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Cherry Gun Cabinet

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Cherry Gun Cabinet

Nothing blends the avocations of hunting and woodworking quite like a gun cabinet. Rick White, our resident "man in the field," so to speak, took on the challenge of creating this fitting home for his firearm collection. The combination of rail-and-stile construction, with both built-up crown and dentil moldings, give it a traditional flair.

Outdoor hobbies are important to contributing editor Rick White, the designer of this project. In fact, fishing and hunting are a way of life for many here in the north country, which explains why one of the most common project requests we get is for a gun cabinet: a way to safely store firearms, yet display them for the craftsmanship they embody. So Rick took on the challenge of creating this display case—with a circular twist. You'll see why shortly.

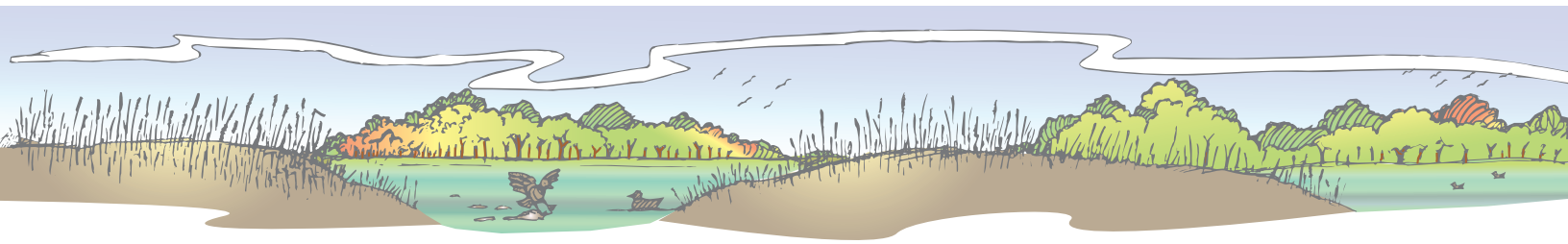
Figure 1: *Plow grooves into the appropriate edges of the rails and glued-up rails. Take a few passes to achieve the proper depth.*

Stiles, Rails and Sides

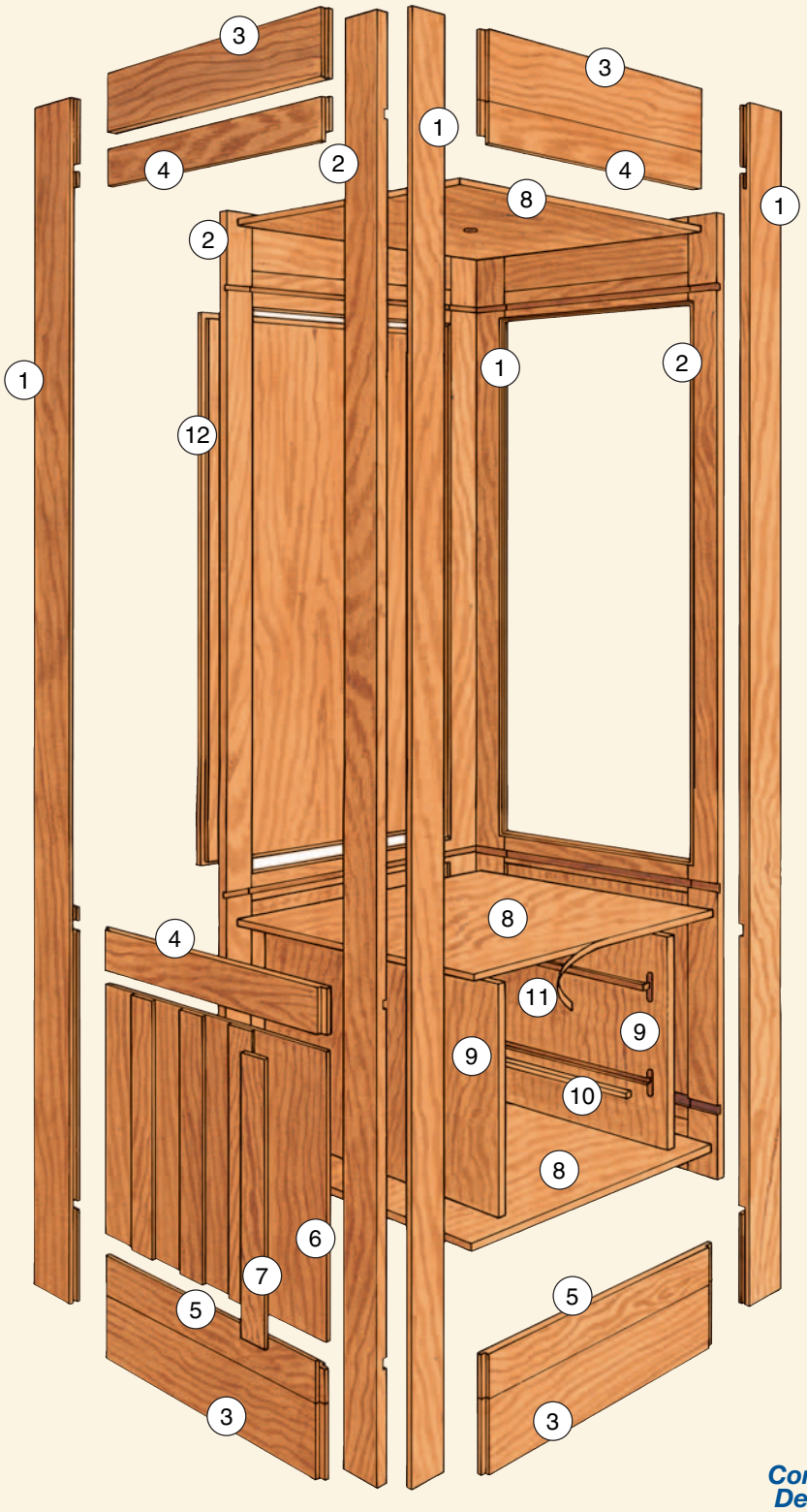
When you first look at the gun cabinet, your eye is drawn to its molding and decorative shapes, but the nuts and bolts of this cabinet are its stile and rail construction. Rick used both cherry lumber and veneered plywood with good results.

