

An Everyday Cabinet

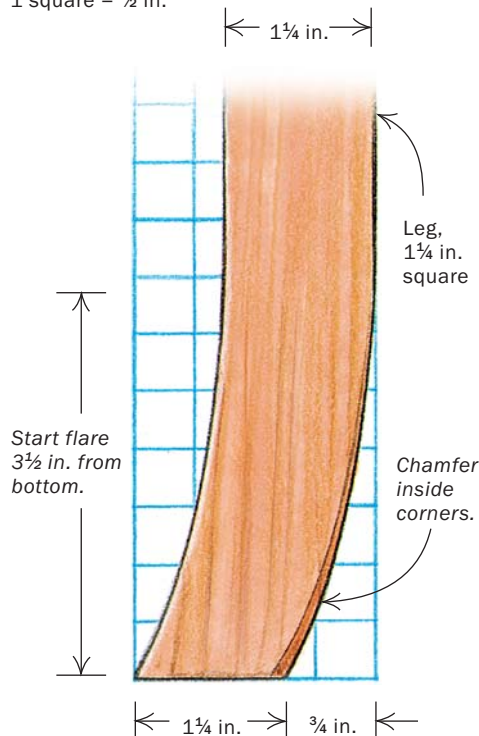
Straightforward construction methods
for building a case with doors and drawers

BY SCOTT GIBSON



A Leg with Flare

1 square = $\frac{1}{2}$ in.



When I set up an office and began working at home, I vowed to be careful with what little space I had. But before long I was awash in all of the junk any office accumulates—pencils, notebooks, phone books—and not enough storage room. Part of the solution was this small, shallow cabinet, which tucks beneath a window without blocking the view. Its two drawers offer useful storage, and the lower compartment is unobstructed by a center door divider.

I wanted to build the cabinet quickly and with a minimum of materials. The sides and back are frame and panel with frame stiles biscuited to the legs. That makes for a sturdy carcass that is easy to put together. With the exception of the drawers, the rest of the joinery is mortise and tenon.

The bottom of a table or cabinet leg can be hard to get right. This cabinet is boxy to start with, and I thought a straight leg would be too plain. In Wallace Nutting's *Furniture Treasury* (Macmillan Publishing Co., 1933), I found drawings of several legs that meet the floor in a graceful curve. The one I liked the most was a tall clock foot with Hepplewhite origins.

The cabinet's design is adaptable. It would be easy to alter the height of the



Story stick aids leg layout. To ensure consistent leg form, shape a single template to trace the layout of all four leg blanks. The same template can be used for marking out the mortises.

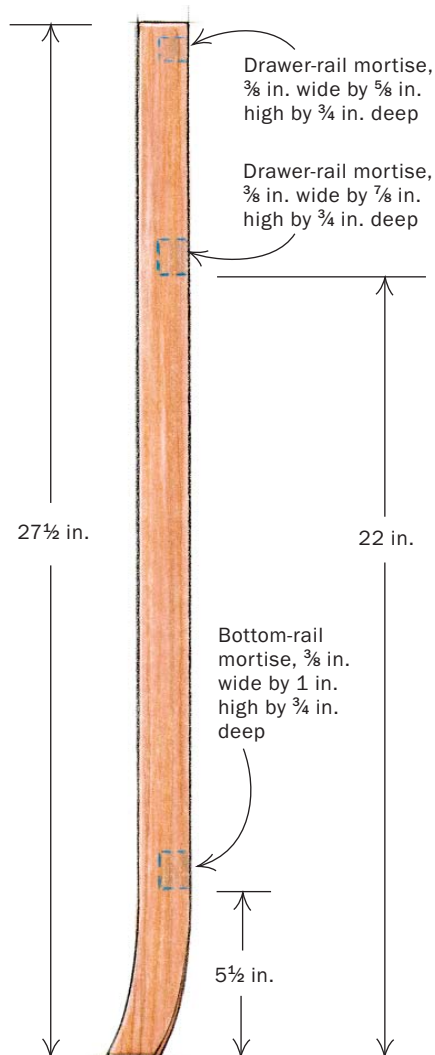


Cut all but the curve. Mark the fence to indicate how far to cut, then cut to that line and shut off the saw. Take care to hold the stock tightly against the fence until the blade has stopped.



