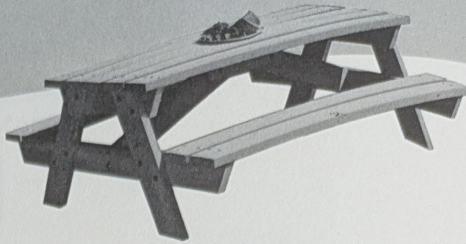
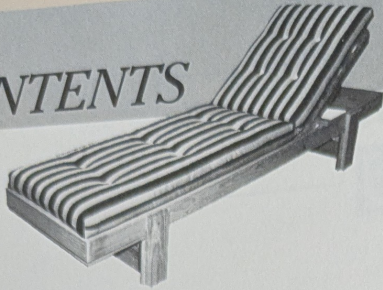


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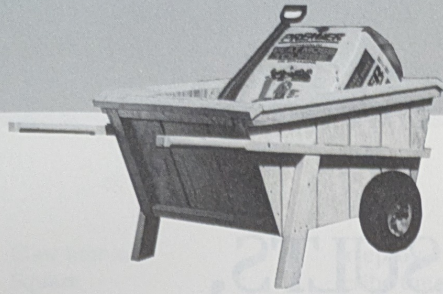
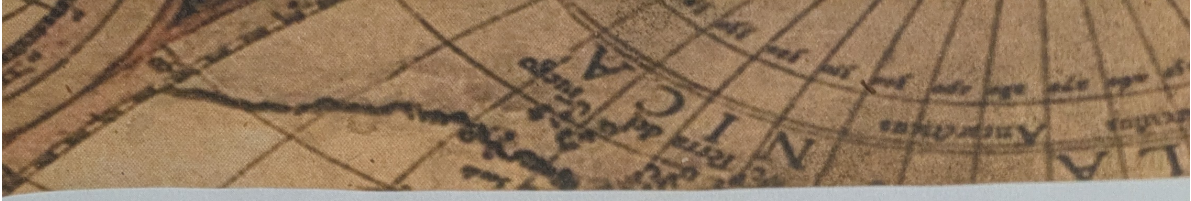
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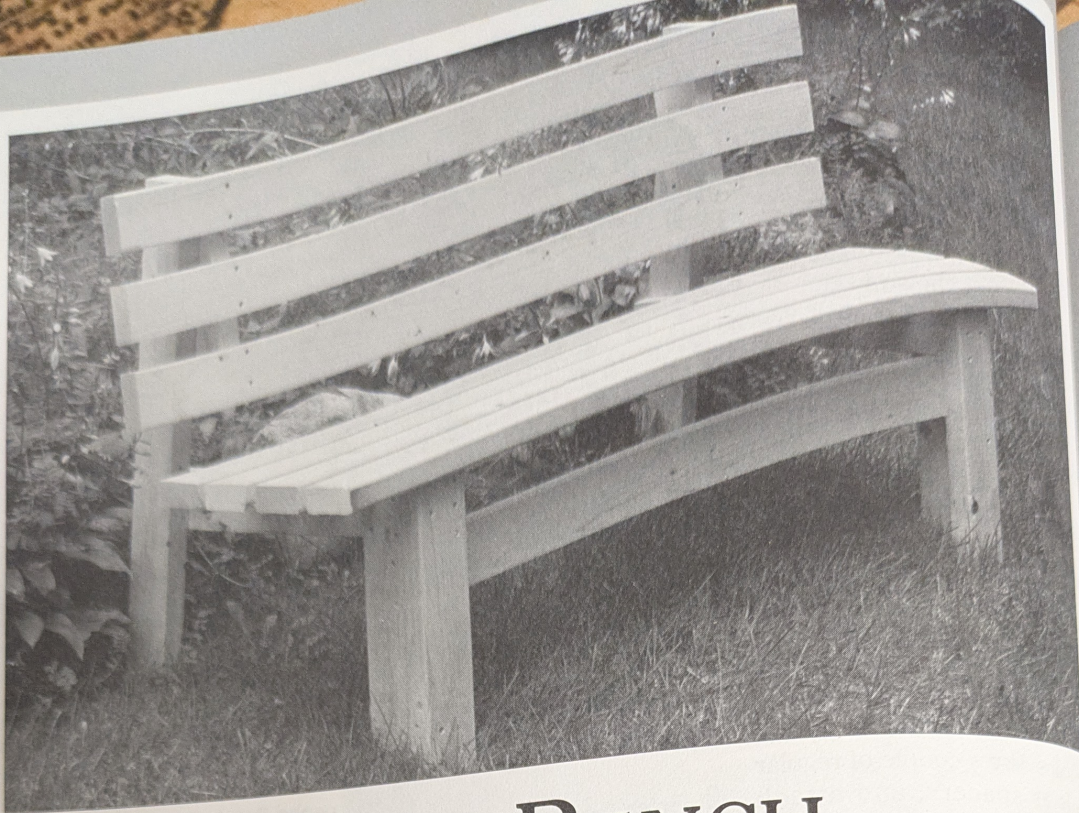
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## PARK BENCH

