

WOODWORKER'S JOURNAL

downloadable plans:
"America's leading woodworking authority"™

Jelly Cupboard Reproduction

In this plan you will be getting:

- Step by Step construction instruction.
- A complete bill of materials.
- Exploded view and elevation drawings.
- How-to photos with instructive captions.
- Tips to help you complete the project and become a better woodworker.



To download these plans, you will need **Adobe Reader** installed on your computer. If you want to get a free copy, you can get it at: **Adobe Reader**.

Having trouble downloading the plans?

- If you're using Microsoft Internet Explorer, right click on the download link and select "Save Target As" to download to your local drive.
- If you're using Netscape, right click on the download link and select "Save Link As" to download to your local drive.

WOODWORKER'S JOURNAL
©2007 ALL RIGHTS RESERVED

\$7.95

WJ110



Published in Woodworker's Journal "Woodworking for the Home Hobbyist: 27 Great Projects and Techniques for your Woodshop"



Jelly Cupboard Reproduction

Sometimes the best way to learn furniture design is to reproduce an antique. That's what we'll do in this project, taking our measurements and joinery directly from a century-old cupboard our author found years ago. The original was built solely with hand tools. For a real trip back in time, sharpen up yours and try to do the same.

The genesis for this jelly cupboard came from a 100-plus year-old antique our author stumbled upon in an antique store. The fact that so many cupboards like this one have survived for a century or more is testimony to the integrity of their construction. Working with little more than planes, saws, and hammers, the builders combined common sense with efficiency and often designed their cabinets based on an ancient Greek standard of proportions. We've followed the dimensions and construction methods of the original closely in our rendition here.

Choosing Stock

Once you've bought your project lumber, set aside the best straight-grained pieces for the face frame and door frames, and choose interestingly patterned pieces for the door panels. Try to select pieces that are similar in color. Choose your next best boards for the sides and the remaining stock for the top—a slightly crowned grain pattern on the top's front edge is a nice

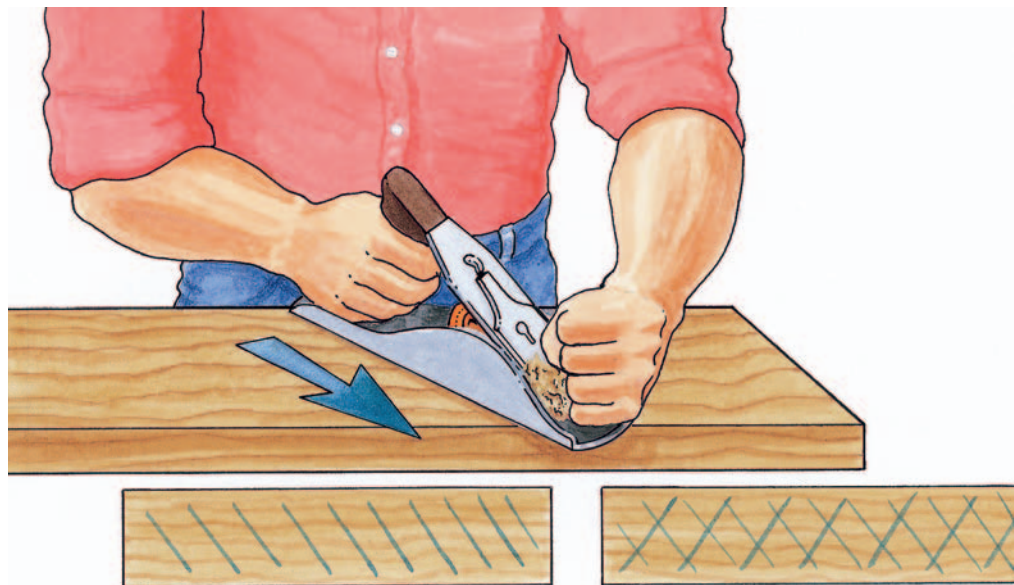


Figure 1: If you choose to flatten your project panels with a hand plane, make diagonal passes across the panels in both directions. Finish by taking clean-up strokes along the length of the stock to remove any planing marks.

touch. Remember, this cabinet is so simple that the visual impact of the wood becomes an important design element.

