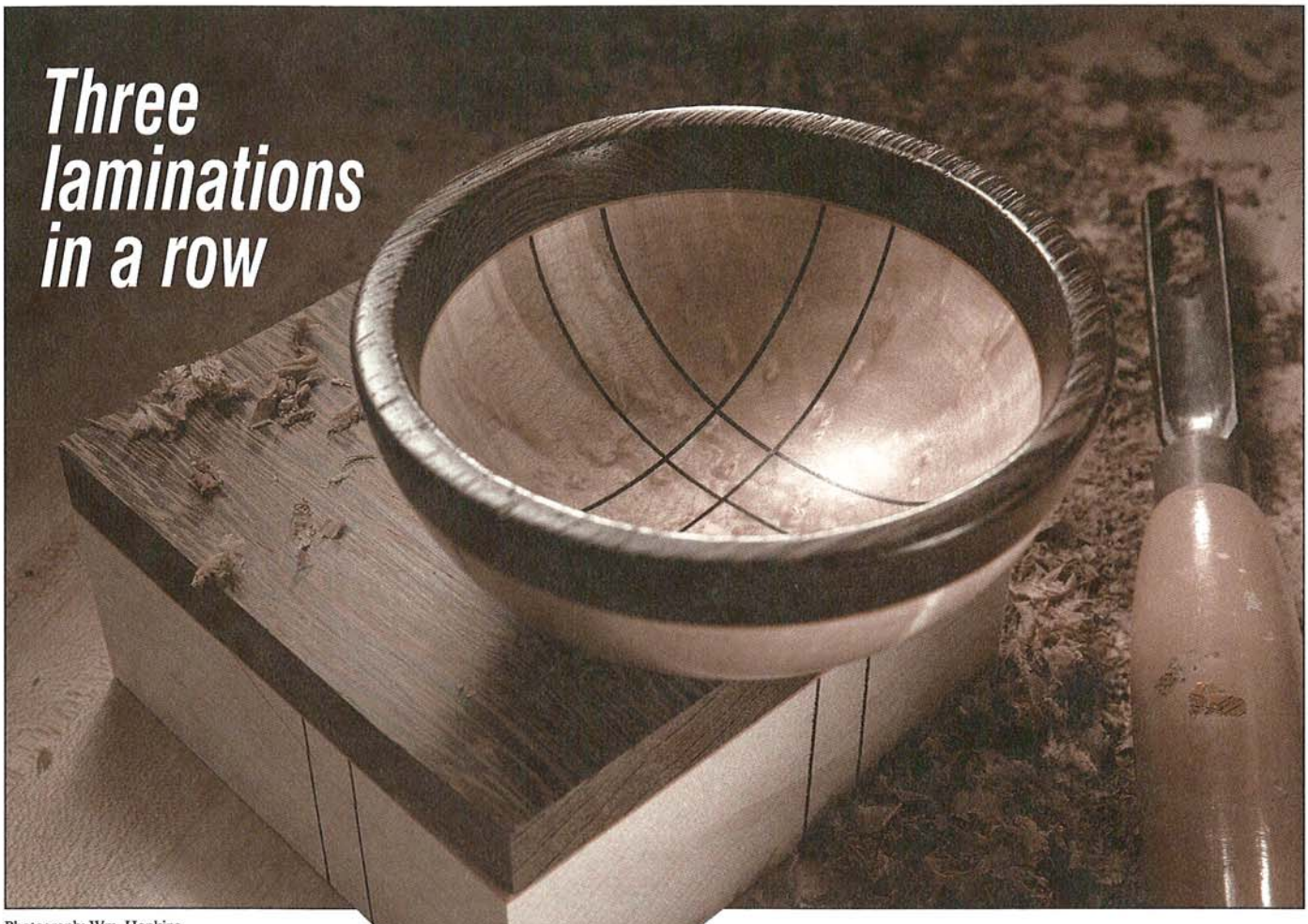
3 Set up your router as shown on the Router detail *above*. Then, rout along all of the box edges except the corners.

4 Finish-sand the clock case. Apply the finish. (We applied four coats of lacquer, rubbing lightly between coats with 0000 steel wool.)

5 Remove the small metal clip from the back of the clock module. Next, apply strips of double-faced carpet tape to the front of the mounting board. Now, center and stick the clock module to the front face of the mounting board. When you need to replace the clock's battery, use a thin wooden wedge and carefully pry the module from the mounting board. ■

TIP **The world time clock module pictured on page 6 features an LCD display of the local time, date, and day of the week. In addition, you may select and display concurrent time in major cities or any one of the 20 world time zones outlined on the world map. You simply point an arrow to the desired city listed along the sides, and its time and date appears. At the same time, a section of the map where that city is located, pulsates. The 24-hour alarm works on local time.**

Project design and builder: Jim Boelling
Illustrations: Kim Downing, Roxanne LeMoine, Carson Ode



Photograph: Wm. Hopkins

Print this article

Tic-Tac-Toe Turned Bowl

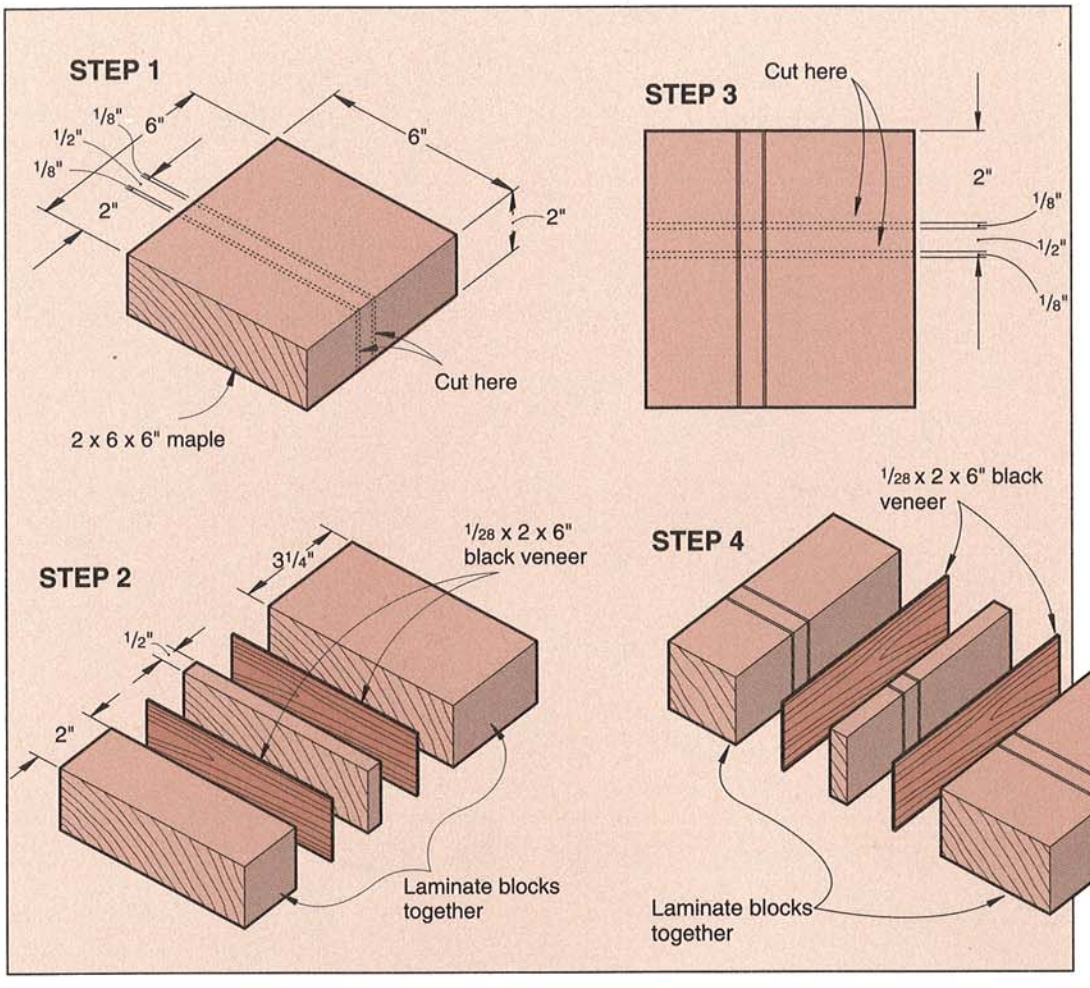
You'll have lots of fun assembling and turning this conversation piece. Follow the easy lamination steps, and you'll be on your way to completing a perfectly formed grid that's sure to catch everyone's eye.

Laminating the Block Is as Easy as 1-2-3

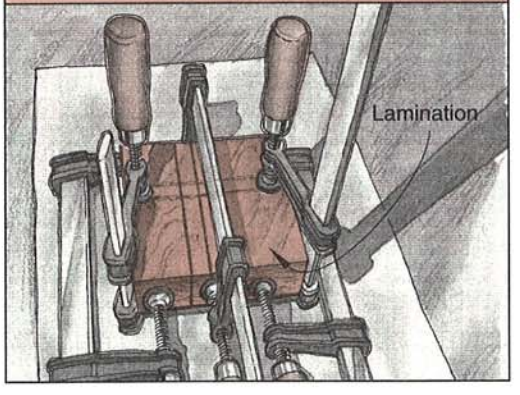
1 Cut a 2″-thick piece of maple to 6″ square. If you have trouble locating stock this thick, we suggest you use a 2″-thick bowl blank, or laminate a piece of ½″-thick maple between two pieces of ¾″ stock. Then, make sure the grain of all three pieces runs in the same direction. (We used a 2″-thick bowl blank. See the Buying Guide on *page 13* for a mail-order source for the specified materials.)

2 Cut your maple block into three pieces where dimensioned in Step 1 of the 4-step Block Lamination drawing *opposite*. (We sawed the block on our tablesaw with a carbide-tipped blade. By elevating the blade 2⅛″ above the saw table and feeding the stock through slowly, we made each cut in one pass. For safety, always use a pushstick when sawing short pieces.)

3 Using a utility knife, cut four pieces of black-dyed veneer to 2×6″. (To do this, we placed one end of the maple piece firmly on the veneer, and then cut around it.)



Clamping the Lamination



4 Arrange your maple pieces and veneer pieces as shown on the Step 2 drawing *above*. Spread a thin, even coat of glue on all mating surfaces of the pieces. Now, squeeze all the pieces together, align the edges and ends of the pieces, and then clamp. (Notice how we arranged the sliding-head clamps. We also used clamp heads to help keep the ends and the top and bottom surfaces flush.) Let this lamination dry overnight.

5 Remove the clamps, scrape off any glue, and lightly sand the lamination. Trim one edge of the lamination flush. Next, position the square-cut edge of the block against the fence, and crosscut it into three sections as shown on the Step 3 drawing *above*.

6 Assemble the three block pieces and the two remaining pieces of black veneer in the order shown on the Step 4 drawing. Glue the mating surfaces, aligning the top, bottom, and ends, and then clamp until the glue dries.

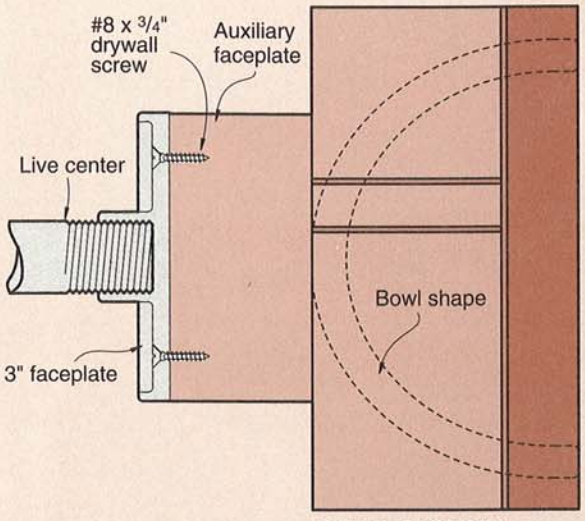
7 Remove the clamps, and sand the top and bottom surfaces of the bowl lamination smooth and parallel to each other. (We did this on our stationary belt sander, being careful not to sand more from one end than the other.)

8 Cut a 6″-square piece of red-dyed veneer. Cut a 6″-square piece of ¾″-thick wenge or walnut for the top. Next, glue, assemble, and clamp the pieces in the order shown on the Bowl Blank Lamination drawing on *page 12*.

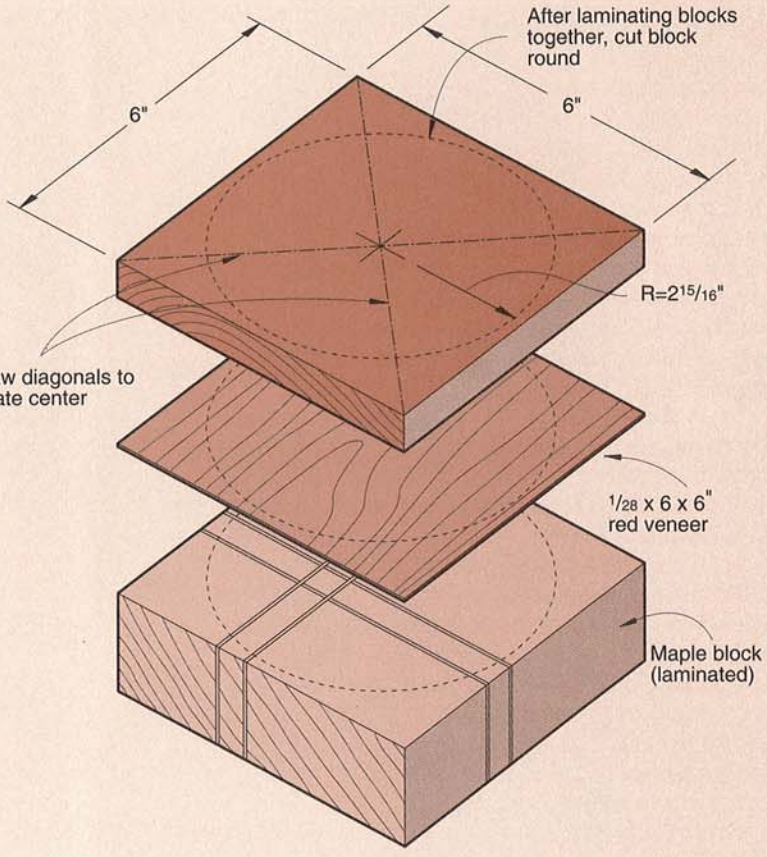
Continued

TIP **For laminated projects such as this bowl, you need to make sound, voidless glue joints. To do this, use a plastic playing card, credit card, or thin scrap of wood to spread a thin, even coat of glue (we used yellow woodworker's glue) on all of the mating wood surfaces.**

TURNED BOWL



BOWL MOUNT



BOWL LAMINATION

NOW, PREPARE YOUR LAMINATION FOR THE LATHE

1 Make an auxiliary faceplate by placing your lathe's 3″ steel faceplate on a piece of scrap 2×4 and tracing around it with a pencil. Mark the mounting hole centerpoints with an awl. Now, bandsaw this disc round.

