SCHOOLMASTER'S DESK

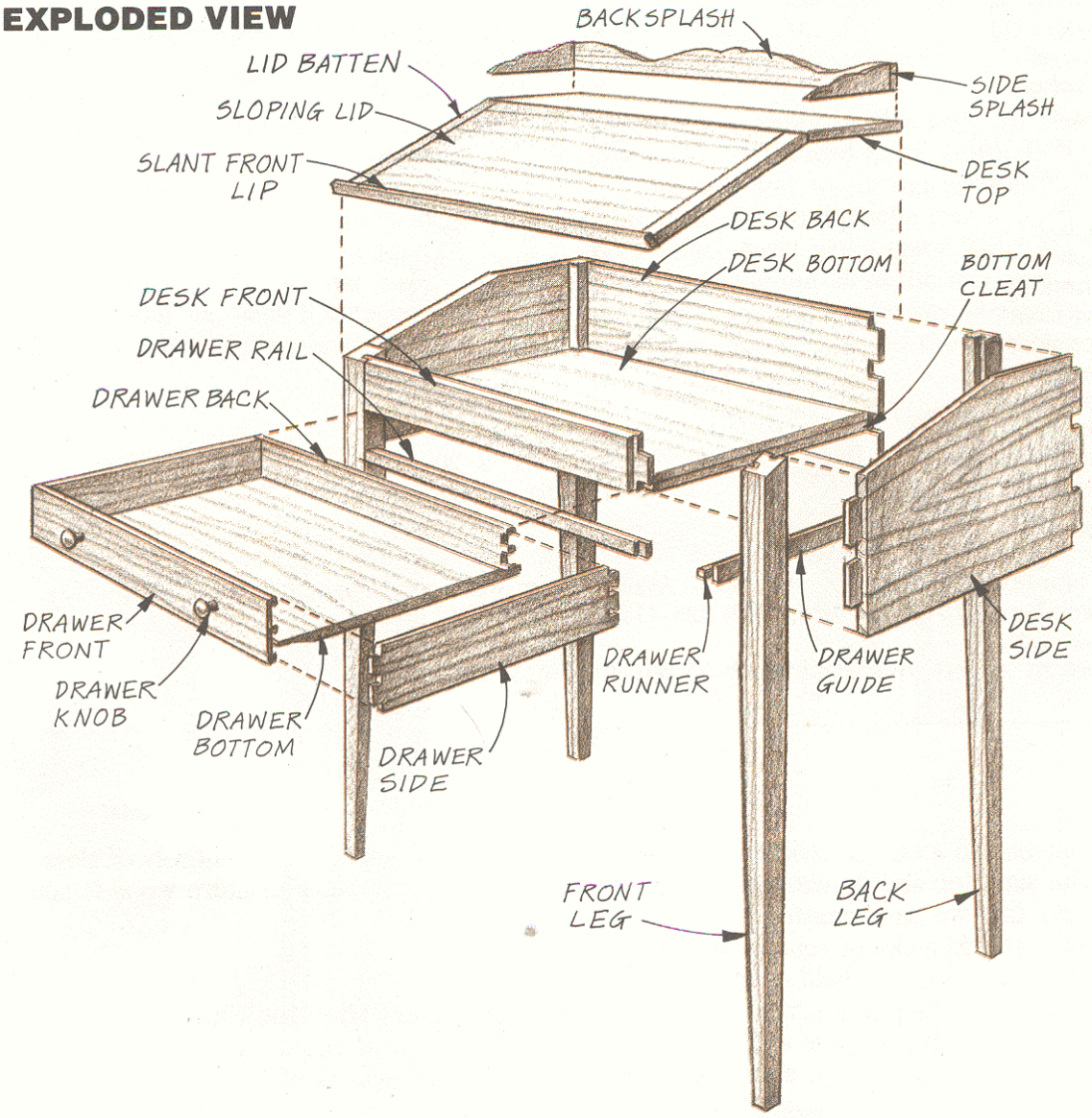
This style of desk has a variety of names. Some would call it a stand-up desk, or a tall desk, since it's too tall to use with a chair. You could sit at it with a tall stool but most people will find it comfortable to use while standing. Other folks might call it a schoolmaster's desk since the style was found at the head of classrooms early in this century. It's about the right width for a birch rod!

