



Pleasant Hill
**SHAKER
CUPBOARD**

Common wood from a common source
creates an uncommon beauty.

I began my study of the Shaker furniture at Pleasant Hill, Ky., with a quick survey of the contents of the enormous Centre Family Dwelling, sticking my head in the door of each room, making a mental note of everything that caught my eye: a table here, a chair there, a little blanket chest, a tripled clothes hanger.

Each item on my mental list had something about it that set it apart from other objects in the Dwelling. In some cases, it was a splash of color, in others a bit of intriguing joinery, in others a form that deviated from Shaker norms. In this manner, I chugged along for maybe half an hour: Looking, storing and getting excited about the prospect of looking more closely later on.

Then, in a room on the second floor, I saw this cupboard hanging from a peg rail above a wash stand. I stuck my head in, caught my breath, released it and then slowly entered the room. The cupboard was familiar (Christian Becksvoort's book "The Shaker Legacy" [Taunton]), but I had forgotten about it. I know I wasn't expecting to see it there.

I stepped over the low railing erected to keep the public at a distance. (I had permission from the curator.) I stuck my nose close to the piece to study the pegs that penetrated the joinery of the frame-and-panel door, then backed off. This was something special, something profoundly Shaker, something that – unlike many pieces in the Pleasant Hill collection – could never be attributed to country origins.

The editors at *Popular Woodworking* had sent me and the mag-

azine's photographer, Al Parrish, to the Shaker Village to write and illustrate a couple of articles about Western Shaker construction methods and design.

Nobody told me to do any measured drawings, but when I took the job, I was pretty sure I'd end up drawing at least a few pieces, and as soon as I saw this cupboard, "pretty sure" changed to dead certain.

Material from a Home Center

I usually buy lumber from hardwood dealers – businesses that typically require a 100 board feet (bf) minimum order. So I can't buy, for instance, 75 bf of curly maple or 50 bf of cherry.

In most cases, I don't mind these minimums. I always need cherry, walnut and curly maple. But sometimes, I don't really want 100 bf of a particular species, and anyone buying small lots of hardwood at stores catering to woodworking hobbyists will find he needs the support of a full-time cardiologist when they check out at the cash register.

Recently, I've been experimenting with another source for poplar: my local home-center store. All the big home-center stores charge more per board foot than hardwood dealers. But there are some good reasons to consider these type of suppliers for poplar (and pine).

For one thing, the material has been surfaced, and let's face it: One of the more odious chores is



Step photos by the author

Although it's possible to drive nails into "green" hardwood without pre-drilling, thoroughly dry hardwood requires pre-drilled holes – that is if you want to avoid split stock. The through hole should be nearly the same diameter as the shank of the nail. The hole that penetrates the second piece of stock should be a bit smaller in order to give the material a good grip on the nail.



Tap the shelf into its dados using a protective block of scrap.

flattening and thickening material. But here's a more important reason: I can buy only perfect boards. If there's a knot, a split, a bit of wane, I don't buy it. If it's not perfectly flat – and I mean billiard-table flat – I put it back.

Try that with a hardwood dealer. He might let you set aside a few boards with egregious defects, but if you reject eight boards out of 10, he might decide he doesn't want your business after all.

In fact, I have developed the habit of buying all my secondary wood this way. Every time I go to the store, I sort through all the poplar and clear white pine, and I buy every perfect board. This little cupboard is built of poplar I'd culled from the home-center's stock over the previous month.

Assembling the Case

I chose to use 8d coated nails to assemble the cupboard because the nail heads visible on the original are about the size of 8d nail heads, and I knew 8d nails, which are 2½" long, would result in a solid construction. Eight penny

by Kerry Pierce

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Use a plane to level the edges of the cupboard's case before you attach the face frame.

nails are big for this application, and I think you could have good results with a 7d nail as well, but I wouldn't recommend anything smaller than that.

Initially, the whole nail thing made me uncomfortable. I've spent too many years cutting wood-to-wood joinery to embrace this (sacrilegious?) method of work. But early in the construction process, I had to remove a piece I'd nailed in the wrong location, and let's just say I'm convinced this little cupboard will never come apart.