2 Center your 3″ faceplate on the auxiliary faceplate you just cut. Drill pilot holes, and then screw the steel faceplate to the auxiliary faceplate with ¾″-long sheet-metal or drywall screws. Do not use longer screws, or you may strike them when shaping the bowl bottom later.

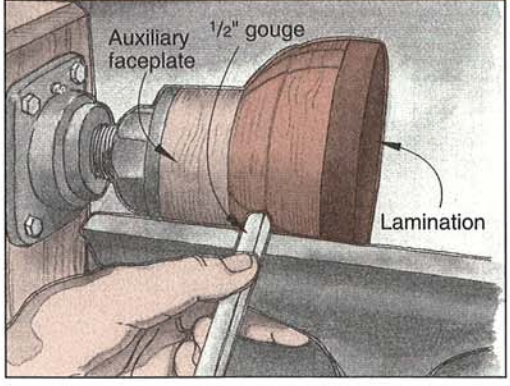
3 Draw diagonal lines across the top face of the bowl lamination from corner to corner to find the centerpoint. Next, set a compass on the centerpoint, and then scribe the largest possible circle on the top face of the blank. (We made ours 5⅞″ diameter.) Now, bandsaw the lamination round.

4 Measuring in from the edges, carefully center and then glue (we used quick-set epoxy) the auxiliary faceplate to the bottom of your laminated block. See the Bowl Mount drawing at *upper left* for reference.

TOOLS SHARPENED? THEN LET'S MAKE SOME SHAVINGS!

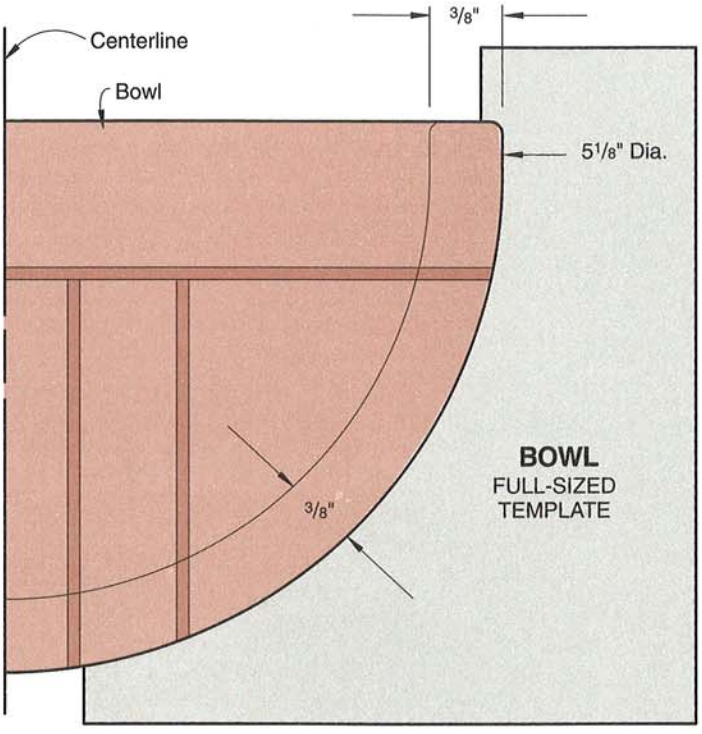
1 Thread the faceplate onto your lathe headstock spindle. Using a lathe speed of about 750 rpm, true-up the outside of the bowl blank. (We used a ½″ gouge for this. Although you can use a scraper, we preferred to use a sharp gouge and a cutting action to minimize tear-out of the end grain. Besides, cutting—rather than scraping—will reduce your sanding time later.)

TURNING THE BOWL EXTERIOR



2 Turn the outside of the bowl to shape as shown on the Bowl profile at *right*. To accurately shape the bowl's exterior, we suggest you make a cardboard copy of the full-sized Bowl template, and use it as a guide while you work.

3 Switch to a ⅜" or ½" bowl gouge, and turn the bowl interior. (To form the continuous curve on the inside of the bowl as shown *below,* we found it necessary to use a bowl gouge because it has a steeper grind than on most spindle gouges. The long-angled bevel on a spindle gouge has too shallow an angle to properly ride the bevel when turning the tight arc on a bowl this small.) Take your time making the final cuts. We recommend you make continuous cuts from the rim of the bowl to the base. Also, try to make a continuous arc (no flat spots) when shaping the interior. As you work, measure the wall thickness with an outside calipers as shown *below right*. Turn the bowl wall to ⅜" thickness that is consistent from the rim to the base.



You're Down to the Final Steps: Parting, Sanding, and Finishing

1 Increase your lathe speed to about 1,250 to 1,500 rpm, and hand-sand the bowl's interior and exterior. (We worked through 100-, 150-, 220-, and 320-grit sandpaper to remove the tooling marks and to smooth the surfaces.) Stop the lathe between grits, and hand-sand with the wood grain. (We've found the end-grain areas always need a little extra sanding.)

2 Using a parting tool, finish turning the base round to part the bowl from the auxiliary faceplate. As shown on the full-sized template, continue the outside curve of the bowl across the bottom for a round—not flat—bottom.

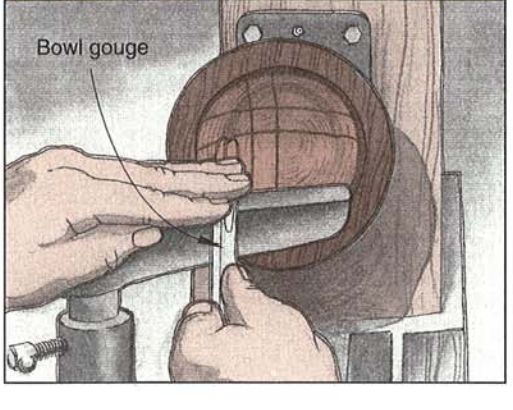
3 To prevent scratching the rim of your bowl when sanding the bottom, place it upside down on a cloth towel. Now, using a palm sander and the same four sandpaper grits used in Step 1 at *left,* sand the bowl bottom smooth and round. Check the bottom curvature as you sand so you maintain the arc.

4 Sign and date the bottom of the bowl with a fine-tipped permanent marker or pen. Let it dry for about 30 minutes.

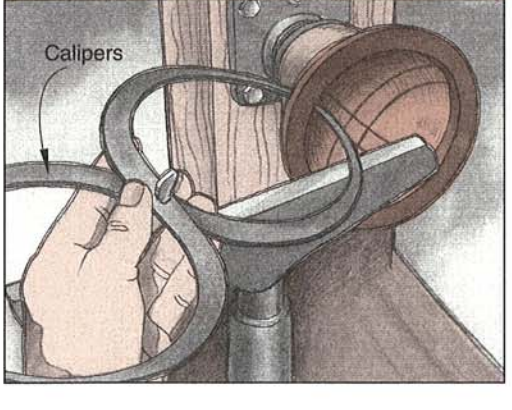
5 Apply your favorite bowl finish. (We applied one coat of sanding sealer and four coats of Deft aerosol lacquer, rubbing each coat after it dried with 0000 steel wool.) ■

TIP **It's easy to make the base wall thicker than the wall of the rim. If this happens to your bowl, start your cuts below the rim and deepen your cut as you move toward the bowl's bottom.**

Turning the Bowl Interior



Measuring the Bowl Wall Thickness



Buying Guide

Bowl Lamination Kit. One 2×8×8" maple block (bowl blank), ⅛" black-dyed veneer, ⅛" red-dyed veneer, and one ¾×6×6" wenge block. Kit no. WWP492, $17.95 ppd. Constantine, 2050 Eastchester Road, Bronx, NY 10461. Or, call 800/223-8087 to order.

Project design: Craig Lossing, St. Croix, Minn.
Illustrations: Kim Downing, Roxanne LeMoine, Carson Ode
Project builder: Marlen Kemmet

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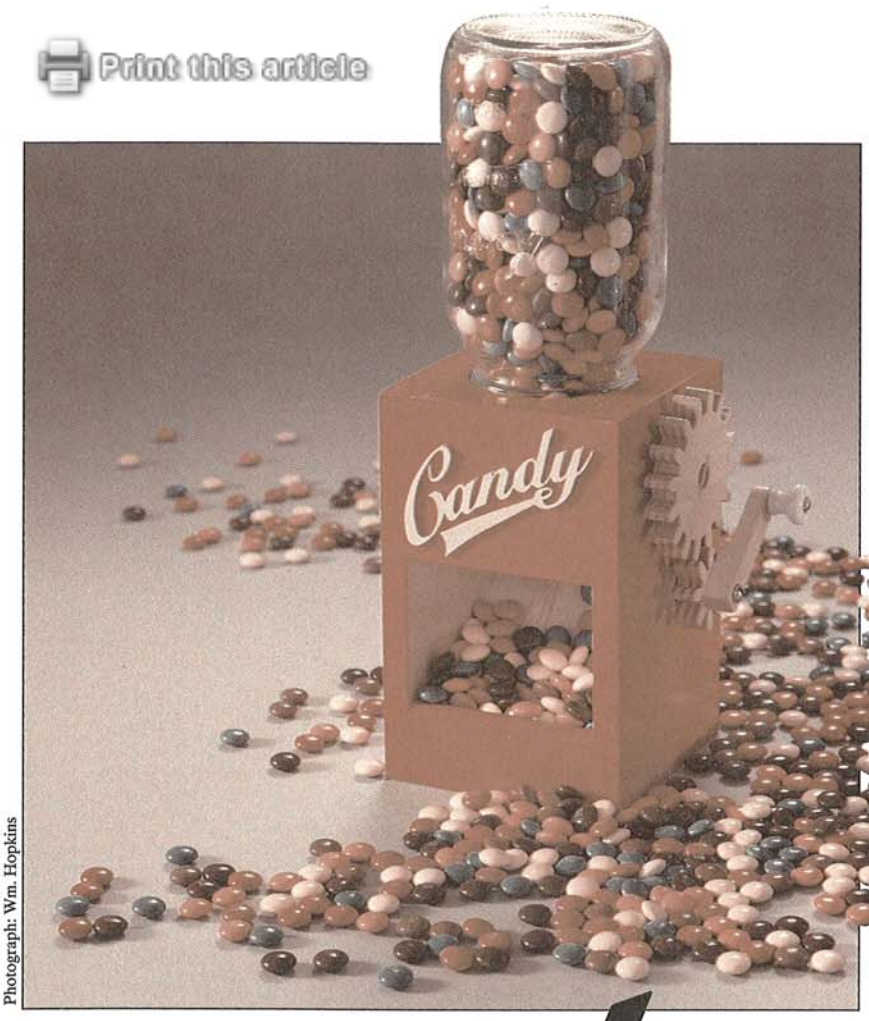


Photograph: Wm. Hopkins

Candy Cranker

Whether at home or the office, you'll attract a crowd with this m-m-good candy dispenser. Give the crank a turn, and watch and listen as candy drops into the trough. Just be sure to buy an extra bag of treats—you'll need plenty!

First, Tackle the Inside Workings Of this Marvelous Machine

1 From 1½"-thick pine, cut the core piece (A) to 3½" square. See the Exploded View drawing *opposite* for additional details. You can either cut the stock from a clear piece of 2×6, or laminate two pieces of ¾"-thick material face-to-face to form the 1½"-thick stock.

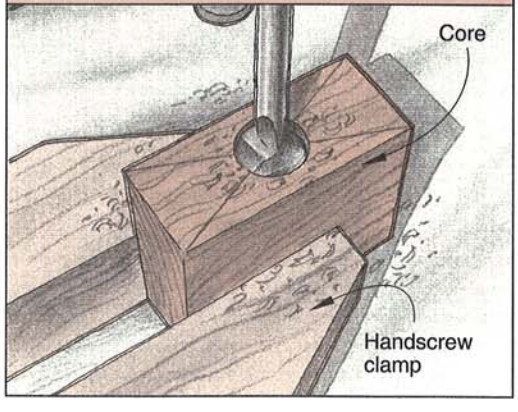
2 Using the Core drawing on *page 16* for reference, mark the hole centerpoints on the top surface and one end of the core piece. Now, as shown *below,* center and bore a 1 1/16" hole through the piece from end to end. Then, turn the piece and bore a 1⅜" hole into the top surface where marked. Round over the top inside edge of the 1⅜" hole. (We used a router and a ¼" piloted roundover bit.)

3 Crosscut a 3⅜" length of 1"-diameter dowel for the dispenser dowel (B). Next, cut two pieces of ¾"-thick scrap to 3" square. Draw diagonals to find the center on one face of each piece. Chuck a 1" spade or Forstner bit into your drill press, and bore through the centerpoint on one of the pieces until the bit's point just starts protruding out the opposite side of the stock. Stop drilling. Now, repeat this procedure on the second piece, except this time drill all the way through it.