A tall desk like this can be quite handy in the home. In a large kitchen it can hold the telephone, directories, writing paper, pens and pencils and provide an excellent surface for taking notes. The sloping lid will hold an open tele-

phone directory or cookbook. In an entry or foyer the desk would provide an impressive place for a guest book, and nobody would notice if the sloping lid were hiding gloves and earmuffs.

The plans and step-by-step instructions reflect a few minor changes from the original. The inside of the desk shows signs that it once had built-in shelves. You could easily add small

EXPLODED VIEW



CUTTING LIST

Part	Dimensions
Front legs (2)	1⅞" × 1⅞" × 43½"
Back legs (2)	1⅞" × 1⅞" × 48⅛"
Desk front	¾" × 4⅞" × 30¼"
Desk back	¾" × 13¾" × 30¼"
Lid battens (2)	¾" × 1¼" × 15¾"
Desk sides (2)	¾" × 13¾" × 21¼"
Drawer rail	1" × 1⅞" × 30¼"
Desk bottom	¾" × 21¾" × 30¼"
Sloping lid	¾" × 15¾" × 31"
Tenon pegs (18)	¼" dia. OR ¼" square × 1"
Bottom cleats (2)	¾" × 1⅛" × 19"
Desk top	⅞" × 8¾" × 33"
Backsplash	⅜" × 3" × 32"
Side splashes (2)	⅜" × 2¼" × 8⅛"
Slant front lip	5/16" × 1⅛" × 33"
Drawer front	¾" × 3⅜" × 27 15/16"
Drawer sides (2)	½" × 3⅜" × 21"
Drawer back	½" × 2¾" × 27 15/16"
Drawer bottom	½" × 20¾" × 27⅜"
Drawer guides (2)	1⅛" × 1¾" × 19"
Drawer runners (2)	⅝" × ¾" × 20"
Drawer knobs (2)	1¾" dia. × 2⅛"

Hardware

1 pair brass butt hinges, 2" × 1¼", open. Available from Woodcraft Supply, P.O. Box 1686, Parkersburg, WV 26102-1686; (800) 225–1153. Item #16Q42.
4d finish nails, 1"
1 friction lid support. Available from Woodcraft. Item #13L31.

shelves and a center divider if you like. The slant top and drawer both have locks that we have omitted. You're welcome to add locks of your choice. The lid of our antique is held open by a stick of wood pivoting on a screw on one side of the desk. It's a crude and somewhat precarious arrangement so we've specified a commercial lid support.

