Desk in a Drawer

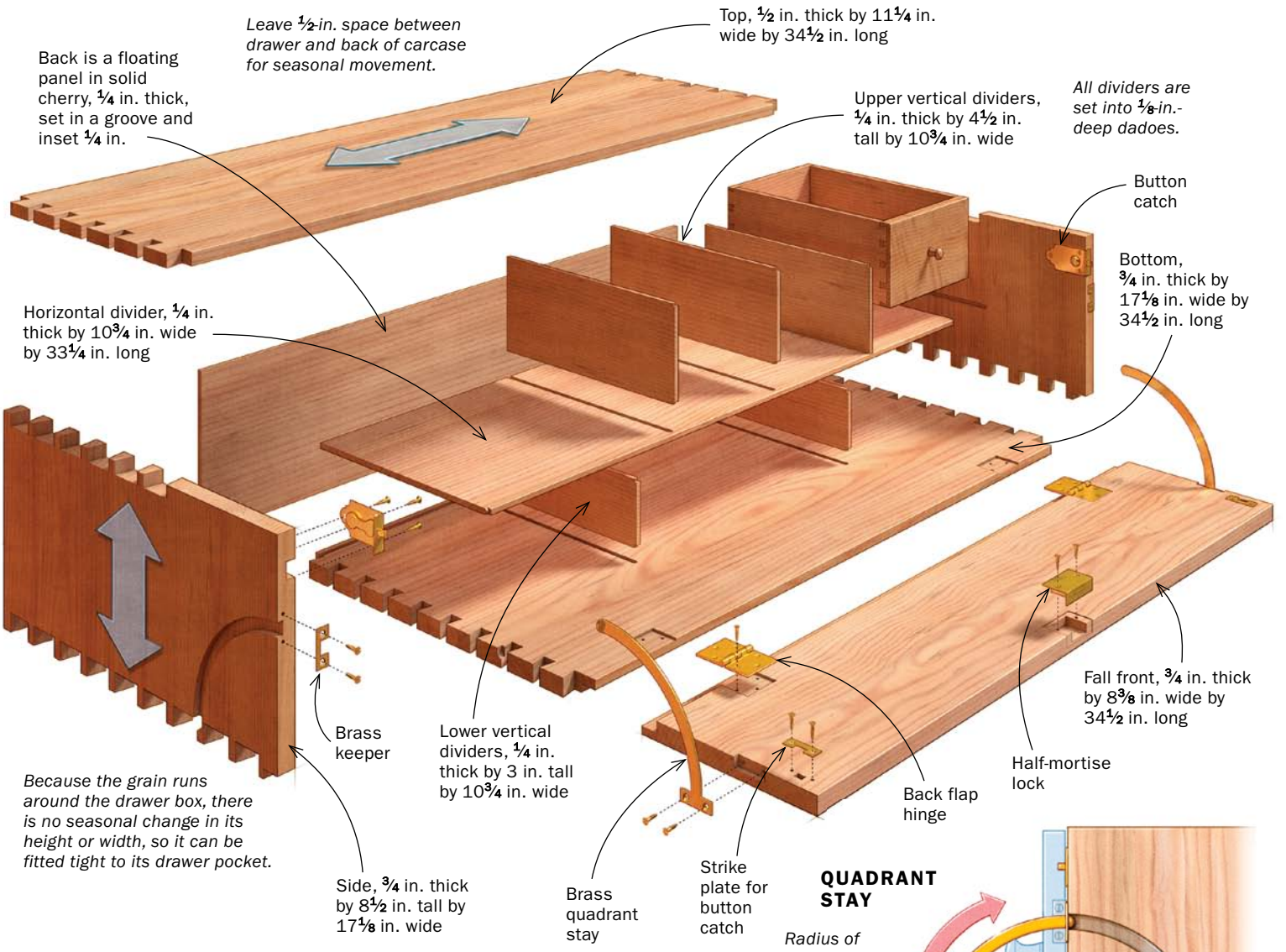
Add a pull-out desk to any chest of drawers

BY CHRISTIAN BECKSVOORT

Of all the desks the Shakers built, perhaps the rarest is the butler's desk, a bureau whose top drawer is actually a fall front that pulls out and opens to reveal a gallery with smaller drawers. The idea of discreetly fitting a writing desk into a chest of drawers did not originate with the Shakers—butler's desks have been made in many styles over the years, notably in campaign furniture and for shipboard use—and the desk drawer I'm making here could be fitted to a traditionally built bureau of virtually any design.

