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# Arts and Crafts Wall Shelf

**Hollow, quartersawn columns and traditional inlay elevate an easy project**


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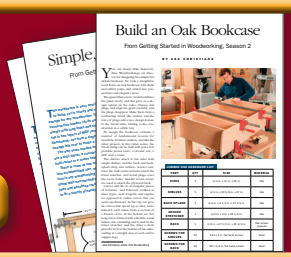


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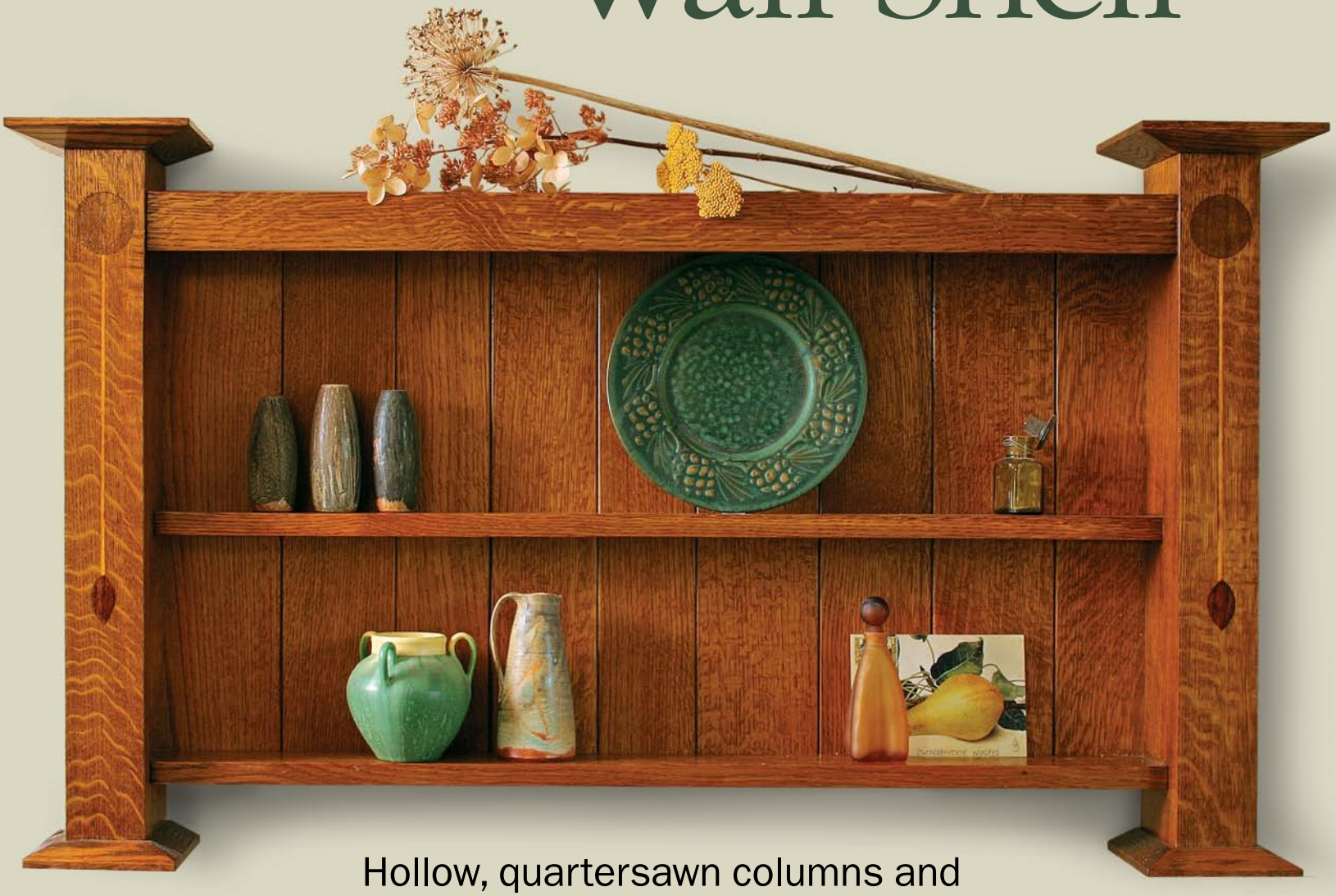
# Arts & Crafts Wall Shelf



## Hollow, quartersawn columns and traditional inlay elevate an easy project

BY NANCY HILLER

While looking through a book on home design several years ago, I noticed a small cabinet hanging above a claw-foot bathtub. With its inlaid columns and beveled caps, the shelf was wonderfully British in style and was quite distinct from American interpretations of Arts and Crafts design. Although the original cabinet had a pair of doors, its shallowness seemed more suited to open shelves.