These nails require the drilling of two holes. The first is a through hole in the board you're nailing through. This hole should be just large enough for the shank of an 8d penny nail to pass without being driven by your hammer.

The second hole should be the full length of your 8d nail and just a bit smaller than the shank of the nail. It has to be small enough so that you have to drive the nail in with your hammer but not so small that seating the nail results in split material. As always, experiment on scrap before you work on the good stuff.

If you look at the photo on the previous page, you'll see me drilling the smaller hole in a partially assembled joint. The drill for the larger, through hole, sits on the bench behind me.



Although the bead on the Shaker original was likely made with a scratch stock (because there is evidence of this tool everywhere at Pleasant Hill), I chose an 1/8" side-bead plane.

After nailing the carcass together, fit the shelf and tap it into its dados.

The original cupboard has only one shelf, although there are dados for two equally spaced shelves. I thought that an interior divided into only two compartments, instead of three, made more sense on this modest-sized cupboard, so I eliminated the second shelf the original cupboard

had at birth. This gave me a fairly small compartment above and a larger compartment below.

After the shelf has been nailed into place, level the cabinet front and back with a plane

The cupboard has 1/8" beads along each of the front corners and around the door frame. The beads on the corners are cut on both the front and side of the vertical parts of the cupboard front.

This produces a bead that's visible from either perspective.

If you haven't used a moulding plane, an 1/8" side-bead plane (shown at left) is a great place to start. You can find these relatively common planes at flea markets, antique malls and, of course, on eBay. But you must be sure to purchase a plane with a reasonably straight sole. Some have bowed beyond repair in the century and a half since their creation. "Reasonably" straight, however, doesn't mean "perfectly" straight. This little 1/8" side-bead plane I'm using here has a bit of a bow but it still works fine.

Unlike most moulding planes, which are designed to be held at an angle (the spring angle), side-bead planes are designed to be held upright, their sides perpendicular to the surfaces being worked. Set the iron so that it's barely visible when you sight along the sole of the plane, tap the wedge firm, then crowd the plane's fence against

PLEASANT HILL SHAKER CUPBOARD

NO.	ITEM	DIMENSIONS (INCHES)			MATERIAL	COMMENTS
		T	W	L		
☐ 1	Top	3/8	7 1/2	31 7/8	Poplar	
☐ 1	Bottom	13/16	7 1/2	32	Poplar	Stock can be slightly oversize
☐ 2	Sides	13/16	5 7/8	17 13/16	Poplar	
☐ 1	Face frame top rail	13/16	2 7/16	20	Poplar	
☐ 1	Face frame rail	13/16	1 7/8	20	Poplar	
☐ 2	Face frame stiles	13/16	5 7/16	17 13/16	Poplar	
☐ 2	Sub top/bottom	7/8	5 7/8	29 1/4	Poplar	
☐ 2	Sides	13/16	5 7/8	17 13/16	Poplar	
☐ 1	Shelf	3/4	5 7/8	30	Poplar	In 3/4" x 3/8" d. dados
☐ 2	Door rails	13/16	2 7/8	16 1/8	Poplar	2" tenons on each end
☐ 2	Door stiles	13/16	3 15/16	13 1/2	Poplar	
☐ 1	Door panel	5/16	8 5/8	13	Poplar	1/16" gap all around
☐ 2	Hangers	5/16	2 7/8	27	Poplar	
☐	Backboards	5/16	30 7/8	17 13/16	Poplar	Random widths to fill 30 7/8"
☐ 1	Knob *	1	1	1 11/16	Walnut	
☐ 1	Catch	1/4	7/16	3/4	Walnut	

* I made the knob 1/8" longer than the original knob. This was a mistake, one I didn't notice until I prepared the materials list. The extra length is in the long cove. The length I give in the materials list is the length of the Shaker original to match the drawing.