Getting Started

Begin building your reproduction by milling stock and joining it into oversized panels for the shelves (pieces 1). Make a couple of shelves 12" longer than necessary so you'll have testing

material when you get to the joint-fitting stage later on. After the glue dries, plane the shelves flat, first planing diagonally in one direction, then the other to create an "X" pattern (see *Figure 1*). Be sure to plane both sides of each shelf this way, then smooth the surfaces by taking light passes along the grain.

Now mill and join stock for the sides and top (pieces 2 and 3), and plane

these panels just as you did the shelves. Once you've finished planing, joint one edge of each side panel and cut them to size. Make sure the two panels match exactly and check their ends for squareness. Complete the same steps with the top, but rip it 1/4" wider than its finished width, then rip the panel again to a width of 15/8". The objective is to rip the front edge off the top now so you can rout the grooves easily, and then glue it back on after the joints are completed.

Machining the Sides and Top

The construction of many older cabinets focuses on a single joinery technique. On this cupboard, the shelves connect with the sides, and the sides to the top, with barefaced, dovetailed housing joints (see *Joint Detail* on page 112). The builder of the original cupboard chose this joint because it's fairly easy to cut with hand tools.

To form the joint, first install a 5/8" dado blade in your table saw and plow 3/8"-deep dadoes in the top and sides, as shown in the *Shelf Locations Drawing* on page 113. Cut a few dadoes in some scrapwood as well for use as testing material.

Next, make three hardboard baseplates for your router to use for cutting the dovetailed shoulder of each dado and the tail on the ends of the shelves and sides. Make these plates to match your router's current baseplate (the round one shown in *Figure 2* is for a Porter-Cable router). Now make two 1/2"-wide by 1/4"-thick hardwood strips to serve as baseplate fences, and drill a router bit clearance hole in each one.

Screw a baseplate to your router and chuck a 14° dovetail bit in the collet. Lower the bit 3/8" to match the depth of the dadoes you just cut. Now position a fence on the baseplate as shown in Step 1 of *Figure 2*. When the

fence is set correctly, mark its position and glue it to the plate. Five-minute epoxy works great here. Test this set-up on scrapwood to see that the bit just grazes the top corner of the dado wall.

Given that dadoes cut on the table saw usually have slightly irregular bottoms due to the imperfections of the panels, the router bit pass will probably shave the high spots. But since the bit isn't as wide as the dadoes, you'll need to make a second pass to even the dado bottoms. Switch to the second shopmade baseplate and glue on a fence the same way you did before, but this time position it as shown in Step 2 of *Figure 2*. Once the epoxy sets, rout the remaining ridges in the dado bottoms. When you've completed

the routing, glue the cutoff piece from the top back to the panel and trim its front edge to bring the top to final width.

Routing the Tails

The third baseplate makes routing the tails on the shelves and sides a breeze. Keep the dovetail bit set to the depth of the dadoes and secure a scrap piece from a side panel in your bench vise. Now install your adjustable router fence and set it as shown in *Figure 3*, next page. Rout the end of the scrap piece and check the tail's fit in a dado. If it's too big or small, continue adjusting the fence until you get a perfect slip fit.

To find the exact shelf length you need, rout two pieces of side panel scrap and slide them into the dadoes in