The design of this cabinet may be simple, but making it involves using a number of valuable techniques such as mitered joints for the columns, decorative inlay, and a finish for quartersawn oak that makes new work look old (see Finish Line, pp. 106-107). Although quartersawn oak is the traditional choice for English Arts and Crafts furniture, this piece would look equally good if it were made of cherry or nonfigured maple.

### Mitered columns showcase oak grain

The columns are the focal point of this piece. They are hollow, made of three vertical boards mitered together at the front corners so that the quartersawn figure is visible on each face, with a fourth board inserted as a back filler.

Even if you are not using oak, these mitered corners will give the columns a much cleaner look than simple butt joints. While you certainly could use a single,



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## MITER AND GLUE UP HOLLOW COLUMNS

**This method of construction allows the hallmark Arts and Crafts ray-fleck figure to appear on each face.**

***Attach an auxiliary fence.*** *Using a supplemental fence on a right-tilt saw prevents the thin, already mitered edge from creeping under the sliding rip fence.*


***Start clamping at the front of the column.*** *Because the pieces that form the column are now cut to length, make sure to get the ends level with each other.*

thick block of wood for the columns, doing so seems clumsy for a delicate piece of furniture, and the columns would be less stable when subjected to seasonal changes in humidity.

Cut the miters in one pass on the tablesaw, holding the board down firmly all the way along the cut. If it lifts even a little or wanders away from the fence, the mitered edge will not fit tightly.

After cutting the miters, you can go ahead and cut the pieces to length. Dry-clamp one of the columns to work out any kinks in the process. Now you are ready to glue them.

There are a number of ways to approach this glue-up, but the method I use has proven efficient and easy for somebody working alone, and it yields great results. I use Ulmia picture-framing miter clamps (www.garrettwade.com or www.collinstool.com) because they are lightweight and easy to handle. While the pointed ends of the wires do leave small indentations in the wood, the coarse grain of the oak distracts the eye enough that the marks disappear when filled with wood putty.

I match the putty to the piece only after the third step of the finishing process (see Finish Line, p. 107). If you don't want to buy Ulmia clamps or if you are using a finer-grained lumber such as maple or cherry, you can use tape (see "The Miter Joint for Casework," *FWW* #190, p. 66, for the taping method) or picture-framer's miter clamps to avoid these marks.

As soon as each column's miters are clamped, insert and clamp the filler board at the back. After the glue is dry, run the back face of each column over the jointer to level the joints.

### Rout the shelf dadoes, rabbets, and stretcher tenons

The shelves will be housed in stopped dadoes routed into the columns. Mark the columns and rout the dadoes while the two columns are clamped together. When marking the dadoes, there are two things you must remember: Because the center shelf is set back more than the other shelves, its dado begins farther back than