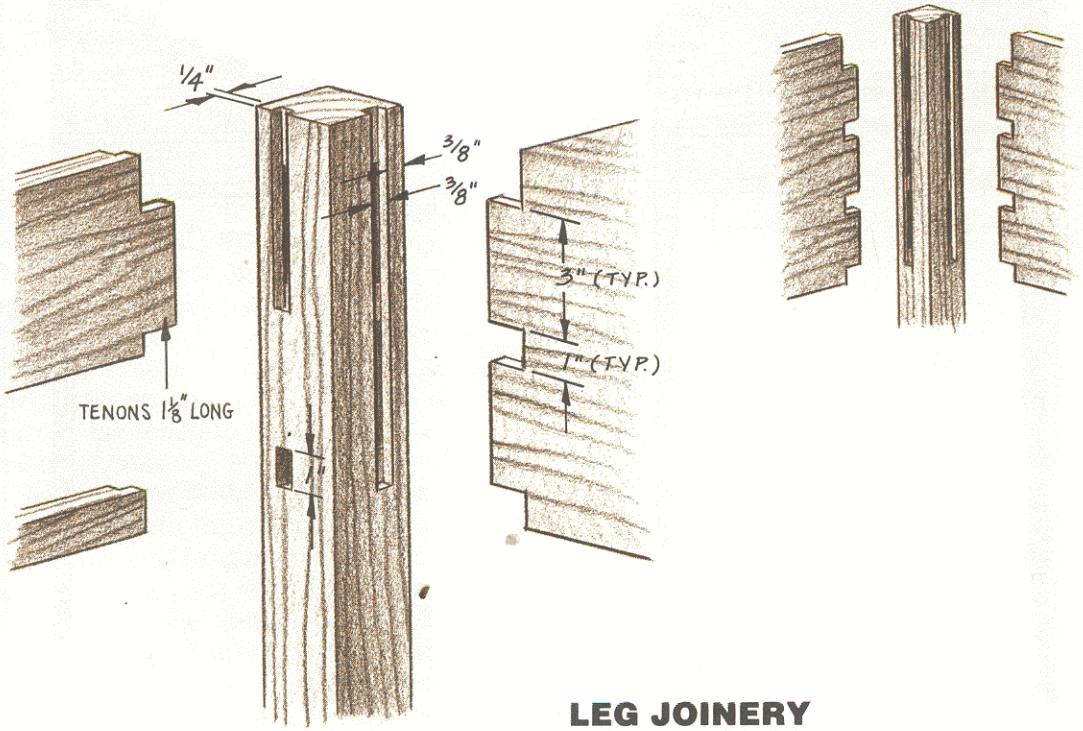
Our desk is made entirely of clear pine but any good furniture wood is suitable.

1 Select the stock and cut the parts. If you surface your own wood, you can build the desk out of 8/4 (eight-quarter) and 4/4 (four-quarter)

stock. Rip the legs slightly oversize out of unsurfaced 8/4 stock. As you plane the legs to the dimensions specified by the Cutting List, keep in mind that the legs will be tapered on their inner surfaces. Knowing that the tapered portions can be left rough at this stage may make it easier to get 1⅞ inches out of 8/4 stock. Rip the drawer rail, drawer guides, and knob blanks from 8/4 stock and surface them.

Set aside the thickest, flattest, 4/4 stock for the desk top since it should have a finished thickness of ⅞ inch. Then select 4/4 stock for the ¾-inch-thick parts, edge-gluing as needed to make up the required widths. See "Edge-Gluing" on page 6 for more information. Resaw the thinner parts from either 4/4 or 8/4 stock. With the exception of the drawer bottom, all of the thinner parts are narrow enough to resaw with a sharp, thin-kerf, rip blade on the table saw. You can substitute ¼-inch plywood for the drawer bottom. Saw and plane all the desk parts except the drawer parts to the dimensions given in the Cutting List.

2 Cut mortises in the legs for the front, side, and back tenons. The simplest way to cut mortises in the home shop is with a plunge router, a fence attachment, and a spiral upcut bit. Begin by laying out all of the mortises *and* the corresponding tenons as shown in the *Leg Joinery.* Lay out the locations