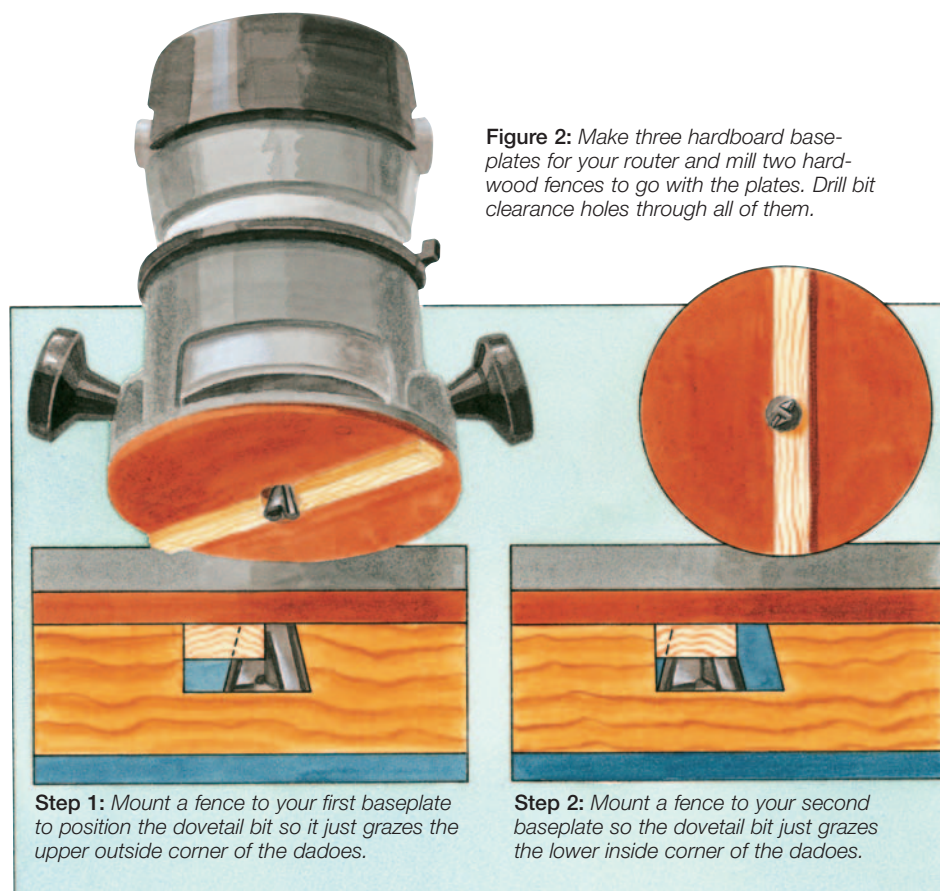


Figure 2: Make three hardboard baseplates for your router and mill two hardwood fences to go with the plates. Drill bit clearance holes through all of them.

the top. Measure the distance between them and add the depths of two dados. The result is the perfect shelf length for your cabinet. Now joint and rip your shelves to width, and crosscut them to the length you just calculated. Make sure the ends are square, then rout the tails. Follow the same procedure to rout tails on the top end of each side panel.

Before assembling the carcass, cut rabbets in the sides and top for the back (pieces 4, 5 and 6). Install a 1/2" dado blade in your table saw and clamp an auxiliary face to the fence. Cut 3/8"-deep rabbets in the sides and a 1/2"-deep rabbet in the top. Be sure to stop the rabbet in the top 2 7/8" from each end. After squaring the ends of the top rabbet with a chisel, lay out the feet pattern on the sides, following the *Elevation Drawings* on the next two pages. Cut out the waste with a jigsaw and sand the edges smooth.

Assembling the Carcass

To begin assembling the carcass, have a friend hold the sides on their back edges while you slide the top onto the tails, but without using glue. This will hold the assembly steady while you glue the shelves in position. Spread a slow-setting glue like urea resin or hide glue into the dados for one shelf and on the back 4" or so of the shelf's tails. Slide the shelf into position, tapping it with a hammer and block if necessary. Slipping 1/2"-thick scrap pieces into the rabbets in the sides will keep the shelves from sliding through. Repeat this procedure for all four shelves, then draw the assembly tight with bar clamps and cauls (see *Figure 4*). You can use square-headed nails to pull the joints tight, if you wish. Be sure to check the cabinet for squareness and clean up any squeeze-out after the glue becomes rub-

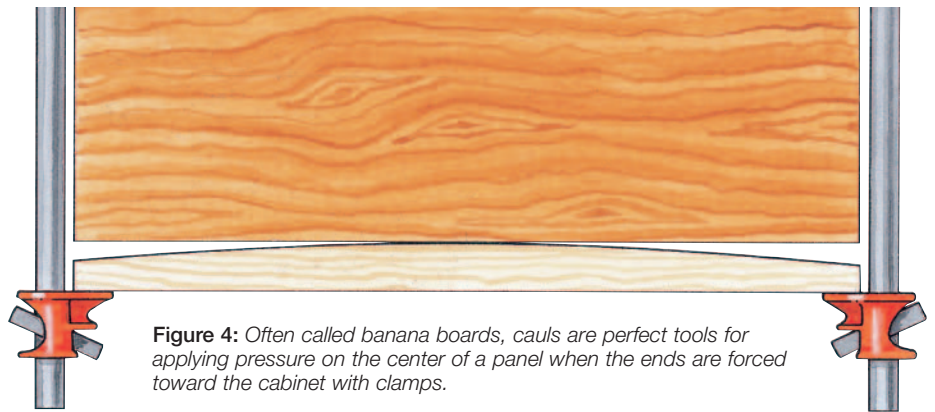


Figure 4: Often called banana boards, cauls are perfect tools for applying pressure on the center of a panel when the ends are forced toward the cabinet with clamps.

bery. Allow the cabinet to sit overnight, then glue the top to the sides.