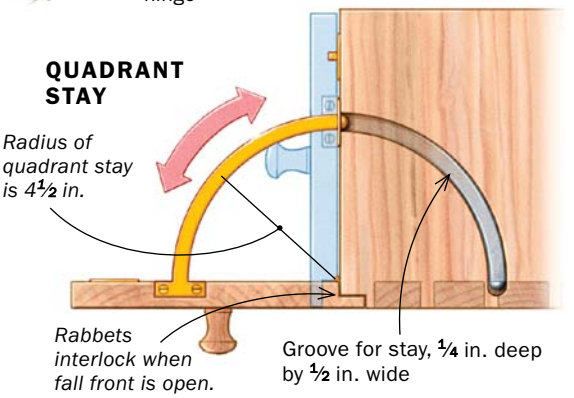
The bureau's case and its lower three drawers are constructed just like a standard Shaker chest of drawers (for details of such a chest, see "Cherry Chest of Drawers," *FWW* #170). The desk drawer, however, is a departure. Like the other drawers, the desk is a dovetailed box, but it's beefier and has been turned so that its "bottom" is at the back. Because the desk drawer is built this way, it can be sized to fit snugly into the drawer opening—no allowance is necessary for expansion and contraction in the height or width of the drawer

Photos: Jonathan Binzen; drawings: John Hartman



BUTLER'S DESK

Built to a Shaker design, this bureau contains a butler's desk—a drawer that pulls halfway out and has a fall front that serves as a writing surface.



SOURCES OF SUPPLY

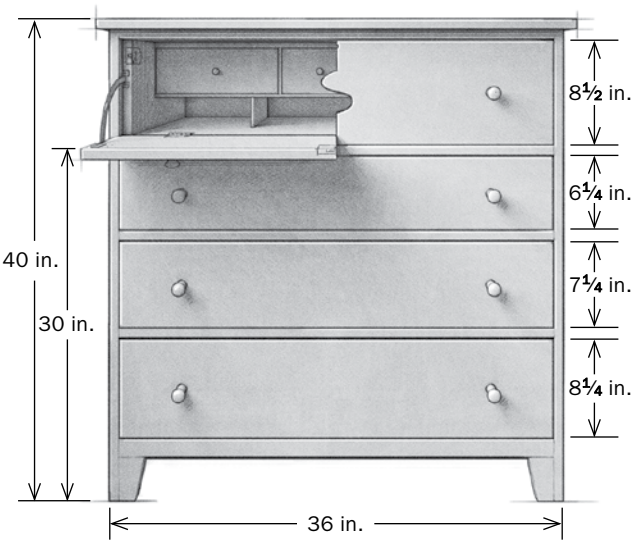
FALL-FRONT HARDWARE

Ball & Ball Hardware Reproductions
ballandball-us.com

Hinges: H15-052

Quadrant stays: J38-566

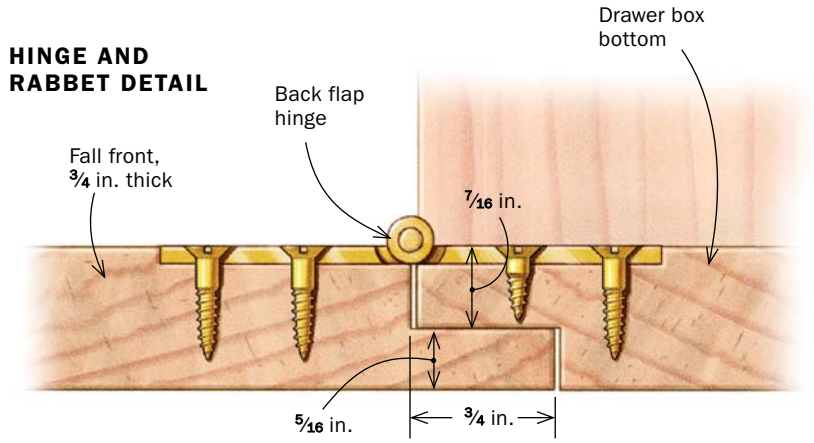
Button catches: J39-567



A stout, dovetailed box holds the desk. *Through-dovetails join the four corners of the desk drawer box. The top of the box, half the width of the sides and bottom, affords access to the desk.*

Add the fall front

Matched rabbets. *After dry-assembling the desk drawer box, Becksvoort cuts rabbets in the fall front and drawer box on the tablesaw.*



Shallower rabbet on drawer bottom permits more purchase for inside hinge screws.

box. The desk drawer's fall front, however, with its grain running side-to-side like the other drawer fronts, must be sized with wood movement in mind.