Seat and back slope comfortably, with no angles to cut

The classic park bench has a wooden seat and back, set into one-piece ends made of wrought iron or reinforced concrete. This is an economical and durable civic construction, yet one that permits a surprising amount of comfort. Who doesn't enjoy a rest, or a little snooze, on a park bench?

This park bench, which is made entirely of 2x4 lumber, relies on glued-and-screwed end assemblies. All the pieces are simple rectangular lengths of 2x4. The design achieves the

seat and back slopes necessary for comfort without sawing any angles, as you'll see in the illustrations and in the steps that follow.

The critical maneuver is making sure you construct mirror-imaged end assemblies. One is right-handed and the other is left-handed. Therefore, make the end assemblies in stages, so you can compare them as you go. You'll see this method in the construction photos.

The bench shown is 60 inches long. You could shorten

it to 48 inches, or lengthen it to about 72 inches, without having to make any structural changes. A longer bench would benefit from a second pair of cross rails, plus a brace inside each back leg.

Some of the edges have been rounded over with a router, and some have been left square, to retain the classic park bench look. You can route as many edges as you like, though if you want to give your router a real workout, consider the loveseat on page 114.

## BUILDING THE PARK BENCH

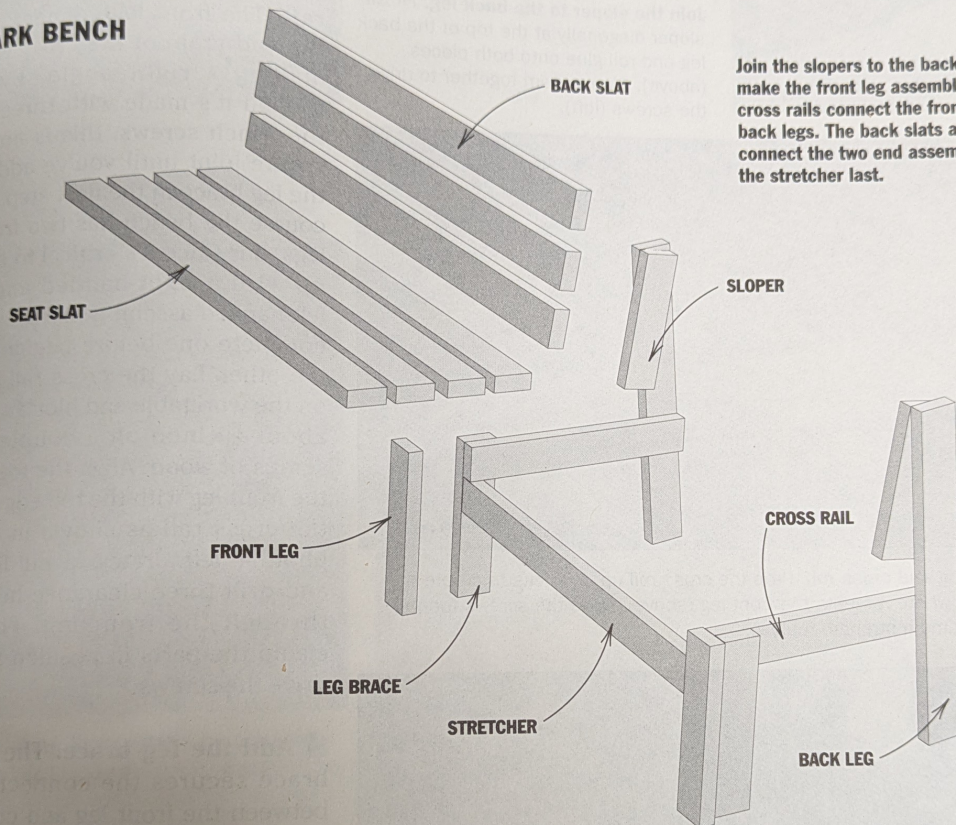
**1 Choose and saw the wood.** You can saw all of the 2x4 lumber to length at the beginning of the project, except for the stretcher. It has to be trimmed to length after the rest of the bench has been assembled. Try to choose clean wood, working

