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Early American Dresser



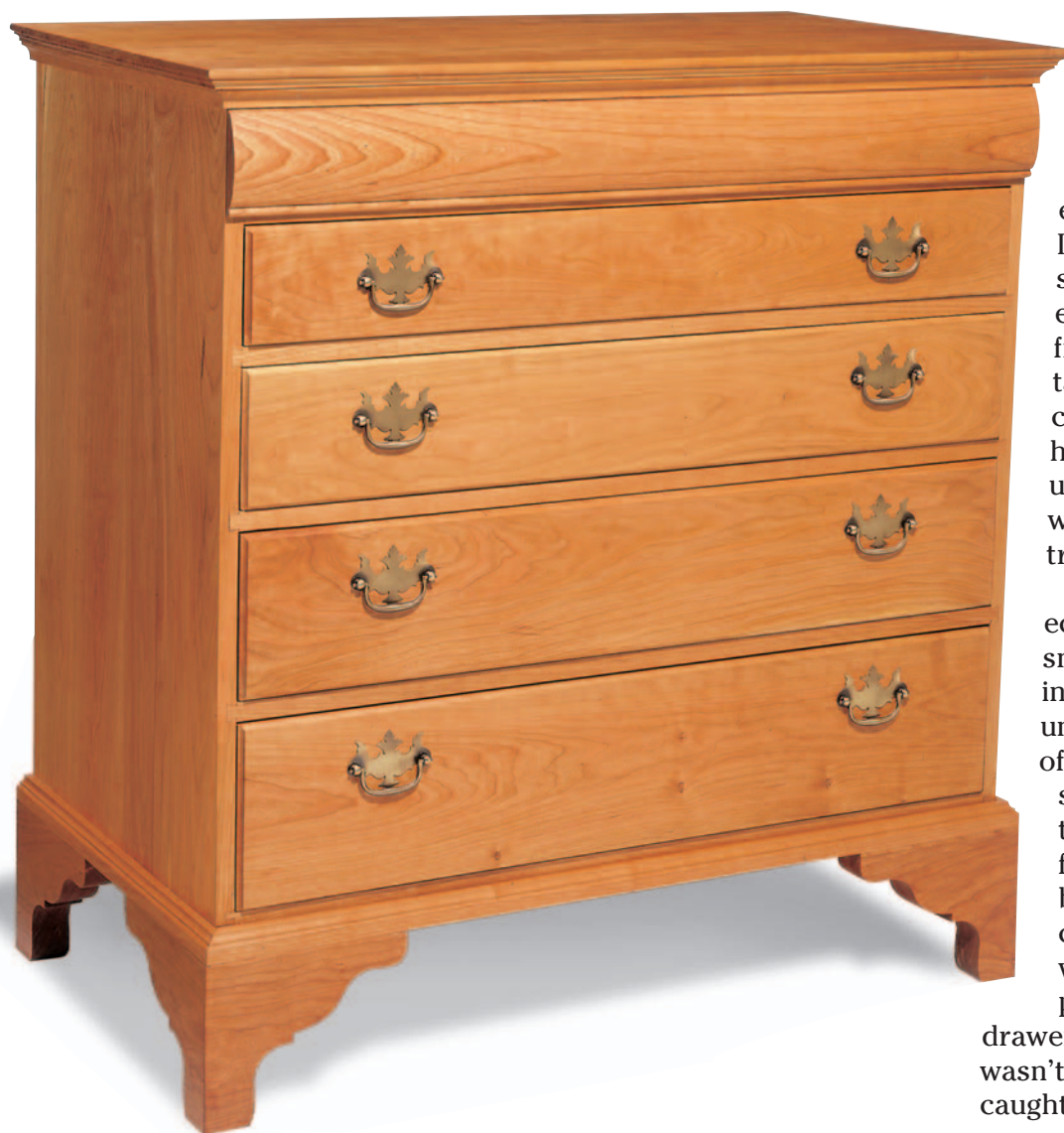
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Early American Dresser

Walk a mile in the shoes of a colonial cabinetmaker and you'll learn a lot about how an heirloom is made.



Building this dresser may mark a number of firsts for you. It may be the first time you'll build early American furniture. It may be your first large solid-wood casework project. And it may be your first shot at cutting dovetails by hand, if you so choose. But jumping these hurdles will surely open up creative possibilities while helping you build a truly classic dresser.

Inspiration for this project came when we visited a small antique shop. Just inside the front door sat an unusual old dresser made of clear pine with an orange shellac finish. It had all the telltale signs of age — fine joinery, nicked feet, a beautiful patina and a crazed finish — although we could tell by all the plugged pilot holes in the drawer fronts that the hardware wasn't original. What really caught our eye was the curved

Planning Ahead: The Early American Dresser Project

Set aside about 60 hours for building and finishing the dresser. You'll need a table saw, router and router table, a drill press and a bandsaw or jigsaw. The recommended finish for this project is Watco Natural Oil.

- 40 board feet of $\frac{3}{4}$ " cherry
- 6 board feet of $1\frac{3}{4}$ " cherry
- 38 board feet of $\frac{3}{4}$ " poplar
- $1\frac{1}{4}$ sheets of $\frac{3}{8}$ " birch plywood
- Eight early American drawer pulls

top molding, which turned out to be the front of a drawer. After doing a little research we found that hidden drawers like this one were used for storing documents, although it's hard to imagine how the drawer remained secret for very long. Working from some basic measurements and a photo of the dresser, we made some detailed drawings and set out to construct this dresser just like the original antique.



Figure 1: A T-square is ideal for routing the dovetail grooves. Make the jig using an extra wide piece of 1/4" plywood for the base, then trim it to size with your router and a 1/4" straight bit. Now you can align the edge of the base with your layouts and rout the grooves using a dovetail bit.

