WOODWORKER'S JOURNAL
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Classic Project

In this plan you'll find:

- Step-by-step construction instruction.
- A complete bill of materials.
- Construction drawings and related photos.
- Tips to help you complete the project and become a better woodworker.

Two-drawer Platform Bed

Attractively styled and solidly constructed, this contemporary bed features a pair of large storage drawers underneath. We used solid oak for all frame parts, but other hardwoods can be used.

The headboard end (parts A, B, C, D, E, and F) provides a pair of shelves, but the construction can be simplified by putting the footboard (parts F and L) on each end. The drawer case (parts O through S), which is removable, can be installed to face either the right or the left side of the bed. Bed rail fasteners (N) are used to join the side rails (H) to the headboard and footboard.

The drawings are dimensioned for a twin bed (sometimes called a single), but simply by lengthening some of the parts it can be made into a full (sometimes called a double) or a queen-size bed. Measured between the rails, a full-size bed measures 75 in. long (same as the bed shown) by 54 in. wide, while a queen-size bed measures 80 in. long by 60 in. wide.

We located the height of the lower shelf (part B) to accommodate a thin mattress. However, if you have a thick mattress, you may want to raise the shelf height somewhat. (If the shelf is too low it will be hidden by the pillows when the bed is made.) Note, though, that you'll need to shorten its width to allow for the taper of the sides.

Begin by crosscutting stock for parts A, B, C, D, E, F, H, L, O, P, Q, R, and S to approximate length, allowing about 1 in. extra for each part. A portable circular saw comes in handy here, especially for long boards like parts H. Shorter parts can be crosscut on the table or radial-arm saw. All length dimensions are shown in the bill of materials. If you can't find 10 in. wide stock for parts A, it will first be necessary to edge join a couple of boards to get the needed width.

Next, rip each of the parts to approximate width, allowing about ⅛ in. extra for each part. For long boards like part H, however, you should allow about ½ in. to account for any crook that may occur after ripping.

The joiner is now used to plane one face surface of each piece of stock. (The face is the surface measured across the width of the stock). This step is important because it establishes one perfectly flat surface, and you need to start with a flat surface before you can continue "dressing" the stock. A detailed discussion on jointing stock can be found in the "In The Shop" column of our May/June 1987 issue.

Once you have one flat face surface on each piece of stock, use a thickness planer to plane each board to its final thickness. First, plane all the ¾ in.

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Next, rip each of the parts to approximate width, allowing about ¼ in. extra for each part. For long boards like part H, however, you should allow about ½ in. to account for any crook that may occur after ripping.

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thick stock, then follow with the 1⅛ in. material. Try to make the cuts in more than one pass, with the final pass removing no more than about 1/32 in. A light cut like this results in a smooth finish that will require little sanding later on. It's important for the stock to have a consistent thickness, so each piece should be planed in an identical manner.

Next, use the jointer to plane (joint) one edge of each piece of stock. As you did with the thickness planer, make a light final cut so that you get a smooth finish.

The stock can now be ripped to final width. To get a smooth finish on the final cut, we like to set the rip fence to allow an extra 1/32 in. on the width. After ripping the stock, we then use the jointer to remove the added 1/32 in. When you make the jointer cut, keep pressure on the infeed table to insure that the cut will remain parallel to the opposite edge.

Measure and mark the cut length of each part, then use a table or radial-arm saw to crosscut the stock to its final length. If you have one, a cross-cut blade is worth using here as it produces a smooth cut with a minimum of splintering. It's important that the cuts be square, so be sure to first make some trial cuts in a scrap board. Don't cut the stock until you are confident you have a square cut.

The ½ in. wide by 11/16 in. deep by 4 in. long mortises, which accept the ⅝ in. long tenons on the ends of parts F, can now be cut in parts A and L. The mortise is made 1/16 in. deeper than the tenon length to allow room for excess glue. Lay out the location of each mortise before starting. We used a router equipped with an edge-guide and a ½ in. diameter straight bit. However, don't make the 11/16 in. deep cut in one pass. You'll get a smoother cut, with less strain on the motor, if it's done in five passes, with each pass removing about ⅛ in. of material.