around knots and defects. Make sure none of your seat and back slats have pitch pockets.

**2 Join the sloper to the back leg.** The sloper gives the back slats the tilt they need for comfort. The angle comes from the size and arrangement of the square-cut pieces, not from a

protractor. The drawing below shows how the sloper fits diagonally on the back leg. If you match up the sloper's top front corner with the top front corner of the back leg, and allow the sloper's bottom back corner to touch the front edge of the leg, you've got it right. Draw a layout line, spread glue, clamp the parts

### PARK BENCH



Join the slopers to the back legs, then make the front leg assemblies. The cross rails connect the front legs and back legs. The back slats and seat slats connect the two end assemblies. Add the stretcher last.

#### YOUR INVESTMENT

Time: One afternoon

Money: \$15

#### SHOPPING LIST

Six 8-foot 2x4 studs

#8 x 2½-inch galvanized screws

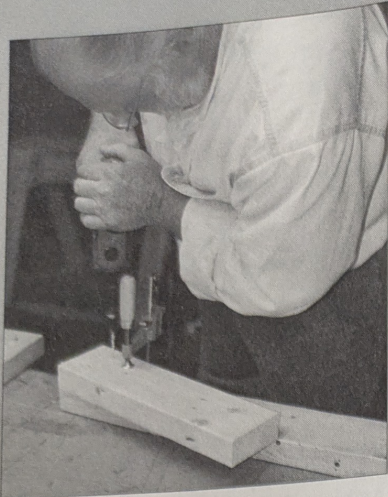
#8 x 3-inch galvanized screw

#### PROJECT SPECS

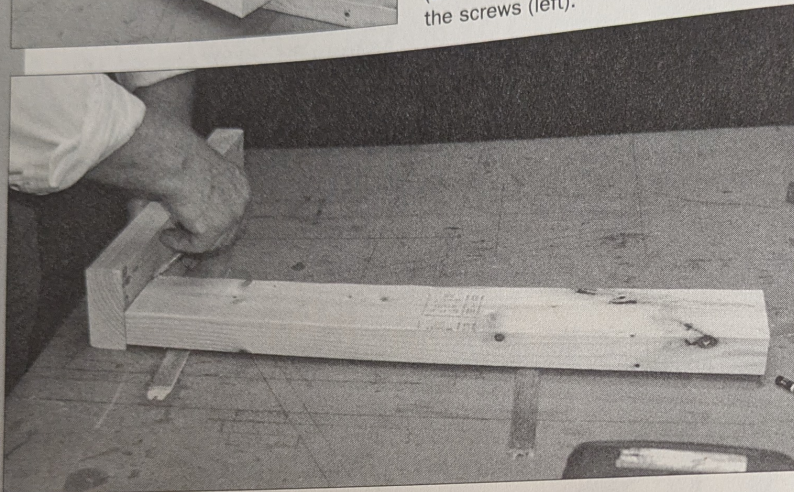
The park bench is 60 inches long, 32 inches high, and 28 inches wide at the ground.