***Insert the filler piece in the back.*** *Once the back is in place, use bar clamps to apply pressure.*



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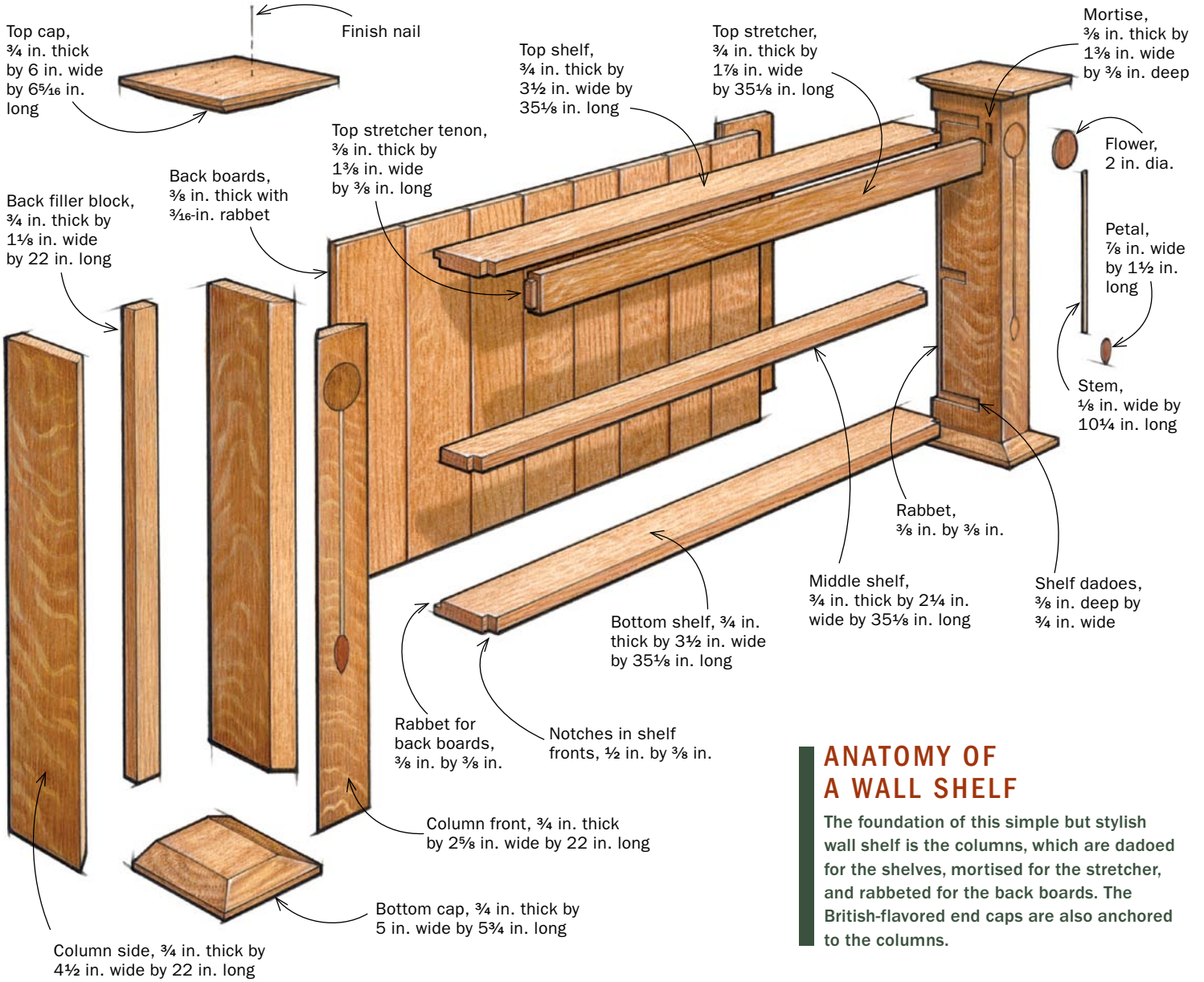
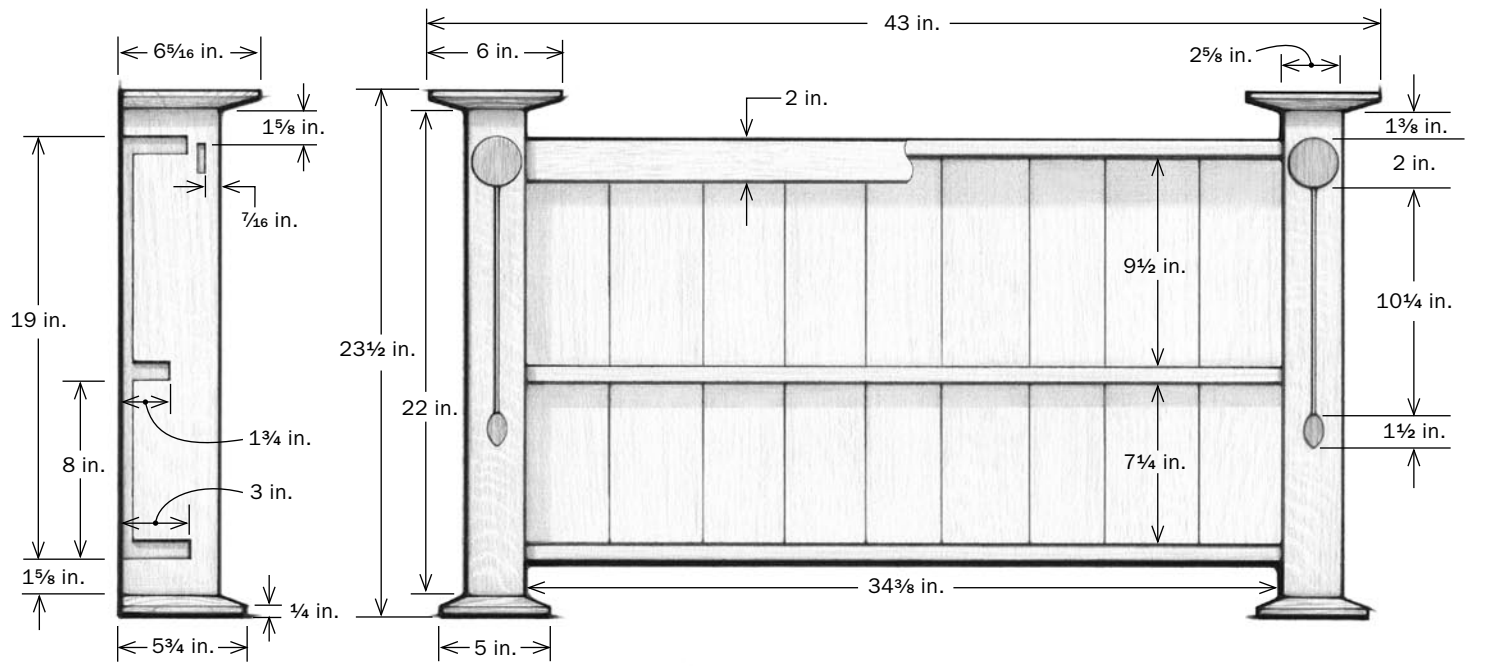