We used a dado-head cutter on the table saw to cut the tenons on each end of parts F (Fig. 4). A scrap block clamped to the rip fence serves as a stop to establish the ⅝ in. tenon length on all pieces. Raise the dado-head cutter to a height of ⅛ in., then use the miter gauge to pass the stock, face side down, over the cutter. Now flip the stock over and repeat the procedure on the opposite side to establish the ½ in. tenon thickness. The dado-head is then raised to a height of 1 in. and the stock is passed, on edge, over the cutter. After one edge is cut, flip the stock over and repeat the cut to create the 4 in. tenon length.

If properly cut, the tenon should fit snugly in its mating mortise. Keep in mind that the tenon dimensions are regulated by the height of the dado-head cutter. It's a good idea to make some trial cuts in scrap stock to get the tenon thickness and length just right.

Bill of Materials
(all dimensions actual)

Part	Description	Size	No. Req'd.
A	Headboard Side	1⅛ × 10 × 36	2
B	Lower Shelf	¾ × 9⅜ × 39¼*	1
C	Upper Shelf	¾ × 7¼ × 39¼*	1
D	Filler	¾ × 2 × 39	1
E	Back	¾ × 2½ × 39	1
F	Head & Foot Rail	¾ × 6 × 40¼**	2
G	Rail Cleat	⅝ × 1½ × 39	2
H	Side Rail	¾ × 6 × 73¾	2
I	Side Rail End Cleat	⅝ × 1½ × 8⅛	4
J	Side Rail Center Cleat	⅝ × 1½ × 25⅜	4
K	Support Cleat	⅝ × ¾ × 6	6
L	Leg	1⅛ × 2 × 19	2
M	Platform	¾ × 39 × 75	1
N	Bed Rail Fastener	4 in.	4
O	Case Side	¾ × 8 × 34½	2
P	Case Divider	¾ × 8 × 34½	1
Q	Case Stretcher	¾ × 2 × 55½	4
R	Case Back	¾ × 8 × 56	1
S	Case Hanger	¾ × 2¼ × 39	3
T	Drawer Front	¾ × 7⅛ × 28	1/drawer
U	Drawer Side	¾ × 6¼ × 28⅜*	2/drawer
V	Drawer Back	¾ × 5¾ × 25⅛*	1/drawer
W	Drawer Bottom	¼ × 24⅞ × 27½	1/drawer
X	Drawer Slide	28 in.	1 pr./drawer

*Includes dovetails
**Includes tenons

Next, referring to Fig. 5, lay out the location of the ⅝ in. wide by 4 in. long mortises in parts A, H, and L that accept the bed rail fasteners (parts N). Once again, the router with an edge-guide is used, this time with a ⅝ in. diameter straight bit. The depth of cut will depend upon the thickness of your bed rail fasteners. The depth should be such that the fastener is flush with the surface of the wood. Since the router cuts rounded corners, you'll need to square them with a chisel.

The bed rail fasteners (N) are made up of two halves — a hooked half and a slotted half. Depending upon the manufacturer, the hooked half may have a peened knob extending out the back of each hook. If your fastener has these knobs, you'll need to bore a couple of relief holes (see Fig. 5) to allow them to sit flush. Also, note that the slotted half requires a ¼ in. wide by ⅜ in. deep by 1⅜ in. long slot. We used the edge-guided router and a ¼ in. diameter bit to make those cuts. As with the earlier router cuts, we only removed about ⅛ in. of material with each pass.

Next, the sliding dovetail joint, (which joins parts A to parts B and C) can be cut (Fig. 1). The dovetail grooves, which are cut into parts A, are made first. You'll need the router and a Yi in. dovetail bit. Also, a guide fence is required. It need only be a 14 in. length of straight stock that's clamped in place, but we found it useful to make a jig (Fig. 2) to serve as our fence. It's made from two pieces of stock joined at 90 degrees as shown. Once made it can be quickly clamped square to the stock.

Before making any cuts, you'll first need to final sand the inside surface of each part A. If you wait and sand after the grooves are cut, the shoulders of the tails will not fit perfectly flush.

Clamp part A, groove side up, securely to your workbench, then lay out the location of the dovetail grooves for parts B and C. Equip the router with the Yi in. dovetail bit set to make a ⅜ in. deep cut. Clamp the jig to part A, locating it so that when the router is held against the jig fence, the bit will make a cut right down the center line of the dovetail groove.

