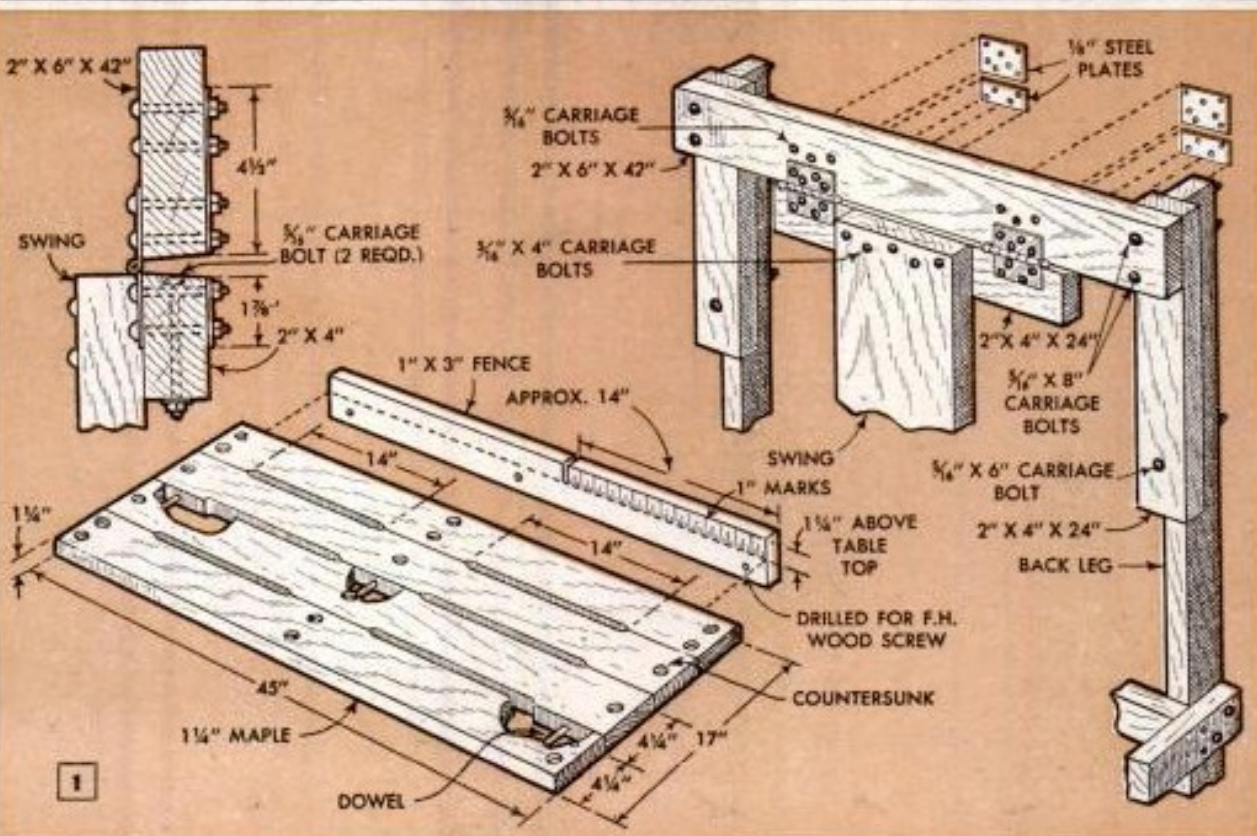


SWING SAW



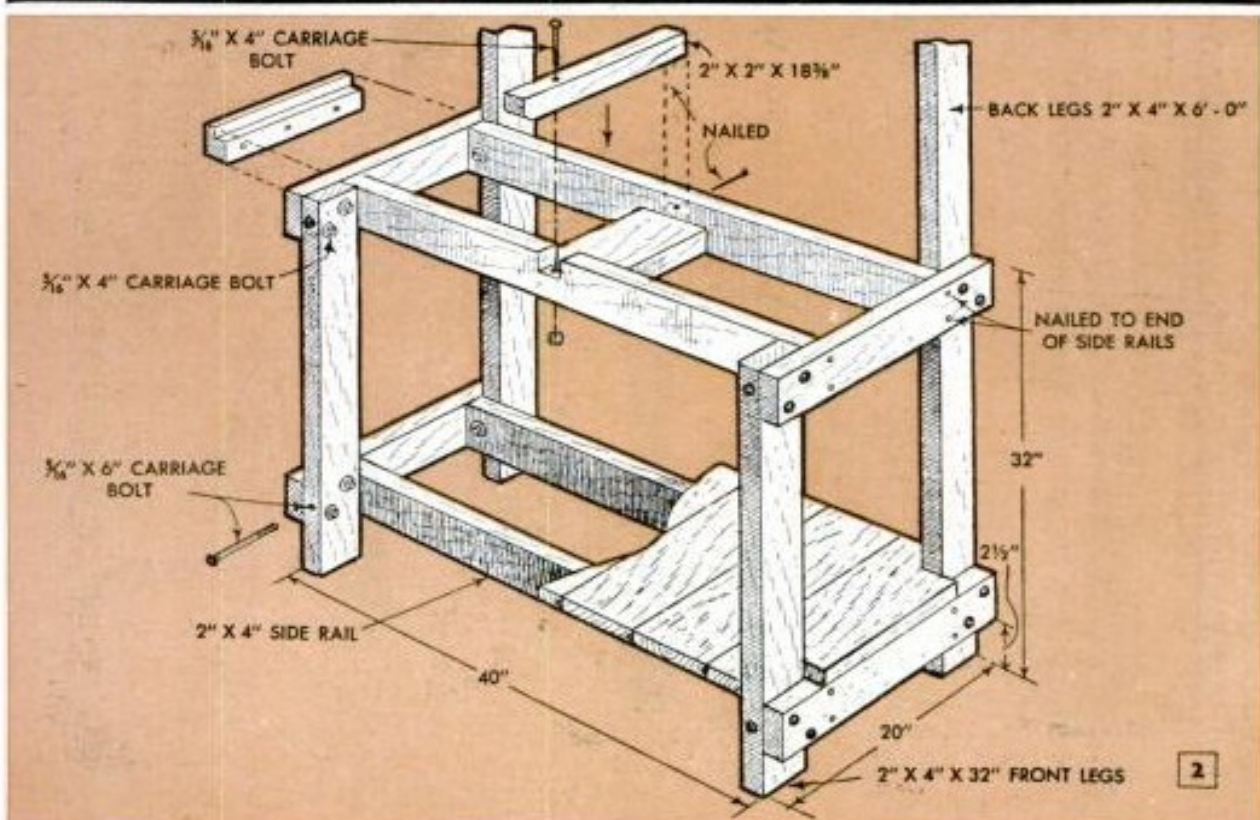
FOR CROSSCUTTING long boards and framing lumber to precise lengths, you can't beat a swing saw for speed and accuracy. That's why experienced home craftsmen, cabinetmakers and carpenters usually build one for use in the shop. The principal units and parts you'll need for the job are a ½-hp. motor, a ball-bearing saw arbor of the type having a housing cast with bolt lugs, suitable pulleys and belt, a pair of heavy butt hinges and a few straight 2 x 4s and 2 x 6s with which to build the table frame and the back support. Figs. 1 and 2 detail the saw table and frame. Before cutting the stock, note that the table height will be 32 in. plus 1¼ in., the thickness of the table top, or, a total height of 33¼ in. Some craftsmen prefer a table height of 36 in. on a swing saw. Check beforehand to make sure which table height you desire. Note also that the table-top length is 45 in. and that the saw blade is on the operator's right. Many craftsmen prefer the blade on the left, as it is somewhat easier to see the dimension marks when cutting to pencil lines rather than using the scale on the table fence. This will require a saw arbor with a left-hand thread.

