



Pennsylvania

Small chest is a craftsman's showcase

BY STEVE LATTA



Spice Box

When I decided to build a piece for my wife and I, to celebrate our 10th wedding anniversary, I had two important goals. I wanted it to be on an intimate scale—something smaller than a sideboard or dining table—and I wanted a piece that could be personalized.

This spice box seemed a perfect fit. It's compact enough to sit on a dresser or in an alcove, and it's great for storing jewelry and small treasures of all kinds. And, as on many original spice boxes, the inlaid decoration allowed me to personalize the box and commemorate the occasion.

Because Elizabeth and I are Quakers living in Chester County, Pa., I was drawn to the history of the spice-box form. This design is typical of those popular among Pennsylvania Quakers throughout the 18th century. Fitted with banks of small drawers and often hidden compartments, they were displayed as symbols of prosperity. The cases typically were made of walnut, the doors or central drawers veneered or inlaid with combinations of maple, boxwood, holly, cherry, walnut burl, locust, and red cedar (see Master Class, pp. 96-100). A finished spice box is small, but it contains a wealth of craftsmanship.

Start with the case joinery

The case is dovetailed, and the various rabbets and notches for the door and the back complicate the joinery a little. Lay out and

DOVETAILING THE CARCASE

Rabbeting the dovetails makes it easier to lay out the pins, and also makes the tails easier to hide with moldings. Clamp a wooden fence onto the router to make the rabbets.

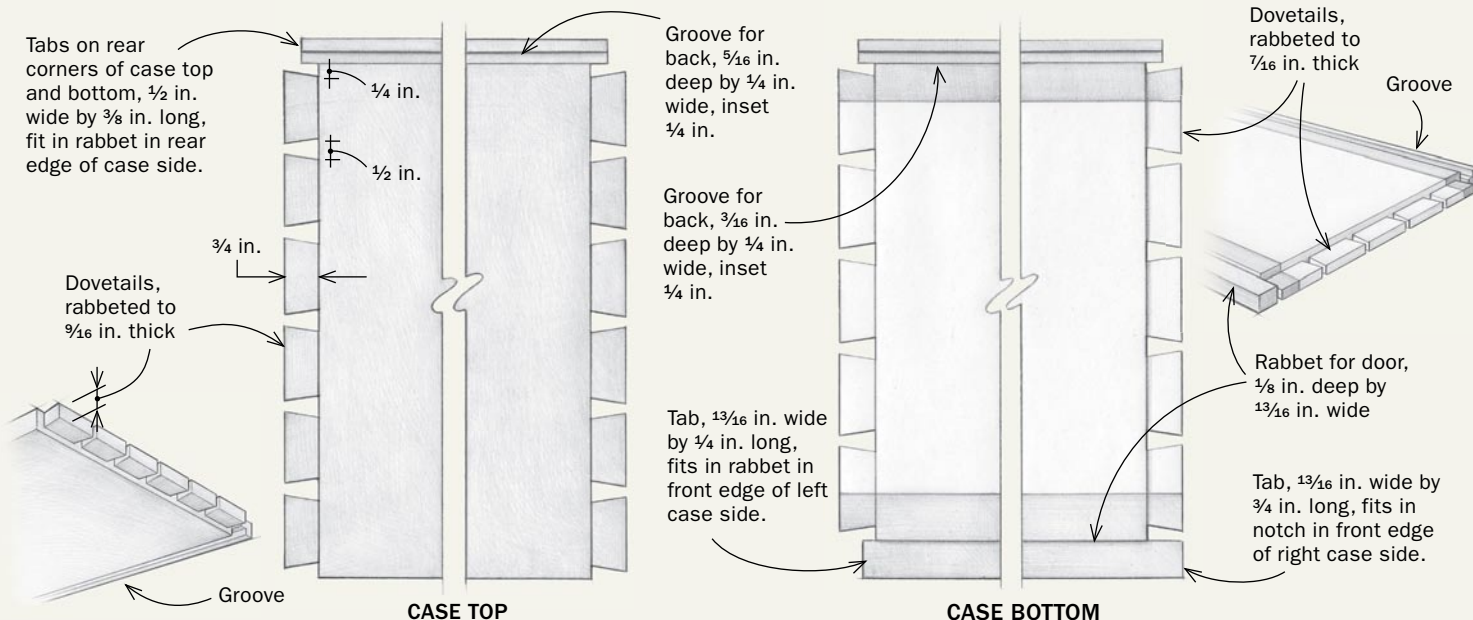


Bury the bit. Pivot the fence into the bit (left) to create a zero-clearance cavity that thwarts tearout. Adjust the fence to cut rabbets of varying depths with a single $\frac{3}{4}$ -in. bit.



