Build a Wall Shelf

A simple piece with sliding dovetails is a good excuse to make a versatile router jig

BY PETER TURNER

Shake up your wall with a shelf. *This simple wall-hung shelf, perfect for a spice rack or sea shells, was adapted from a traditional Shaker design. The shelves are joined to the sides with sliding dovetails.*

My wife, Colleen, occasionally asks me to build a piece of furniture for our home. I would love nothing more than to honor these requests, but there never seems to be time. But a hanging shelf is one project that I figured I could finish quickly.

I got the inspiration from a drawing of a peg-hung Shaker shelf in Ejner Handberg's book, *Shop Drawings of Shaker Furniture and Woodenware, Vol II* (Berkshire Traveller Press, 1975). The shelf sides in Handberg's drawing are curved on top, but the bottom is straight. I added another curve at the bottom, experimenting with

different curves until one satisfied my eye. Handberg's Shaker shelves also hung from a wall-mounted peg rail. I don't have a peg rail at home, so the first time I made this piece, I used brass keyhole hangers. In later versions, including the one shown on p. 51, I used simpler brass hangers mortised into the second shelf from the top. These are less expensive, easier to install and make hanging the shelf a snap. We use one hanging shelf as a spice rack. The varying heights and sizes of our spice jars helped establish the shelf spacing and overall width.

Consistency is the key to this piece. If you start with flat stock of uniform thickness and length, the joinery follows smoothly. To ensure consistency, do all your milling at once (all the stock is ½ in. thick), and use a plywood pattern and flush-trimming router bit for making identical curved and tapered sides.

The trickiest parts of this piece are the sliding dovetails. Routing the grooves is easy, but the long tails on the ends of each shelf take some patience and finesse. I use a router setup in which the router is mounted horizontally; it seems to make it easier to get a straight, even cut (see the drawing).

By holding the pieces flat on the router table, I have more control as I slide the piece past the bit. I make test pieces out of scrap, which I milled at the same time as the final pieces.

The Shakers housed the shelves in dadoes, rather than sliding dovetails, and you can do the same. It won't be as strong, but if you're worried about the shelves, you can toenail them from the bottom with finish nails or brads. □

Peter Turner is a woodworker and furnituremaker who lives in Portland, Maine.

WALL SHELF STEP-BY-STEP

STEP 1

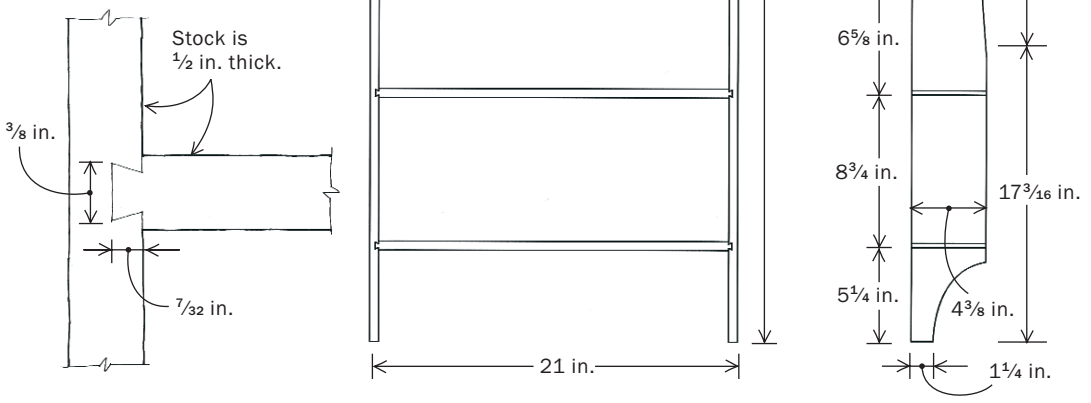
Routing dovetail grooves in the sides: **After milling all the material to a thickness of ½ in., cut the sides to length, but leave them at least ¼ in. wider than the widest dimension (4⅜ in.). Then mark the centerlines for each shelf on both pieces. Using a slotted piece of plywood to guide a ½-in. router template insert, cut the dovetail slots. First rough the slots with a ¼-in. straight bit, and finish them off with a ⅜-in. dovetail bit.**