#### CUTTING LIST

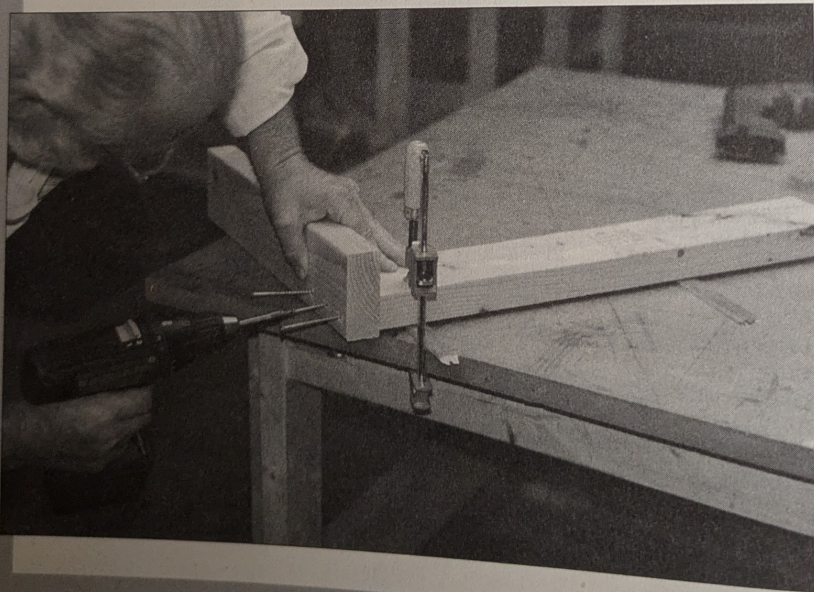
PART	QTY.	DIMENSIONS	NOTES
Back leg	2	1½ × 3½ × 32	2x4
Sloper	2	1½ × 3½ × 14	2x4
Front leg	2	1½ × 3½ × 16½	2x4
Cross rail	2	1½ × 3½ × 24	2x4
Leg brace	2	1½ × 3½ × 16	2x4
Back slat	3	1½ × 3½ × 60	2x4
Seat slat	4	1½ × 3½ × 60	2x4
Stretcher	1	1½ × 3½ × 46	2x4; cut to fit



**Join the sloper to the back leg.** Fit the sloper diagonally at the top of the back leg and roll glue onto both pieces (above). Clamp them together to drive the screws (left).



**Join one front leg and cross rail.** Prop the cross rail up on sticks to create the inset, and mark where it meets the front leg (above). Drive the screws toenail fashion, for maximum strength (below).



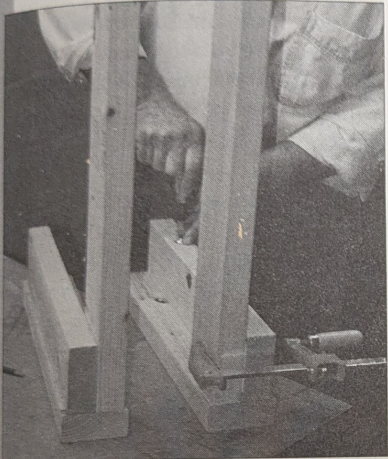
together, drill clearance holes for four 2½-inch screws and drive the screws down tight. Join the other sloper and back leg in the same way, but be sure you get a right-handed and a left-handed assembly. You can see this relationship in the large photo on the facing page.

