

House Your Tools

Plywood cabinet and simple joinery speed construction time

BY CHRIS GOCHNOUR

A tool cabinet is a great shop helper. It keeps hand tools and small power tools well organized and off the bench but within reach. And perhaps more importantly, it saves valuable floor space. But a tool cabinet doesn't have to have the cold feel and look of MDF, or the piecemeal appearance of a cabinet made entirely from scraps. Rather, it can have the look of fine furniture, giving tools an attractive home and your shop an aesthetic boost.

I collaborated with the editors at *Fine Woodworking* to design a useful, attractive tool cabinet. It can be built with the most basic shop tools in a short amount of time, and it will beautify your shop as it has mine.

The carcase, made of $\frac{3}{4}$ -in. walnut plywood, is built with simple dado joinery cut with a tablesaw. The six interior drawers employ a similar setup. The attractive doors couldn't be easier to make. They feature stub-tenon and groove joints for the frame, a veneered plywood panel glued in place, and divided glass panes that can be done in no time at all. Construction starts with the case.

Case is a lesson in tablesaw joinery

All of the main components of the case (including the adjustable shelves) can be built from one sheet of $\frac{3}{4}$ -in.-thick walnut plywood. The back is $\frac{1}{2}$ -in.-thick walnut plywood. Some suppliers may be reluctant to sell a partial sheet of hardwood



in High Style



plywood. If your supplier won't, and you don't think you'll use the cutoff in the future (or make two cabinets!), you can make a solid-wood back (see "A Back for Every Cabinet," *FWW* #192).

Begin with the case sides. Cut them to length but leave them $\frac{1}{4}$ in. extrawide. Glue $\frac{1}{8}$ -in.-thick solid walnut caps to the bottom edges and trim them flush. After that, rip the sides to their final width. The fixed shelf also is edged with solid walnut that's trimmed flush prior to cutting the joinery.

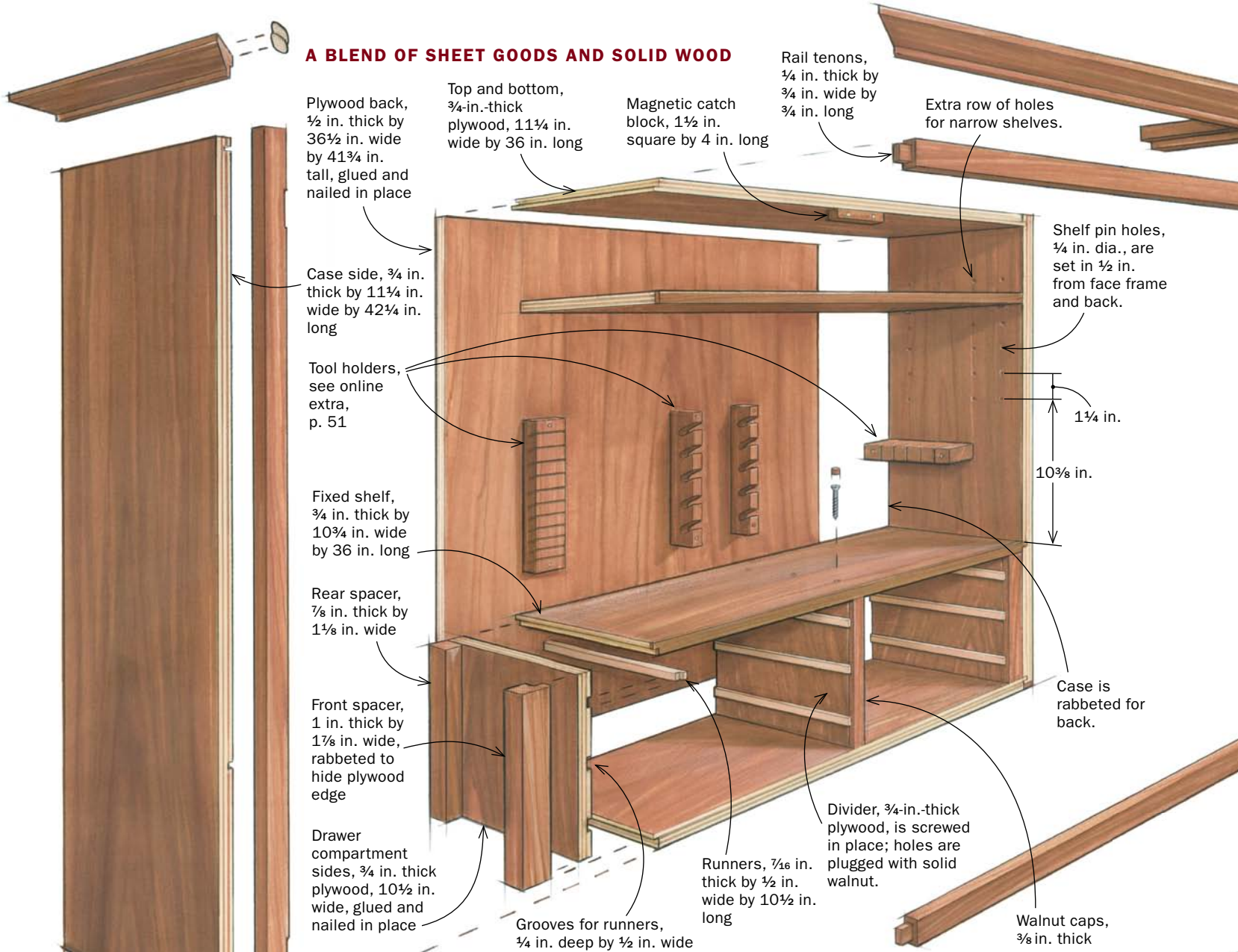
The case dado joints are cut on the table-saw with a $\frac{1}{4}$ -in.-wide dado blade. Adjust the blade for a $\frac{1}{4}$ -in.-deep cut and make the dados in the sides for the top, the bottom, and the fixed shelf. Then, without changing the height or width, cut the $\frac{1}{4}$ -in. tongues on the top, the bottom, and the fixed shelf. Now cut the rabbets that will house the cabinet back. I do this on a router table using a straight bit and a fence to guide the cut. The rabbets on the case sides are stopped, while those on the top and bottom run all the way through.

