CD CAROUSEL

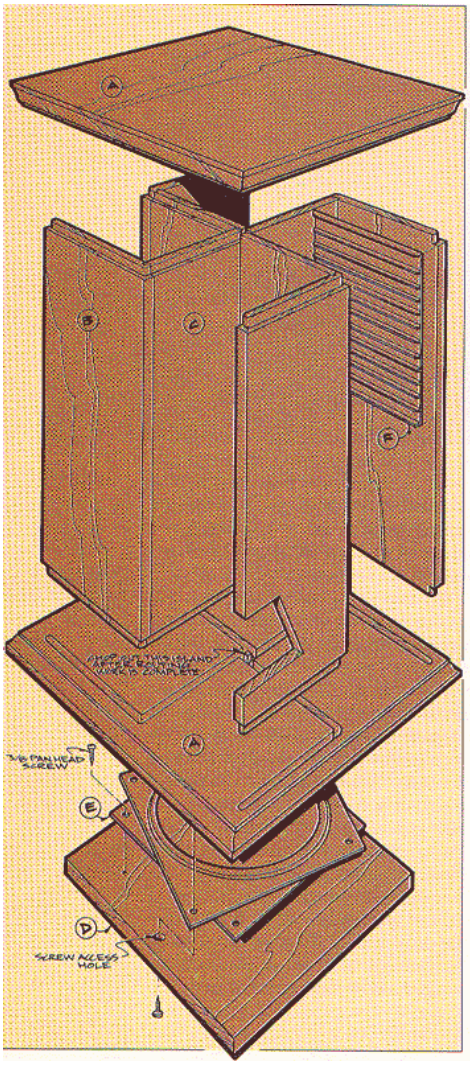
This handsome CD Carousel makes use of the venerable revolving New England bookcase concept, an idea that's been used to hold everything from books to wine bottles. The project isn't difficult to build, and you have the choice of making it in either the height shown or in a half-height version.

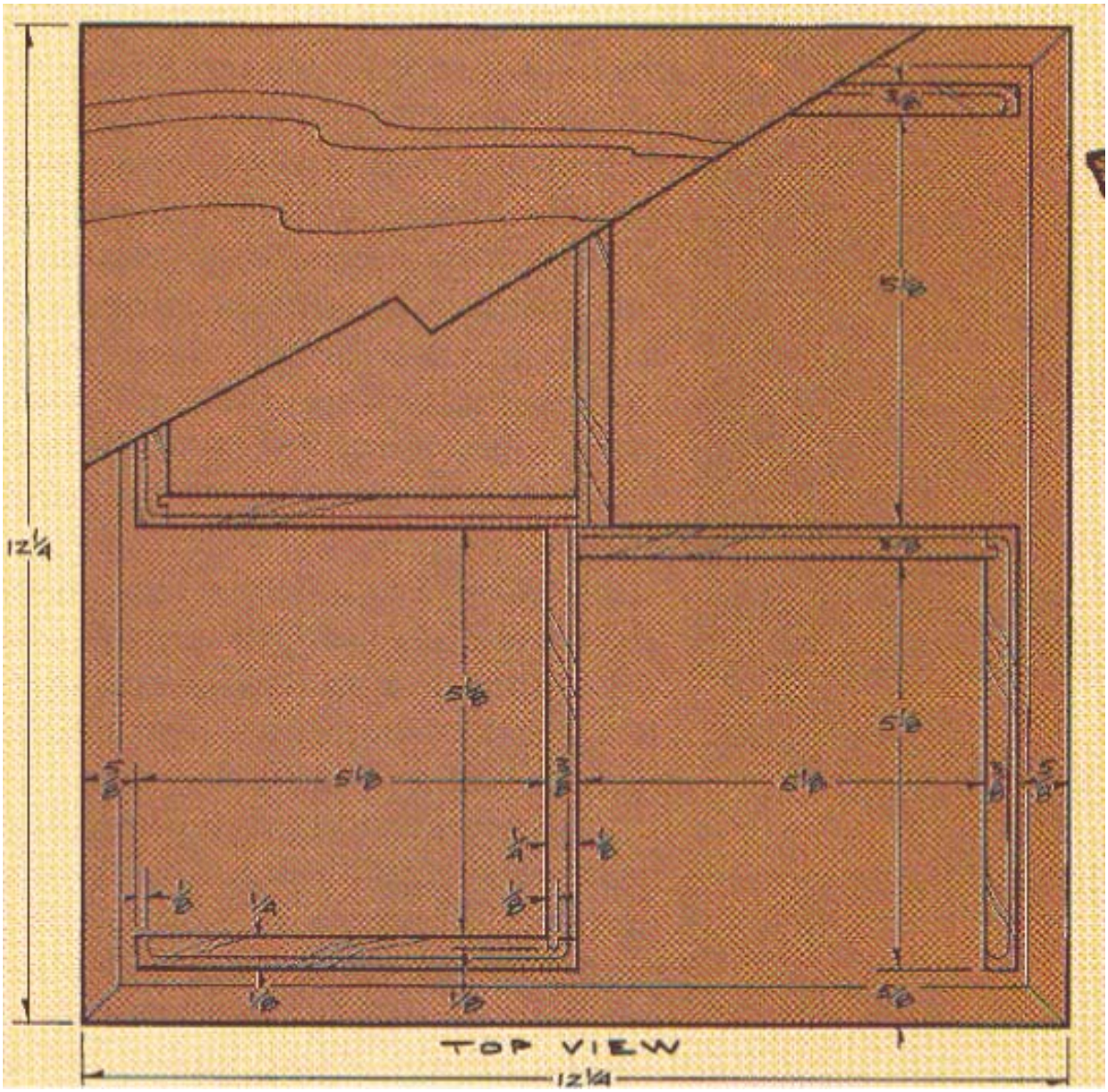
Bill of Materials
(all dimensions actual)