A beefy drawer box

Build the case first so that you'll be able to size the desk drawer precisely to its pocket. The desk drawer, made with ¾-in.-thick stock for the sides and bottom, and ½-in. stock for the top, is through-dovetailed on all four corners. The back panel floats in a groove. With the dovetails cut, dry-fit the four sides of the drawer box, and machine the rabbet for the fall front.

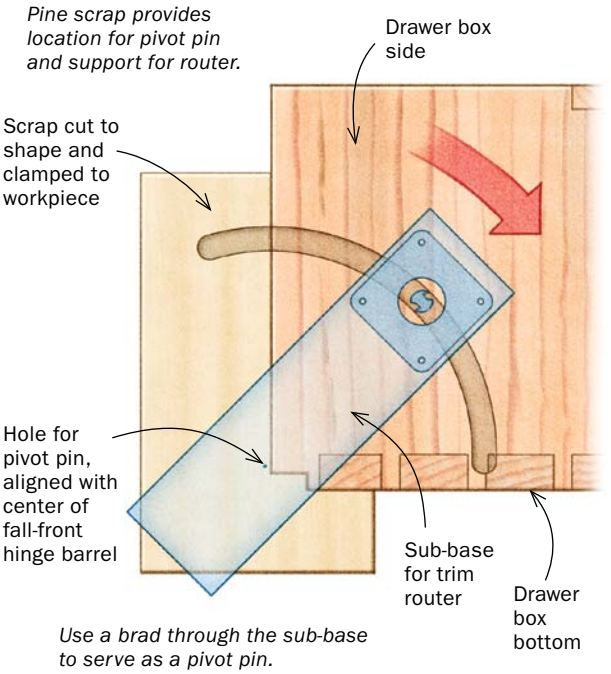
The bottom of the fall front and the front edge of the drawer box have mating rabbets that allow the fall front, when lying flat, to meet the bottom of the drawer box without a gap, yet still fill the whole drawer opening when upright. I cut both rabbets on the tablesaw. Together, the depth of the two rabbets must equal ¾ in. I made the rabbet in the drawer box the shallower of the two to leave more purchase for the hinge screws located above it.

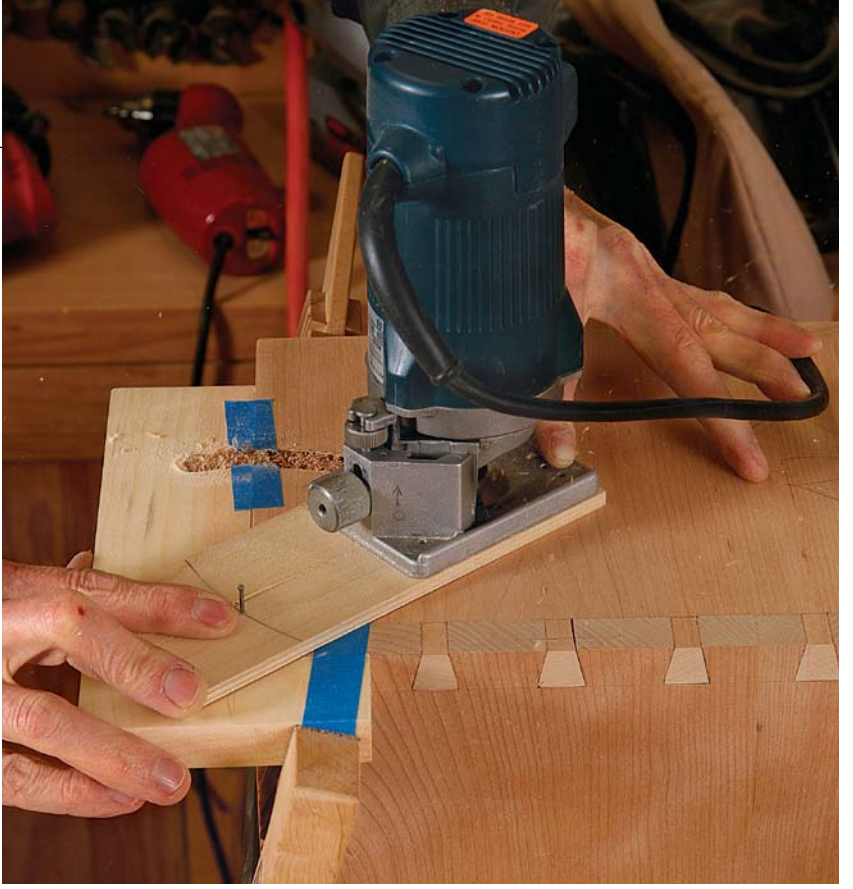
On to the hinging hardware

Installing the desk drawer hardware is the most challenging part of this project, and I could find no information on layout or installation. Not interested in taking any chances with the real desk drawer, I built several partial mockups in pine and worked by