Plane the front edge of each shelf flush with the sides, and sand and finish the inside if you want (the old timers usually left the inside unfinished).

Mill 1/2"-thick poplar for the cabinet back and cut these pieces to size. Next, rabbet the edges of the back pieces, as shown in the *Back Elevation* on the next page. Cut tapers on the bottom of pieces 4 to match the front stiles, as shown in the *Face Frame Elevation*. Glue and nail pieces 4 and 6 into place, making sure you avoid nailing through the rabbets. Now slide the remaining panels (pieces 5) into posi-

tion, center them and drive one nail at each shelf location and at the top rabbet. This arrangement will allow for plenty of wood movement.

Making the Cabinet Face Frame

Mill the face frame stock (pieces 7 and 8) to thickness, then joint and rip the stiles 1/16" wider than the finished dimension and the rail to actual size. Cut the pieces to length, double-checking the *Material List* dimensions against your carcass to determine the correct measurement. Cut the taper on the bottom of each stile, following the *Face Frame Elevation* on page 113.

Now form the tongue and groove

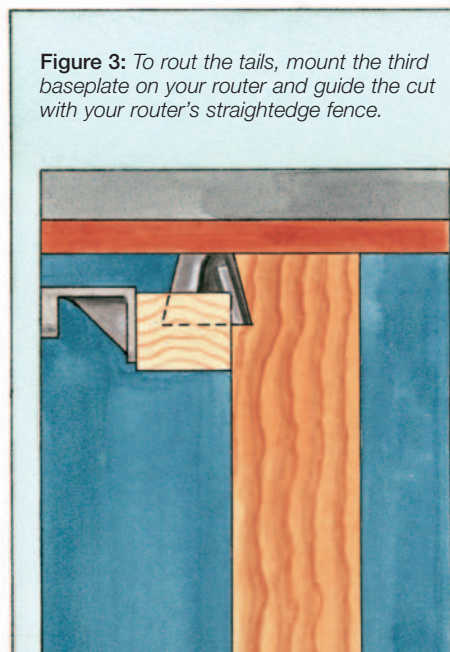
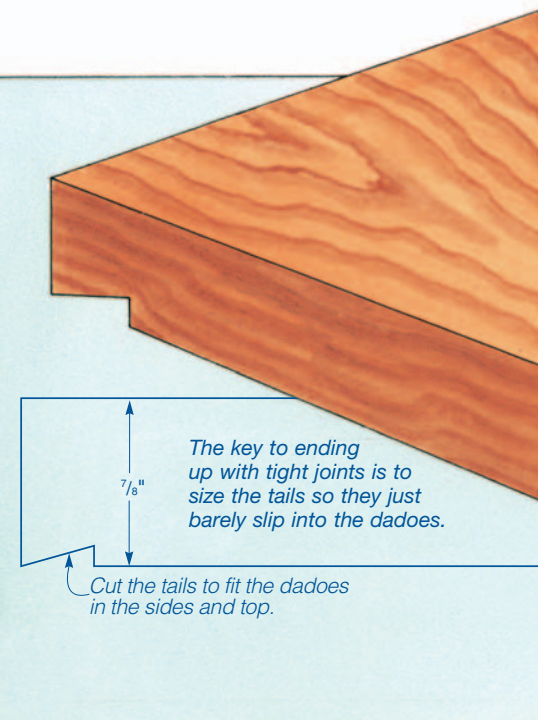