Selecting Wood and Gluing Panels

Country craftsmen traditionally chose local woods for their projects, like cherry and pine, and they left the imported woods to urban cabinetmakers who had rich customers with an appetite for fancier furniture. We chose cherry because it's both a handsome species and also because it's often less expensive than clear pine, another good choice for furni-

ture like this. For the hidden parts of the dresser, like the drawer sides and backs and the internal frames, we chose poplar. The drawer bottoms and the dresser's back panel are made of birch plywood.

Set aside your best cherry boards for the drawer fronts (pieces 18, 21, 24, 27 and 30) and use your next best stock for the top and sides (pieces 1

and 2). Joint and glue your lumber for the top and side panels and, after the glue sets up, remove the squeeze-out with a scraper or chisel. Later, plane the panels flat and sand them to 120 grit.

Cut the side panels to size and lay out the sliding dovetail grooves, the dados and the rabbets, as shown in the *Side Panel Elevation* found in the *Technical Drawings* on page 107. Cut the dados and rabbets with your table saw and the appropriately sized dado blades, then build a jig like the one shown in *Figure 1* for routing the sliding dovetail grooves. Chuck a dovetail bit in your router and clamp the jig next to a joint layout on a panel. Set

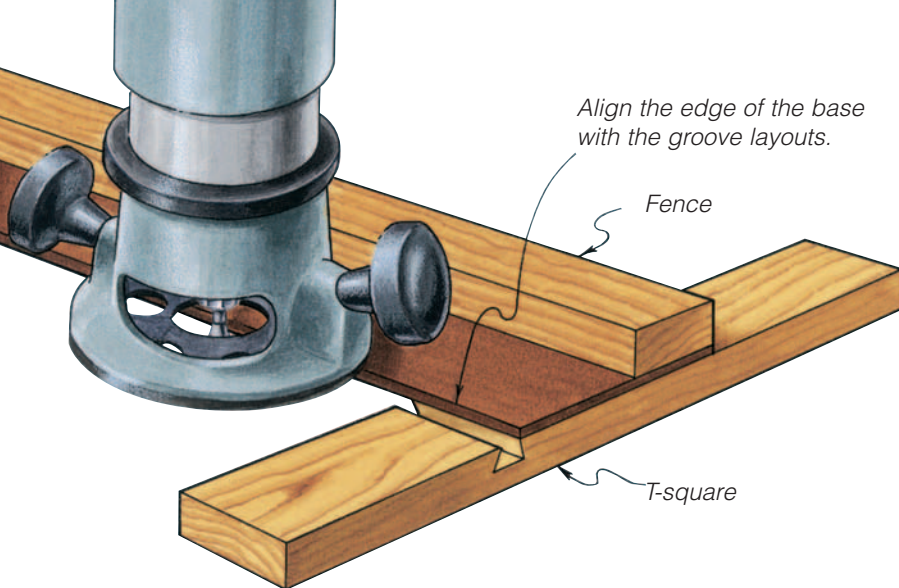
Quick Tip

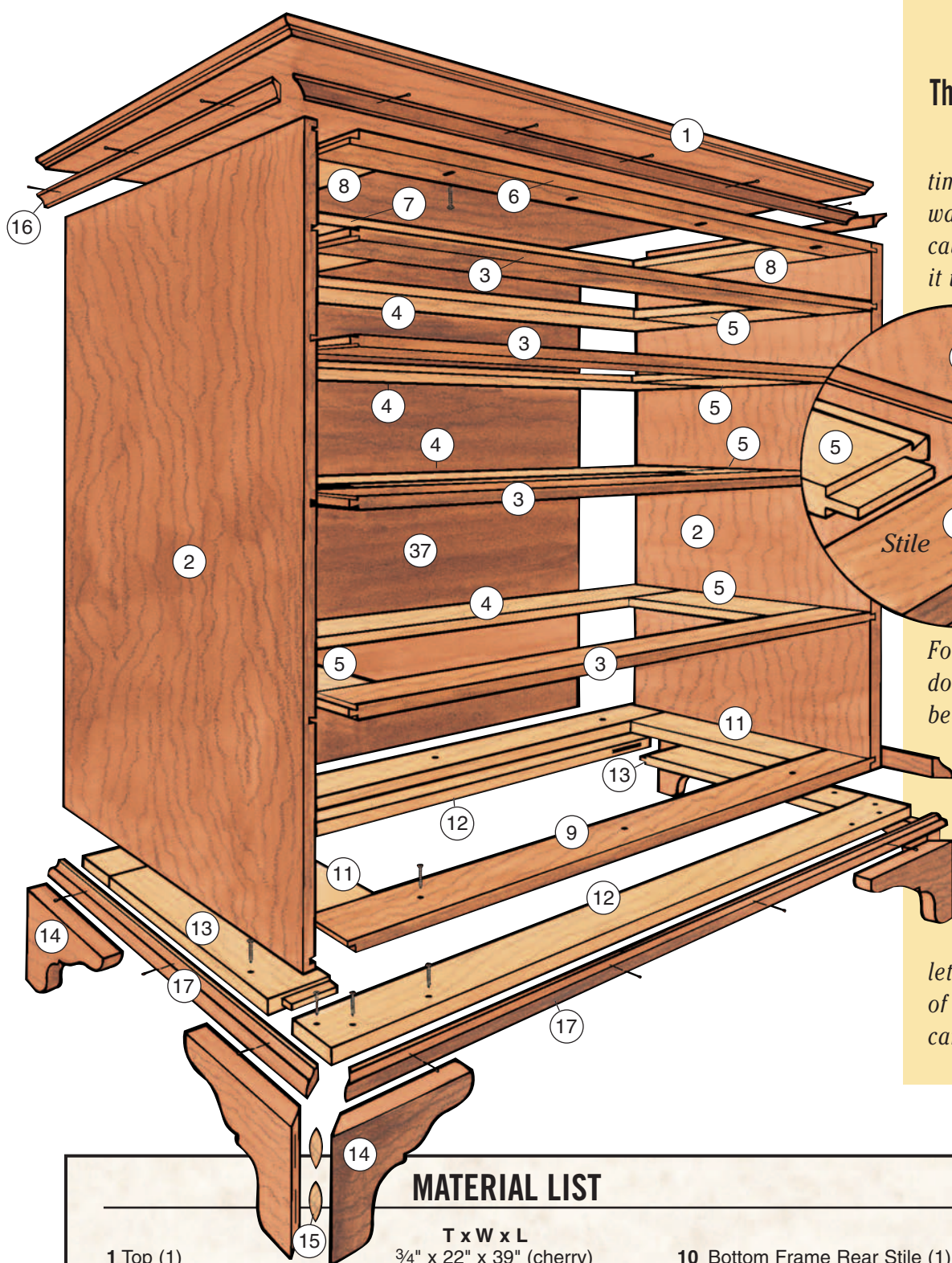
Blemish Control

If you use wood filler to cover nail holes on prefinished wood, sanding away the excess filler can blemish the surrounding finish. One way to eliminate the problem is to place a short piece of masking tape down where you plan to nail. Hammer and set the nail through the tape. Apply the wood filler over the tape. When you peel off the tape, a perfect round spot is left and there's little or no sanding to do. It's a great technique to use with prefinished trim as well.



Figure 2: Rout tails on the rails with a dovetail bit and a router table, making sure the fit is just loose enough to slide them into the grooves in the sides.