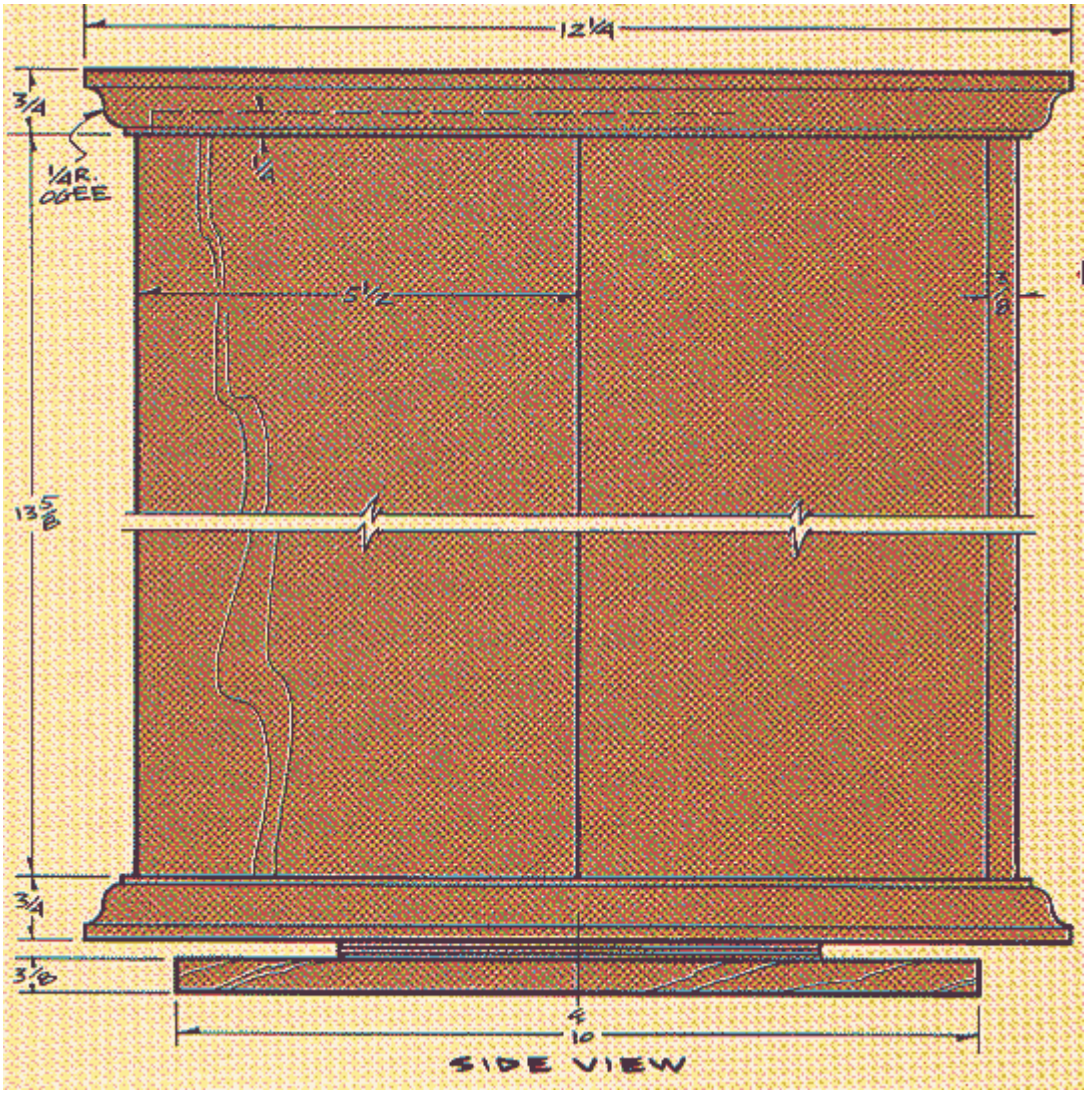
Part	Description	Size	No. Req'd.
A	Top/Bottom	3/4 x 12-1/4 x 12-1/4	2
B	Side Partition	3/8 x 5-1/2 x 14-1/8*	4
C	Center Partition	3/8 x 5-1/4 x 14-1/8*	4
D	Base	3/8 x 10 x 10	1
E	Low Profile Lazy Susans	6 in.	1
F	CD Holder Strip		