Transfer the layout. Mark the appropriate corners of the top and bottom panels (left) and cut them to fit into the side rabbets. Then scribe the pin layouts (right).

AN ARRAY OF TABS AND DOVETAILS

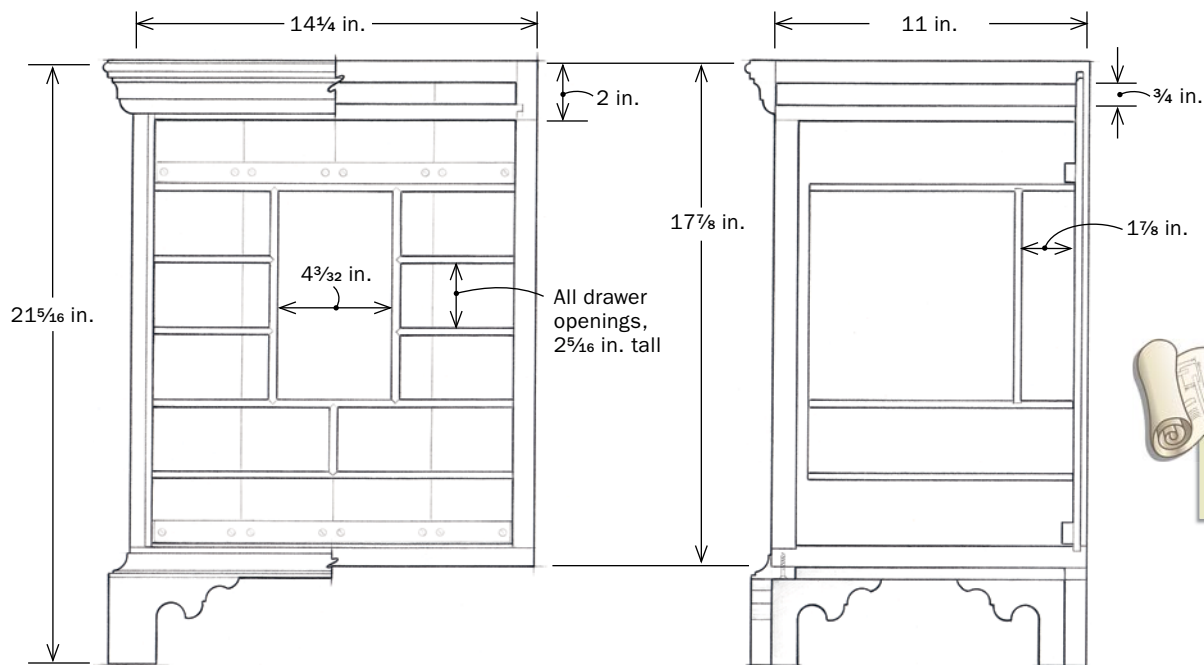
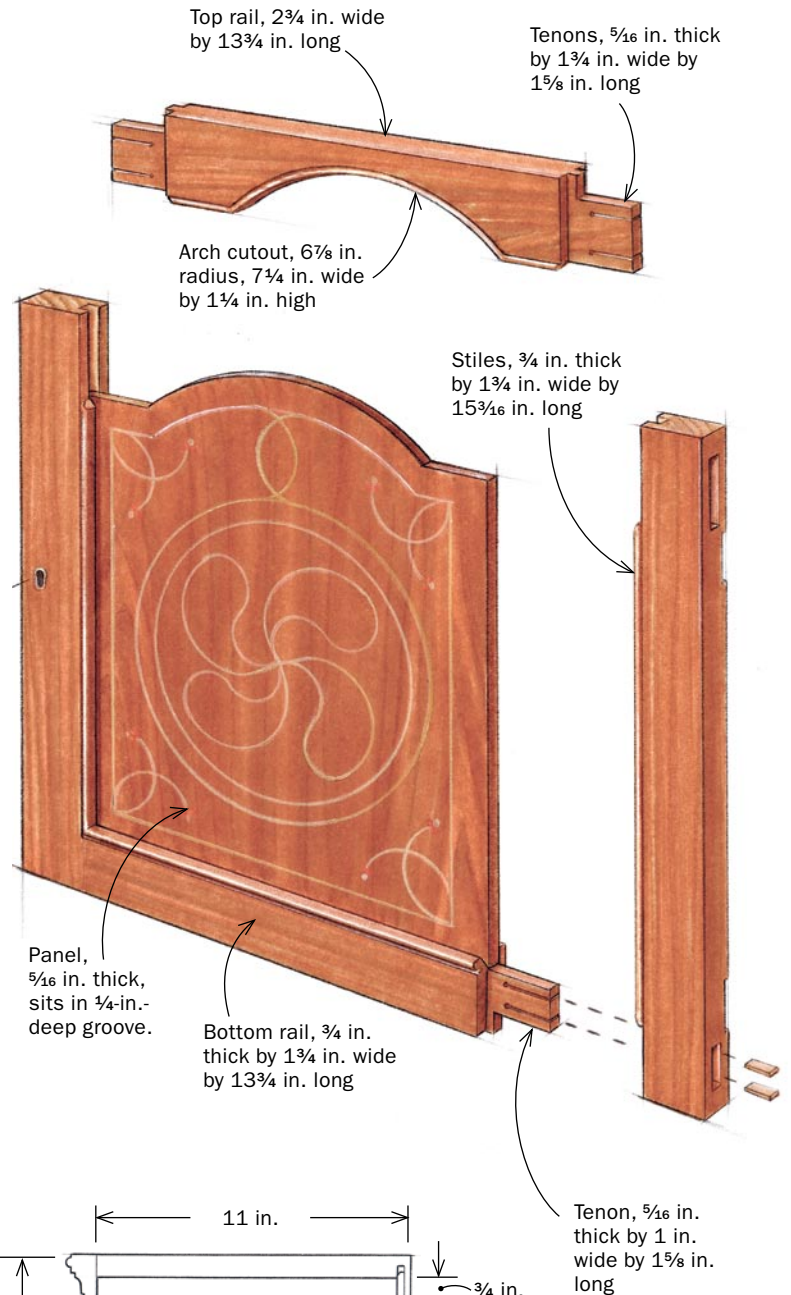
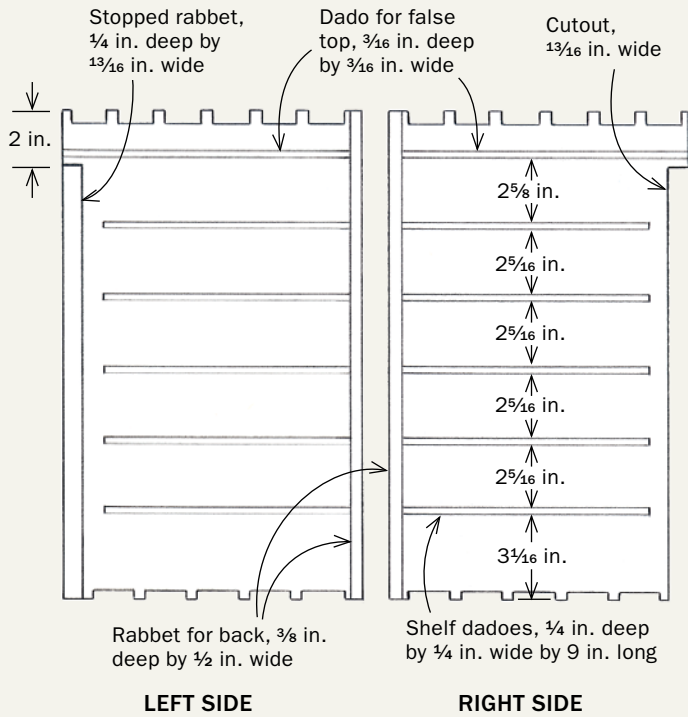


