Glass adds a whole new dimension to a cabinet. *The inside is as important as the outside. The thin beveled strips holding the glass to the back of these doors looks good from either side.*

Glazing Cabinet Doors

Beveled strips hold glass firmly in place

by Tony Konovaloff

I've opened a lot of glass doors on finely crafted cabinets and cringed. The joints are tight, the finish is fine, but the glass is held in place by methods that look, at least to my eye, crude. I've seen big, clunky strips held in place by #8 screws, badly done putty and perhaps worst of all, vinyl strips screwed or even stapled to the door frame.

What looks much better is glass set in a relatively deep rabbet in the frame and held in place with beveled strips of wood on the back side of the door. The strips function like quarter-round molding, but the profile is more refined. The strips, which are easy to make, are fastened to the shoulder of the rabbet with brass escutcheon pins. Should the glass need to be replaced, the strips easily pop off and can be reused.

Holding glass in a door this way is nothing new. It's an old technique that works because it's simple and practical, and it looks good whether the door is open or closed.

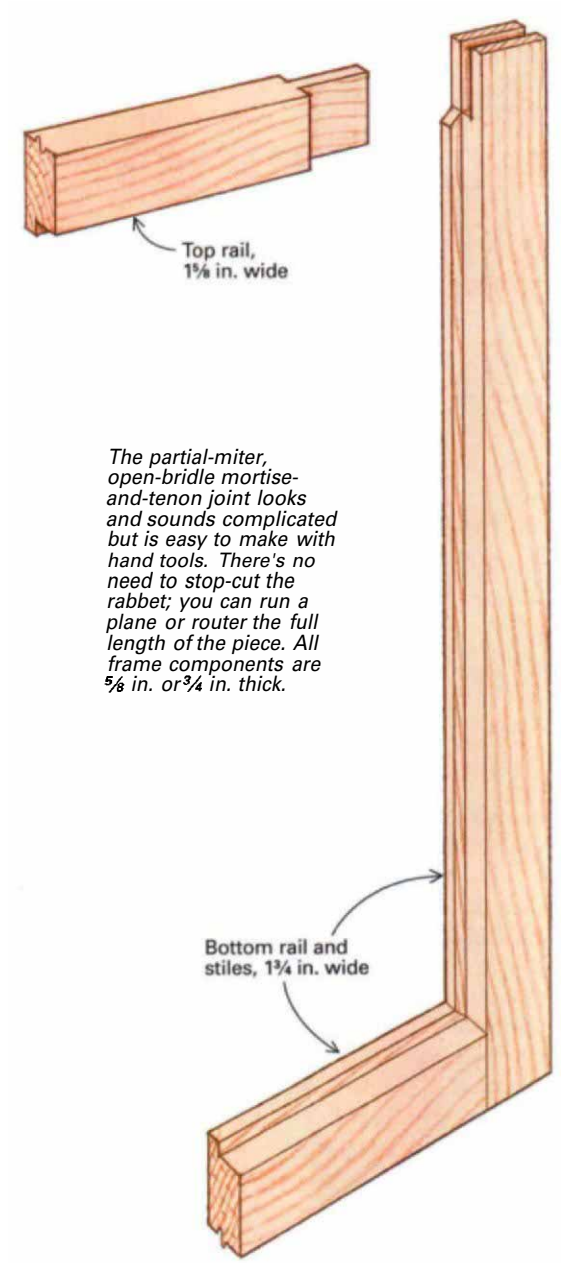
Designing for glass

With glass-front cabinets, the focus is not on the furniture but on what's inside it. Before you begin making the cabinet, think about how a glass front will affect the design and construction. For instance, everything is now visible, so the layout and fit of the joints on the inside of the cabinet are as important as those on the outside.

Glass thickness and temper—Standard window glass is only 3⁄32 in. thick, and I use it almost exclusively. It's called single-thickness float glass, and I buy it cut to order at a local glass shop. When safety is a factor (when the glass will be near the floor in a household with children, for example), I use tempered glass. The thinnest readily available size of tempered glass is 1⁄8 in., and it has to be special-ordered (see the story on p. 53).

I wouldn't use beveled strips where the glass is thicker than 1⁄8 in. because the rails and the stiles must be beefed up to accommodate the glass and the larger strips. Unless the cabinet

BUILDING THE FRAME



The partial-miter, open-bridle mortise-and-tenon joint looks and sounds complicated but is easy to make with hand tools. There's no need to stop-cut the rabbet; you can run a plane or router the full length of the piece. All frame components are ⅝ in. or ¾ in. thick.

is really large, the whole thing probably will look clumsy.