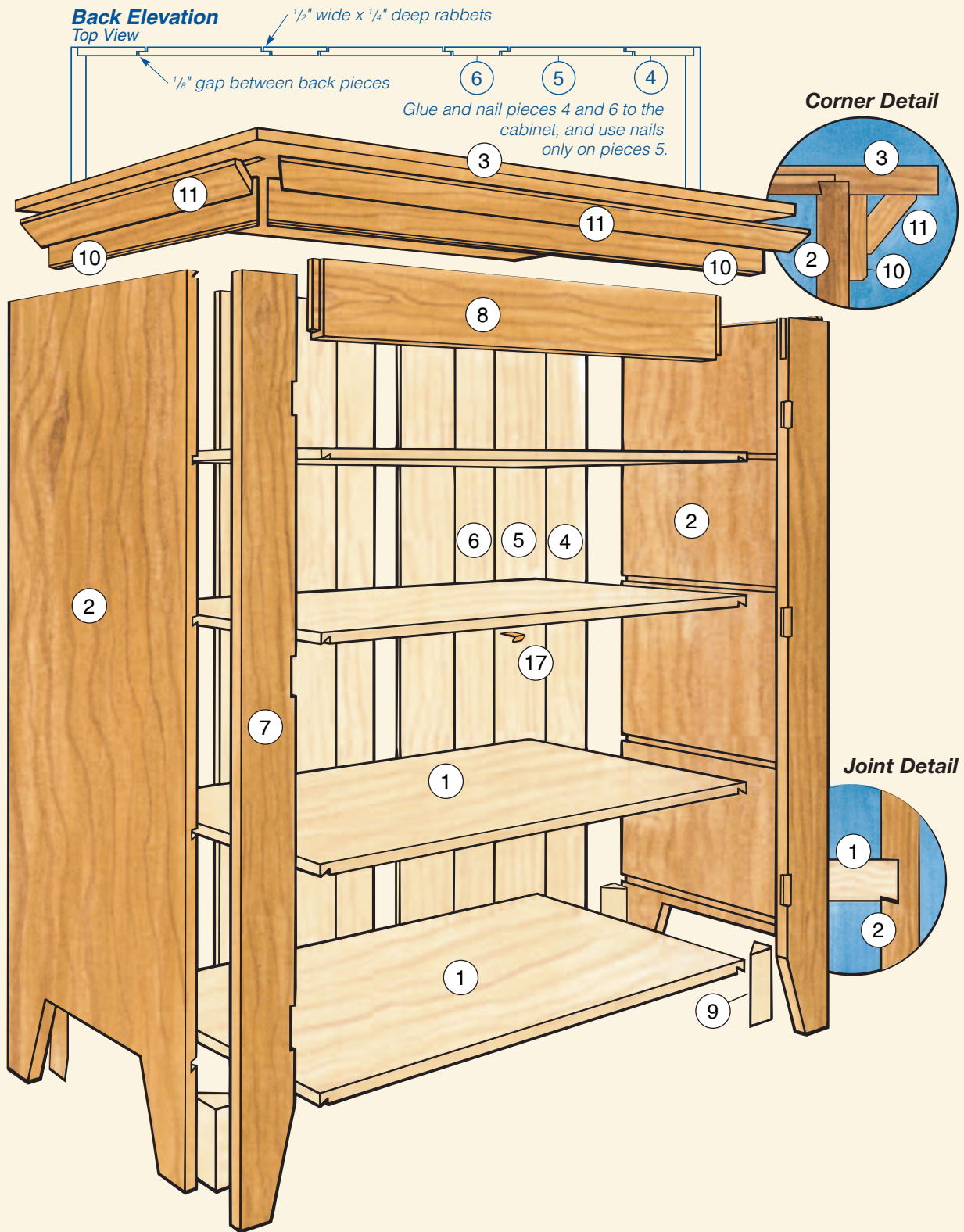
Figure 3: To rout the tails, mount the third baseplate on your router and guide the cut with your router's straightedge fence.



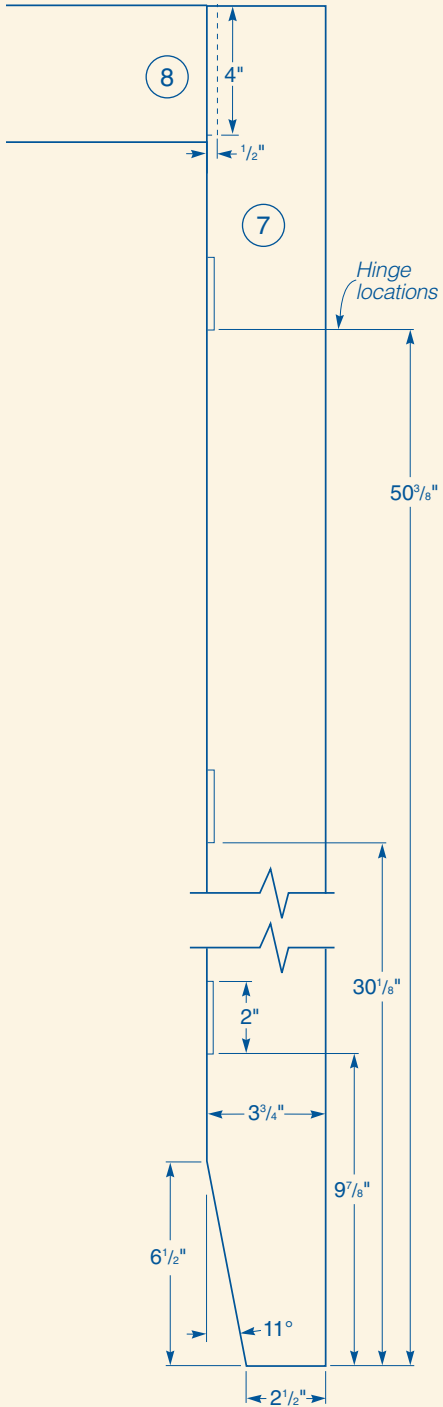
The key to ending up with tight joints is to size the tails so they just barely slip into the dados.