## ANATOMY OF A WALL SHELF

**The foundation of this simple but stylish wall shelf is the columns, which are dadoed for the shelves, mortised for the stretcher, and rabbeted for the back boards. The British-flavored end caps are also anchored to the columns.**






Drawings: Christopher Mills

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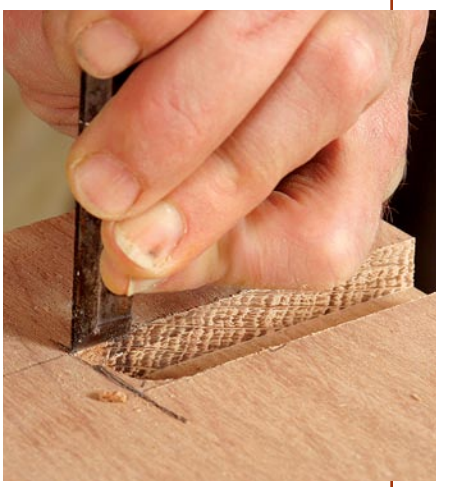
## CUT THE DADOES AND RABBETS



***Rout shelf dadoes while columns are clamped together.*** *Clamp a straightedge to the columns to guide the router (left). Use a chisel to square up the front edge of the dadoes by hand (above).*

the dadoes for the top and bottom shelves; and all of the dadoes are stopped short of the shelf fronts to accommodate the notch in the front of the shelf.

Cut the dadoes in one or two passes using a ¾-in. straight bit, guiding the router with a straightedge clamped to the work. With a chisel, square up the front ends of the dadoes.

While milling stock for the shelves (after you have finished cutting the dadoes), be attentive when you get close to ¾ in. thick and keep checking the stock against the dado. The fit should be hand-tight, requiring some pressure to push the stock home but not so tight as to need heavy pounding with a mallet.

Next, rout a rabbet for the backboards on the underside of the top shelf and on the upper side of the bottom shelf. The columns also need a rabbet to hold the backboards. When cutting the rabbets in the columns, stop them in the upper and lower shelf dadoes. Check how everything lines up.

