Making a Chisel Cabinet

A simple case for an elemental tool

by Carl Dorsch

The slanting sides of this chisel cabinet emphasize the subtle concave curve of the door. Although Dorsch used magnetic strips to secure his chisels, the cabinet could easily be customized for other types of collectibles.

Wood chisels are some of my favorite tools. I have a rather extensive collection that includes two sets of bevel-edge chisels: one set of five for general work and one set of seven for fine paring. Rounding out this collection are a couple of firmer chisels and three mortise chisels that I made. I had built a large, double-door cabinet for my handplane collection, and there was enough space on the doors to hang the chisels. But I knew I would despise the rattling when opening and closing the cabinet doors; besides, I wanted to store the chisels in their own case to reflect my appreciation for them.

The small, single-door wall cabinet shown here is perfect for the chisels. Although a bit extravagant, the cabinet fulfills my storage needs and was fun and easy to make. Cabinet construction is straightforward. The two sides are doweled into the bottom and top, as shown in figure 1 on the facing page, and angle toward the front at 15°; the cross-grain quartersawn oak sides further emphasize the concave door. The chisel handles rest on narrow shelves and magnetic strips hold them in place. You could substitute deeper shelves and other fasteners to display your favorite collectibles. Tablesawn cove moldings trim the top and bottom.

Building the cabinet—My chisel cabinet was inspired by James Krenov. After seeing a curved-panel cabinet he had made, I knew just what to do with a warped panel left over from another project. I had glued up the book-matched, ⅜-in.-thick oak panel, but never used it because it bowed about ½ in. across its width. While nature did a good job creating the curved panel that became the door on my chisel cabinet, a more controlled approach would be to cooper the door by gluing up beveled staves (see *FWW* #56, pp. 36-39) and then shaping the panel with a round-bottom plane. This way, the door can be made to predetermined specifications to suit your requirements. For this project, though, I would still make the door first and then build the cabinet carcase to fit.

Since the door was already done, I began by cutting identical pieces of ¾x4¾x17 oak for the top and bottom so that my cabinet would be ¼ in. wider than the overlaid door. This leaves ⅛ in. showing on either side of the door. The ends of the top and bottom are mitered at 15°, as shown in figure 1. Crosscut two ⅝-in.-thick cabinet sides to 35 in. long and then rip them to 4½ in. wide with the blade tilted to 15° to match the angle of the top and bottom. With the blade still at 15°, rip ¼-in.-wide by ¼-in.-deep rabbets on the back inside edges of the sides to accept the cabinet

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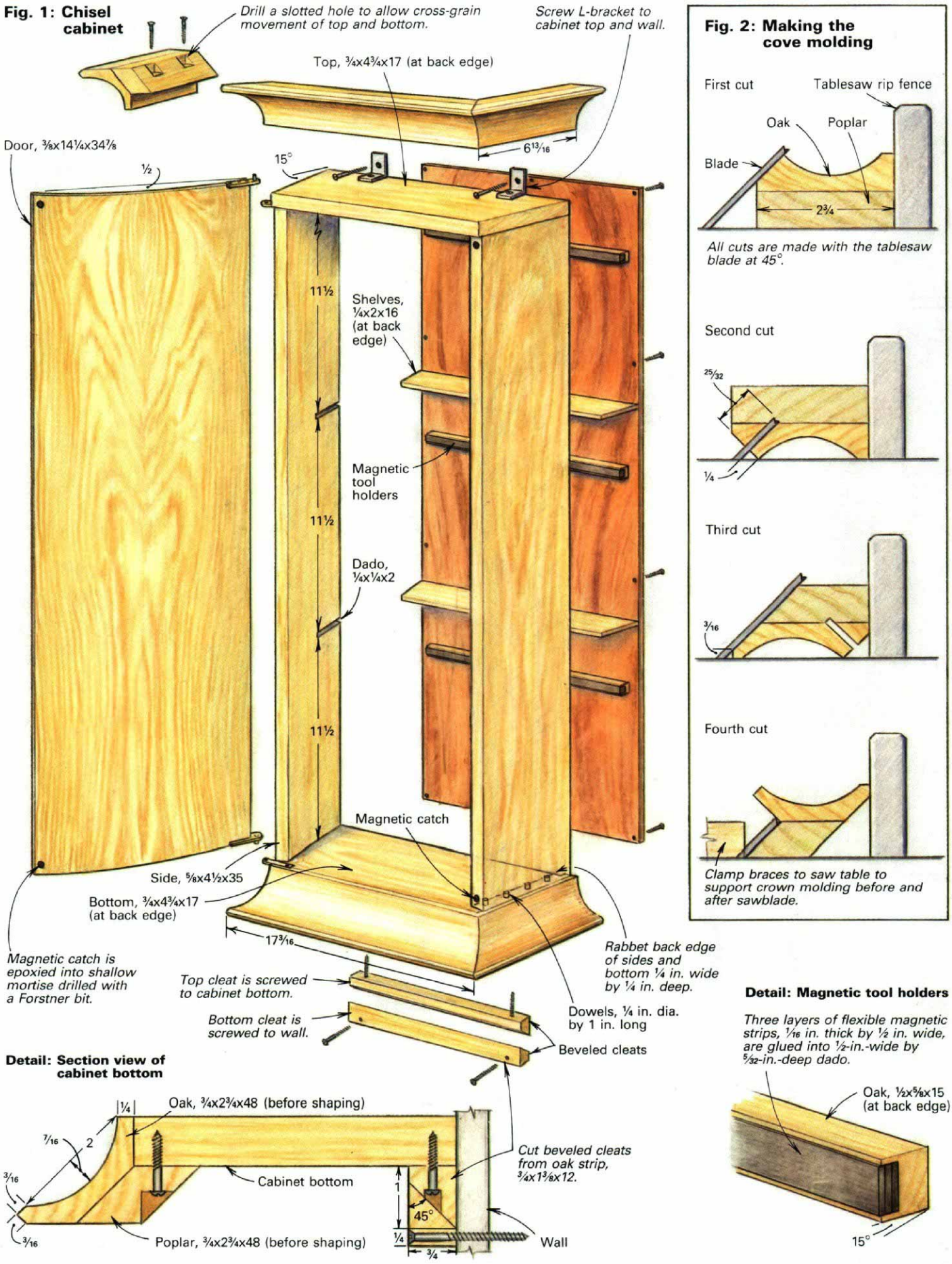


