VOL. 5 NO. 4 • ISSUE 28

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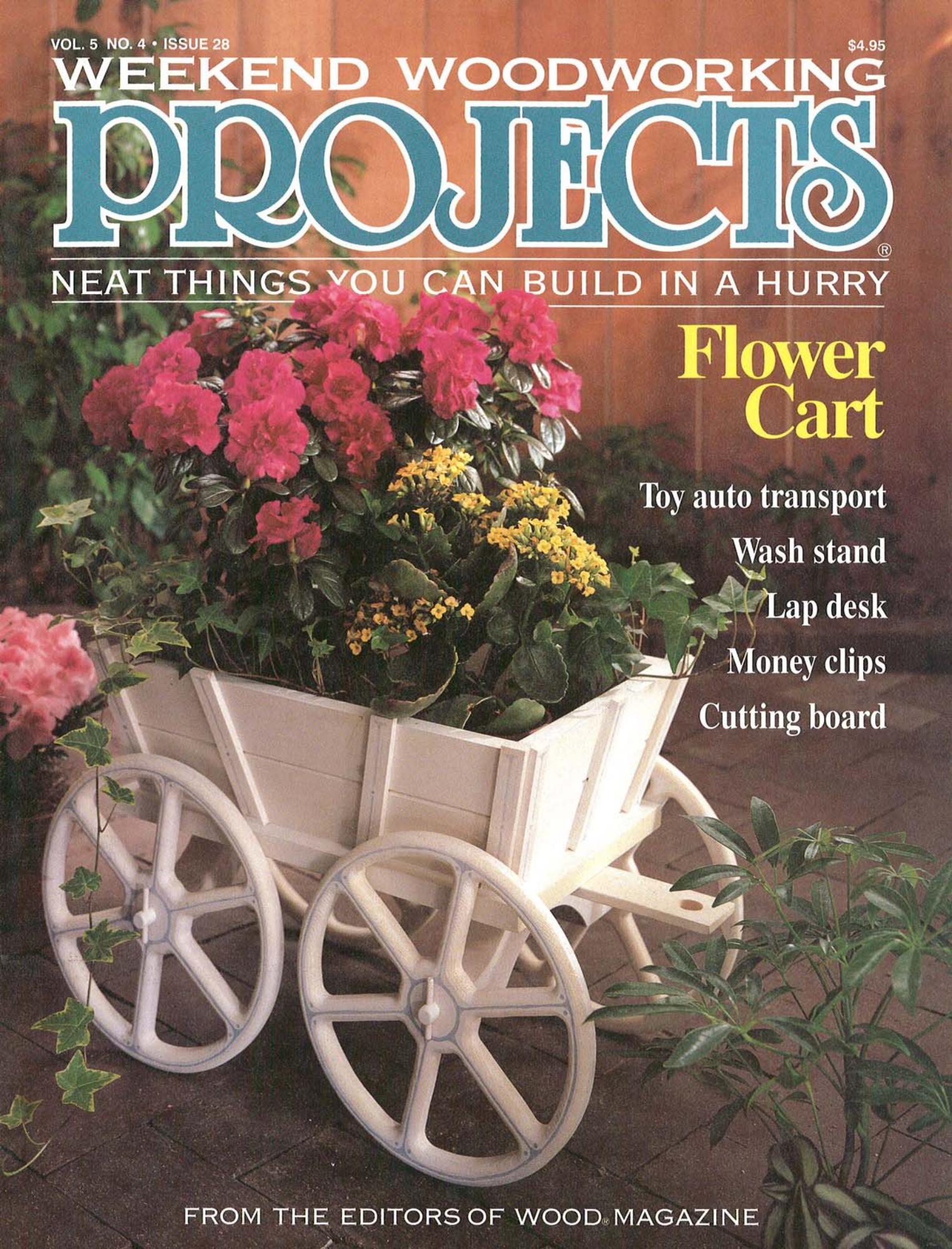

Flower Cart

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FROM THE EDITORS OF WOOD® MAGAZINE

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FROM OUR SHOP

DEAR READER,

One of the pleasures of publishing a woodworking magazine comes from rubbing shoulders with some pretty creative readers. One who really stands out is Bob Colpetzer, a great woodworker, inspirational shop teacher, and one heck of a project designer.

We first became acquainted after he sent us photos of a jewelry case—a design we later published in Issue 22. Bob showed us such talent that we asked him to develop a lap desk for this issue. We think you'll appreciate the four drawers for writing supplies that he has tucked inside the project. (See *pages 6-11.*)

Bob has a rich background to draw upon. For more than 20 years, he taught woodworking at Waukegan East High School in suburban Chicago. After teaching student and adult-education woodworking, operating a Lake Michigan fishing charter in the summer, and renovating homes in his free(?) time, Bob and his wife, Joyce, retired to Tennessee in 1990. All that hard work paid off—our new woodworking friend retired at the ripe young age of 45 "to do exactly what I want to do."

Photograph: Miles Cary

Bob Colpetzer, shown in his new shop in Clinton, Tennessee, is a reader with a lot of design ideas.

From what I've heard, Bob was the type of teacher who could really make a difference in a kid's life. I had a chance to talk to Tom Rucks, one of Bob's former students who now teaches industrial arts at Lake Park High School in Roselle, Illinois. Mr. C, as he was known to many, kindled an interest in woodworking that burns red-hot in many students—several like Tom who now teach woodworking. " Mr. C was so well organized," Tom said. "From stacks of three-ring binders with pictures he had taken, you could learn exactly how to construct all the joints. I still use a lot of his projects and ideas in my classes.

"He was a great inspiration to many of my friends, too. Mr. C worked with us to find ways to solve a problem—skills we keep using no matter what our job is."

This isn't the last time you'll see Bob's work—we already have plans to publish a couple more of his designs. And I would bet many of you have designed and built projects, as Bob has, that draw rave reviews from your family and friends. We'd love to consider your craftsmanship for publication. So when you have a chance, send us photos of your masterpieces to our address listed *below* under We Care! It's a great way to share your woodworking experience with others.

Carl Voss

Cover photograph: Wm. Hopkins

Print this article

WEEKEND WOODWORKING PROJECTS

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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

MPA

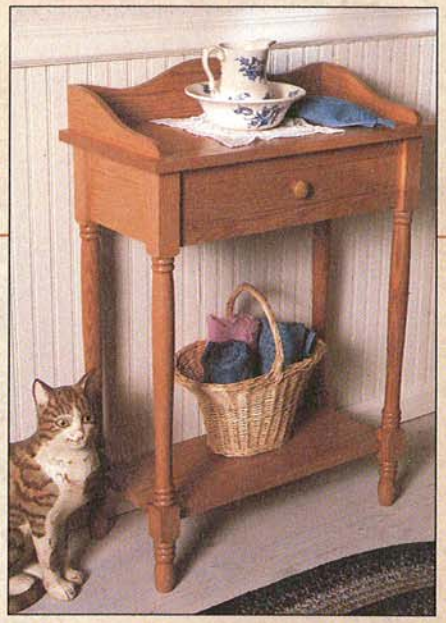
WEEKEND WOODWORKING PROJECTS (ISSN 1042-6094; Canadian GST Reg. #R123482887) is published bimonthly in January, March, May, July, September, and November by Meredith Corporation, 1716 Locust Street, Des Moines, IA 50309-3023. Second-class postage paid at Des Moines, Iowa, and additional offices. SUBSCRIPTION PRICES; One year $27.97 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 50366-0815.

WEEKEND WOODWORKING PROJECTS®
JULY 1992 • VOL. 5 No. 4 • ISSUE 28

6 Make a note for correspondence
Readers constantly ask for a great lap-desk design, so here's a project with lots of special features. We think you'll find the four inside drawers especially convenient.

12 Dollar-saving money clips
Using scrap woods and our source for money clips, you can personalize a whole year's worth of gifts in just a short time. To help you get started, we offer six original designs.

14 French bread cutting board
Contrasting laminations of oak, maple, walnut, and padauk make this slender cutting board a real crowd-pleaser. It's an original design from David Jordan, editor of Better Homes and Gardens® magazine.



16 Country-classic washstand

We scaled down a longtime country favorite to 24″ wide and 12″ deep—a size that offers plenty of decorating possibilities in your home.

20 Bloomin'-good wagon

Roll into summer with a patio accessory reminiscent of yesteryear's flower wagons. In addition to promoting your floral displays, this versatile project could make an eye-catching container for a mound of rolls at your next barbecue.

24 Fun-time transport

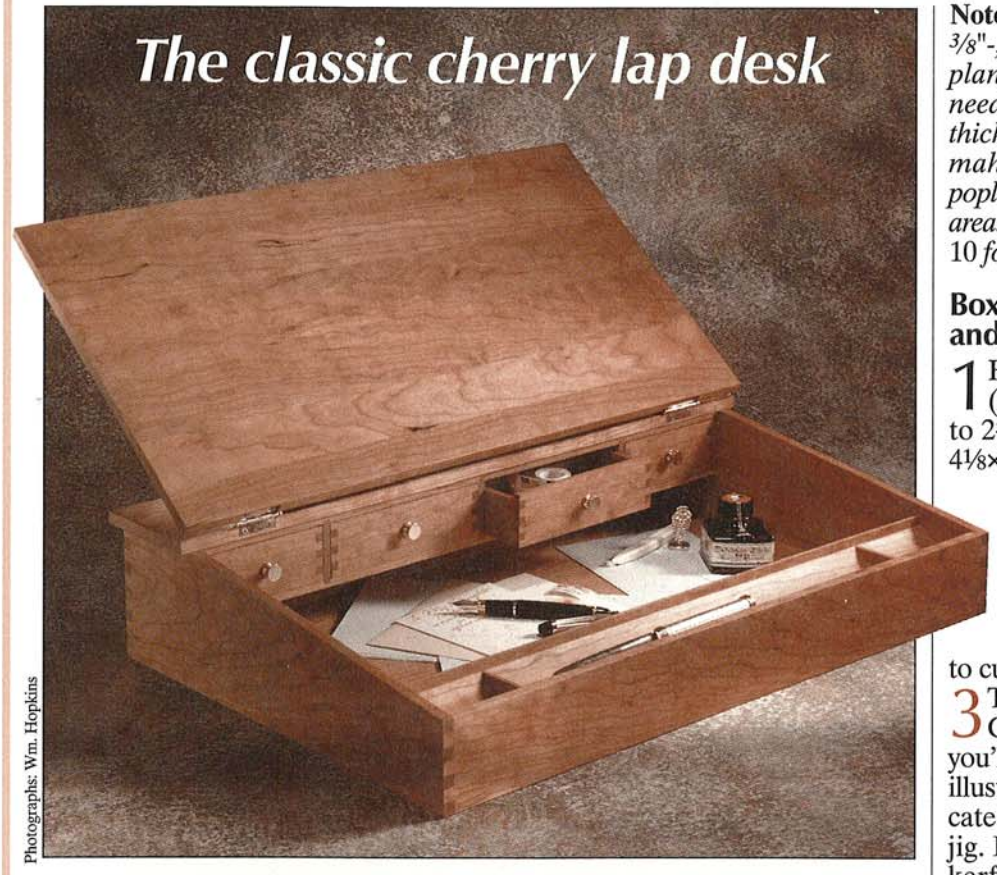
Let's load up some cars, good buddy, and get on truckin' through playtime with an auto transport built to last a lifetime. In fact, this toy probably will outlast two generations of imaginative "truckers."

CHECK OUT THESE TIPS AND JIGS

- Make tight-fitting box joints with a simple jig for your tablesaw—page 6
- Cut a drawer front with perfect matched grain—page 16
- Illustrated steps simplify cutting compound bevels, miters—page 21
- Bore straight holes into the ends of long pieces—page 26

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

MAKE A CASE FOR CORRESPONDENCE



Photographs: Wm. Hopkins

Sometimes, a telephone call just isn't as satisfying as a nice, newsy letter. And, with this fine lap desk, modeled after a Colonial original, you won't have to sit at your desk to stay in touch with family and friends.

Print this article

Note: *Our lap desk requires 1/8"-, 1/4"-, 3/8"-, and 3/4"-thick stock. Resaw or plane thicker stock to the thickness needed. You may be able to buy 1/2"-thick cherry (our choice), Philippine mahogany, red oak, pecan, yellow poplar, walnut, or other woods in your area. See the Cutting diagram on* page 10 *for how we laid out our stock.*

Box joints make an attractive and stout case

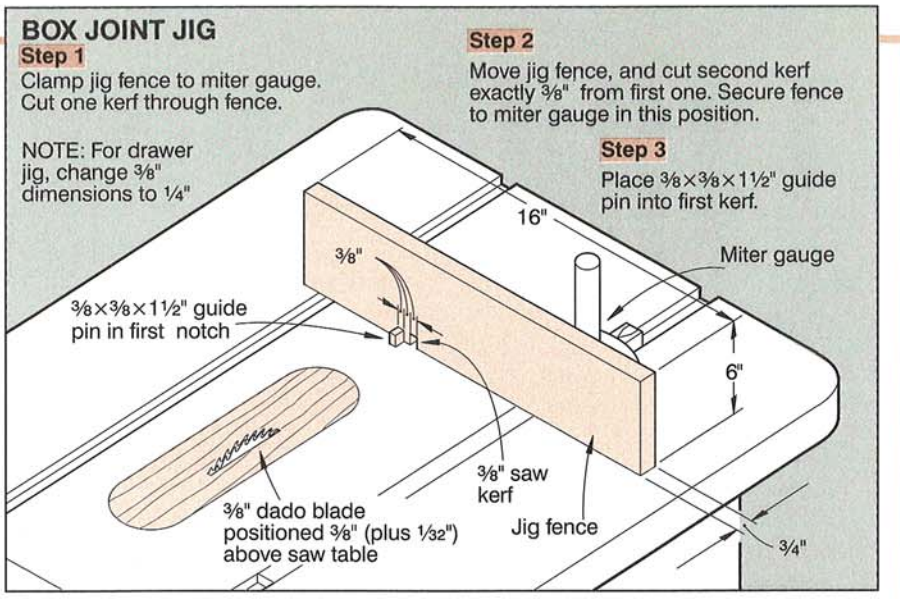
1 From 3/8"-thick stock, cut one back (A) to 4 1/8×22 1/16", one front (B) to 2 5/8×22 1/16", and two ends (C) to 4 1/8×14 11/16".

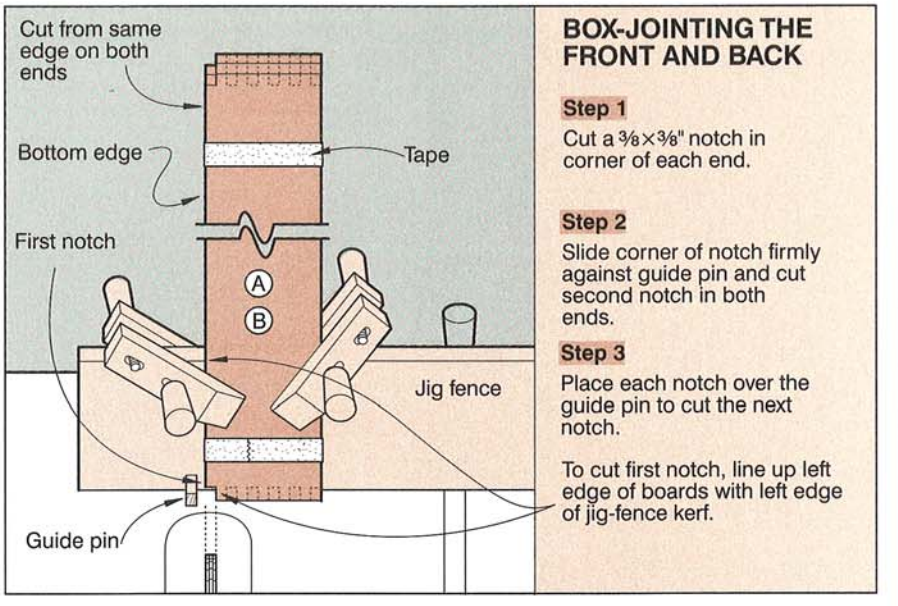
2 Make a zero-clearance insert for your tablesaw. Mount a 3/8" dado set to the saw arbor, and elevate it 3/8" above the table. Now, raise the blade 1/32" more. (We found it better to cut the joint fingers a bit long.)

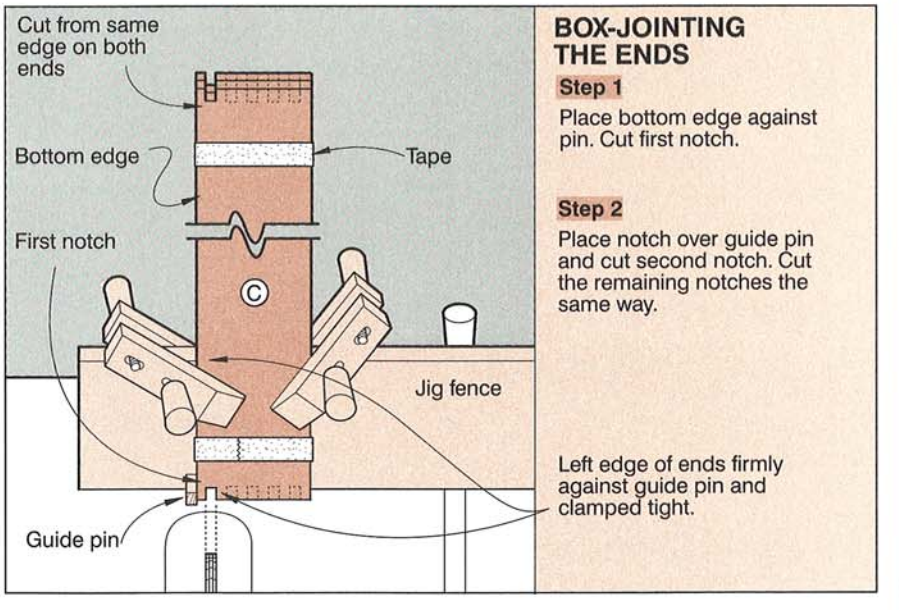
3 To cut the joints shown on the Case Box Joint detail on *page 11,* you'll need to make the Box Joint jig illustrated *opposite top*. Carefully locate and cut the two 3/8" kerfs in the jig. For tight-fitting joints, the two kerfs and the space between them must be exactly 3/8".