Start by cutting all the corner stiles (pieces 1 and 2) to the dimensions listed in the *Material List* on page 101. Move to your router table and, with a 3/4" straight bit chucked into your router, machine rabbets down the length of the wide stiles. Change the router bit over to a 1/4" straight bit to plow 1/2"-deep grooves into the edges of the corner stiles. These grooves are full length on six stiles and stopped on the front two, as shown on the *Exploded View Drawing*, next page. (If possible, leave this set-up in place, as you will be using it again soon.)

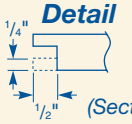
Next, cut the top and bottom rails (pieces 3) from 3/4" hardwood plywood and the middle and lower rails (pieces 4 and 5) from solid stock. All these rails are identical in length, but vary in width. A real time-saving step is to cut all



Gun Cabinet Exploded View

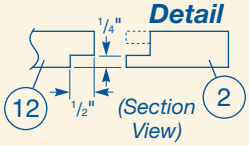


Glass Rabbet Detail

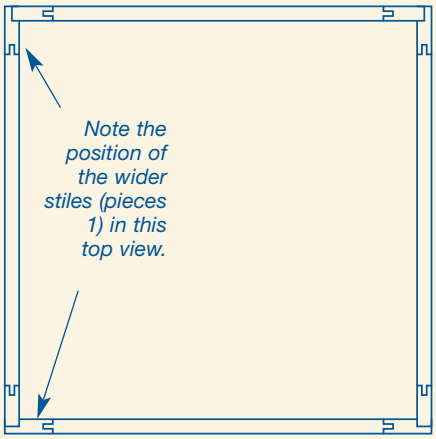


(Section View)

Back Detail

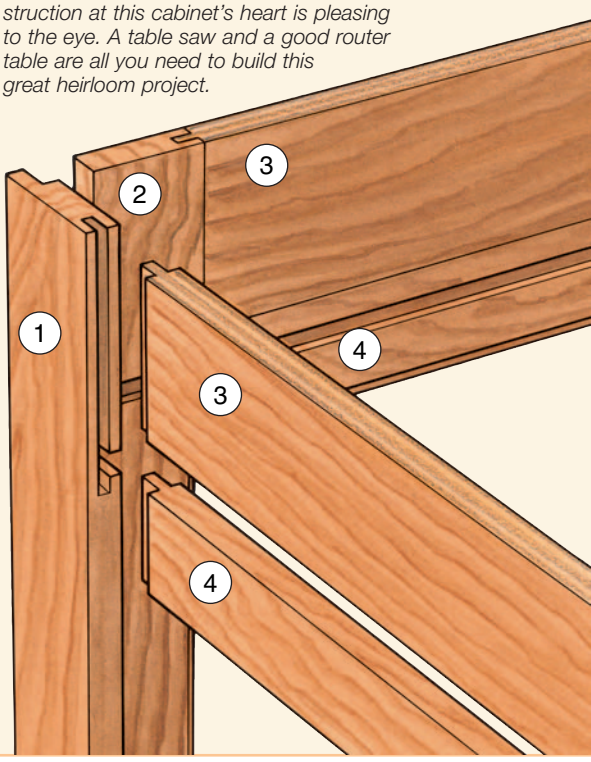


(Section View)



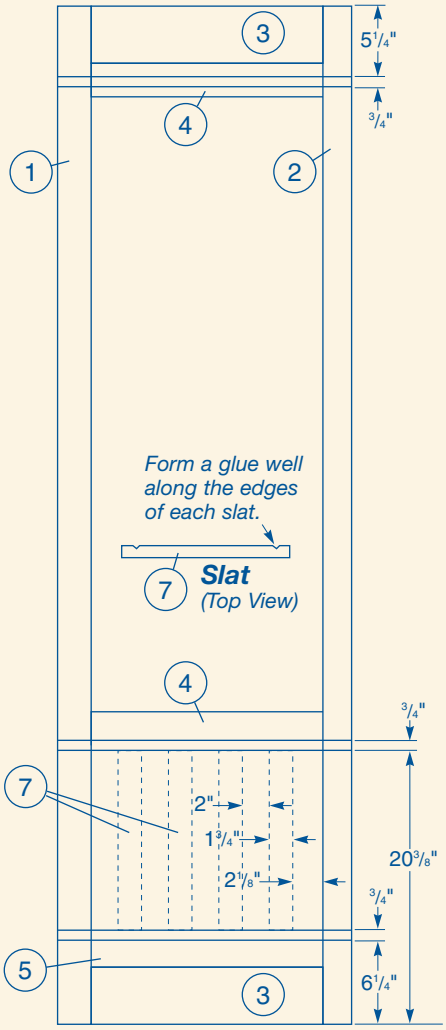
Front

The "bread-and-butter" stile-and-rail construction at this cabinet's heart is pleasing to the eye. A table saw and a good router table are all you need to build this great heirloom project.