4 As shown in Step 1 of the Drilling the Dispenser Dowel and Core drawing on *page 16,* fit the 3"-square blocks over the ends of the Dispenser dowel. Next, using the small hole in the 3"-square scrap piece as a centering point, bore a ½" hole centered through it and ¾" deep into one end of the dispenser dowel. (We

Continued

Drilling the Core

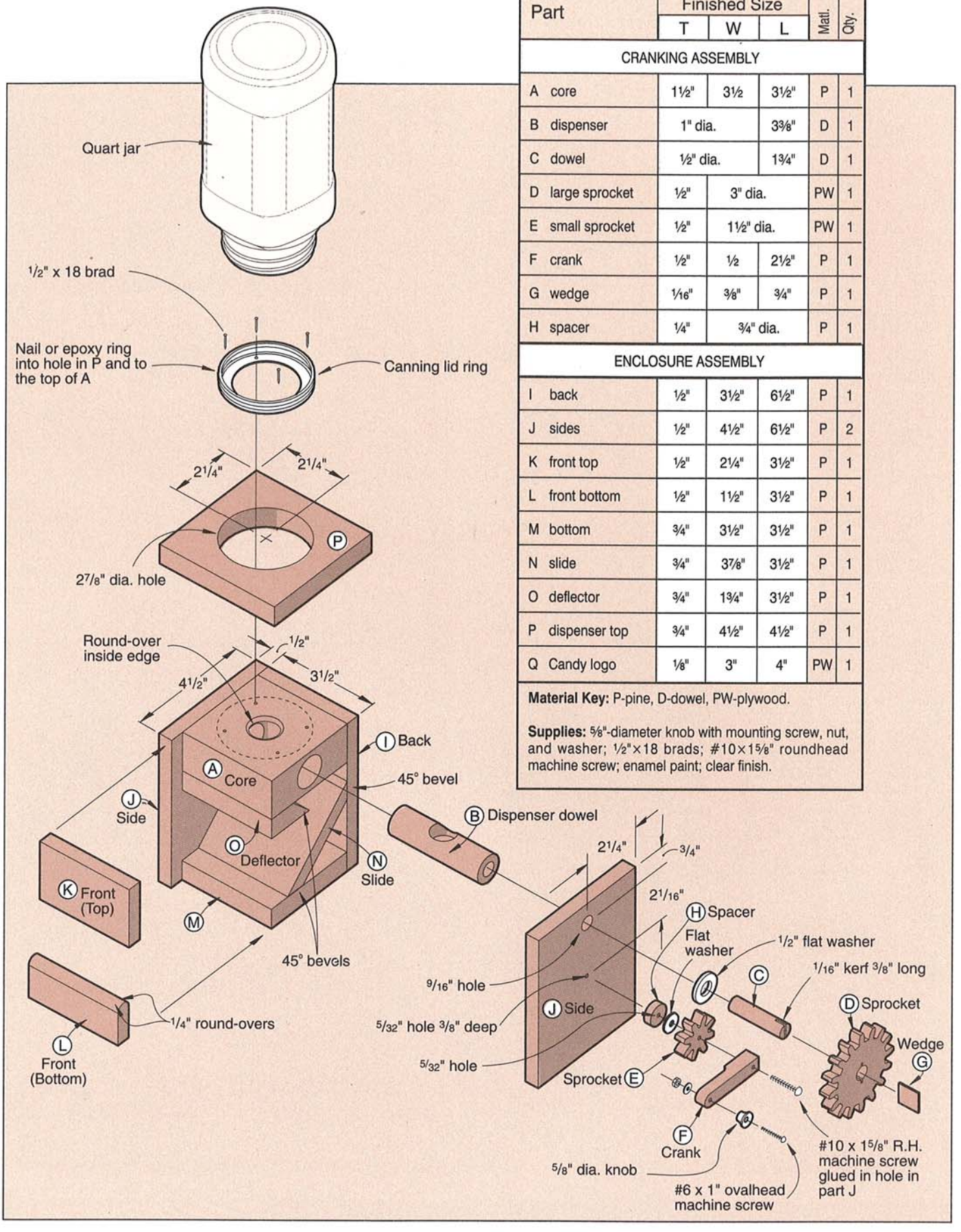


Bill of Materials

Part	Finished Size T	W	L	Matl.	Qty.
CRANKING ASSEMBLY					
A core	1½"	3½	3½"	P	1
B dispenser	1" dia.		3⅜"	D	1
C dowel	½" dia.		1¾"	D	1
D large sprocket	½"	3" dia.		PW	1
E small sprocket	½"	1½" dia.		PW	1
F crank	½"	½	2½"	P	1
G wedge	1/16"	⅜"	¾"	P	1
H spacer	¼"	¾" dia.		P	1
ENCLOSURE ASSEMBLY					
I back	½"	3½"	6½"	P	1
J sides	½"	4½"	6½"	P	2
K front top	½"	2¼"	3½"	P	1
L front bottom	½"	1½"	3½"	P	1
M bottom	¾"	3½"	3½"	P	1
N slide	¾"	3⅞"	3½"	P	1
O deflector	¾"	1¾"	3½"	P	1
P dispenser top	¾"	4½"	4½"	P	1
Q Candy logo	⅛"	3"	4"	PW	1

Material Key: P-pine, D-dowel, PW-plywood.

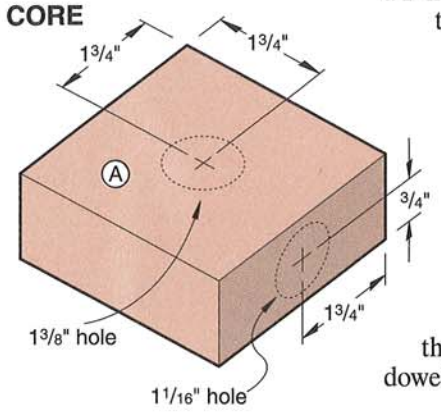
Supplies: ⅝"-diameter knob with mounting screw, nut, and washer; ½"×18 brads; #10×1⅝" roundhead machine screw; enamel paint; clear finish.



CANDY CRANKER

clamped this assembly to our drill-press table to prevent it from moving while we bored the hole.)

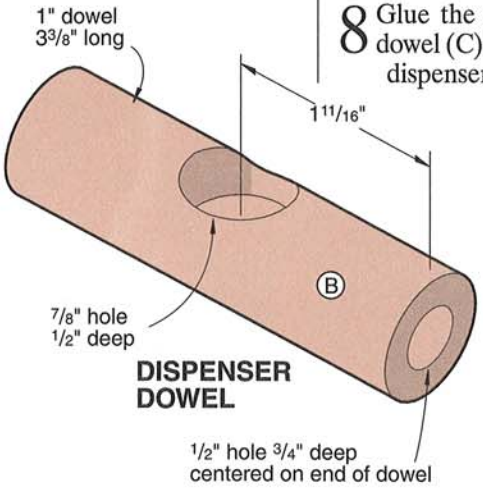
5 Cut a scrap piece of 2×4 to 3⅜″ wide by 4″ long. Find the center along one edge of the piece as shown on the Step 2 drawing, and drill a 1″ hole through it. Next, extend the centerline of that hole across the top of the scrap. Mark a centerpoint on it where shown.



6 Insert the dispenser dowel into the scrap block with the drilled end positioned as shown on the Step 2 drawing. Bore a ⅞″ hole through the scrap and ½″ into the dowel. See the Dispenser Dowel drawing for the hole-size reference. Remove the dowel from the block.

7 Crosscut a ½″ dowel to 1¾″ long for the large-sprocket dowel (C). Now, bore a ½″-diameter hole in a scrap piece of 1×4 stock. Slide the dowel stock into the hole, and then cut a 1⁄16″-wide kerf ⅜″ long into one end of the dowel as shown *below right*. (We used a bandsaw.)

8 Glue the non-kerfed end of the sprocket dowel (C) into the ½″ hole in the end of the dispenser dowel (B).



MOVE INTO HIGH GEAR WITH THE SPROCKETS AND THE CRANK

1 Copy the sprocket patterns (D, E), and adhere them to ½″ plywood with spray adhesive. (We photocopied our patterns.) Mark the hole centerpoints with an awl.

2 Bore a ½″ hole through the large sprocket (D) and a 3⁄16″ hole in the smaller sprocket (E).

3 Cut the sprockets to shape (we used a scrollsaw and a #7 blade with 12 teeth per inch). When cutting the large sprocket to shape, remember to cut the two wedge notches.

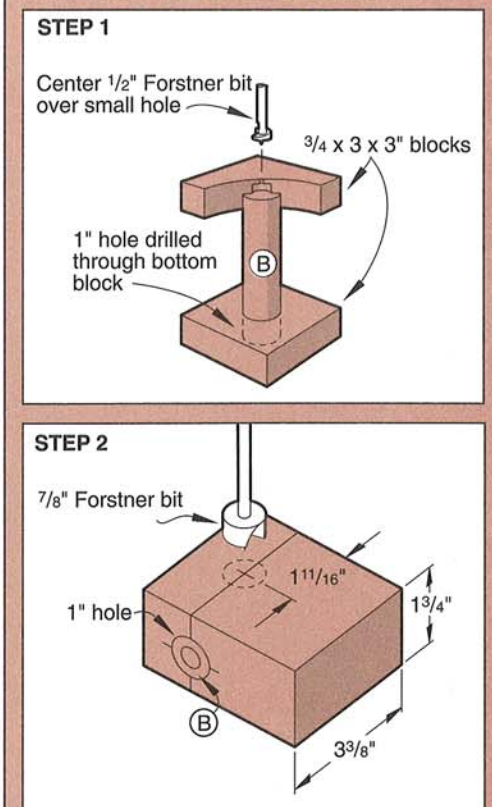
4 For the crank (F), first cut a piece of ½″-thick pine to ½″ wide by 3″ long. Copy the Crank Top and Side View patterns *opposite,* and adhere them to the top and side of the piece, aligning both at one end. Drill the two holes, and saw the part to shape.

5 From pine scrap, cut the large sprocket wedge (G) and small sprocket spacer (H) to shape. Drill a 5⁄32″ hole in the center of the spacer.

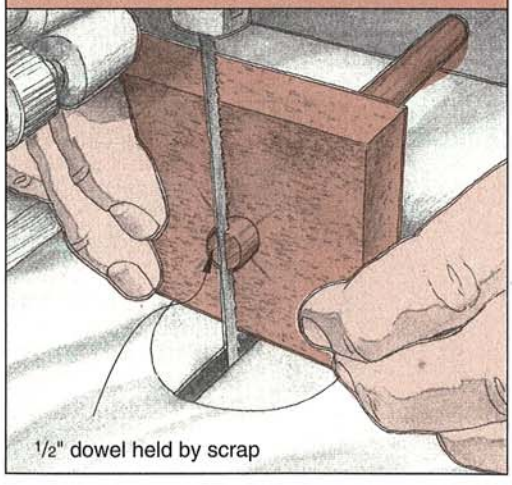
NOW, CUT THE REMAINING PIECES

1 Cut one candy-dispenser back piece (I), two side pieces (J), the top front piece (K), the

CENTER DRILLING THE DISPENSER DOWEL CORE



SAWING THE DOWEL SLOT



bottom front piece (L), and the box bottom piece (M) to the sizes listed in the Bill of Materials. If you don't have ½"-thick material for these parts, resaw or plane thicker stock.

2 Cut the slide (N) and deflector (O) pieces to size. Note that you must bevel-cut both edges of M and one edge of O at 45°.

3 Drill a 9/16" hole and a 5/32" hole in the right side piece (J) where dimensioned on the Exploded View drawing. Center the spacer (H) over the 5/32" hole. Now, sand ¼" round-overs along the top edge of the front bottom piece (L).

4 Cut the dispenser top piece (P) to size. Center and cut a hole of the same diameter as your canning lid ring plus 1/16". (We cut our 2 1/16"-diameter opening with a scrollsaw.) Now, finish-sand all pieces with 120-grit sandpaper.

5 Glue and clamp the deflector (O) to the bottom of the core piece with the front edges and ends flush.

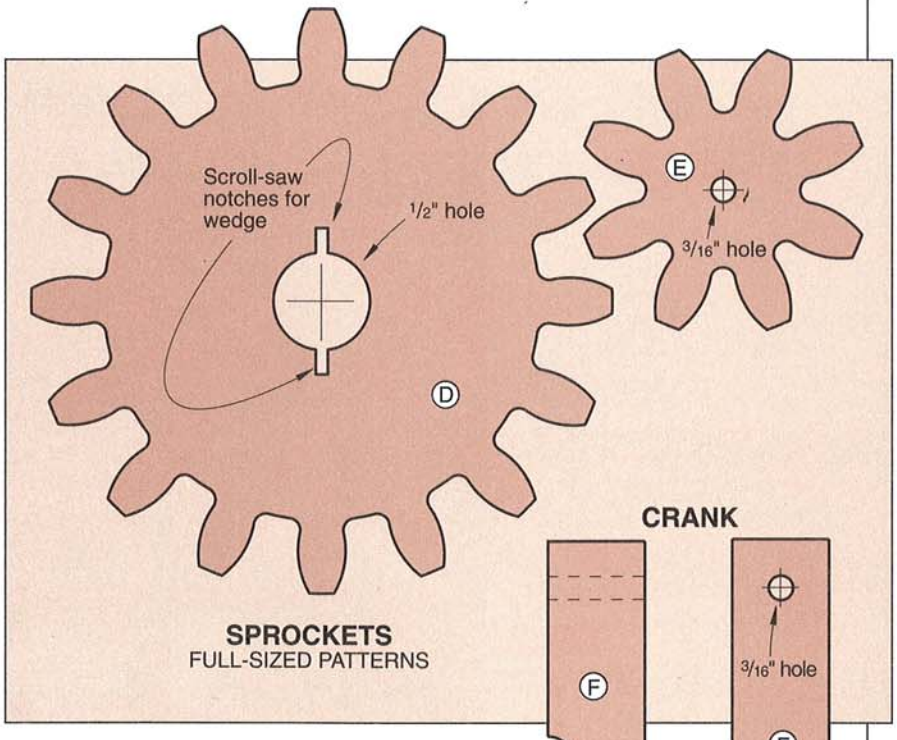
6 Fit the dispenser-dowel assembly (B, C) into the 1 1/16" hole in the core (A). Then, glue and clamp the bottom, back, and core assembly (A, O) between the side pieces (J). Be careful not to get any glue on the dispenser-dowel assembly—it needs to turn freely. Next, glue and clamp the front pieces to the assembly.

7 Sand all joints flush. Mask off the front, and then apply clear sanding sealer to the inside surfaces of the dispenser. After the sealer dries, mask off the inside, and then paint the dispenser as desired. (We applied red enamel paint.)

8 Make a copy of the Candy pattern on *page 14* (the script). With a scrollsaw, cut out the word from 1/8" plywood. (We used a #5 blade.) Then, spray or brush two coats of clear finish on the word, gears, and handle.

Time to Buy Your Candy—Just Assemble and You're Done

1 Slide a ½" flat washer and the large sprocket onto the protruding end of the ½" sprocket dowel. Put a dab of glue in the kerf in the dowel, and tap the wedge (G) into the slot in the large sprocket and kerf in the dowel. Let dry, and trim or sand the wedge flush with the outside surface of the sprocket if necessary.



2 Fasten a 5/8"-diameter knob to the end of the crank where shown on the Exploded View drawing. (We used a small porcelain knob that we purchased at a hardware store.)

3 To assemble the cranking mechanism as shown on the Exploded View drawing on *page 15,* first glue the crank to the small sprocket. Make sure that the 1/8" hole in the crank aligns with the 1/8" hole in the sprocket. Redrill if necessary. Next, turn a #10×1 5/8" roundhead machine screw through the hole in the crank and sprocket. Now, place a washer on the protruding end of the machine screw.

4 Place a drop of epoxy or instant glue in the 5/32" hole in the right-hand side piece (J), and then drive the #6×1" machine screw into the hole with a screwdriver. Do not overtighten—you want the handle/sprocket assembly (E, F) to turn freely on the screw.

5 Nail or epoxy the canning lid into the hole in the top piece (P). Then, adhere the *Candy* logo to the box front.

6 Fill a quart jar with gum balls, jelly beans, or other small candies. Holding the dispenser upside down, screw the mouth end of the jar into the lid fastened to the dispenser. Now, set the machine right side up, and turn the crank in either direction to meter out the candy. ■

Project design: David Ashe, Des Moines
Illustrations: Roxanne LeMoine
Project builder: Ron Hawbaker

Print this article

At-your-fingertips convenience in a stylish package

Fabulous Phone Facility

Photograph: Wm. Hopkins

Good looks are only part of the story with this solid-oak telephone surround. Just look at the features we've built in—a handy writing surface for message-taking and a drawer large enough to store a phone directory plus a cache of pens, pencils, and notepads. We hope you'll agree that it's just right for the busy telephone center.