**3 Join one front leg and cross rail.** The front leg and cross rail. The end grain of the cross rail connects to the front leg, making a right angle. Even though it's made with three of the 3-inch screws, this is not a secure joint until you've added the leg brace in the next step. Of course the bench has two front legs, but since it's critical to end up with a right-handed and a left-handed assembly, it's best to complete one before beginning the other. Lay the cross rail flat on the worktable and block it up about 3/16 inch on a couple of scraps of wood. Align the top of the front leg with the top edge of the cross rail as shown in the photo at left, draw a layout line and drill three clearance holes through the front leg. Then clamp the parts in position and drive the screws.

**4 Add the leg brace.** The leg brace secures the connection between the front leg and cross rail. It fits flush at the top, but it's inset by ½ inch at the bottom. This inset allows the seat of the bench to slope toward the back. Roll glue onto the edge of the brace that fits against the front leg, and also glue where it fits against the cross rail. Clamp the brace to the leg, drill clearance holes, and drive two of the 2½-inch screws into it through the front face of the leg. The



**Add the leg brace.** Glue and screw the leg brace to the back of the front leg, as well as to the cross rail. Note the  $\frac{1}{2}$ -inch offset at the bottom of the brace.

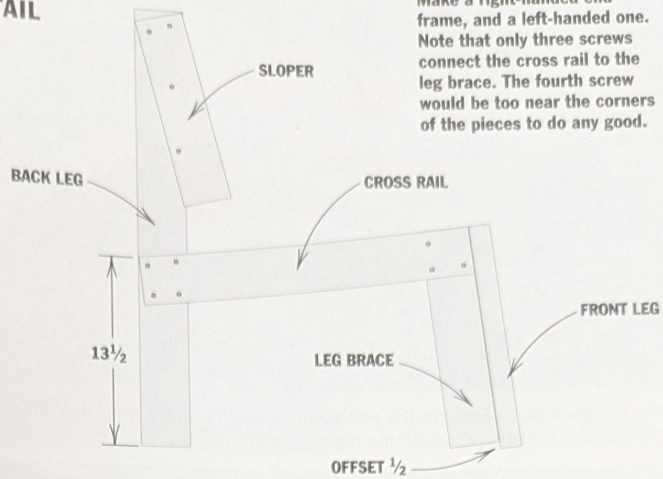


**Make the second front leg assembly.** The second leg assembly matches the first, except one is right-handed and the other is left-handed.

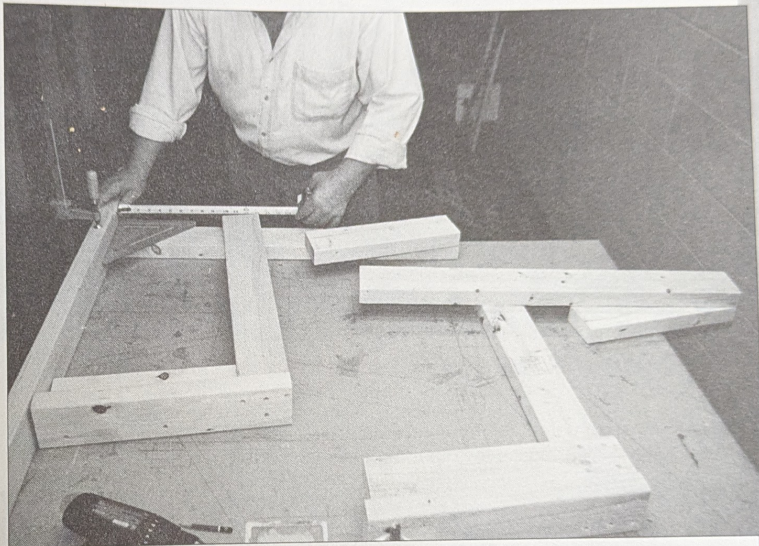
drill and drive three more screws through the cross rail into the brace. Position these screws as shown in the illustration at top right.