4 Tape the front and back pieces (A, B) together face-to-face with double-faced tape or wrap them with masking tape. Align the bottom edges and the ends. Prepare the end parts (C) the same way.

5 Follow the three steps on the box-jointing drawings *opposite* to cut the joints on the front, back, and ends. (We box-jointed two 3/8"-thick scrap pieces to test our jig and the process before cutting our stock.)







6 Using the dimensions on the Exploded View drawing on *page 11,* lay out the triangular shapes on the end pieces, and then saw them to shape. (We sawed away the triangular-shaped waste on our bandsaw, cutting just outside the line. We then sanded the sawed edges to the line on our stationary belt sander.) Now, separate all pieces, remove the tape, and finish-sand, using 100-, 180-, and 220-grit sandpapers.

7 Dry-assemble the case parts to make certain all joints fit. Now, separate them, apply glue to the mating surfaces of the box joints, and then reassemble the case. (We used white woodworker's glue to extend our working time during assembly.) Square the case corners, lightly clamp with bar clamps, wipe off any glue squeeze-out with a damp cloth, and then let the case set overnight.

8 Now, turn the case upside down. Chuck a 1/4″-piloted rabbeting bit into your router, and set its cutting depth equal to the thickness of the plywood you'll use for the bottom (D). Then, rout along the inside edge of each back, end, and front. Measure the rabbeted opening, and then cut a bottom panel to fit. Sand the corners to match the rounded rabbet corners. Glue the bottom into the rabbet. Finally, drill and countersink 7/64″ shank holes and 1/16″ pilot holes, and then drive the #4×3/4″ screws. Drive these screws deep enough into the bottom so they won't catch on clothing or scratch a tabletop.

9 Sand the joint fingers flush with the front, ends, and back. (We used 180- and 220-grit sandpaper.)

Lap desk

Now, assemble the lid

1 From ⅜″-thick stock, rip and crosscut eight 2×23″ pieces. Arrange the pieces for best grain and color. To minimize warpage, invert (reverse the end grain) every other board when you assemble the panel. See the detail on the Exploded View drawing. Now, edge-glue the pieces and clamp. (We used yellow woodworker's glue.)

2 Remove the clamps, then scrape and sand both surfaces on the panel. (We used our belt sander with 100- and 150-grit sandpaper.)

3 Joint one edge of the panel. Cut the lid (E) and top (F) to size. Finish-sand both pieces (we used a palm sander fitted with 220-grit sandpaper), and then set them aside for later.

Shape the pencil tray on your tablesaw

1 Select a piece of ¾″-thick material measuring at least 5½×24″. Next, clamp a straightedge to your tablesaw as shown at *right*. (We angled ours 25° to the blade, and placed it 1¼″ from the blade's arbor center.)

2 Elevate the saw blade to cut ⅛″ deep, and place the workpiece against the fence. Now, turn on the saw, and then slowly push the piece over the blade. Raising the saw blade in ⅛″ increments, repeat the process until you've cut the ½″-deep cove shown on the Pencil Profile at *right*.

3 Rip the coved strip to form the 2″-wide coved tray. Next, crosscut the coved tray (G) to fit snuggly inside the front edge of the case.

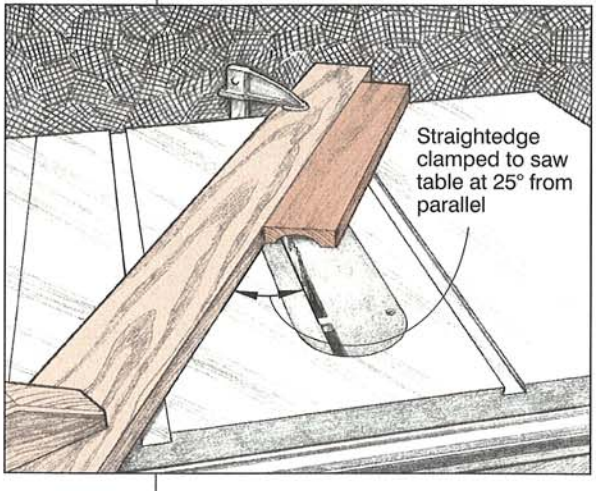
4 From the scrap remaining from cutting the pencil tray, resaw a ⅛×½×12″ piece, and then crosscut two 2″-long tray dividers (H) from this piece. Next, resaw a ⅛×1×22″ strip for the tray edge (I) from the same scrap. Now, finish-sand all of the tray parts.

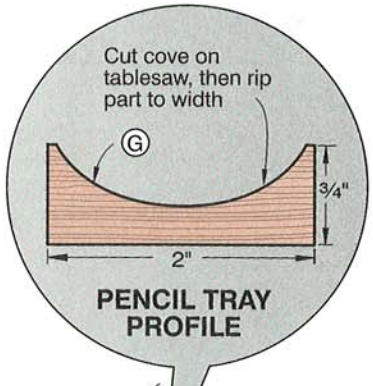
5 Elevate your ⅛″-thick saw blade ½″ above the saw table's surface. Turn the coved pencil tray upside down, and using the miter gauge and a stopblock, cut dadoes across the tray, 3″ in from each end. Next, glue the two ⅛×½×2″ dividers in the dadoes so they're flush with the top of the cove. Wipe off excess glue with a damp cloth. Now, glue and clamp the ⅛″-thick edge trim (I) to one side of the tray where shown on the Pencil Tray Assembly drawing, and then trim it to the same length.

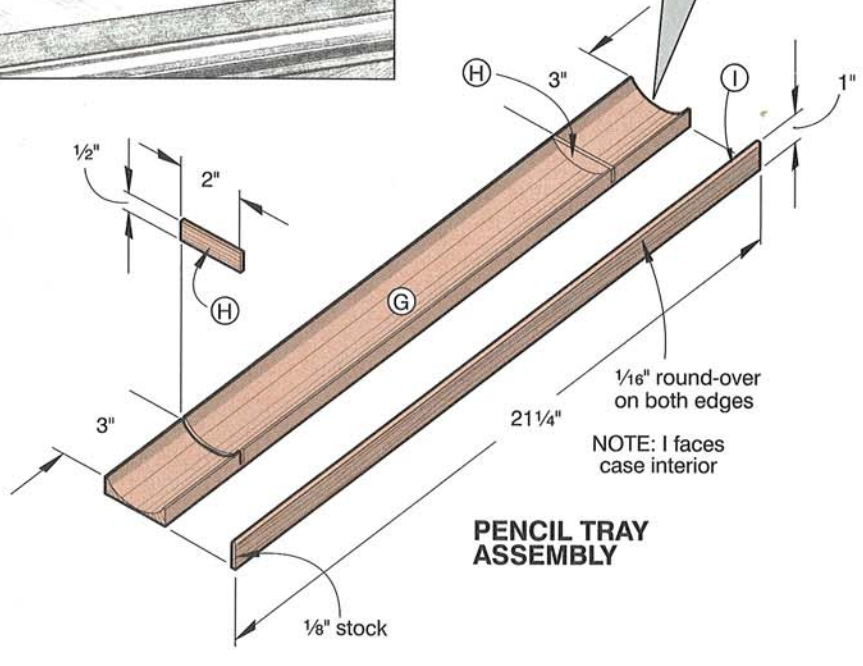
Now, make up the four handy drawers

1 From ¼″-thick stock, cut two shelves (J) to fit snugly lengthwise inside your case. (Our case measured 21¼″ inside.) Finish-sand all surfaces on both shelf pieces. Using dimensions on the Shelf Assembly drawing *opposite*, lay out and cut the three ¼″-wide ⅛″-deep dadoes and the two end rabbets in each shelf. Next, locate and then drill the ¼″ holes ⅛″ deep in the top shelf.

2 Cut the five shelf dividers (K) to dimension from ¼″-thick stock. Glue, assemble, square, and clamp the shelves and dividers. Wipe off glue squeeze-out immediately.





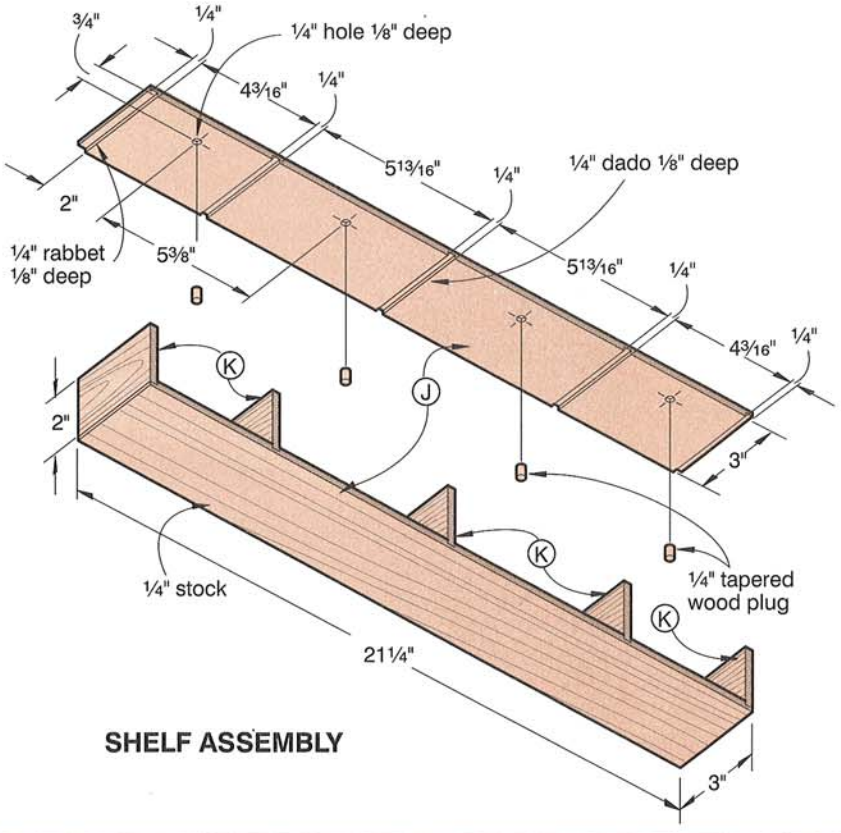


3 For the drawers, cut two narrow fronts (L), two narrow backs (M), eight drawer ends (N), two wide fronts (O), and two wide backs (P). Use the dimensions on the Drawer Assembly drawing *below*.

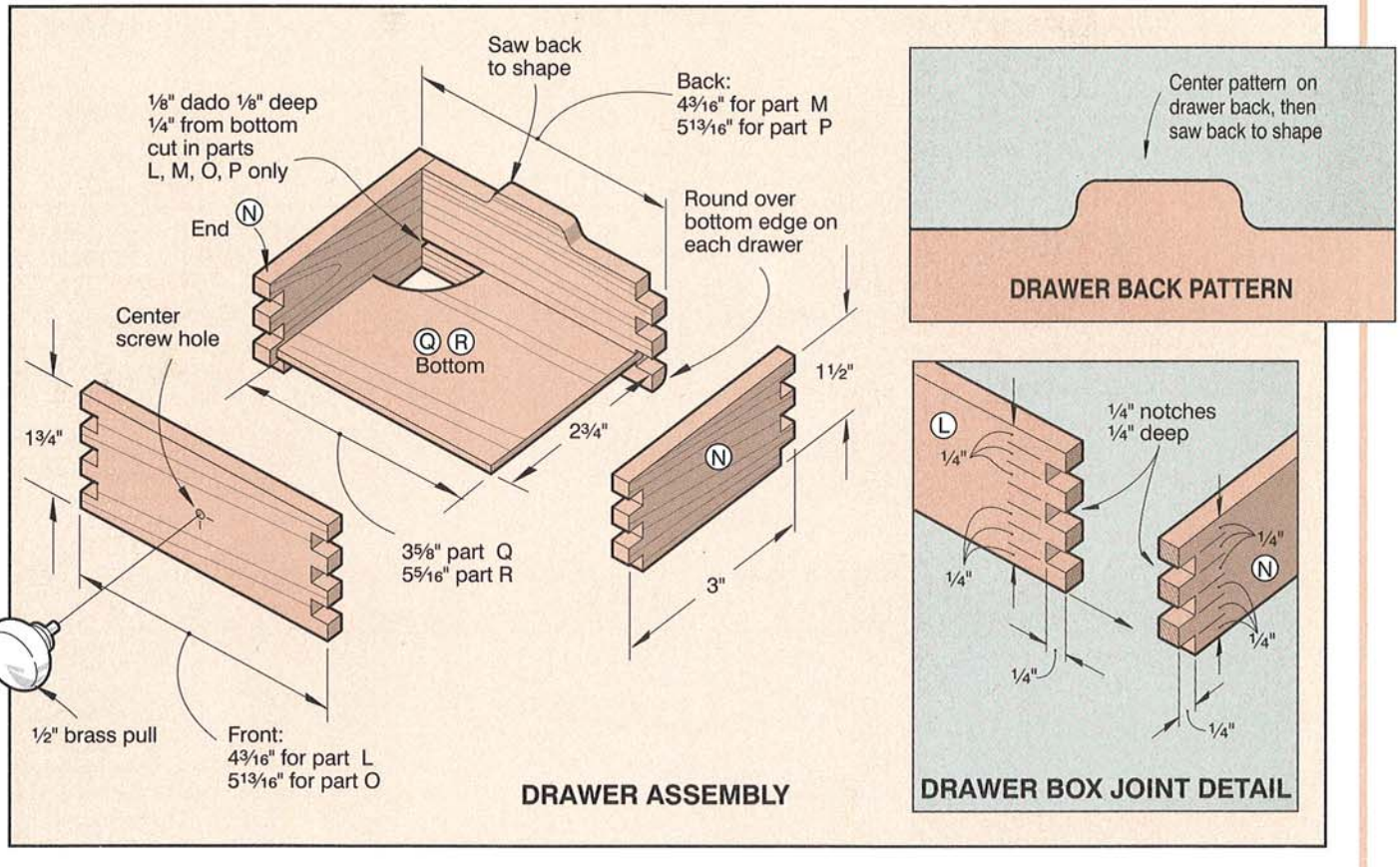
4 To make the drawer joints shown on the Drawer Box Joint detail *below,* first mount a ¼″ dado set to your tablesaw. Next, make a ¼″ version of the Box Joint jig shown on *page 7*. For this jig, the dado kerfs, the guide pin, and the spacing between the two kerfs must be ¼″. Elevate the dado to cut ¼″ deep, plus another 1/32″. Now, follow the same box-jointing procedures with the drawer fronts, backs, and ends.

5 Mount a ⅛″-thick carbide blade on your tablesaw and set it to cut ⅛″ deep. Set the rip fence ¼″ from the blade. Cut the ⅛×⅛″ dadoes along the inside face of each drawer

Continued



SHELF ASSEMBLY



DRAWER ASSEMBLY

DRAWER BACK PATTERN

DRAWER BOX JOINT DETAIL

front and back. Make a copy of the Drawer Back pattern on *page 9*. Center it on each back, and trace its outline. Now, scrollsaw or bandsaw the backs to shape. Mark and drill holes for the drawer-pull screws.

6 From your remaining stock, resaw two ⅛×3×12″ pieces. Finish-sand them. Next, dry-assemble the front and ends of each drawer. Now, determine the size of bottoms (Q, R) needed, and then cut them from this ⅛″-thick material.

7 Next, glue, assemble, square, and clamp the drawers. (We assembled the front and ends, inserted the bottom, and then added the back. To hold them flat, we placed waxed paper on a board, and then clamped each drawer to the board.) Wipe off glue squeeze-out. After the glue dries, sand the box fingers flush with the edges. Round over the bottom outside edge of each drawer back.

8 Glue ¼×½″-tapered wood plugs or dowels into the holes in the top shelf. Next, test-fit the drawers in the shelf openings. You'll need to lift each drawer front as you slide them into the opening so the back clears the plug. If you need to reduce drawer height or width, sand the bottom or sides on a flat sheet of sandpaper.