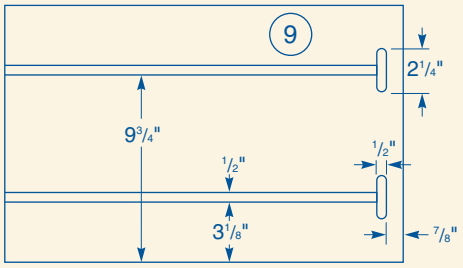
Corner Detail

Side Subassembly
(Inside View)



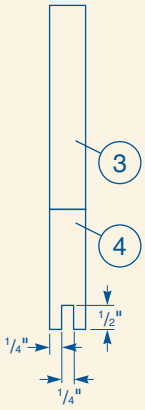
Note: this view shows the shelf dado locations.

Drawer Wall *(Inside View)*

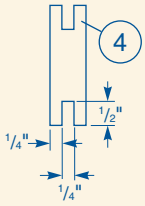


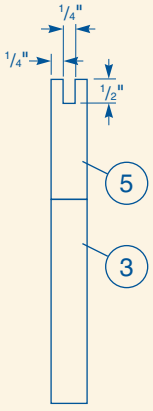
Note: this view shows the drawer glide grooves and strike plate mortises.

Top/ Middle Rail
(Section View)

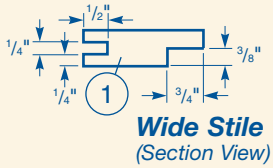


Middle Rail
(Section View)





Lower/ Bottom Rail
(Section View)



Wide Stile
(Section View)

NOTE: Maximum gun length is 47"

MATERIAL LIST – *Carcass*

		T x W x L
1	Wide Stiles (4)	3/4" x 2½" x 75¾"
2	Narrow Stiles (4)	3/4" x 2⅛" x 75¾"
3	Top and Bottom Rails (8)	3/4" x 4¼" x 18¼"
4	Middle Rails (7)	3/4" x 2½" x 18¼"
5	Lower Rails (4)	3/4" x 2¾" x 18¼"
6	Sides (3)	1/4" x 18¼" x 14¾"
7	Hardwood Slats (1)	1/8" x 1¾" x 235"
8	Top, Bottom & Middle Divider (3)	3/4" x 21¼" x 21¼"
9	Drawer Walls (2)	3/4" x 20¾" x 13⅜"
10	Drawer Glides (4)	1/2" x 1/2" x 20⅛"
11	Hardwood Tape (1)	7/8" x 100"
12	Back (1)	3/4" x 18¼" x 46¾"
13	Glass (2)	Measure to fit

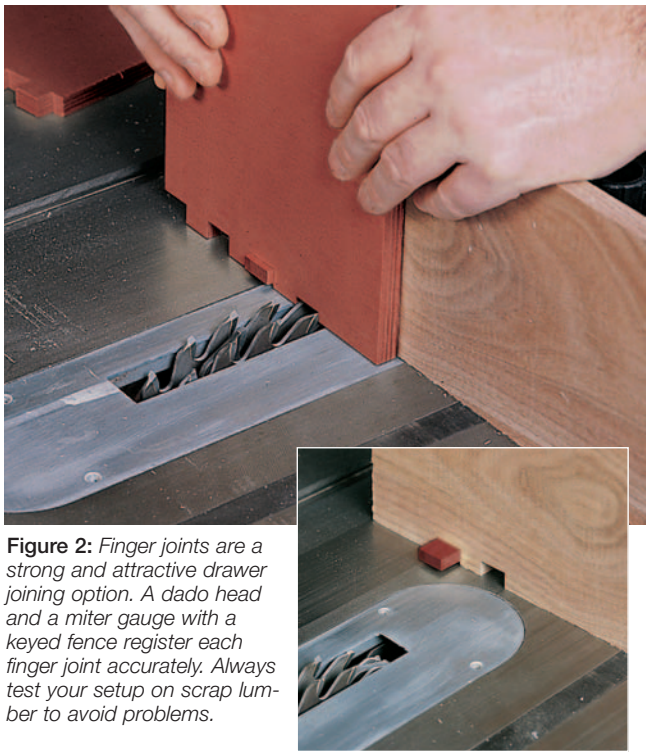


Figure 2: *Finger joints are a strong and attractive drawer joining option. A dado head and a miter gauge with a keyed fence register each finger joint accurately. Always test your setup on scrap lumber to avoid problems.*

the rails to length and width, and then machine the 1/4"-wide by 1/2"-long full-width tenons onto their ends. Test the tenons' fit in the grooves you created earlier. The cabinet has three built-up carcass sides (pieces 6) created with 1/4" hardwood plywood and applied hardwood slats (pieces 7). Cut your plywood sides with a sharp, thin-kerf saw blade designed for this operation. Stay at your table saw to make the horizontal dividers (pieces 8) from 3/4" hardwood plywood. Slice the two drawer walls (pieces 9) from your remaining plywood and the four drawer glides (pieces 10) from solid hardwood, and you're ready to move on to your first subassembly.