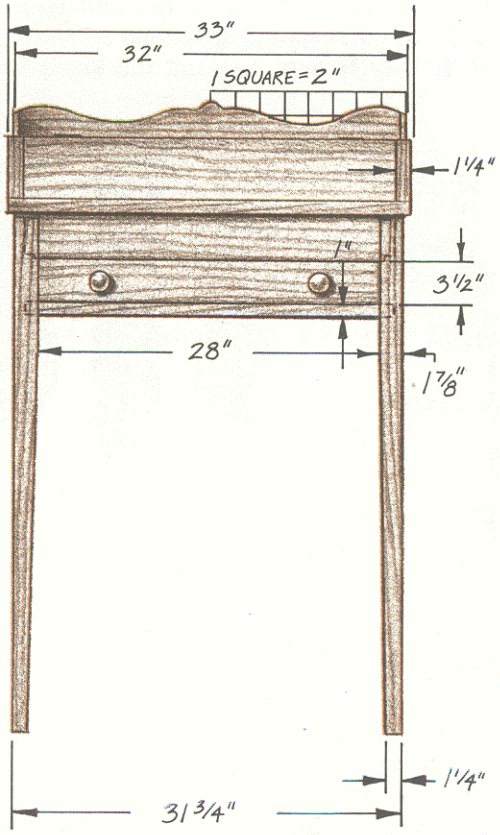


LEG JOINERY

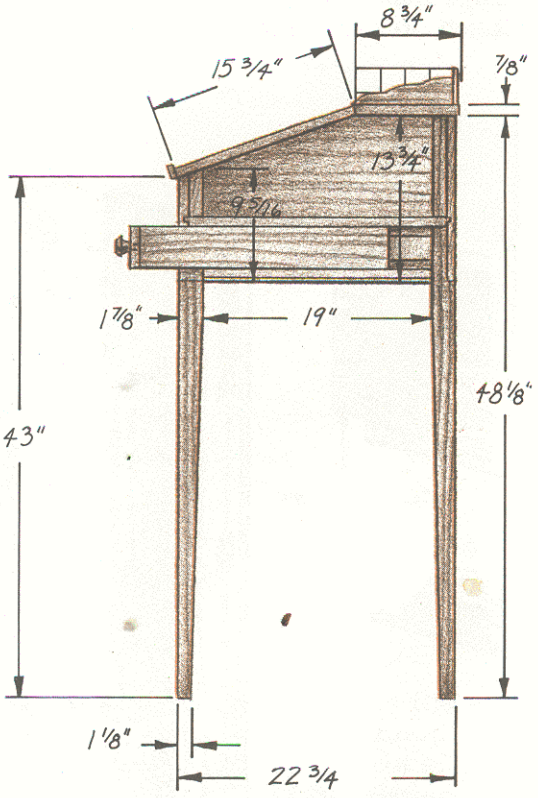
of the tenon pegs at this time, too. The two back legs are interchangeable but the front legs are mirror images of each other. Label all four legs for their position in the desk. When you've laid everything out, double-check by holding the tenons up to the mortises.

The length of the haunch grooves is the same as the width of the adjoining part. Rout the groove 3/8 inch wide by 1/4 inch deep with a 3/8-inch-diameter spiral upcut bit. If you're unsure of your ability to keep the router steady on the 1 7/8-inch width of the legs, clamp a second leg alongside the one you're routing. Guide the cut with the fence attachment running along the outside surface of the leg.

Adjust the router to cut the mortises 1 3/16 inch deep. This makes the mortises 1/16 inch deeper than the length of the tenons. Don't change the setting of the router fence. Rout the mortises in a series of passes, then square the ends of the mortises and haunches with a chisel. See page 18 for a similar mortising technique that uses a shop-made jig to steady the router.



FRONT VIEW



SIDE VIEW CROSS SECTION

3 Cut the desk bottom grooves. The desk bottom separates the drawer compartment from the compartment under the sloping lid. It fits into grooves in the front and back. Rout the ⅜-inch-deep grooves in several passes of increasing depth with a ¼-inch-diameter straight bit. Lay out the grooves as shown in the *Bottom Groove Detail* and guide the router with its fence attachment.

4 Make the grooves in the lid battens. Battens help to hold the sloping lid flat. They join the lid with a tongue and groove. Rout the ¼-inch-deep grooves in the battens with a ¼-inch-diameter straight bit. Don't try to hold the router steady on the ¾-inch-wide edge of the battens. Clamp the battens between a couple of scraps of squared-up 8/4 stock so you have a broad, flush surface for the router. Center the groove in the edge of the battens.

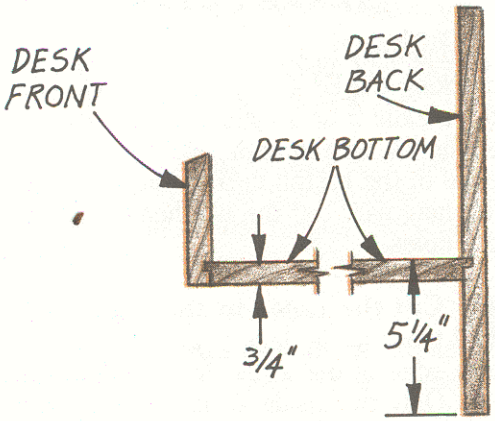
5 Cut the tenons on the sides, back, front, and drawer rail. Perhaps the safest and easiest way to cut tenons on wide parts such as these is with a hand-held router. The first step is to cut a rabbet along the end forming one big tenon, then cut away parts of the one big tenon to form smaller tenons and haunches.