With all the joints cut, you can dry-fit and then glue up the assembly. Gluing in the plywood back as you assemble the carcass will help keep things square. Reinforce the assembly with brad nails.

Face frame and crown are solid walnut

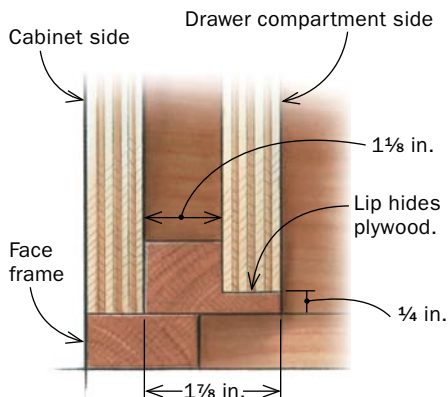
I make the face-frame parts a hair oversize in width so they overhang the case by about

A BLEND OF SHEET GOODS AND SOLID WOOD



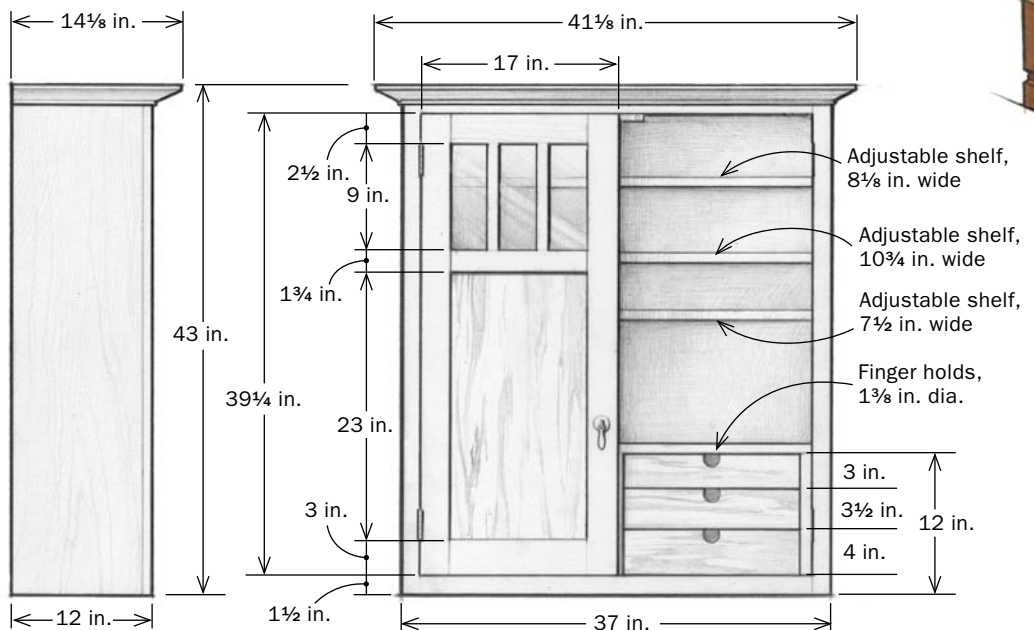
FRONT SPACER DETAIL

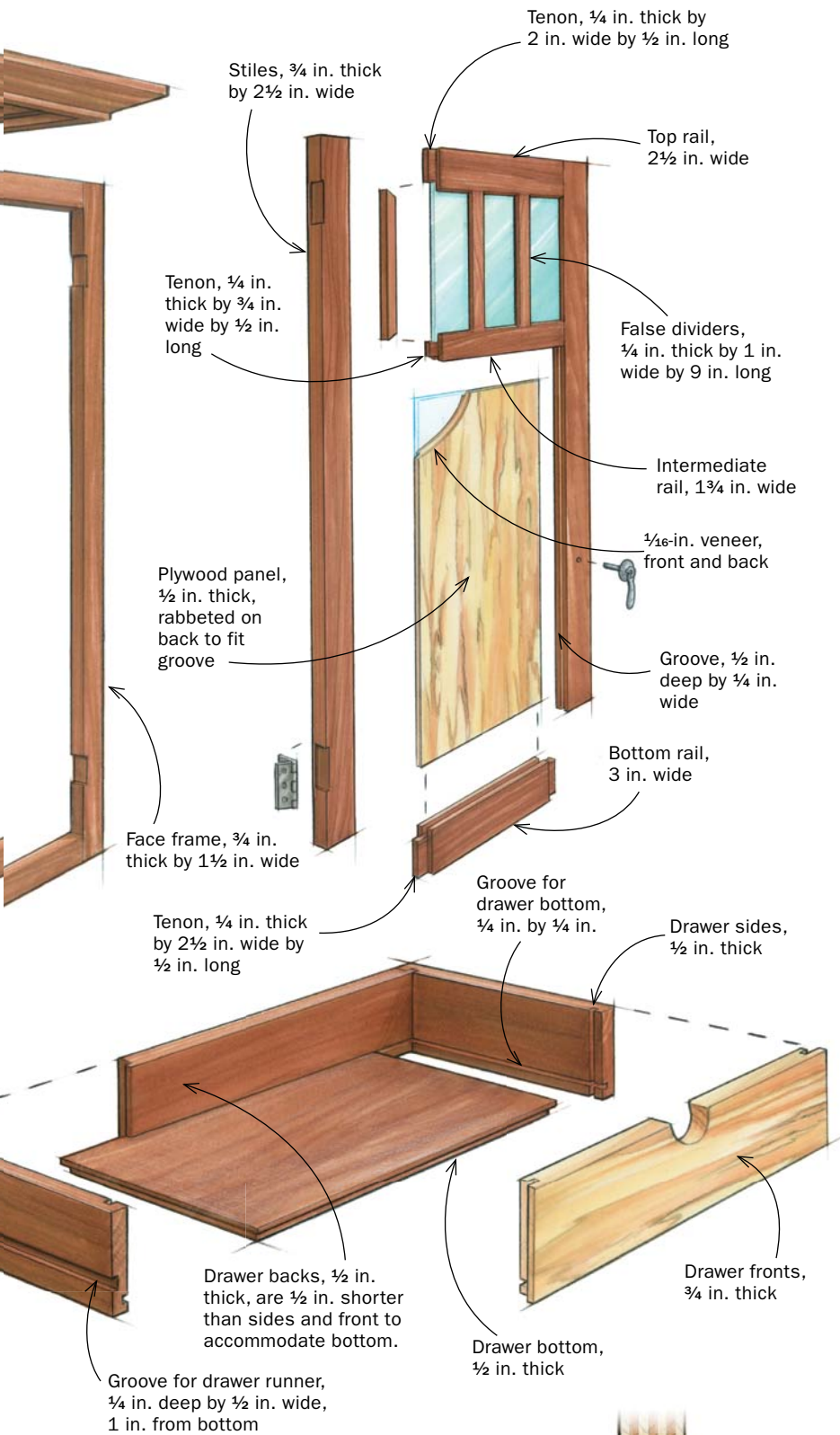
Spacers move compartment sides in so that drawers can clear the face frame in front.