** The hinges on my reproduction also are historically inaccurate. The hinges on the original are 1 3/4" long (as they appear on my drawing). Here, too, I made a mistake. I marked and mortised for a pair of 2"-long hinges, thinking—for some reason—I was working with 1 3/4"-long hinges.

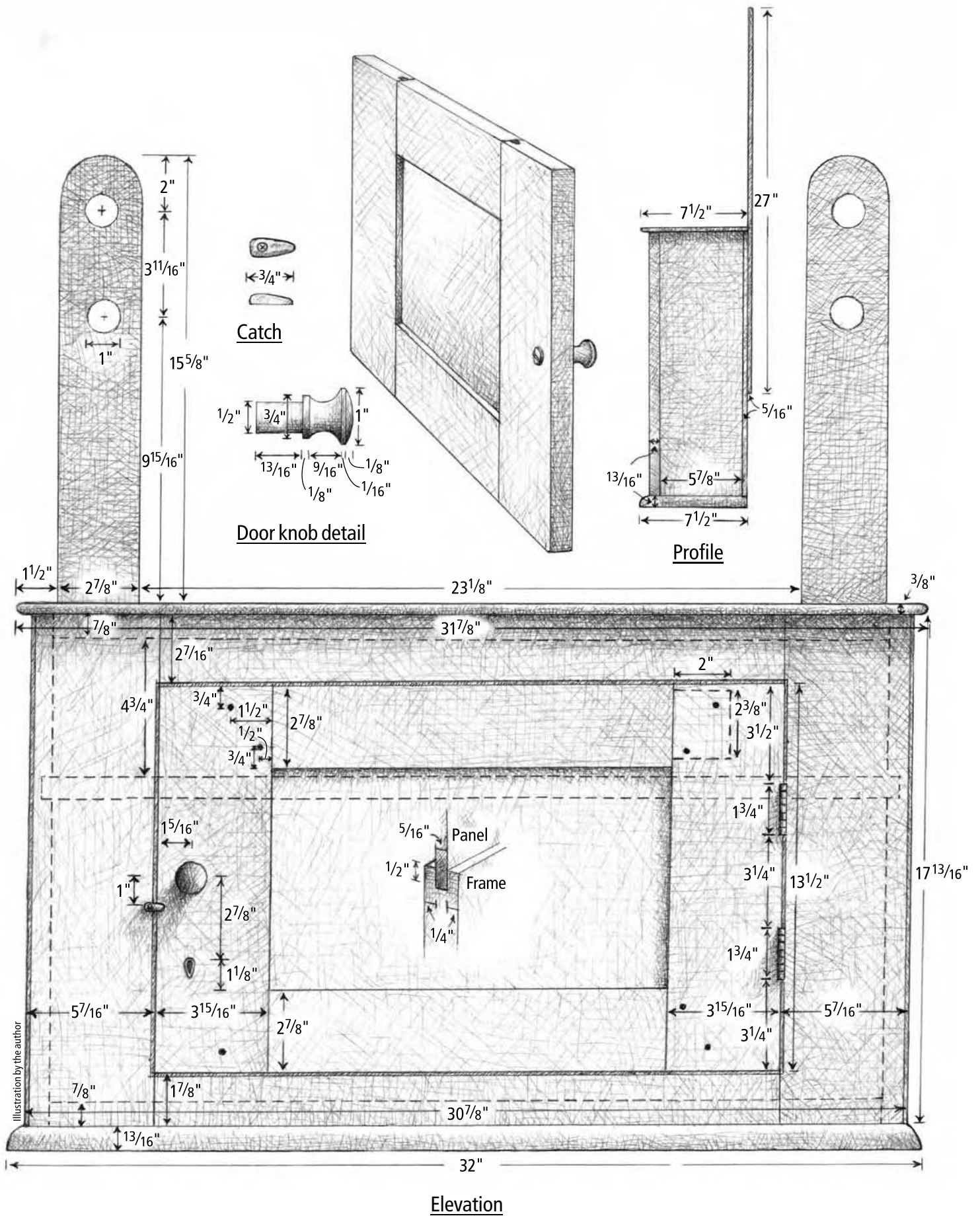


Illustration by the author



The junction of the horizontal and vertical beads must be completed with a little paring chisel work.