You're almost done

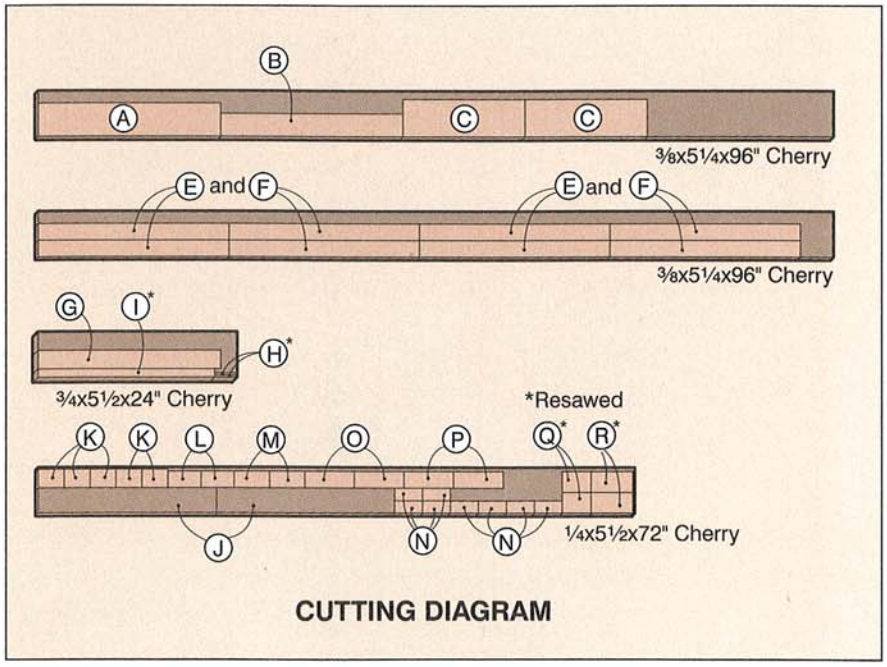
1 Trim both ends of the pencil tray to fit inside the case. Glue and clamp it in place. (We positioned the tray ¼″ below the front's top edge.)

2 Glue the shelf and drawer assembly inside the case, aligning its top flush with the top of the case.

3 Position the hinges on the desk top (F), and then cut the mortise in the edge. (Holding each hinge in place, we marked around the edge with a sharp crafts knife, and then chiseled out the mortises.) Attach both hinges to the top. Next, mark and cut the mortises in the lid's mating edge. Now, sand a bevel along the mating edges of the lid and top to allow the lid to slope downward.

4 Glue the top to the case. Drill and counterbore the holes in the top where shown, and drive the screws. From scrap, cut six ⅜″ plugs. Glue one in each hole, and sand them flush with the top. Now, finish-sand any parts needing attention.

5 Apply the finish of your choice. (We brushed on one coat of sanding sealer and two coats of clear lacquer finish. We sanded with 320-grit sandpaper between coats to level the finish.) Now, attach the hinges and drawer pulls. ■



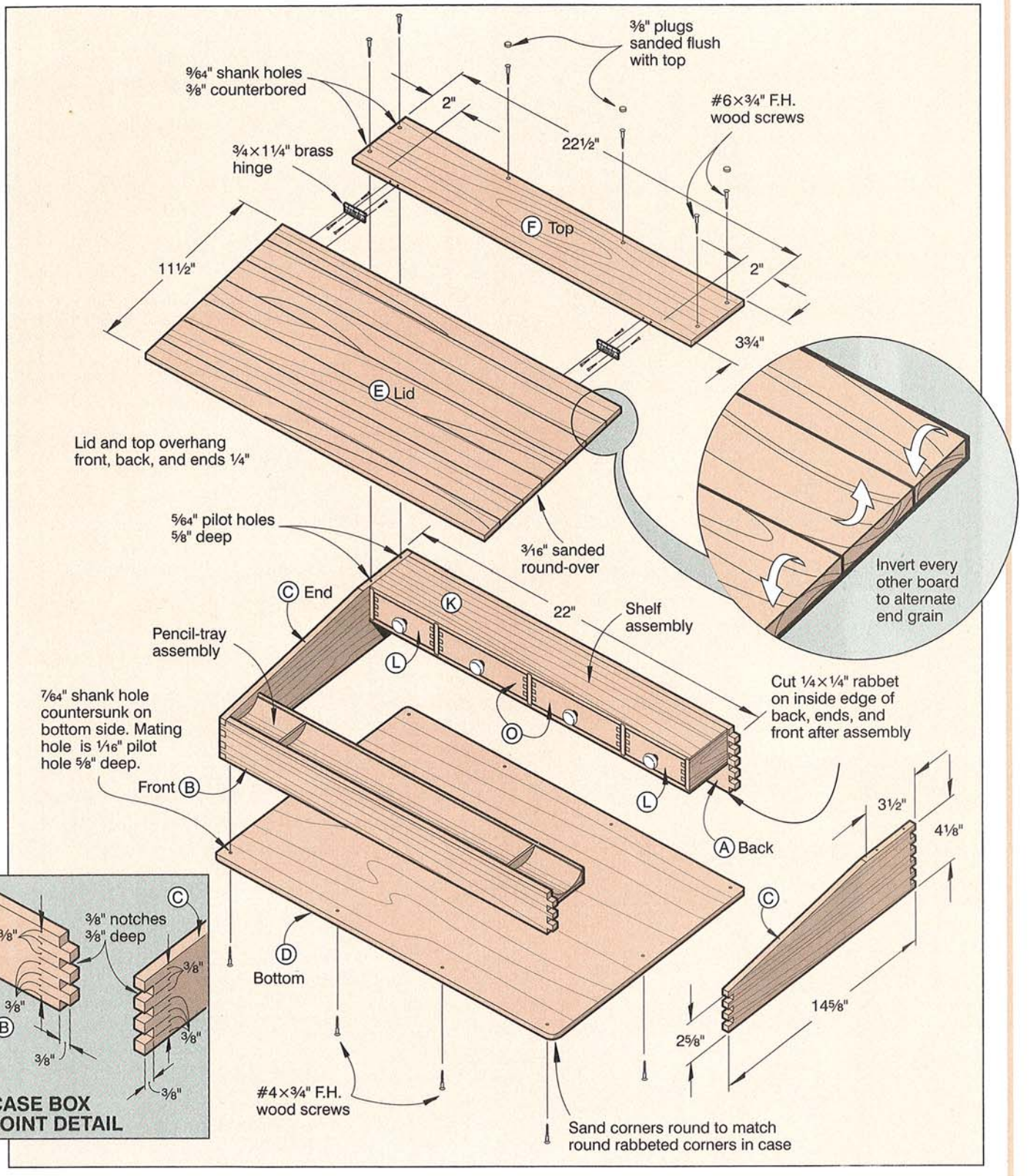
CUTTING DIAGRAM

BILL OF MATERIALS

Part	Finished Size T	W	L	Matl.	Qty.
Case					
A* back	⅜"	4⅛"	22"	C	1
B* front	⅜"	2⅝"	22"	C	1
C* end	⅜"	4⅛"	14⅝"	C	2
D* bottom	¼"	14⅜"	21¾"	CP	1
E* lid	⅜"	11½"	22½"	C	1
F* top	⅜"	3¾"	22½"	C	1
Tray					
G tray	¾"	2"	15"	C	1
H* divider	⅛"	½"	2"	C	2
I* edge	⅛"	1"	21¼"	C	1
Drawers					
J* shelf	¼"	3"	21¼"	C	2
K divider	¼"	2"	3"	C	5
L* front	¼"	1¾"	4⅛"	C	2
M* back	¼"	1¾"	4⅛"	C	2
N end	¼"	1½"	3"	C	8
O* front	¼"	1¾"	5¾"	C	2
P* back	¼"	1¾"	5¾"	C	2
Q* bottom	⅛"	2¾"	3⅝"	C	2
R* bottom	⅛"	2¾"	5⁹⁄₁₆"	C	2

*Cut or sand parts marked with an * to size during construction. Read all instructions before cutting.
Material key: C—cherry; CP—cherry plywood
Supplies: Four ¼×½" tapered wood plugs or dowel, #4×¾" and #6×¾" flathead wood screws, six ⅜" wood plugs, four ½"-diameter brass drawer pulls, ¾×1¼" brass hinges, finish.

Project design: Bob Colpetzer, Clinton, Tenn. Illustrations: Kim Downing; Carson Ode Project builder: Chuck Hedlund


3/8" plugs sanded flush with top
9/64" shank holes 3/8" counterbored
2"
22½"
#6×¾" F.H. wood screws
¾×1¼" brass hinge
F Top
11½"
2"
3¾"
E Lid
Lid and top overhang front, back, and ends ¼"
5/64" pilot holes 5/8" deep
3/16" sanded round-over
Invert every other board to alternate end grain
C End
K
22"
Shelf assembly
Pencil-tray assembly
L
O
7/64" shank hole countersunk on bottom side. Mating hole is 1/16" pilot hole 5/8" deep.
Cut ¼×¼" rabbet on inside edge of back, ends, and front after assembly
Front B
A Back
3½"
4⅛"
C
D Bottom
14⅝"
2⅝"
#4×¾" F.H. wood screws
Sand corners round to match round rabbeted corners in case
3/8" notches 3/8" deep
3/8"
B
CASE BOX JOINT DETAIL

DOLLAR-SAVING MONEY CLIPS

Photograph: Wm. Hopkins

Strike it rich at the scrollsaw

Cash in on your woodworking talents with a fun project you can complete in an afternoon. Using scrap woods and our source for money clips, you can easily personalize an entire year's worth of gifts in no time at all.

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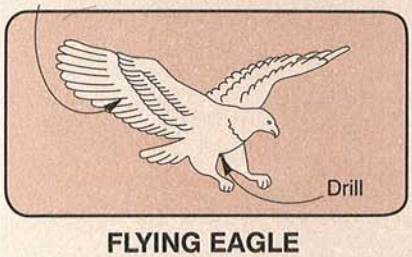
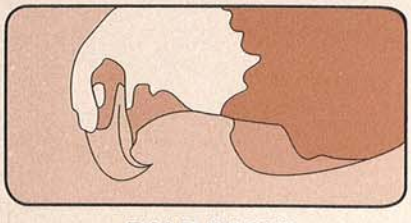
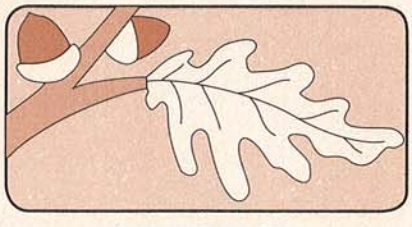
Saw into all stopped lines



FLYING EAGLE



BALD EAGLE



OAK BRANCH

Note: *You can buy fully assembled money clips. See the Buying Guide for our mail-order source.*

Find a mother lode of resources in your scrap bin

1 Make working copies of the six designs. (We photocopied ours.) Next, determine the number and colors of woods needed for each inlay. The trout, flying eagle, and dog require a dark and light wood. The flying ducks, oak branch, and bald eagle require four contrasting woods. (For the dog and flying eagle inlays pictured at *left,* we used walnut and oak. We chose oak, maple, walnut, and cherry for the ducks.)

2 For safety, start with ¾"-thick scrap pieces measuring at least 12" long. Rip them 1 1/16" wide, and then resaw 3/16"-thick strips from these pieces. Next, sand the strips to a uniform ⅛" thickness. (We laid our strips on a flat surface and sanded them simultaneously, using 150-, 180-, and 220-grit sandpaper.) Now, crosscut the strips into 2 1/16"-long blanks.

3 Stack the wood blanks together face-to-face. (We used thin double-faced cellophane tape between the blanks, but you may temporarily adhere them with rubber cement or spray adhesive.) Now, sand the edges of each blank stack to match the size of the money clips.

4 Make an auxiliary top for your scrollsaw table. (We made ours from ⅛"-thick hardboard.) Drill a 1/16" hole through this top for the blade, and then tape it to your saw's table.

5 Apply a mist coat of spray adhesive to the pattern's back. Center, and then adhere it to the top blank of each stack. Drill a blade start hole through the pattern and blank stack. (We drilled through areas where a hole was least visible.)

6 Thread your scrollsaw blade through the start hole, and then attach it to the saw. (We used a 2/0 blade with 20 to 23 teeth per inch.) If you have a variable-speed saw, set it at a medium or slow speed. Cut out the inlay. (We sawed around the smaller pieces, cut into the stopped lines as we worked, and then cut out the bigger pieces last.) Be careful not to lose the small pieces.

Mix and match parts for color and contrast

1 Carefully separate the stack so as not to break the fragile parts. If you have trouble pulling apart some of the small pieces, dip them in lacquer thinner to dissolve the adhesive.

2 Arrange the cutout parts on waxed paper. Make up the inlay combinations by interchanging parts from the different wood layers. To assemble two-part inlays such as the dog, you place the dark-colored dog inside the light background and vice versa. When designs have three or more wood species, assemble several versions and select the combinations that appeal most to you. For example, of the four flying ducks combinations, we preferred the inlay with the lightest (maple) sun and darkest (walnut) ducks.

3 Wrap a strip of ⅛"-wide masking tape around the outside edge of each assembled inlay to hold it together. Next, mix a small amount of five-minute epoxy and place it on top of each inlay. Now, carefully work the epoxy down into the saw kerfs between the inlay parts.

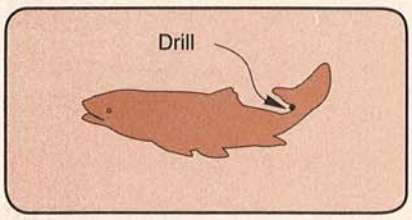
4 After the epoxy cures, remove the masking tape, and sand both sides of the inlay flat. Now, finish-sand the top face and round over the top edges with 220- and 320-grit sandpaper on a pad sander.

5 Apply the finish of your choice. (We brushed on one coat of sanding sealer and two coats of semigloss polyurethane. We sanded with 320-grit sandpaper after each coat dried.) If you wish to use an oil finish, apply it *after* you epoxy the inlay to the money-clip face.

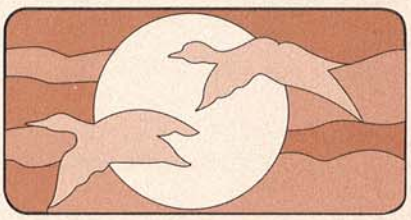
6 To adhere the inlay to the money clip, first clean the flat metal surface with lacquer thinner. Next, lightly sand the clip face with 220-grit sandpaper, being careful not to touch it with your fingers.

7 Apply a thin, uniform layer of epoxy to the clip face and the underside of the inlay. Join the two parts and press together. Hold or tape the inlay firmly to the clip until the epoxy sets. Immediately remove any epoxy squeeze-out. ■

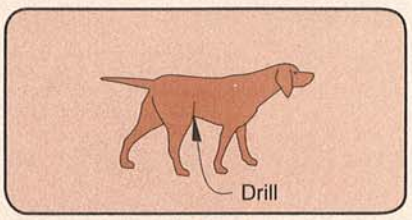
Buying Guide: Money clips. Assembled clips with folding knife and nail file. $11.95 for two clips, plus $2.95 per order for shipping. (Minn. residents add 78 cents sales tax per set.) Catalog no. 1226. From Meisel Hardware Specialties, P.O. Box 70-WEW, Mound, MN 55364-0070.



TROUT

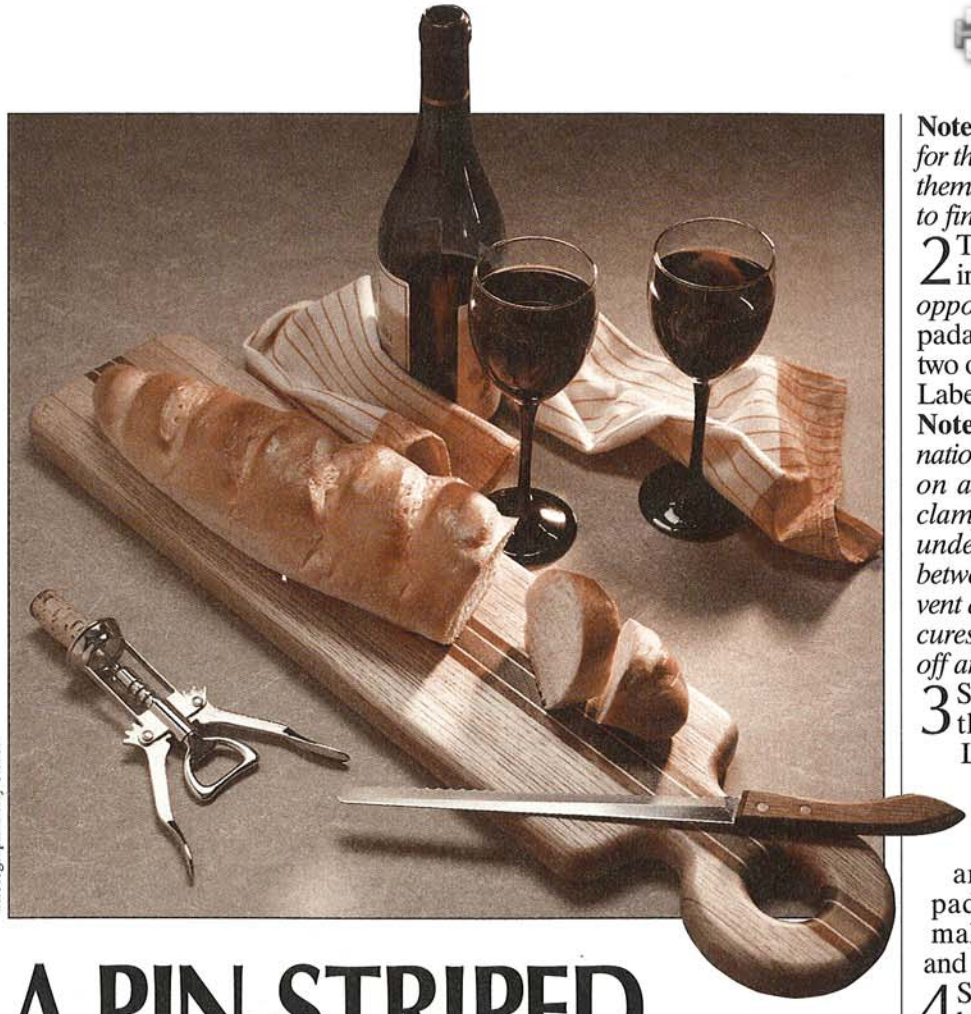


FLYING DUCKS



DOG

Designs: Joanne Lockwood, Citrus Heights, Calif.; Judy Gale Roberts, Lufkin, Texas Illustrations: Kim Downing Project builder: Rick Hutcheson



Photograph: Perry Struse

A PIN-STRIPED CUTTING BOARD

When David Jordan relaxes from his job as editor of Better Homes and Gardens® magazine, he enjoys dreaming up new designs in his shop. David has presented many friends with this original design of a tough and attractive French bread cutting board.

