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## Colonial Pewter Cupboard

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**\$7.95**

WJ015

Published in Woodworker's Journal 'From Shop to Home: Essential Projects, Tips and Techniques for Today's Home Woodworker'



# Colonial Pewter Cupboard

*Colonial styling and a milk paint finish bring history alive in this pine reproduction piece.*

**F**ine pewter isn't seen much in daily use anymore, but not so long ago it was the material of choice for many domestic utensil makers both here and in Europe. A malleable tin-based alloy, pewter could be shaped and formed to create vessels, mugs and serving dishes. Unfortunately, many early pewter creations contained a great deal of lead, and if used over a protracted period, caused untimely death. Those early pieces with high lead content are characteristically dull, while latter-day pewter is generally bright and shiny due to a hardening process involving antimony and copper.

Prosperous homeowners in eighteenth century New England prized their pewter dishes and platters, in large part because those pieces were handcrafted by skilled artisans. To display them, another group of artisans — furniture makers — came up with the pewter cupboard, much like the one shown here. In this respect you might say that the pewter cup-





**Figure 1:** In the traditional mode, we glued up solid-wood panels for the sides instead of substituting plywood. Rabbits for the back were then cut on a table saw, as shown here.

board was a precursor to today's china cabinet.

Plate grooves cut into the shelves held serving dishes on-edge, while smaller pieces such as tureens, goblets and bowls were arrayed in front. Below, a single door kept flatware and utensils out of sight.

Clear pine was the most abundant and also the most workable species in the new continent, so it became the wood of choice for pewter cupboards. And the finish of choice was the standard of its day — milk paint — made with milk from the same pewter jug used that morning at breakfast.

### Begin with the Sides

Those magnificent wide pine boards used for the sides of antique casework projects are, unfortunately, a thing of the past. Technology has provided a solution, however: Biscuit joiners. With their help you can make up stock for the sides (pieces 1) in two stages. Begin by biscuiting and gluing up two boards for each of the full-length sections, then add a 5"-wide strip to the front edges.

The flagstone floors in early American kitchens were quite

uneven, and cabinets often had feet rather than a solid base to deal with this problem. You can cut these with a jigsaw, following the *Half-size Foot Profile* shown on the *Technical Drawings* on page 90, then clean up the cuts with a drum sander mounted in your drill press or by using an oscillating spindle sander if you have one.

The cabinet's back is made up of boards and splines (pieces 2 and 3) that are set in rabbets in the sides. Cutting these rabbets is next on your list (see *Figure 1*), and the easiest way to do it is on your table saw. Check the *Technical*



**Figure 2:** Use a jigsaw to notch the counter so it fits between the cupboard sides (see the *Counter* drawing at right for dimensions).

*Drawings* for the dimensions, make the cuts, then switch to your portable router to cut a series of dadoses across both of the sides. These dadoses hold the unit's bottom panel and lower shelf (pieces 4), the counter (piece 5), and the two fixed shelves (pieces 6) in the upper half.

Cut these dadoses with a straight bit chucked in your router, running the base against

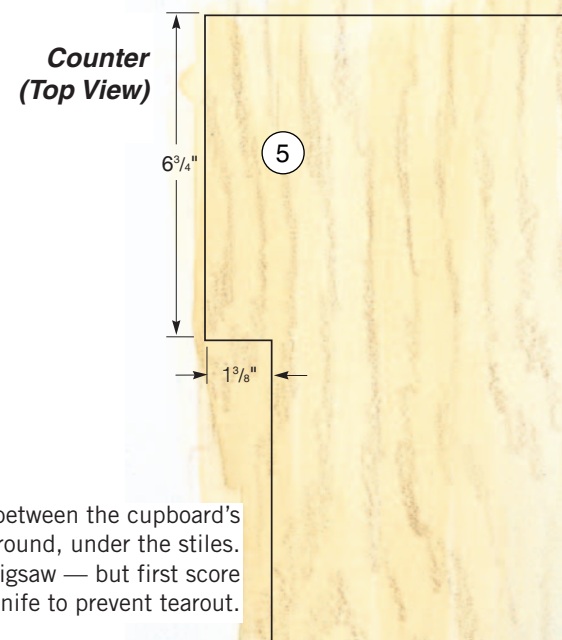
a straightedge. The locations and dimensions for the  $\frac{3}{4}$ "-wide dadoses can be found on the *Technical Drawings*.