The top stretcher will be tenoned into the columns. The small mortises for these stub tenons can be cut using a router guided by its own fence or just drilled out and then finished with a chisel. I cut the stub tenons by hand with a backsaw.

***Rout a rabbet for the backboards.*** *A rabbeting bit works well, with the guide bearing running against the side of the column. Stop the rabbet in the shelf dadoes.*

### Fit the shelves

When the piece is finished, there will be three distinct shelf setbacks. The top shelf will have a stretcher in front of it, so even though the top and bottom shelves are cut to the same depth, the top shelf will sit nearly at the front of the column. The bottom shelf, which does not have a stretcher, will be set back about ¾ in. more, and the center shelf will be the farthest back.

Cut the shelves to size, remembering to rip the center shelf narrower than those at the top and bottom in order to accommodate the extra setback as well as the backboards. Mark out for the notch on the front edge and use a backsaw to remove the waste, or you can cut these notches and the joints for the stretcher on the tablesaw. Test-fit the shelves in their dadoes.

### Create the decorative inlay and assemble the case

I do my inlay with the aid of a magnifier that mounts to my workbench. The first step is cutting out templates (using



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# A simple inlay technique

1

***Score the outline.*** *Press lightly at first to avoid getting caught in the grain, then more deeply a second and third time.*

2

***Remove most of the recess.*** *Rout close to the inlay border, leaving a bit of waste to clean up by hand.*

3

***Pare to the line.*** *Carving gouges make it easy to clean up and shape the recess accurately.*

**Prepare the inlays by resawing stock (on the tablesaw or bandsaw) to 3/32-in. thickness. Regular commercial veneer is too thin and doesn't leave any margin for error.**

**Trace the outline onto the inlay stock and cut each part to shape, using a scrollsaw or a coping saw, files, and coarse sandpaper. After the inlays are shaped, mark the position of the flower and leaf on each column, taking care to center them in the width and align each element with the other. You can use double-sided tape to ensure that the inlays don't slip out of position while you are scribing around them. Score the outline with a sharp knife or awl. Carefully rout out the main portion of the recess, using a 1/4-in. straight bit set at just less than 3/32 in. deep.**

**Pare away the remaining waste with carving gouges and a knife, making sure the bottom of the recess is uniformly flat. Cut the recess for the stem using a 1/8-in. straight bit (also set at slightly under 3/32 in.), and a router equipped with a fence.**

**Using yellow glue, with cauls to distribute clamping pressure, glue in the flower and leaf. After the glue is dry, sand them flush. Finally, trim the stem to fit and glue it in place.**

4

***Rout for the stem.*** *After routing the groove, rip stock to fit tightly into it.*

5

***Glue in the flower and leaf.*** *Use a caul to apply even pressure. Newspaper prevents the caul from sticking to the inlay.*

6

***Insert the stem and finish up.*** *Glue and clamp the stem in place (above). Once the glue is dry, scrape and sand the inlay flush (right).*

7



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## ASSEMBLE THE SHELF

***Clamping the case.*** *Use enough pressure to pull the shelves into their housings, but avoid excessive strain on the hollow columns (left). Apply finish to the parts before screwing the back boards in place (above).*

cardstock) for the flower and leaf. Select a species that will show up against the background wood (for more about the inlay technique, see the facing page).

At this point, the piece should be ready to dry-fit. First, sand all of the parts to P180-grit. Dry-fit first and then glue the front stretcher and the shelves into place at the same time. The stretcher should also be glued and clamped to the front edge of the top shelf. When the assembly is dry, sand the entire piece to P180-grit.

While the columns are the visual anchor, the beveled end caps give the piece its British flair. Cut the caps and bevel them on the tablesaw.

Now mill the backboards, rabbeting alternate edges on the tablesaw. Sand the backboard faces and use a block plane to work a small bevel on the front edge of each board. Apply finish to the backboards (see Finish Line, pp. 106-107). Once all the other parts also have been finished, attach the backboards using small screws.

When the shelf is completely assembled, rout the slots for keyhole hanging and install the hardware. Attach the caps to the columns with finish nails. □

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***Rout two depths for hanging hardware.*** *The first step will hold the hardware, while the deeper step allows the hanging screw to be inserted.*

***Attach the end caps.*** *Countersink the finish nails and fill the holes with matching wood putty.*



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