Make up the 11 laminations in safe, easy steps

Note: *For a massive-looking board, we made ours 1 1/16" thick. This required five-quarter stock for the oak pieces. However, feel free to use more readily available 3/4"-thick stock for a thinner cutting board.*

1 From five-quarter (1 1/16"-thick) white oak, rip and crosscut four pieces to 1 1/8×26". Plane them to 1 1/16" square. Next, rip two 1 1/16"-wide strips from 3/4"-thick padauk. (Substitute cherry or other medium-colored woods if you prefer to use native hardwoods in your board.)

Note: *When preparing our wood strips for the cutting board, we initially ripped them 1/16" wider, and then planed them to final dimension.*

2 To make up the lamination shown in the Blank Lamination drawing *opposite,* start by gluing one of the padauk strips cut in Step 1 between two oak strips. Clamp the lamination. Label the oak strips A and K.

Note: *To glue the strips for this lamination, brush yellow woodworker's glue on all mating surfaces. Apply four clamps—two across the top and two underneath. Also, place scrap pieces between the clamps and blank to prevent denting of the wood. After the glue cures, remove the clamps and scrape off any excess glue.*

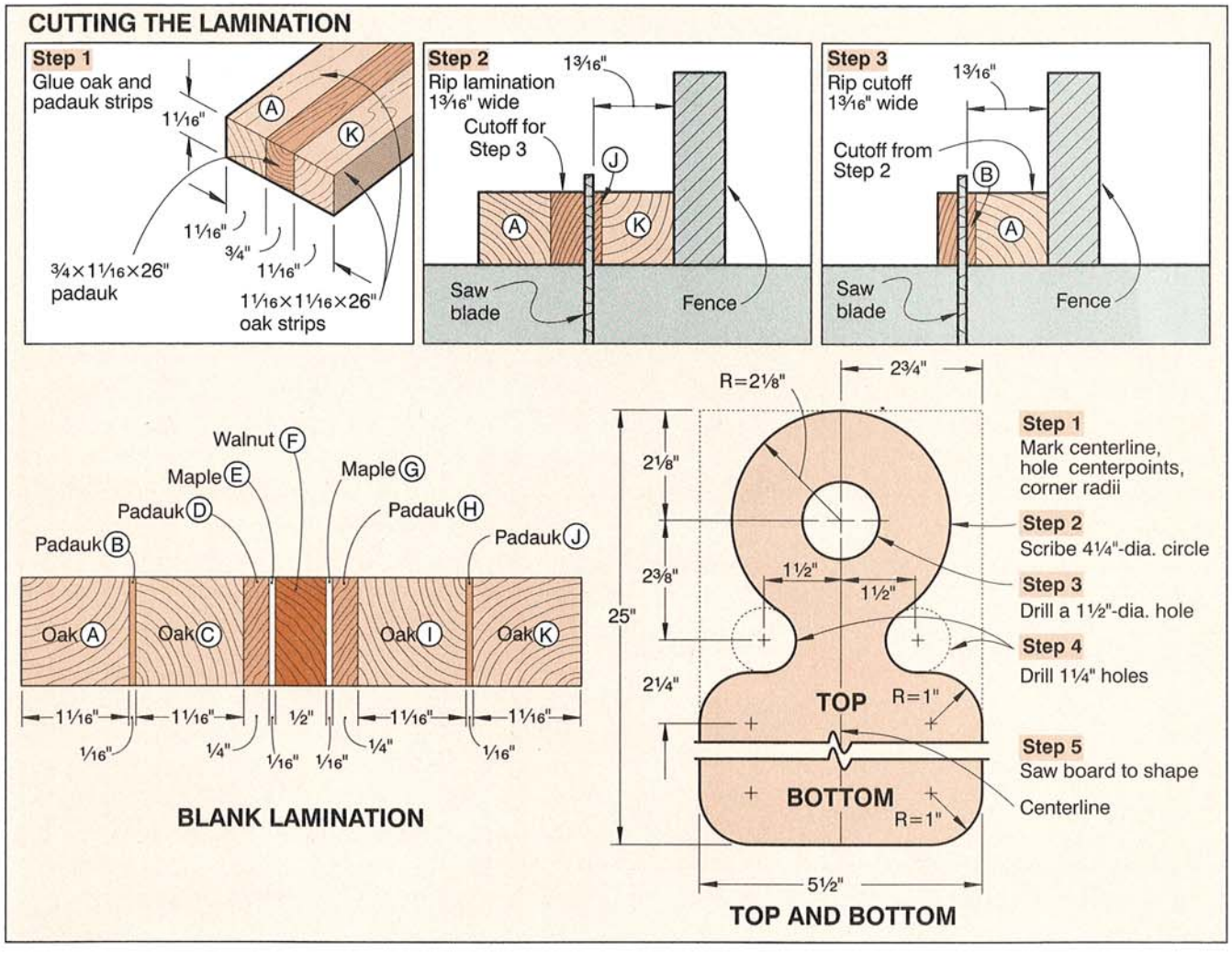
3 Set your saw's rip fence 1 3/16" from the blade. See the Three Step Lamination drawing *opposite* for details. Rip the piece in two. Next, place the oak edge of the cutoff piece against the fence, and rip it to width. Plane the padauk edges on both strips to make 1 1/8"- wide laminations AB and JK (1 1/16" oak plus 1/16" padauk).

4 Sandwich the second padauk strip between your remaining two oak strips, and glue them the same way. When it's ready, rip this lamination in two, and then plane the padauk edges to get 1 5/16"-wide strips (1 1/16" oak plus 1/4" padauk). Mark these strips CD and HI.

5 Cut a piece of 3/4"-thick maple to 1 1/16×26". Lay the strip on its narrow edge, and sandwich it between the padauk edges of laminations CD and HI. Glue and clamp.

6 Set the rip fence 1 7/16" from the blade, and rip the piece in two. Place the oak edge of the cutoff piece against the fence and rip it. Next, plane the maple edge on both pieces to 1/16" thickness. You now have laminations CDE and GHI.

7 For the center walnut piece (F), rip a 26"-long strip of 3/4" stock to 1 1/16" wide. Glue and clamp this walnut to the maple edge on CDE.



When it's ready, rip this lamination to make the walnut 9/16" wide, and then plane it to 1/2" wide. Now, glue lamination GHI to the walnut edge.

8 To complete the blank, glue and clamp lamination AB to the left side, and JK to the right side of the lamination CDEFGHI. After the glue cures, remove the clamps, and scrape off excess glue. Now, belt-sand both faces of the blank with 150- or medium-grit sandpaper.

You're nearly finished—invite your friends to lunch

1 Using the dimensions on the Top and Bottom drawing *above right,* plot the centerpoints for the handle circles and top corner radii. Next, measure down 25" from the top, scribe a line across the board, and then locate and mark the centerpoints for the bottom corner radii.

2 Using a compass, scribe the 2 1/8"-radius (4 1/4"-diameter) handle circle and the four 1" corner radii on your lamination.

3 With a 1 1/2" Forstner or spur bit, bore the center hole. (When drilling, we placed scrap underneath the board to prevent chipping out the bottom side.) Switch to a 1 1/4" bit, and bore the two holes forming the neck.

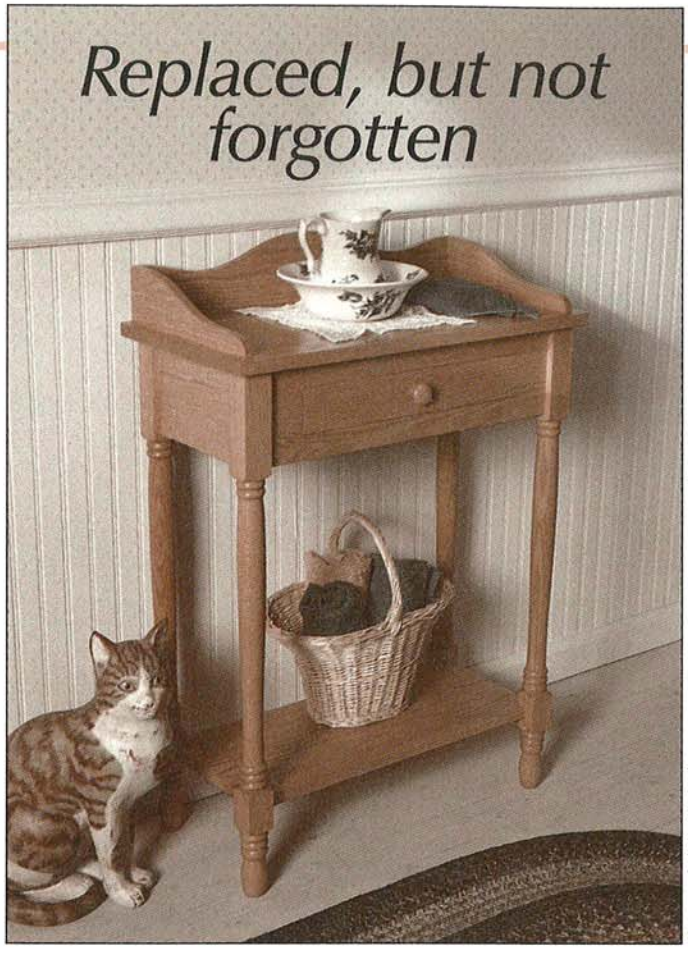
4 Saw the board's round handle and all corners to shape, sawing outside of the line. (We used a jigsaw.) Next, sand the cut edges to the line. (We sanded the outside-curved edges on our stationary disc sander, the straight edges on our belt sander, and hand-sanded the inside edges.)

5 Using a hand-held router, round over all edges. (For this, we used a 3/8"-piloted round-over bit.) Now, finish-sand all surfaces on the board with 180- and 220-grit sandpaper.

6 Finish your board. (We applied three coats of nontoxic Behlen's Salad Bowl Finish, following the label directions. You also may apply several coats of vegetable oil.) ■

Supplies: 1 1/16"-thick white oak, 3/4"-thick padauk, 3/4"-thick maple, 3/4"-thick walnut, finish.

Project design: David Jordan, Des Moines Illustrations: Kim Downing



Photograph: John Hetherington

COUNTRY-CLASSIC WASHSTAND

In your house, you'll find plenty of spaces for this scaled-down version that's just 24" wide and 12" deep. You say you don't know the first thing about turning? No problem! See page 18 for our source of handsome ready-turned legs.

Prepare the legs and laminate the top

Note: *You can bypass steps 1 and 2 by purchasing the legs already turned. See our Buying Guide on page 18 for a mail-order source.*

1 First, square four 36"-long turning squares to 1½×1½". (We used red oak.) Find the center on the end of each square, and then mount one of them on your lathe.

2 Turn four table legs (A), using the dimensions on the Leg Profile drawing *opposite*. Finish-sand each leg. Now, crosscut each of the legs to final length.

3 For the tabletop (B), select ¾"-thick stock with similar color and grain. Cut four 3⅛×25" pieces. See the Cutting diagram on *page 18* for how we laid out our stock. Arrange the pieces for best appearance, glue-join them, and then clamp. Let your tabletop set for 24 hours, and then remove the clamps and scrape off excess glue.

4 To make the shelf (C), rip and crosscut a ¾"-thick piece to 5×22" and one to 4½×22". Edge-join the pieces, aligning the ends, and clamp. After the glue dries, scrape off excess glue, and trim the shelf to size.

5 For the front and back rails (D), first rip and crosscut two pieces of ¾"-thick stock to 5½×20". (We oversized these pieces initially.) Select the front piece, and using a ⅛"-thick saw blade, cut off the bottom section (1) as dimensioned on the Front Rail detail *opposite*. Number the pieces as you cut them. Next, rip the center section 2⁹⁄₁₆" wide. From it, crosscut the left 2¼"-wide stile (2), the 15"-wide drawer front (3), and then the right 2¼"-wide stile (4). (We cut these parts in this order so the drawer-front grain matches the wood surrounding it.) Use the cutoff strip for the top portion (5) of the front rail.

6 Sand the drawer front to 2½" wide. Assemble the front-rail pieces on a flat surface. Glue and clamp the stiles between the top and bottom rails. (We allowed 1⁄32" clearance between the drawer ends and stiles.) Remove the clamps after the glue dries. Trim the ends flush with the outside stile edges, and rip the width to 5¼". Saw the back rail to the same size. Cut two 5¼×7½" side rails (E) from ¾"-thick stock.

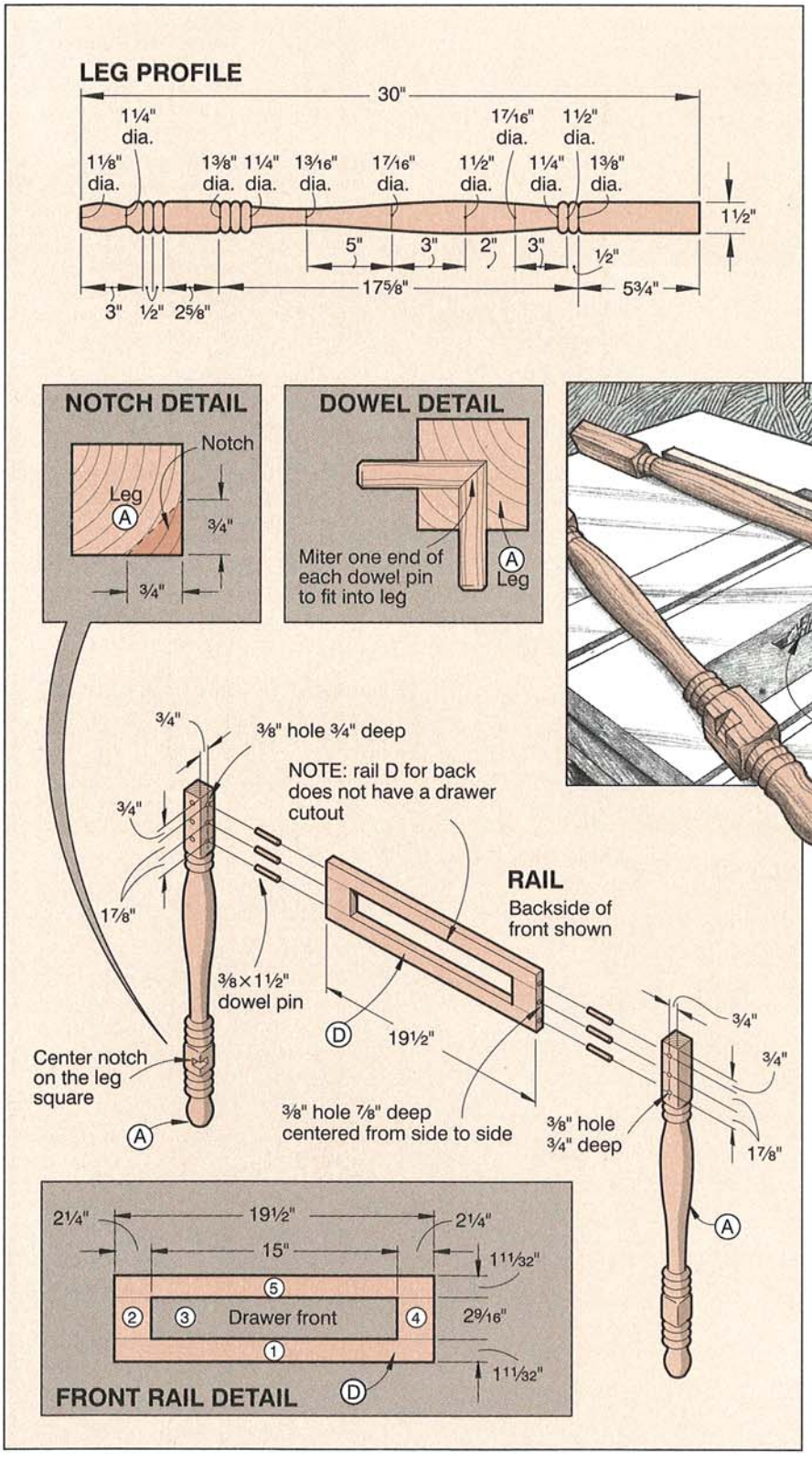
7 From ½"-thick stock, cut a 4×21½" piece for the backsplash (F), and two 3×12" pieces for the sides (G). Stack the two side pieces face-to-face using double-faced tape.