Fig. 1: Chisel cabinet
Drill a slotted hole to allow cross-grain movement of top and bottom.
Screw L-bracket to cabinet top and wall.
Top, ¾x4¾x17 (at back edge)
Door, ⅜x14¼x34⅞
½
15°
6 13/16
11½
Shelves, ¼x2x16 (at back edge)
Magnetic tool holders
11½
Dado, ¼x¼x2
11½
Magnetic catch
Side, ⅝x4½x35
Bottom, ¾x4¾x17 (at back edge)
17 3/16
Magnetic catch is epoxied into shallow mortise drilled with a Forstner bit.
Top cleat is screwed to cabinet bottom.
Bottom cleat is screwed to wall.
Rabbet back edge of sides and bottom ¼ in. wide by ¼ in. deep.
Dowels, ¼ in. dia. by 1 in. long
Beveled cleats
Detail: Section view of cabinet bottom
¼
Oak, ¾x2¾x48 (before shaping)
7/16
2
3/16
3/16
Cabinet bottom
Poplar, ¾x2¾x48 (before shaping)
1
45°
¼
¾
Wall
Cut beveled cleats from oak strip, ¾x1⅜x12.
Fig. 2: Making the cove molding
First cut
Tablesaw rip fence
Oak
Poplar
Blade
2¾
All cuts are made with the tablesaw blade at 45°.
Second cut
25/32
¼
Third cut
3/16
Fourth cut
Clamp braces to saw table to support crown molding before and after sawblade.
Detail: Magnetic tool holders
Three layers of flexible magnetic strips, 1/16 in. thick by ½ in. wide, are glued into ½-in.-wide by 5/32-in.-deep dado.
Oak, ½x⅝x15 (at back edge)
15°

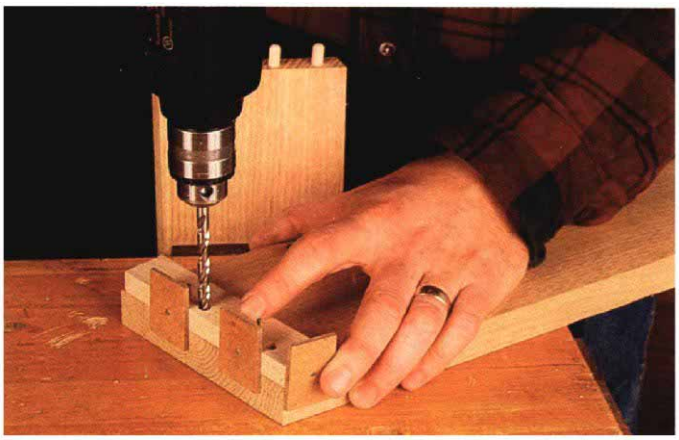
back. With the blade at 90°, cut matching rabbets in the top and bottom pieces. The cove molding will hide the ends of these rabbets.

If you want shelves in your display cabinet as I did, you should crosscut their ends 15° to match the angle of the sides. Then dado the cabinet sides to receive the shelves. I used a marking knife to trace the outline of each shelf end onto the sides and then I pared the dadoes with a chisel. You could also rout the dadoes using a straightedge clamped across the sides as a guide.

To locate and drill the holes for the dowels that join the sides to the top and bottom, I made the maple doweling jig shown in the photo below. When using the jig, keep the cleats that are nailed to the edges of the guide block on the outside and rear surfaces of each piece, as shown below. Securing the jig to the workpiece with 4d finishing nails keeps it from shifting during drilling and the nail holes are hidden when the carcase is assembled. Drill the dowel holes 9/16 in. deep to prevent the 1-in.-long dowels from bottoming. The 1/2-in.-thick doweling jig also makes a good depth stop when inserting the dowels into their holes. (For more on this, see *FWW* #70, pp. 69-73.)