You Can Cut Out the Cabinet Parts in a Jiffy

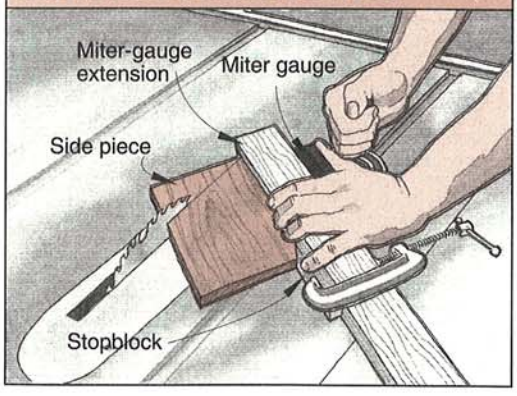
Note: *We sized this cabinet to fit wall-mounted telephones measuring less than 7" wide and 9" long. If you have a larger telephone, adjust dimensions of the necessary parts accordingly.*

1 Select ½"-thick stock (we chose oak) that's preferably 7" wide, and sand both surfaces. If you can't purchase ½" stock locally, consider planing or resawing it from thicker stock. For the sides (A), rough-cut two pieces to 2½×21" and two pieces to 4½×7". Next, cut two 7×7¼" plates (B), one 2¾×7¼" back blank (C), one 2¼×7¼" spreader (D), and one 7×9¼" shelf piece (E). Turn to the Cutting diagram on *page 20* to see how we laid out our stock. (Note that we initially cut some of the pieces oversize.)

2 Angle your saw's miter gauge 30° from perpendicular to the blade. (Your miter-gauge scale will read 30° or 60°.) As shown at *right,* miter-cut one end of both 4½×7" side pieces. Next, glue and clamp these two pieces to the two long side pieces where shown on the Side Assembly drawing *opposite,* aligning them along the bottom. After the glue has dried, remove the clamps, scrape off excess glue, and sand the joints on both pieces. Now, measure 6⅝" down from where the joint starts, scribe a line, and crosscut the bottoms of both side pieces at that point.

3 Copy the patterns on *page 21*. (We made two copies of the Back half pattern and taped them together to form a full pattern.)

Mitering the Side Piece at 30°



4 Stack the two side pieces together inside face to inside face using double-faced tape and aligning the bottoms. Scribe a point on the back edge of one side piece 20¼" from the bottom. Apply adhesive (we used rubber cement) to the back of the Side pattern. Adhere the pattern to the side so the tip of it aligns with that mark, and make sure the pattern faces the correct direction on the side. Now, bandsaw or scrollsaw the sides to shape, and then sand the cut edge. Remove the pattern, and separate the pieces.

5 Adhere the Back pattern to the back blank, aligning both along the ends and bottom. Saw the part to shape, and sand the cut edge.

6 Angle your saw blade to 30° from vertical. Bevel-rip one long edge on the shelf (E), cutting it to a 6" final width. See the Shelf drawing at *right* for details. Now, sand a round-over along the front and side edges.

7 To make the pencil bar (F), resaw a piece of stock to ¼" thick, round over the edges on one side, rip it 5/16" wide, and then crosscut it to 6¼" long.

We'll Assemble the Cabinet Next

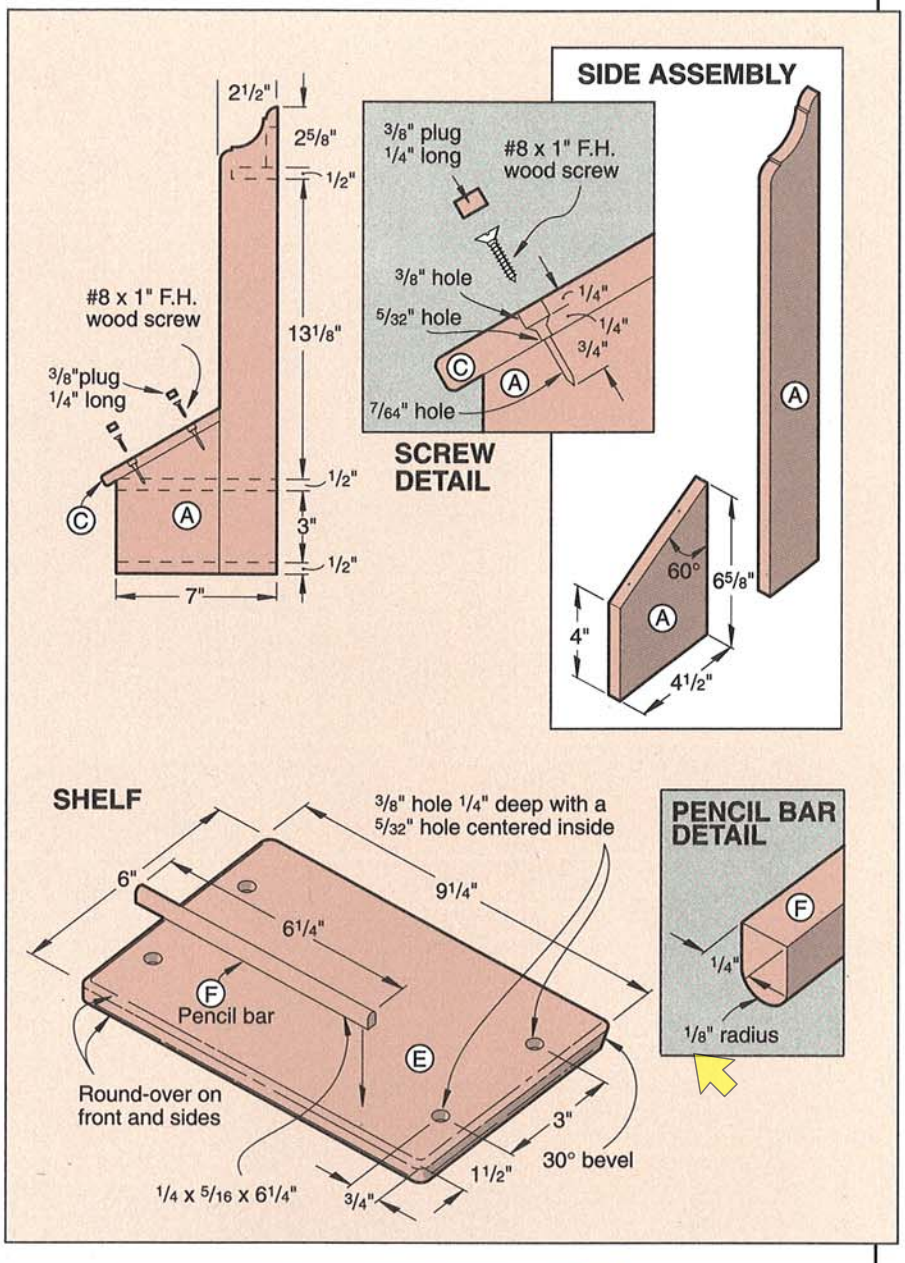
1 Using the dimensions on the Exploded View drawing on *page 20,* plot the location of the ¼" dowel hole in the *underside* of the top plate (B). Drill the hole ¼" deep.

2 Dry-assemble the sides, plates, and back as shown on the Exploded View drawing. (We used bar clamps to hold the parts. We also cut two 3x6" scraps and used them to space the plates.) Next, cut the head off a 4d nail, chuck the nail into your electric hand drill, and use it to pilot-drill the nail holes in the sides. Now, disassemble the cabinet.

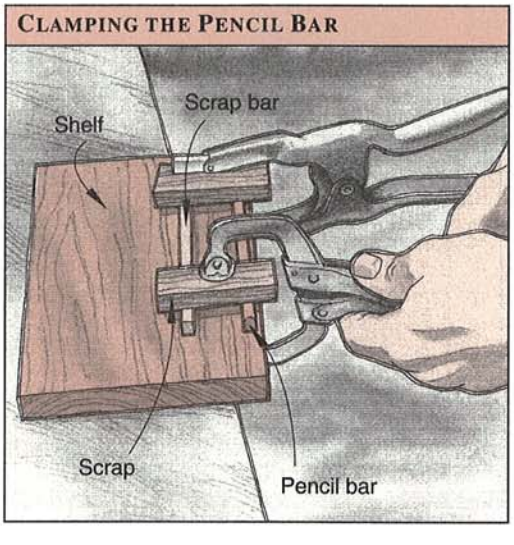
3 Glue, assemble, clamp, and nail the sides, plates, and back. Wipe off any glue squeeze-out with a damp cloth. Next, glue, clamp, and nail the spreader in position. Remove the clamps after the glue dries.

4 Center, glue, and clamp the pencil bar to the top face of the shelf, setting it back ⅛" from the front edge. Clamp lightly. (Note at *right* how we clamped the pencil bar so it wouldn't move when we applied the clamps.)

Continued

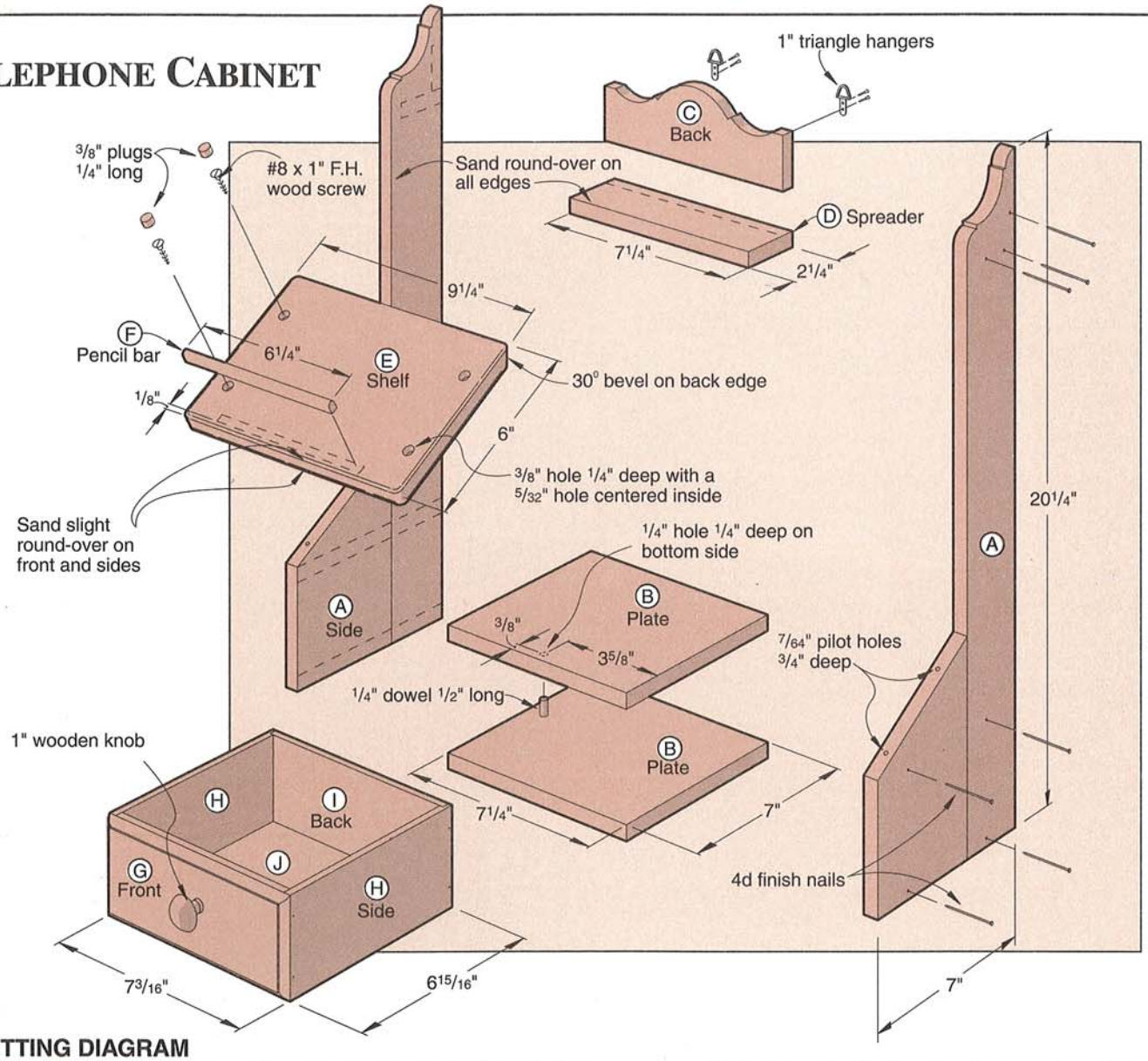


Clamping the Pencil Bar

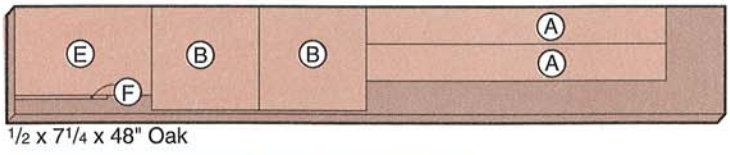


TIP When bandsawing or scrollsawing patterned pieces like the back and ends of the sides, we get better-looking results by first sawing slightly wide of the line. Then, we carefully sand to the pattern line, often using a drum sander chucked into our drill press for the curved areas.

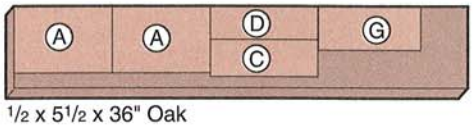
TELEPHONE CABINET



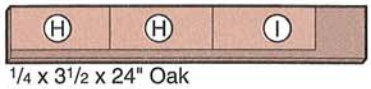
CUTTING DIAGRAM



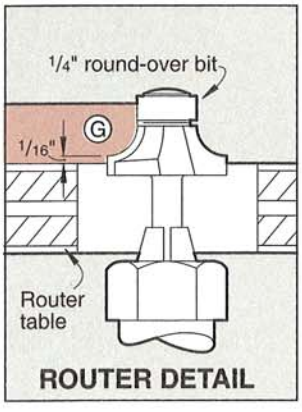
1/2 x 7 1/4 x 48" Oak



1/2 x 5 1/2 x 36" Oak



1/4 x 3 1/2 x 24" Oak



ROUTER DETAIL

5 Position the shelf on the sloping edges of the sides, center it from side to side, and mark the screw-hole centerlines. Next, drill and counterbore two holes along each centerline where dimensioned on the Screw detail on *page19*. (We drilled and counterbored the holes on our drill press.) Now, reposition the shelf on the sloping edges again, and using the existing holes as guides, drill the pilot holes into the sides. Drive the #8×1″ flathead wood screws to attach the shelf to the cabinet sides.

6 Using a 3/8″ plug cutter in your drill press, cut four 1/4″-long plugs from your oak scrap. Next, glue these plugs into the counterbored shelf holes to hide the screws. (To make the plugs less noticeable, we inserted them so their grain direction matched the grain direction of the shelf.) After the glue dries, trim and then sand the plugs flush with the surface of the shelf.

