flip-seat STORAGE BENCH

Flamingo. That's what I looked like as I stood in the doorway perched on one leg, with my other foot raised so that I could untie the laces on my muddy boots. The problem was that there wasn't a convenient place nearby to sit down and take off my boots, which is why I decided to build this storage bench.

The small size of the bench makes it great for an entry, a porch, or a mudroom. And the low height makes it convenient for putting on (or taking off) your shoes or boots.

But as an added bonus, the lid of the bench lifts up to reveal a storage compartment, see lower photo. This makes a great place to throw mittens, scarves, gloves, earmuffs, umbrellas, or any other outdoor item.

CONSTRUCTION. One of the nicest things about this bench is that it isn't very difficult to build. There's no complicated joinery. (It's held together with screws.) And the scroll work at the bottom of the panels can be cut with a sabre saw or a band saw.

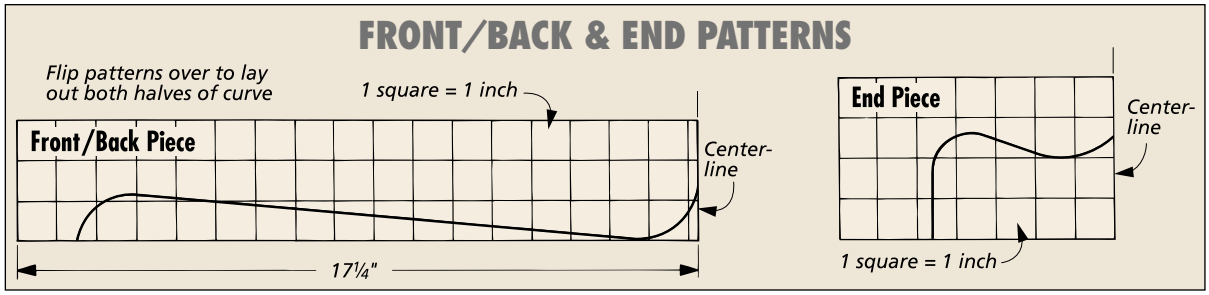
BASE

The base of the bench is just a four-sided box that's screwed together, see Base Exploded View on the next page. The ends of the box are longer (taller) than the sides to double as legs and support the bench.

To build the base, I started by gluing up the panels for the two **ends (A)** and a **front** and **back (B)**. After cutting the panels to size, lay out the curves at the bottom of each panel using a cardboard template based on the patterns shown below. Shop Note: The patterns below are half patterns. You'll have to flip them over to lay out the right-hand side of the curve.

To cut the curves, I used a sabre saw, see Fig. 1. (You could also use a band saw.) The important thing to

▲ ***Flip your lid.*** *The top of this bench lifts up to reveal a compartment for storing gloves, scarves, umbrellas, and other accessories.*



place some adhesive-backed sandpaper on a narrow scrap of wood.

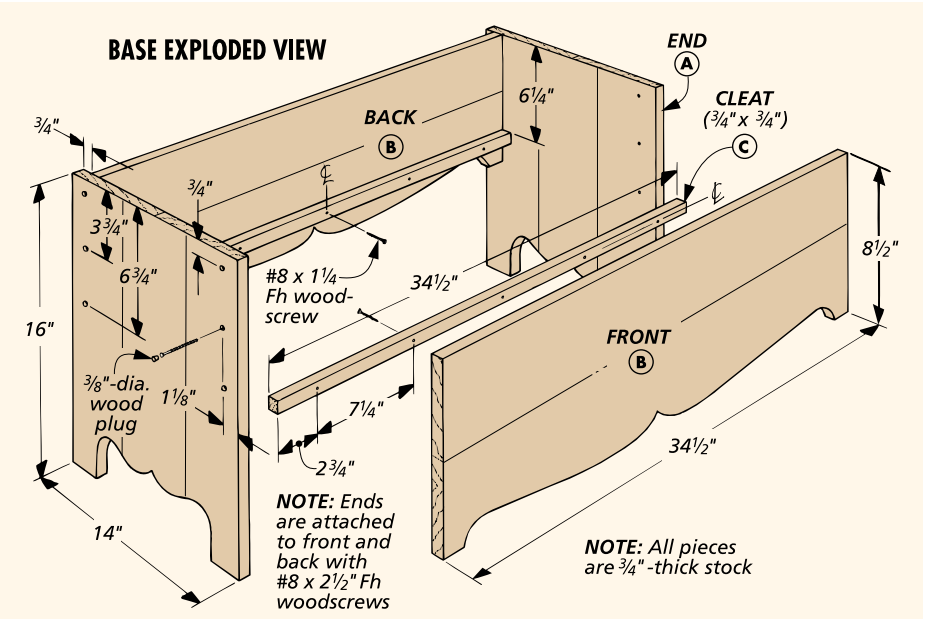
ROUNDOVERS. When the curves have been sanded nice and smooth, you can walk over to the router table with the end pieces in hand to rout the roundovers, see Fig. 2. First, an 1/8" roundover is routed along the bottom edges of the "feet" (the edges that will rest on the floor), see detail 'a' in Base Exploded View. Then identical roundovers are routed along the front and back edges of each end piece.