Clamp one of the parts to your workbench with the outer surface facing up and the end hanging over the edge of the bench. Chuck a fairly large diameter straight bit in the router. Adjust the fence so the bit will cut just up to the shoulder line. Adjust the depth of cut so a ⅜-inch-thick tenon will be left after cutting the rabbet. Take a series of cuts starting at the end of the board and cutting closer to the shoulder with each pass. The fence will prevent cutting past the shoulder line, leaving a nice straight shoulder. Cut rabbets on both ends of the front, back, and sides.

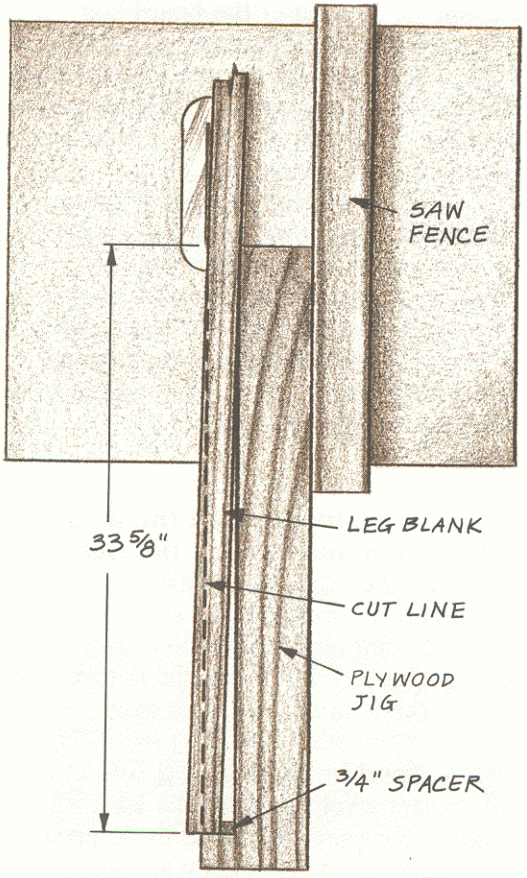
Hold the tenon pieces in position against their corresponding leg mortises to check the location of the haunches. Saw the sides of each tenon with a back saw, then saw the ends of the haunches between the tenons with a coping saw. Make sure that no parts of the haunches are longer than the depth of the haunch groove.

6 Cut the tongues on the desk bottom and sloping lid. Cut these tongues the same way you cut the tenons on the front, back, and sides. The only differences are the dimensions. The tongue on the sloping lid is formed by *two* rabbets, one on each side.

7 Assemble the sloping lid. The battens help prevent the lid from cupping but they can cause more problems than they cure if they are glued



BOTTOM GROOVE DETAIL



TAPER DETAIL

continuously to the lid. To prevent cracking the lid in dry weather, glue only the middle 2 or 3 inches of each batten to the lid. At the ends, nail through the edge of the batten into the lid with a 4d finishing nail. Set the nail heads and fill the holes.

8 Cut the taper in the legs. The taper in the legs begins at the bottom edge of the sides, back, and drawer rail. Only the inside surfaces of the legs taper. Lay out the taper in each leg with a straightedge, then saw the tapers with a tapering jig as shown in the *Taper Detail*. Clean up the cut with a hand plane.

9 Saw the slope on the front legs, front, and sides. The sloping lid is 20 degrees from horizontal. Adjust the tilt of the table saw to this angle and crosscut the tops of the front legs, as shown in the *Side View Cross Section*.

Assemble the four legs to the front, rail, side, and back pieces without glue. A band clamp will hold the assembly securely. Lay out the bevel on the front and the slope on the sides.