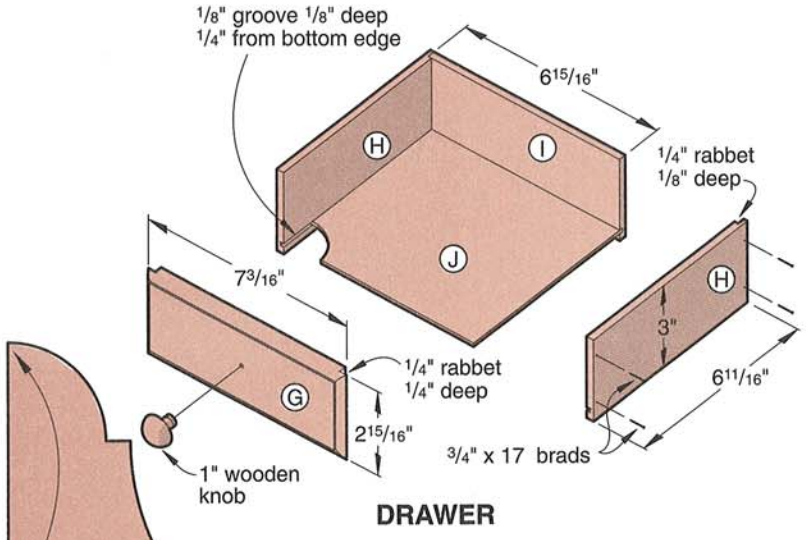
BILL OF MATERIALS

Part		Finished Size* T	W	L	Matl.	Qty.
Cabinet						
A*	side	½"	7"	20¼"	O	2
B	plate	½"	7"	7¼"	O	2
C*	back	½"	2½"	7¼"	O	1
D	spreader	½"	2¼"	7¼"	O	1
E	shelf	½"	6"	9¼"	O	1
F	bar	¼"	5/16"	6¼"	O	1
Drawer						
G*	front	½"	2 15/16"	7 3/16"	O	1
H	side	¼"	3"	6 11/16"	O	2
I*	back	¼"	2 15/16"	6 15/16"	O	1
J*	bottom	⅛"	6 7/16"	6 15/16"	HB	1

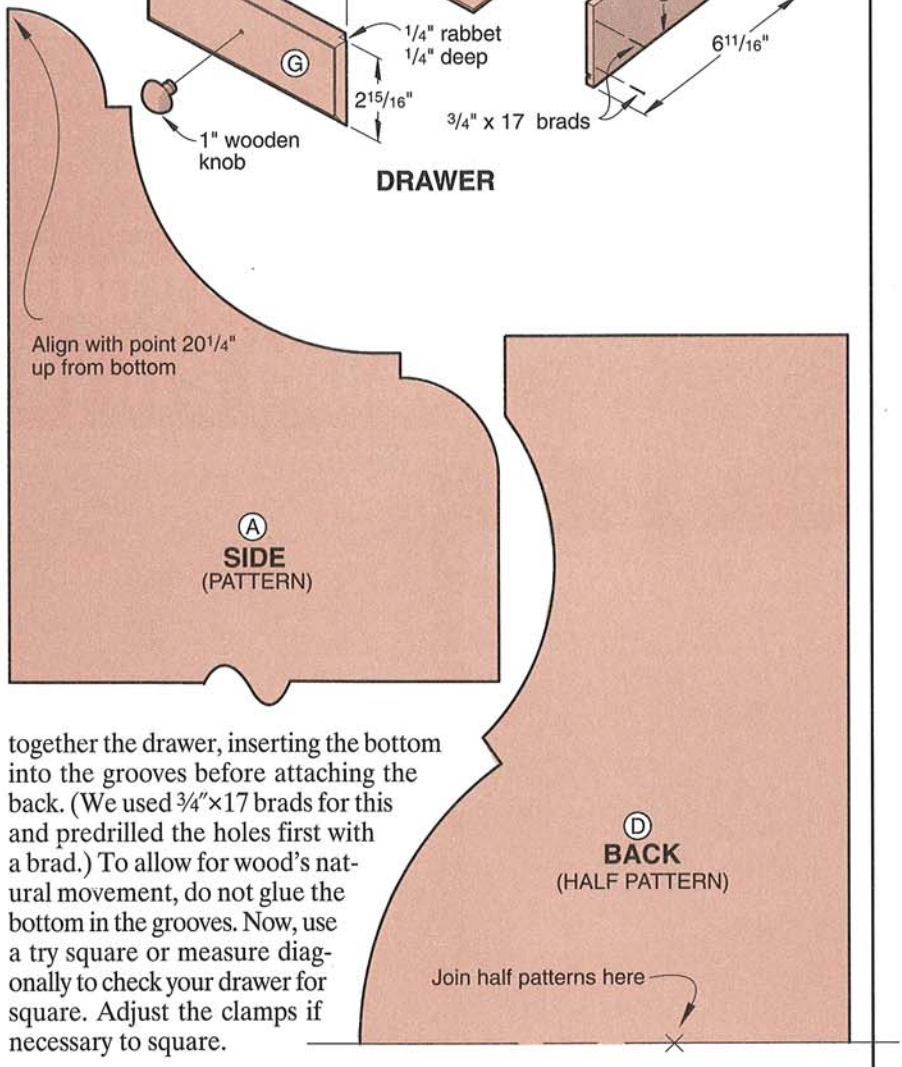
*Cut parts marked with an * to final size during construction. Please read all instructions before cutting.

Material key: O—oak; HB—hardboard.

Supplies: 4d finish nails, ¾" ×17 brads, #8×1" flathead wood screws, ¼" dowel, 1" diameter wooden knob, two 1" triangle hangers, finish.



DRAWER



NOW, PUT TOGETHER THE DRAWER AND APPLY THE FINISH

1 From ½" stock, rip and crosscut one drawer front (G) to 3×7 3/16". From ¼" stock, cut two drawer sides (H) to 3×6 11/16" and one drawer back (I) to 3×6 15/16". (We planed our ½"-thick stock to this size, but you also can resaw it.)

2 Set your tablesaw's rip fence ¼" from the saw blade. Then, cut a ⅛"-wide kerf ⅛" deep ¼" from the bottom edge of all four drawer pieces where shown on the Drawer drawing *above right*.

3 Cut a ¼"-wide rabbet ⅛" deep along the inside back edge of both drawer sides. Saw a ¼×¼" rabbet along the inside ends of the drawer front. Next, plane or rip 1/16" from the bottom edge of the front and back pieces. This step creates a reveal at the bottom of the drawer equal to that of the top.

4 Locate and drill the hole for the knob screw. Next, set up your router as shown on the Router detail *opposite,* and rout the drawer front edges. Now, finish-sand all drawer parts.

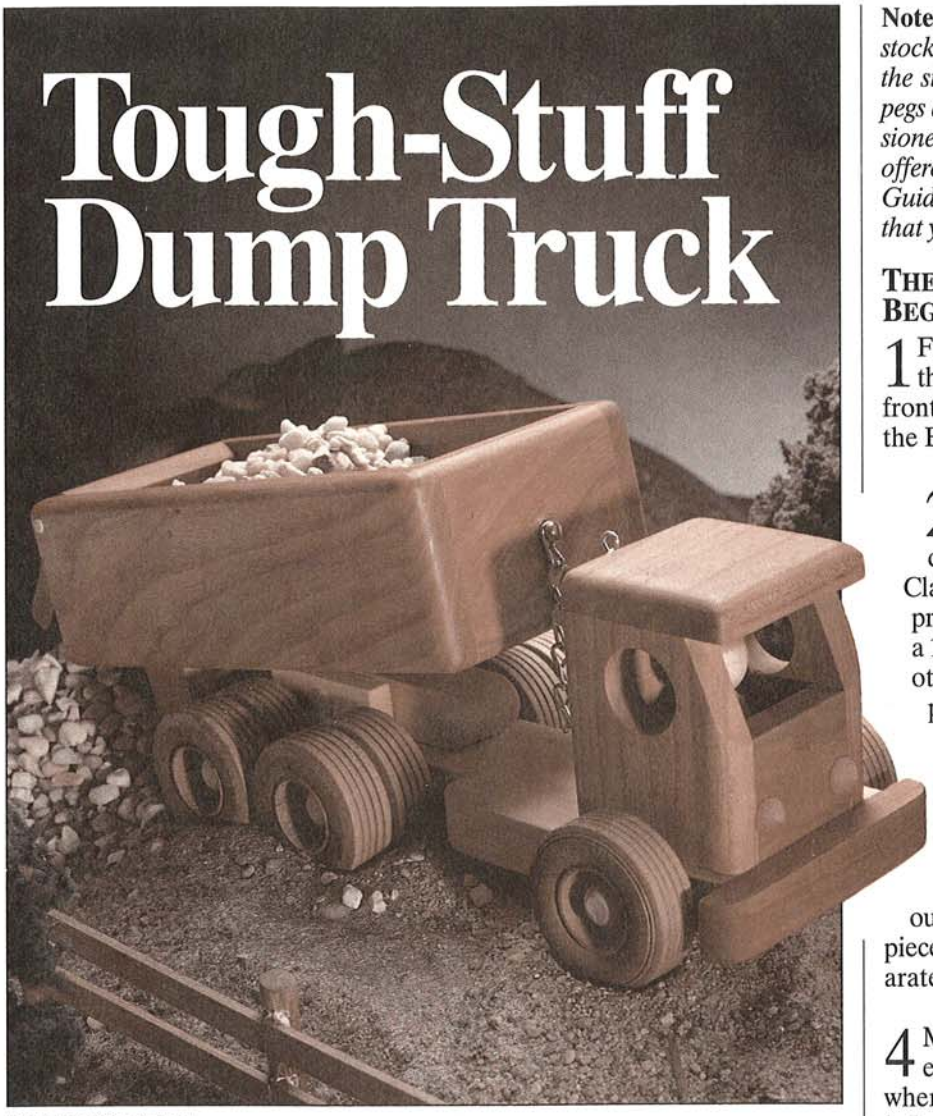
5 Temporarily assemble the drawer, aligning the top edges of the parts. Measure the bottom opening and cut a piece of ⅛"-thick hardboard to this dimension. (Ours measured 6 7/16×6 15/16".) Next, glue, clamp, and then nail together the drawer, inserting the bottom into the grooves before attaching the back. (We used ¾"×17 brads for this and predrilled the holes first with a brad.) To allow for wood's natural movement, do not glue the bottom in the grooves. Now, use a try square or measure diagonally to check your drawer for square. Adjust the clamps if necessary to square.

6 Fill all of the nail holes and then finish-sand. Next, apply the finish of your choice. (We applied a light oak stain, let it sit for 10 minutes, and then wiped off the excess with a cloth. After letting the stain dry, we applied one coat of sanding sealer and followed it with two coats of clear semigloss lacquer. We sanded each coat of finish with 320-grit sandpaper to level the surface.) Now, place the drawer in the opening and insert the ¼" dowel stop in the top plate hole. ■

Project design: Bob Colpetzer, Clinton, Tenn.
Illustrations: Roxanne LeMoine, Carson Ode
Project builder: Chuck Hedlund

Print this article

Tough-Stuff Dump Truck



Photograph: Wm. Hopkins

Whether it's hauling a load of sand across the sandbox or a box full of marbles from one end of the playroom to the other, this sturdy kid-sized truck carries them like the big rigs. When it's time to dump the load, an easy flip of the hoist lever raises the box.

Note: *Some parts of this project require thin stock. You can resaw or plane thicker material to the sizes needed. Also, we've found that all axle pegs are not created equal. The hole sizes dimensioned for them on the drawings fit the pegs offered by the supplier named in the Buying Guide. If you purchase pegs elsewhere, we suggest that you first test-drill holes to verify the fit.*

The Assembly Line Begins with the Cab

1 From ½"-thick stock (we chose cherry), cut the two truck cab sides (A), one back (B), one front (C), and the top (D) to the sizes listed on the Bill of Materials on *page 25*.

2 Mark the hole centerpoints and front tapered edge on both cab sides where dimensioned on the Cab drawing *opposite*. Clamp one cab side in a handscrew clamp to prevent it from spinning with the bit, and bore a 1" window hole through it. Repeat with the other cab side. (To prevent chip-out, we placed a scrap under each side piece when boring the holes.)

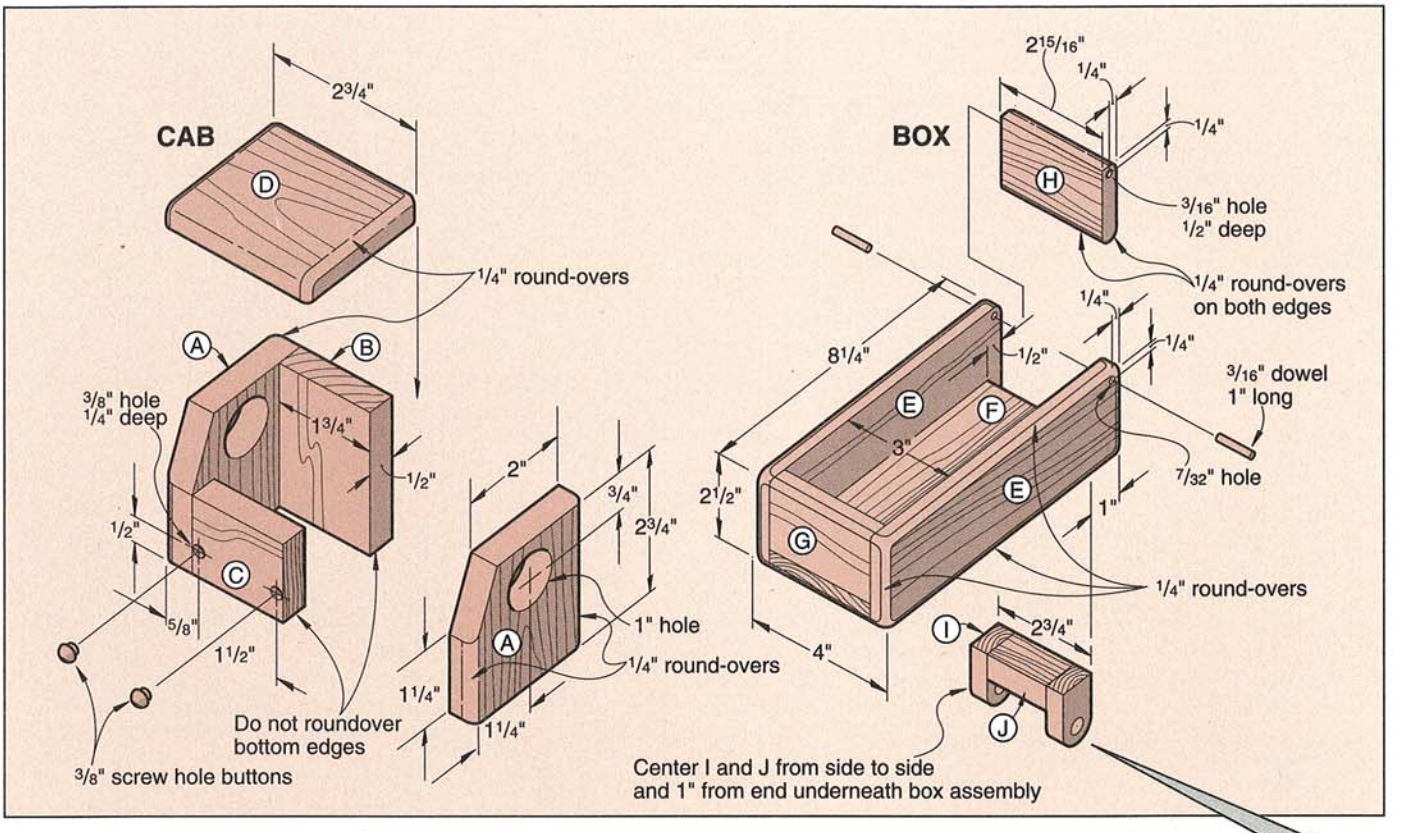
3 Cut the angled front edge on each cab side. (To make the two cab side pieces identical, we taped them together face-to-face, bandsawed just outside the slanted line, and then sanded both pieces to the line on our belt sander.) Now, separate the side pieces.