AN INTRICATE TREASURE CHEST

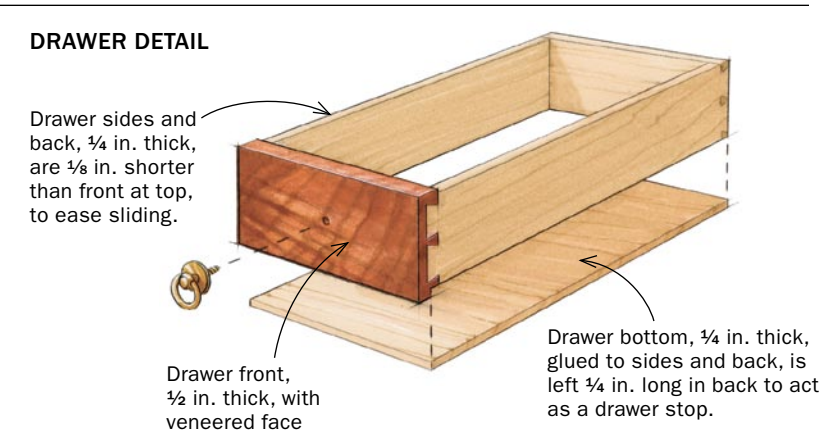
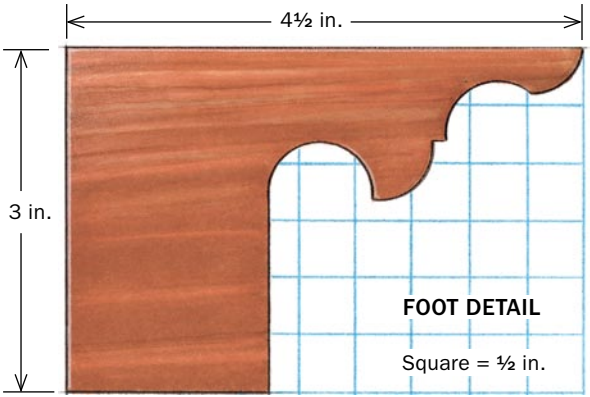
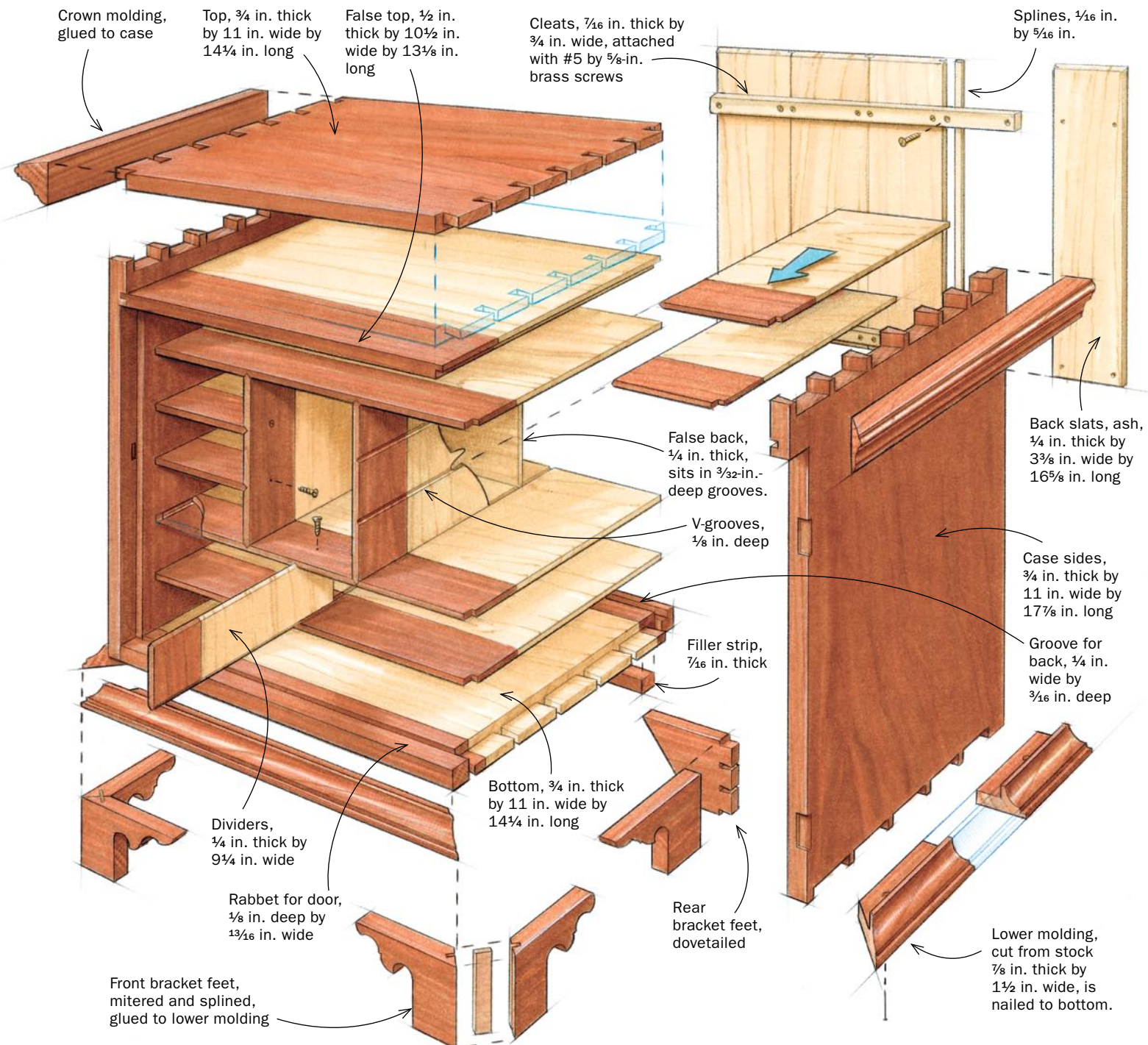
The box houses 11 dovetailed drawers with veneered fronts, and two secret compartments. The case, door, and trim are from a single walnut board. The bottom and interior partitions are poplar, glued up with a walnut strip at the front; the back is ash. Hardware is from Londonderry Brasses (www.londonderry-brasses.com).