Getting Out Stock

As shown in the Bill of Materials, you'll need only two thicknesses of stock for this project. The top and bottom (A) are 3/4 in. thick; the partitions (B, C) and base (D) are 3/8 in. thick. If you buy 4/4 stock, you should be able to easily obtain two thicknesses of the 3/8 in. material by resawing the 4/4 stock. By the way, although you can make all the parts of your CD Carousel out of whatever wood you select (we chose walnut), you could save a little by using a secondary wood (such as poplar) for the four center partitions.




12¼
TOP VIEW
12¼



Size Parts

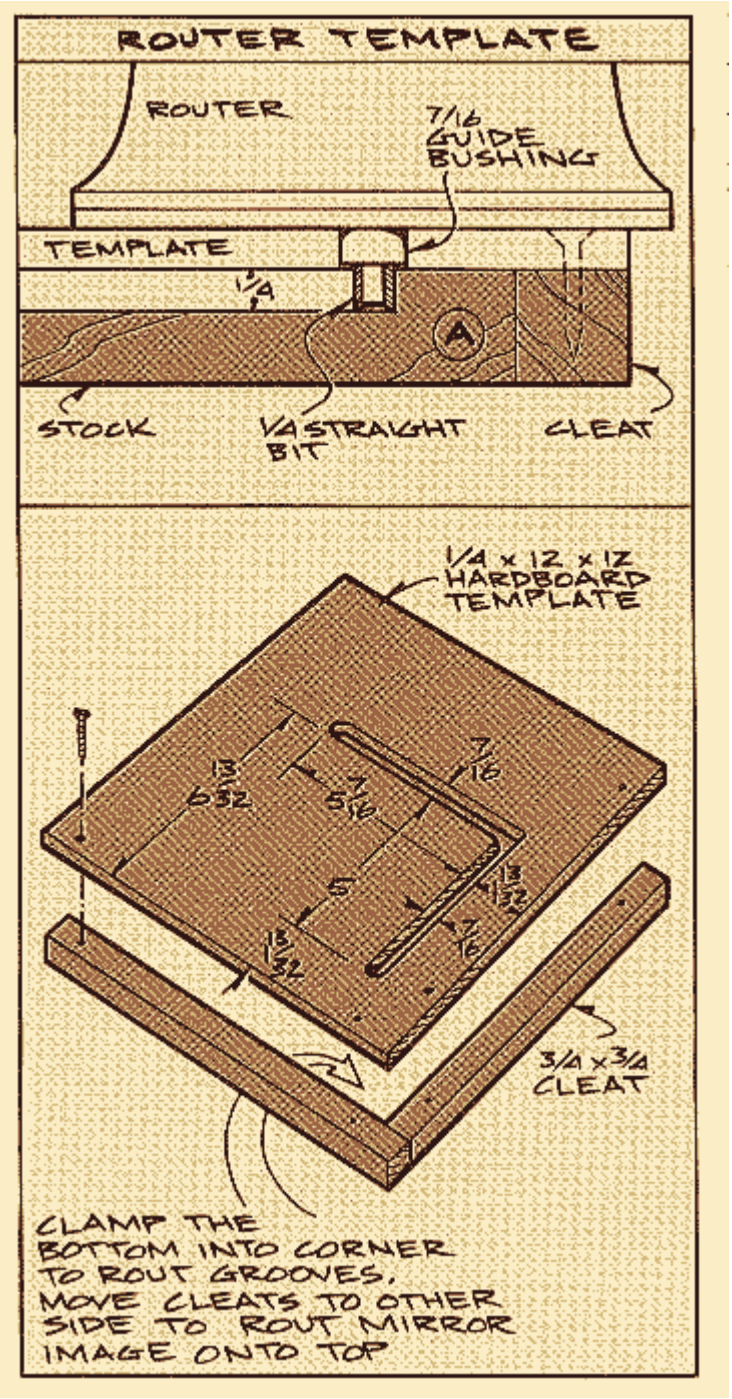
Once you've thicknessed all your stock, cut the parts to the exact sizes listed in the Bill of Materials. Note that the lengths of the partitions *include* the 1/4 in. long tenons on the ends, and that the width of the center partitions includes allowance for the 1/8 in. tongues that will later be cut on one edge. Since the length of all the partitions is identical, just set up a stopblock on your miter gauge fence, locating it 14-1/8 in. from the blade, to cut all these parts to length (the stopblock setting would be 7-3/8 in. from the blade if you are making a half-height CD Carousel, holding 48 CD's). For the ripping cuts to establish the width of the outside partitions, locate the rip fence 5-1/2 in. from the blade, then move the rip fence 1/a in. closer to the blade when you cut the four inside partitions to width. The sizes of the top and bottom must also be exact, since you'll be using a jig to cut the partition tenors grooves in these parts, and any mistake in the size will cause the grooves to be out of alignment.