Cut the tails to fit the dados in the sides and top.

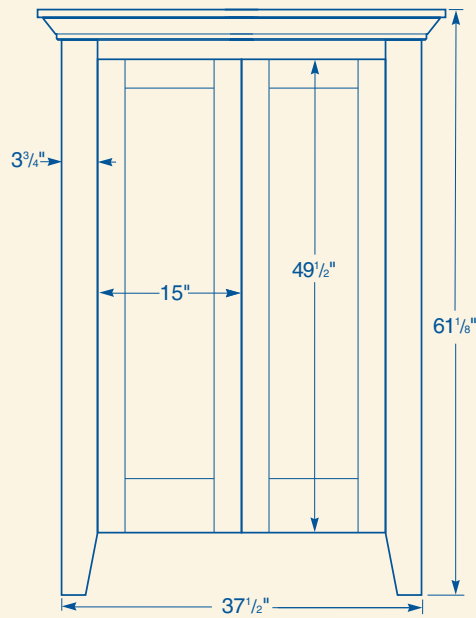
Cupboard Exploded View



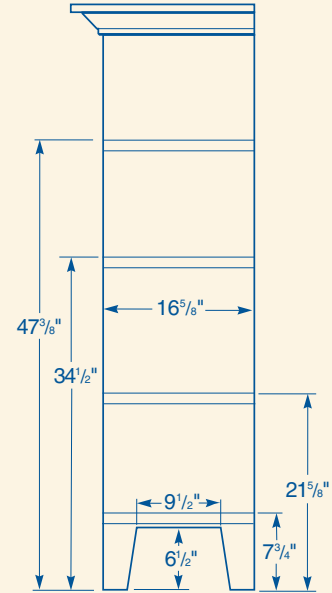
Face Frame Elevation
Front View



Cupboard Elevation
Front View



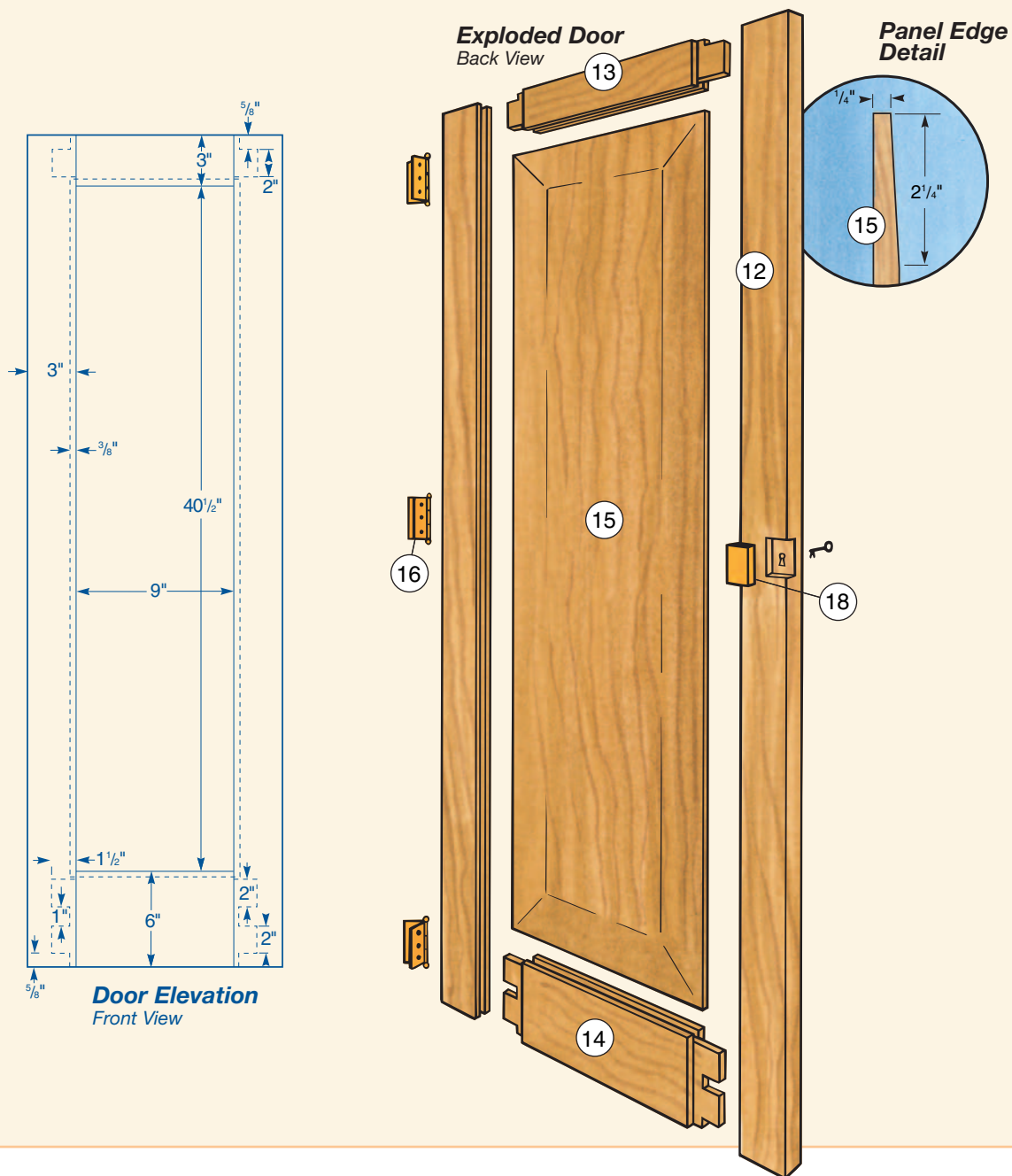
Shelf Locations



MATERIAL LIST

| | T x W x L |
|---------------------------|---|
| 1 Shelves (4) | 7/8" x 15 ¹ / ₈ " x 36 ³ / ₄ " |
| 2 Sides (2) | 7/8" x 15 ³ / ₄ " x 60 ³ / ₈ " |
| 3 Top (1) | 3/4" x 19 ³ / ₁₆ " x 42 ³ / ₈ " |
| 4 Back (2) | 1/2" x 4" x 60 ³ / ₈ " |
| 5 Back (3) | 1/2" x 7 ³ / ₄ " x 54 ¹ / ₄ " |
| 6 Back (2) | 1/2" x 3 ³ / ₄ " x 54 ¹ / ₄ " |
| 7 Face Frame Stiles (2) | 7/8" x 3 ³ / ₄ " x 60 ³ / ₈ " |
| 8 Face Frame Rail (1) | 7/8" x 4 ³ / ₈ " x 31" |
| 9 Corner Blocks (4) | 2" x 2 ¹ / ₄ " x 6 ³ / ₄ " |
| 10 Base Crown Molding (1) | 1/2" x 2 ⁵ / ₈ " x 80" |
| 11 Top Crown Molding (1) | 3/4" x 2 ¹ / ₈ " x 80" |
| 12 Door Stiles (4) | 7/8" x 3" x 49 ¹ / ₂ " |
| 13 Upper Door Rails (2) | 7/8" x 3" x 12" |
| 14 Lower Door Rails (2) | 7/8" x 6" x 12" |
| 15 Door Panels (2) | 3/8" x 9 ¹ / ₂ " x 41 ¹ / ₈ " |
| 16 Hinges (3 pair) | 1 ³ / ₄ " x 2" Brass Ball Tip |
| 17 Elbow Catch (1) | Brass Plated |
| 18 Lock (1) | Half Mortise, Brass |

Door Exploded View



joints on the face frame. First, rout a groove in each stile, as shown in the *Face Frame Elevation*, then use your table saw to cut tenons on the rail to fit the stile grooves.