ASYMMETRICAL CASE SIDES

The case sides look very different up front. The door rests in a rabbet on the left side and overlaps a cutout on the right to swing out of the way of the drawers.



Full-size plans for this spice box and other projects are available at FineWoodworking.com/PlanStore.



CASE ASSEMBLY



For clean, precise stopped dados, build this jig. Its fence mates with the rabbet on the workpiece edge, preventing tearout at the entrance to each dado. A notch in the stop block prevents trapped sawdust from shortening the cut.



Picture of a calm glue-up. Latta leaves the bottom dry-fit while gluing up the top, sparing himself the panic of getting the whole case together at once.

cut the dovetails (but not the pins yet), keeping in mind all those insets and rabbets. Next, mount a $\frac{1}{2}$ -in. or $\frac{3}{4}$ -in. straight bit in a handheld router and “bury” the bit in a fence clamped to the base. Set the router to cut a rabbet that is $\frac{3}{8}$ in. deep by $\frac{1}{2}$ in. wide, and use this setup to rabbet the rear, interior edges of both case sides. These rabbets will receive the back.

For the front of the case, you now need to cut a stopped rabbet on the interior of the left side. When closed, the lock side of the door will fill this recess, which should be $\frac{1}{4}$ in. deep by $\frac{13}{16}$ in. wide. Adjust your fence and bit depth, then cut the rabbet, stopping $2\frac{1}{16}$ in. from the top. Don’t square the rounded end of the rabbet just yet. The squared end should be trimmed flush with the bottom of the false top, so wait until you’ve fitted the false top before taking this step. On the hinge side, the door sits in a notch $\frac{13}{16}$ in. deep that stops $2\frac{1}{16}$ in. from the top.

The next step with the router is to rabbet the dovetails. Reset the router fence to cut the length of the tails. For both pieces, be sure to rabbet only the dovetails, not the notches in front and back. Before

transferring the tail layouts to the end grain of the pin boards, trim the tabs at the rear of the top and bottom pieces so they fit into the side rabbets for the back. Also trim the front tab on the bottom to fit in the left-side rabbet for the door (see drawing, p. 59). Cut the pins.

Next, along the inside edges of the top and bottom, cut the grooves to receive the back panel. Cut the groove in the bottom $\frac{1}{4}$ in. wide by $\frac{3}{16}$ in. deep. The top groove should be slightly deeper— $\frac{5}{16}$ in.—to facilitate the back panel sliding up and dropping into the bottom groove. This can be done with the router-and-fence setup or with a dado blade.

With that, all of the main carcass joinery is cut, and the pieces are rabbeted and notched to accommodate a back and a door. But before glue-up, you need to start on the interior of the case.

Prep the case for the partitions

Inside the case, lightweight and delicately joined partitions create space for 11 drawers and two secret compartments. The first of

PARTITIONS

Cut partition joinery on the router table. Set up a 90° V-bit to cut halfway through the stock's depth. The widest part of the groove should match the stock's thickness. Next, bury the bit in the fence to chamfer the mating ends, which should come to a point that is centered on the stock.



A preventive measure. The partition joinery will be secured in several places with wood screws. Before installing the partitions, predrill and counter-sink the screw holes to avoid splitting the stock.



these—a hidden file space $\frac{3}{4}$ in. deep—is created by a false top hidden behind the crown molding. The false top should be crosscut to length but left wide until after its joinery is cut. To hold it in the case, use a router to cut a through-dado in each case side, $1\frac{1}{2}$ in. from the top. Crown molding will cover these. Using a dado blade buried in an auxiliary fence, cut a notch along the ends of the false top to fit into the dados.

The horizontal drawer dividers are joined to the cabinet sides with stopped dados $\frac{1}{4}$ in. wide by $\frac{1}{4}$ in. deep. These dados should stop $\frac{5}{8}$ in. back from the front edge on the hinge side and the rabbet on the lock side. I cut these using a router jig that stops the cut and eliminates blowout along the back edge (see photos, facing page).

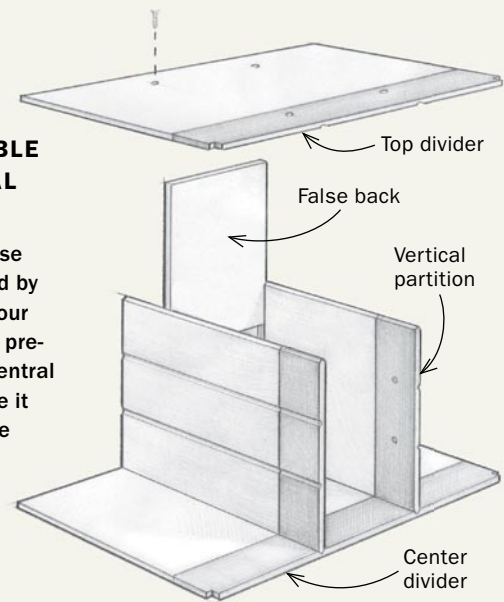
Once the dados are cut, glue up the case with the false top.