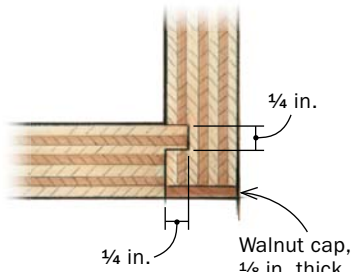
SIDE

FRONT



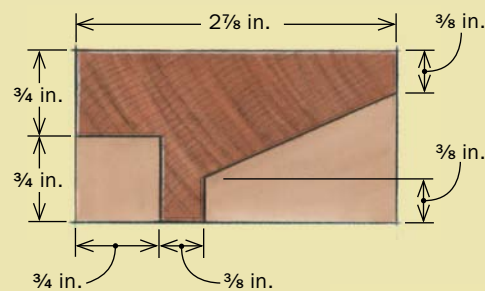


To purchase digital plans and a complete cutlist for this cabinet and other projects, go to FineWoodworking.com/PlanStore.



CASE JOINERY DETAIL

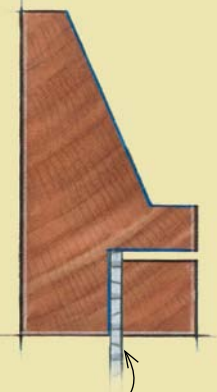
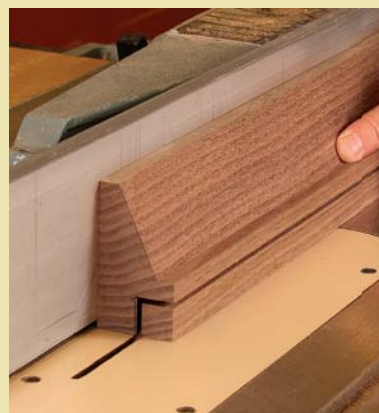
CROWN MOLDING IN FOUR CUTS



The first cut is the deepest. Make the bevel cut first. Use a featherboard to keep the piece tight against the fence.



Lay it flat. The second cut starts the rabbet. The third cut (shown) frees the bevel waste.



Stand it up. The fourth cut finishes the rabbet and lets the waste fall away safely.

SIMPLE JOINERY IS SOLID AND SPEEDY

No help needed. The case is fairly large, but with carefully fitted joints, the glue-up shouldn't require more than two hands.



1/2 in. all the way around. This makes it a bit easier to get the frame aligned and squared perfectly. The stiles and rails are joined using mortise-and-tenons. I remove the bulk of the mortise waste at the drill press and finish with chisels. The tenons are cut on the tablesaw using a dado blade.

Glue up the frame and then glue it to the case. Once the frame is aligned the way I want, I drive four brads, one in each corner, to ensure that the frame doesn't shift as I clamp it. After the glue has set, flush-trim the frame to the case.

The crown molding is very easy to make and apply. It is made using four different tablesaw setups (see p. 47). Make the profile and clean up the cuts with scrapers and sandpaper, then cut the miters and fit the molding. I reinforce the miters with #10 biscuits, and then glue and nail the mold-



Face frame is last. After gluing and nailing in the back, attach the face frame to the front (left). Trim it flush with a router (above) after the glue dries.



