

Making a Writing Desk

Customizing a leg-and-apron table with drawers

by Christian Becksvoort

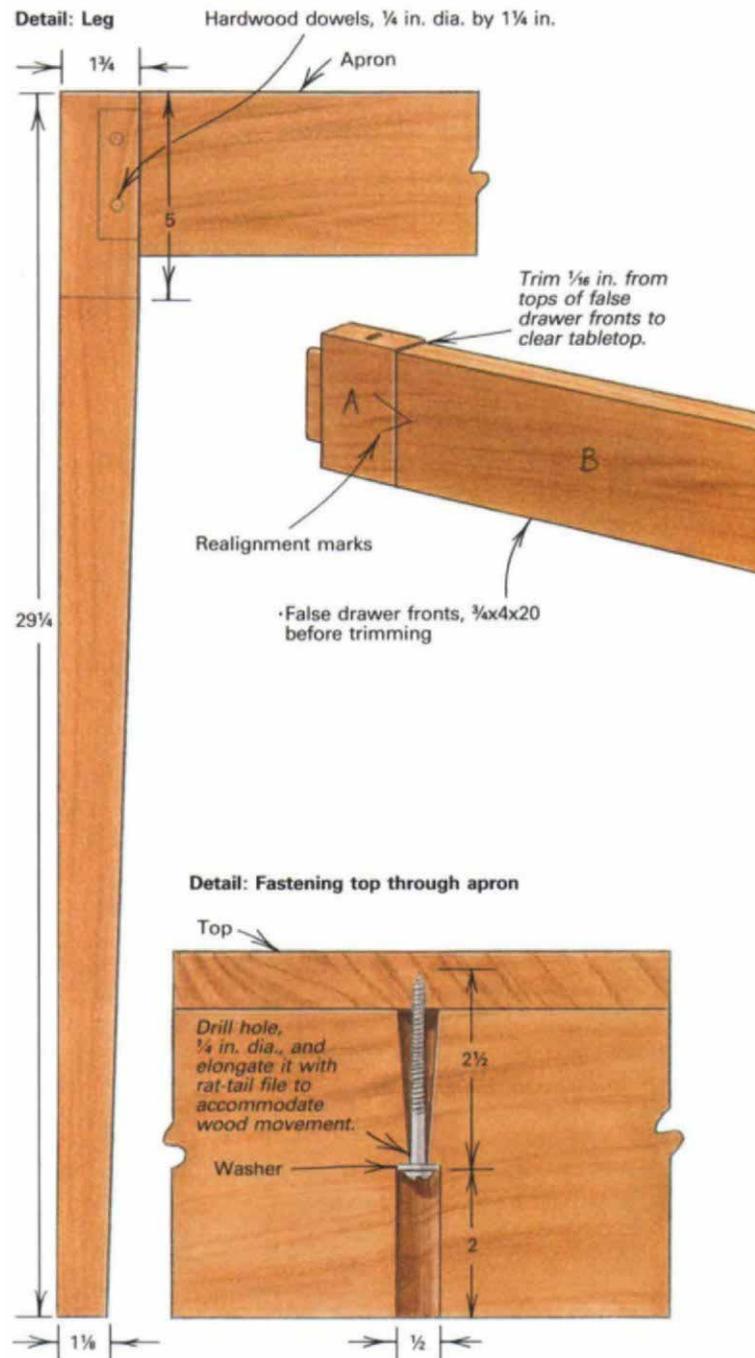
To me there are two types of desks: storage desks and writing desks. Storage desks, slant-tops, roll-tops and other "instant offices" consist of multitudes of drawers and pigeon holes designed to house not only pen and paper, but also ledgers, stamps, files, folders, books and various office supplies. On the other hand, writing desks like the one in the photo on p. 66 are multifunctional pieces of furniture consisting of a table with a few drawers built into the aprons. These desks are ideal for the kitchen, dining or work room, or even a regular office, where you are more concerned with having a large, usable work surface than with lots of storage space.

The writing desk described in this article is basic leg-and-apron table construction. An advantage of custom-made furniture is that it can be made to fit specific requirements. I usually make this writing desk with a 36-in. by 72-in. top, but to fit into a smaller room, this one was scaled down to 32 in. by 60 in. It overhangs the base by 6 in. on the sides, 2 in. at the back and only 1 in. at the front for easier drawer access. My desk has two drawers, but the number and layout of drawers can be altered to suit the function of the table. One drawer in the middle will suit for most purposes, although you may wish to have two identical drawers fit side by side, as shown in the drawing at right. For a three-drawer table, I usually put one big drawer in the middle and two smaller ones on either side. The side drawers can then be pulled out without moving the chair while working at the table. On a kitchen table or partners' desk, the drawers can be on opposite sides by using half-depth drawers back to back or full-depth drawers side by side in a variety of configurations. Another alternative is to place the drawers on the ends of the table.