The last milling operation on the sides is to make the cut to fit the counter. This is fairly simple to cut with your jigsaw, following the dimensions on the *Technical Drawings*. First use a sharp utility knife to score across the grain to prevent tearout. Also, cut with the saw against the inside face so that any ragged edges will be hidden when the cabinet is assembled.

### Now Make the Shelves

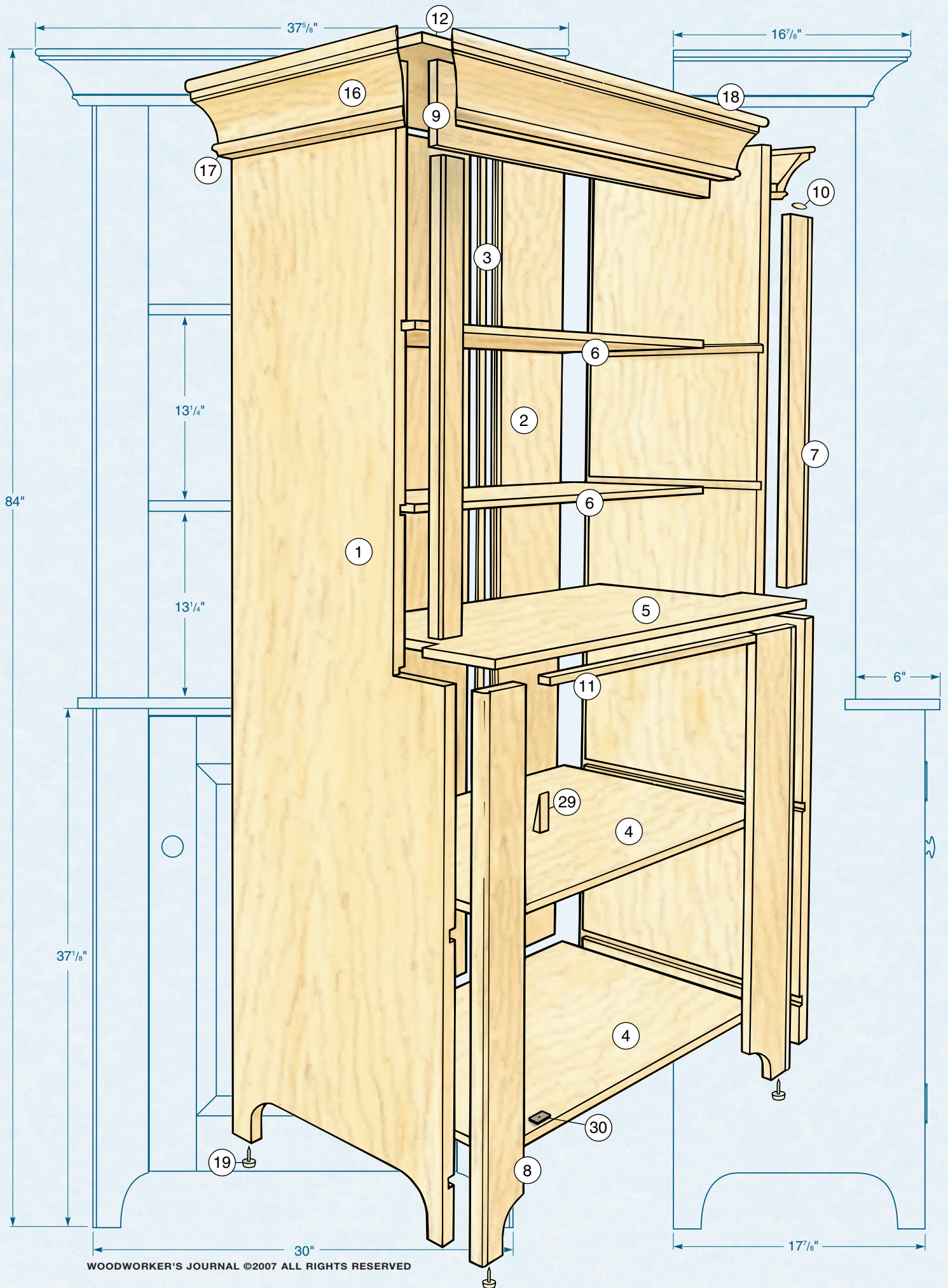
Cut the countertop to shape using your jigsaw (see *Figure 2* and the dimensioned drawing below). It's also a good idea here to score the crossgrain with a knife to avoid tearout. When you're done, assemble the sides and shelves, counter and bottom panel, gluing and clamping them together.