Dry-assemble the frame and check its fit against the carcass—we cut a temporary lower rail that helped keep the frame square. When everything's in order, disassemble the frame, apply glue

to the joints and clamp it back together. Remember to check for squareness.

Glue the face frame to the carcass, letting the stiles stick out from the each side about 1/16", and don't forget to glue the rail to the top. On the original cabinet, one nail was driven through the frame at each shelf location to stiffen the shelves. Allow the glue to cure, then glue blocks (pieces 9) into the corners

formed by each pair of legs and plane the stile edges flush with the sides.

Cut your crown moldings (pieces 10 and 11) to shape, as shown in the *Corner Detail* on page 112 and on the full-size pattern in the *Pinup Shop Drawings*, and miter them to length. Glue and nail the front base molding to the cabinet, but for the sake of wood movement, glue only the first 4" of the

side base moldings. Next, glue and nail the top moldings to the base molding. Be sure to glue all the miters.

Making the Doors

Mill your door frame stock to thickness, then joint and rip the rails and stiles (pieces 12 through 14) to width. Machine the grooves for housing the panels with a table saw and 1/4" dado blade. Set the rip fence on the saw to center the blade on your stock, and raise the blade to 3/8". Now run the appropriate edges of the stiles and rails through the blade.

Lay out the mortises, as shown in the *Door Elevation* on the facing page, then clear out the waste. Cut the door mortises using whatever method you prefer. Cut the lower mortises for the bottom rail tenons about 1/8" wider than called for in the *Door Elevation* to allow for seasonal movement.

Following the *Door Elevation*, form the rail tenons with your table saw, dado blade and miter gauge. Make sure the cuts are square to the stock, and size the thickness of the tenons for a snug fit in the mortises. Cut the gap in the bottom rail tenons with a handsaw and chisel as shown in *Figure 5*, above.

Now mill and size the panels (pieces 15), remembering to allow for seasonal movement when ripping them



Figure 5: Once you've formed the tenons with your table saw, dado blade and miter gauge, cut the gap in each lower rail tenon with a hand saw.

to width—the panel width called for in the *Material List* is a compromise between seasonal extremes. Use a hand plane to taper the back edges of the panels, as shown in the *Panel Edge Detail* on the facing page, until they fit into the frame grooves. This procedure is just like making old-fashioned raised panels, only in this case the flat side will show on the front of the doors. Once the panels fit in the door frames, sand them and apply finish to prevent unfinished wood from becoming exposed when the panels shrink. Spread glue in the mortises, the tenon haunches and the first 1" of the tenon cheeks, and assemble the doors, making sure to keep them flat and square.

Mortise the doors and the face frame stiles for the loose-pin butt hinges (pieces 16). Loose-pin hinges allow you to remove the doors easily during the fitting process—driving screws in and out of the wood to many times would

strip the pilot holes. Mount the doors, then plane their overlapping edges to a perfect fit—bearing in mind the season as you establish the gap between the doors. It's easier to shave a little material off later than it is to add it back on.

Following tradition, the right door latches to the left door, and the left door latches to the cabinet. An elbow catch (piece 17) will firmly hold the left door to a shelf, and a half mortise lock (piece 18) is ideal for the right door. Be sure to notch the left door so it can accept the lock plunger, and install an escutcheon in the key hole. Like the original cupboard, the key to the lock acts as the pull for the doors.

Finishing Up

After sanding the cabinet thoroughly, seal it with a wash coat of shellac, then finish with two coats of a quality varnish. In the old days these cabinets were almost always painted, so a color finish is appropriate if you prefer to go that route instead.

Once you've constructed your own jelly cupboard, we know you'll appreciate what those old timers accomplished with just a few hand tools. If you're lucky, some day a woodworker may happen upon your cupboard and decide that it's worth reproducing again.

QuickTip

Shop-made Logs

Even a benchtop planer produces more shavings than one knows what to do with, and if you use a lathe, you know that the chips can make a mountain in no time. One way to put chips and shavings to one last bit of good use is to make your own shop "logs." Lay a sheet of newspaper on your bench or work table, pile on the shavings and roll it into a tight sausage. After three or more layers of newspaper, secure the ends and center with string and your "log" is ready for the fireplace.

Full-size Pattern

Crown Mouldings