In any of these designs, I always try to make maximum use of the space available. If the distance between the aprons is 30 in., make the drawer 29½ in. deep, and then put a false back at 18 in. or 20 in. This allows ready access to a normal-size drawer, and provides an additional space at the back for seldom-used items or a secret compartment. Keep in mind that putting drawers through the aprons makes the table inherently weaker than one with four solid aprons. The writing desk is strong enough for normal use, but I advise people not to sit on it. While the addition of drawers somewhat complicates this piece, the construction remains straightforward.

I always start by gluing up my ¾-in. tabletops, as described in *FWW* #79, pp. 68-70, a week or so in advance. Then by the time I'm ready to work on the rest of the desk, I've had time to have them sanded perfectly flat on a 36-in. abrasive planer at a local millwork shop. My primary concern in gluing up tops or panels is appearance, so I arrange the boards for the best color and figure regardless of grain orientation; I've never had problems with cupping or warping.

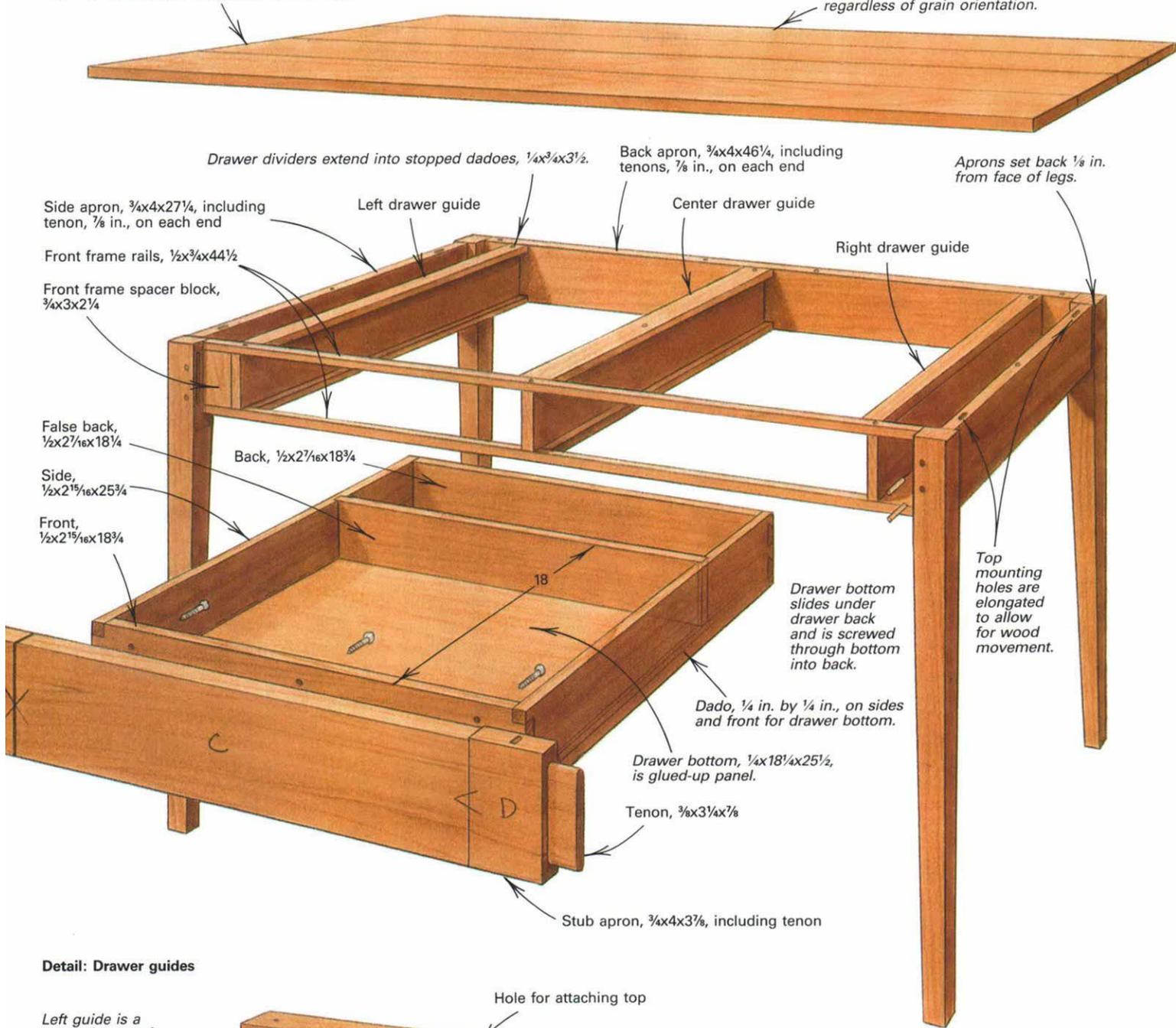
With the top needing only final sanding I begin constructing the base, as shown in the drawing, by cutting, shaping and mortising the legs. Solid aprons are tenoned into the legs on non-drawer sides.