The two upper shelves are fixed in place, as are the counter, the lower shelf and the bottom. After cutting all four to size, rout plate grooves in the



**The back of the counter** fits between the cupboard's sides, while the front wraps around, under the stiles.

To create this shape, use a jigsaw — but first score your line with a sharp utility knife to prevent tearout.







**Figure 3:** To display your best pewter, cut plate grooves in the shelves with a V-groove bit in the router table.

upper shelves and the countertop with a V-groove bit (see *Figure 3*, above). The *Technical Drawings* show the locations of these grooves.

Begin with the bottom and work your way up, gluing all the shelves into one side first. Then spread glue in the second side's dados and repeat the process. Check the diagonals for square and tighten your clamps.

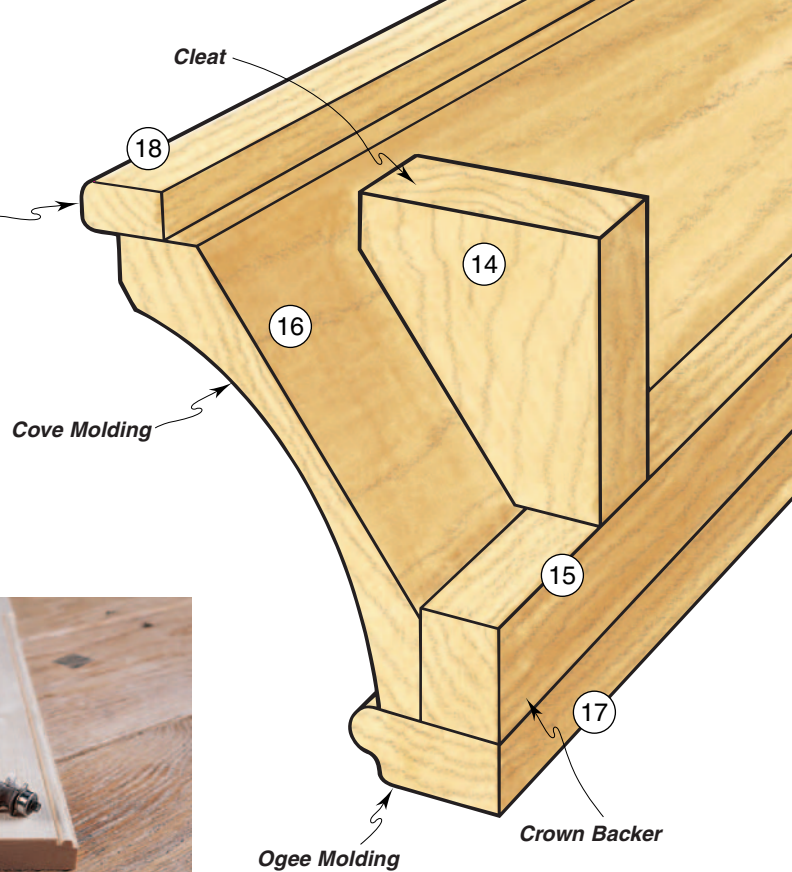
### Making the Face Frame

The upper and lower stiles (pieces 7 and 8) and the top rail (piece 9) can all be made at the same time. After ripping and jointing them to size, use a beading bit in your router to create the decorative detail on the outside edge of the stiles, as shown in *Figure 4*. Then saw



**Figure 4:** To create the traditional decorative detail on the edges of the stiles, use a bearing-guided beading bit in your router.

the foot profiles on the lower stiles using the *Half-size Foot Profile* as a guide in the *Technical Drawings*. Clean up these cuts with your drum sander, then dry-fit the upper stiles and the top rail to the cupboard carcass. If everything



The crown assembly is built up with three moldings plus a backing strip and a series of supporting cleats.

fits, use glue and biscuits (pieces 10) or dowels to attach the upper stiles to the top rail. When the glue is dry, change to a chamfering bit in your router and ease the inside edge of this subassembly. Continue the chamfer into the corners with a file or sharp chisel, then glue and clamp the upper subassembly and lower stiles to the carcass. Now glue and tack the bottom rail (piece 11) in place.

