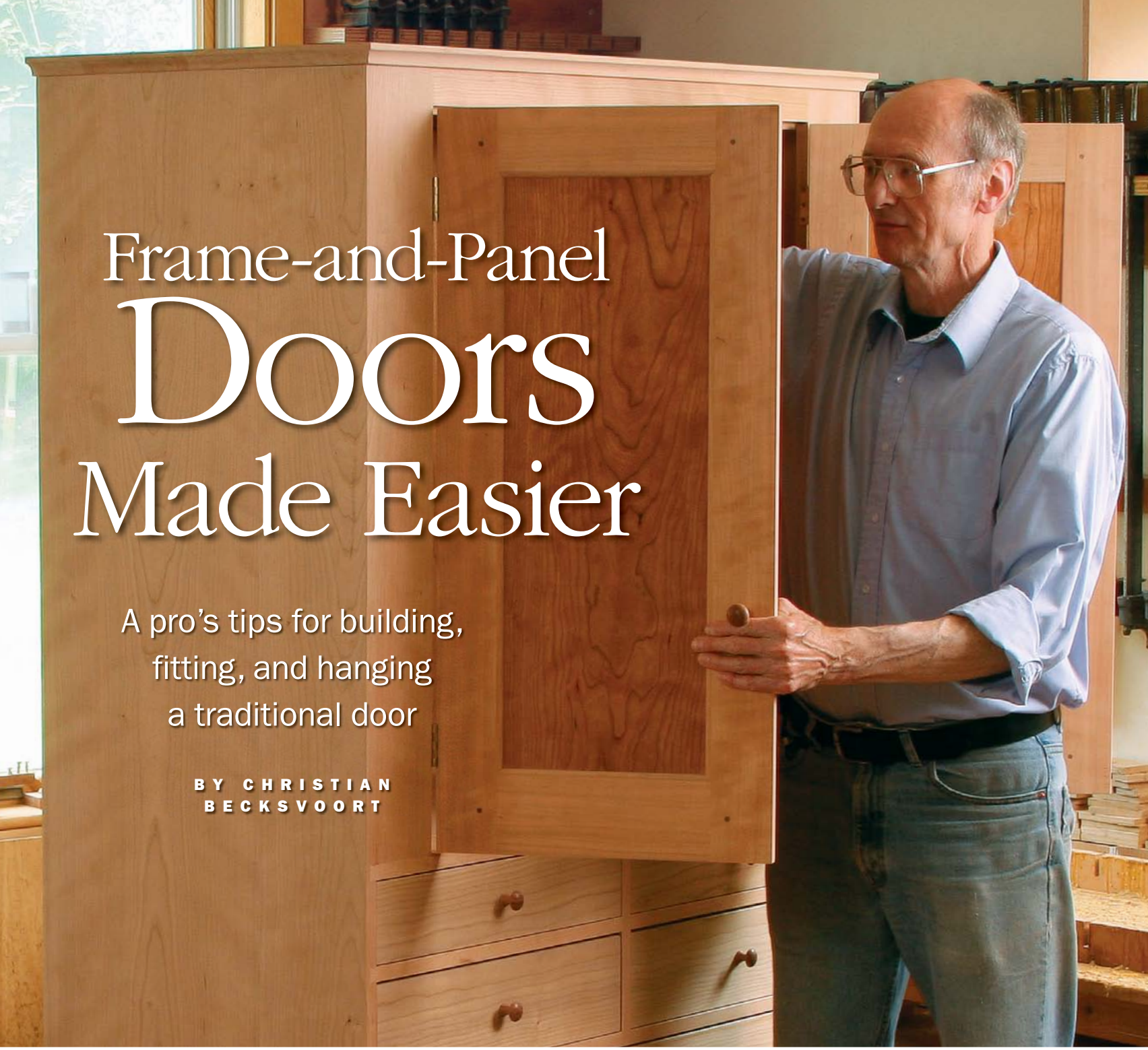


Frame-and-Panel Doors Made Easier

A pro's tips for building, fitting, and hanging a traditional door

BY CHRISTIAN BECKSVOORT

I make Shaker doors differently than others do. While you can't beat a mortised-and-tenoned, pegged frame for strength and style, I prefer a thin, inset panel surrounded by a quarter-round molding as opposed to raised-panel or pillowed-panel doors. Although the Shakers used moldings sparingly, the quarter-round along the inner edges of the frame makes for a clean, slightly rounded, and understated design. This style can blend into both period and modern environments.