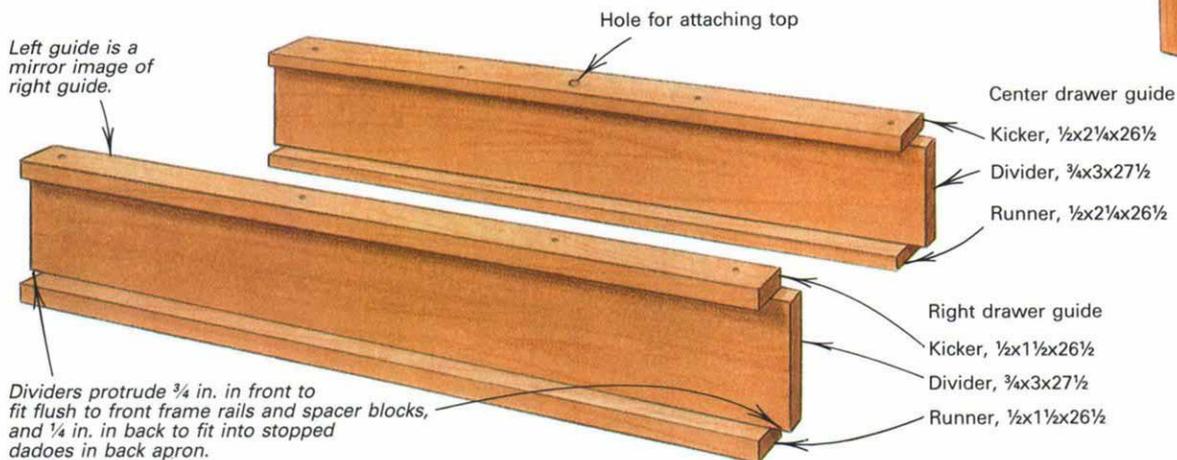
Writing desk

Top, $\frac{3}{4}$ x32x60, overhangs base 6 in. on ends, 1 in. in front and 2 in. in back.

Glue top for best figure and color match regardless of grain orientation.



Detail: Drawer guides



Aprons on sides that will receive a drawer are crosscut into the appropriate sections to form false drawer fronts and stub aprons, which are then tenoned into the legs. Next, I make a front frame of rails and spacer blocks, as shown in the top photo on the facing page, and screw it into the back of the stub aprons, for a solid connection across the front of the table, to prevent racking or splaying of the legs. Drawer guides are constructed as shown in the detail in the drawing by adding kickers to the top and runners to the bottom of a divider to support the drawers and further increase the rigidity of the table. With the base assembled, I attach the top, make the drawers and then attach the false drawer fronts to complete the table.

Cutting and shaping the legs—The legs on most tables are a great deal larger than necessary to support the loads placed on the tabletop. In my designs, I concentrate on developing more delicate legs that will still support any expected loads. The tapered legs of this table work well with the overall dimensions, creating a light, yet solid effect. To ensure that all legs will be the same length, I crosscut $\frac{3}{4}$ stock to a length of $29\frac{1}{4}$ in. before ripping four pieces to $1\frac{3}{4}$ in. square (see drawing detail). Next, I orient the best figure and color to the outside surfaces of the leg and taper the two inside faces with a jig on the tablesaw. You can also taper the legs on a jointer, or rough them out on the bandsaw and refine the surface with a hand-plane. Depending on your methods, you may want to mortise the two inside faces prior to tapering. I use a slot mortiser that allows me to make one setup and then quickly cut all my mortises the same, although a router and jig or a drill press can be used.