Since the dovetail groove is "stopped," that is, it doesn't extend all the way across the board, it's a good idea to include a stopblock in the set up.

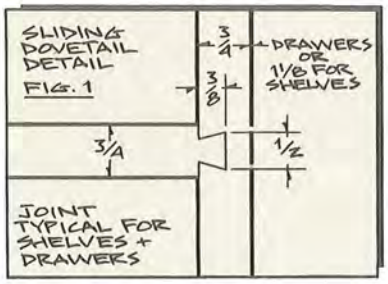
With the router held firmly against the fence, make the dovetail groove cuts, referring to Fig. 2 for the direction of feed. Run the router to the stopblock, then without shutting off the motor, back the bit out of the cut.

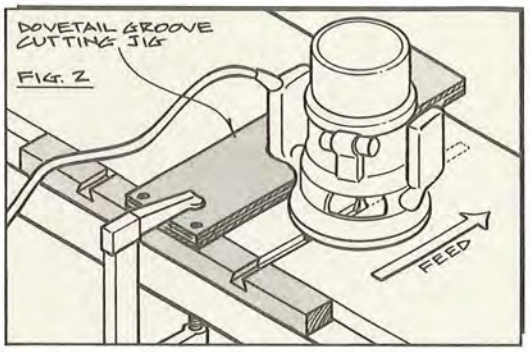
Be sure to keep the router firmly against the fence, even when backing out the bit. Once all four dovetail grooves have been cut, the end of each stopped groove can be squared with a chisel.

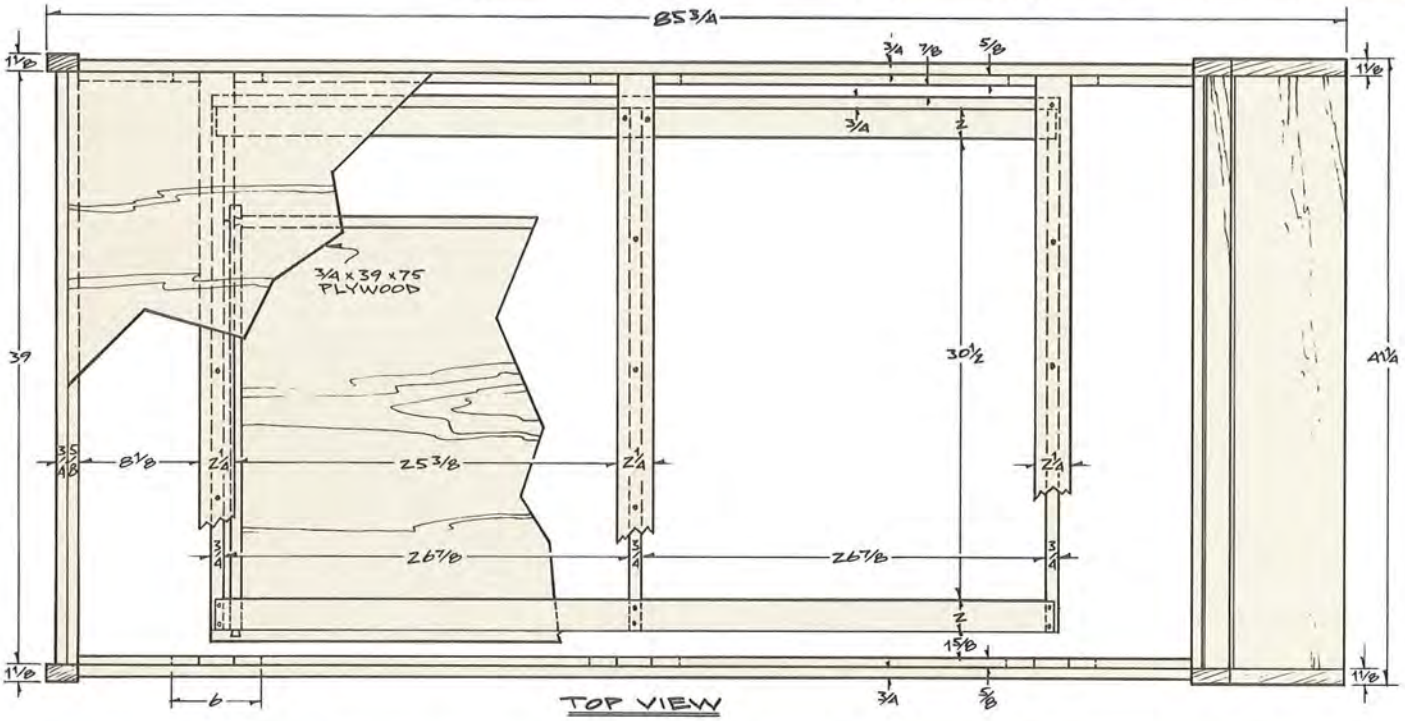
The dovetails on the ends of parts B and C can now be cut. But before go-ing any further, and without readjusting the depth setting, use the router and dovetail bit to cut a dovetail groove into the end of a scrap piece. It will come in handy later on.