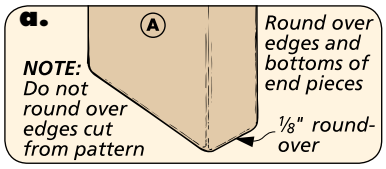
CLEATS. Before screwing the four pieces together, I added a cleat to the inside face of the front and back, see Base Exploded View. These cleats will support a row of slats that are added later to make up the bottom of the storage compartment.

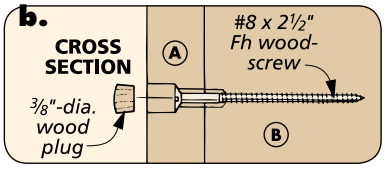
The **cleats (C)** are nothing more than 3/4"-square strips that are cut to length and screwed to the front and back. When attaching the cleats, make sure they're flush with the ends of the front/back pieces. If they stick out at all, they'll prevent the ends from drawing up tight during assembly.

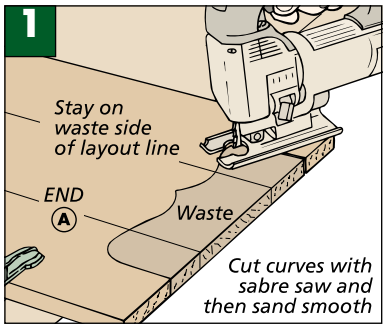
COUNTERBORES & PILOT HOLES. The ends are attached to the front and back with screws that are counterbored and later plugged, see detail 'b' in the Base Exploded View. Since these screws are fairly long (2 1/2") and are being driven into end grain, it's important to drill pilot holes in the workpieces beforehand to prevent the screws from breaking off in the wood, see Fig. 3a. (For more on drilling these long pilot holes, see page 5.)

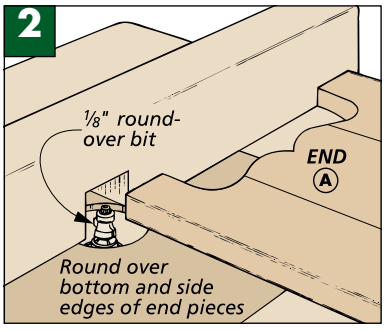
In order to drill the pilot holes, the ends are clamped to the front and back, see Fig. 3. To help position these pieces while drilling the holes (and later during assembly), I made a couple of spacers. These are nothing more than 11"-wide plywood panels. The spacers are clamped to the end panels, between the front and back pieces, see Fig. 3.

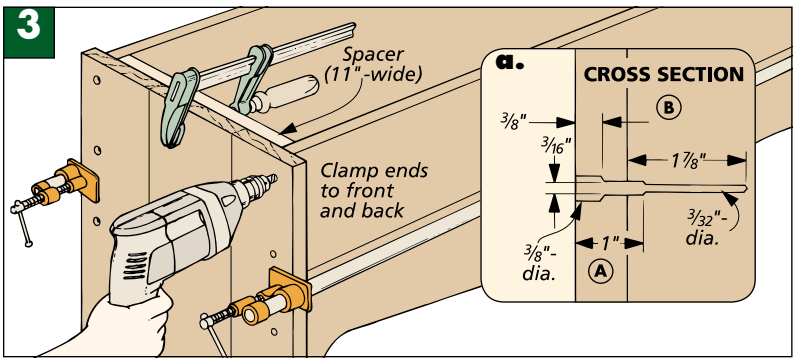












WOOD PLUGS. Once the ends are glued and screwed to the front and back, a wood plug can be installed in each hole, see detail 'b' above.