The Sliding Dovetail

In colonial times, wood movement was a big issue with cabinetmakers, just like it is today.

For centuries, sliding dovetail joints have been used to hold solid wood-structures together while still allowing wood panels to shrink or swell at will. The key is to leave the rails unglued and let the tails on the ends of the stiles hold the carcass together.

MATERIAL LIST

1 Top (1)

2 Sides (2)

3 Middle Frame Front Stiles (4)

4 Middle Frame Rear Stiles (4)

5 Middle Frame Rails (8)

6 Top Frame Front Stile (1)

7 Top Frame Rear Stile (1)

8 Top Frame Rails (2)

9 Bottom Frame Front Stile (1)

T x W x L
 $\frac{3}{4}$ " x 22" x 39" (cherry)

$\frac{3}{4}$ " x 20 $\frac{1}{2}$ " x 32" (cherry)

$\frac{3}{4}$ " x 27 $\frac{7}{8}$ " x 35 $\frac{7}{8}$ " (cherry)

$\frac{3}{4}$ " x 27 $\frac{7}{8}$ " x 35 $\frac{7}{8}$ " (poplar)

$\frac{3}{4}$ " x 3 $\frac{3}{8}$ " x 15 $\frac{5}{8}$ " (poplar)

$\frac{3}{4}$ " x 27 $\frac{7}{8}$ " x 35 $\frac{7}{8}$ " (cherry)

$\frac{3}{4}$ " x 27 $\frac{7}{8}$ " x 35 $\frac{7}{8}$ " (poplar)

$\frac{3}{4}$ " x 3 $\frac{3}{8}$ " x 15 $\frac{5}{8}$ " (poplar)

$\frac{3}{4}$ " x 27 $\frac{7}{8}$ " x 35 $\frac{7}{8}$ " (cherry)

10 Bottom Frame Rear Stile (1)

11 Bottom Frame Rails (2)

12 Base Frame Stiles (2)

13 Base Frame Rails (2)

14 Feet (6)

15 Splines/Biscuits (2/4)

16 Cornice Molding (2)

17 Base Molding (2)

18 Top Drawer Face (1)

T x W x L

$\frac{3}{4}$ " x 27 $\frac{7}{8}$ " x 35 $\frac{7}{8}$ " (poplar)

$\frac{3}{4}$ " x 3 $\frac{3}{8}$ " x 15 $\frac{5}{8}$ " (poplar)

$\frac{3}{4}$ " x 27 $\frac{7}{8}$ " x 36 $\frac{5}{8}$ " (poplar)

$\frac{3}{4}$ " x 27 $\frac{7}{8}$ " x 15 $\frac{5}{8}$ " (poplar)

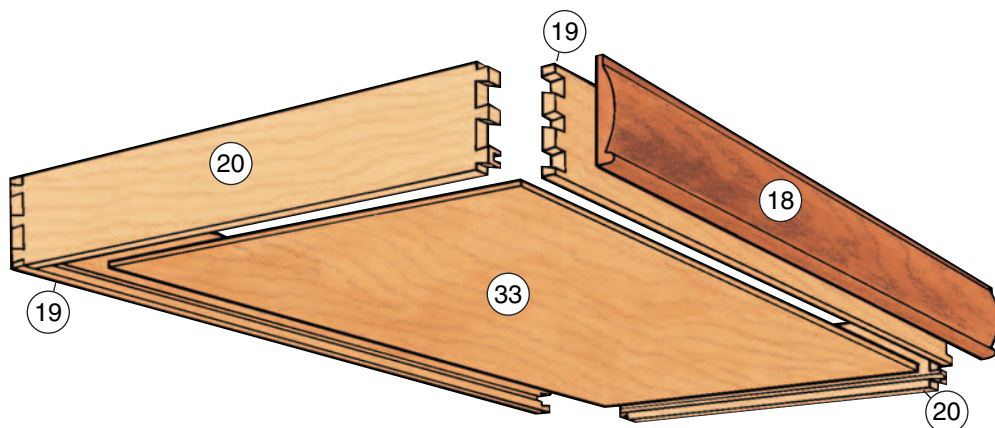
1 $\frac{3}{4}$ " x 6 $\frac{3}{4}$ " x 8 $\frac{1}{2}$ " (cherry)

$\frac{1}{4}$ " splines or #20 biscuits

$\frac{3}{4}$ " x 1" x 48" (cherry)

$\frac{3}{4}$ " x 1" x 48" (cherry)

$\frac{3}{4}$ " x 4" x 36 $\frac{5}{8}$ " (cherry)



the depth of cut to $\frac{3}{8}$ " and rout the groove. Repeat this procedure for each of the sliding dovetail grooves.