The second difference is that I apply the molding, rather than cutting it into the frame parts. The flat, inset panels are only ¼ in. thick in a ¾-in. frame, leaving room for the quarter-round molding around the inside edge. I apply the moldings because it's tedious and tricky to cope or miter the profiled frame. And if you mess it up, you have to go back and remake the part, which not only means time lost, but also could jeopardize a nice grain pattern you've already chosen. Also, the anatomy of a molded frame is much more complex. By the way, Shaker furniture makers occasionally applied these moldings, too.

Making the doors

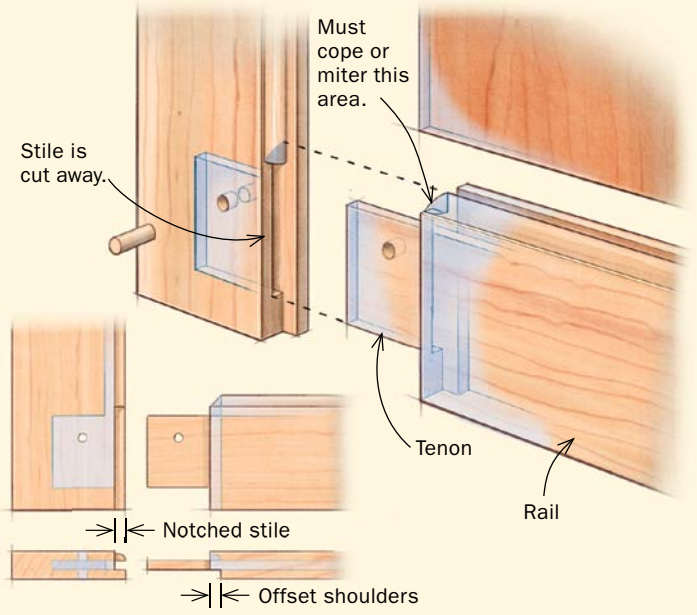
I try to use quartersawn stock to minimize the gaps created by seasonal movement between the door panels and face frame. Cut

Photos: Anissa Kapsales; drawings: John Hartman

SIMPLIFY CONSTRUCTION WITH AN APPLIED MOLDING

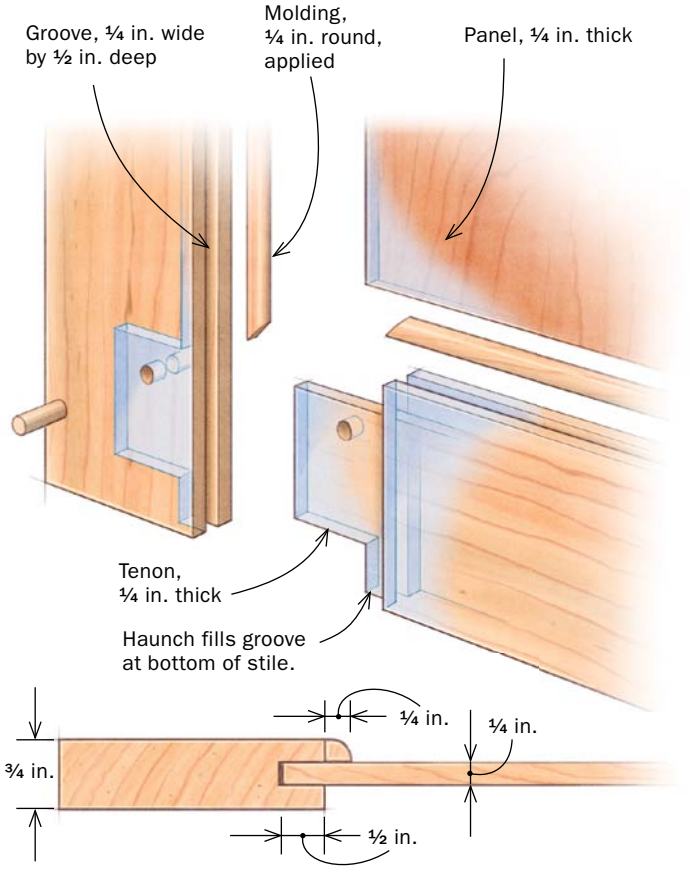
TRADITIONAL METHOD IS DIFFICULT

When the molding is part of the frame, it makes the joinery complex. You have to cut away part of the stile, and cope or miter the molding for a clean joint.