I used plugs with tapered sides and a dome-shaped head. These plugs are designed to stand proud of the surface just a bit. And the tapered sides allow the plug to wedge in place tightly in the counterbore.

But just to be sure that the plugs wouldn't fall out, I put a little glue in each counterbore before tapping the plugs in with a mallet. (For a tip on installing these plugs, see page 5.)

Bottom & Lid

▲ *A scrap of ½"-thick stock can be used to space the slats evenly.*

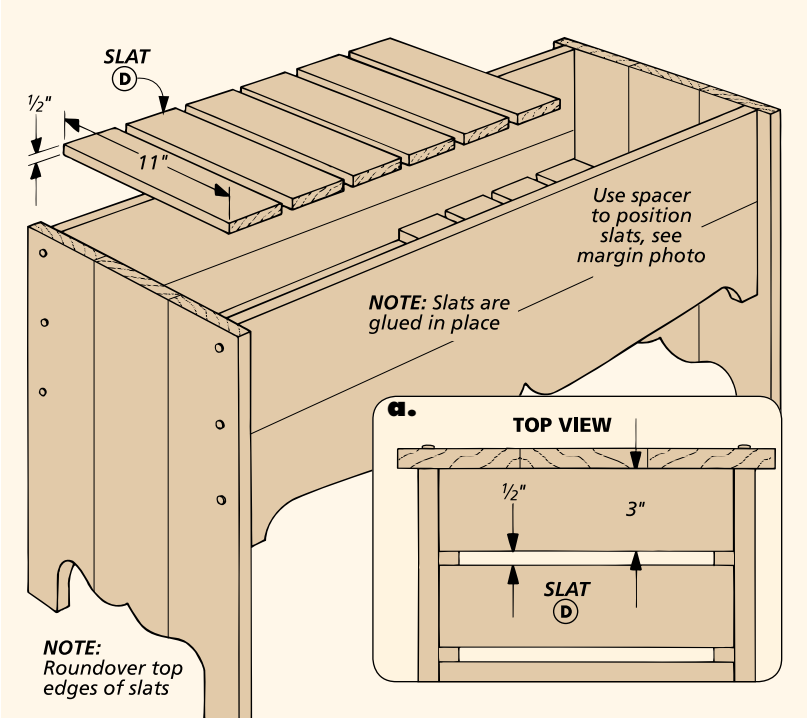
If you're planning on using the bench to store clothes or apparel, moisture is the last thing you want inside the compartment. So to allow the storage area of the bench to "breathe," the bottom is made up of slats that are spaced ½" apart, see drawing.

There are ten ½"-thick **slats (D)** in the bottom of the bench. Making these slats is really nothing more than ripping the stock to width and then cutting the individual slats to length, using a stop block clamped to the fence of your miter gauge, see Fig. 4.

After cutting all the slats to size, the next step is to rout a roundover on the two long edges of the top of each slat, see Figs. 5 and 5a.

You could nail the slats to the cleats with small finish nails or brads. But trying to swing a hammer in such a confined space is tough. In addition, I was worried that the nails might split the cleats beneath the slats. So instead, the slats are simply glued to the top of the cleats.

To make it easier to space the slats evenly, try making a spacer block out of ½"-thick stock, see photo in margin.

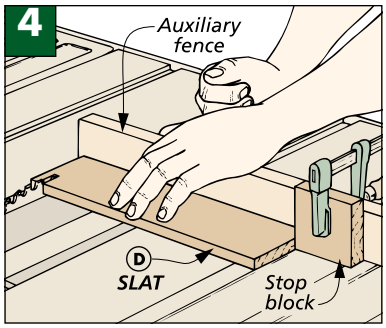


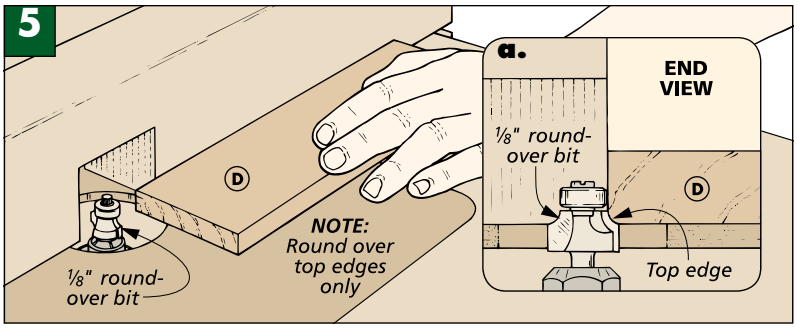
Then glue each slat and clamp it in place just long enough for the glue to "grab" — about five minutes.