The dovetails are cut on a router table. As noted earlier, it's important that the stock thickness be the same. If

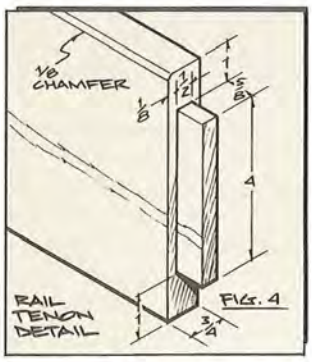
(continued on page 6)

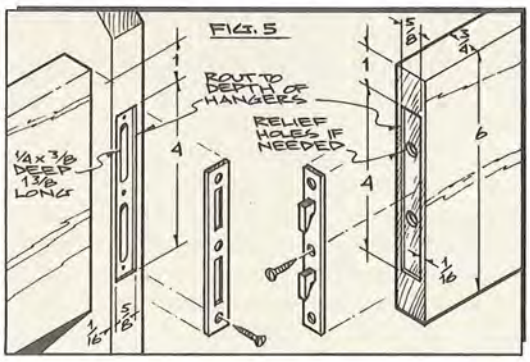






TOP VIEW





SIDE VIEW

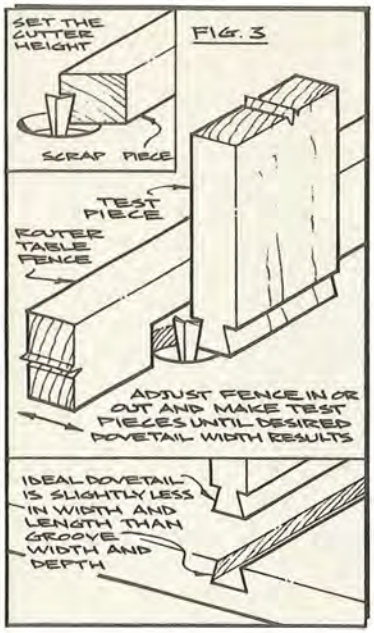
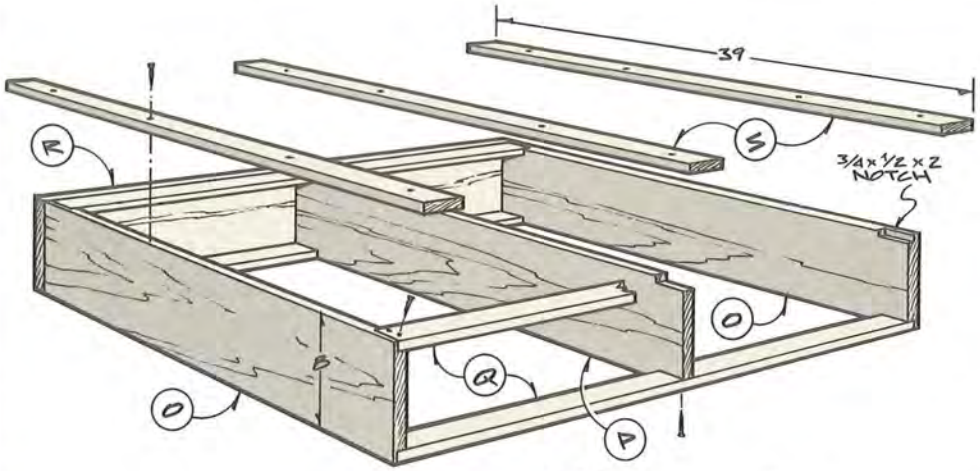