4 Mark the centerpoints for the two ⅜"-diameter headlight holes on the cab front piece where shown on the Cab drawing. Drill these holes where marked ¼" deep. Now, finish-sand all of the cab pieces.

5 Glue and clamp the cab front and back between the cab sides, aligning the edges and ends flush where shown on the Cab drawing. Wipe off any glue squeeze-out with a damp cloth. After the glue dries, remove the clamps and sand the joints flush.

6 Glue and clamp the cab roof to the cab assembly, keeping the back edges flush. After the glue has dried, sand the joints flush.

7 Fit your table-mounted router with a ¼" piloted round-over bit. Round over all of the edges on the cab where shown on the Cab drawing. Next, finish-sand the routed edges.



Build a Box to Haul Big Loads

1 From the same ½"-thick cherry stock, cut the two truck box sides (E), one box floor (F), one box front (G), and one tailgate (H) to the sizes listed in the Bill of Materials.

2 Dry-clamp (without glue) the box sides together face-to-face with the edges and ends aligned flush. Next, mark the hole centerpoint for the tailgate dowel ¼" in and ¼" down from the top back end where dimensioned on the Box drawing *above right*. Drill a 7/32" hole through both pieces at the same time. Now, remove the clamps and finish-sand all of the box parts.

3 Glue, assemble, and clamp the truck box floor and front between the box side pieces where shown on the Box drawing *above*. Make sure the edges and ends are flush before clamping. After the glue dries, remove the clamps and sand all box joints and edges.

4 Fit the tailgate piece (H) between the box sides at the back end of the box. If necessary, trim one edge or the bottom for clearance. The tailgate should fit the space between the box sides but still swing open freely.

5 Locate and mark the centerpoints on both ends of the tailgate for the 3/16"dowel holes where shown on the Box drawing. Clamp the part upright in a handscrew clamp. Use a second clamp to secure the first clamp to the drill-press. Drill 3/16" holes ½" deep where marked.

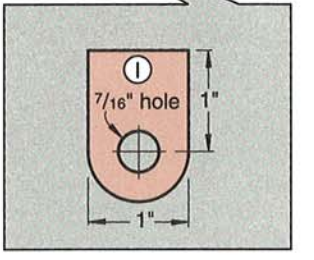
6 Rout ¼" round-overs on the box where shown on the Exploded View drawings.

7 Cut two 1" lengths of 3/16" dowel. Inject a drop of glue into each tailgate hole. Next, fit the tailgate between the box sides, and then drive the dowels through the box sides and into the tailgate holes. Wipe off any excess glue immediately. Sand flush any protruding dowel.

8 Copy the Hinge Block pattern on *page 24*, and use it to make two hinge blocks (I). Drill a 7/16" hole in each hinge block where indicated. Now, cut one spacer (J) to size.

9 Glue and clamp the spacer between the hinge blocks. Later, glue and clamp this hinge assembly 1" from the back edge of the truck box where shown on the Box drawing.

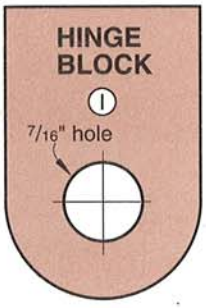
Continued



TIP **Clamp your cab assembly in a small handscrew clamp when routing the edges. This gives you more control, and helps keep your fingers safely away from the bit as you rout.**

DUMP TRUCK

HOIST PATTERN



HINGE BLOCK

TIP When drilling the holes in the tailgate, we used a brad-point bit. This helped eliminate the chance of the bit wandering off center. If you use a regular twist bit, indent the marked centerpoint with an awl before drilling to help prevent the bit from wandering.

NEXT, ASSEMBLE THE CHASSIS AND HOIST

1 From ¾" stock, cut a 3×10½" piece for the truck chassis (K).

2 Mark the hole centerpoints for the axle pegs on the chassis sides where dimensioned on the Exploded View and on the Chassis Top View drawing at *right*. Drill the axle holes as dimensioned.

3 Referring to the Chassis Top View drawing again, lay out the chassis, and then cut it to shape. Now, sand a slight round-over on all edges except for the front where the bumper attaches.

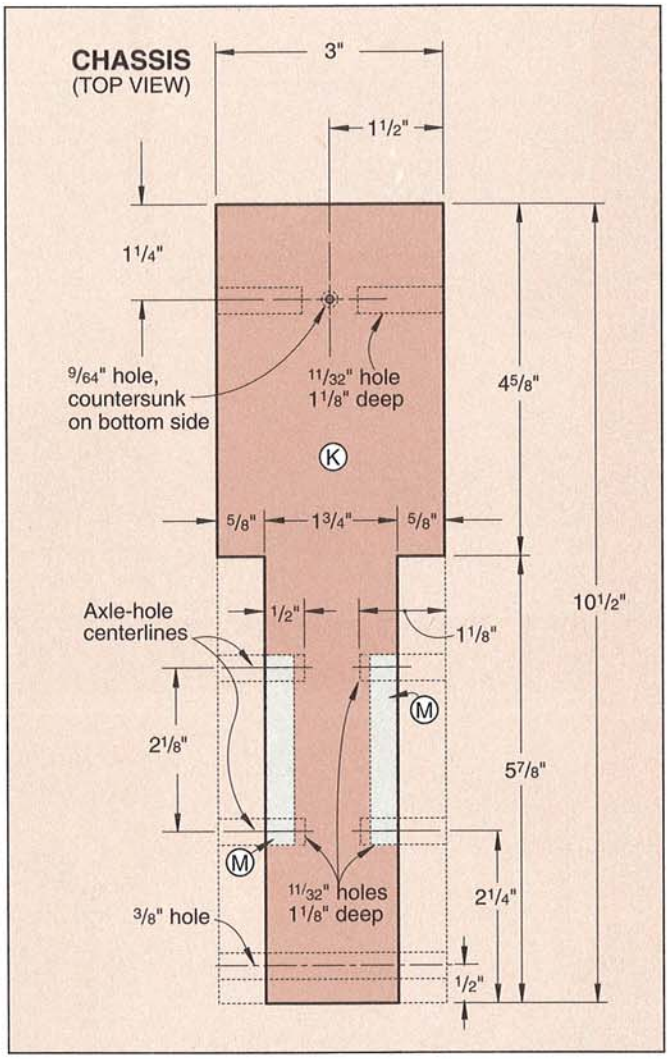
4 Mark the centerpoint on the bottom side of the chassis, and then drill and countersink a 9/64" hole through the part for mounting the wooden driver to the chassis. Next, drill a pilot hole centered in the base of the wooden person, and then screw it to the chassis. (See the Buying Guide for a mail-order source for wood parts.)

5 Center, glue, and clamp the cab to the chassis where shown.

6 Using the Hoist pattern at *left* as a guide, cut the hoist (L) to shape, drill the ½" hole, and set the part aside. Cut two hoist blocks (M) to size, and drill a 9/16" hole through both parts where indicated on the Exploded View drawing.

7 For the hoist lever, cut a ½" dowel 4" long and a 3/16" dowel 1½" long. Next, drill a 3/16" hole ¼" deep into the larger dowel ⅜" from one end. (See the Exploded View drawing for reference.) Apply glue to the hole in the hoist, and then insert the ½" dowel through it so that 7/16" protrudes out the opposite side. Note that the hole in the end of the hoist dowel faces up when in the raised position. This will allow the lever to set horizontal when you lower the hoist.

8 Slide a hoist block over each end of the ½" hoist dowel, and then glue and clamp these blocks to the chassis where shown. Glue the 3/16" dowel into the hole in the ½" hoist dowel.

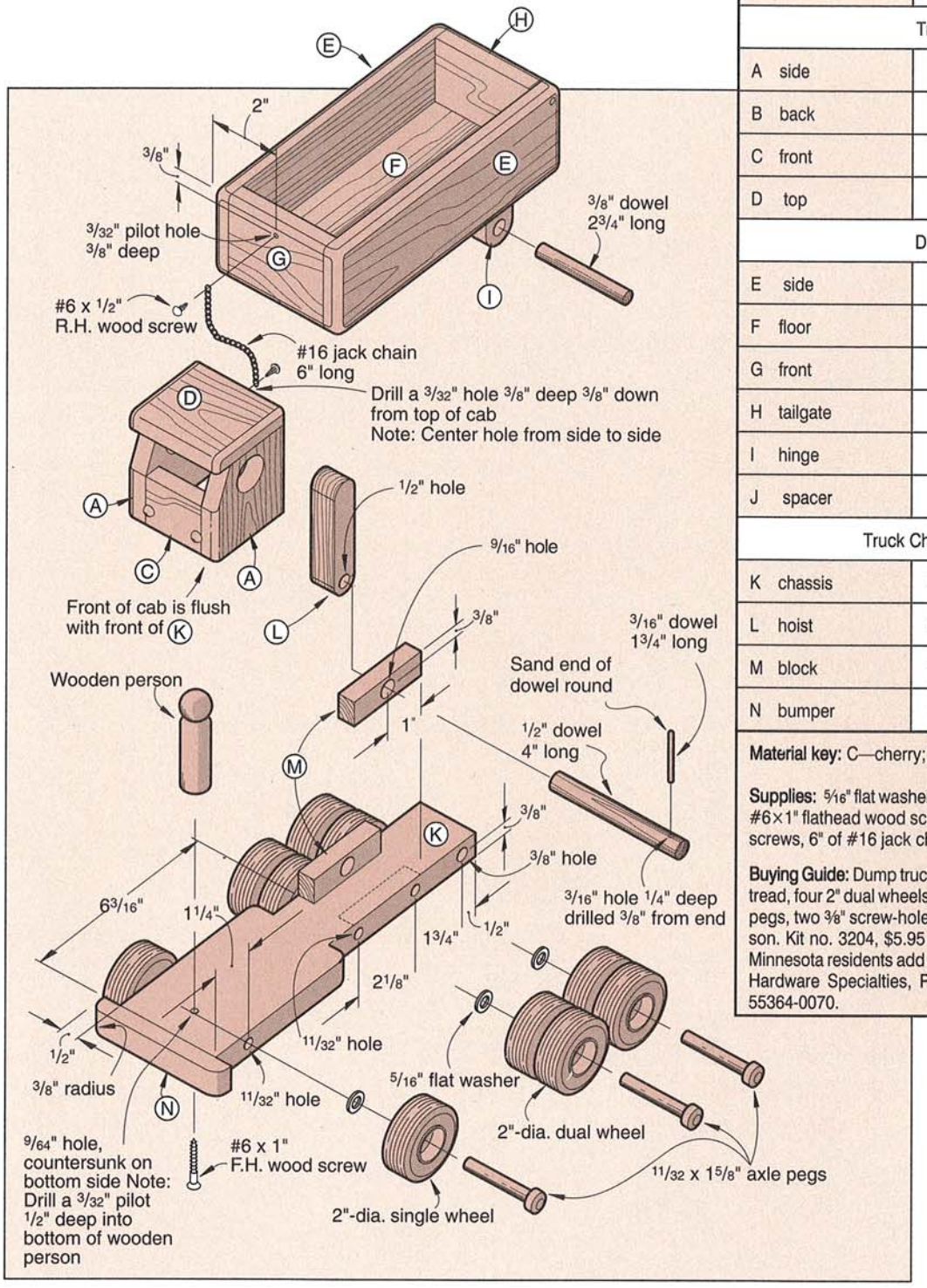


9 Crosscut a 2¾" length of ⅜" dowel. Turn the truck box upside down, and place the chassis on top of it. Next, align the holes in the hinge blocks with the last chassis hole. Place a dab of glue in the open hinge hole, and then drive the ⅜" dowel the rest of the way through the hole to complete the box hinge.

YOU'RE NEARLY READY TO SHIP THIS RIG TO THE NEW OWNER

1 Cut the bumper (N) to size. Saw or sand a ⅜" radius on each front corner. (We traced around a dime to form the radius, and sawed it to shape on our scrollsaw.) Now, glue and clamp the bumper to the chassis front.