The Joinery

There are two joints that this project uses. The tongue-and-groove joint that joins the side and center partitions is mainly just a way to keep these parts from sliding out of

alignment when they're glued together. But the grooves in the top and bottom and the corresponding tenons on the partition ends are what holds this project together, and it's important that they are cut accurately. Here's how we did it. (Our jig method is the preferred method if you are making multiples, but if you want to make just one CD Carousel, skip down to the Another Option section).

Make Our Simple Jig:



With a project like this, where you want to make repetitive accurate grooves, and where you plan to make a number of items, the best way to assure success is with a template jig. As the Router Template detail shows, the jig we used is just a 1/4 in. thick piece of hardboard (the template) measuring 12 in. by 12 in., with a few 3/4 in. square cleats screwed to it to properly index the top and bottom. Our jig is designed to be used with a 1/4 in. diameter bit and a 7/16 in. diameter guide bushing. If you use a different size bushing, please note that you'll need to make the appropriate changes on the hardboard template.

Obviously, if you expect your jig to cut accurate grooves, it must be constructed accurately. We used the router table and a 7/16 in. diameter straight cutter to make the grooves in the hardboard template. Locate the router table fence 1-13/32 in. from the bit to cut the first leg of the L-shaped groove, and set up stops to start and stop the groove as indicated. You'll need to drop the hardboard down over the bit to start the groove. Then relocate the fence so it's 6-13/32 in. from the 7/16 in. diameter bit, set up stops, and cut the second leg of the L-shaped groove. Screw your 3/4 in. cleats (make sure they are exactly 3/4 in. wide or all your other careful measurements won't matter) in place flush with the edges of the template, and your jig is ready to use. Obviously, the screw heads must be countersunk so the muter doesn't hang up on them.

Using The Jig: To use the jig, clamp the bottom flush into the corner formed by the two cleats, with the hardboard guide template on top. Then use the router, a 7/16 in. guide bushing and a 1/4 in. diameter straight bit to cut the L-shaped groove. Reposition the jig to each of the three remaining corners on the bottom and repeat the process. All the grooves in the bottom should now be complete.

The same hardboard template is used to rout the grooves in the top, but to make the grooves as a mirror image of the bottom, you'll need to switch the 3/4 in. cleats to the opposite side of the template. Again, countersink for the screw heads so they don't interfere with the movement of the router on the template. Clamp the top into the corner of the jig, with the template on top as before, cut the first L-shaped groove, then relocate the jig on each corner successively to complete the three remaining L's. You should now have a top and bottom that are perfect mirror images of each other. By the way, you'll notice that on both the top and bottom, where the center legs of the four L's converge, you'll have a little 1/4 in. square island of stock remaining. Take a chisel and chop this island out.