FIG. 3



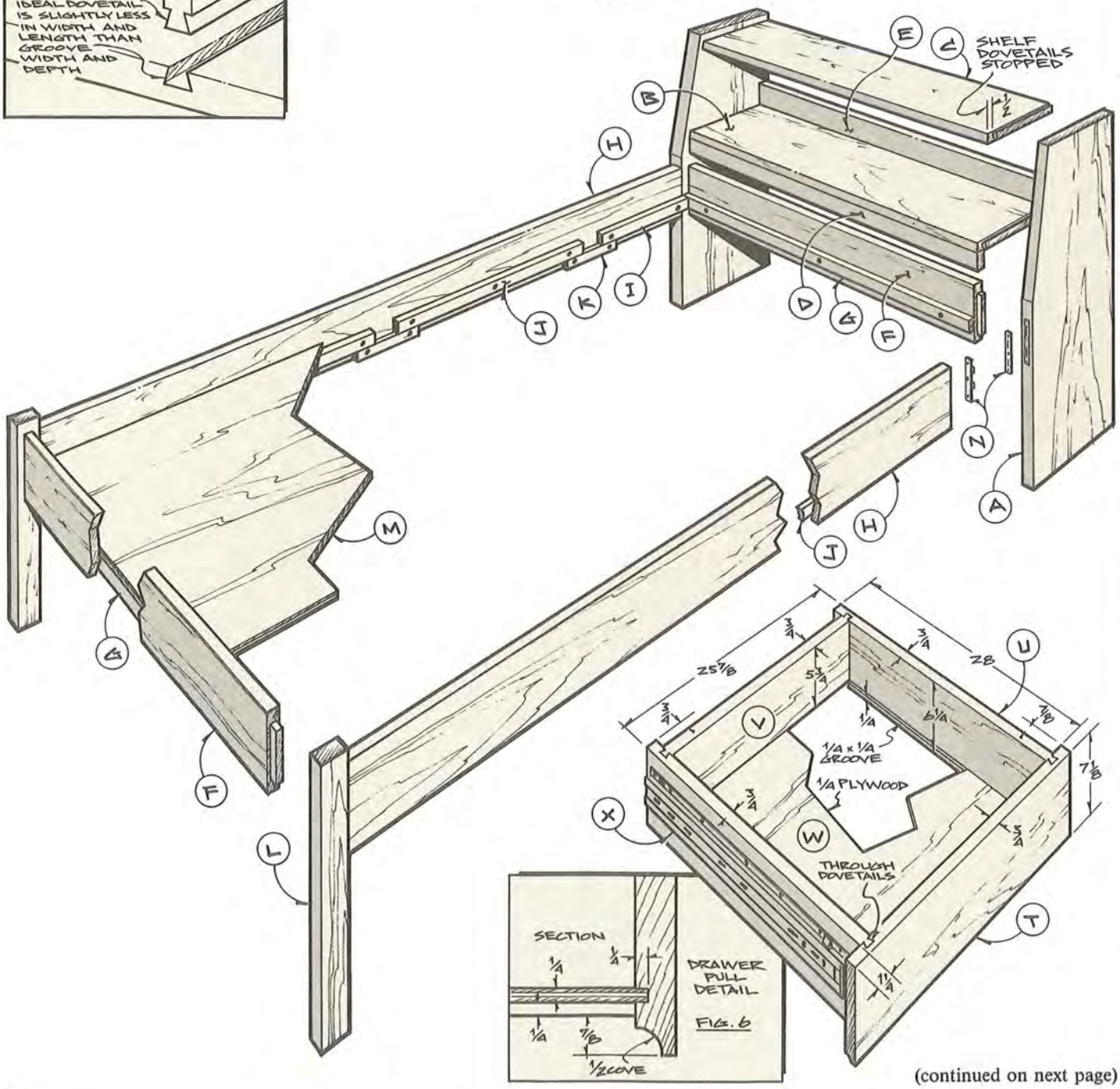


FIG. 6

(continued on next page)

it isn't you won't get a well-fitted joint.