Fitting the central partitions

The lightweight partitions are joined to each other with chamfered ends fitted precisely into shallow V-grooves. These V-joints,

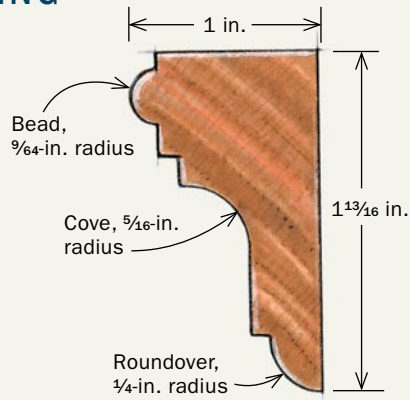
PRE-ASSEMBLE THE CENTRAL GALLERY

Because the false back is captured by grooves on all four sides, you must pre-assemble the central gallery and slide it into place in one piece.



Partitions slide in from the back. Latta dry-fits the interior, fitting the pieces to one another, then removes and pre-finishes the pieces before final assembly. Screws hold the assembly together.

CROWN MOLDING



Attach the crown molding. Cut a shallow V-groove along the molding's bottom edge to capture excess glue and reduce squeeze-out. Molding cutoffs serve as cauls to create a square clamping surface.



combined with the stopped dados, allow everything to be slid into the case from the back. The divider fronts are slightly rounded over and these roundovers meet seamlessly at the V-joints.

Leave the partitions wide until all of the notches, V-grooves, and front details are completed. Start by cutting the three main horizontal dividers to length. This dimension should be the side-to-side distance between shelf-dado bottoms, minus $\frac{1}{32}$ in. to make them slide easily. Next, cut V-grooves into the faces of these dividers to accept the vertical partitions that run between them. Use a 90° V-bit mounted in a router table, riding the partitions against the fence. The bottom of the V-groove should be exactly halfway through the stock. If you have a little flat at the groove bottom, use a chisel to bring it to a point.

Now slide the three dividers into their respective dados and measure for the length of the vertical partitions. When you cut these partitions to length, leave them a little long.

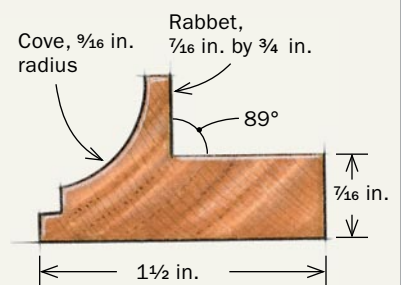
Next, bury the V-groove bit in the fence and set it to chamfer precisely halfway through the end of the partition stock. Chamfer the bottom and top edges of the vertical partitions to a point so that they fit into the V-grooves in the three main panels. Slide the partitions into their slots and, using a straightedge, check whether the horizontal partitions are bowed. If so, shorten the verticals with a light pass of the block plane and re-chamfer. A good fit is critical.

Each of the long vertical partitions now needs a pair of V-grooves to accept short horizontal dividers. Lay out the grooves to align with the side dados and cut them using the V-groove bit in the router table. Slide the partitions back into the case.

Determine the length of the short horizontal dividers by measuring from the bottom of the V-grooves to the bottom of the dados cut into the sides. Cut these dividers to length and chamfer the inside edges. Next, notch the ends of the horizontal partitions to fit



BASE MOLDING



The cove molding is notched. The lip provides a nailing surface for attaching the molding from underneath. Make the first tablesaw cut a degree out of square for a snug fit against the case.

BRACKET FEET

The front feet are mitered. For glue-up, place a piece of 2-in. packing tape over the outside of the joint. Pre-treat the end grain with a light layer of glue. After adding more glue and folding the miter together, insert the spline. Latta clamps the assembly with a wide, double-wrapped rubber band. He uses the negative-image off-cuts from the scroll-saw (right) as cauls for gluing the feet to the cove molding.



over the ends of the stopped dadoes in the case sides. This creates a nice, clean termination of the partitions into the sides. Mark the notches with a chisel or knife and cut them with a handsaw and chisel.

Once everything fits, use a $\frac{5}{16}$ -in. roundover bit and a router/router-table setup to round the front edges of all of the partitions. Use only a small portion of the cutting edge to apply a shallow roundover. This makes for a really clean look.

You can now cut the partitions to width on the tablesaw.