Apron design and installation—The aprons also must harmonize with the other table components and I've found that a 3-in.- to 4-in.-wide apron provides adequate strength and avoids the bottom-heavy look of a 5-in. apron. I begin by first ripping my $\frac{3}{4}$ -in.-thick apron stock to width, and then crosscutting the two side aprons and the back apron to length. The drawer apron is cut slightly long so I can reposition the drawer fronts and stub aprons to minimize the sawkerfs between the individual pieces. By working from the center to both ends, I maintain the selected grain pattern and have enough stock at each end to tenon the stub aprons. First, cut the drawer apron in half and reposition the two halves end to end. Mark the two drawer fronts to either side of the center cut, leaving 4-in.- to 5-in.-long pieces on each end, and crosscut the drawers fronts. Now, reposition all the pieces next to the back apron, and mark and cut the two stub aprons so the four separate pieces are exactly as long as the back apron, including tenons. I later disc-sand the ends and joint the tops of the false drawer fronts to allow about $\frac{1}{16}$ -in. clearance at the top and sides. Finally, I draw realignment marks and label the pieces A, B, C and D, as shown in the drawing. This ensures that they stay in the correct order and the grain forms a continuous pattern, making the drawers almost undetectable in the finished table (see the photo at right).

Tenons for the three full aprons, as well as the left end of piece A and the right end of piece D, are now crosscut on the tablesaw with the miter gauge and a stop block clamped to the fence. Position the stop block $\frac{1}{8}$ in. away from the side of the blade farthest from the fence and set the blade height to $\frac{3}{16}$ in. Test your setup on a piece of scrap apron cutoff, making sure the tenons fit snugly in the mortises. The shoulder is cut first by holding the apron against the miter gauge with the end butted against the stop block. After making a pass to form the shoulder, make multiple passes from the end toward the shoulder to clear away the rest of the waste. Flip the apron over and repeat to form the other cheek. Holes for attaching the top are drilled from bottom to top through the aprons, including the stub aprons A and D. All of the holes,

except those in the middle of the side aprons and the center drawer guide, are elongated with a rat-tail file in the direction of potential wood movement of the top.

The table base is ready for assembly after sanding everything to 220-grit and checking the fit of the mortises and tenons. After making sure the aprons are all in their correct positions, glue and clamp the side aprons to their respective legs on a flat surface, checking for squareness by measuring the diagonals. Make necessary adjustments before drilling $\frac{1}{4}$ -in.-dia. holes and pinning the joints with $1\frac{1}{4}$ -in. hardwood dowels, as shown in the drawing. Connect the two glued-up sides by gluing, clamping and pinning the back apron in place, again checking for squareness across the diagonals. The two stub aprons are similarly installed, but a try square is used to check their alignment.

The base is rather flimsy until the cherry frame for the drawers (shown in the top photo on the facing page) is constructed to tie the sides of the table together. I cut two strips $\frac{1}{2}$ in. thick by $\frac{3}{4}$ in. wide and the exact length of the back apron. These are then clamped, one flush with the top and the other flush with the bottom, to the backs of the stub aprons. Next, I fit a $\frac{3}{4}$ -in.-thick spacer block between these strips so that it extends from the leg to within $\frac{3}{4}$ in. of the inside edge of the stub apron. Then the parts are undamped and glued together on a flat surface; I usually do this on the long, plastic-laminated outfeed table of the tablesaw. When dry, the frame is sanded, reclamped in its position behind the stub aprons and screwed into the back of them, as shown in the bottom photo on the facing page.

Installing drawer guides—The rigidity of the apron is increased by adding drawer guides, which are constructed of three pieces: a divider, a kicker and a runner (see the drawing). The drawer guides are screwed into the frame in front and into dadoes in the back apron. For two drawers, three drawer guides are required. The vertical member against which the side of the drawer slides is the divider, the bottom horizontal piece that supports the drawer is the runner and the top horizontal piece that keeps the drawer from drooping when opened is the kicker. As shown in the drawer guide detail in the drawing, the dividers protrude $\frac{3}{4}$ in. in front to fit into the frame that was added to the back of the stub aprons and $\frac{1}{4}$ in. in back to fit into stopped dadoes in the back apron, shown in the top photo on the facing page. Lay out the left and right dadoes in the back apron by measuring from the front legs to the stub apron ends, transferring these measurements and squaring lines at each end of the back apron. Then, measure $\frac{3}{4}$ in. toward the legs and draw parallel lines. To locate the center dado, find the center of the back apron, measure $\frac{3}{8}$ in. to either side of the centerline and mark out the $\frac{3}{4}$ -in. dado. Although these dadoes can be cut on a tablesaw prior to assembly, I



Based on Shaker designs, this writing desk is basic leg-and-apron construction with drawers built into the apron.



