



CURLY-MAPLE HANGING SHELF

The original on which this reproduction is based was made in Hancock, Massachusetts. It is now in the collection of the Hancock Shaker Village there. It was designed to be suspended from a cord run between the $\frac{1}{4}$ " holes drilled in the ends, a cord which was positioned over a pair of pegs.

Mine is very similar to the original with the exception of joinery. I added a number of $1\frac{1}{4}$ " coarse-threaded drywall screws that pass through the dadoed ends of the shelves for a little extra strength. The heads of the screws are countersunk and concealed under maple plugs planed flush.

These plugs are available from many dealers in two forms, both of which are tapered on the sides to permit them to be tapped into holes and achieve tight fits. Some are cut from end grain stock and so match up well in such an application. Others, like the plugs I used on this piece, are cut from side grain and match up better in holes drilled in side-grain stock.

6 Here is the collection of wide boards I ripped in half, flattened and thickened. They are ready to be rejoined.



7 I began the jointing process at my machine jointer which established an edge exactly 90° from the face.



8 I then took a single shaving from those jointed edges with this low-angle, bevel-up jointer from Veritas. This tool is specifically designed to handle difficult species like curly maple. This single pass removes not only the faint ripples left behind by the machine jointer but also any tearout resulting from the curly figure, leaving behind a near-perfect surface for jointing.

9 I then clamped one board in a vise and aligned the other on edge on top of the first to verify that my edges were square.

10 I then rejoined the two halves of each board.



11 I could have surfaced the boards on my thickness planer, but I enjoy the use of planes, so I leveled each rejoined board with criss-crossing diagonal strokes of this Lie-Nielson (LN) low-angle, bevel-up jack plane, the perfect tool for flattening figured wood.

12 In this close-up, you can see the criss-crossing tracks of the jack plane. Once the surface was leveled, I removed these criss-crossing planes strokes with a smoothing plane worked in the direction of the rising grain.

13 I traced my pattern on the stock for the two end panels and bandsawed those forms.



14 I marked and cut the shelf dados using a stack of dado cutters on my radial arm saw. (This work could also be accomplished on the table saw.)



15 I cut the dados to a width slightly less than the thickness of the shelves, which gave me some thickness I could remove with a plane to fit each shelf to its dado.

16 Because I had decided to use drywall screws with their countersunk heads hidden under plugs, I next drilled the $\frac{3}{8}$ " countersink holes using a Forstner bit.



17 Then, in the center of each countersink hole, I drilled the through hole for the screws that would hold the shelf unit together. This bit is just a little larger in diameter than the threads on the drywall screws* I would be using at assembly.

* Several years ago, a reader wrote to the publisher of *Pleasant Hill Shaker Furniture* to complain about the fact that in the book I'd used drywall screws to hold the top of a Shaker table reproduction in place. He rightly felt the screws were historically inaccurate. I understand the concern, but I think it's misplaced.

First, it isn't economically possible to reproduce every historical nuance of period and Shaker originals. We're building our reproductions in the 21st century, and all of our materials and tools are results of 21st-century manufacturing processes. And these processes are written on the unseen surfaces of drawer bottoms and case sides in the form of jointer or planer ripples and the arcing tracks of circular saws. Our hardware too is marked by the consistencies of 21st-century manufacturing processes which produce, for instance, screws in which each one is the exact duplicate of the first. This is a consistency 18th-century makers of steel fasteners could not approach.

After 25 years of studying Shaker furniture and the men (and some women) who made it, I believe they would choose coarse-threaded drywall screws in many applications for the same reasons I choose them: They're inexpensive and have a holding power greater than the holding power of traditional woodscrews that have thicker shanks and narrower threads.



18 While it's true the screws turned into end grain lack the holding power of screws turned into side grain, if you're careful to select a bit of the right size—one that allows the threads to bite into the sides of hole without requiring so much torque that they're twisted off—the screws still provide an acceptable amount of grip, particularly if you use several screws as I did.

As always, when installing screws, it's important to experiment with the bits you intend to use on scrap before you use those bits on the real thing.

Years ago, I cut out a number of plywood gussets like the one shown here to make it easier to glue up cabinets that were truly square. When I drilled the holes in the end grain of each shelf (for the threaded shanks of the drywall screws), I used one of these gussets to hold the shelf and the end in the proper alignment while I drilled those holes.

19 I then turned the $1\frac{1}{4}$ " coarse-threaded drywall screws into the end grain of each shelf. Notice that the shelf edges haven't yet been beveled to match the angled ends of the shelf unit.



21 After applying a bit of glue to each tapered $\frac{3}{8}$ " plug, I tapped them into the countersink holes.

20 I then planed the bevel on each of the top two shelves and the rounded edge on the bottom shelf.



22 I then planed the plugs flush.