## MATERIAL LIST - Carcass

	T x W x L		T x W x L
1 Sides (2)	3/4" x 17 1/8" x 84"	11 Bottom Rail (1)	3/4" x 1/2" x 22"
2 Back Boards (3)	1/2" x 9 1/2" x 79 3/4"	12 Top (1)	3/4" x 11 5/8" x 28 1/2"
3 Back Splines, Plywood (2)	1/4" x 3/4" x 79 3/4"	13 Screws	#6 x 1 1/2"
4 Lower Shelf and Bottom (2)	3/4" x 16 5/8" x 29 1/4"	14 Cleats (8)	3/4" x 2 3/8" x 2 1/4"
5 Counter (1)	3/4" x 18 1/2" x 32"	15 Crown Backer (1)	3/4" x 1" x 60"
6 Fixed Shelves (2)	3/4" x 11 5/8" x 29 1/4"	16 Cove Molding (1)	3/4" x 4" x 72"
7 Upper Stiles (2)	3/4" x 4" x 46"	17 Ogee Molding (1)	1 1/4" x 13 1/16" x 61"
8 Lower Stiles (2)	3/4" x 4" x 37 1/4"	18 Bullnose Molding (1)	3/4" x 1/2" x 72"
9 Top Rail (1)	3/4" x 6" x 22"	19 Glides (4)	5/8", Nylon
10 Biscuits (2)	#0		

## MATERIAL LIST - Door

	T x W x L
20 Door Stiles (2)	3/4" x 3 3/8" x 32 1/2"
21 Door Rail, Top (1)	3/4" x 3 1/2" x 15 3/4"
22 Door Rail, Bottom (1)	3/4" x 3 7/8" x 15 3/4"
23 Door Panel (1)	5/8" x 15 3/8" x 25 5/8"
24 Door Hinges (2)	Solid Brass Partial Wrap
25 Door Knob (1)	1 1/2" Dia. Low Profile
26 Pivot Dowel (1)	1/4" x 1 3/4"
27 Washer (1)	5/16" ID
28 Latch (1)	5/8" x 1" x 2 3/4"
29 Wedge (1)	1/4" x 1" x 1 3/4"
30 Magnetic Catch (1)	Low Profile