Carrying Out the Carcass Subassembly

Edge-glue and clamp four pairs of top and middle rails (pieces 3 and 4) together. Do the same with four pairs of bottom and lower rails (pieces 3 and 5), and allow the glue to cure. Move back to your router table (the one you left set up with a 1/4" straight bit), and plow 1/2"-deep grooves in the appropriate edges of the middle rails (pieces 4) and glued-up rail subassemblies (see *Figure 1*). Check the *Elevation Drawings* for all the machining details. When that task is complete, move to a large, flat work surface and test-fit the right and left sides and the front and back subassemblies.

Notice that the orientation of the wide and narrow stiles is critical to properly assembling the cabinet, as shown in the *Elevation Drawing* page 100. Once all your subassemblies' various parts fit together well, take them apart and re-clamp them together using a good quality yellow glue, making sure each panel is flat and square as you go.

There are a few more machining steps to take care of while the glue is curing. Find the drawer walls you cut earlier and lay out the matching drawer glide grooves and the locks' strike plate mortises. Use a straightedge guide and your portable router equipped with a 1/2" straight bit. Rout the 5/16"-deep grooves for the drawer glides and then use the same bit to create the mortises for the strike plates.

Face the front edge of the middle divider with hardwood tape (piece 11), and trim the back of the divider by the thickness of the tape. Drill a 1"-diameter hole dead center on the top divider—sorry, most drill presses lack the throat depth to reach the middle of this 21¼"-square panel, so you'll have to drill straight with a Forstner bit chucked into your hand-held drill.

Remove the clamps from the carcass subassemblies and scrape off any excess glue squeeze-out. Using your tri-square and straightedge, lay out all the grooves for the horizontal dividers on the inside faces of each of the four subassemblies.

Chuck a 3/4" straight bit into your portable router and, with the aid of a clamped-on straightedge, plow the grooves you just laid out. This is the time to make the rabbets for the back (piece 12) and the glass (pieces 13). Now, chuck a 1/2" bearing-guided rabbeting bit into your router and rout the rebates as shown in the *Elevation Drawings*. (Hint: never order glass until you measure the opening you machined for it at least twice!)

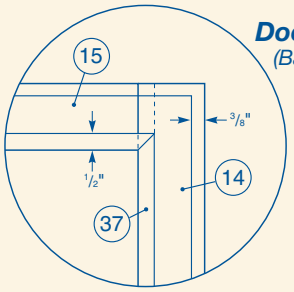
Time for More Body Building

Now you're ready to put some parts together. It will be a smoother operation if you get a friend to help you handle these larger carcass sections…but it can be done solo.

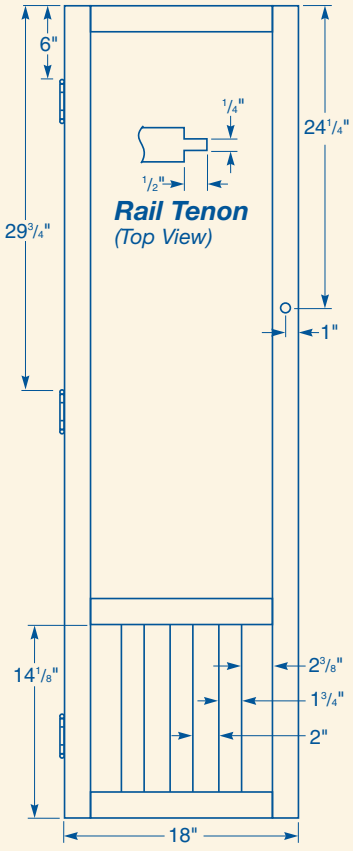
Dry-fit your components by laying the front face down on your work surface and then fitting the horizontal dividers in place. Note: the divider with the hole is placed at the top and the divider with the hardwood tape is in the center (tape facing down). Snuggle the sides up to the front and dividers, fitting the dividers into their respective grooves, and clamp them up through the glass openings.

Test-fit the drawer walls; they must slide in place, touching the middle and bottom dividers, running squarely back from the front drawer opening. Then, drop the back subassembly in place and see if all your joints are tight. Once you're happy with the fit, disassemble and repeat the steps with glue in the appropriate joints, until you slide the drawer walls in place (with glue). Pause here and drive finish nails

Subassembly Exploded View

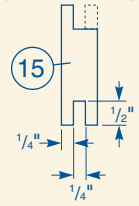


Door Rabbet Detail
(Back View)