Disassemble the parts, then rip the bevel on the front and plane it smooth. While the saw is set up at this angle, rip the same bevel on the upper edge of the sloping lid. Adjust the tilt of the table saw back to square and adjust the miter gauge to 20 degrees from square. Cut the slope on the sides staying well outside the line, then plane to the line.

10 Notch the corners of the desk bottom. The desk bottom must fit around the legs at the corners. Lay out the notches, then saw them with a handsaw.

11 Assemble the desk. You've already laid out the locations of the tenon pegs. Prick a hole at these locations with an awl or small nail so the locations won't get sanded away. Sand the parts, but avoid the mortised surfaces of the legs. Glue and clamp the front and back legs to the desk sides. Insert the desk bottom into the front and back grooves, then glue and clamp the desk front, drawer rail, and back between the two side units. Don't glue the tongues on the desk bottom into the grooves.

12 Peg the tenons in the legs. Drill ¼-inch-diameter, 1-inch-deep peg holes in the legs, through the tenons, where you've laid them out. Peg the tenons with ¼-inch dowels, or with ¼-inch square pegs made from the same wood as your legs. Bevel the leading edge of the pegs slightly, apply glue, and drive the pegs into the drilled holes. Then saw and sand them flush with the surface of the legs.

13 Glue the bottom cleats to the desk sides. The desk bottom is now held along its sides but not at its ends. Cleats glued to the desk sides support the ends of the bottom as shown in the *Drawer Support Detail.* Glue the cleats to the desk sides but not to the desk bottom so the bottom is free to shrink in dry weather. Apply glue somewhat sparingly to the cleats and clamp them in place, tight against the bottom. If you don't have clamps with deep enough throats, nail or screw the cleats in place.

14 Cut the backsplash dadoes and attach the top. The three backsplash pieces fit in ⅜-inch-wide by ⅛-inch-deep dadoes in the desk top. Rout these dadoes with a straight bit, then square the ends.

The desk top is glued and nailed to the sides and back. Predrill the nail holes inside the dadoes so they will be hidden. Sand the desk top, then glue and nail it to the sides and back.

15 Make and attach the backsplash. Lay out the curves of the backsplash parts from the *Front View* and *Side View Cross Section.* Saw them out with a coping saw. Clamp the two sides together and saw them as one to get a perfect match between them. Smooth the sawn edges with files and sandpaper, then sand the surfaces. Glue and clamp them into the dadoes on the desk top. When the glue has dried, round the edges slightly and smooth the joint between the back- and side splash pieces with sandpaper.

16 Attach the lip to the desk lid. The lip at the bottom edge of the lid serves as a stop for pencils or papers. Sand the lip, rounding-over the top edge slightly, then glue and clamp it to the edge of the lid.

17 Hinge the slant lid to the desk. Mortise the hinges into the desk top. Adjust the depth of the mortises to allow for only a minimal clearance between the top and the lid. Adjust the width of the mortise so the plane of the upper surface of the top passes through the hinge pin. This position minimizes the projection of the hinge barrel above the desk surface while still allowing the lid to open fully. Screw the hinges to the top.

Set the desk lid in place and mark the hinge positions on the top edge. Mortise the lid for the hinges and screw them in place.

18 Cut the drawer parts. Measure the drawer opening in the assem-

(continued on page 20)