Building the Carcass

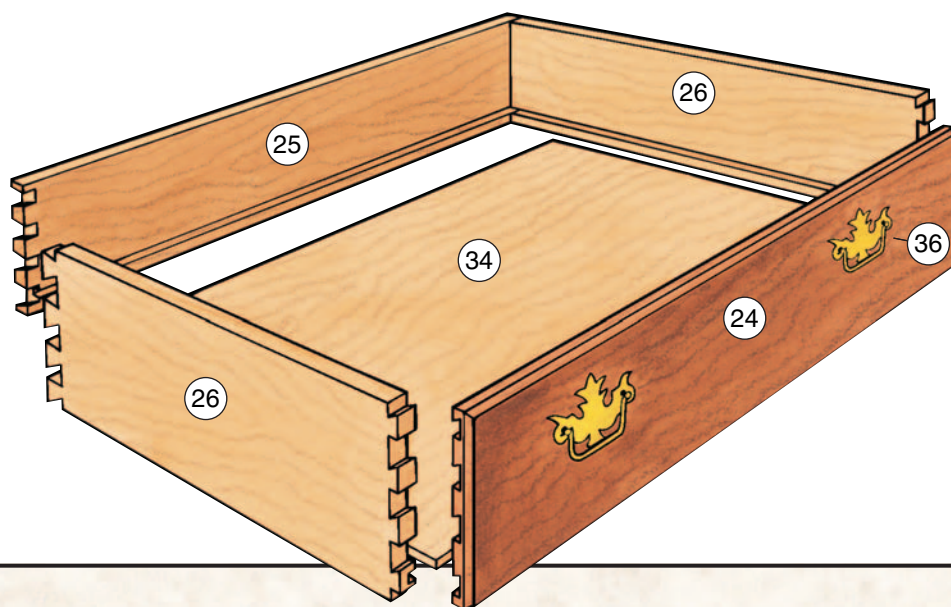
Rip cherry and poplar stock for the middle frames, the bottom frame, the base frame and the top frame (pieces 3 through

13). After cutting the pieces to length, set up your router table with the same dovetail bit you just used for the grooves. Clamp a fence near the bit and cut a dovetail on the edge of some poplar scrap wood to fit in the side panel grooves (see *Figure 2*). You want a snug fit, just tight enough to require a

few taps with a mallet before it slides into place. Adjust your set-up until you get the fit just right, then rout tails on one edge of the rails for the middle frames (see the *Sliding Dovetail Groove Detail* on page 104). Once you've finished routing tails on the rails, cut a tail on the end of another scrap piece of poplar and test its fit in a



Figure 3: Clamp a set-up block to your fence to align the shoulder of your tenon layout with the $\frac{1}{2}$ " dado blade. Make two passes to cut each cheek.



Dovetail Joint Detail

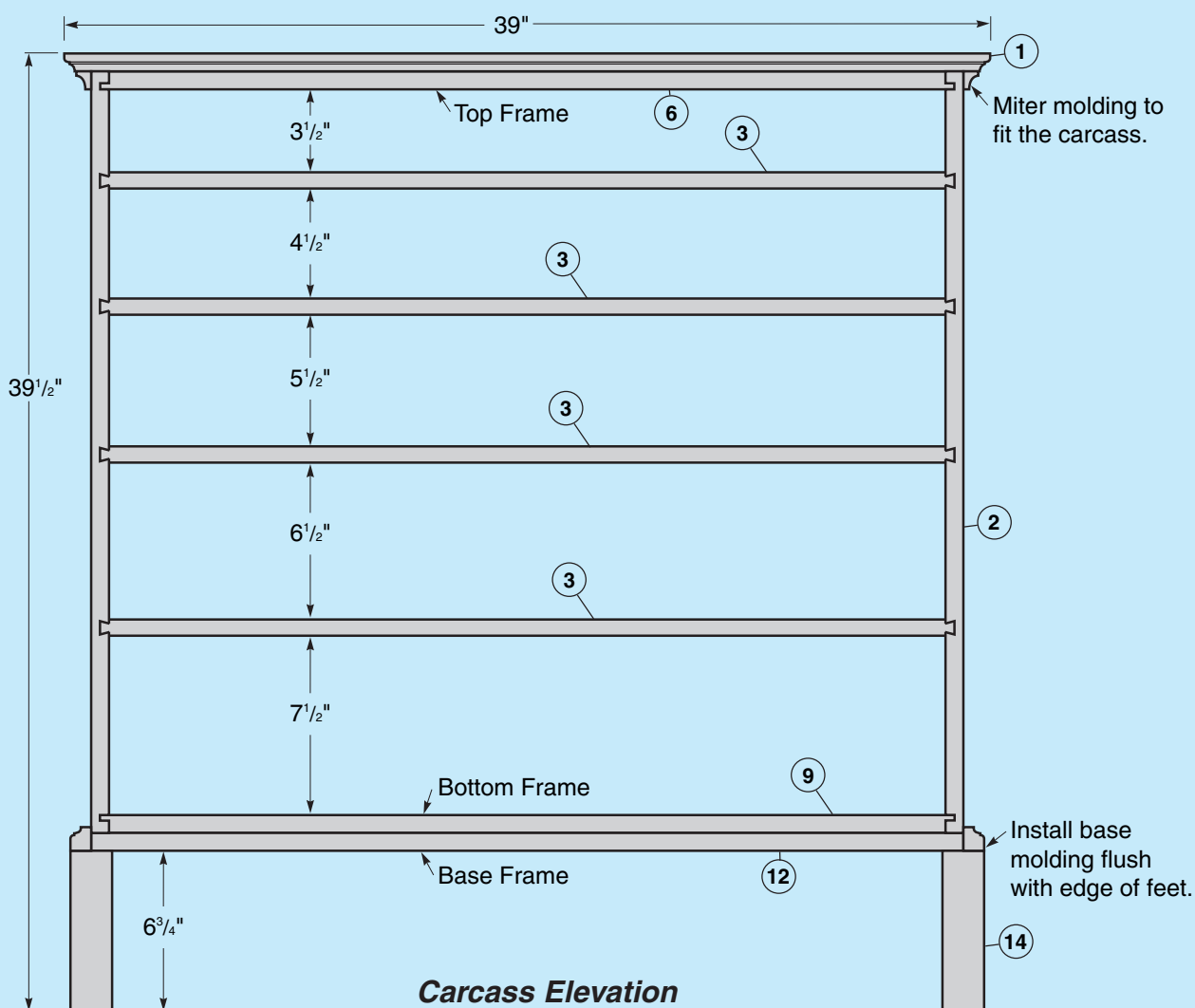
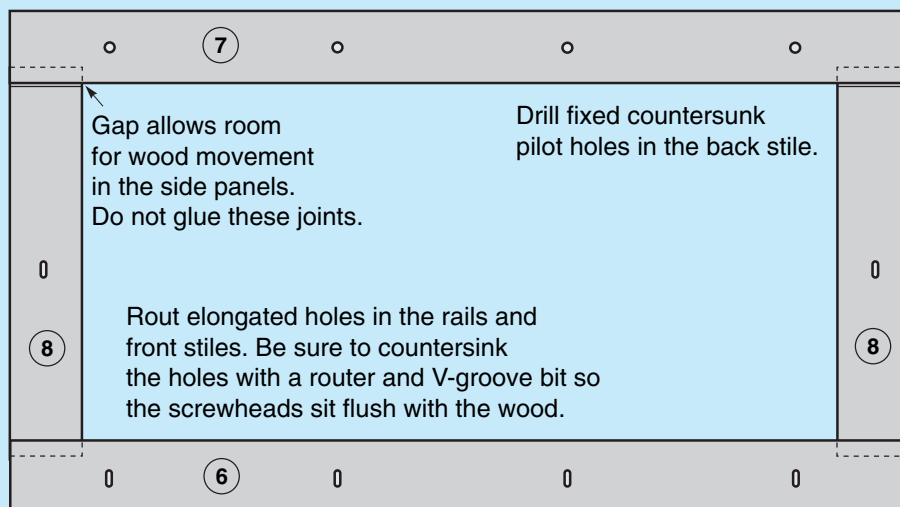
Use this layout as a guide, varying the number, spacing and size of the dovetails on each drawer. Begin and end each joint with a half pin.