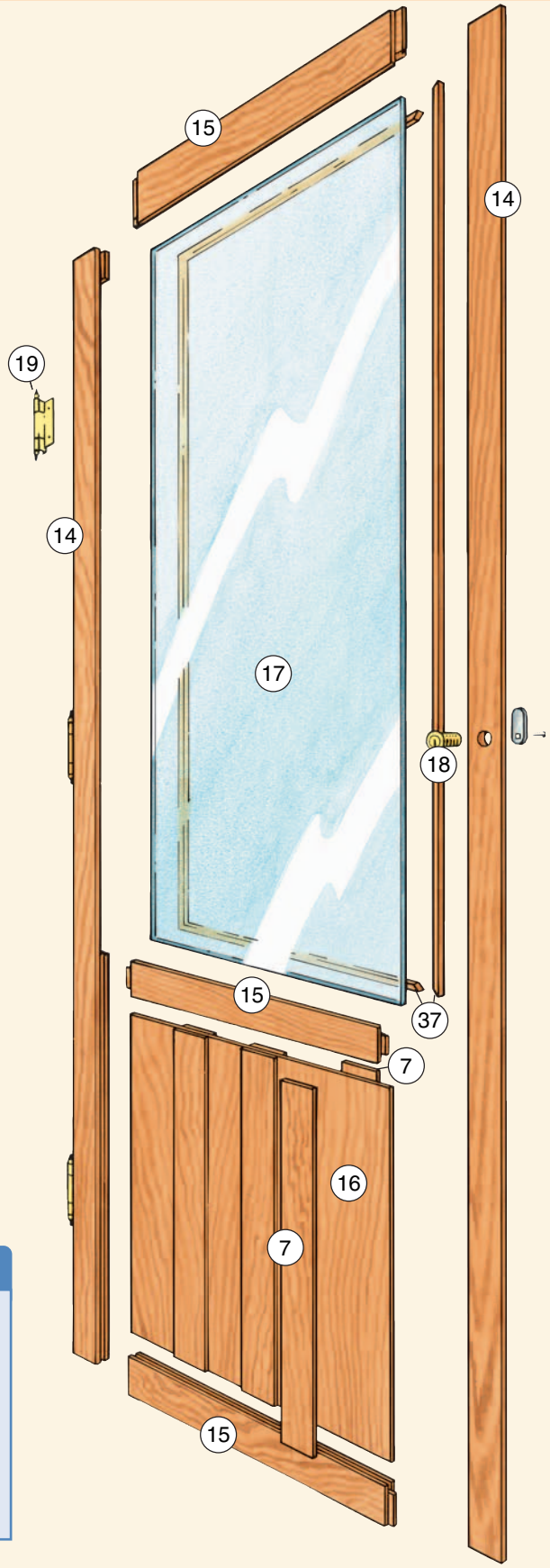


Rail Tenon
(Top View)

Door Elevation
(Front View)



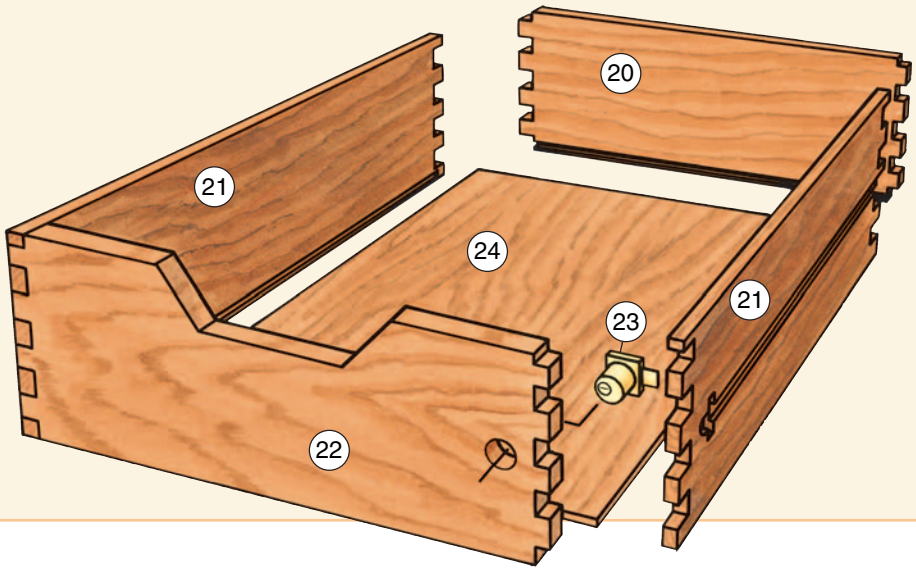
Door Rail
(Section View)

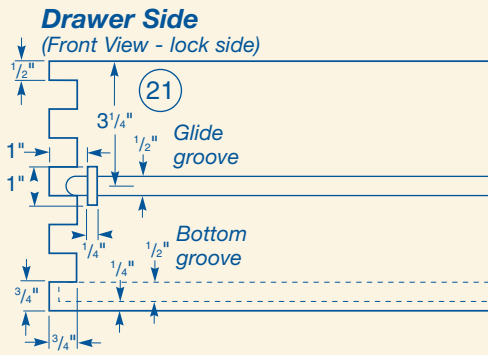


MATERIAL LIST – *Door*

		T x W x L
14	Door Stiles (2)	3/4" x 2" x 62 3/4"
15	Door Rails (3)	3/4" x 2 1/2" x 15"
16	Door Panel (1)	1/4" x 15 x 12 5/8"
17	Door Glass (1)	Measure to fit
18	Door Lock (1)	Brass
19	Hinges (3)	Brass

Drawer Exploded View





through the middle and bottom into the edges of the drawer wall. Continue the task, clamp and allow the glue to cure.

Making the Door

The door is straightforward stile and rail construction with the same applied decorative slats as the sides. Start by making the door stiles and rails (pieces 14 and 15) from 3/4" hardwood. Then slice the door panel (piece 16) from 1/4" ply. On your table saw, making use of the miter gauge, nibble away stock to form the tenons on the ends of the rails. Step over to your router table and plow 1/4"-wide by 1/2"-deep grooves into the edges of the stiles and rails as shown in the *Elevation Drawings*. Test-fit the door components and, once you're comfortable with the fit, glue and clamp them together.

