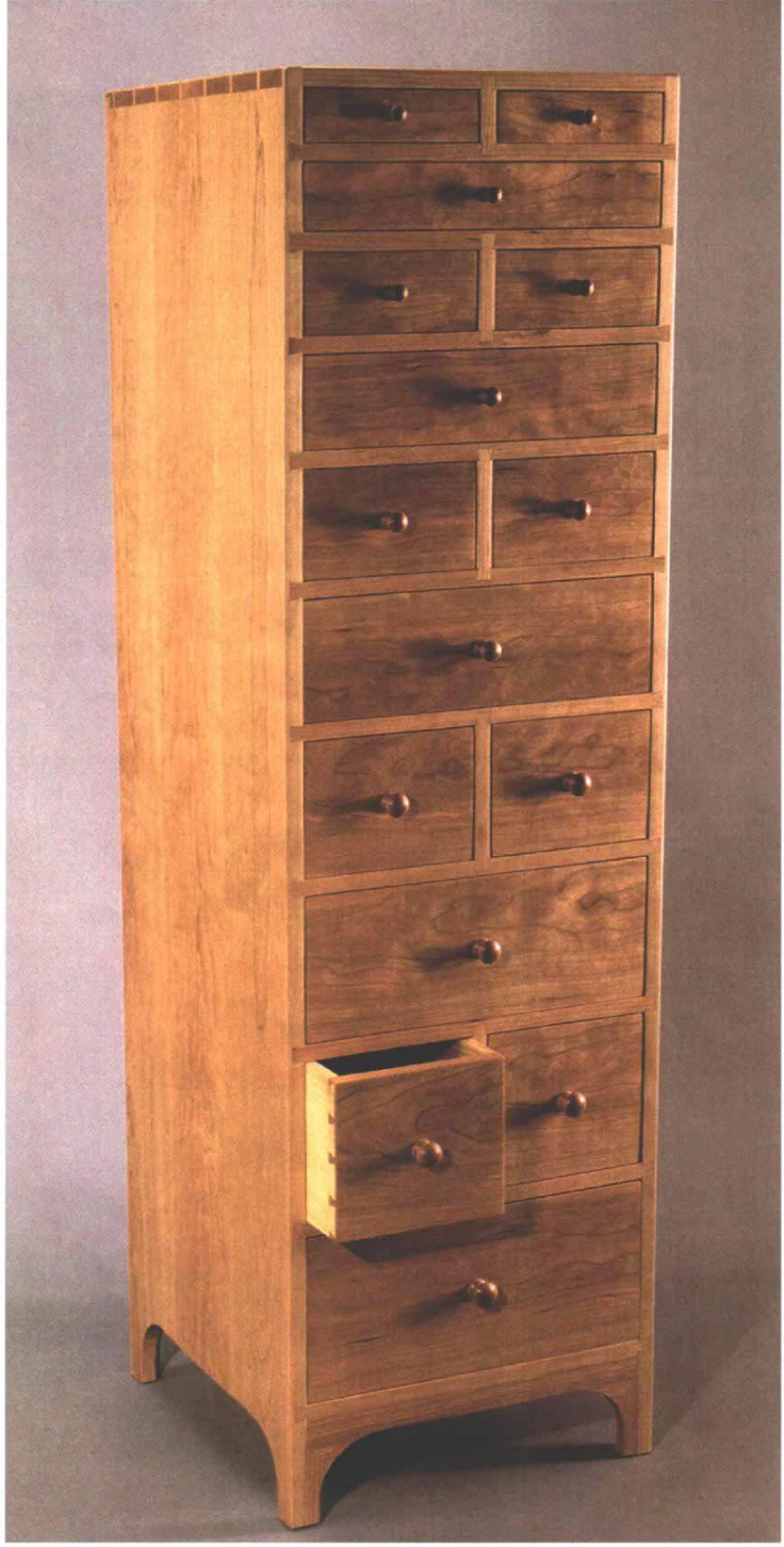

Aligning the front on a chest of drawers—*The author has developed a technique for beltsanding his cabinet fronts and drawers at the same time. When he combines them with front-mounted stops, the cabinet faces are flat and smooth and drawers always align with the face frame, regardless of season.*

VIDEO TAKES
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Drawer Fronts That Fit Flush

Beltsanding and drawer stops leave a front that's always aligned

by Christian H. Becksvoort

Maintaining drawer-front alignment to the face frame can be a seasonal problem on furniture built with slab (or wide board) construction and typical rear-mounted drawer stops. The depth of the case can vary considerably from summer to winter depending upon the width, species and cut of the wood (see *FWW*#94, pp. 38-41). The length of wood does not change noticeably with changes in moisture content, however, so flush-mounted drawers with stops at the back tend to protrude in the winter and are recessed in the summer.