Cut $\frac{3}{8}$ " x $\frac{3}{8}$ " grooves for the bottoms, making sure they pass through a tail.

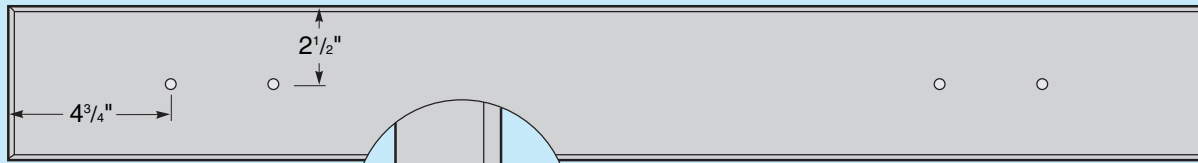
	T x W x L
19 Top Drawer Front/Back (2)	$\frac{3}{4}$ " x $3\frac{1}{2}$ " x $35\frac{1}{8}$ " (poplar)
20 Top Drawer Sides (2)	$\frac{3}{4}$ " x $3\frac{1}{2}$ " x $18\frac{1}{2}$ " (poplar)
21 #2 Drawer Front (1)	$\frac{3}{4}$ " x $4\frac{1}{2}$ " x $35\frac{1}{8}$ " (cherry)
22 #2 Drawer Back (1)	$\frac{3}{4}$ " x $4\frac{1}{2}$ " x $35\frac{1}{8}$ " (poplar)
23 #2 Drawer Sides (2)	$\frac{3}{4}$ " x $4\frac{1}{2}$ " x $18\frac{1}{2}$ " (poplar)
24 #3 Drawer Front (1)	$\frac{3}{4}$ " x $5\frac{1}{2}$ " x $35\frac{1}{8}$ " (cherry)
25 #3 Drawer Back (1)	$\frac{3}{4}$ " x $5\frac{1}{2}$ " x $35\frac{1}{8}$ " (poplar)
26 #3 Drawer Sides (2)	$\frac{3}{4}$ " x $5\frac{1}{2}$ " x $18\frac{1}{2}$ " (poplar)
27 #4 Drawer Front (1)	$\frac{3}{4}$ " x $6\frac{1}{2}$ " x $35\frac{1}{8}$ " (cherry)

	T x W x L
28 #4 Drawer Back (1)	$\frac{3}{4}$ " x $6\frac{1}{2}$ " x $35\frac{1}{8}$ " (poplar)
29 #4 Drawer Sides (2)	$\frac{3}{4}$ " x $6\frac{1}{2}$ " x $18\frac{1}{2}$ " (poplar)
30 #5 Drawer Front (1)	$\frac{3}{4}$ " x $7\frac{1}{2}$ " x $35\frac{1}{8}$ " (cherry)
31 #5 Drawer Back (1)	$\frac{3}{4}$ " x $7\frac{1}{2}$ " x $35\frac{1}{8}$ " (poplar)
32 #5 Drawer Sides (2)	$\frac{3}{4}$ " x $7\frac{1}{2}$ " x $18\frac{1}{2}$ " (poplar)
33 Top Drawer Bottom (1)	$\frac{3}{8}$ " x $34\frac{1}{4}$ " x $17\frac{7}{8}$ " (plywood)
34 Drawer Bottoms (4)	$\frac{3}{8}$ " x $34\frac{1}{4}$ " x $18"$ (plywood)
35 Drawer Stops (10)	$\frac{3}{4}$ " x $\frac{3}{4}$ " x $2"$ (poplar)
36 Drawer Pulls (8)	Antique brass
37 Back (1)	$\frac{3}{8}$ " x $36"$ x $33"$ (plywood)