Fit the hidden compartment—A small box fits behind the large central cavity and is only accessible from the back of the case. Consequently, a false back made from ash, the same material as the real back, needs to be fitted in that section. Using a $\frac{1}{4}$ -in. straight bit chucked into a handheld router with an auxiliary fence mounted to the base, cut a groove to receive the false back. It is cut on the inside faces of the two main vertical dividers and between the two V-grooves on the top two horizontal dividers. Size a cutoff from the back to fit into the recess.

Next, screw all of the partitions and dividers together using #3 or #4 by $\frac{5}{8}$ -in. wood screws. Be sure to predrill and countersink to avoid splitting. Small nails would work great also.

At this stage, you should have a box and its false top glued together. All of the internal dividers are dry-fitted and cut to the right depth, with their front edges nicely detailed.

Making the back

The back is made from four $\frac{1}{4}$ -in.-thick ash slats with chamfered edges, splined and battened together. Cut a shallow groove, about $\frac{3}{16}$ in. deep, in the edges where the boards meet, using a $\frac{1}{16}$ -in. tablesaw blade. After the panel is glued up, use a block plane to cut a chamfer along the inside of the top edge of the back panel.

This chamfer allows you to lift and tip the back panel into position and then drop it into the lower groove.

Making the crown molding and feet

I copied the crown molding from an original 18th-century box, using a shaper and a cutter I ground to match. The molding can also be made with a combination of router bits.

The cove molding at the bottom is made from stock measuring $\frac{7}{8}$ in. thick by $1\frac{1}{2}$ in. wide. Using a cove cutter mounted in the router table, scallop out the top of the molding. Cut the fillet next, using a slot cutter with the tip buried into an auxiliary fence. Following this sequence reduces the likelihood of tearout.

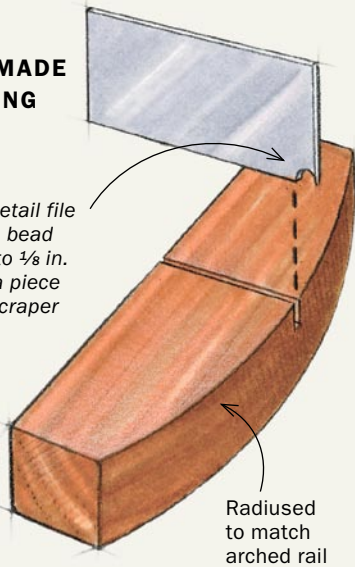
This molding needs to be notched so that it covers the lower dovetails and lips underneath the case. Glue a filler piece measuring $\frac{7}{16}$ in. thick by 1 in. wide along the lower back edge of the case between the moldings. It provides a level surface for mounting the feet.

The flat bracket feet are made from $\frac{1}{2}$ -in.- to $\frac{5}{8}$ -in.-thick stock that's 3 in. wide. I prefer to use a straight grain that brings the eye to the center of the piece. The front feet are made from sequentially sawn pieces that are mitered and splined. Cut the groove for the spline on the tablesaw using a 45° block mounted to a miter gauge. Cut the spline from $\frac{1}{8}$ -in. stock whose grain runs parallel to the grain orientation in the feet. After the miter joint is cut, lay

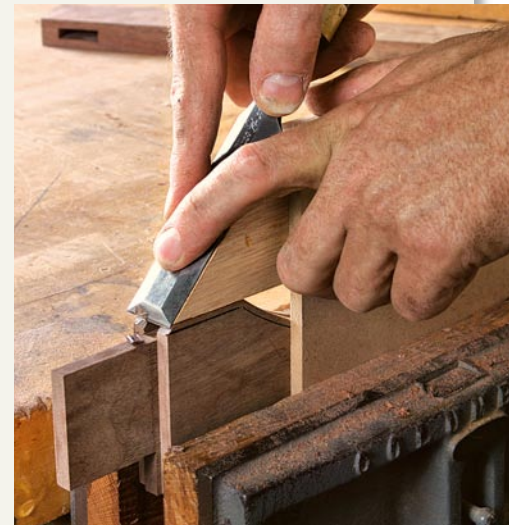
ARCHED DOOR

SHOPMADE BEADING TOOL

Use a detail file to cut a bead profile to $\frac{1}{8}$ in. dia. in a piece of old scraper stock.



This scratch stock is built for curves. The block is shaped to match the radius of the door's arched top. Stop the bead short of the corner and clean it up with a chisel.



Miter the beaded corners. A simple cutting guide makes it easy to pare the corners cleanly at 45°.



Sturdy frame for a picture-perfect panel. The door's inlaid panel slides into a frame joined with mortises and wedged through-tenons.

out the foot detail and cut it out on the scrollsaw. The rear feet are dovetailed. I broke from tradition and used primary wood for the rear return because the back of the chest would be visible. After the four foot glue-ups are dry, glue them to the lower cove molding, making them flush to its front edge.