I've borrowed a technique of front-mounted drawer stops from an antique piece and have used it quite successfully for the last several years. Front-stopped drawers always maintain the same position in relation to the front of the cabinet, and they don't need to be individually adjusted for each drawer. This technique uses a stop glued to the divider under the drawer instead of placing the stop at the back of the drawer.

The stops also help me sand the drawer fronts and cabinet front at the same time, ensuring a flat, smooth plane and perfect drawer alignment. I install the drawers in the carcase against the stops and wedge them in place. I then beltsand the entire front of the case, including drawer fronts, drawer dividers and the front edges of the cabinet sides, as shown in the bottom photo on p. 84, The drawers support the belt sander, so I don't have to worry about balancing it on the thin dividers and gouging the case sides when I sand to the edge of the case. While sanding the drawer fronts, I'm also able to sand out all the minor misalignment that occurs when sliding the dovetailed dividers into place in the case sides.

There is no other technique that will leave the case and drawers as flat and as perfectly aligned. The whole system works because I house my drawer bottoms in grooves that are 5/16 in. from the bottom edge of the drawers. This leaves plenty of clearance for the ¼-in.-thick drawer stops glued to the drawer divider below the drawer. The stops are out of sight and don't interfere with the drawer's contents as top-mounted stops might.

Fitting the stops

First I fit the drawers, leaving about 1/32-in. to 3/64-in. gap on either side, and a gap above the drawer appropriate to the size, species and moisture content of the drawer front. I also make the drawers short enough (about ½-in. shy of the full cabinet depth) to accommodate more than the full range of movement expected in the cabinet side.

Then I mark the location of the stops, referencing from the back of the case. If this were a perfect world, I could simply mark from the front of the case, allowing for the thickness of the drawer front and the leather bumper. But perfectly aligning the snug, sliding dovetail joints that connect the dividers to the carcase is not an easy task. Sometimes the glue grabs before the divider is fully seated; other times that last tap knocks the divider 1/16 in. past where you want it, and no amount of pounding will reverse it. Referencing the stops from the back of the case lets me sand out misalignments when I'm sanding the drawer fronts to align with the case.

To make sure that all the stops are aligned, first I find the divider that is inset the farthest. I measure from the front of this divider, deducting the thickness of the drawer front plus a leather bumper. This mark is where the front of the stop needs to be to leave the drawer front flush with the divider's face. I then make a gauge for marking the rest of the dividers by measuring from the back of the cabinet to the mark. I cut a 4-in.- to 6-in.-wide scrap board to that length to serve as a guide for laying out all the stops. The gauge is slipped into the opening, making sure it is pushed tightly against the cabinet back and side, so all the drawers will be equidistant from the back of the cabinet. The stop position is marked by scribing a line along the front edge of the measuring gauge, as shown in the top photo. I find that a knife-scribed line is more accurate than a pencil line when marking the stops. To make the scribed line more visible, you can darken it by running a pencil sharpened to a chisel point along the line.

Scribed lines accurately position stops—*The author uses a 4-in.- to 6-in.-wide board, cut to the appropriate length, as a gauge to scribe alignment marks for the drawer stops. Measuring from the cabinet back eliminates any variations that may have occurred when gluing in the dovetailed drawer dividers.*

The drawer stops are glued, *positioned on the dividers and held in place with spring clamps. The stops must be thin enough to clear the drawer bottoms and short enough to allow drawer side clearance at the ends. Leather bumpers are temporarily glued to the stops to position the drawers for sanding.*

I cut the stops from waste stock, 3/8 in. to ½ in. wide and ¼ in. thick. For drawers 14 in. and narrower, I usually use a single strip across the divider. The strips are centered in the drawer opening, and they leave plenty of room on each side for the ½-in.-thick drawer sides. Wider drawers get two stops about 2 in. to 3 in. long. After sanding, the stops are glued to the scribed lines and held in place with spring clamps (see the bottom photo above). The stops must be located about 1 in. from the carcase sides so they don't in-