Top Frame Elevation

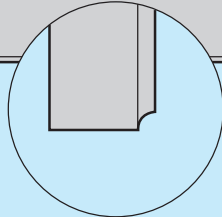


Drawer Elevation

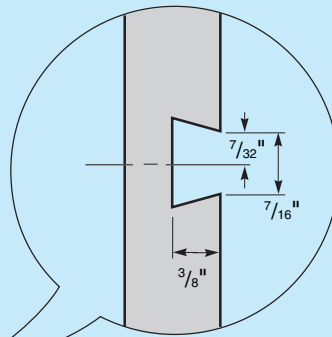


Install all drawer handles at the same locations.

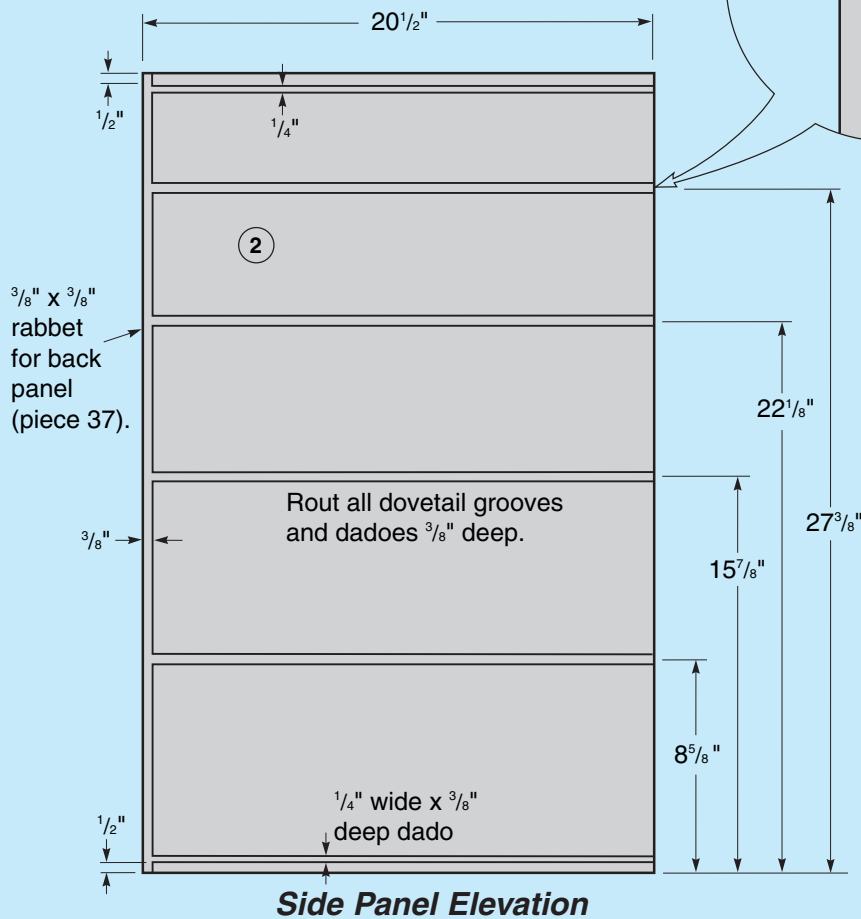
Drawer Front Cove Detail



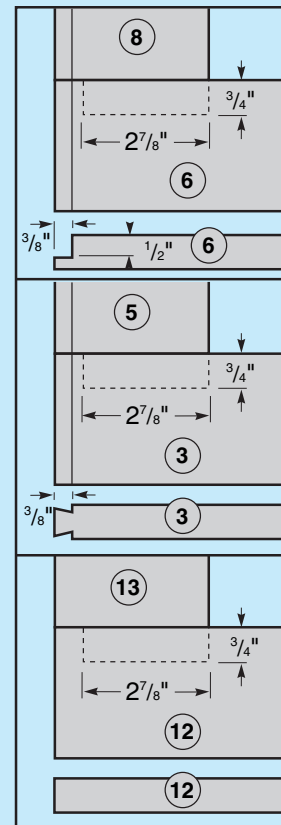
Sliding Dovetail Groove Detail



Note: All dovetail locations shown on the *Side Panel Elevation* indicate the center of the grooves. Lay out the center lines, then use the detail at left to lay out the full width of each groove. Use your router and the jig shown on page 103 to make two passes for each groove with a 1/2" diameter, 14° dovetail bit.



Side Panel Elevation



Top and Bottom Frame Elevation

Middle Frame Elevation

Base Frame Elevation

Frame Elevations

groove to ensure a good fit. If necessary, readjust the router table set-up to get a good fit on a test piece, then rout the ends of the rear middle frame stiles. Next, test cut the end of a cherry scrap piece (the fit might change again) and rout the front middle frame stiles.

Top Edging



Cornice Molding



Top Drawer Face

Cut on your table saw.



Shape with a block plane.

Top Drawer Face Detail

Make a saw kerf, then shape with a rabbet plane.

Shape with a rabbet plane.

Base Molding



Foot Bracket

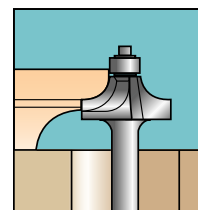
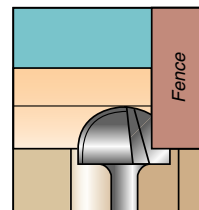


Figure 4: After mitering the front feet, cut slots with a biscuit joiner and join the pieces with biscuits. If you don't have a biscuit joiner, use splines.