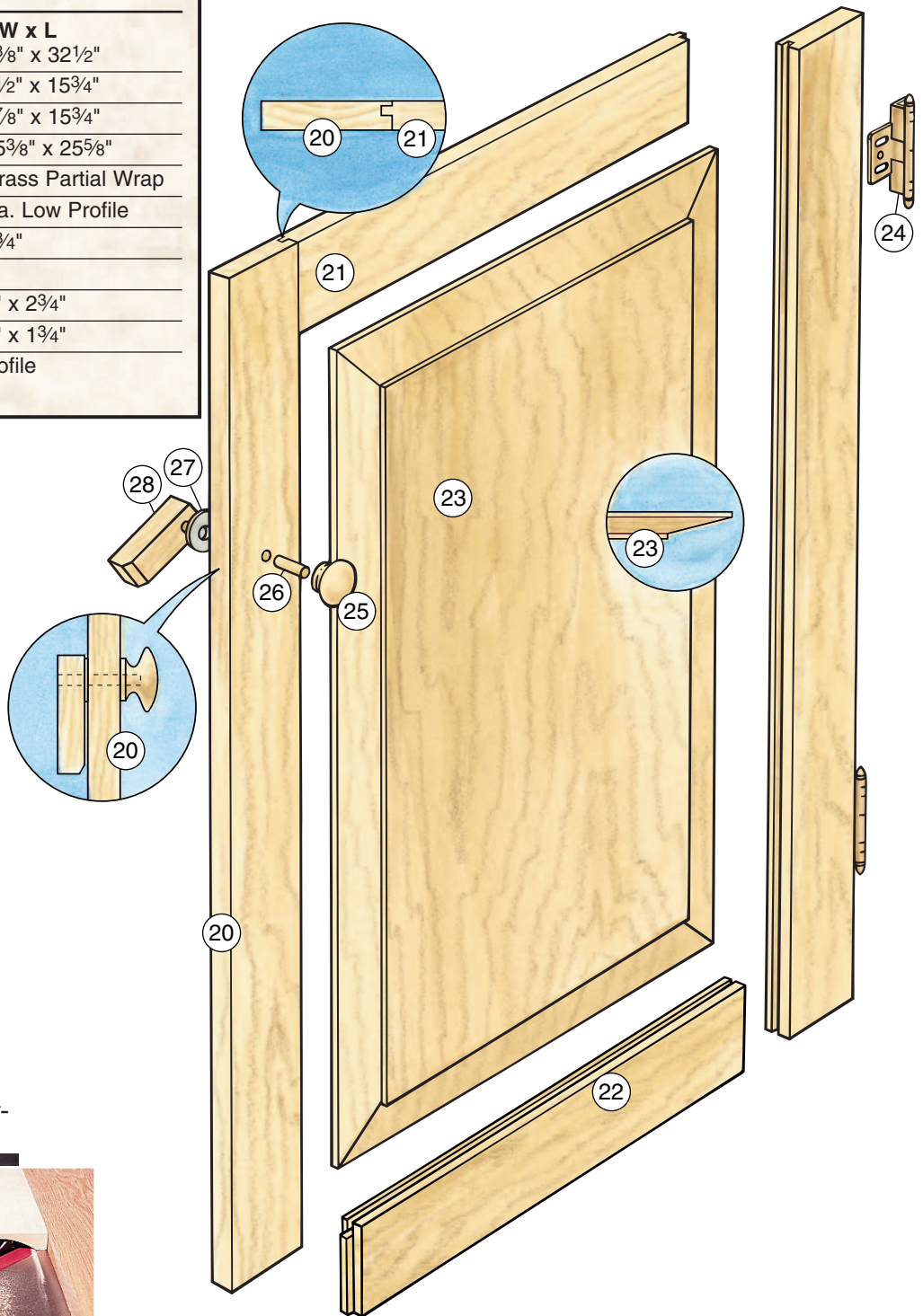
### Making the Crown

The first step in the crown assembly is to attach the cupboard's top (piece 12) with screws (pieces 13) driven through predrilled 1/8" holes in the sides and the top rail.

A series of cleats (pieces 14) to hold the crown assembly in place can now be screwed to the sides and top rail (from the inside). The shape and locations of these cleats can be found on the *Technical Drawings*. It's very important that the bottom edges of the cleats all line up properly, so draw a pencil line at this location (see the *Drawings*) all the way around the cupboard to guide you dur-



**Figure 5:** To create the cove molding, use your miter gauge to orient and clamp fences at 45° to the blade, then raise the blade 1/16" per pass as you cut the curved profile.



ing installation. This line will be hidden by the crown backer (piece 15), which should be installed now. Drive these screws from the inside.

Three moldings are attached to the cleats and backer. The first of these is a large cove

molding (piece 16) that is made on your table saw (see cross-section on the *Technical Drawings*). With the blade lowered below the table, clamp two parallel boards to the saw, as shown in *Figure 5*, this page.) The boards should be 4" apart



**Figure 6:** The Roman ogee and the bullnose moldings are cut on the router table. Be sure to sand the top edges of the Roman ogee before installing it.



and set at a 45° angle to the blade. Your miter gauge can help you set this angle. Test your setup on scrap, making repeated passes and raising the blade 1/16" after each pass. (Note: For this operation a sharp blade will reduce your sanding time considerably.) When you're satisfied with your test cuts, mill the workpiece.

Make the Roman ogee and bullnose moldings (pieces 17 and 18) on your router table, as shown in *Figure 6*. Then miter all three moldings to the correct lengths, apply glue on the mitered ends and secure them to the cupboard with finish nails. Set the heads, apply filler and sand smooth.

## A Spline-jointed Back

When building cabinets, it can be helpful to attach the back to the carcass as early as possible — a square plywood panel helps keep the cabinet stiff. But the style of this piece predates



**Figure 7:** The 1/4"-thick splines in the back are cut from scrap plywood. Solid-wood splines would just crack along their grain.

plywood, so that's not really an option here. Instead, the fixed shelves serve to stiffen the cabinet until you install the three separate boards for the back. The two outside boards have a groove cut along their inside edges, and the center board has the same groove cut into both edges. Refer to the *Technical Drawings* for the dimensions, then plow these grooves on the table saw with the workpiece on edge. Use plywood for the splines