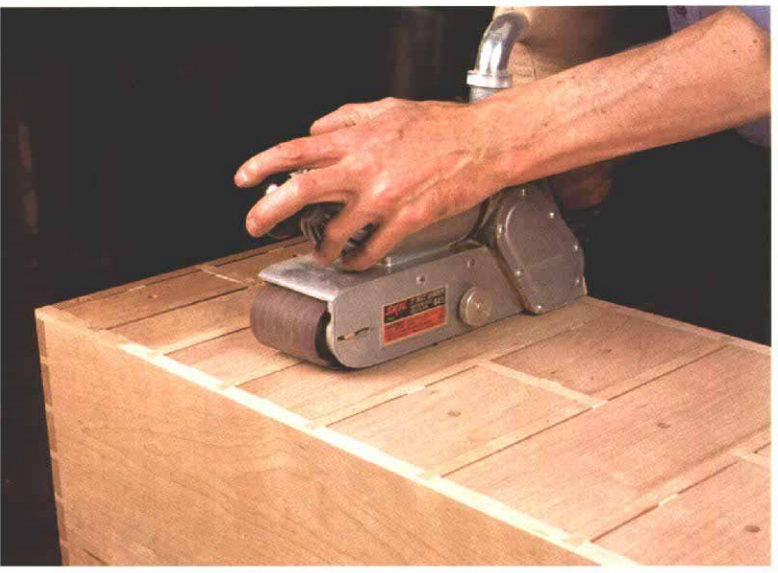
Photos: Charley Robinson

terfere with the drawer sides. Then the leather bumpers are temporarily glued to the fronts of the stops, using a minute amount of glue. After the front has been sanded, the leather is removed for finishing (otherwise it becomes hard) and reapplied when the case is complete. I prefer the quality feel and sound of leather bumpers on a custom piece because they make a better impression than the rubber, plastic or cork bumpers so frequently found on store-bought furniture.

Sanding the case and drawers

The first time I used this method of stopping drawers, it dawned on me that this was the perfect solution to sanding the entire cabinet face. No more balancing a belt sander on a ¾-in.-wide divider, hoping not to gouge the cabinet side or intersecting dividers. This was a real bonus. It takes a little preparation, but the results are well worth the effort.

Wedging the drawers in place *holds them for beltsanding. The drawers should be wedged on each side to center them in the opening and wedged at the top to hold them firmly against the drawer dividers and stops. The entire front of the cabinet can then be sanded to one flat, smooth plane.*



Sanding the cabinet front, *with the drawers held in place by front-mounted stops and wedges, ensures that the entire face of the cabinet will be flat and smooth. The drawers support the sander and prevent gouging the face frame. This technique eliminates the need to set each drawer individually.*

First, after drilling holes for hardware or knobs in the drawer fronts, I slide all the drawers back into the case, Next I make shims, using 1/16-in. by ½-in. pine strips, tapering the ends into wedges with a quick knife cut. I shim the drawer sides to center the drawer from side to side in the opening, as shown in the top photo on this page. Then, using thicker pine strips, I shim the top of the drawer front to hold the drawer against the divider below it. The shims should be good and tight to keep the drawer from vibrating during the sanding process.

With all the drawers securely in place, I lay the cabinet on its back on two padded sawhorses of convenient height. Using a belt sander and an 80-grit belt, I work my way across the face of the cabinet, from one end to the other, as shown in the bottom photo on this page. Before sanding with a 120-grit belt, I check the cabinet face for high and low spots by laying a 5-ft.-long straightedge on the face of the cabinet and sighting along the straightedge's bottom edge. I repeat the process in four or five places across the cabinet face, marking the high spots with a pencil line. I then connect these marks, making a topographical map, of sorts, on the cabinet face to show me where more material needs to be removed. After sanding with 120-grit and 150-grit belts, I switch to a vibrating-pad sander or random-orbit sander and 180-grit, 220-grit and 320-grit discs.

Finishing details

At this point, the front of the cabinet is a single, flat, smooth plane. I remove the drawers for a final hand-sanding with a bolt through the knob hole. The first drawer is always difficult to remove, especially if the shimming was done correctly and you forgot to drill the knob holes before wedging in the drawers. However, once the first one is out, I have room to reach in and push out the rest from behind. I hand-sand each drawer face with 400-grit paper and ease and smooth all the edges. The same goes for the cabinet face: Remove all traces of cross-grain scratches and break all edges. Then vacuum out the inside of the case, remove the leather bumpers and the case is ready for the finish of your choice.

Christian H. Becksvoort builds custom furniture in New Gloucester, Maine, and is a contributing editor to Fine Woodworking.

Leveling a cabinet front: Video shows you how

VIDEO TAKES

A magazine article can be a great help in learning new tricks and techniques. But sometimes, it's easier to learn and understand a process when you can watch someone doing it. In a 13-minute companion video (VHS) to this article, Christian Becksvoort takes you through the steps he uses to align drawer fronts and face frames simply and easily with a belt sander. There is no other process that will leave a cabinet front in such a smooth, flat plane. To order, call (203) 426-8171, or send $7 to The Taunton Press Order Department, DrawerVid 011035, P.O. Box 5506, Newtown, Conn. 06470.

—Charley Robinson, associate editor