After the glue has cured, you need to form a 3/8" rabbet along the outside edge of the door and another 1/2" by 1/2" rabbet for the door glass (piece 17). Complete your machining by drilling a 3/4" hole for the lock (piece 18) and laying out and drilling pilot holes for the three surface mounted hinges (pieces 19). With this done, you can temporarily hang the door to test the fit and check the lock.

Finger Jointed, Locking Drawers

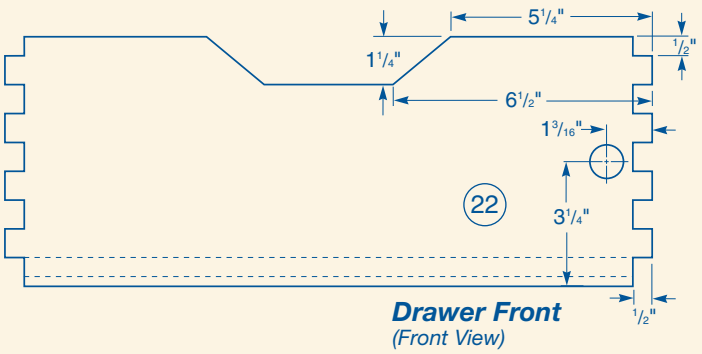
When it comes to gun cabinets, drawers are definitely not an afterthought. They are the key to safely separating the guns from the ammunition. That's why you'll want to use separately keyed locks from the door.

Cut the blanks for your drawer backs and sides (pieces 20 and 21) from 1/2" stock but make the fronts (pieces 22) from 3/4" stock to accommodate the locks (pieces 23). Form

QuickTip

Another Good Finishing Option for this Project

If you find particularly attractive cherry stock for your gun cabinet that displays heavy figure, one way to accentuate the grain is to start with two coats of boiled linseed oil wiped on the raw wood. The linseed oil will give the grain extra "depth" and shimmer. Wait for the oil to completely cure between coats and after the second coat. Then, topcoat the project with an oil-based varnish as usual.



Drawer Front
(Front View)

MATERIAL LIST – *Drawer*

		T x W x L
20	Drawer Backs (2)	1/2" x 6½" x 17⅛"
21	Drawer Sides (4)	1/2" x 6½" x 20⅝"
22	Drawer Fronts (2)	3/4" x 6½" x 17⅛"
23	Drawer Locks (2)	Brass
24	Drawer Bottoms (2)	1/2" x 17¾" x 19⅛"

the drawer fronts' profile on the band saw. Create 1/2" finger joints on your table saw with an auxiliary fence on your miter gauge and a registration key mounted to it (see *Figure 2*). Next, groove the fronts and backs with 1/2"-wide by 1/4"-deep grooves running their whole length to capture the drawer bottoms (pieces 24). The sides need their grooves stopped to accommodate the finger joints. Also, groove the sides on their outside faces to accept the drawer glides you made earlier. Bore 7/8" holes through the drawer fronts for the locks and chop through mortises in the sides so the locks' throws can pass through the drawer sides. Then dry-fit the parts and move on to gluing and clamping once everything fits.

Making a Carriage for Eight

The circular carriage allows you to display eight guns in a surprisingly small space. Rick used a heavy-duty lazy Susan because…guns are heavy!

Cut a 20"-diameter circle from 3/4" plywood to make the base (piece 25) and cover the edges with more hot-melt hardwood tape. Next, glue up hardwood blanks to make the gun caddy (piece 26) and barrel guide (pieces 27). Lay out the various notches and the circular shapes found in the *Elevation Drawing*, and move to your band saw to shape the blanks. Use a 1/4" roundover bit to soften the edges of the cut-out areas. Attach the gun caddy to the base with clamps and glue. Drill 3/4"-diameter stopped holes where indicated to accept the hardwood dowels that make up the struts (pieces 28). A 1" dowel runs from the top of the barrel guide up through the hole in the center of the top horizontal divider. This stabilizer (piece 29) has a rectangular key (piece 30) notched into one end of the dowel to fit into a matching mortise on the barrel guide. Form the key, notch out the end of the stabilizer on a band saw and glue the two pieces together. Start the mortise on the top of the barrel guide with a one-inch Forstner bit and chop the remaining squared-out ends for the key with a sharp chisel. Now assemble the carriage with yellow glue and set it aside. (Don't glue the stabilizer in place—it will be attached with a screw later.)