Hinge layout. *With a couple of business cards as spacers between the fall front and the drawer box, mark the perimeter of the hinges with a knife. A trim router used freehand (right) does most of the mortising. Follow up with a chisel.*

Install the stay





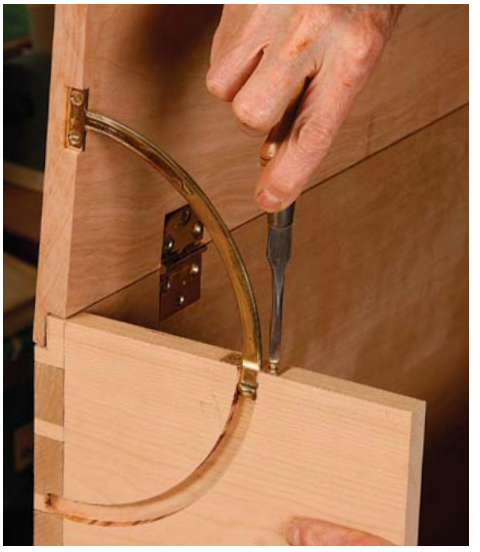
Scrap for support. *A pine scrap cut to fit and clamped to the desk drawer provides support and a place for the pivot pin as you rout the curved grooves for the stays. Strips of tape help keep the scrap flush and tight to the drawer box.*

trial and error until I was sure that the hinges, quadrant stays, and catches would all function flawlessly together. If you're changing the dimensions, I'd recommend you do the same.

Back flap hinges—To lay out the mortises for the back flap hinges, dry-fit the drawer box and set it on a flat surface. Now push the fall front into place in open position with the two rabbets interlocked. I located the hinges about 3 in. from each end of the fall front, perfectly square to the front, with the barrel centered over the gap. To leave a small gap for clearance between the drawer box and the fall front, insert a few business cards as a spacer near each hinge. Scribe around both hinges with a knife, then separate the fall front from the box for mortising. Hog out the mortises with a trim router, clean up the corners with a chisel, and insert the screws. The fall front should operate smoothly, without binding at the rabbets.

Quadrant stays—Cutting the quarter-circle grooves for the quadrant stays can be tricky, and in addition to my pine mock-ups, I also made a full-scale drawing that helped me determine the exact location of the

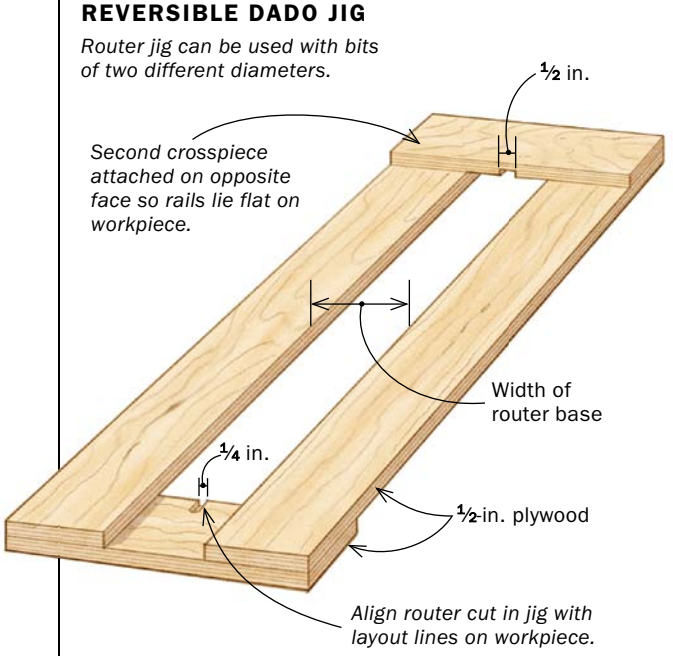
Mark for the flange. *After installing the hinges, place the quadrant stay in its curved groove and mark out the flange mortise.*