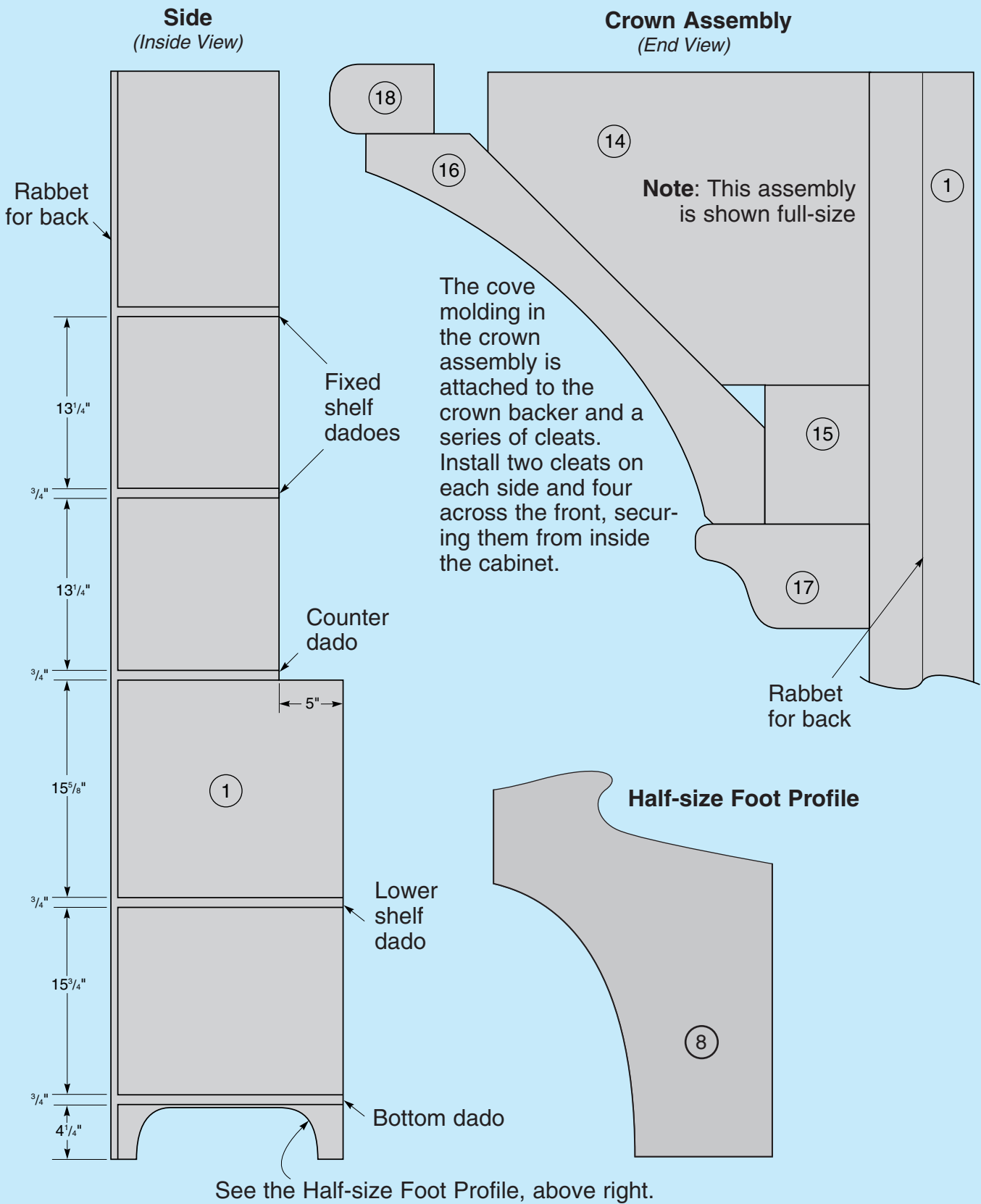
## How to Raise Panels on Your Table Saw



Begin by raising your blade just less than 1/8" above the table, and set the fence 1 5/8" from the blade. Use this setup to score the front face of each door four times to create the panel's shoulders (see photo, above). After making these cuts, raise the blade a hair and recut these kerfs for nice clean grooves that will require very little sanding.