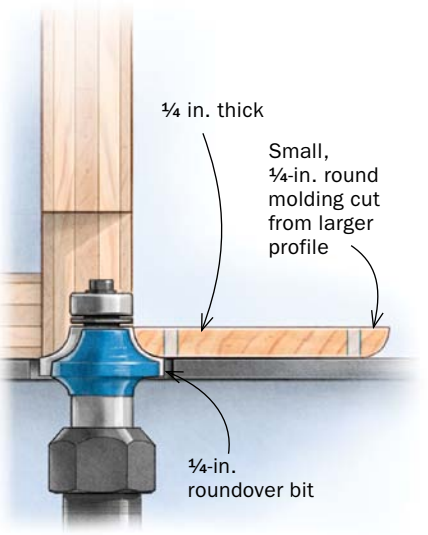
A BETTER WAY: ADD MOLDING AFTER ASSEMBLY

Applying the molding after the fact allows you to have a simpler mortise-and-tenon joint, with even shoulders.



STEP BY STEP

Start with a solid frame. *Becksvoort recommends a full mortise and tenon. A single peg in each corner adds a decorative element and ensures that the joint stays strong. He finishes the panel beforehand.*



Cut the molding. *A wide workpiece is easier and safer to machine. Cut the quarter-round profile on the router table (profile both sides of the piece), and then rip the moldings to width on the tablesaw.*

Fit it piece by piece. *Glue the molding to the frame only, not to the panel. Work on one piece at a time, marking, cutting miters, and gluing as you go. Use hand pressure to keep the pieces in place for about 1 minute each, and then leave a few pieces of tape behind as clamps.*

JOINTER SPEEDS DOOR-FITTING

Begin by getting the top and bottom to fit in the opening. One or both may not be parallel to the case or each other, but the jointer gets them to fit perfectly whether you have to cut a straight line or a taper.

Fit the length first. *If the door isn't parallel to the case, you'll have to make an angled cut. Working on one door at a time, butt the door to the hinge side and mark the door parallel to the bottom of the opening.*

the four stiles ⅛ in. longer than the opening and the four rails, then cut the grooves on the inside edges of all the parts on the tablesaw. Using a router or drill press followed by a mortise chisel, cut the mortises. Then cut the tenons on the tablesaw, leaving a ½-in. haunch to fill the exposed grooves, top and bottom. Next, cut the bookmatched door panels to size, sand them, and test the fit. Before gluing the doors together, I oil the panels so no raw wood shows if they shrink in dry months. Glue and pin the joints, and sand both faces.

Now I simply cut, fit, and glue the ¼-in. quarter-round moldings to the outside face of the frame, all the way around the panel. Then I fit the doors to the opening.

Getting the doors to fit the case

Start with a slightly oversize door and work on the length first, then the width. Working on one door at a time, butt the first door to the hinge side of the opening. Things can be very slightly out of square. This isn't a problem. If the bottom of the door isn't square to the case, mark it and square it on the jointer. Then, because the top of the opening might not be parallel to the bottom, do the same thing to the top of the door. Once the bottoms and tops of both doors match the case, take off enough material to leave a 1⁄16-in. gap on the top and ⅛ in. on the bottom. This technique also works for a single door.

To fit the width of the doors, set both doors in place and trim them (on the jointer) so they just fit into the opening with about a 1⁄16-in. gap at the hinges. The final fitting will be done after the hinges are in. Last, drill for the doorknobs and add brass butt hinges on both doors. □

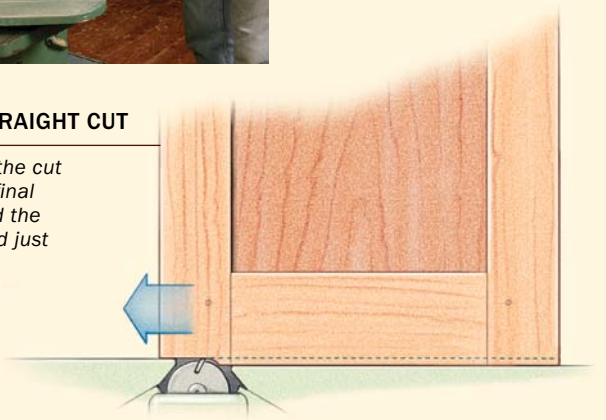
Christian Becksvoort is a contributing editor.

JOINTER HANDLES STRAIGHT AND TAPERED CUTS

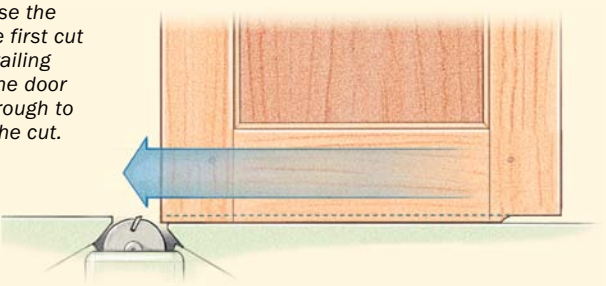
You can't run the entire end of the door over the jointer or the end grain on the trailing edge will blow out. Becksvoort's technique prevents that. And he uses a time-tested trick for tapered cuts.