Glass weighs about three times as much as wood. But the weight of a simple door glazed with 3⁄32-in. or ⅛-in. glass is roughly the same as that of a similar wooden panel door because the glass is so much thinner. There's no need to consider special hinges or hardware.

Glass color and wood choice—Standard float glass, sometimes called soda-lime float glass, has a slight green tinge (see the photo on p. 53). The effect is more noticeable as the thickness of the glass increases, and it can alter the color of the wood behind it. Sometimes the effect can be pleasing, and sometimes it's not. Test it by looking at wood samples through the glass you intend to use.

Dimensions and construction of frames—When sizing the cabinet-door frames, keep in mind that the clear front affects the apparent widths of the frame pieces. The same size frame you'd use for a wooden panel front looks too heavy with glass.

When I make a medium-sized cabinet door (something like 15 in. wide by 24 in. tall), the frame pieces are ⅝ in. or ¾ in. thick, depending on the thickness of the glass. I make the bottom rail and the stiles 1¾ in. wide, with the top rail ⅛ in. narrower. The rabbet depth is two-thirds the thickness of the frame.

I join my frames with a partial-miter, open-bridle mortise and tenon. It's a long-winded name for something quite simple (see the drawing at left). It's an old molding joint that saves the trouble of stop-cutting the rabbets. The joint is quick and easy to do with hand tools (which are all I use), because you can cut the joint first and then run the rabbet the full length of the piece. It's also an attractive joint.

Another way to join the frames is to glue up a doweled (or biscuited) frame and run a rabbet around the inside with a router, squaring up the corners with a chisel. It really doesn't matter how the frames are made as long as you plan for the rabbet.

Installing the glass

When the doors are made but not finished, I take them to the local glass shop to have the glass fitted. A good slip fit is desirable for the glass—if it's loose in the frame, it may rattle when a truck drives by. There's no need to allow for movement in either the wood or the glass in a medium-sized door.

If the glass is too snug in the frame, adjust the fit with a rabbet plane and a bullnose rabbet plane. If the glass is a little small, you can shim out the rabbets with thin slivers of wood. Nothing will show once the beveled strips are in place

Once the glass fits correctly, I turn my attention back to the door. I fit it to the carcase and install the hinges and catches. Then I finish the door (inside and out) and set it aside.

Fitting the beveled strips—The beveled strips are sized so that when they're installed, they will stand slightly proud of the frame and be a little narrower than the rabbet (see the drawing on p. 52). The strips are not rectangular in section—they bevel about 5° to 8° (see the bottom right photo on the facing page). This makes them less visible from the outside.

I rip the strips from long scraps of the same wood as the frame. I plane all four sides (including the bevel) on a small vise-mounted bench I built for handling small pieces (see the photo at right and the drawing on the facing page). It has an adjustable stop made from a brass screw and a light fence tacked on to hold the strips for planing. Then I lightly chamfer all the edges with a small spokeshave (see the top right photo on the facing page).

When the finish on the door is dry, I lay it on the bench, set the glass in the rabbet, and fit the strips: first the top and bottom strips and then the sides. I cut them a little long with a backsaw and then pare them to fit with a chisel (see the top left photo on p. 52). Because of the bevel, the side pieces aren't cut at a right angle. The best way to fit them is by paring away a little at a time. Once the strips are fitted, I lightly file the corners to match the chamfer on the other pieces.

Fastening the strips

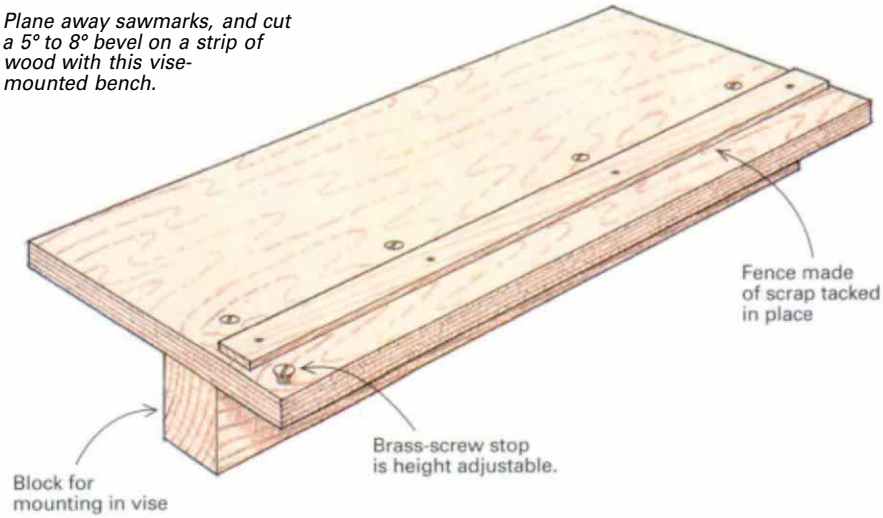
I prefer escutcheon pins over brads for holding the strips in place. I like the look of the brass head, and the pins make a more secure fastening. I use #18 escutcheon pins, ⅝ in. long.