Carefully drive the nails that attach the face frame. (If you miss and ding up your stock, don't despair. Just spoon a bit of water onto the ding. As the fibers swell to accept the water, the surface of the wood will return to its original configuration.)

the edge of the work and push the plane forward. If you have the right amount of iron exposed, a tiny shaving will squirt out the side of the plane. (Test the plane's setting on scrap before working on the cupboard stock. A rank iron – one set too deep – can tear out the bead.) After a half dozen passes, you will have defined a neat little bead and quirk.

If you prefer routers, there are $\frac{1}{8}$ " bead cutters available that will simulate the work of this plane.

Cutting the bead around the door on the face frame stiles of the cupboard front requires a little trickery because you simply can't do it with a properly set up side-bead plane. This is because the bead doesn't run all the way to the ends of the boards on the face-frame stiles (although the bead does run from end to end on the face-frame rails so these beads can be cut in the way I'm demonstrating here.)

Caveat: The Shaker maker might have done this with a scratch stock. A scratch stock is nothing more than two pieces of scrap wood between which is sandwiched a small bit of metal filed to the necessary profile. The wood part of the scratch stock provides a way to hold the metal at the necessary angle without damaging the craftsman's fingers (it also stabilizes the metal), while the metal cuts the bead with a scraping action. It's simple but effective



Bench planes can be made to do a fair amount of edge shaping. Here, I'm using a bench plane to create the radius between a line drawn on the edge and a line drawn on the top of the cupboard bottom.



These narrow, deep mortises can be tricky to chop with hand tools.

when properly sharpened.

You can, however, cut the stopped bead on the face-frame stiles of the cabinet front with a side-bead plane if you cheat a little. Tap the iron down so that it hangs an extra $\frac{1}{8}$ " or so from the sole of the plane. That will allow the iron to engage the work when the sole of the plane is not riding down on the bead you're cutting. You are in effect, using the side-bead plane as a beading tool. This too is something you should experiment with on scrap before trying it out on the good stuff.

Nail the components of the face frame into place.

After the frame has been attached, you'll then finish the bead around the door with a paring chisel as shown above, followed by sandpaper.

The cupboard top and bottom both have radiused edges. The top has a 180° radius, the bottom only a 90° radius. These radii can be formed with moulding planes (or roundover bits in a router), but I've always made this shape with a bench plane as I'm doing above. You'll be amazed at how quickly you can do this work – much more quickly than you could set up a router to perform the same operation, and of course working with a plane means no dust and no noise. The shop remains quiet enough so you can plan the next few steps in the construction process.

If you choose my method, you'll first need some pencil lines to plane between. One of these lines should identify the midpoint of the board's edge. The other line should be placed on an adjacent

surface a distance from the edge that is equal to half the thickness of the board.

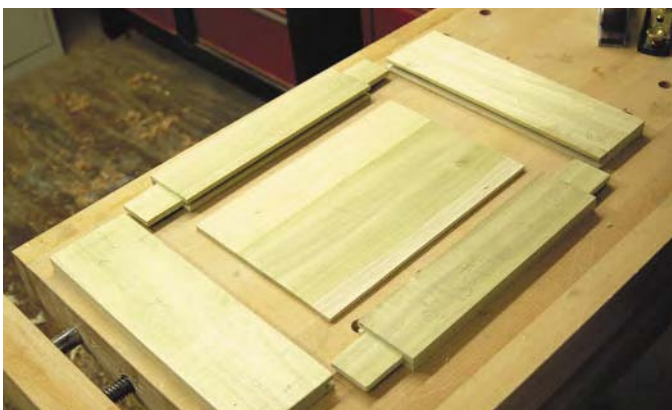
To create the radius, simply remove shavings in the area between these lines until, working by eye, you've established the rounded edge.

You should create the radii on the ends of the board before tackling the long-grain radius to avoid tear-out at the corners.