8 Make your full-sized Backsplash pattern by taping sheets of paper to form a 5×22" rectangle. Starting at one corner, scribe 1" squares across the paper. Now, using the gridded pattern on *page 19* as your guide, plot the points where the outline crosses the grid lines. Draw a line connecting these points. (We used french curves to draw the curving lines.) Make a 4×12" grid sheet, and using the same techniques, draw the Side pattern on it.

9 Trace the patterns onto the respective pieces. Saw the parts to shape and sand the cut edges. Now, separate the backsplash sides.

The washstand takes shape

1 Lay out the legs and rails. Mark the leg faces adjacent to the rails. Using the dimensions on the Front drawing, mark the dowel-hole centerpoints in the rail ends. Drill these holes ⅞" deep. (We used a self-centering doweling jig to drill holes.)



2 Place ⅜" dowel-hole centers in the rail holes. Join the rails and legs, pressing them together to mark the mating dowel holes on the two leg faces. Drill these holes ¾" deep. Next, miter one end of 12—1½"-long dowels at 45° as shown on the Dowel detail *left center*.

3 Mount a ¾"-wide dado set to your tablesaw. Next, using the technique shown *below,* cut the notch for the bottom shelf on the inside corner of each leg. See the drawings at *left* for notch position. (We bevel-ripped a 2×4 in half [at 45°] and used one piece to support the legs when cutting in the notches.)

4 Finish-sand all of the table parts with 150-, 180-, and 220-grit sandpaper. Dry-assemble the legs and rails. When you're satisfied with the fit, glue the dowels, and assemble the legs and rails. Square the corners, and then clamp. (We glued the mitered- dowel pins into the legs first, making sure the beveled ends mated correctly.) Glue the shelf in the leg notches. Now, secure the shelf with screws as shown on the Screw Hole detail on *page 19*.

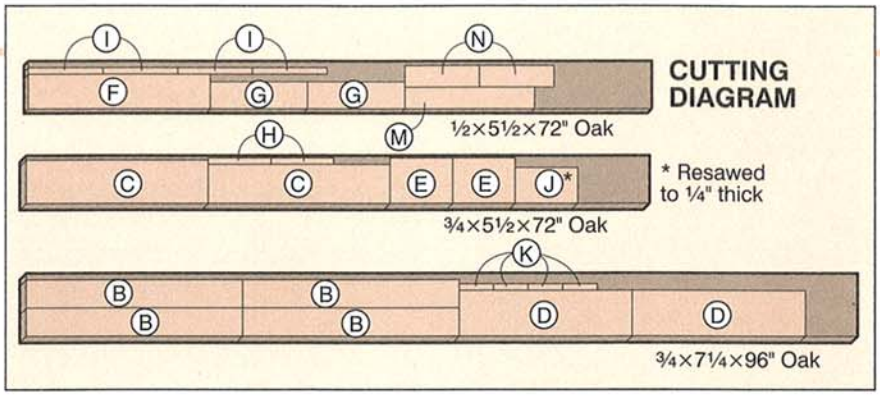
5 From ¾"-thick stock, rip and crosscut two cleats (H). Drill and countersink two ⅝₂" shank holes in two adjacent edges of each cleat. Attach these cleats along the top inside edge of the side rails.

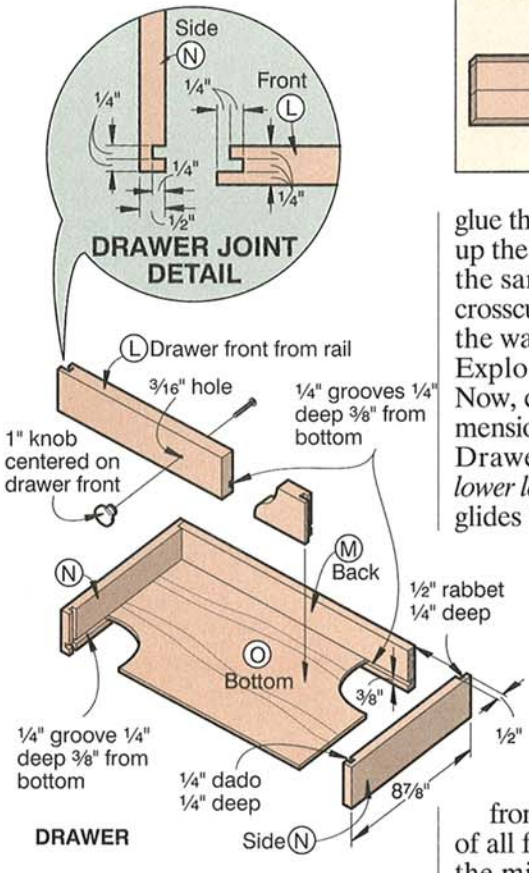
Your next challenge—the drawer and drawer glides

1 From ½"-thick stock, rip and crosscut four slides (I) to ¾×9". Cut two supports (J) to ¼×4¹⁄₁₆×9". (As shown on the Cutting diagram,

Continued

Washstand



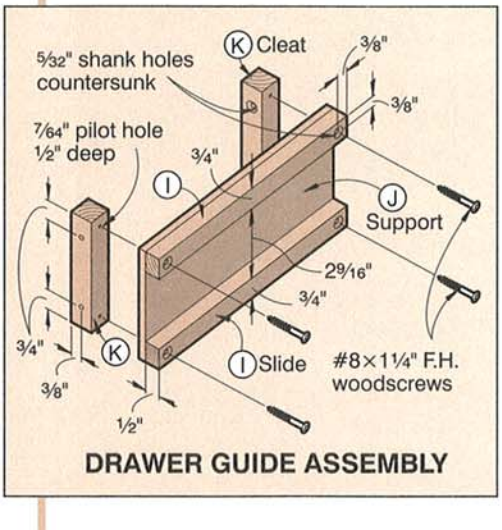


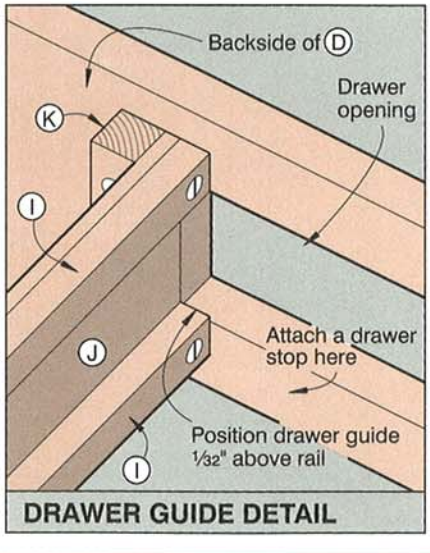
we resawed them from ¾"-thick stock.) Sand the parts. Now, rip a 2⁹⁄₁₆"-wide, 6"-long scrap spacer.

2 Glue and clamp a slide to the top of each support. Next, place the scrap spacer under that slide, and then glue the bottom slide against it. Make up the second drawer glide assembly the same way. After the glue dries, crosscut both assemblies to fit inside the washstand where shown on the Exploded View drawing *opposite*. Now, cut four glide cleats (K) to dimension. Drill them as shown on the Drawer Guide Assembly drawing *lower left*. Finally, glue and screw the glides to the cleats as shown.

3 From ½"-thick stock, rip and crosscut one drawer back (M), and two drawer sides (N) to dimension. (You have already cut the drawer front (L) from the front rail.)

4 Mount a ¼" dado set to your tablesaw and set it to cut ¼" deep. Cut a groove ⅜" from the bottom on the *inside* face of all four drawer parts. Next, using the miter gauge with an extension, cut the ¼"-deep dado into the front edge of both drawer sides where shown on the Drawer Joint detail *top left*. Now, make two passes to cut the ½"-wide rabbet on the opposite end of both sides.





BILL OF MATERIALS

Part		Finished Size T	W	L	Matl.	Qty.
Table						
A	leg	1½"	1½"	30"	O	4
B*	top	¾"	12"	24"	O	1
C*	shelf	¾"	9"	21"	O	1
D*	front/back rail	¾"	5¼"	19½"	O	2
E	side rail	¾"	5¼"	7½"	O	2
F*	backsplash	½"	4"	21½"	O	1
G*	side	½"	3"	11¼"	O	2
H	cleat	¾"	1"	7½"	O	2
I*	slide	½"	¾"	8⅜"	O	4
J*	support	¼"	4"	8⅜"	O	2
K	cleat	¾"	¾"	4"	O	4
Drawer						
L*	front	Cut from front rail				
M	back	½"	2½"	14½"	O	1
N	side	½"	2½"	8⅞"	O	2
O	bottom	¼"	8¼"	14⅜"	OP	1

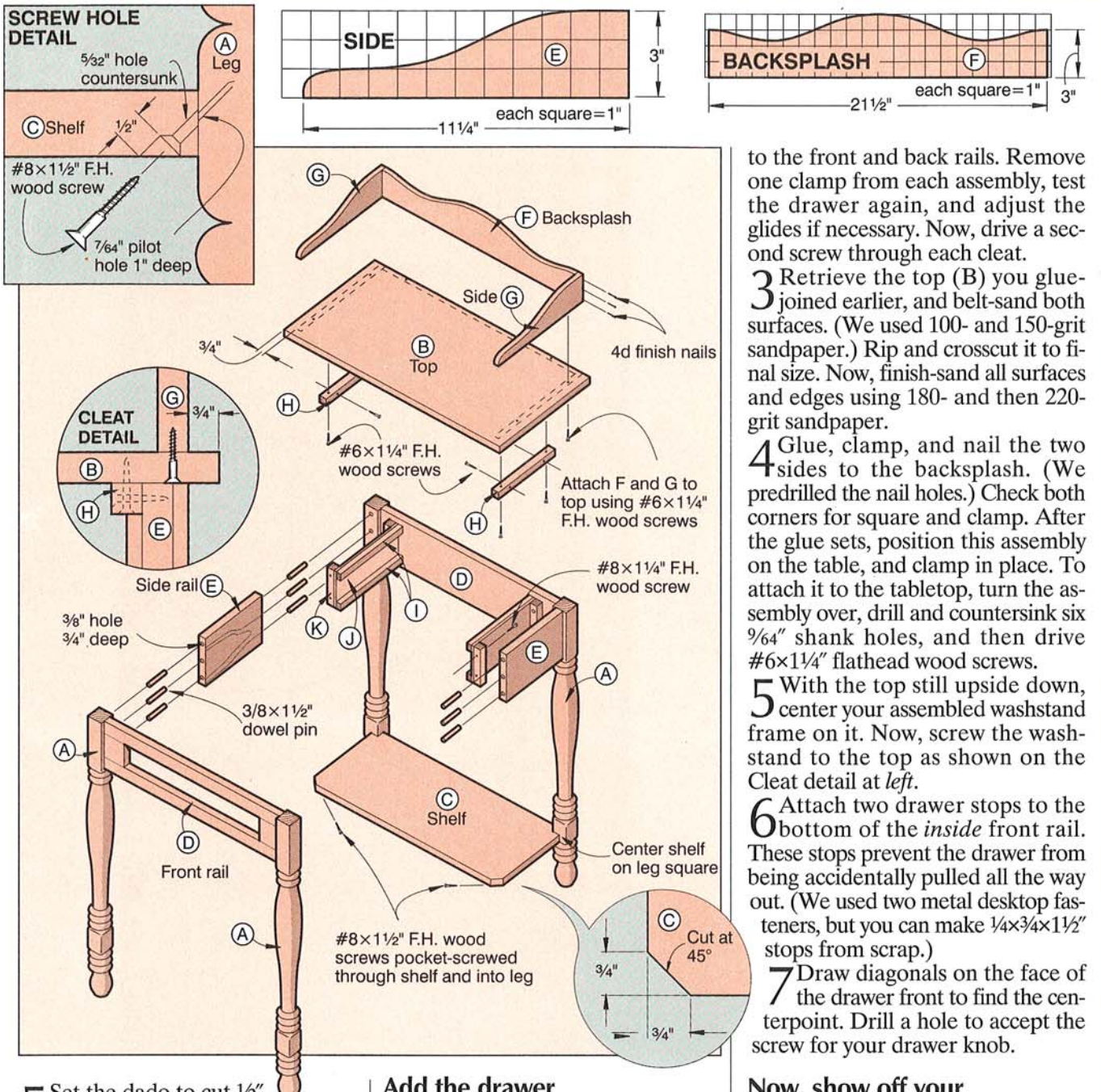
*Cut parts marked with an * to final size during construction. Please read all instructions before cutting.

Material key: O—oak; OP—oak plywood

Supplies: ⅜" dowel pins, #6×1¼"-,#8×1¼"-, and #8×1½"-flathead wood screws, ¾"-diameter wood knob, 4d finish nails,desktop fasteners, finish.

Buying Guide: Turned oak legs: Four 1½×1½×30" legs, turned to our specifications. Price: $34 ppd. From: Schanz Furniture, Highway 6, South Amana, IA 52334. Credit card and phone orders accepted. Telephone: 319/622-3529.

Turning squares: Four 1½×1½×36" squares. Available in oak, walnut, cherry, and maple. Price: $18.75 ppd.for red oak. Catalog No. WEW592. From: Albert Constantine & Son, Inc., 2050 Eastchester Rd., Bronx, NY 10461. Telephone 800/223-8087, or 212/792-1600.



5 Set the dado to cut ½" deep. Now, cut the ends of the drawer front as dimensioned on the Drawer Joint detail, *opposite top left*.

6 Dry-assemble the drawer, and measure the span. Cut a ¼"-thick oak plywood bottom (O) to fit.

7 Finish-sand all drawer parts. Glue the front and sides, slide in the bottom, and then add the back. Square the drawer, and clamp. Do not glue the bottom in the grooves. Next, finish-sand all joints flush.

Add the drawer glides and tabletop

1 Position the drawer glides between the front and back rails, aligning the bottom-drawer glide 1/32" above the opening as shown on the Drawer Glide detail *opposite*. Now, temporarily clamp the drawer-glide assemblies in place.

2 Place the drawer between the drawer glides. Align the drawer with the front-rail opening, and adjust the glides as necessary. Drive a screw through each cleat to fasten it to the front and back rails. Remove one clamp from each assembly, test the drawer again, and adjust the glides if necessary. Now, drive a second screw through each cleat.

3 Retrieve the top (B) you glue-joined earlier, and belt-sand both surfaces. (We used 100- and 150-grit sandpaper.) Rip and crosscut it to final size. Now, finish-sand all surfaces and edges using 180- and then 220-grit sandpaper.

4 Glue, clamp, and nail the two sides to the backsplash. (We predrilled the nail holes.) Check both corners for square and clamp. After the glue sets, position this assembly on the table, and clamp in place. To attach it to the tabletop, turn the assembly over, drill and countersink six 9/64" shank holes, and then drive #6×1¼" flathead wood screws.

5 With the top still upside down, center your assembled washstand frame on it. Now, screw the washstand to the top as shown on the Cleat detail at *left*.

6 Attach two drawer stops to the bottom of the *inside* front rail. These stops prevent the drawer from being accidentally pulled all the way out. (We used two metal desktop fasteners, but you can make ¼×¾×1½" stops from scrap.)

7 Draw diagonals on the face of the drawer front to find the centerpoint. Drill a hole to accept the screw for your drawer knob.

Now, show off your craftsmanship

1 Apply the finish of your choice. (We stained our washstand with an oil-based stain. After waiting a day for the stain to dry, we applied a coat of sanding sealer, and then three coats of satin-finish lacquer. After each coat dried, we sanded with 320-grit sandpaper to level the finish.)

2 Attach the drawer knob. Slide the drawer into the opening. Position the drawer stops. Now, get ready to deliver your washstand. ■

Project source: Deb and Bruce Berendts, Edina, Minn. Illustrations: Kim Downing; Carson Ode Project builder: Chuck Hedlund

Patio or bust

BLOOMIN'-GOOD WAGON

Roll into summer with a patio accessory reminiscent of yesteryear's flower wagons. In addition to boosting your floral displays, we imagine some of you probably will load its 16"-long wagon box with rolls or chips for your next barbecue.

Print this article

Photograph: Wm. Hopkins

Let's start by building the wagon's undercarriage

1 Rip and crosscut two 10″ lengths of 2×4. (Because we planned to paint our wagon, we chose pine lumber.) Copy the Axle pattern on *page 30*. (We photocopied ours.) Trace the axle outline and the end-hole centerlines onto the face of both axle blanks. Next, using a try square, transfer the axle-hole centerlines from the face to the ends on each 2×4. Now, mark the centerpoints for these ½″ holes, and then drill them 1¼″ deep into the 2×4 ends.

2 Cut the ⅜″-deep, 2″-wide notch in the top of one axle where indicated on the pattern. (We cut out this notch on our tablesaw.) Now, bandsaw both axles (A) to shape. Sand the cut edges with 100-grit sandpaper. (We used a 2″-diameter sanding drum chucked into our drill press.)

3 Rip and crosscut the wagon platform (B) as dimensioned on the Bill of Materials. See the Cutting diagram on *page 22* for how we laid out our wood. If you don't have 10″-wide stock for the platform and wheels, edge-glue narrower pieces.