STEP 2

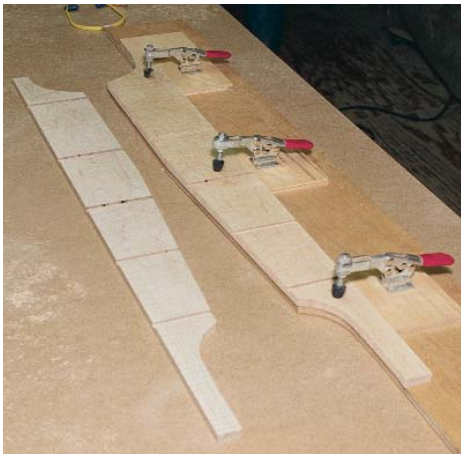
Trace the pattern, and bandsaw the sides: **With the grooves routed, cut the curved and tapered sides. First make a plywood pattern matching the shape of the sides of the shelf, trace the pattern onto the back of each side and bandsaw the shape close to the line.**

SHAKER SHELF UPDATED

Traditional, peg-hung Shaker wall shelves often have a slight curve at the top and taper from top to bottom. This shelf has a curve at the bottom also, and only the top half is tapered. The piece can be modified by changing the width or the shelf arrangement.

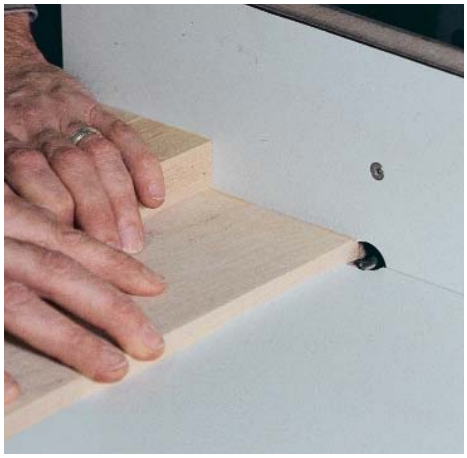


Photos: Zachary Gaulkin



STEP 3

Flush-trimming bit makes both sides identical: **After roughing out the sides on the bandsaw or jigsaw, clamp each side into the plywood pattern using hold-down clamps fastened to the plywood. Then rout the edge with a ½-in. flush-trimming bit, either using a router table (see the drawing below) or a hand-held router setup. This step will remove any tearout created when you routed the dovetail grooves, and it makes each side identical.**