Making the door

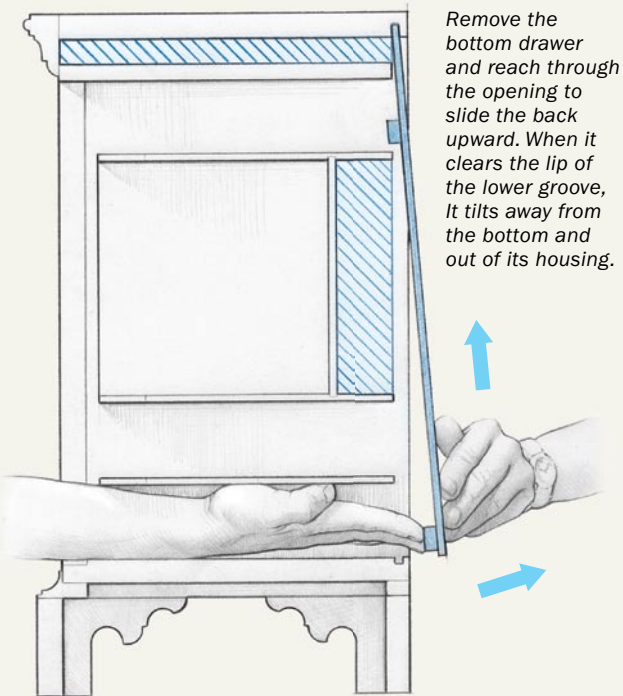
Mill the door stock in stages and leave the stiles and rails a couple of inches overlong and at least $\frac{1}{4}$ in. to $\frac{3}{8}$ in. extrawide, even after reaching final thickness of $\frac{3}{4}$ in. Cut the arch in the approximate center of the top stile. Lay out the curve and cut it with a bandsaw; clean up the sawmarks with a card scraper.

The straight inside edges of the door frame are beaded first—on both the inside and outside faces. To cut the beads, I use my slicing gauge and define the inner line on all of the components, and then use a detail file to rough in the radius on the edges. I use a shopmade scratch stock to define the bead. (See “Scratch Stocks,” FWW #163, pp. 62-65). With a white-lead pencil, mark what will be the top of the bead and scrape only until the lead disappears. This helps guarantee an even bead without too many high or low spots.

For the arched rail, bead the flats on both sides of the arch, being careful not to run all the way to the corners. Remount the scratch stock into a block of wood radiused to match the curve in the rail and bead the arches. Using a chisel, small knife, gouge, sandpaper, or other means, blend the corners together on the arched piece.

Once all the edges are beaded, cut the pieces to final length and width, keeping in mind that the door is oversize and will be taken to dimension later. Lay out and cut the $\frac{5}{16}$ -in. through-mortises, centered along the thickness of the stock, leaving about $\frac{7}{32}$ in. on each side. Next, plow a $\frac{1}{4}$ -in.-deep groove the same width as the mortise along the internal edge of the stiles and rails. I use a slot cutter on a router table, clamping on an auxiliary fence and

REVEALING HIDDEN COMPARTMENTS



Remove the bottom drawer and reach through the opening to slide the back upward. When it clears the lip of the lower groove, it tilts away from the bottom and out of its housing.



making sure the tip of the cutter is buried in the fence where it would make contact with the stock. I shaped another auxiliary fence for the arched portion of the top rail, setting it up so it was also just $\frac{1}{4}$ in. deep.

I cut the tenons on the tablesaw and hand-pared the internal miters using a guide block. Because the groove is deeper than the $\frac{1}{8}$ -in. bead, do a sample to figure out the quirks. The tenons need a $\frac{1}{8}$ -in. haunch to fill the groove. Because it is such a small door, I did not bother angling the haunch in, as I would on larger doors. Cut the tenons for wedges and, with the door dry-fit, turn to the panel (see Master Class, pp. 96-100).

Once the inlay is done, glue up the door. Because of all the miters and the need to fuss a little, use white glue and take advantage of its extra open time. With the door clamped, make sure it is flat, pound in the wedges, release the clamps, and let the door dry.

Size the door to the opening, mortise in the lock and hinges, and hang it in the case. I typically line up the hinges with the rails. To calculate the location of the lock mortise, use machinist's

Online Extra

For a step-by-step finishing recipe, go to FineWoodworking.com/extras.

blue/white correction fluid on the end of the bolt. With the door closed, turn the key, forcing the bolt against the case side. Cut the mortise with a small chisel. To finish the case, door, and drawer fronts, I padded on several coats of garnet shellac. □

Contributing editor Steve Latta teaches cabinetry at Thaddeus Stevens College in Lancaster, Pa.



Hidden treasure. Both hidden compartments are accessed from the back of the box. The shallow space above the false top conceals documents. The deep box in the alcove can hold small valuables.