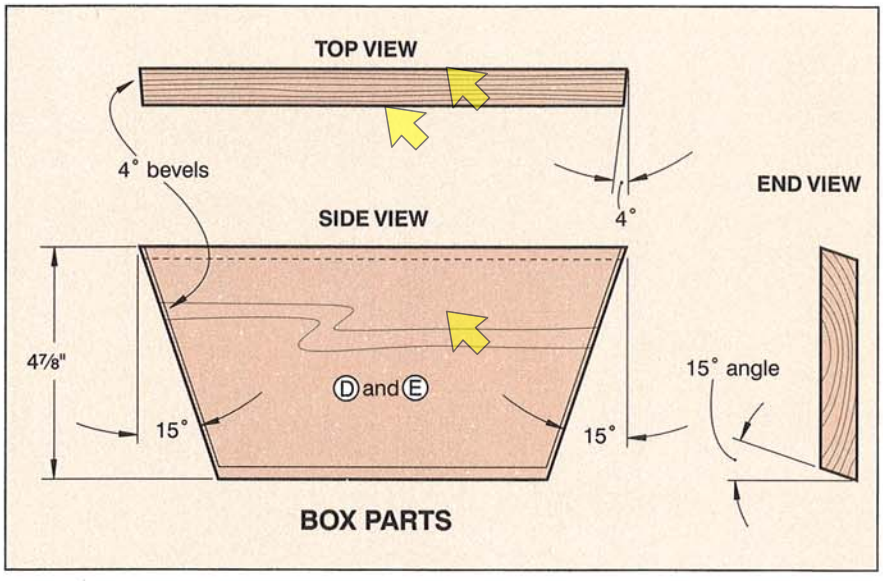
4 Prepare a full-sized wheel pattern. (We made two copies of the half pattern on *page 30,* then aligned and taped them together.) Using carbon paper, trace four wheel outlines onto your wide stock. Bore the ½″-center holes where marked, and then saw the wheels (C) to shape. (First we bored 7⁄16″- and ½″-diameter holes in each wheel segment to preshape the inside corners. Then, we scroll-sawed the areas between the spokes and bandsawed the outside edge, cutting just wide of the line.)

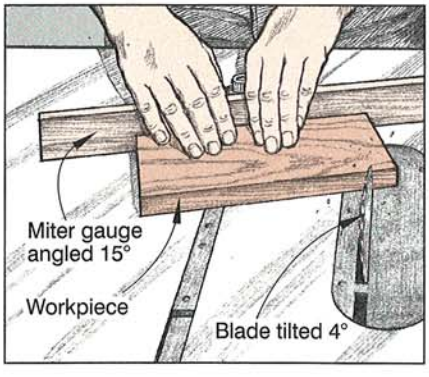
5 Sand all sawed edges to the line on the four wheels. Next, round over all cut edges on both sides of each wheel. (We used a piloted ¼″ round-over bit in our router.)

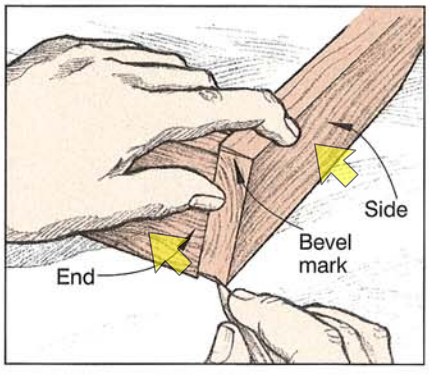
6 Rip and crosscut a piece of ¾″-thick pine to 2×7″. Resaw it to ⅜″ thick for the wagon tongue (F). Finish-sand the piece, and then bore the ¾″ hole where shown.

Lots of drawings will help you make the wagon box

1 From ¾×5½″ stock, crosscut two 10″-long end (D) blanks, and then two 17″-long side (E) blanks.







2 Set up your tablesaw as shown on the Step 1 drawing *above right*. You'll make the miter- and bevel-cuts shown on the Box Parts drawing *above top*. Our drawings at *right* show the setup on a tablesaw with a right-tilting blade. If your saw's arbor tilts left, set up the fence and miter-cut on the *opposite* side. Now, cut the beveled-miter on one end of the box ends and sides as shown *above*.

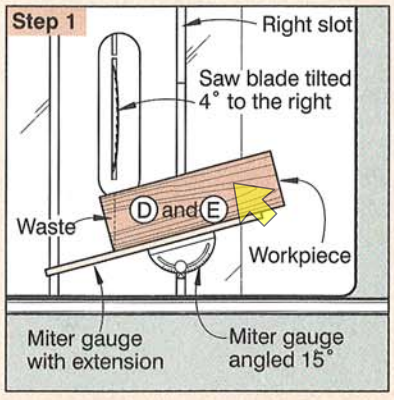
3 To bevel-miter the opposite end of each piece, set up the saw as shown on the Step 2 drawing. Do not change blade angle or miter setting—simply move your miter gauge to the left slot. Next, mark the final lengths on the top edge of one end (9½″) and one side (16″) piece. Place the bottom edge of this marked end against the miter gauge, align the mark with the blade, and then clamp a stopblock to the miter-gauge extension. Bevel-miter the second end on both. Now, reset the stopblock to accommodate the 16″-long sides, and bevel-miter the second end on them.

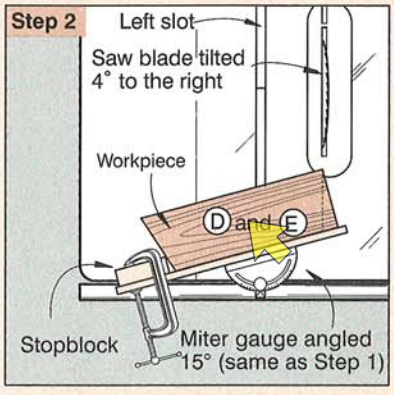
4 It's easy to get confused making the next two cuts, so we suggest you dry-assemble the box to mate the beveled corners. Check the corners for square, and then mark the inside faces, and letter the mating corners, A-A, B-B, C-C, and D-D. As shown *above,* mark the ends to indicate the direction for top and bottom bevels.

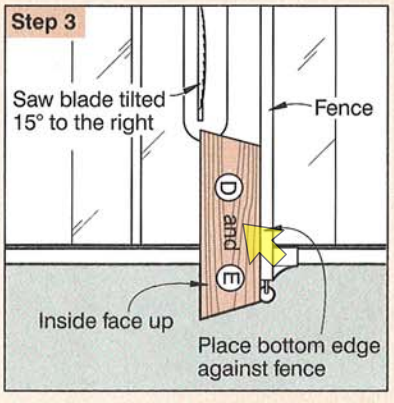
5 To bevel-rip the top edges on the box sides and ends, set up your saw as shown on the Step 3 drawing.

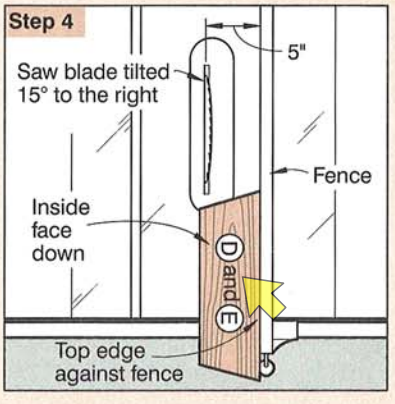
Continued

CUTTING THE SIDES AND ENDS TO SHAPE

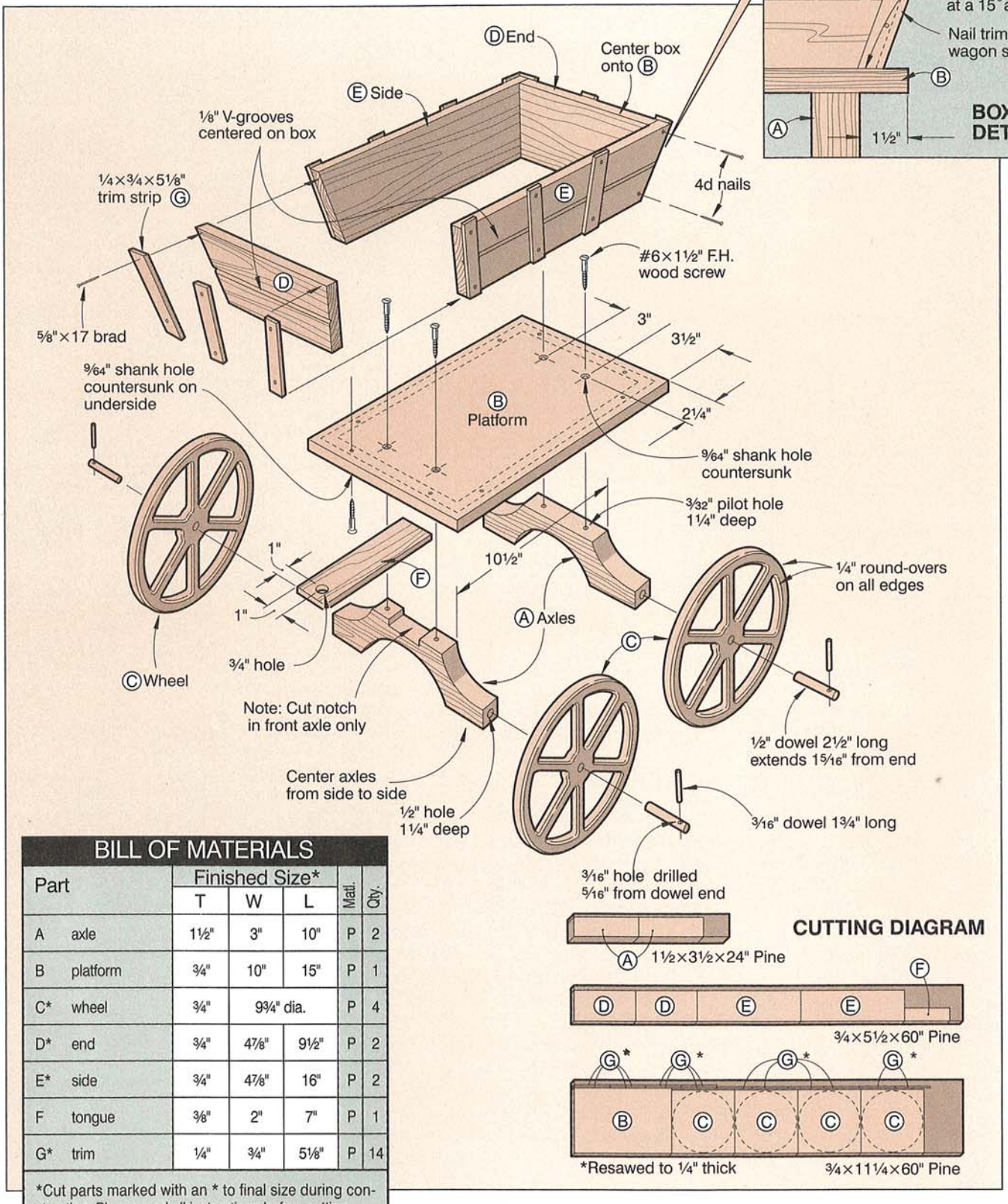








Flower wagon

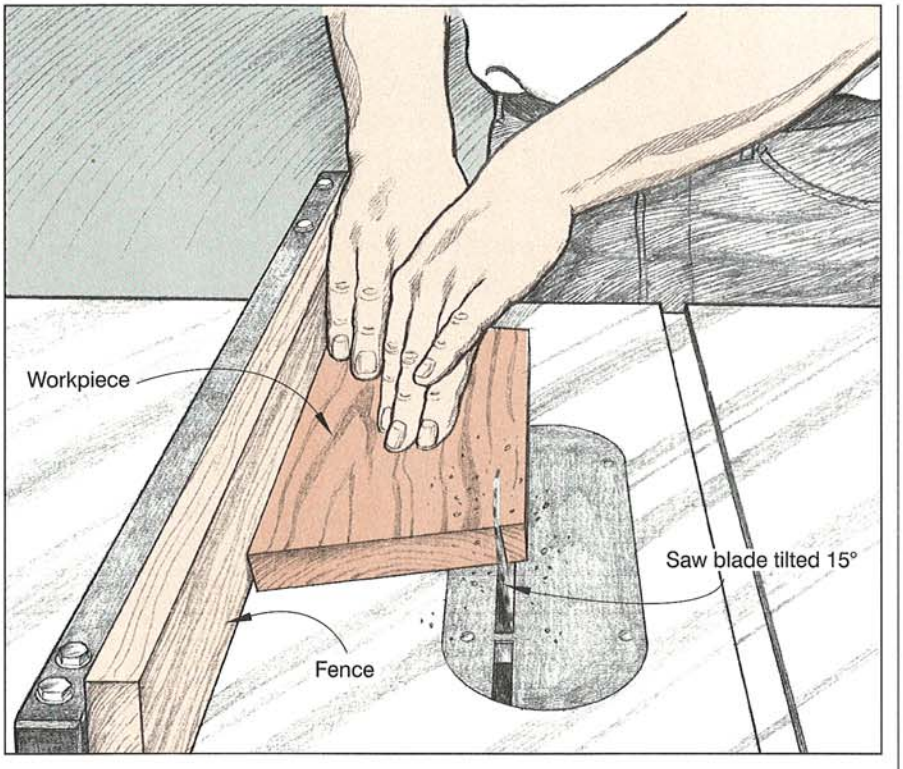


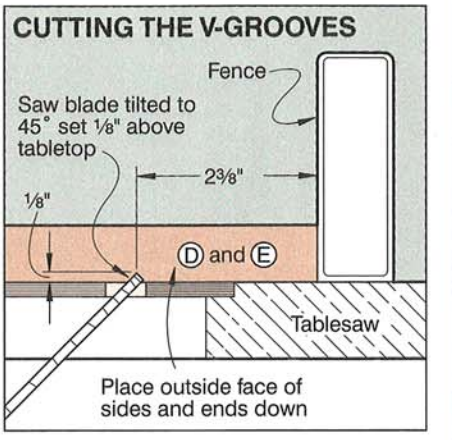
BILL OF MATERIALS

Part		Finished Size* T	W	L	Matl.	Qty.
A	axle	1½"	3"	10"	P	2
B	platform	¾"	10"	15"	P	1
C*	wheel	¾"	9¾" dia.		P	4
D*	end	¾"	4⅞"	9½"	P	2
E*	side	¾"	4⅞"	16"	P	2
F	tongue	⅜"	2"	7"	P	1
G*	trim	¼"	¾"	5⅛"	P	14

*Cut parts marked with an * to final size during construction. Please read all instructions before cutting.
Material key: P—pine
Supplies: 3⁄16" and ½" dowel, #6×1¼" and #6×1½" flathead wood screws, ⅝"×17 brads, 4d finish nails.

CUTTING DIAGRAM





Position the fence so you can make a full bevel-rip along the top edge. Turn the inside face up and place the bottom (narrowest) edge against the fence. Make sure the bevel will angle in the same direction as the line you scribed across the end of the piece in the previous step. Now, bevel-rip the top edge on all four box pieces.

6 Set up your tablesaw as shown on the Step 4 drawing on *page 21*. Place the top edge against the fence as shown *above,* with the *inside* face down. Again, check that the bevel angles the same direction as your scribed line. Bevel-rip the bottom edge on all box pieces.

7 To form the V-groove, set your saw as shown on the Cutting the V-Grooves drawing *above right*. Mark the center on the edge of one box piece, and align it with the blade. Position the fence against the piece and lock it in place. Now, placing the *outside* face down and the top edge against the fence, saw the groove in all box pieces.

8 Glue and nail the box together. (We started the nails in the sides, and applied glue along the edges of the box ends. For easy nailing, we clamped each end in a vise, aligned the edges of the sides on it, and finished driving the nails.) Square the box corners, and clamp if necessary to hold it square until the glue cures.

Order the flowers—you're nearly finished

1 Glue the tongue in the front axle's notch. Next, cut four 2½″ lengths of ½″ dowel. Drill a 3⁄16″ hole through each of them 5⁄16″ from the end. Glue these ½″ dowels in the axle holes, letting them extend 1 5⁄16″ out from the end. Next, center the axles on the underside of the platform where shown on the Exploded View drawing *opposite*. Square them to the platform, and then clamp both in place temporarily. Now, drill and countersink the shank and pilot holes where dimensioned, and then screw both axles to the platform.

2 Center the box on top of the platform. Scribe a line along the inside edges of the box sides. Next, use these lines as a guide to locate two 9⁄64″ shank holes on both sides. (We centered these holes 3⁄8″ outside the lines.) Now, drill these holes from the top down through the platform, angling them inward at 15°. Finally, countersink them on the underside of the platform.

3 Position the box on top of the platform, and temporarily clamp it in place. Now, turn this assembly over, and drive the screws through the holes you just drilled to attach the box to the platform.

4 Rip and crosscut 14—¼×¾×5¾″ trim strips. Miter-cut both ends on 12 of the strips at 15° in the same direction, sawing them to 5⅛″ final length. Glue and nail them to the outside of the box where shown on the Exploded View drawing. Now, square your miter gauge and cut the two remaining trim strips 5″ long, and then glue and nail them in the center of both box ends.

5 Cut four 1¾″ lengths of 3⁄16″ dowel for the axle pins. Sand a slight taper on one end of each for easy insertion in the axle holes.