Build the drawer compartment. Install the spacers and compartment sides after cutting the dados for the drawer runners. The center divider is screwed in from above and below. Temporary plywood spacers on each side (top and bottom) keep the divider aligned vertically.

ing to the case. The adjustable shelves are plywood with solid walnut edging. I made two of the shelves shallower to make it easier to access tools without banging a shelf edge.

Dirt-simple glass doors

The frame-and-panel doors have three divided lights in the upper section, but their construction isn't complicated: It's all tongue-and-groove joinery, with the plywood panel glued in place for strength.

After milling the frame material, cut the panel grooves on all the inside door parts. The grooves also receive the rail stub tenons, which are cut using a dado blade on the tablesaw.

The 1/2-in.-thick plywood panel on my cabinet doors is covered with spalted syc-

BUILD STRONG DOORS ON THE TABLESAW



Center the grooves. The door frames are grooved for the glass and the wooden panel. To make sure the groove is centered, cut it in two passes with a dado blade, flipping each workpiece end for end after the first pass.



Don't change the blade. Reset the height of the dado blade to cut the stub tenons. Dial in the tenon with a test piece, then crank out the tenons on all the parts.



Spacers help the glue-up. Because the glass is installed later, the intermediate rail is hard to align and keep square. Gochmour uses spacers to align the piece before clamping it (above). The panel is glued all around, adding strength to the door (left). To avoid squeeze-out, brush glue into the grooves but not on the panel.

amore veneer. But you can substitute a nice hardwood plywood. Cut the panel to size and rabbet the back on the tablesaw to form a tongue that is captured by the groove of the door frame. Once all the parts are cut and fitted, glue up the doors.

The glass in the top of each door is an eye-catching detail, and my method of installing the single pane of glass is easy. First, rout a rabbet for the glass using a bearing-guided rabbeting bit and square the corners using a chisel. The false dividers are butt-joined to the frame rails. Cut them to width, and then carefully fit them lengthwise. The butt joint is rein-



Scraper trick gets the reveal just right. Before tightening down the clamps, use a card scraper as a lever to adjust the reveal all around the rabbet on the back of the door panel.

GLASS ADDS CLASS



Glass sits in a rabbet. With the door facedown, remove the wood behind the groove, using a bearing-guided rabbeting bit riding on the wood in front of the groove. Square up the corners.



Spacers again. The false dividers are cut for a tight fit and butt-joined to the frame. When gluing them in, use spacers to align them correctly.

forced from behind with a 1/2-in.-dia. long-grain plug.

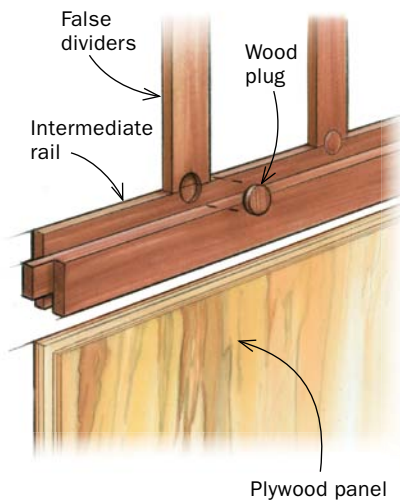
The opaque glass I use is called “domestic seedy,” purchased from a local glass dealer. It is held in place with adhesive caulk and a thin mitered frame.

Drawers are quick to make

The six drawers in the cabinet are side hung and require a couple of extra vertical panels on both sides of the drawer compartment. Those pieces, 3/4-in.-thick plywood, are blocked out from the case sides so the drawers clear the face frame.