Details, Details

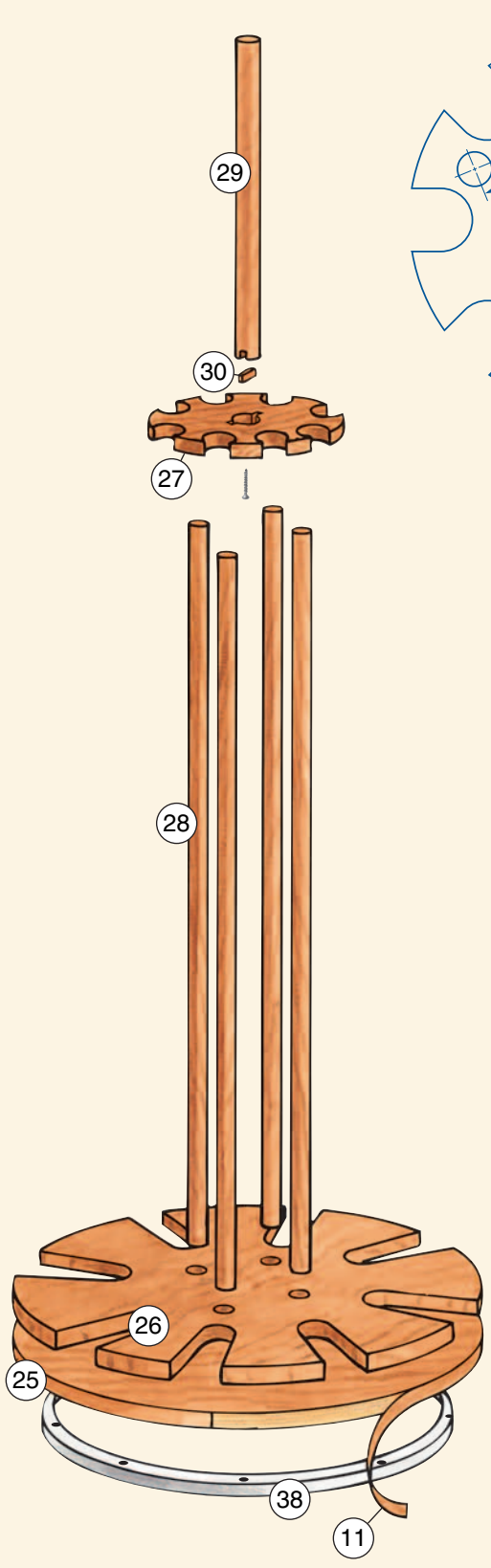
The basic rectangular shape of this gun cabinet is accentuated by shop-made dentil molding, shaped stacked moldings and flat, built-up slats.

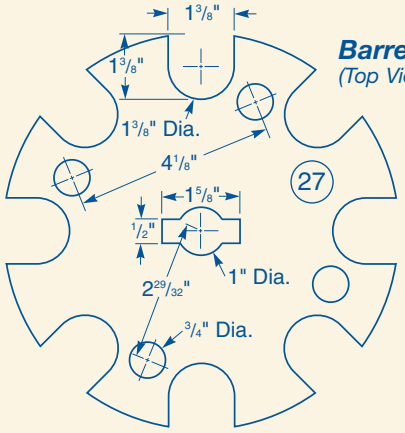
It's time to glue the slats (pieces 7) in place on the carcass panels and door. To keep the glue from escaping the edges and making a real mess, relieve two glue wells down each edge of each slat. Rip and plane up long pieces of the slats and cut them to exact length as you need them.

The stacked molding will give your router a real workout. The dentil molding (piece 31) has two different thicknesses, but they're machined the same way, as shown in the *sidebar* on page 107. Next, make the bead molding (piece 32) in two steps, using a 1/4"-radius roundover bit on the edge of your 3/4" stock. This molding is used in two locations on the stacked molding, as shown in the same *sidebar*.

Make the long cove (piece 33), with a vertical panel-raising bit in your router table. The little cove (piece 34) is made with a 1/2"-radius bearing-guided cove bit. Cut the cove base molding's (piece 35) shape on the same setup.

Carriage Exploded View

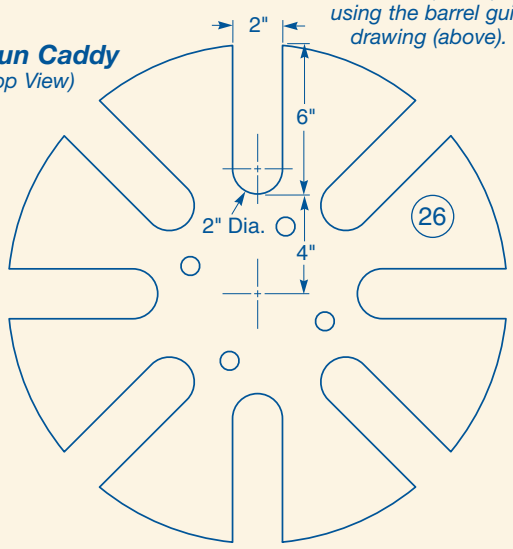




Barrel Guide
(Top View)

Note: Establish the four strut holes (below) by using the barrel guide drawing (above).

Gun Caddy
(Top View)



MATERIAL LIST – *Carriage & Moldings*

	T x W x L
25 Base (1)	3/4" x 20" x 20"
26 Gun Caddy (1)	3/4" x 20" x 20"
27 Barrel Guide (1)	3/4" x 8¼" x 8¼"
28 Struts (4)	3/4" Dia. x 34"
29 Stabilizer (1)	1" Dia. x 15"
30 Key (1)	1/2" x 1/2" x 1⅝"
31 Dentil Molding (1)	3/4" x 3/4" x 200"
32 Bead Molding (1)	3/4" x 1½" x 210"
33 Long Cove (1)	7/8" x 1¾" x 100"
34 Little Cove (1)	3/4" x 1/2" x 100"
35 Cove Base (1)	3/4" x 3¾" x 100"
36 Backer (1)	1/2" x 2½" x 96
37 Retainer (1)	1/4" x 1/4" x 255"
38 Lazy Susan (1)	Steel (heavy-duty)

Before you attach the molding, wrap the top of the case with a 1/2" plywood backer (piece 36) to add dimension to the crown molding effect. Now miter the moldings around the gun cabinet, starting from the top down and attaching it with glue and clamps. For the two bottom molding elements, start from the bottom and work up.