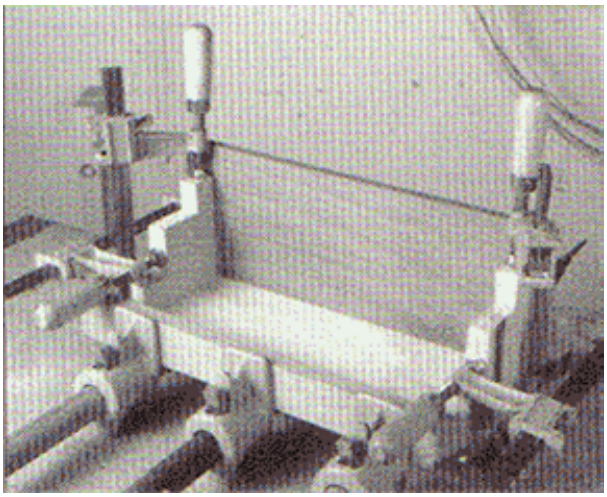
Another Option: If you don't have fancy things like guide bushings for your router, and would rather not fuss with making a jig, don't despair. You can make the grooves using just your router and a 1/4 in. straight bit. Mark the starting and stopping points of all the grooves, then use your router's edge guide to properly index the cuts. The grooves for the four side partitions are made with the edge guide located 3/4 in. from the bit, the four center partition grooves are made with the edge guide located 5-3/4 in. from the bit. Take care to start and stop your grooves dead-on the layout marks that you made. When laying out the grooves in the top and bottom, just remember this: One is a mirror image of the other. Making two identical parts is like having two left feet-it just won't work.

The Partitions: The 1/8 in. tongue-and-groove joints that join the side and center partitions are easily cut with your regular 1/s in. table saw blade. You can also use the table saw to establish the tenons on the partition ends. Make sure you cut the shoulder (that establishes the tenon on each partition end) on the proper side of the stock. One way to make this process foolproof is to mark the inside faces of each matched pair of partitions with an "X" (remember, each pair of partitions forms an L). All the tenon shoulder cuts are made on the side opposite the X marked faces. Note that the front end of the tenons on the side partitions must be notched back 1/8 in. and rounded to fit the rounded end of your router-cut groove.

Assembly

Now glue and assemble each pair of partitions (one side partition and one center partition) to form four L-shaped partition sub-assemblies. As the photo on page 7 shows, a pair of notched right-angle clamp blocks will make certain that the partitions are joined at a true 90-degree angle. Once the four partition sub-assemblies are out of clamps, you can test-fit them into their respective L-shaped grooves in the top and bottom. Note that to fit the tenons into the grooves, you'll need to round the outside corner of each of the L-shaped partition sub-assembly tenons to match the radius at the corner of your L-shaped groove.

And, here's one other important assembly tip. Although you probably won't have much trouble fitting the four partition sub-assemblies into the bottom (you just fit them into their respective L-shaped bottom grooves one at a time), it can be a fussy-and frustrating-task when next you must get the top to fit over all four partition sub-assemblies at once. To ease this part of the assembly, take a sharp chisel and pare a slight bevel on both the inside and outside edges of each L-shaped partition sub-assembly tenon. The bevel should only extend about 1/s in. up the 1/4 in. long tenon. This makes it easy to get all the tenons started simultaneously into their respective grooves, but insures that they'll be properly located when the assembly is socked up tight.



Notched right-angle clamp blocks will aid in gluing up the partitions.

Once a dry assembly of the top, bottom and the four partition sub-assemblies has fitted together to your satisfaction, disassemble it, then use an ogee bit to mold the profile on the top and bottom.

How do you complete a glue-up like this without any glue dripping down from the top? Here's the secret. Add a little glue in the bottom grooves only (not too much or you'll be cleaning up squeeze-out), then add the partition sub-assemblies, and the top (but without any glue in the top grooves). Clamp the whole, and set it aside to dry. Don't use any glue at the center where the partitions meet-there's no need to fasten these parts together. Once the glue in the bottom has dried, flip the unit over, lift off the partition and bottom assembly, add glue in the top grooves, reassemble and clamp.

All that remains of your project is to add the base, the swivel (E), mount the inserts (F), and apply a finish. Finish the base and the exposed surfaces of the CD Carousel (we used Minwax Antique Oil), screw the swivel to the base, then mount the base to the bottom of the carousel by inserting screws through a screw access hole in the base (see exploded view).

The plastic inserts can be glued in place, but make certain the glue is not solvent based or you risk melting the plastic. A better choice is to use double-stick tape.