Nail the shiplapped backboards onto the back of the carcass. Then nail the top and bottom in place.

Making the Door

The cabinet took me maybe three hours to assemble. The door took a day and a half to build and fit. In part, this is because the door is the only element with any tra-



Before you glue up the door, lay out the parts and make certain that they will all come together during glue-up.



Riven pegs are not only historically accurate, they are also stronger than sawn pegs because they eliminate the possibility of grain run-out.

ditional joinery, but primarily, it was because doors require a lot of careful fitting.

The original door has 1/4"-thick x 2"-wide x 4"-long through tenons on the rails. And so did the first door I made for this particular reproduction.

But the mortises must have been a little out of whack because when I assembled the door, it had an unacceptable amount of twist, a result probably of an incorrectly cut mortise. This is something that's easy to do when chopping long and very thin mortises by hand. So I made a second door, this time with mortises only 2" deep. These were much easier to cut accurately, and a tightly fit 2"-long tenon has more than enough glue surface for this door, particularly when the glue joints are reinforced with 1/4" walnut pegs.

The photo at the top of the page shows the door components before the door was glued up. Notice the 1/4"-wide, 1/2"-deep through grooves milled into all of the inside edges of the door's rails

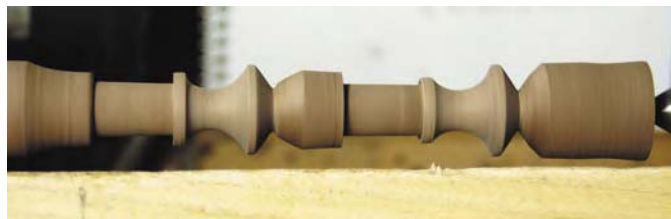
and stiles. The flat center panel floats in these grooves.

The door is opened with a turned walnut knob. I turned two knobs from the spindle shown because I had decided to make a pair of these hanging cupboards.

The final touches on the door are the 1/4"-diameter pegs that reinforce each tenon. Cut off a length of walnut (or some other durable, easily split hardwood) that is a bit longer than the thickness of the door components. Then, with a wide chisel, tapped with a hammer, split off squares about 5/16" on a side. Pare these squares into approximate rounds, holding the individual pegs as shown above.

The splits in the center of the photo are the splits from which the pegs are shaved. The pegs on the left have been shaved close to their final shapes.

Cut and shape the hangers as shown in the illustration. Nail them to the back—place the nails so you catch a shelf and the sub top of the carcass.



Use a skew to shape the top of the knob and a fingernail gouge to cut the cove. The tenon can be cut with a paring chisel laid flat on the rest with the bevel down.



The original cupboard had been stained. I chose to use a primer and paint combination in order to best mimic the look of the aged original finish.

Finishing

The original cupboard was stained red, but I opted for paint in order to conceal the nail heads. I began with a coat of latex primer, which I sanded, then followed that with two coats of a "designer" red that approximated the color of the original piece.

Of course, the problem with paint is the dimensional change it causes. Each layer of paint adds measurably to the width and thickness of the part to which it's applied. A door stile that was 4" wide after sanding, might be 4 1/8" wide after applying three coats of paint. So even though I had fit the door with a comfortable 1/16" gap all around, after painting, I had to remove the door and plane off additional width from all the rails and all the stiles and then repaint those planed edges in order to get the door to open and close properly.

My wife asked me how the Shakers might have used the original cupboard. I had to tell her I didn't know.

Because it was poplar—rather than, say, cherry or curly maple—it probably was a utility cabinet of some kind, maybe something that hung in a washroom, something that might once have held soaps or cleaning brushes, but because it was so portable—just remove it from the pegs in one room and hang it from the pegs in another—it might have had several incarnations in its original life, as the Shakers moved it from room to room to suit the needs of a community dwindling steadily in size over the years.

My wife decided to hang hers in the kitchen. She's going to fill it with spices, and then use the top surface to display her collection of antique tin cans with brightly lithographed color labels. **PW**