Since there isn't room for well-supported sliding dovetail joints at the ends of the side panels, join the top and bottom frames to the sides with tongues and dados. Install a $\frac{3}{8}$ " dado blade in your table saw and raise the blade $\frac{1}{2}$ " to form the $\frac{1}{4}$ " tongues on the ends of the stiles and one edge of each rail.

Now lay out mortises on all the frame stiles for the rail to stile joints, as shown in the *Frame Elevations* on the *Technical Drawings*. Use a $\frac{3}{16}$ " drill bit and your drill press to rough out the mortises, then clean them up with a chisel. Next, form tenons on the ends of the rails to fit the mortises, using a table saw and a $\frac{1}{2}$ " dado blade (see *Figure 3*).

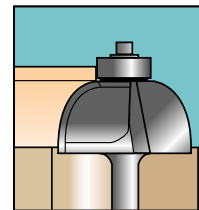
Assembling the carcass will go a lot more smoothly if you recruit an extra pair of hands for the task, and we recommend installing one frame at a time to keep the process manageable. Start by spreading glue in the first 3" of one set of dovetail grooves in the side panels, then slip a front stile into place. Next, set the carcass on its face, brush some glue into the front stile mortises and slip the rails into the dovetail grooves from the back of the side panels. Be careful to avoid gluing



Top Edging Detail

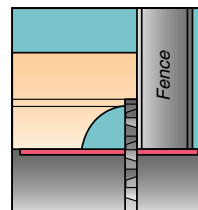
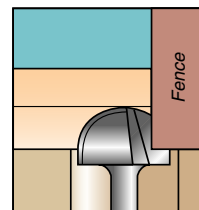
Step 1: With a router table and core box bit, form a cove at the edges of a board.

Step 2: Install a roundover bit in your router table to complete the molding.



Cornice Molding Detail

Rout the edges of a board with a piloted cove bit, leaving a $\frac{1}{8}$ " wide fillet along the top of each edge.



Base Molding Detail

Step 1: With a router table and core box bit, rout a cove along the edges of your board.

Step 2: Cut rabbets with your table saw.

the rails to the sides or you'll restrict the seasonal movement of the panels. Press the rails as far forward as you can to seat the tenons in the front stile mortises. Now brush glue in the last 2" of each dovetail groove and tap the rear stiles into place, stopping when the rails sit flush with the rabbets in the sides. Do not put glue in the rear stile mortises so the side panels can move. Clamp the carcass together, then repeat the installation procedure for the rest of the frames, including the top and bottom frames.

Constructing the Base

Glue the base frame together, then select thick cherry stock

Figure 5: Use a 1/4" or narrower bandsaw blade for making the tight cuts along the outline of each foot. Set the saw guides just above the wood to keep the blade from wandering.

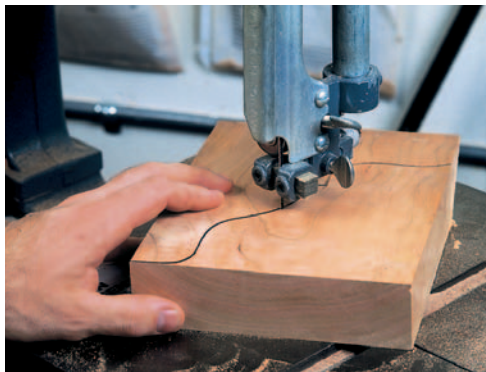


Figure 6: Trace the pattern of the top drawer face on the end of your stock and remove some of the waste with your table saw. Shape the face with a rabbet plane and block plane.

for the feet (pieces 14). Cut the stock for the feet to size and miter one end of four pieces for the front foot assemblies. Make sure the miters are square to the edges of the stock. Next rout a spline slot or cut biscuit slots in the miters (see *Figure 4*). Adding splines or biscuits (pieces 15) to the miter joints will greatly reinforce the foot assemblies. Now make a full-size pattern of the foot using the *Technical Drawings* as a guide, and trace it onto your stock. Bandsaw the feet to shape (see *Figure 5*) and smooth the edges with a drum sander. Make plywood splines (if you need them) and glue the mitered feet together.

After blending the corners of the two front foot assemblies with a palm sander, draw a line on the top of each foot $\frac{3}{4}$ " back from the front edge. Glue and screw the base frame to the feet, aligning the outside edges of the frame with the lines you just drew on the feet — make sure the back edge of the frame is flush with the back edge of the rear feet. The $\frac{3}{4}$ "-wide ledge now formed on

the top of each foot will support the base molding that conceals the joint between the carcass and the base.

Adding the Moldings

To make the cornice molding (pieces 16), rout the edges of a 3" or wider board with a cove bit and roundover bit following the *Cornice Molding Detail* illustration on the previous page. Miter the molding to length, then glue and pin the front piece to the cabinet with #17 wire brads. For the side pieces, glue the first 3" only, then pin the remaining length to the side panels with brads to allow for wood movement. Use a nail set to drive the brad heads below the wood surface, and fill the holes with a matching wood putty.

Rout a 3" or wider piece of stock for the base molding (piece 17) with a cove bit, then trim the leftover waste on your table saw, as shown in the *Base Molding Detail* illustrations, previous page.

Use a rabbet plane and sandpaper to round over the file on the front edge of the molding, and rip the molding off the board. Miter the molding to length, then glue and nail the pieces to the base assembly.

Now rout $\frac{1}{8}$ "-wide elongated holes in the front stile and rails of the top frame, and drill fixed holes in the back stile as shown in the *Top Frame Elevation* (see *Technical Drawings*). Countersink all the holes with a V bit and router to recess the heads of your screws. These pilot holes will allow the top to move after it's screwed to the carcass.

Secret drawers were common in Eighteenth century furniture and often contained a family's most important documents. Today, they serve better as sock drawers than document hideaways.