Cut the side panels and the center divider to size at the same time, and then cut the dados for the drawer runners. Now

WOOD PLUGS ADD STRENGTH



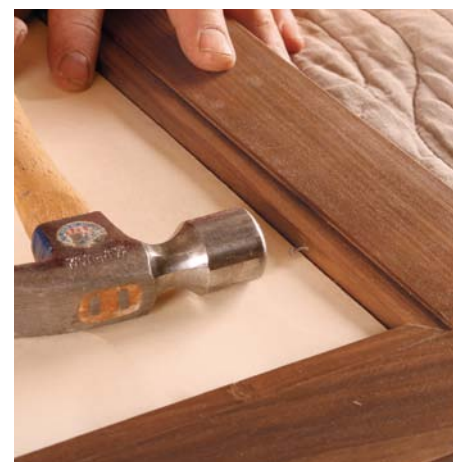
Holes for the plugs. Gochnour uses wood plugs to reinforce the small butt joints. Drill 1/8-in.-deep mortises for them using a 1/2-in.-dia. Forstner bit.



Cut and release. Use a plug-cutter to make a row of 1/2-in.-dia. plugs in a walnut blank and then rip off a thin strip on the bandsaw to free them.



Glue them in. Align the plug's grain with that on the dividers and trim the plugs flush after the glue dries. The frame is attached with brads.



Add the glass after finishing. It is held in place with a small bead of adhesive caulk below the glass, and a thin mitered frame (left) attached with brads. Drill pilot holes for the brads, and use a sheet of thin cardboard to protect the glass as you drive them home (above).

add the solid-wood edging to the center divider and trim it flush.

Now you're ready to assemble the drawer compartment. Cut and fit the spacers and glue and nail the pieces to the sides. Next, glue and nail the compartment sides to the spacers. Finally, screw the center divider in place from above and below. The screw holes are countersunk and plugged.

Once the internal case is assembled, make the maple drawer runners and fit them in their dados. The runners have some front-to-back play and, when dry-fitted, can slide back and forth. They butt against the back of the drawer fronts and, when glued in place, also serve as the drawer stops.

The drawers use simple dado joinery at the back and front. I made the drawer bottoms from 1/2-in.-thick solid alder, but you could substitute plywood there. The bottom is screwed into the drawer back, with a slot in the bottom to allow for movement.

The drawer pulls need to be flush because of the close proximity of the drawer fronts to the doors. I use a simple 1 3/8-in.-dia. hole drilled into the edge of the drawer front using a Forstner bit.

Once the drawers are complete, make the tool holders and finish the piece (I used a sprayed lacquer). To hang the cabinet, simply screw right through the back, being sure you hit the wall studs. Now if only I could find the time to put away all my tools ... □

Chris Gochnour is a busy furniture maker near Salt Lake City, Utah.

SIX DRAWERS IN A DAY



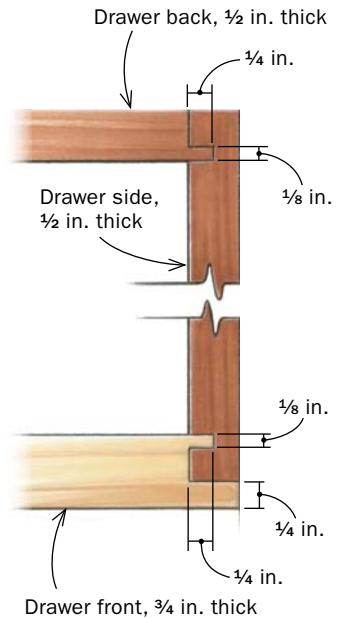
More tablesaw joinery. After cutting the grooves for the side runners, cut the narrow dados for all of the drawer backs. Keep the blade at the same height but adjust the fence to cut the dados for all of the drawer fronts.

Hold it steady.

The tongues on the drawer backs are cut flat on the saw table with a dado blade. To cut the tongue and rabbet joint in front, hold the workpiece upright as shown, using a featherboard and tall fence to keep the piece from tipping.



SIMPLE DRAWER JOINERY



Bite the tongue. After dialing in the setting, trim the tongues on all the drawer fronts.



No fitting required. The runners have enough play front to back to allow you to adjust the drawers perfectly flush in front. Glue in the runners (above) one pair at a time. Then, before the glue dries, install the drawer and tap it so that the front is perfectly flush (right). Leave it that way until the glue dries.



Online Extra

For information on making the tool holders, go to FineWoodworking.com/extras.