Set the dovetail cutter to a height equal to the depth of the dovetail groove cut in parts A. The scrap piece can be used here as shown in the Fig. 3 inset.

After setting the bit height, the fence must be positioned to establish the proper dovetail width. We've found the best way to do this is to use scrap pieces milled to the same thickness as parts B and C. As shown in Fig. 3, you'll need to make test cuts into the scrap stock until you establish the fence position that results in a well-fitted joint. Keep in mind that a joint that is too loose won't have maximum strength, while a joint that is too tight will be difficult to assemble, especially after glue is added causing the wood to swell slightly. Although not shown in Fig. 3, we clamped a 12 in. auxiliary wooden fence to our regular router table fence. The extra height made it easier to keep the stock square to the table. Once all the dovetails were cut, we used a chisel to cut a ½ in. notch (see exploded view) in each front corner to accommodate the stopped groove.

The 9-degree taper on the front of parts A can now be made. Note that it starts 7½ in. from the upper back corner and 17 in. from the top. Mark the points, then scribe the line with a straightedge. Use a band or jigsaw to cut it out, and stay slightly on the waste side of the line. A few passes with a sharp hand plane will smooth the edge and bring it exactly to the marked line.

Glue and clamp part D to part B, taking care to make sure that the front edge and the ends remain flush. Once dry, use the table saw set to a 9-degree angle to cut the bevel along the front edge as shown in the side view. Part E can now be glued and clamped to part B, again taking care to insure that the back edges and the ends remain flush. Also, at this time, the front edge of part C can be cut to a 9-degree angle.

Apply glue to the mortises in parts A and L, and the tenons on the ends of F. Clamp parts A to F and parts L to F as shown in the exploded view. Check for squareness and set aside to dry.

Parts B and C can now be assembled to parts A. Note that they must be slid in from the back. Keep in mind that even if the dovetail fits easily in the groove when dry, there is always a possibility it might bind when the glue is added and the wood swells as it takes on moisture. To minimize this potential problem, only apply glue to the front half of the dovetail groove and to the back half of the dovetail. Only assemble one shelf at a time — and work quickly to keep the swelling problem to a minimum. Also, just apply glue to the beveled surfaces of the groove and dovetails as the other surfaces of the joint present an end grain situation. End grain has little strength, so there is no need to take extra time (and create additional swelling of the wood) to apply the glue there.

The various cleats (parts I, J, and K) are now added after cutting them to the dimensions shown in the bill of materials. Use glue and wood screws to secure them to the rails.

The drawer case (parts O, P, Q, R, and S) is made next. We used a router to notch the ends of parts O, then squared the rounded corners with a chisel. Note the screws that join the ends of parts Q to parts O are driven at a slight angle. This minimizes the chance of splitting the ends of Q when the screws are added. When the case is completed, the ends of parts S will rest on parts K. Don't glue this joint though, as the case must be removable to facilitate moving the bed. It also will enable you to reverse the case, which means the drawers can be used either on the right or left side of the bed.

The drawer (parts T, U, V, W, and X) can now be made. We cut part T from a 60 in. long board so that the grain would run continuously from the left to right drawer front — a detail that adds interest to the piece. The ½ in. cove cut along the inside bottom edge of each part T is cut on the router table using a ½ in. radius cove bit.

The sliding dovetails are made following the same general procedure used earlier. However, because the dovetail grooves are located near the ends of parts U and T, both the grooves and the dovetails can be cut on the router table. When making the grooves, butt the end of the board against the fence, then push it through the cutter. As you make the cut, hold the stock firmly against the fence and use a push stick to keep hands away from the cutter. Since the groove is not stopped, you can run the cut complete-ly across the width of the stock.

Once the dovetails are cut, the drawers can be assembled as shown. Check for squareness before setting aside to dry. When dry, final sand and finish. We sprayed two coats of Deft's Clear Wood Finish on all the drawer surfaces.

The drawers can now be hung in the case. (we centered the slides on parts O). When installed there should be a ⅛ in. gap between the bottom edge of part U and the lower part Q. This also creates a ⅛ in. gap between the top edge of part U and the upper part Q.

Next, remove the drawers and give the entire project a thorough sanding. Two coats of Deft are sprayed on as a final finish. To complete the project, cut part M to size and drop it in place on the cleats as shown.

WWJ