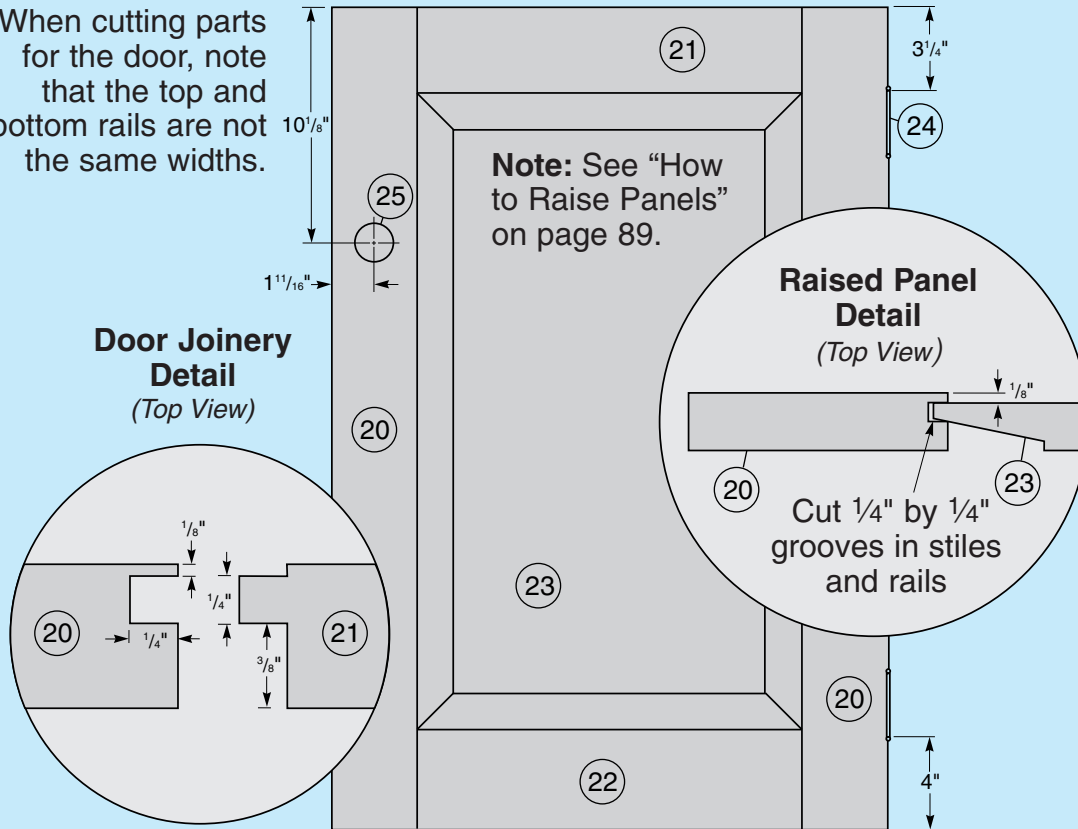
Place the panel on edge, then set the blade at 12° and raise it until the teeth meet the shoulder kerfs. Set the fence 1/4" from the inside edge of the blade and cut across the grain first, then with it (see photo, above). Keep the panel tight against the fence while you're making these cuts. Now nudge the fence 1/32" closer to the blade and repeat this process to create cleaner bevels.



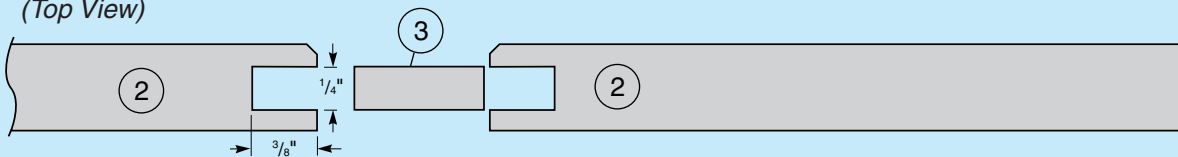


## Raised Panel Door (Front View)

When cutting parts for the door, note that the top and bottom rails are not the same widths.

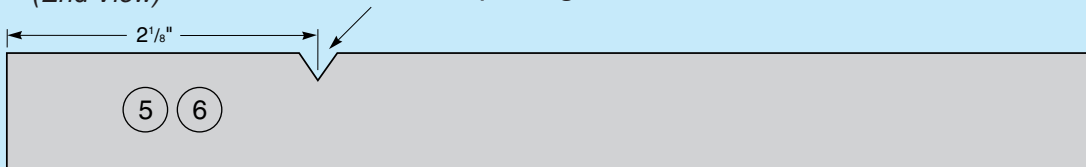


## Back Boards and Spline (Top View)



## Fixed Shelves and Counter (End View)

Use a V-groove bit to make the plate grooves.



# All-Natural Milk Paint



The author's traditional recipe for milk paint includes skim milk, linseed oil, lime and whiting. Pigment can then be added to this base.

Over the past couple of decades I've driven through most of the contiguous 48 states. Like any traveler, I revel in the drama of great treasures like Yellowstone and the Grand Canyon, but I have to admit that some of my best trips have been simple drives through the pastoral hills of New England and the plains of the Midwest. And my most enduring memories of both regions are of huge red gambrel-roofed barns that dominate every dairy farm.

Have you ever wondered why, with so many color options available, almost every barn in America was painted red? The answer is simple but economically sound: Until the latter half of this century, farmers used their own abundant product — milk — to make the paint they used to spruce up their barns. The formula, developed in Egypt and China a couple of millenia ago, has been used successively through the ages by, among others, Greeks, Romans and Celts.