6 Paint or finish your flower wagon. (We painted ours a flat white, and trimmed it with a blue-gray.) After the finish dries, mount the wheels, and then insert the 3⁄16″ dowel pins through the axle holes. ■

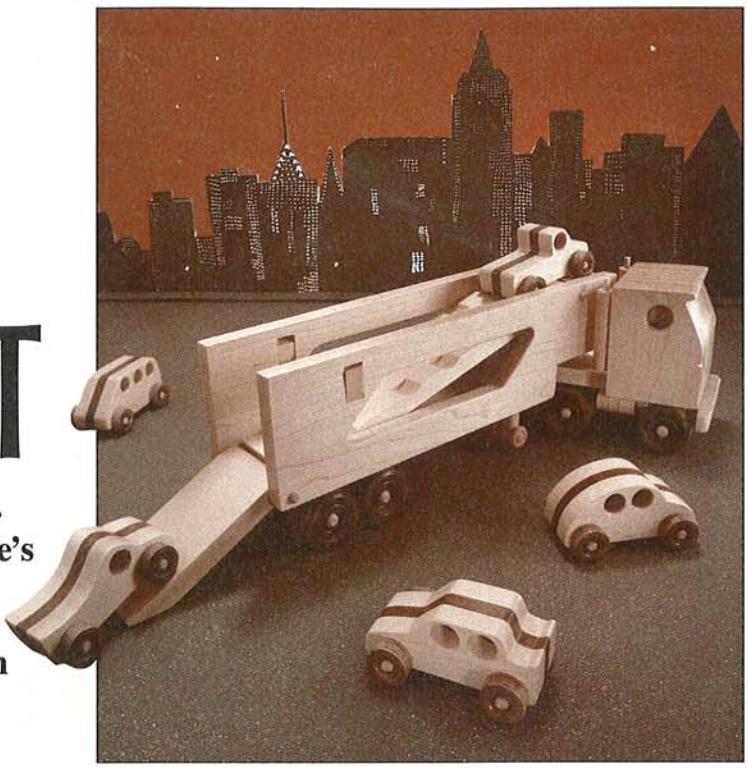
Project design: Tom Lewis, Vista, Calif. Illustrations: Kim Downing; Carson Ode Project builder: Ron Hawbaker

Print this article

A big 10-4, good buddy

FUN-TIME TRANSPORT

Frank Pickett's auto transport, a prize-winning design from WOOD® magazine's Build-A-Toy™ contest, has a magnetism that draws curious hands of all ages. And, look at the ingenious ramp system he's devised for this sturdy toy.



Photograph: Wm. Hopkins

Build a rugged tractor

1 For the cab components, rip and crosscut six pieces of ¾"-thick stock to 3⅞×4¹⁵⁄₁₆" (A, B) and one ½"-thick piece (C) to the same size. (We used maple. See the Cutting diagram on *page 29* for how we cut the parts from our stock.) Laminate four ¾"-thick pieces (A) with the ½"-thick piece (C) sandwiched in the center. See the Tractor Exploded View drawing *opposite*. Align the edges flush, and clamp until the glue dries.

2 Belt-sand the block to 3¾×4⅞". Next, cut a ¾×3¼" notch across the block's bottom where shown on the Cab pattern on *page 29*. Now, glue and clamp an outside blank (B) to both of the block's sides. After the glue dries, remove the clamps and sand all edges flush.

3 Copy the Cab pattern and adhere it to the block's side. (We aligned the pattern bottom and back with the block edges.) Bore a 1"-diameter window hole ¾" deep into both sides, and then round over the window edges. Drill the ⅛×½" headlight holes where dimensioned. Now, bandsaw and sand the cab front to shape. (We sawed wide of the line, and then sanded to the line.)

4 For the chassis (D), measure the notch in the cab block. Cut a ¾"-thick piece to the width and 8¼" long.

5 For the tractor and trailer tandem axles (E), rip and crosscut three pieces of ¾"-thick stock 2" wide and 12" long. Glue and clamp the pieces to make a 2¼×2×12" block. Trim this lamination to 1¾×2". Crosscut two 3⅝"-long blocks from it.

6 For the front axle (F), rip and crosscut two pieces of ¾"-thick stock to 1¾×3¾". Glue and clamp the pieces face-to-face. Crosscut it to the same width as the chassis.

7 Cut the bumper (G) to the same width as the cab. Using the dimensions shown on the Tractor Exploded View drawing, cut a ½×¾" notch on each end. Next, sand a ½" round-over on the ends. Now, finish-sand the bumper, axles, and chassis. Round over all hard edges on the tractor parts.

Note: *Axle pegs from different sources often vary in size. Measure your pegs and drill the hole size they require.*

8 Locate and drill the ¹¹⁄₃₂" holes in the three axle blocks. (We drilled through the two tandem-axle blocks and 1" deep into both ends of the front axle.)

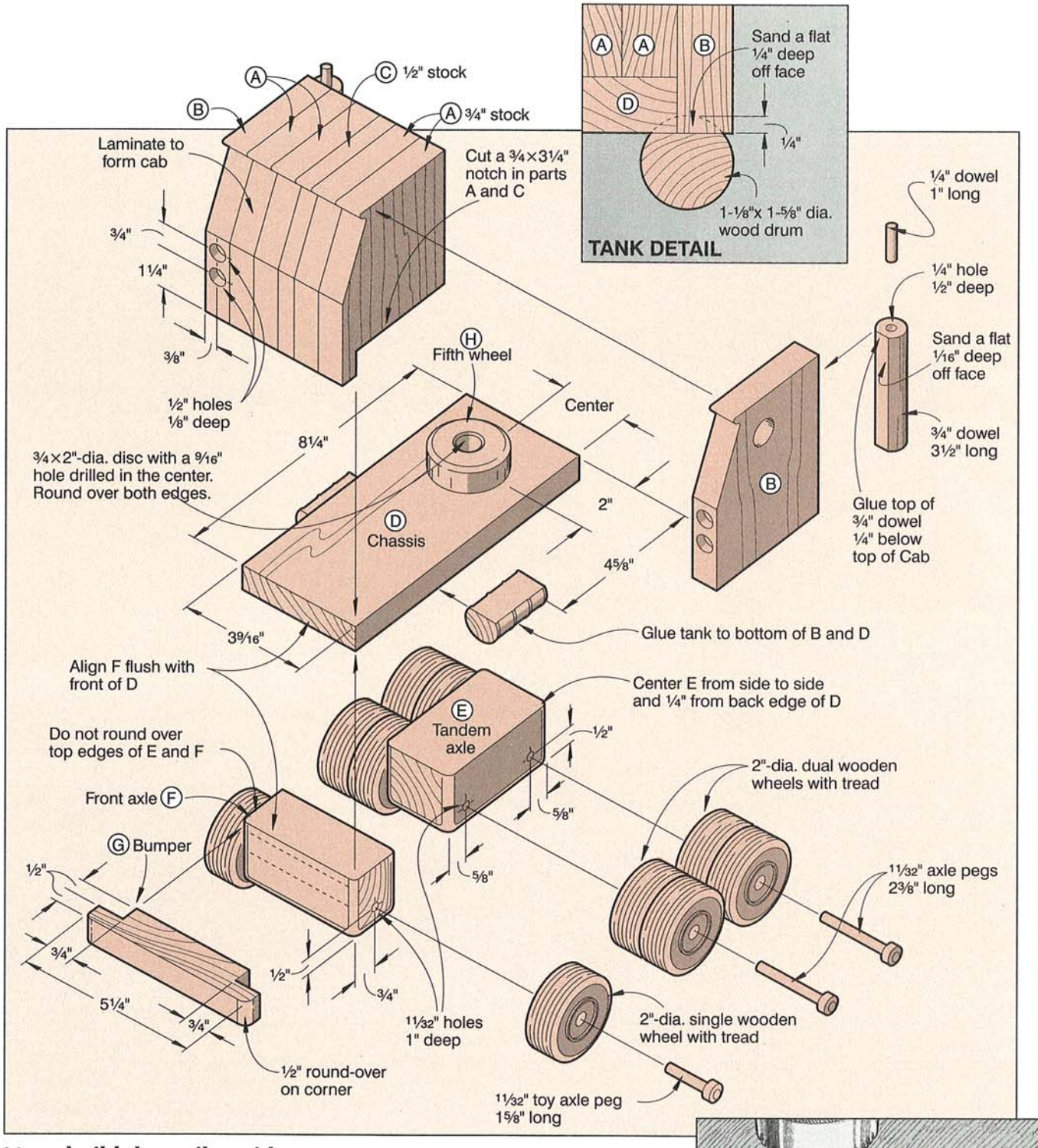
9 For the fifth wheel (H), cut a 2"-diameter disc from ¾"-thick stock. Drill a 9⁄16" hole in the center. Round over both top edges on the disc.

Move the tractor down the assembly line

1 Glue and clamp the chassis in the cab notch. Glue the front axle to the chassis, aligning its edges with the front and side. Square the axle and clamp. Next, glue and clamp the bumper to the front axle, dropping it ¼" below the cab. Glue and clamp a tandem axle and the fifth wheel to the chassis where shown.

2 Flatten one side of two wooden drums by sanding them as shown on the Tank Detail *opposite*. (See our Buying Guide for a mail-order source of the drums, wheels, and axle pegs.) Glue the drums to the underside of the cab and chassis where shown.

3 For the exhaust stacks, crosscut two 3½" lengths of ¾" dowel and two 1" lengths of ¼" dowel. As shown at *right*, bore a ¼" hole into the center of the larger dowels. Sand 1⁄16" from the side of each large dowel so it fits flat against the cab. Glue a ¼" dowel into each hole, and then glue the flattened dowels to the cab.

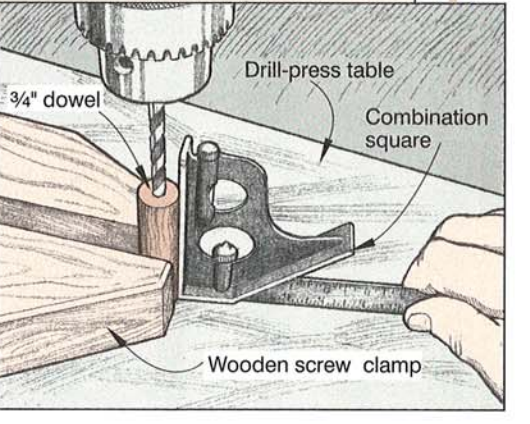


Next, build the trailer with its clever ramp

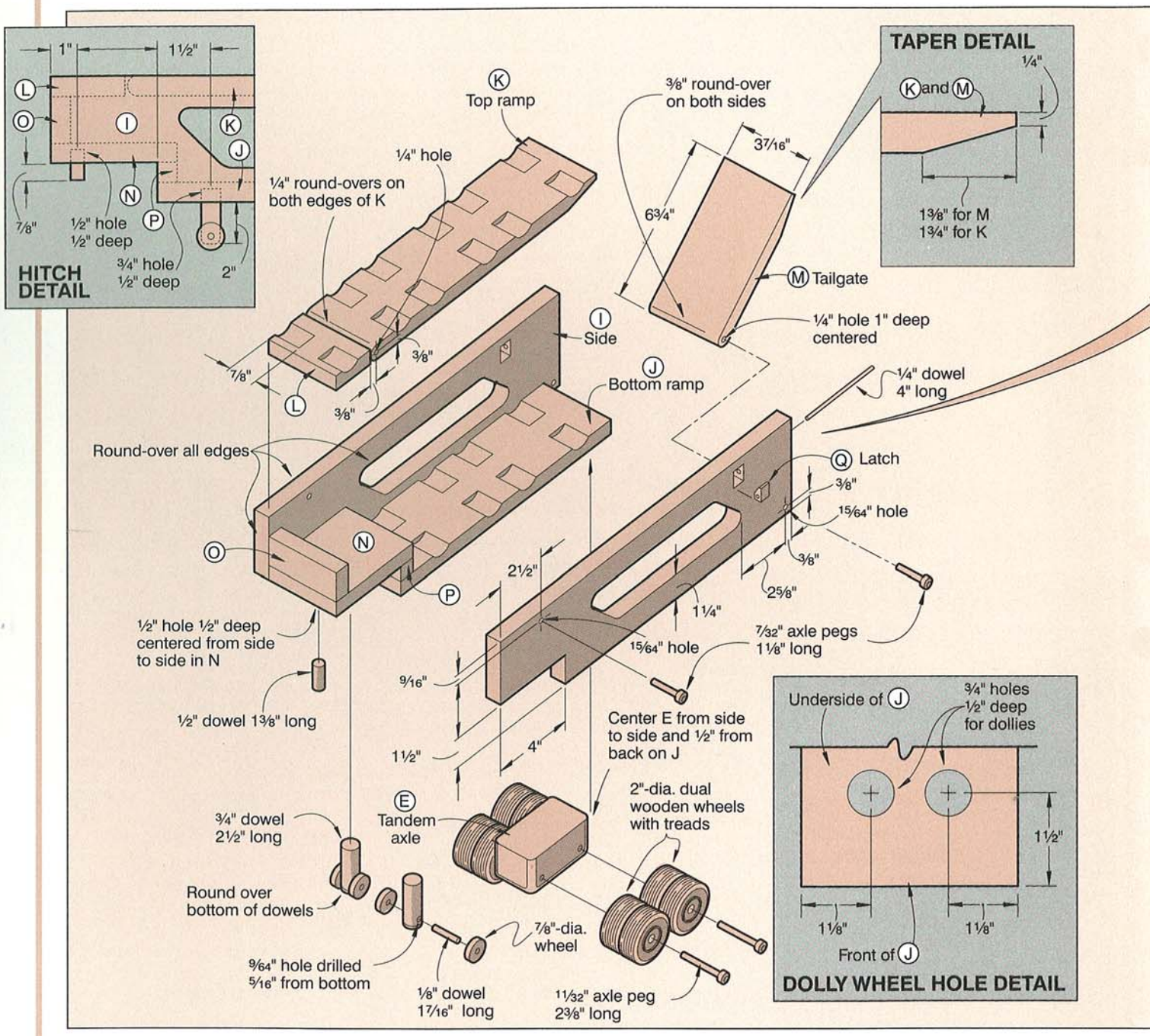
1 From ¾"-thick maple, cut two trailer sides (I) to dimension. Stack them face-to-face, using double-faced tape. Copy the Side pattern on *page 29,* and trace it onto one of the sides. Bore the ¾" corner holes, and then scrollsaw the opening. (We used a Forstner bit to bore the holes and a # 10 blade to saw the opening.) Sand the inside edges.

2 Lay out the ¾×1¼"-rectangular latch opening in the sides where dimensioned on the Latch detail on

Continued



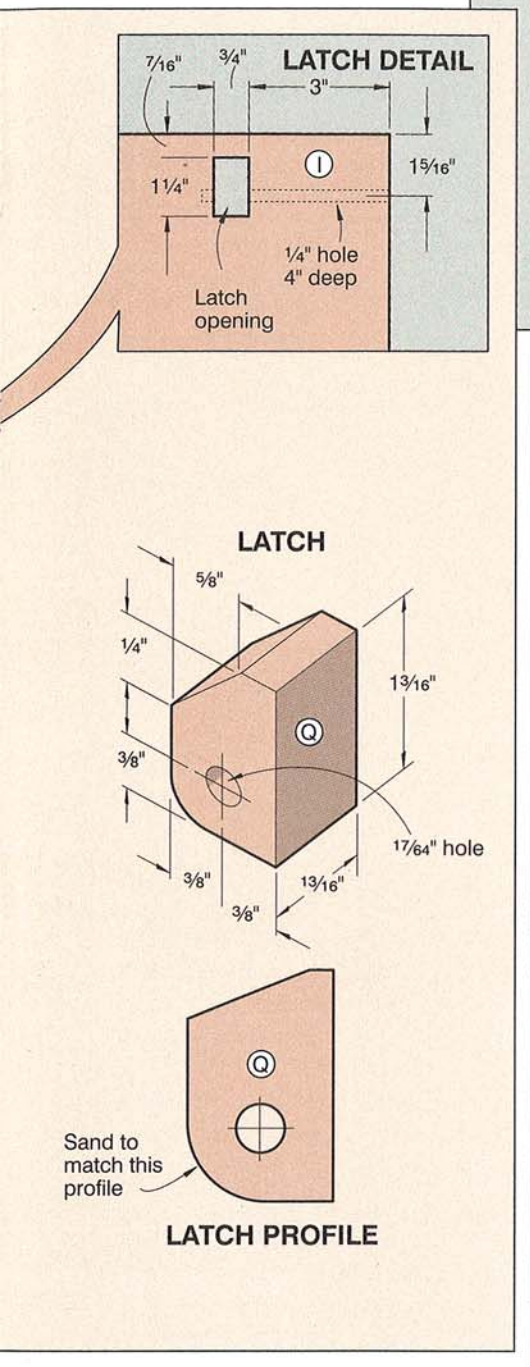
Toy auto transport

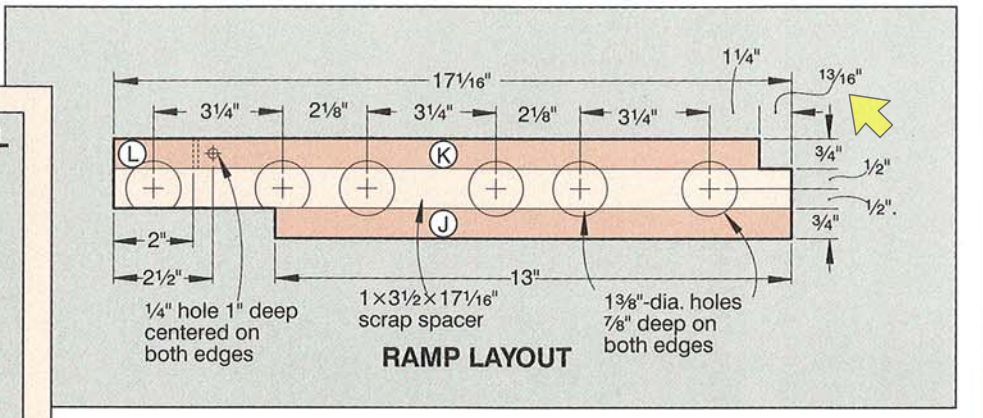


page 27. Scrollsaw it to shape. Lay out and cut away the 1½×4″ notch in the lower front corner of both sides. Drill the 15/64″ holes through the sides.