LID. With the slats in place, all that remains to complete the bench is to add the lid, see Lid Exploded View on opposite page. The lid also doubles as the seat. To make the lid, start by gluing up a single oversize blank for the lid and the hinge support.

Once the glue is dry, you can trim the blank to length (37½"). Then rip the blank into two pieces — one for the **lid (E)** and a narrow piece for the **hinge support (F)**.

HINGES. When it came to selecting hinges for the bench, I decided to use no-mortise hinges that are simply





Materials

A	Ends (2)	¾ x 14 - 16
B	Front/Back (2)	¾ x 8½ - 34½
C	Cleats (2)	¾ x ¾ - 34½
D	Slats (10)	½ x 3 - 11
E	Lid (1)	¾ x 13 - 37½
F	Hinge Support (1)	¾ x 2 7/16 - 37½
G	Lid Cleats (3)	¾ x 1½ - 10¼

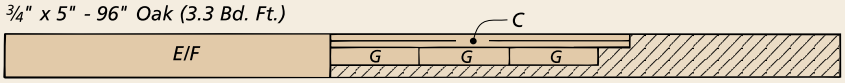
SUPPLIES

- (12) #8 x 2½" Fh Woodscrews
- (19) #8 x 1¼" Fh Woodscrews
- (12) ⅜" Wood Plugs
- (3) 2" No-Mortise Hinges w/Screws
- (1) Lid Support w/Screws
- (2) ½"-dia. Felt Dots

Cutting diagram

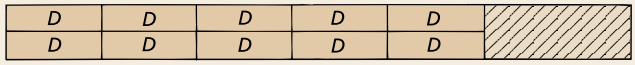
¾" x 6" - 96" Oak (Two Boards @ 4 Bd. Ft. Each)

¾" x 5" - 96" Oak (3.3 Bd. Ft.)



¾" x 4½" - 72" Oak (Two Boards @ 2.3 Bd. Ft. Each)

½" x 6¼" - 72" Oak (3.1 Sq. Ft.)



screwed to the surface of the lid and hinge support, see photo at right. This way, you get the traditional look of a butt hinge, but without the hassle of having to cut mortises for the leaves of the hinge.