There are countless variations on the basic recipes, but the two I've used are listed below. One is for interior projects such as furniture and wainscoating, and the other is for exterior structures such as barns, chicken coops and graineries. Both use the same elements, differing only in the proportions required (by the way, milk paint contains no lead, propellants or other harmful chemicals). With the ingredients in hand, add the milk to the lime, then stir in the linseed oil. Sift the whiting onto the top and let it sink, then stir vigorously with a stick.

The small packages of pigment sold at hardware stores to color cement will work as a coloring agent, as their chemical content is compatible with lime. Mix them with a little water to make a paste, then stir them into the paint.

Experiment with some of your batch to get the color just right, keeping in mind that your paint will be a lot lighter by the time it's finished drying. Then apply it with a bristle or foam brush.

because solid wood will crack along its grain. Be aware that most ¼" plywood is actually a little thinner, so adjust your groove accordingly. Dry-fit the splines (see *Figure 7*) and the boards for a snug fit.

Picking up on a Colonial theme, the edges of the boards are chamfered where they meet, creating a V. Cut these chamfers with the same V-groove router bit you used earlier to make the shelf plate grooves and be sure to test your setup on scrap before milling the workpieces.

Dry-fit the boards against the carcass and mark the shelf locations, then remove them and use your marks to predrill from the inside for the screws. Countersink the screw holes from the outside and screw the back in place. To allow for expansion and contraction, don't glue the boards or the splines. Drive a tack through each spline near the bottom to stop it from sliding out. Tack the two outside boards to the carcass sides. Attach the glides (pieces 19) next.

## The Raised Panel Door

This is a standard frame and panel door, with a ¼" x ¼" groove cut in the stiles (pieces 20) and rails (pieces 21 and 22) using a straight bit in the router table. The same bit can also be

*Interior Milk Paint*  
Makes approximately 1 gal.  
8 lbs. skim milk  
8 oz. linseed oil  
12 oz. slaked lime (garden lime)  
6 lbs. calcium carbonate (whiting)

*Exterior Milk Paint*  
Makes approximately 1 gal.  
8 lbs. skim milk  
16 oz. linseed oil  
16 oz. slaked lime  
6 lbs. whiting



used to cut tongues on the ends of the rails (see the *Technical Drawings*). The door panel (piece 23) is edge-glued and sanded, then milled according to the instructions given on page 89. (Note: On a panel this big, be sure to add a high auxiliary fence to your saw's rip fence before making the second cuts.) Once your door pieces are milled, dry-fit them, checking that the panel isn't too tight. Then glue up the door frame but allow the panel to float freely in the frame. Now install the door in its opening, using the two partial-wrap hinges (pieces 24). Their locations are shown on the *Technical Drawings*. Then remove the door and hinges to prepare for finishing.

### A Milk Paint Finish

After giving the entire project a thorough sanding with 220-

grit paper, finish up with some 280-grit and wipe everything down with a tack cloth. Apply a vibrant red milk paint (We used J.E. Moser's Salem Red, available through catalog outlets). This is a water-based finish, so you must raise the grain before applying it. Dampen the wood with a moist sponge or rag, let it dry completely and then sand lightly with 280-grit paper. Be careful not to sand too hard or you'll go through the newly raised grain and be back to square one.

Although many over-the-counter milk paint mixes recommend one coat coverage, we suggest applying two. Then top it off with two coats of Danish oil. If you'd prefer a more traditional approach to milk paint, check out the tips from finisher Larry Fiscus on how to make your own milk paint in the story at left.

When the finish is dry, reinstall the door and then turn your attention to the knob assembly. Enlarge the hole in a wooden knob (piece 25) with a 1/4" drill bit, then glue a short length of 1/4" dowel (piece 26) into the hole. Drill a 5/16" hole through the door at the location indicated on the *Technical Drawings*, and slip the dowel through the hole. Place a washer (piece 27) over the dowel, then drill another 1/4" hole — this time through the latch (piece 28). Glue the latch onto the dowel, making sure the knob still spins freely, then tack the wedge (piece 29) in place.

Wrap up by attaching the magnetic catch (piece 30) near the bottom of the door opening to provide for a nice, tight seal that will help prevent the door from warping over the years.

## Quick Tip

### Door Glue-Up Jig

When gluing up frame and panel doors, it sometimes can be difficult to keep the assembly square. To help solve the problem, here's a jig that squares one corner of the frame, giving you a reference point for checking the other three corners. The jig has two cleats screwed to a plywood base at 90° to each other. When using the jig, first apply a little pressure with the clamps while adjusting the frame so it's square, then tighten the clamps and check the other corners of the glue-up. Lay wax paper in the jig first to prevent glue squeeze-out from sticking to jig.