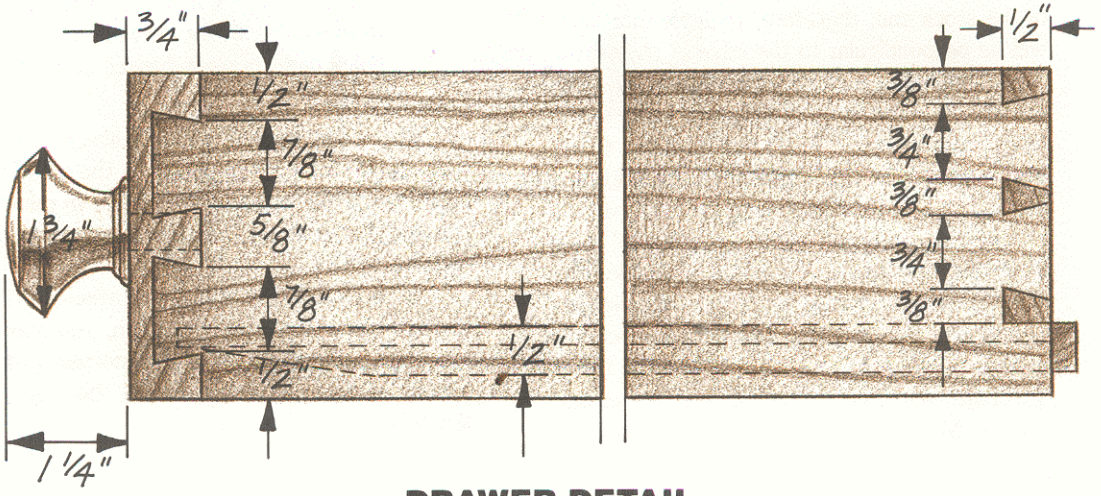
bled desk and, if it differs from the drawing, adjust the drawer part sizes so the drawer will fit the opening. Plane the stock and saw the parts to size. Edge-glue boards to get sufficient width for the drawer bottom, or make the bottom out of ¼-inch hardwood plywood.

19 Cut the dovetails in the desk drawer. The drawer in the original desk has traditional handcut dovetail joints, half-blind where the sides join the front, and through dovetails at the back. The dimensions of these dovetails are shown in the *Drawer Detail*, if you want to reproduce them exactly. If you would like the strength of a dovetailed drawer but are not concerned with historical accuracy, cut the joints with a router as explained in "Routing Dovetails" on page 36.

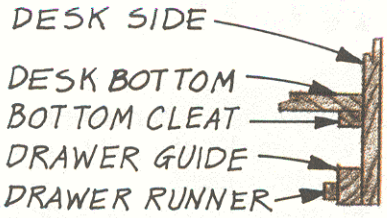
20 Cut the bottom groove and assemble the drawer. Rout a ¼-inch by ¼-inch drawer bottom groove in the front and sides. Make sure the groove is positioned within the tails on the sides so it won't show from the outside of the assembled drawer.

If your drawer bottom is ½-inch solid wood, plane a broad chamfer on its front and side edges so it will fit the bottom grooves. Sand the inside surfaces of the drawer parts, then glue and clamp the dovetails together. Slide the bottom into its grooves and secure it with two or three 1-inch nails into the back. Check the drawer for twist and, if necessary, clamp it to a flat surface while the glue dries.

21 Install the drawer guides and runners. Check that the drawer



DRAWER DETAIL



DRAWER SUPPORT DETAIL

guides fit between the legs, flush with the drawer opening. Then glue the guides to the desk sides, flush with the bottom edge of the sides as shown in the *Drawer Support Detail.* Check that the drawer runners will be flush with the top surface of the drawer rail at the same time that they are flush with the bottom edge of the guides. Then glue them to the guides.

22 Turn and attach the drawer knobs. If you have a lathe and want to turn the drawer knobs to match the original, follow the shape shown in the *Drawer Detail.* The original knobs have ⅜-inch-diameter stems, which are glued into holes in the drawer face. If you buy similar knobs, they will probably attach with a screw. When drilling the drawer front for either the knob stem or screw shank, back up the hole with scrap wood to prevent tear-out when the bit exits. Sand the outside of the drawer and try its fit in the opening. Sand or plane as necessary for an easy sliding fit, then install the knobs.

23 Install the lid support and complete the desk. Install the lid support according to the manufacturer's instructions.

Finish sand the desk, softening hard edges on all the upper parts that the user will feel but maintaining a crisp appearance elsewhere, especially on the legs.

Remove the hardware and dust the desk thoroughly with a tack cloth.

For a durable clear finish, apply three coats of a penetrating oil or two coats of a brushing lacquer or polyurethane.