Finish on the bandsaw. Cutting from the bottom of the leg, finish the sweep of the foot on the bandsaw.

Front-Leg Joinery



Mark and cut mortises. For consistency, mark the mortise locations directly from the story stick (above). A dedicated mortising machine makes quick work of cutting all 12 mortises (below).



drawers or even the overall dimensions of the cabinet without changing its look very much. Figured veneer door panels or drawer fronts would give the piece a much more formal feel. In the end, I kept the design simple.

A template helps with the legs

It's easier to lay out and shape a template than it is to measure and duplicate the same pattern on four separate legs. I used scrap pine for this template, marking the sweep of the foot with a French curve and noting the locations of mortises for the front frame pieces. These legs curve in only one plane, away from the case sides.

The tip of the foot extends about ¾ in. beyond the side of the cabinet, so there really isn't much waste in cutting the legs from solid wood. Most of the cutting can be done on a tablesaw by running the leg blank through the blade until the kerf just reaches the start of the curve. Mark the extent of the blade's reach on the fence before you start so that you know how far to go before turning off the saw. A bandsaw will finish the cuts, and a rasp, file and scraper quickly remove the saw marks.

A tapered chamfer helps the leg look thinner and more delicate as it reaches the floor. It begins just where the curve starts outward and widens as it nears the floor, making the leg look less bulky at the bottom. This is very simple to do with a spokeshave. If the wood wants to tear going around the bend, use a file. But try to stay



Biscuit-join the leg and stile. It's helpful to place the stock and machine on a flat surface (like the MDF pictured) for square cuts. The MDF also acts as a riser, allowing you to lay the leg flat, with the foot hanging off the end and out of the way.



Glue up the leg and stile. To ensure a tight bond along the entire glue-line, glue and clamp the leg to the stile before setting the frame and panel into place.

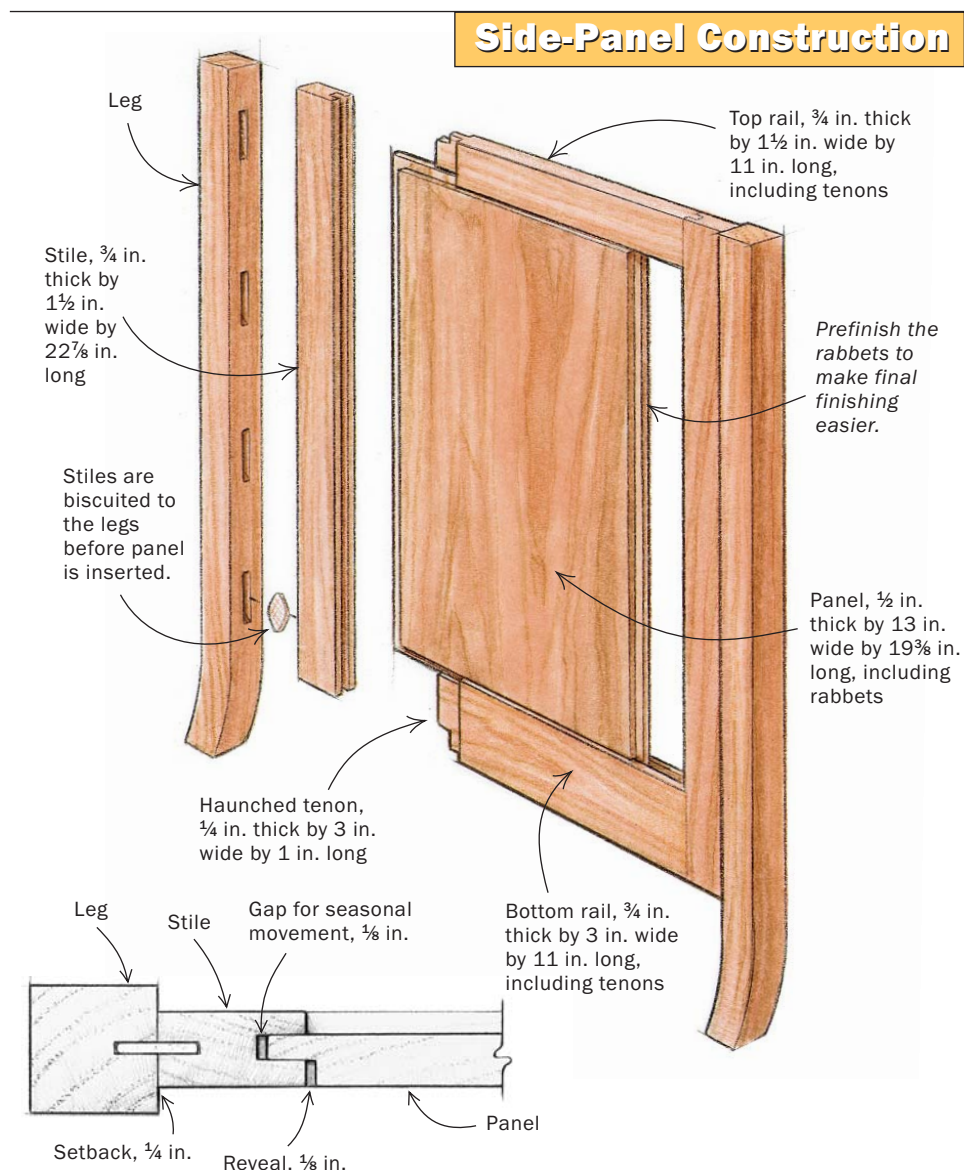
away from sandpaper as much as possible because it rounds over the edges.