2 For the truck headlights, glue a ⅜" screw-hole button in each hole in the cab front.



BILL OF MATERIALS

Part	Finished Size* T	W	L	Matl.	Qty.
Truck Cab					
A side	½"	2½"	2¾"	C	2
B back	½"	1¾"	2¾"	C	1
C front	½"	1½"	1¾"	C	1
D top	½"	2½"	2¾"	C	1
Dump Box					
E side	½"	2½"	8¼"	C	2
F floor	½"	3"	7¾"	C	1
G front	½"	2"	3"	C	1
H tailgate	½"	2½"	2 15/16"	C	1
I hinge	½"	1"	1½"	C	2
J spacer	½"	1"	1¾"	C	1
Truck Chassis and Hoist					
K chassis	¾"	3"	10½"	M	1
L hoist	¾"	1"	2½"	M	1
M block	⅜"	¾"	2"	M	2
N bumper	½"	¾"	4"	C	1

Material key: C—cherry; M—maple

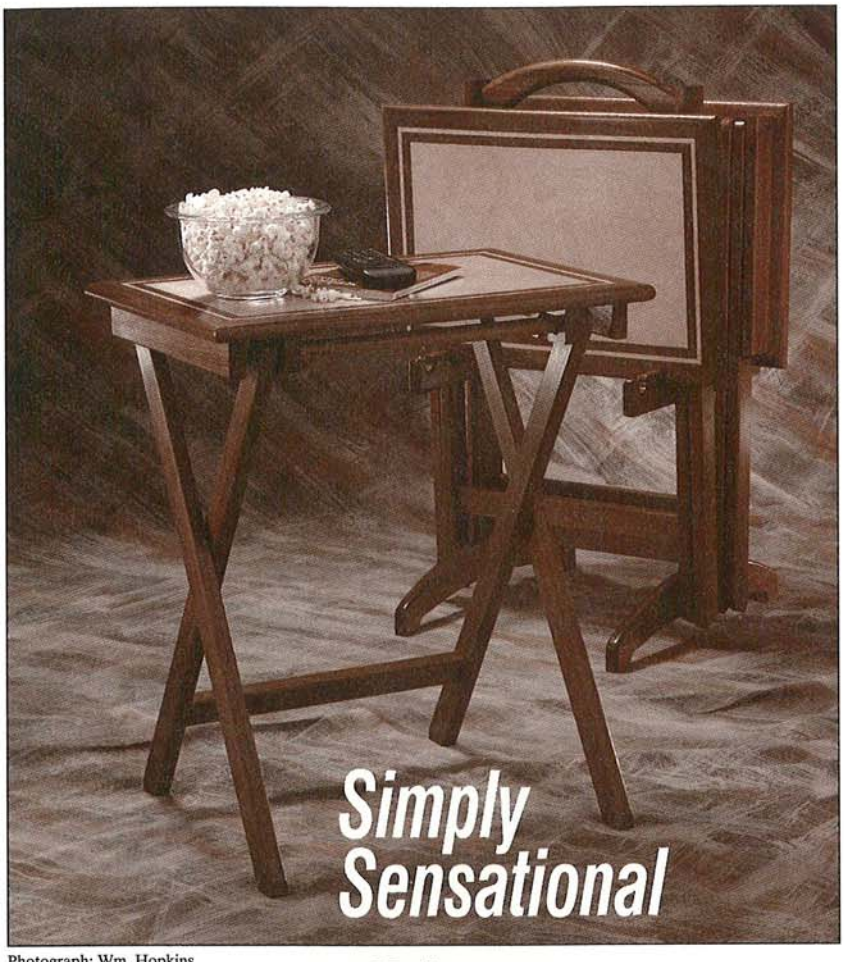
Supplies: 5/16" flat washers, 3/16", 3/8", and 1/2" dowel stock, #6×1" flathead wood screws, #6×1/2" roundhead wood screws, 6" of #16 jack chain, stain, clear finish.

Buying Guide: Dump truck kit. Two 2" wooden wheels with tread, four 2" dual wheels with tread, eight 11/32×1 5/8" axle pegs, two 3/8" screw-hole buttons, and one wooden person. Kit no. 3204, $5.95 plus $3.50 shipping per order. Minnesota residents add 39 cents sales tax per kit. Meisel Hardware Specialties, P.O. Box 70WWP, Mound, MN 55364-0070.

3 Stain the wheels, and apply the finish of your choice. (We applied a walnut stain to the wheels, and lacquer to the truck, rubbing each coat lightly after it dried with 0000 steel wool.) After the final finish coat dries, assemble the wheels and glue the axle pins in the chassis where shown on the Exploded View drawing. Make certain the wheels turn freely on the axles.

4 Drill the pilot holes, and then attach a 6" length of #16 jack chain (available at most hardware stores) to the back side of the cab and front side of the box where shown on the Exploded View drawing. (The chain prevents the box from tilting too far back when you raise it with the hoist lever.) Now, box and gift-wrap the little hauler for that lucky tot. ■

Project design: R. Perry Mercurio, Kingfield, Maine
Illustrations: Kim Downing, Roxanne LeMoine, Carson Ode
Project builder: Jim Boelling



Photograph: Wm. Hopkins

Snack Trays

Toss away those flimsy television tables! Our folding snack trays set up easily, won't accidentally collapse, and come with their own space-saving storage stand to keep them organized and readily available.

Let's Cut the Tray Parts First

Note: *We list the quantity of parts required to make four folding trays. If you plan to make more or fewer trays, change the number of parts accordingly.*

1 From ¾"-thick stock, rip and crosscut 16 pieces to 1½×28" for the tray legs (A). (We made all of the frame parts from walnut, and cut the tray tops from birch plywood. Turn to the Cutting diagram on *page 30* to see how we laid out our lumber.) From the same stock, cut four leg stretchers (B), eight tray aprons (C), and eight tray catch blanks (D) to the dimensions listed in the Bill of Materials. Now, cut four 15" lengths of ¾" walnut dowel (E). (Note that we initially oversized some parts. Also, to avoid confusion later, we labeled each piece as we cut it.)

2 Sort the legs into four sets. Then, mark one leg as the front left, front right, back left, and back right in each set.

3 Using the dimensions on the Back Leg and Front Leg drawings *opposite,* lay out all of the hole centerpoints. Drill the holes.

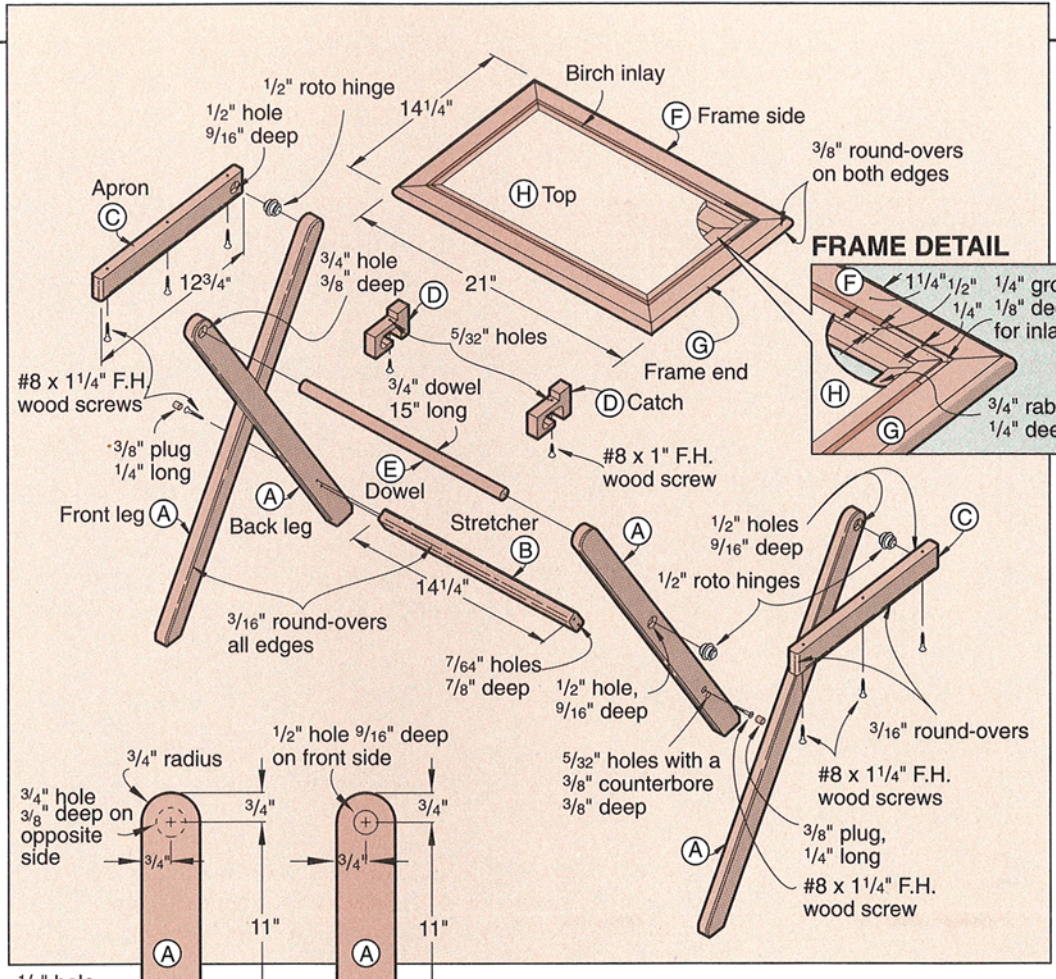
4 Scribe a ¾" radius on the top end of each tray leg. Then, bandsaw and sand each radius. Rout a 3/16" round-over along all leg edges. Now, using your tablesaw, miter-cut the two angles on the foot of each leg.

5 Using the same 3/16" round-over bit, rout the edges of the four leg stretchers (B). Now, finish-sand the legs, stretchers, and the dowels.

6 For the tray, saw eight frame side pieces (F) to 2¾×23" and eight frame end pieces (G) to 2¾×16". Next, cut a ¾"-wide rabbet ¼" deep along one edge of each frame piece. (We set the rabbet's depth with a piece of our ¼"-thick birch plywood stock.) Now, using the dimensions on the Frame detail and the Section View drawing *opposite,* cut a ¼"-wide groove ⅛" deep into each frame piece for the birch inlay.

7 Cut eight birch pieces to ⅛×¼×23" and eight pieces to ⅛×¼×16" for the inlay. (We ripped the ¼"-wide strips from ¾"-thick scrap first and then resawed these strips to ⅛" thick.)

8 Glue and clamp the birch strips in the frame grooves. Next, using a piloted ⅜" round-over bit, rout both outside edges on each frame part. Now, finish-sand the tray frame parts.



Cut the Remaining Tray Parts

1 Miter-cut the tray frame pieces to their final lengths. See the Bill of Materials on *page 30* for the parts dimensions.

2 Mount a ¼" slotting cutter on your table-mounted router. Using scrap, set the cutter and fence to cut a slot centered in the end of each frame piece. Slot both ends of each frame piece as shown on *page 28*. (To cut the oval-shaped slots, we turned all frame pieces face up, cut a slot into one end of a piece, then turned it end-for-end and repeated the operation on the second end. Do not turn the pieces over. If you use a plate jointer to cut the slots, set it up for a no. 0 biscuit.)

3 Make a spline pattern to fit the half slots you just cut. (See the tip at *right* for how we made our pattern.) Using the pattern, trace 16 oval-shaped splines onto ¼"-thick plywood. Now, scrollsaw or bandsaw the splines to shape.

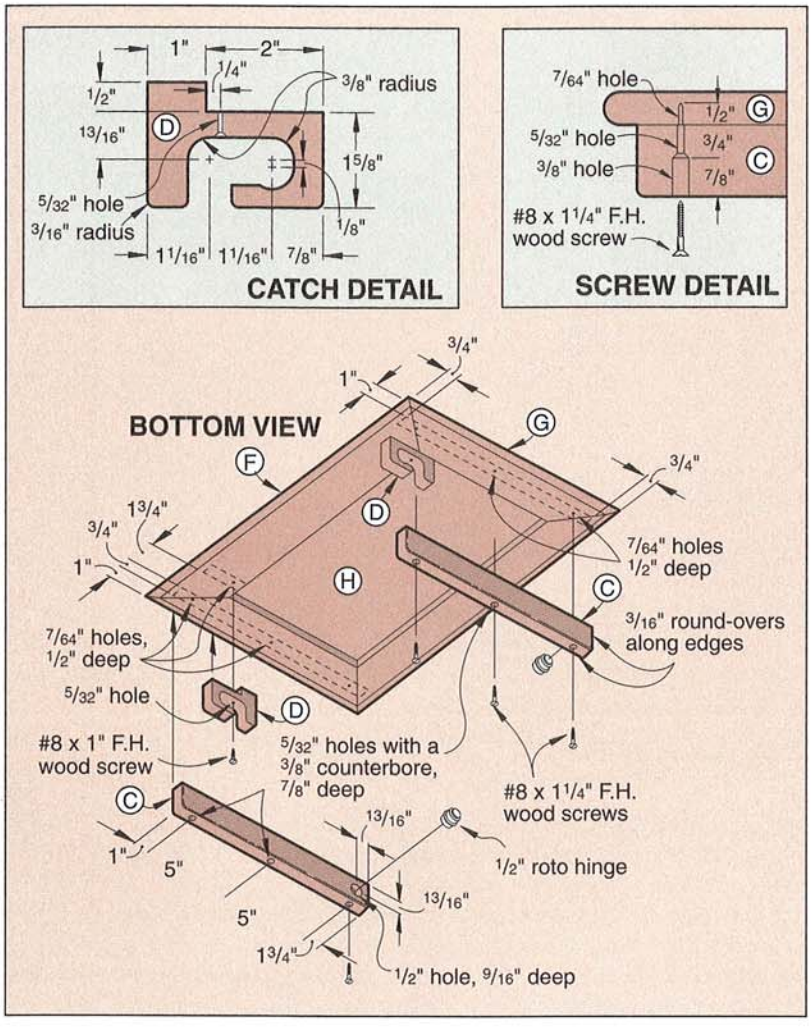
4 Dry-assemble the four tray frames to test-fit the parts.To assemble the tray frames, make an assembly jig like the one shown being used on *page 28* from plywood and scrap strips. Now, one by one, glue, assemble, and clamp each of the four tray frames in the jig. After the glue dries, remove the frames and finish-sand.

5 Measure the tray-frame openings, and cut four ¼"-thick birch plywood tops (H) to fit. Glue and clamp a panel in each tray frame. If you sand the plywood, be careful that you don't cut through the thin birch veneer layer.

Continued

TIP **Here's an easy way to make a pattern to match the slots you cut into the frame ends with your slotting cutter. (Step 2 at left.) First, cut a slot into the end of a piece of scrap material. Next, saw away the top portion of the scrap to reveal the slot. Scrollsaw the slot profile to shape. Now, trace the profile of the piece you cut out onto a piece of paper twice to make a full oval pattern. Use this outline as your spline pattern.**

SNACK TRAYS AND STAND



Project design: Bob Colpetzer, Clinton, Tenn.
Illustrations: Roxanne LeMoine, Carson Ode
Project builder: Ron Hawbaker

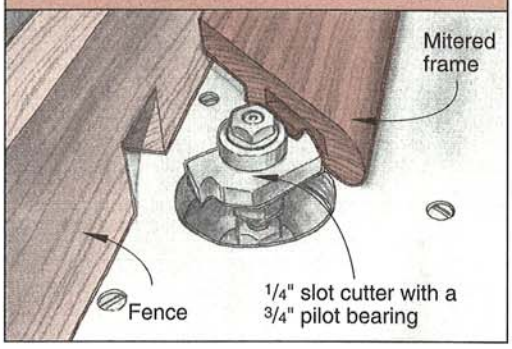
6 Drill and counterbore the three holes in one edge of each tray apron (C) where dimensioned on the tray Bottom View drawing and Screw detail *above*. Locate and bore the ½"-diameter holes 9/16" deep for the roto hinges. Round over the apron edges where shown.

7 Using the dimensions on the Catch detail *above,* lay out the part on the face of one of the catch blanks (D). Drill the 5/32" vertical screw hole, then lay the piece on its side and bore the two ¾"-diameter holes to form the hook arcs. Bandsaw or scrollsaw it to shape. Now, use this part as a pattern for the remaining catches. Bore two ¾" holes, and then saw the parts to shape.