Cutting Dovetails

Cutting dovetail joints isn't hard, it just takes practice and patience. Although, using quality tools definitely helps. A marking gauge with a knife point, for instance, will lay out crisp joint shoulders that give your chisels a positive starting point, and a well-tuned bevel gauge will keep your pin and tail angles consistent. Stiff-bladed saws make it easier to keep your pins and tails square and sharp chisels are essential.



Use a fine-toothed tenon saw with a back stiffener to cut the pins and tails, always stopping just shy of the shoulder lines.



Sharp chisels make fine tuning your dovetails possible. Without them you'll get more tear out and sloppier fitting joints.



A coping saw will speed up the repetitive work of removing the waste after the pins and tails are defined with the tenon saw.

Cut the top to size and rout its front and side edges with the bits shown in the *Top Edging Detail* illustrations on page 108. Sand the top to at least 120 grit, then position the panel on the carcass. Mark all the pilot hole locations, drill them with a 3/32" bit and secure the panel to the cabinet with #8 screws.

Complete the cabinet assembly by placing the carcass on the base and drilling countersunk pilot holes through the bottom frame and into the base frame. Now drive screws to hold the two subassemblies together.

Making the Drawers

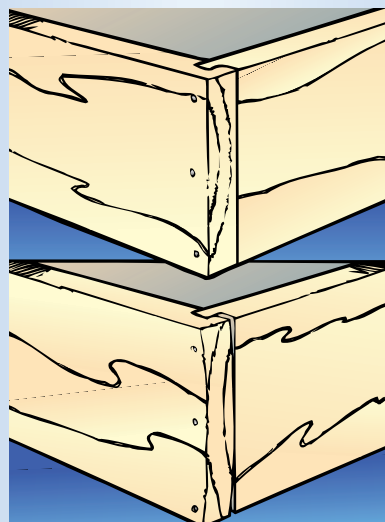
Select a board for the top drawer front (piece 18) and rip it to width. Cut it a little longer than needed and trace the shape of the top drawer face profile (see *Technical Drawings*) onto the ends of the board. Begin the shaping process by ripping a kerf to define the inside edge of the bottom bead, as described in the *Top Drawer Face Detail*. Next, remove some of the waste at the top of the drawer face by tilting the table saw blade 15° and running the stock on-edge through the blade. Straighten the blade to cut the small rabbet along the top edge, then form the hump and bead of the molding by hand with a rabbeting plane and smoothing plane (see *Figure 6*). Wrap up the shaping with a palm sander.

Rip and crosscut the rest of your drawer fronts to size, as well as all the sides and backs (pieces 19 through 32), then lay out the dovetails — half-blind dovetails on the fronts and through dovetails on the backs and top drawer box (see *Exploded Views*, page 105). Use

Quick Tip

Growth Ring Joinery

To make tight corners on boxes, drawers, or chests, take a close look at your wood before doing any milling. Arrange the parts so that all the end grain has the annual rings curved out toward the ends. Wood tends to cup in the direction opposite the rings curve, so if you crown the board the wrong way the rings might draw the joinery apart over time.



a marking gauge with a knife point to define the back shoulder of each joint and a utility knife for laying out the side shoulders of the pins and tails. Be sure to begin and end each joint with a half pin, as shown in the *Dovetail Joint Detail* on page 105. Cut the pins first, then use them to trace the tail locations. A fine-toothed tenon saw works well for cutting the joints, and paring them to final fit is only possible with a very sharp chisel (see the *Cutting Dovetails* sidebar, previous

page). Or, rout the dovetails with a router and dovetail jig.

After completing the dovetail joints, rout the $\frac{3}{8}$ " wide by $\frac{3}{8}$ " deep grooves for holding the drawer bottoms (pieces 33 and 34), as shown in the *Drawer Elevation* on page 107. Notice that these grooves will run through a pair of tails in the drawer sides, but the resulting holes won't show on the back of the drawers.

Assemble the drawers, making sure to check for squareness as you go. Allow the glue to dry, then trim the joint ends flush with the drawer sides and backs. Use a hand plane to carefully shave the top edges of the drawers until they fit the cabinet openings — if it's winter, leave a $\frac{3}{32}$ " gap; in summer, a $\frac{1}{32}$ " gap.

Next, screw the top drawer box to the drawer face. Be sure to align its ends with the sides of the dresser and leave a $\frac{1}{16}$ " gap between the top of the drawer face and the cornice molding.

Use a cove bit to rout the edges around all the drawer faces except the top one, then slide the drawers into the cabinet and install the stops (pieces 35). Screw the stops to the rear stiles on each frame. Now drill pilot holes in the drawer fronts for the pulls (pieces 36).

Cut plywood for the back (piece 37) and set it into the cabinet, then drill countersunk pilot holes and screw the back to the rabbets in the side panels.

Now that you've spent all this effort putting your dresser together you get to take it apart

again. Remove the back, base and top, and pull out all the drawers so you can sand everything to 220 grit before applying an oil finish. With the first coat of finish you'll see the cherry begin to mellow, which will continue for years until the piece looks like an antique. Apply three more coats of oil finish and polish off the project with a coat of paste wax.

There's a wealth of woodworking knowledge hidden in this dresser. By building it, you've now stepped into the shoes of the craftsman who built the original some 200 years ago. Perhaps no one else will fully recognize your achievements — except of course another woodworker.

Quick Tip

Jig for Cutting Mitered Corners

If your table saw won't cut accurate miters, this jig can help. Start with a keyed plywood base of $\frac{3}{4}$ " thick stock. Lower the blade below the table top and make sure the plywood slides smoothly along the miter slot. Raise the blade and cut the side absolutely parallel to the blade. Cut two matching sides to about 48° and glue these to the base, holding their tips to the saw-cut parallel edge. With a steel square, mark a line on the jig at 90° to the blade and add a fence for registering the edges of your stock. Now tilt the blade just a bit until you have a perfect 45° angle for your cuts. Remember to reset the blade to vertical after using it.