The only thing left on the legs are the mortises for the front frame pieces. These are located so that the frame pieces (and doors) can be set back from the front of the leg by $\frac{1}{4}$ in. This dimension is important. Depending on where the hinge pivots, too much of a setback will prevent the doors from opening very far. It's a good idea to have the hinges in hand before you start.

The front frame pieces extend to the back edge of the leg, making for a clean corner inside the cabinet (that will be helpful later). Now is a good time to cut the mortises for the knife hinges and to plunge a groove in the back of the bottom drawer rail with a biscuit joiner for the intermediate drawer support (both operations will be very difficult to do later). Also, the dados or dovetailed mortises for the center drawer divider can be made now.

Making and fitting the frame and bottom

These frame pieces are made of $\frac{3}{4}$ -in.-thick material with a groove for the panel $\frac{1}{4}$ in. wide and $\frac{1}{2}$ in. deep. A single panel is on each side, and two panels are on the back. After milling up the parts, I set up an adjustable dado to cut all of the grooves in the center of each stile and rail. Before running off all of the pieces, I tinkered with the width of the cut to make sure it would match the width of my mortising chisel. I wanted to make sure the 1-in.-deep mortis-



Attach the rails. Once the leg-and-stile assembly has dried, insert the bottom and top rails of the frame and panel.