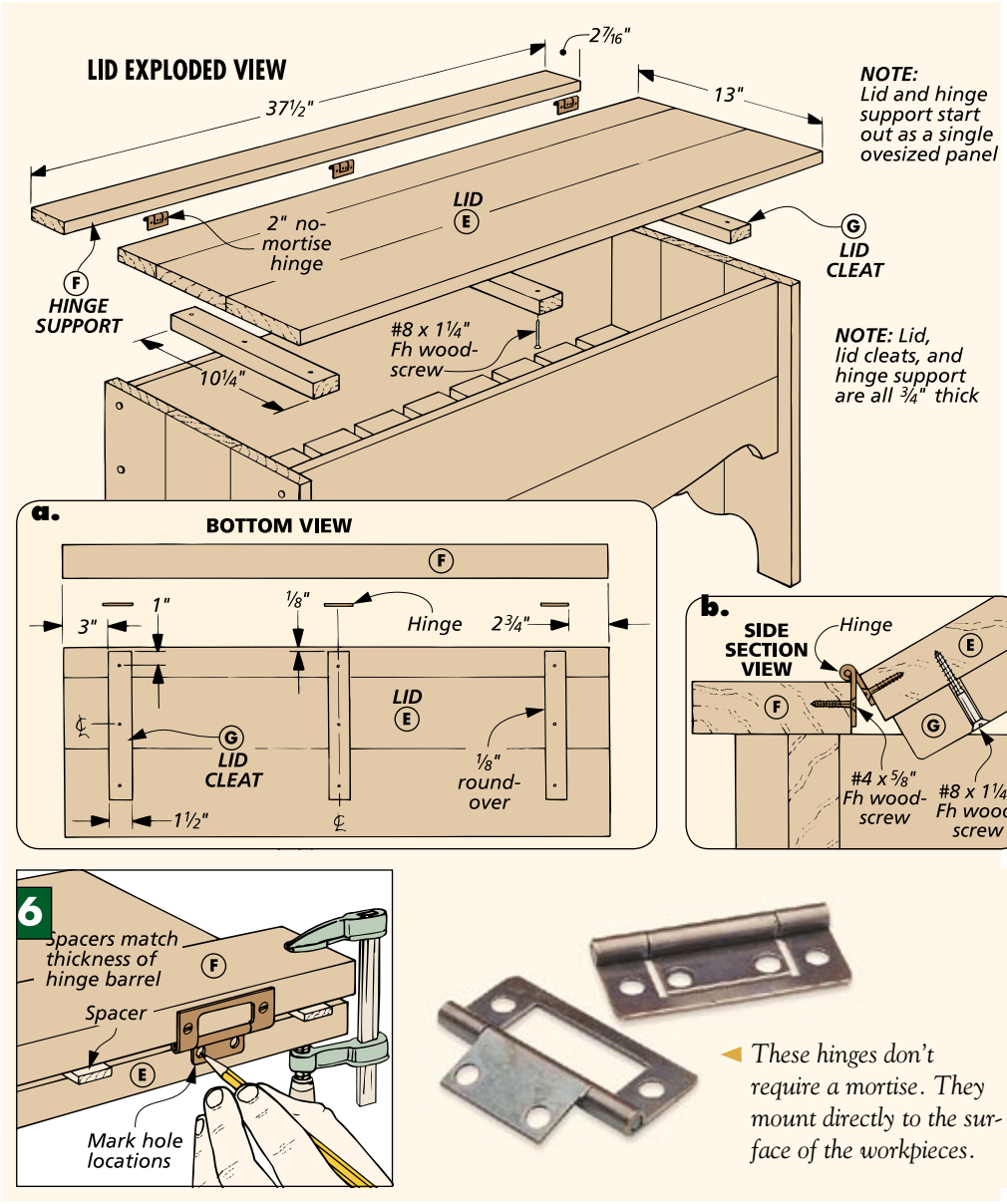
The only trick to mounting these hinges is laying out the screw holes in both pieces so they line up. To lay out the holes in the hinge support (F), simply place the hinge on the edge of the support and use it as a template to drill the holes.

With the hinges attached to the hinge support, I sandwiched some spacers in between the lid and hinge support and clamped the two pieces together, see Fig. 6. (The thickness of the spacers should match the thickness of the hinge barrel.)

LID CLEATS. Because the lid is a solid wood panel, it will have a tendency to cup over time. To help prevent this and keep the lid flat, I screwed three ¾"-thick **lid cleats (G)** to the underside of the lid, see detail 'a.' Routing ⅛" roundovers on the cleats helps to soften the sharp edges.

ATTACHING THE LID. The lid and hinge support are attached to the base of the bench as a unit. Before doing this however, I routed an ⅛" roundover on the outer edges.

Attaching the lid involves nothing more than gluing the hinge support to the base of the bench, see Fig 7. To do this, start by placing the lid assembly on the base and centering it, see Fig. 7a. Then with the lid clamped down to the base of the bench, just lift up the hinge support to apply the glue to the base of the bench.