FOR A STRAIGHT CUT

First, with the cut set to the final depth, feed the leading end just a bit.

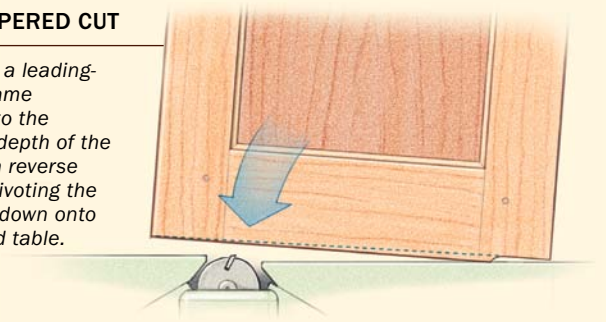


Then reverse the door so the first cut is on the trailing end. Run the door straight through to complete the cut.

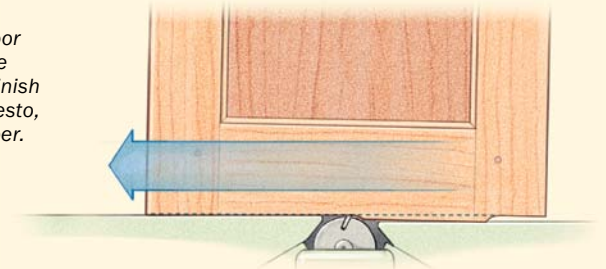


FOR A TAPERED CUT

First make a leading-end cut (same as above) to the maximum depth of the taper. Then reverse the door, pivoting the uncut end down onto the outfeed table.



Run the door through the jointer to finish the cut. Presto, perfect taper.



USE A TRIM ROUTER FOR HINGE MORTISES

Hinging can be daunting, but a trim router does the grunt work and ensures a perfectly uniform depth. A small router is easier to balance on narrow edges.

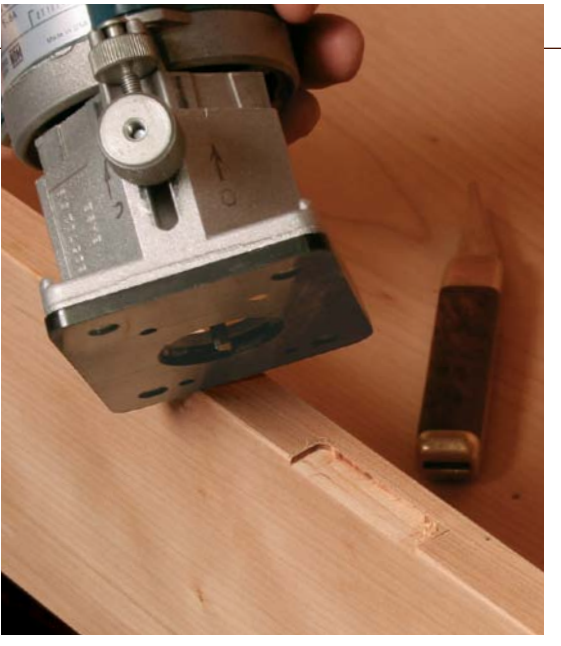
MORTISE THE DOORS FIRST...

Mark for the hinge mortise. *The hinges line up with the top and bottom rails. Hold the hinge in place and trace around it lightly with a knife. Then remove the hinge and cut heavier lines to rout to and place the chisel in later.*

Clamp doors together. *Two doors create a wider base for the router (above) and you can cut both mortises at once. If you only have one door, clamp another board flush for a wider base. Pivot the bit down into the cutting area to get started, and work close to the lines, cleaning up with a chisel (left).*

...THEN MORTISE THE CASE

Transfer the location to the carcase. *Once the hinges are screwed to the doors, position them in the opening, leaving the gap you want along the top and bottom edges. Use a marking knife to transfer the hinge placement, and then remove the door (and unscrew the hinges), set the hinges in place on the edge of the frame, and mark around them.*



Rout the face frame. *Rout close to the lay-out lines again, and finish with a chisel. Then check the fit on the knob side of the door, or between doors if there are two. Remove the door(s), trim that final edge, and then reinstall them. You should have perfect gaps all around.*