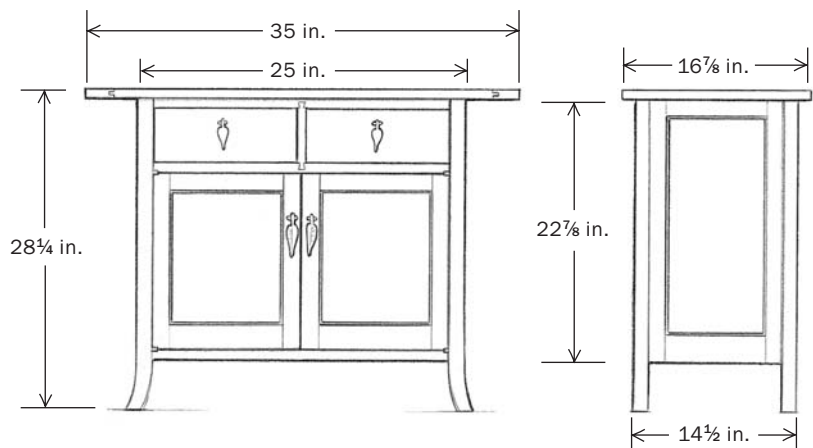
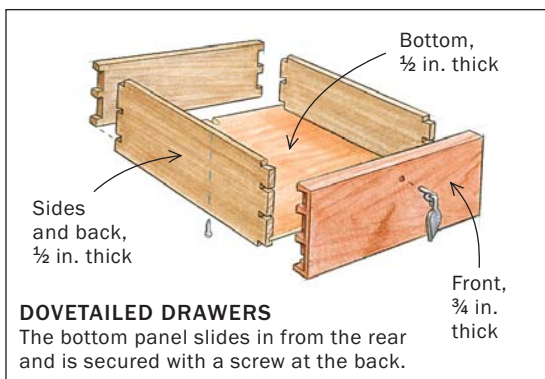
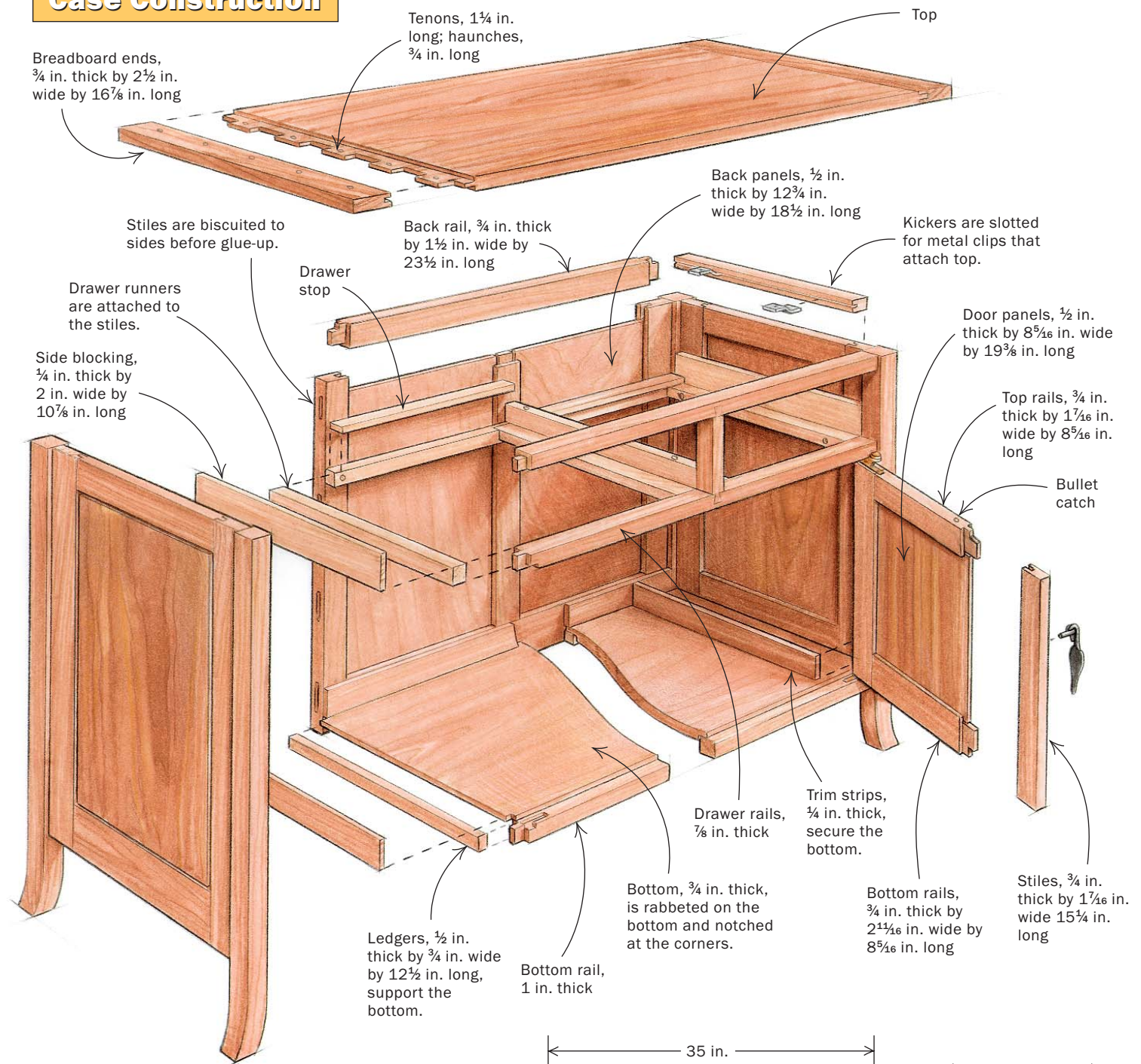