**5 Make the second front leg assembly.** To make the other leg assembly, follow the same sequence as in Steps 3 and 4. However, keep the completed leg assembly close by and make

## END FRAME DETAIL



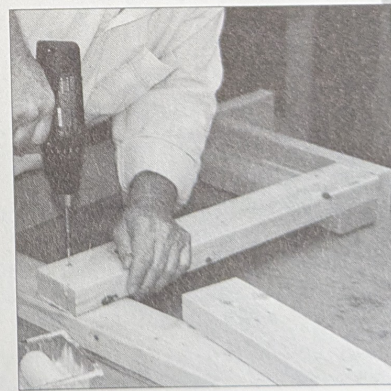
Make a right-handed end frame, and a left-handed one. Note that only three screws connect the cross rail to the leg brace. The fourth screw would be too near the corners of the pieces to do any good.

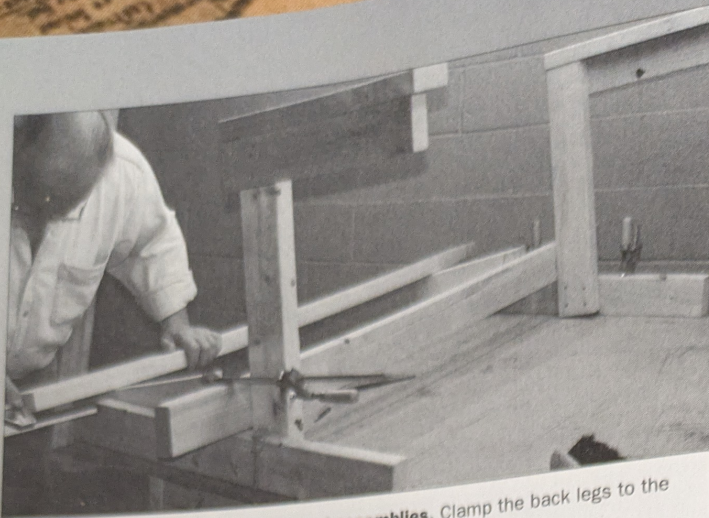


**Join the front and back legs.** With the back leg square to the 2x4 that represents the ground, the top of the cross rail is  $13\frac{1}{2}$  inches high (above). The cross rail and sloper are on the same side of the leg (right).

sure you end up with a right-handed assembly and a left-handed one, as shown above.

**6 Join the front and back legs.** The cross rail connects the front leg assembly to the back leg and



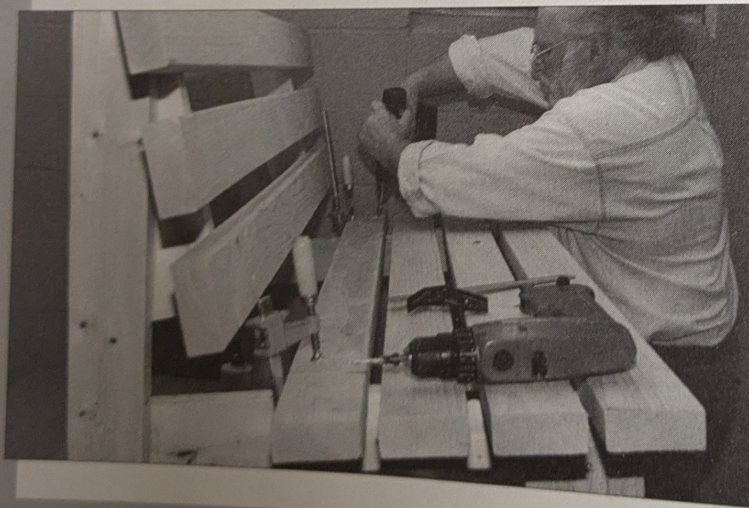


**The top back slat connects the end assemblies.** Clamp the back legs to the worktable to center and attach the top back slat.