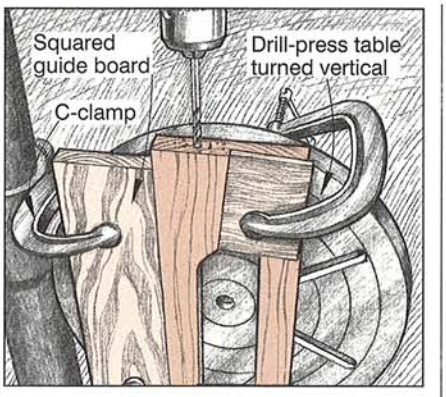
3 Separate the two sides. Next, set up your drill-press table as illustrated *opposite center,* and then drill the two ¼″-diameter holes into the ends where dimensioned on the Latch detail. Drill these holes as deep as you can with your ¼″ twist bit, and then switch to a longer ¼″ spade bit to finish them. (These holes must be drilled straight, so we tested our setup by drilling into scrap first.) Now, round over the edges on both sides.

4 Rip and crosscut the bottom ramp (J) to size. Cut the top ramp and plate (K, L) as one 16⅛″-long piece. From a 2×4 scrap piece, rip and crosscut a 1×3½×17 1/16″ spacer.





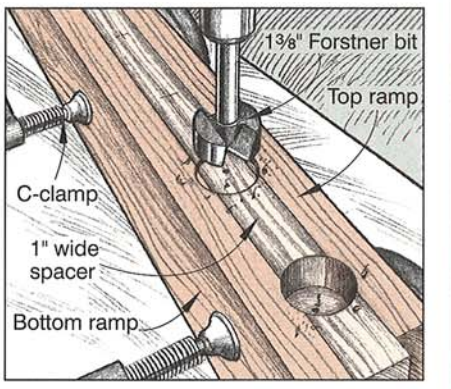
Sandwich it between the two ramp pieces (J, K), aligning them as shown on the Ramp Layout drawing *top right*. Clamp the pieces. Next, using the dimensions on that drawing, lay out the centerpoints for the 1⅜″ holes on *both edges* of the assembly.



5 As shown at *right,* bore the 1⅜″ holes ⅞″ deep into both sides. (We used a Forstner bit.) Switch to a ¼″ bit and drill the 1″-deep hole into both edges of the top ramp (K) where indicated. Remove the clamps and crosscut the 2″-long stationary portion (L) from the top ramp. Now, rip the ramp (K) 3 7/16″ wide.

6 Cut the tailgate (M) to size. Next, lay out the 1⅜″-long bevel on one end of the piece. Bandsaw the bevel, cutting just outside the line. Sand to the line. Lay out the bevel on the end of the top ramp (K), and then saw and sand it to shape. Drill a ¼″ hole 1″ deep into the tailgate sides ⅜″ from the end. Round over the end of the top ramp and tailgate where shown on the Trailer Exploded View drawing *opposite*.

7 Cut trailer parts N, O, and P. Glue, square, and clamp them. Locate and drill a ½″ hole in the underside of N where shown on the Hitch detail and Trailer Exploded View. Glue this assembly to the bottom ramp (J), square, and clamp.

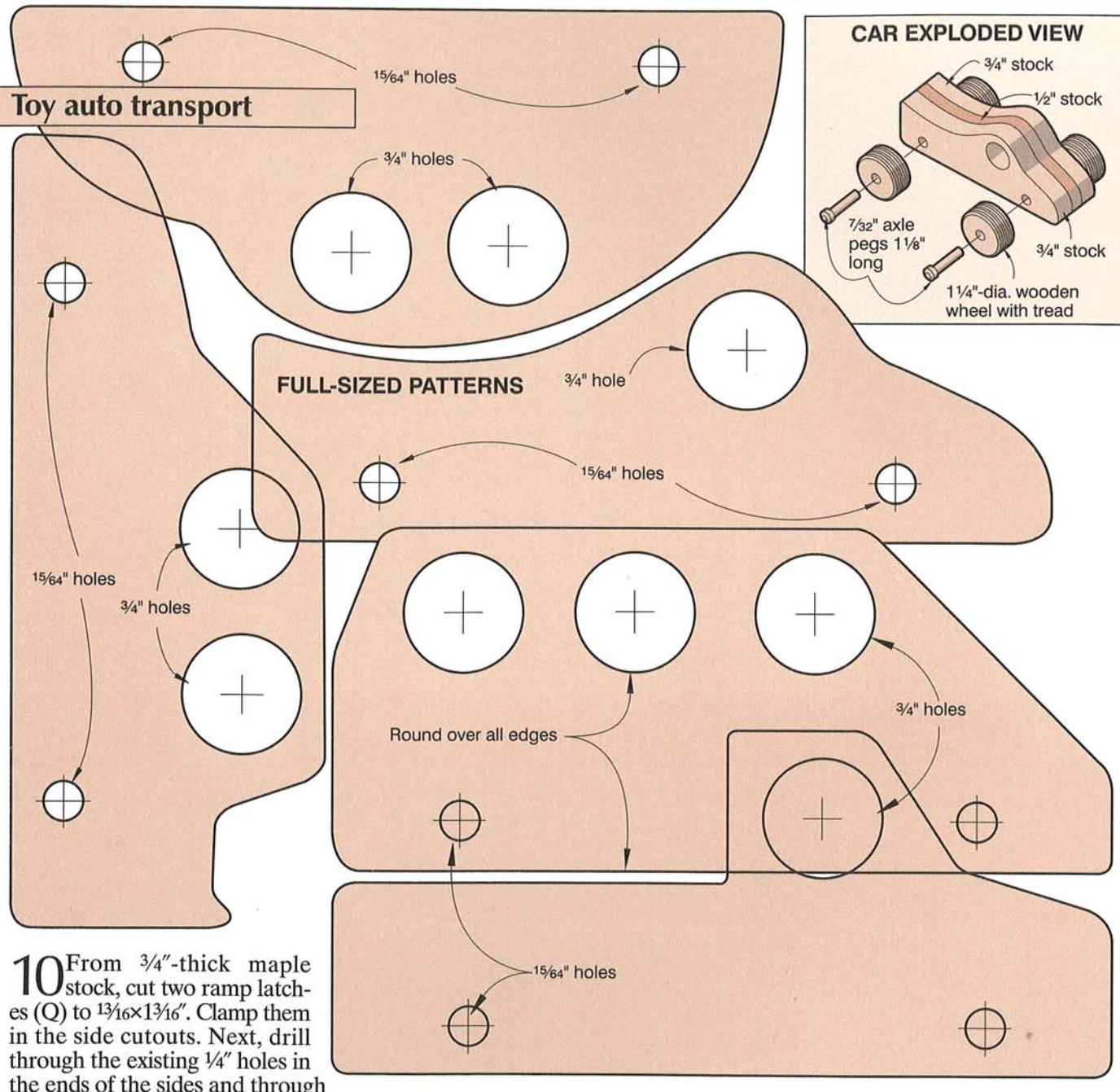


8 Clamp the sides to the bottom assembly, position the top ramp and tailgate, and check their operation. Sand the edges if necessary to increase clearance. Next, glue and clamp the trailer sides (I) to the bottom ramp assembly, aligning along the front and bottom edges. Glue and clamp the top plate (L) in place. Now, drill the two ¾″-diameter holes into the underside of the bottom ramp where shown on the Dolly Wheel Hole detail *opposite*.

9 Glue a tandem axle (E) to the bottom ramp ½″ forward of its back edge. Cut a 1⅜″-long piece of ½″ dowel, and chamfer one end. Then, glue it in the hole in the underside of N. Crosscut two 2½″ lengths of ¾″ dowel, drill a 9/64″ hole through them 5/16″ from the bottom. Sand to round-over the bottoms. Crosscut two 1 7/16″ lengths of ⅛″ dowel. Assemble the dolly wheels as shown on the Trailer Exploded View drawing. Glue the dowels in the holes in the underside of the ramp (J).

Continued

Toy auto transport



10 From 3⁄4″-thick maple stock, cut two ramp latches (Q) to 13⁄16×1 3⁄16″. Clamp them in the side cutouts. Next, drill through the existing 1⁄4″ holes in the ends of the sides and through the latches. Remove the latches, and then enlarge these holes to 17⁄64″. Now, saw and sand them to match the profile shown on the Latch drawings on *page 27*. Finally, crosscut two 4″ lengths of 1⁄4″ dowel, place both latches in the cutouts, and glue the dowels in the holes. Don't glue the latches—you want them to move.

A transport isn't complete without its load of cars

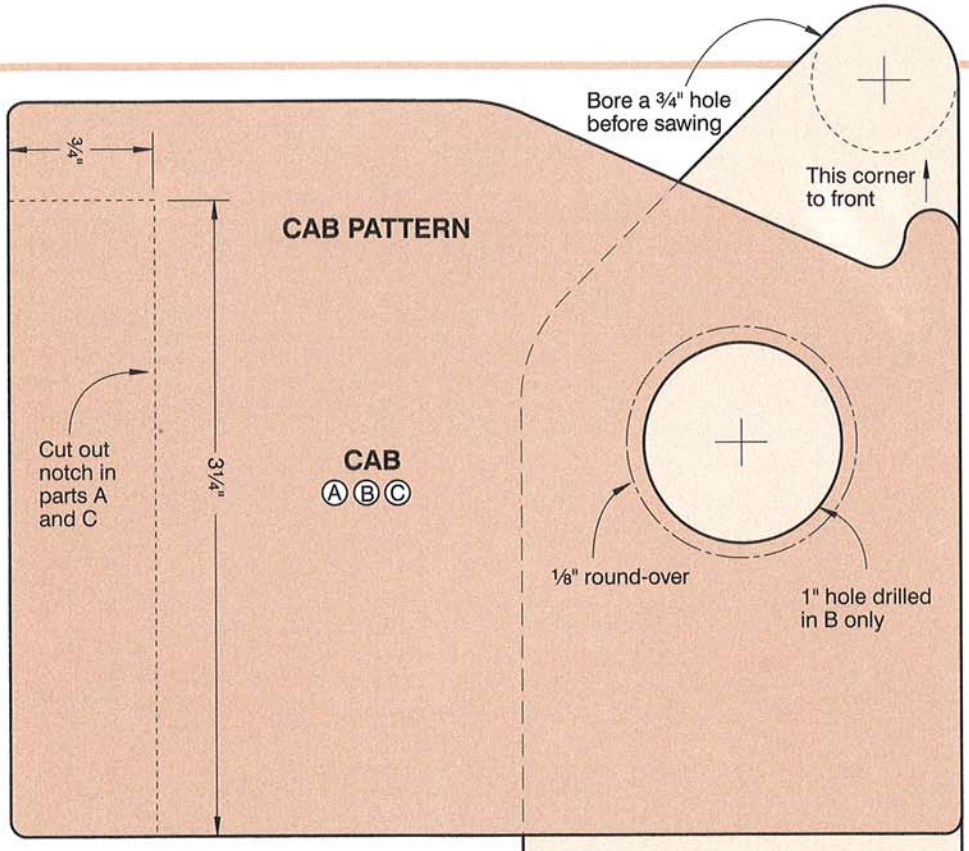
1 To make up the five cars, first rip and crosscut 10—3⁄4×3×6″ maple pieces. Next, rip and crosscut five pieces of 1⁄2″-thick walnut stock to 3×6″. Now, glue up five blocks, sandwiching a walnut strip between two maple pieces. Align the edges and then clamp each block. After the glue dries, remove the clamps and sand the bottom of each block flush.

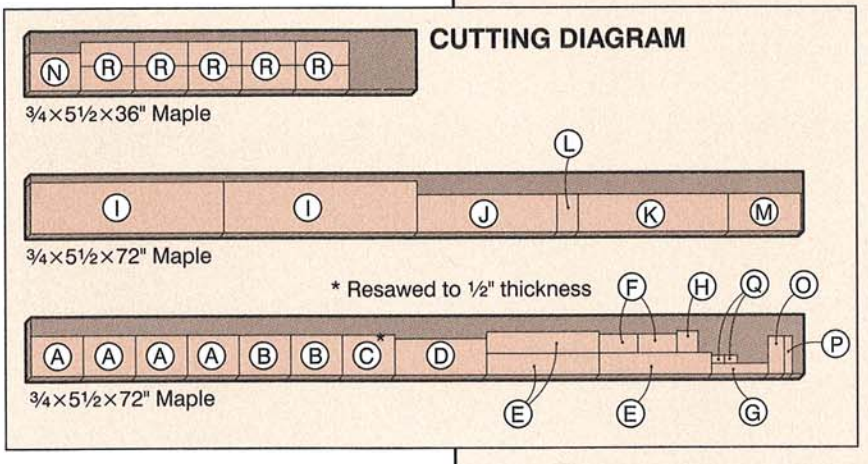
2 Make copies of the full-sized Car patterns *above*. (For convience, we photocopied ours. Note that parts of several cars overlap areas on adjacent car patterns.) Cut out the patterns and adhere them to the blocks. (We aligned the bottom of the patterns with the bottom edge of each block.) Drill the 15⁄64″ axle holes where marked through the blocks. Bore the 3⁄4″ window holes through the blocks.

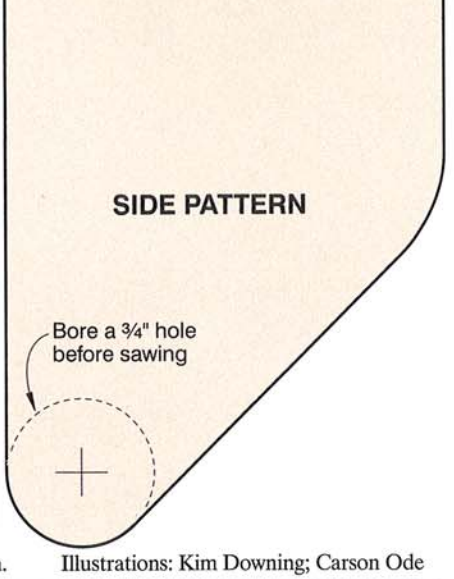
3 Bandsaw the cars to shape. (We used a 1⁄8″-wide blade.) Round over the edges of the windows and cars. Finish-sand the cars.

The last steps—finish and assemble the trailer and cars

1 Finish-sand any parts needing touch-up. Next, apply the finish







BILL OF MATERIALS

Part		Finished Size* T	W	L	Matl.	Qty.
Tractor						
A*	cab	¾"	3¾"	4⅞"	M	4
B*	cab	¾"	3¾"	4⅞"	M	2
C*	cab	½"	3¾"	4⅞"	M	1
D*	chassis	¾"	3⁹⁄₁₆"	8¼"	M	1
E*	axle	1¾"	2"	3⁹⁄₁₆"	M	2
F*	axle	1½"	1¾"	3⁹⁄₁₆"	M	1
G	bumper	¾"	1"	5¼"	M	1
H	5th wheel	¾"	2" dia.		M	1
Trailer						
I	side	¾"	4¾"	18"	M	2
J*	ramp	¾"	3½"	13"	M	1
K	ramp	¾"	3⁷⁄₁₆"	14"	M	1
L	top plate	¾"	3½"	2"	M	1
M	tailgate	¾"	3⁷⁄₁₆"	6¾"	M	1
N	plate	¾"	3½"	4¾"	M	1
O	end	¾"	1½"	3½"	M	1
P	lift	¾"	¾"	3½"	M	1
Q	latch	¾"	1³⁄₁₆"	1³⁄₁₆"	M	2
R*	cars	1⅞"	2¼"	5"	L	5

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

Material key: M—maple; L—maple-and-walnut

Supplies: ⅛", ¼", ½", and ¾" dowels, finish

Buying Guide: Auto transport kit includes 8—2"-dia. dual wooden wheels with grooved tread, 2—2"-dia. single wooden wheels with grooved tread, 20—1¼"-dia. wooden wheels with grooved tread, 4—⅞"-dia. wooden wheels, 24—7⁄32×1⅛" axle pegs, 2—11⁄32×1⅝" axle pegs, 8—11⁄32×2⅜" axle pegs, and 2 oil drums. Ask for kit no. 3434. The price is $14.95 per kit, plus $4.95 per order for shipping. (Minn. residents add $0.98 sales tax per order.) Order from Meisel Hardware Specialties, P.O. Box 70WEW, Mound, MN 55364-0070.

of your choice. (We stained the wheels with an oil-based walnut stain. We left the remaining parts unstained, and applied one coat of sanding sealer and two coats of semigloss polyurethane. We lightly sanded each part between coats with 320-grit sandpaper to level the finish.)

2 Assemble the single and dual wheels to the tractor and trailer where shown on the Tractor Exploded View drawing. Allow 1⁄16" clearance between the wheels and axle blocks so the wheels turn freely.

3 Mount the wheels to the cars as shown on the Car Exploded View drawing *opposite top right*. ■

Project design: Frank Pickett, Johnson City, Tenn. Illustrations: Kim Downing; Carson Ode Project builder: Don Wipperman

Flower wagon

Continued from page 23