This framework is screwed into the back of the stub aprons, connecting the ends of the table and providing an opening for the drawers. Note the pins securing the aprons to the legs and the dados visible on the back apron that will accept the dividers of the drawer guides.

prefer to rout them $\frac{1}{4}$ in. deep, guided by a clamped-on fence, because it is easier to stop the cut $\frac{1}{2}$ in. from the bottom of the apron.

Begin constructing the drawer guides, as shown in the drawing detail, by ripping the $\frac{3}{4}$ -in.-thick dividers to the width of the opening of the front frame, which is 1 in. less than the width of the aprons. Measure the length of the dividers directly from the bottom of the stopped dado in the back apron to the back of the stub aprons. After crosscutting the dividers to length, test-fit and temporarily clamp them in place. Scribe the top and bottom of the dividers where they meet the front frame and the back apron. The kickers and runners are added to the top and bottom of the dividers between the front frame and the back apron to form the guides. Rip $\frac{1}{2}$ in.-thick stock $1\frac{1}{2}$ in. wide for the left and right drawer guides and $2\frac{1}{4}$ in. wide for the center drawer guide. Now I unclamp the dividers and glue and nail the kickers and runners to the top and bottom of the dividers, forming a left, center and right drawer guide. When the glue has dried, countersink and fill the nail holes and sand the finished drawer guides. Then drill and countersink a hole through the middle of the center guide for attaching the top.

The drawer guides are now installed by drilling and screwing through the top and bottom of the front frame, and drilling at an acute angle through the drawer guide into the back apron. The left and right drawer guides are located by their dados and the front frame. Although the back of the center drawer guide is also located in back by its dado, the front needs to be carefully laid put. For accuracy, I measure the location at the back, from the left and right drawer guide dividers to the center divider, and then transfer

these measurements to the front frame. Consequently, if the center dado is not precisely in the middle, the drawer guides will be parallel, but not necessarily equal in width. Once the center drawer guide is located and screwed in place, all screw holes should be plugged and sanded. At this point, the top can be cut to size and its edges dressed, and then finish sanded and attached through the holes drilled in the aprons and center drawer guide. Suddenly the table becomes quite sturdy and substantial.

Making the drawers—I prefer dovetailed drawers with a false front attached, but you can make your drawers using your favorite technique. Whatever method you choose, remember the false drawer fronts fit flush with the stub aprons in front of the frame. Cut all drawer sides, fronts and backs from $\frac{1}{2}$ -in.-thick stock, as shown in the drawing on pp. 64-65. Lay out and cut the dovetail joints before dadoing the sides and front to receive the $\frac{1}{4}$ -in.-thick glued-up bottom panel. Now sand and assemble the drawers without their bottoms. Make sure the drawers fit the openings, planing any problem areas so they glide easily and smoothly.

I don't install the drawer bottoms until the false fronts are attached, so I can put the drawers in place and then work through the open drawer bottom to perfectly align the false fronts. First I rout a $\frac{1}{2}$ -in. cove into the bottom inside edge of the two fronts for finger pulls. Fit the first front, clamp it into place and then fit the second front. I like to leave a $\frac{1}{16}$ -in. gap between the drawer and the top and $\frac{1}{16}$ in. between drawers and stub aprons. All four members must be flush on bottom. The actual trimming to obtain a clean $\frac{1}{16}$ -in. gap is done with a disc sander or a fine-tooth blade on the tablesaw. In either case, undercut the ends 4° to 5° because a good drawer fit requires some side clearance and the undercut will keep the drawer fronts from hanging up on adjacent members. Once both fronts are fit and clamped into place, I drill from the inside of the drawers for six screws each. These screws are not plugged in case any adjustment of the false fronts should ever be necessary. With the false fronts screwed in place, slide the bottoms into their dados and screw up through the bottoms into the backs.

Remove the top and drawers for a final light sanding and the finish of your choice. I generally prefer Watco oil (available from most hardware or paint supply stores), but if the table is more likely to see hard use, I will use a lacquer or varnish for a more durable finish.



The drawer framework is screwed directly into the back of the stub aprons to keep the legs from splaying or racking.

Christian H. Becksvoort builds custom furniture in New Gloucester, Maine, and is a Contributing Editor to FWW.