The last machining step is to make the back panel and form a rabbet along the inside edge of the back. Test the fit and then glue and nail it in place with brads. Remove the door if you haven't already done so and attend to a few details like mounting the locks and strike plates and gluing the drawer glides in place. Also, machine up lengths of retainer strip (piece 37) to hold the glass pieces in place.

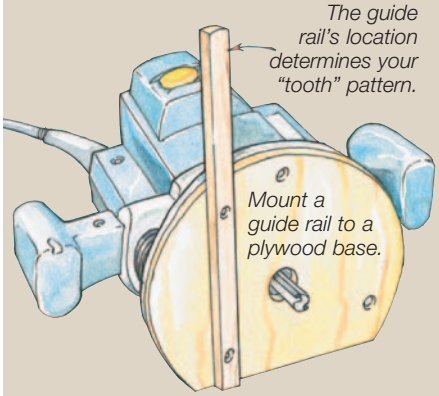
Finishing Up

Sand the entire cabinet up through all the grits to 320 grit. While some folks will disagree, Rick thinks nothing looks as good on cherry lumber as a high quality oil finish. He recommends using four coats of Watco oil with an ultra light steel wool (0000 grade) rub-down between coats. One the oil thorough cures, give the entire project a final topcoat of paste wax.

Mount your door and the glass panels, set the lazy Susan (piece 38) in the cabinet, place the carriage on top of it, and slide in your drawers.

Woodworkers and outdoor's people share at least one thing in common—the love of the lore associated with their hobby. So when your friends ask you about your gun cabinet, you can decide which avocation you're in the mood to tell tall tales about. If it's Rick, he'd probably talk about both.

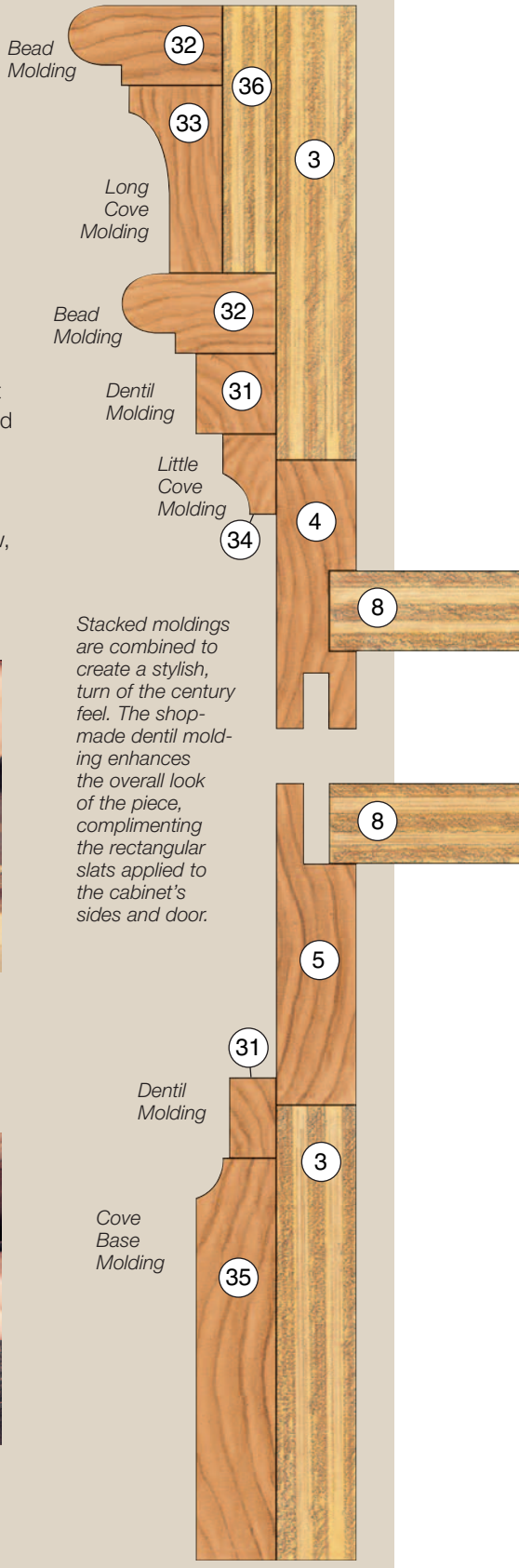
DENTIL MOLDING



Create dentil molding as you need it with this simple jig. Mount a new plywood base on your router. Make a guide rail of the same thickness and depth as you desire for the dentil's "teeth". Start with wide boards and then, on your table saw, rip the dentil molding off, piece by piece, with a sharp thin-kerfed blade.

Run the guide rail against the end of the board to form the first dado. Then drop the guide into that dado to form the second one, continuing until you reach the end of your stock.

With the dentil dadoes cut, simply rip off lengths of molding on your table saw. Be sure to use a very sharp blade for best results.



Stacked moldings are combined to create a stylish, turn of the century feel. The shop-made dentil molding enhances the overall look of the piece, complimenting the rectangular slats applied to the cabinet's sides and door.