STEP 4

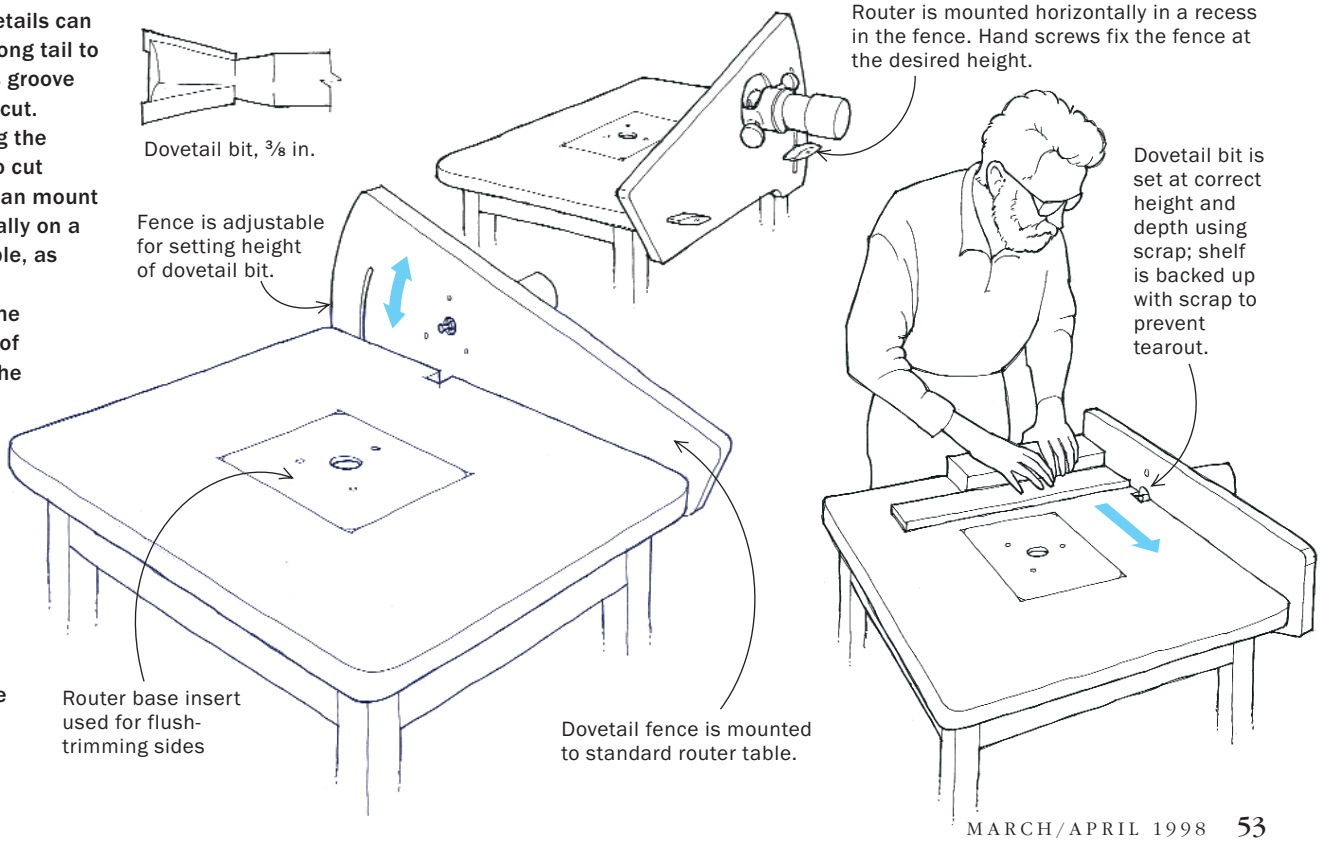
Routing the dovetails on the shelves: **To cut the dovetails, mount your router horizontally on the router table (see the drawing below). This makes it easier to adjust the height of the cut. It also lets you hold the workpiece flat on the table rather than against a fence. Adjust the depth and height of the router bit to match the depth of the slots. I cut the tails to fit by trial and error, testing on scrap stock milled at the same time as the shelf parts.**

STEP 5

Cut shelves to width and assemble: **Don't cut the shelves to width until after you cut the dovetails on the ends, so you can remove any tearout caused by the router. The front edge of the top three shelves is angled to match the tapered sides, which you can do by transferring the angle to the jointer fence. After sanding all the pieces, slide each shelf into the sides, starting at the bottom and clamping each shelf as you go.**

HORIZONTAL DOVETAILING FIXTURE MAKES A DIFFICULT JOINT EASY

Cutting sliding dovetails can be tricky. To get a long tail to slide snugly into its groove requires a uniform cut. Rather than holding the shelves vertically to cut the dovetails, you can mount the router horizontally on a standard router table, as shown. Holding the workpiece flat on the table, cut one side of the tail; then turn the piece over, and cut the other side. Use scrap of the same thickness to establish the exact height and depth of the dovetail bit, and then fit them in a test groove to prevent marring the final pieces.



Drawings: Jim Richey