With the strips fitted in place, I mark the locations of the escutcheon pins every 4 in. to 5 in. I remove the strips and drill the shank holes for a push fit. I use a #53 (.059 in.) or #54 drill (.055 in.), depending on the wood. Check the fit in a piece of scrap to be sure. I drill the holes at right angles to the bevel and

Photos except where noted: Aimé Fraser; drawings: Vince Babak

SHAPING BEVELED STRIPS TO KEEP GLASS IN PLACE

Plane away sawmarks, and cut a 5° to 8° bevel on a strip of wood with this vise-mounted bench.

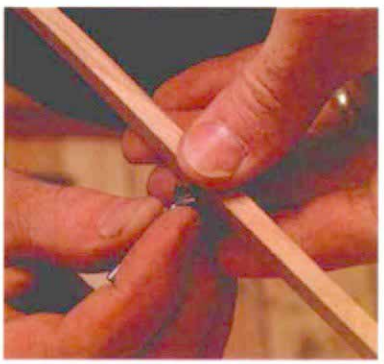


***Using the mini-bench**—A screw keeps the strip in place while the author planes a 5° to 8° bevel*

***Chamfering the beveled strips** relieves any sharp edges.*

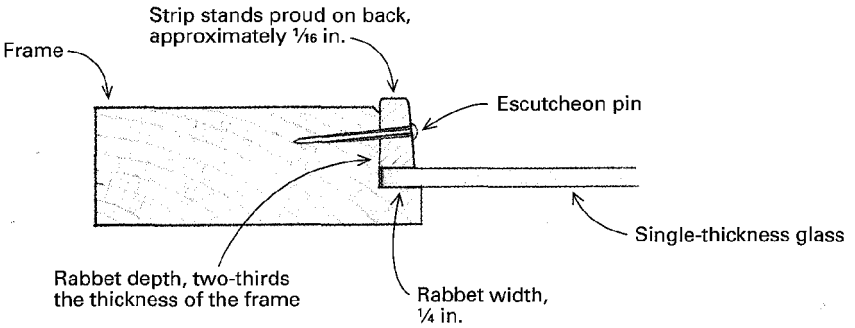
***The strip on the left is ready to install.** The bevel and chamfers, though small, are obvious when compared to the rectangular strip on the right.*

Use a chisel to pare the ends of the strips to fit *after cutting them a little long with a backsaw.*



Clean up both sides *of the escutcheon-pin shank holes by hand-turning a small countersink.*

ATTACHING THE BEVELED STRIPS



Protect the glass with cardboard, *and carefully use a light hammer when setting the escutcheon pins.*

clean up both sides of the hole by turning a small countersink a few times by hand (see the bottom left photo).

I put the escutcheon pins partway in the shank holes in the strips and put the strips back in place on the glass. Holding the strip firmly in place, I lightly tap each pin to mark the frame for the pilot holes. After removing the strips and the glass, I use the marks in the frame as centers for drilling the pilot holes. I use a #55 drill (.052) for a hammer fit, and I drill at about 5° off the perpendicular—the amount of the bevel.

Everything is ready for final assembly, but first I finish both the strips and the inside of the cabinet with paste wax.

Final assembly

Before installing the glass, I clean it one last time. I put it back in the frame, put the strips in place and protect the glass with a piece of cardboard cut from a cereal box. I set the escutcheon pins with a 3-oz. Warrington hammer; it's light and narrow, perfect for such delicate work (see the photo above right). Don't try to drive the pins in one blow—take it slowly. Be careful not to hit the strips, or they'll be marred by the hammer.

If an escutcheon pin goes into the frame too easily because the diameter of the pilot hole is a little too big or the hole too deep, you can tighten it up by bending the pin. Just hit it with the other end of a Warrington hammer to put in a slight curve. When you put the pin back in the pilot hole, it'll snug up nicely.

Because I've already fit and finished the door, all that's left is to mount it in the cabinet. After this is done, I install a small riser in each door opening to support the doors when closed. Risers are pieces of wood, 1/4 in. by 1/4 in. by 3/8 in. long, mortised into the cabinet bottom on the catch side. The block goes in end grain up and is filed down until its height equals the gap between the carcase and the door (about the thickness of a business card). The door rests lightly on the riser and opens and closes freely. □

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