Install the keeper. *The C-shaped keeper is the stop for the stay. It can be installed on the end of the desk side (shown) or on the outside face.*

Strike plate for a button. *The button catches that keep the fall front closed mate with brass strike plates.*

Add dividers



Hidden dadoes for dividers. *Using a simple jig to guide his router, Becksvoort cuts ⅛-in.-deep stopped dadoes for the dividers inside the desk drawer.*

Fitting the dividers. *The dividers must be notched to fit their dadoes. With the divider pushed into the dado, Becksvoort marks for the notch with a razor blade (1). Then he removes the divider, notches it with a knife (2), and tests the fit until it's perfect (3).*

arc and its centerpoint. I decided to cut the curved grooves with my trim router, swinging it like a compass around a pin at the centerpoint of the arc.

I made a rectangular sub-base for the trim router and drilled a hole for the pivot pin 4½ in. from the center of the collet. Because the centerpoint of the arc was just off the edge of the drawer side, I cut a piece of scrap pine to an L-shape and clamped it to the edge of the drawer. The scrap provided both a place to drive in the brad I used as a pivot pin and additional support for the router. I routed the groove ¼ in. deep and ½ in. wide.

To install the stays, first remount the flap hinges. With the fall front closed, place the stay in its groove and scribe around the flange into the end grain of the fall front. Rout to the same depth as the arc groove, clean up with a chisel, and insert the screws. With both stays installed, fold the fall front flat to determine the location for the keepers that serve as stops for the quadrant stays. The keepers are only about 1/32 in. thick, and I surface-mounted them.

Button catches—With the quadrant stays working to my satisfaction, I next located and routed out for the button catches. The plates of these catches are thin enough that they can be surface-

Fit the drawer

mounted, so I simply routed a rough mortise big enough to fit the mechanism. Once the catches were screwed in place, I closed the fall front until it hit the tongue of the catch. That determined the location of the mating strike plates.

Before disassembling the drawer box, I put the whole thing in my shoulder vise, with the back end up, and used a ¼-in. slot-cutter in my trim router to run the groove for the back panel.

Interior affairs

Now it's on to the interior. You could build a removable case of drawers and cubbies and slide it in, but I wanted to conserve space and material, so I made the unit integral, routing the divider dadoes directly into the desk drawer.

I started with the horizontal divider, and stopped the dadoes for it just shy of full length. Then I dry-assembled the case, and slid the divider in. With a razor blade, I marked the divider's leading edge, removed it, and cut a small notch with a knife at the razor line. Once notched, the horizontal divider would slide all the way home. I then marked the locations of the upper and lower vertical dividers, using a square to align the top and bottom dadoes. After disassembling the case, I routed all the dadoes, then reassembled the case and notched and fitted the vertical dividers.

A tight fit is fine. *Build the desk drawer to fill its drawer pocket, then plane (or belt-sand) where necessary to get a snug fit. Because of the grain orientation of the drawer box, no allowance for wood movement is needed.*

Assembly and fitting

With interior dividers to deal with in addition to the dovetails, gluing up the desk drawer is a bit of a challenge. I had my clamps, cauls, mallet, and glue at the ready. First I glued the sides of the drawer box to the bottom. Next I carefully slid the dividers into their dadoes and the pre-finished back panel into position. Then I glued the top of the drawer box to the sides, making sure that the back and the upper vertical dividers fit into their dadoes as the top was positioned.

Clamp the drawer as needed, and measure the diagonals front and back to make sure the drawer is perfectly square. Once the glue is dry, fit the drawer to the case. If the fit is too tight, check where it's rubbing and use handplanes and a belt sander to remove material. It usually takes a few attempts to get the correct fit.

Once the drawer is fitted, you can install the stop blocks. Pull the desk drawer halfway out, so the fronts of the small drawers are aligned with the front of the bureau. Then screw two stop blocks to the underside of the desk drawer. Locate them just inside the web frame, which will serve as the stop. □

Arrest the desk. *With the desk drawer pulled partway out and clamped in position, Becksvoort makes a mark for a stop block on the bottom just behind the web frame. Then he screws in the block (left). He uses a pair of press-in silicone bumpers from Lee Valley on the stop block for a soft stop.*

Contributing editor Christian Becksvoort has been building furniture in New Gloucester, Maine, for four decades.