Do It Yourself

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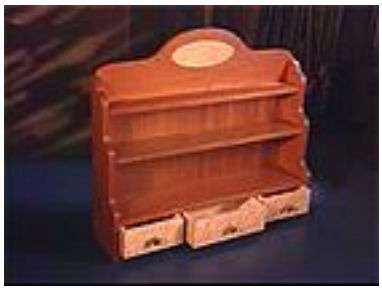
Inlaid Spice Rack: Mahogany Case-Stock

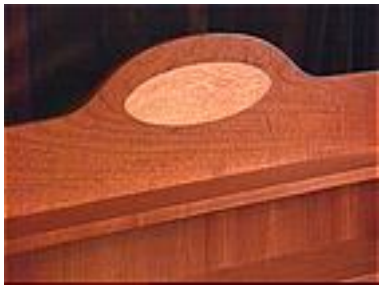
From "Wood Works"
episode WWK-510 -- More Projects »

In this episode of *DIY Wood Works*, host David Marks builds a spice rack from contrasting woods of mahogany and maple. The rack features three shelves, three drawers and a decorative crest-rail.

This classic kitchen accessory has three shelves for displaying bottled spices and drawers for storing fresh herbs. Crafted from solid mahogany, the sides are cut at the band saw and routed using a template. The shelves are joined to the case with dowel joinery and the back panel is glued into a rabbet. The drawers are fashioned out of contrasting bird's-eye maple. Finally, a highly figured maple burl gets precision-fitted into the crest rail to form a beautiful inlay.



This classic spice rack was built using a combination of mahogany and bird's-eye maple. It's a contemporary design but is reminiscent of the classic arts-and-crafts style.



The maple inlay was added using a hand-held router and specialized router-inlay kit.

Materials:

Mahogany stock
MDF for templates
Table saw; cross-cut sled
Band saw
Table router
Cordless drill
Doweling jig
Wood screws
Chisel
Double-stick tape
Clamps
Straight-edge
Carpenter's pencil
Safety glasses or goggles

Safety Alert: *Always* wear safety goggles or safety glasses when working with wood, power-tools, saws, drills, routers, etc.

Case Stock

- The spice rack has three major components: the case with template-routed sides, the drawers built with reinforced rabbet joints and the decorative crest-rail.

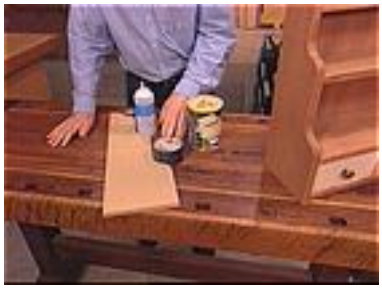


Figure A

- The curved sides and crest rail are inspired by the step-down motif of the arts-and-crafts style. One simple way to develop designs with curves is to trace objects that correspond roughly to the desired shape. Ordinary household items such as spools of tapes and round cans or containers are ideal for this (**figure A**).

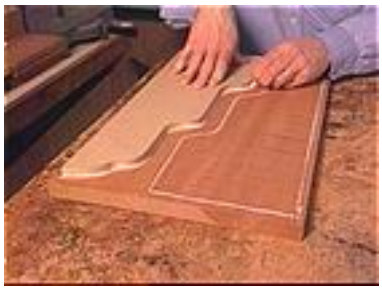


Figure B

- Once you've worked out a design for the curved sides on an MDF template, trace your design onto the mahogany stock. For maximum yield, we traced the template twice onto a piece of mahogany stock milled to 3/4-inch thick by 21-1/4 inches long and 12-3/4 inches wide (**figure B**).

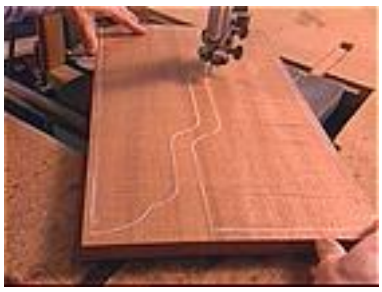


Figure C

- Use the band saw to rough-cut the curved pieces of mahogany slightly oversized (**figure C**).

- Tape the template to the side stock (**figure D**) and flush-trim the edges at the table router using the template as a guide. Use a spiral-carbide router bit to flush trim the edges with little risk of chip-out.

Figure D

- With the side stock cut, work can begin on the shelves. As seen on the prototype, the bottom two shelves form the enclosure for the drawers. All of the shelves are the same length and are set back 1/4-inch from the front edge, but each is a different width (**figure E**).

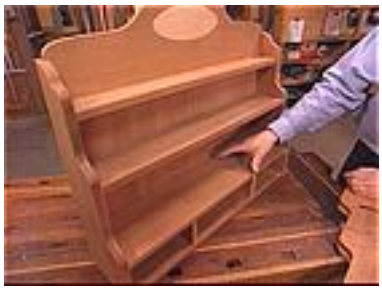


Figure E

- At the table saw, rip the shelf stock to the appropriate widths: 2-3/4 inches for the top, 4-1/2 inches for the middle, 6-1/8 inches for the third and 6-3/4 for the bottom shelf (**figure F**).

- Use the cross-cut and stop-block on the table saw to cut all of the shelf stock to 26-1/2 inches long.