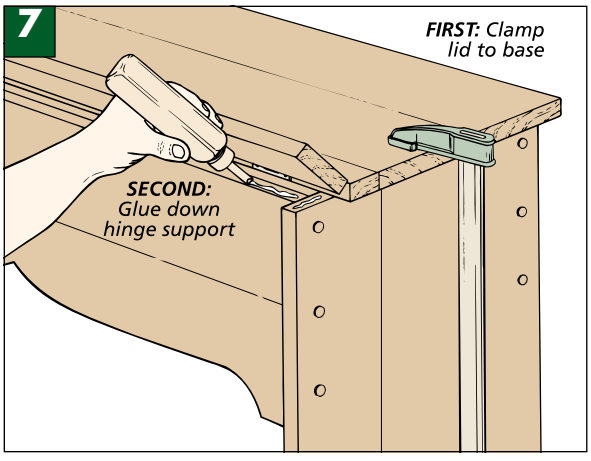


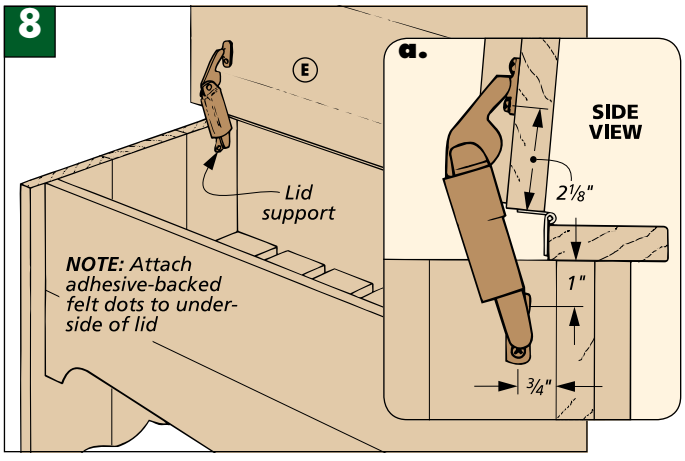
These hinges don't require a mortise. They mount directly to the surface of the workpieces.

LID SUPPORT. To prevent the lid from slamming down on little fingers or from opening back too far, I added a safety lid support. This support gets screwed to the underside of the lid and the inside face of one of the end pieces, see Figs. 8 and 8a.

I finished the bench by building up several coats of a wipe-on finish, sanding lightly between coats with 400-grit sandpaper.

After the last coat of finish was dry, I added a couple of adhesive-backed felt dots to the underside of the lid to cushion it as it's closed. Then I sat down and took my shoes off. W





Shop Notes

Drilling Deep Pilot Holes

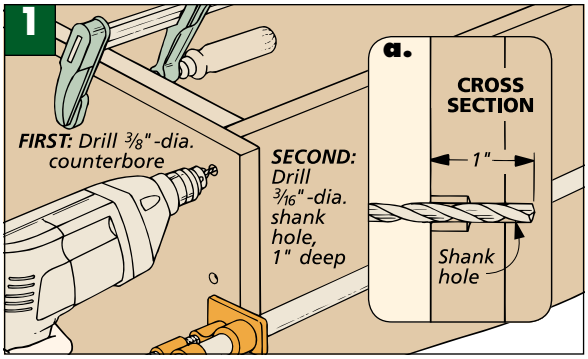
Normally, I don't give much thought to drilling pilot holes. But when it comes to the storage bench, it pays to be a little more careful. Since the screws are fairly long (2½"), and they're going into end grain, it's easy to break one off. To prevent this, each pilot hole will need to be drilled three times:

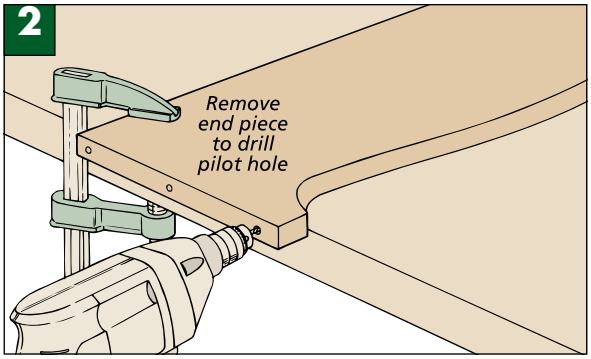
COUNTERBORE HOLE. Start with a ⅜"-deep, ⅜"-dia. counterbore to accommodate the screwhead and the wood plug, see Fig. 1 and photo at right.

SHANK HOLE. Next, drill a 3/16"-dia. shank hole for the unthreaded portion of the screw. Normally, a shank hole is only drilled in the top (first) piece. But because of the long shanks on these screws, the shank hole enters the second piece as well, see Fig. 1a.

PILOT HOLE. Finally, I drill a 3/32"-dia. pilot hole. Since this is a rather deep hole, you'll have to unclamp the workpieces to drill the hole to the proper depth, unless you have an extra-long drill bit, see Figs. 2 and 2a. W

▲ *To insert the dome-shaped plugs, use a piece of scrap with a 3/32"-deep dado cut in it.*





Hardware Sources

STORAGE BENCH

To build the storage bench we used "no-mortise" hinges and a lid support that prevents the lid from slamming on any small fingers, see photo at right. These should be readily available at a local hardware store or through the mail order sources listed at right.

▲ *Hardware for the flip-seat storage bench.*

Rockler Woodworking
www.rockler.com
800-279-4441

Woodcraft
www.woodcraft.com
800-225-1153