Drop the panel in place. Gibson prefinished the rabbets on the panel so that he wouldn't have to squeeze finish into the small gap between the frame and the panel.



Complete the side. Finish by attaching the other stile and leg, which have been biscuited. Glue and clamp horizontally.

Case Construction



Important Note



Install knife hinges before glue-up. Knife hinges must be installed before the carcass has been assembled. See *Master Class* (p. 108) for techniques on installing knife hinges.

es aligned with the sidewalls of the groove as closely as possible.

After years of cutting mortises with a plunge router, I recently bought a mortising machine, which is faster and less prone to error. I cut tenons with a homemade jig on the tablesaw.

It would seem logical to glue up the frame-and-panel assemblies now, but that's not a good idea. The panel stiles are attached to the legs with #20 biscuits, and the full length of the stile should be clamped to the leg while the glue dries. That's not possible if the frame-and-panel assemblies are put together first. So start by gluing just the stiles to the legs, and then add the rails and panels to complete the carcass when those assemblies have dried.

The cabinet's solid-wood bottom goes in after the carcass has been assembled. It needs to move with seasonal changes in humidity. I glued and screwed ledgers around the inside perimeter of the cabinet, rabbeted the bottom panel and set it inside. Only the front edge is glued. It forms the doorstep. The back edge of the bottom can move to its heart's content. To keep it firmly in place and to hide the seam between bottom and cabinet, I attached ¼-in.-thick strips of wood to the inside rails with an 18-gauge pneumatic brad nailer. They trap the tongue on the edge of the bottom panel and keep it in place, and the nail heads are so small they're hard to see.

In gluing up the carcass, the assembly should be as close to square as you can get it. An out-of-square carcass makes fitting



Assemble the back frame and panel. Lay one side facedown on risers and attach the back. It helps to do a complete dry run before gluing up the back-panel assembly.



Complete the case. It is easiest to finish the assembly with the case on its side (left). To ensure an equal reveal around the panel, shim the opening and hold the door in place with masking tape (above) until the carcass dries.

Case-Bottom Installation

Ledgers hold up the bottom. After the carcass glue has dried, ledgers are screwed into the back and sides to provide solid support for the bottom panel.



Rabbeted lip rests on ledgers. Fit the bottom so that it's snug at the front, but leave room at the back to allow for seasonal movement.

Secure the bottom with trim strips. The front edge is glued to the front rail and acts as a doorstop. To keep the bottom in place and to cover the expansion gap, tack additional strips into place on the sides and back.



the bottom a real pain in the neck (don't ask how I know) and makes it much harder to fit the drawers correctly.

Adding the drawer guides and drawers

It may defy common sense, but a drawer that fits loosely in its opening will bind as it's opened and closed. To get a drawer to work well, it must fit its opening very closely, and the opening must be square. Drawer guides and runners can be any kind of wood. Even pine will give you decades of service before it wears out.

Drawer runners on the sides of the cabinet are screwed directly to the panel stiles. Then add blocking with the inside face exactly even with the edge of the leg that forms the drawer opening. At the center of the cabinet, the drawer supports are a little more complicated. Add a center runner wide enough to handle both drawers. This is where that biscuit slot comes in handy: The front of the runner is biscuitted and then eased into the cabinet. The back of the runner is dadoed into a ledger that runs along the back of the cabinet. A vertical divider, the same width as the drawer divider in the frame, completes the opening. The last components are the kickers, which prevent the drawers from tipping too much as they are opened. These are slotted to accommodate metal clips that attach the top to the cabinet.