**Complete the back.** Glue and screw the bottom back slat to the sloper.

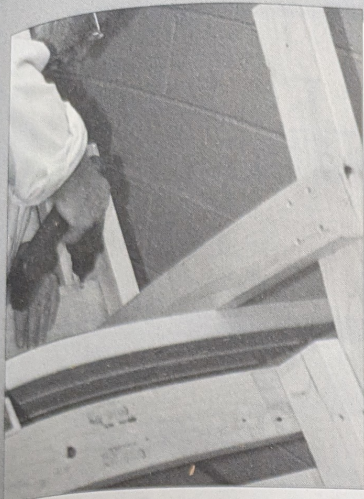
**Make the seat.** Center the front seat slat from side to side, overhanging the front leg by 1 inch. Space the other three slats about  $\frac{3}{4}$  inch apart.



sloper. Set the parts up on the worktable as shown in the center photo on the previous page. Clamp one of the seat slats to the edge of the table to represent the ground. Now if you make the back leg vertical, and allow the front leg and brace to both touch the "ground," you'll have created the backward slope of the bench seat. You can verify the slope by direct measurement: Verify that the top of the rail crosses the back leg  $13\frac{1}{2}$  inches up from the ground. Draw a layout line, spread glue, drill four clearance holes and drive the  $2\frac{1}{2}$ -inch screws. Join the other end of the bench in the same way, using the first one as a guide to make sure you end up with mirror-image assemblies.

**7 The top back slat connects the end assemblies.** Set the two end assemblies up on the worktable. Clamp the back legs to the table, 48 inches apart from outside to outside, as shown in the photo above left. If you don't have a big worktable (page 348), you'll have to set up on the floor or on the edge of your deck. Center the top back slat from side to side, and make it flush with the top of the sloper and back leg. Glue and screw the top back slat to the sloper with the  $2\frac{1}{2}$ -inch screws.

**8 Complete the back.** Center glue and screw the bottom back slat to the sloper, followed by the middle back slat. The bottom slat overlaps the end of the sloper by about  $\frac{1}{2}$  inch. Center the middle slat in the space between the top and bottom slats.



**Add the stretcher.** Fit the stretcher into the socket formed by the front leg, leg brace and cross rail. Screw it to the front leg (above). Screw into the stretcher through the leg brace (right).



**9 Make the seat.** To attach the seat slats, turn the bench upright. The front seat slat, which is centered from side to side, overhangs the front leg by 1 inch. Drill clearance holes and drive four of the 3-inch screws down through the front seat slat and into each front leg assembly. Space the remaining three seat slats  $\frac{3}{4}$  inch apart. Drill and drive two 3-inch screws through each end of each slat and into the cross rail below.



**Finish the bench.** Rout or rasp the corners off the bottom of the legs, for easy dragging. Also round the front edge of the seat, and the top edge of the back.

**10 Add the stretcher.** The stretcher is a cut-to-fit length of 2x4 that connects the front legs, underneath the seat and cross rail. If you turn the bench upside-down on the worktable, you'll see how it drops neatly into place. Mark and cut the stretcher to length, spread glue where it overlaps the front legs and cross rails, and drive two 2 $\frac{1}{2}$ -inch screws from each direction.

**11 Finish the bench.** Forest-green paint is the traditional park-bench finish. To prepare for finishing, fit a roundover cutter in the router and smooth off selected edges. Round the bottom of the legs, to prevent splintering during dragging across the patio. Round the front edge of the seat, and the

top of the back. Unless you want a mushy appearance, don't round the ends of the slats. Sand the sharpness off them with 100-grit paper, but leave them crisp. Fill the screw heads with two-part wood putty, and sand all the flat surfaces smooth, and you're ready to prime and paint.