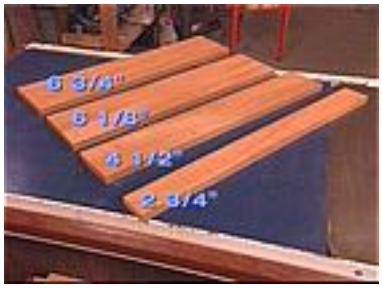


Figure F

- As seen on the prototype, a rabbet cut into the sides of the case and bottom shelf will hold the back panel. The rabbet is cut slightly more than 1/2-inch deep to allow the back-panel to be recessed slightly. The side pieces get stop-rabbets while the bottom shelf gets a through-rabbet (**figure G**).


Figure G

- Cut the rabbet in the bottom panel using a 1/2-inch spiral-carbide router bit (**figure H**). Set the bit to the full height of the cut -- 5/16-inch. Adjust the fence to cut the width rabbet in two passes.

- Before cutting the stop-rabbets in the sides, set them perpendicular to the bottom shelf to make the layout mark for the cuts (**figure I**). Set the bottom shelf on a 1/4-inch shim to allow for the offset.

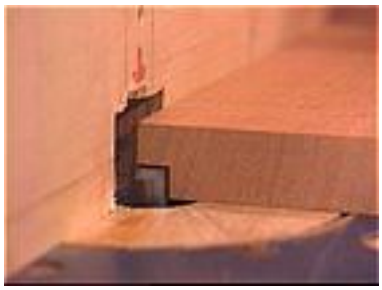


Figure H

- Using the layout marks as a guide, clamp a stop-block to the fence to cut the stop-rabbets in the side stock (**figure J**). To cut the rabbet on the other piece of side-stock, reposition the block to the back of the fence and make the cut.

- Slide the stock slowly into the bit to make the rabbet cuts (**figure K**).


Figure I

- Use a sharp chisel to square up the corners of the stop rabbet.

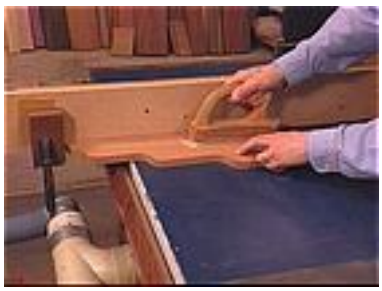


Figure J

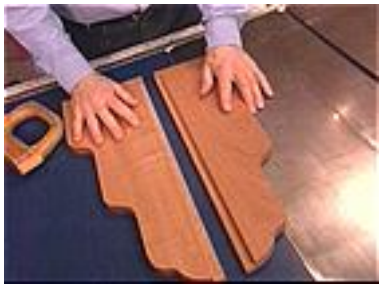


Figure K

Dowel Joinery

Wooden dowels are used to assemble the case and to join the shelves to the case. Dowel joinery is a simple, affordable form of joinery that doesn't require elaborate tools. It does, however, require precision.

- To make the joinery line up, and to keep the shelves level, we create a doweling jig from a piece of maple that has been jointed and planed flat. It's made slightly wider than the width of the bottom shelf. A heel is glued to the end so that the rabbet can be used for a reference (**figure L**). The heel is notched so that it will clear the rabbet on the bottom shelf (**figure M**).

- Though the four shelves are different widths, this one jig can be used for all of them. The configuration of the jig allows for two dowels on the top shelf (**figure N**), three on the middle shelf and four on the two bottom shelves.

- The extra holes visible on the jig are pilot holes so that the jig can be secured to the stock with wood screws.

Figure L

Figure M

Figure N

- Using the template as a guide, transfer the layout lines for the shelves onto the stock (**figure O**).

- Set the jig in place and screw it into position (**figure P**) making sure that the jig is square with the rabbet.

- Use a hand-drill with a 5/16-inch bit to make the holes for the dowels (**figure Q**). Blue carpenter's tape on the drill-bit acts as depth gauge to ensure that the holes are all drilled to uniform depth.

- Repeat the process until all of the holes are drilled in the side stock.


Figure P


Figure P


Figure Q

- Mark the shelf stock with cabinet-makers triangles to indicate the top face and back side of each shelf (**figure R**).

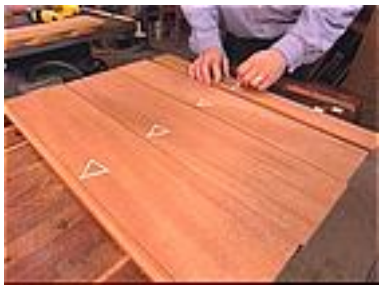


Figure R

- Drill the joinery on the ends of the shelf stock by clamping each shelf and securing the doweling jig with screws (**figure S**). For the opposite end, simply flip over the stock and jig to maintain the same reference point.

- Once all of the holes are drilled, conduct a dry-fit using 1-inch dowels (**figure T**). Pre-manufactured wooden dowels are chamfered and fluted to allow room for the glue as the the dowels are inserted

- With the case dry-fit and clamped, the layout for the drawer dividers can be worked out.


Figure S

In the segment that follows, the case is assembled and the drawers are built.

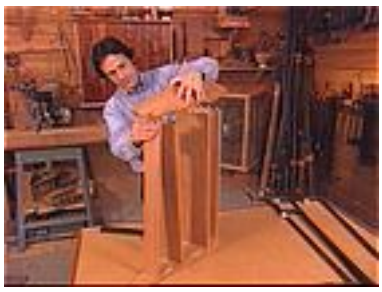


Figure T

- **ALSO IN THIS EPISODE:**

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Inlaid Spice Rack: Case Assembly and Drawers
Inlaid Spice Rack: Decorative Accents
Inlaid Spice Rack: Finishing Touches