The best explanation of drawer fitting I've read comes from Alan Peters, the English cabinetmaker (see *FWW* #125, pp. 72-78). I like the way hand-cut dovetails look, but the drawers could be made in any one of several ways: dovetailed with a router or assembled with biscuits or a tongue-and-groove joint. The key is choosing a sturdy joint, making sure the parts fit precisely and ending up with a square drawer box. Drawer bottoms should be oriented so that they move seasonally front to back, not side to side, as Peters suggests.

These drawer sides are made of quarter-sawn white oak, which is very stable dimensionally, and they are a bit thinner than the drawer front. The white oak may not make a big difference, but it can't hurt.

Adding the doors and top

These are very simple frame-and-panel doors. Because knife hinges are used, they must fit the opening very closely (for more on knife-hinge installation, see *Master Class*, p. 108). I don't allow any extra when

cutting the door stiles to length—they should be exactly the same height as the opening minus the two washers on the hinges. For width, it's a good idea to allow a little extra material, $\frac{1}{8}$ in. or so, and plane the doors to fit after they've been made. There's no solution to doors that are too narrow other than making new ones.

The front edge of the cabinet bottom forms the only doorstep. At the top of the opening, Brusso bullet catches hold the top of the doors in place. I insert the part containing the spring-loaded ball into the cabinet frame, and the catch into the top of the door. When assembled this way, the ball will wear a tiny groove in the top of the door stile, but no one will see it unless the door is open. If the ball goes in the door, it will wear a groove in the cabinet frame that will be visible all of the time. Although these catches are beautifully made, they are a little fussy to put in because you really have only one chance to get it right. I check the layout several times before drilling the holes, and then I epoxy the pieces in place and hope for the best.

Breadboard ends give a tabletop a finished look. The overhangs are a personal choice, but I think between 4 in. and 5 in. is about right on the ends, and about 1 in. on front and back. This keeps the top from getting too wide, while adding a horizontal dimension that prevents the cabinet from looking squat.

Choosing a finish and hardware

Everyone has a favorite finish. Chris Becksvoort and others who routinely work in cherry like an oil finish because it brings out the wonderful color of the wood. I like a harder finish. After trying just about everything, I now spray either nitrocellulose lacquer or blond shellac. Both have a pleasant amber color and terrific clarity, and they offer very good protection to the wood. Also, they don't dry out over time and can be repaired or recoated. Still, I start with a thin coat of a polymerizing oil, such as Watco, to bring out the rich color of the cherry. I don't think cherry needs stain.

Like finish, hardware is a personal call. To my eye, good iron hardware looks just right on cherry. I was lucky that my son, Ben, is skilled in the forge. He designed and made the drop pulls. □

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Drawer-Guide Installation



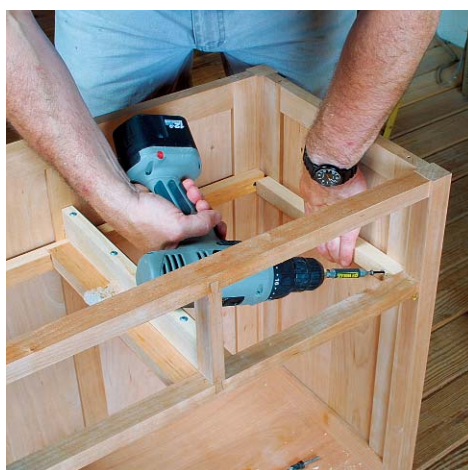
Not quite a sliding dovetail. The drawer divider is joined with a dovetail only half the thickness of the rail so that rail strength is not compromised.



Fit the center runner. For ease of assembly, the back is rabbeted and drops into a notch in the ledger. The front is biscuited into place.



Attach the divider. Before screwing the divider into place, mark its location using a square. Then fit to the lines.



Runner fits flush with rail. Screwed in for strength, the runner lines up with the back guide and the front rail.



Tack in the side blocking. Finish the interior of the drawer-guide installation by attaching the side blocking.