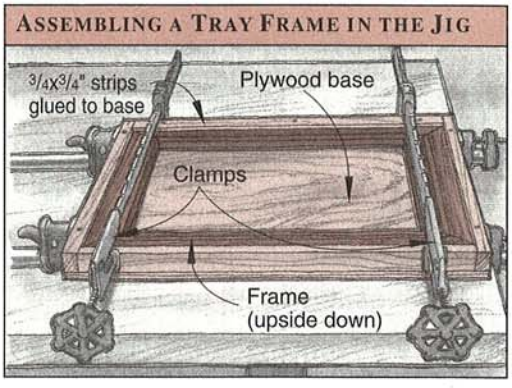
NEXT, WE'LL ASSEMBLE THE TRAYS

1 To assemble the back (inside) leg set, make a jig as shown *opposite top*. Then, working on

SLOTTING THE ENDS OF FRAME PIECES



ASSEMBLING A TRAY FRAME IN THE JIG

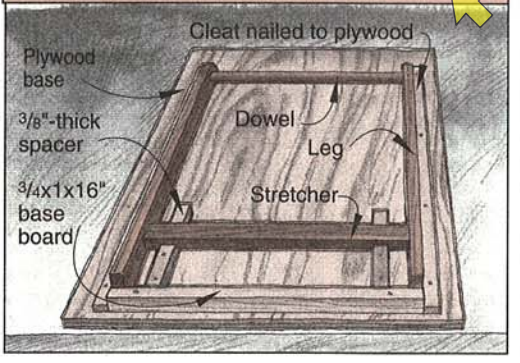


one set at a time, glue a dowel (E) into the holes at the top of the legs. Glue a stretcher (B) between the legs, starting 4½" up from the leg bottom. After the glue has set, remove the assembly from the jig, and drive the screws through the legs and into the stretchers. Assemble the remaining leg sets the same way. Now, using a ⅜" plug cutter, cut 24 plugs from your walnut scrap. Glue a plug into each counterbored screw hole in the legs. Sand the plugs flush with the legs. Save the extra plugs—you'll use them later on the tray stand.

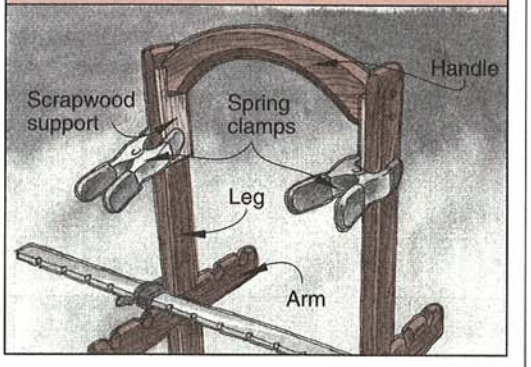
2 Glue a roto hinge into the ½"-diameter hole centered in each back leg. (See the Buying Guide for a roto-hinge source.) Place glue in the mating hole of a front (outside) leg, and press it over the exposed half of the hinge. Assemble the remaining legs to this point. Now, glue a roto hinge into the top hole of each front leg.

3 Press the exposed half of the roto hinge that you glued into the top hole of each front leg into the existing ½" hole in a tray apron. Assemble the second leg, and apron the same way. Next, place a tray face down on a workbench or floor. Position the leg and apron assembly on the tray where dimensioned on the

ASSEMBLING REAR LEGS IN THE JIG



ASSEMBLING THE TRAY STAND



Bottom View drawing at *left,* and clamp it in place. Now, pilot-drill through the apron and into the tray. Drive the #8×1¼″ screws to attach the aprons to the tray bottom. Assemble your remaining trays the same way.

4 Glue and screw two catches (D) to the underside of each tray where shown on the Bottom View drawing at *left*.

YOUR TRAYS NEED A STURDY STAND

1 From ¾″-thick stock, cut two 2×28″ pieces for the legs (I), one 2×12⅝″ piece for the stretcher (J), and two 2×14″ pieces for the arms (K). Now cut two ¾×4×18″ foot blanks (L) and one ¾×4×13″ handle blank (M).

2 Using the dimensions on the Tray Stand drawing on *page 30,* lay out the half-lap joints on the leg and arm pieces. Mount a ¾″ dado on your tablesaw, and then set it to cut the half laps into each leg and arm piece where marked. (We tested our saw setting on scrap first to ensure that the lap joints would fit tight and flush.)

3 Lay out the centerpoints for the four ⅞″-diameter holes in the two arm pieces using the dimensions found on the Tray Arm drawing on the top of *page 30*. Bore these holes (we used a Forstner bit), and then form and shape the notches on your bandsaw or scrollsaw.

4 Make full-sized patterns of the foot (L) and handle (M) using the gridded patterns at *right* as your guide. Or, if you prefer to work with full-sized patterns, see our pattern offer at the bottom of *page 30.* Next, adhere your Handle pattern to the handle blank, aligning it along one edge and bottom of the piece. (We used rubber cement on the pattern back.) Bandsaw the part to shape. Now, using a ⅜″ round-over bit, rout the handle edges where indicated on the Tray Stand drawing on *page 30*.

5 Adhere the Foot pattern to a foot blank, aligning it along one edge and the bottom. Using the same dado height setting you used in Step 2 at *left,* cut the half lap in both foot blanks where shown on the pattern. Using double-faced tape, stack the two foot blanks together, align the pieces, and then bandsaw both pieces to shape. Sand the cut edges.

6 Remove the patterns, separate the pieces, and finish-sand all of the stand parts. Next, glue and clamp an arm and a foot to each leg.

7 Remove the clamps, and sand the lap joints flush. Next, rout a ¼″ round-over along all edges of each leg assembly except along the bottom of each foot. Round-over all edges on the stand's stretcher the same way.

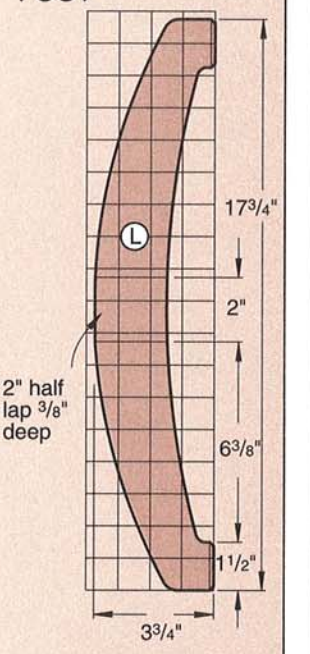
8 Mark and drill the four counterbored holes centered in the outside face of each stand leg where dimensioned on the Tray Stand drawing. Next, dry-assemble the legs as shown *above*. Check the assembled stand for square. Using the existing holes in the legs as guides, carefully drill pilot holes into both ends of the spreader and the handle. Now, drive the #8×1¼″ flathead wood screws. Glue ⅜″ plugs into the counterbored leg holes. Trim and sand the plugs flush with the leg faces.

9 Apply the finish of your choice. (We left the wood natural, but applied one coat of sanding sealer and two coats of polyurethane. We sanded each coat lightly after it dried with 320-grit sandpaper to level the finish.

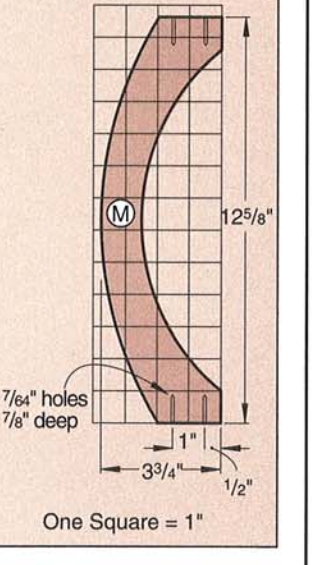
Continued

GRIDDED PATTERNS

FOOT



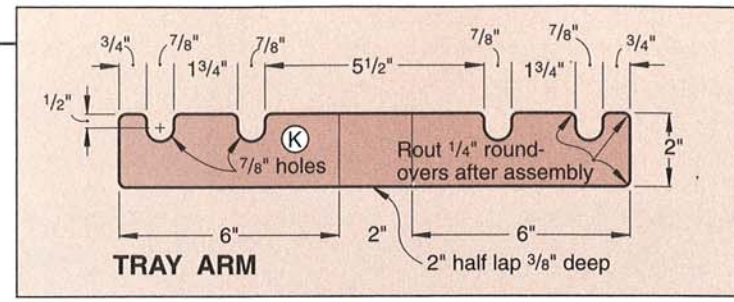
HANDLE



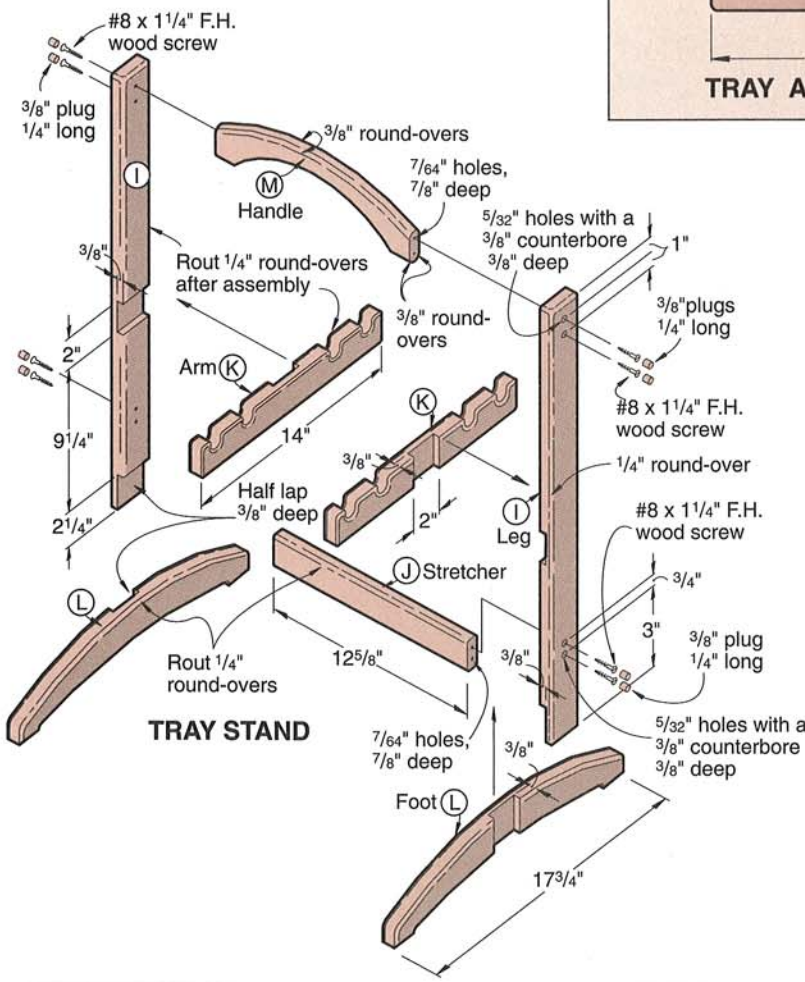
One Square = 1"

TIP **To make full-sized patterns from gridded patterns like those above, tape together sheets of paper slightly larger than the pattern. Then starting in one corner, scribe 1" squares across the sheets. Next, using the gridded pattern as a guide, mark points on the grid lines that correspond to intersecting points on the pattern grid. Then, draw lines to connect these points. We use a straightedge to draw the straight-line sections and french curves to draw the smooth curving lines.**

Snack Trays and Stand



TRAY ARM



TRAY STAND

BILL OF MATERIALS

Part		Finished Size* T	W	L	Matl.	Qty.
Trays						
A*	leg	3/4"	1 1/2"	26 3/4"	W	16
B	stretcher	3/4"	1 1/2"	14 1/4"	W	4
C	apron	3/4"	1 5/8"	12 3/4"	W	8
D*	catch	3/4"	2 1/8"	3"	W	8
E	dowel	3/4" dia.		15"	D	4
F*	frame side	3/4"	2 3/4"	21"	W	8
G*	frame end	3/4"	2 3/4"	14 1/4"	W	8
H	top	1/4"	10 1/4"	17"	BP	4
Stand						
I	leg	3/4"	2"	28"	W	2
J	stretcher	3/4"	2"	12 5/8"	W	1
K	arm	3/4"	2"	14"	W	2
L*	foot	3/4"	3 3/4"	17 3/4"	W	2
M*	handle	3/4"	3 3/4"	12 5/8"	W	1

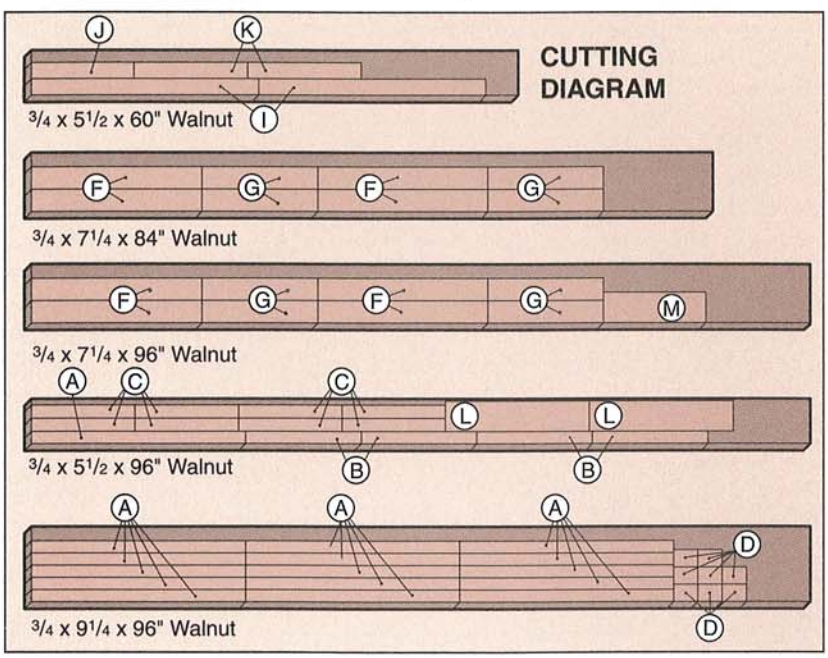
* Parts marked with an * are sawed oversized initially, and then cut to final size during construction. Please read all instructions before cutting.

Material key: W—walnut; D—walnut dowel; BP—birch plywood.

Supplies: #8×1" and #8×1 1/4" flathead wood screws, 16—1/2" roto hinges, finish.

Buying Guide

1/2" roto hinges. Four required per tray. Catalog no. 36251. Price: $16.00 ppd. for 16 hinges. (Sales tax collected for some states.) From: The Woodworkers' Store, 21801 Industrial Blvd., Rogers, MN 55374-9514. Credit-card orders: 612/428-2199.



CUTTING DIAGRAM

How To Order Our Full-Sized Patterns

If you prefer to work with full-sized patterns of the handle and foot, send $1 and a self-addressed business-sized envelope with 58 cents U.S. postage to:

Sensational Snack Trays
Weekend Woodworking Projects
1912 Grand Ave.
Des Moines, IA 50309-3379