Before glue-up, I dry-assembled the carcase to ensure everything fit and the carcase was square. When you are satisfied with the fit, disassemble the carcase, put glue in the dowel holes in the cabinet sides and insert the dowels. Then put glue in the holes in the top and bottom pieces, and assemble and clamp them to the sides. Measure across the diagonals and clamp as needed to square up the carcase; don't overtighten the clamps or you will bow the sides. When the glue has dried, measure and cut the back to fit into its rabbets. I used 1/8-in.-thick hardboard, veneered on the inside face with goncalo alves, for its striking appearance, and on the other side with mahogany, to balance construction and prevent bowing. I test-fit the shelves and back, but didn't permanently install them. I'll do this after I apply the finish later in the construction process.

Making and installing the cove moldings—Rather than rout the edges of the top and bottom, I made and attached cove molding from a separate piece of straight-grained quartersawn oak. This eliminated shaping endgrain and also conserved wood by reducing the thickness needed for the top and bottom. Although the molding can be made from 1 1/2-in.-thick stock, I didn't have any this size and so I laminated 3/4-in.-thick poplar to the back of 3/4-in.-thick oak. It is easier and safer to make all the molding from two 4-ft.-long pieces of stock and then crosscut and miter the individual short pieces to length.



This jig guides the bit for drilling dowel holes, and serves as a depth gauge when setting the dowels. Be sure to position the cleats against the outside and back edges of the workpiece.

I coved the molding by clamping a fence diagonally across the tablesaw and running the molding stock over the blade at an angle, taking very small cuts and raising the blade slightly after each cut, as discussed in *FWW* #87, p. 51. I then beveled and rabbeted the back edge of the molding following the sequence of tablesaw cuts shown in figure 2 on the previous page. When making the fourth cut, be sure to clamp braces to the tablesaw, as shown, to support the molding. If your cabinet sides are angled 15°, then the moldings should be mitered at 37 1/2°. If not, you can figure the angle for each miter by measuring the included angle between the front and side and dividing this angle by two. Subtract the result from 90° to get the correct miter-gauge angle, and cut the miters on the tablesaw.

Glue and screw the front pieces of molding to the top and bottom of the cabinet and then fit each side piece individually. If the miters do not fit as cut on the tablesaw, pare the side molding miters with a sharp chisel to match the front moldings. After the front corner miters fit, trim the back ends to length by crosscutting at 15° Attach the side moldings with a dab of glue and a screw at the front and with a screw that fits into a slotted, countersunk hole at the back, to allow for seasonal wood movement.

Hanging the door—Fitting the door to the cabinet is the most critical part of construction because there is little room for error. Install the moving half of the knife hinges in notches cut in the door, and then test-fit the door to the cabinet. Because my door was slightly bowed along its length, I had to spokeshave the cabinet sides' edges to accommodate the bow, as well as slightly trim their 15° bevel to the door's curve. When the door fits, use it to mark the top and bottom for the locations of the pin half of the hinges. Pare the hinge mortises with a chisel, but stop short of the mark for the hinge end. Test-fit the door again, this time by holding the pin half of the hinge on the door while sliding the hinge into its mortise. Do this for both the top and bottom. Center the door on the cabinet by adjusting the length of the hinge mortises. The door is held closed by two round magnets that are epoxied into holes drilled into the edge of the unhinged cabinet side. Strikes for the magnets are epoxied into shallow mortises drilled into the inside face of the door with a Forstner bit.

Now, remove the door and the hardware before finishing the cabinet. I applied a light coat of Minwax Golden Oak and rubbed on a mixture of tung oil and polyurethane. I added extra polyurethane to the mixture that was applied to the shelves and bottom for more protection where the handles of the chisels will rest. When the finish is completely dry, slide the shelves into their dadoes from the rear, fasten the back panel into its rabbet with 10 #6 by 3/4-in.-long screws and reinstall the door.

The magnetic strips that hold the chisels are screwed to the cabinet back from the rear. Although magnetic tool holders are commercially available, I think they look too bulky and their magnetism is so great that they make tool removal awkward. So I made my own holders, as shown in the detail in figure 1 on the previous page. For each holder, I used cyanoacrylate to glue three flexible magnetic strips together and then into a dado in a 1/2x5/8x15 piece of oak. Flexible magnetic strips are available from most craft-supply stores and many mail-order tool companies. The three strips provide just enough magnetic attraction to keep the chisels in position, yet allow them to be removed easily.

I hung the cabinet on beveled cleats at the bottom and two small L-brackets at the top, as shown in figure 1. Cove molding around the top and bottom hides these attachment fixtures when the cabinet is hung on the wall. □

Photos: Charley Robinson; drawings: Lee Hov