The back legs of the table extend to 6 ft. in height as in Fig. 2. First, cut the legs and the end and side rails, or stretchers. Be sure that all parts are cut square at the ends and to the lengths specified. Assemble the end members with glue and bolts as in Fig. 2 and check both assemblies for squareness before the glue dries. Then set up the frame with the side rails in place and place bar clamps across the top and bottom end rails, using one clamp at each corner so that the frame can be drawn together tightly before drilling the holes for the 6-in. carriage bolts. Use waterproof glue in the joints and, when the frame has been glued, clamped and bolted, check for squareness.

The table top, Fig. 1, is a simple edge-gluing job with the joints doweled. To form the slots, bandsaw both edges of each of the inner pieces, and one edge of each of the outer pieces to a depth of ½ in., each cut being 14 in. long. Start the cuts in on a ½-in. radius, run straight for 13 in., then out to the edge on a ½-in. radius. When the table strips are assembled, the cuts will form 1-in.-wide slots with rounded ends, permitting sawdust and chips to fall through to the floor. Although the table length is given

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for Your Home Workshop

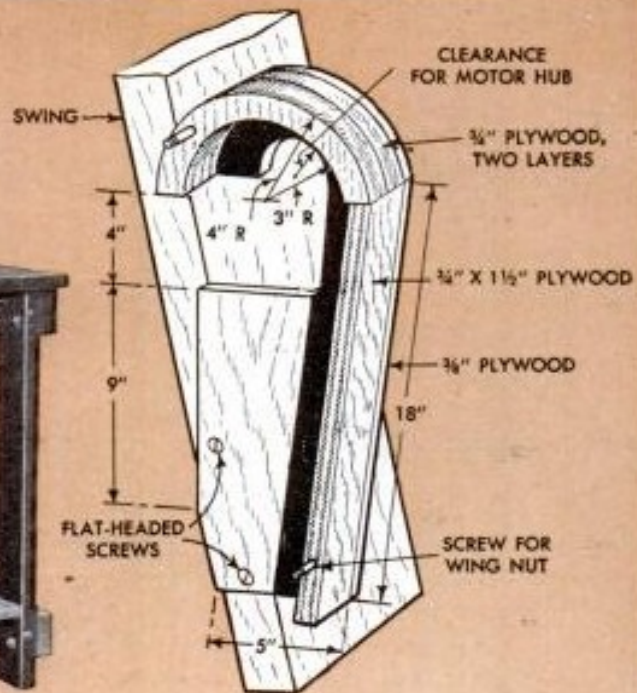




By using angle blocks clamped against the fence, you can make angle cuts up to 45 deg. on narrow stock

here as 45 in., it can be made any convenient length up to 6 ft. by using the same general construction and thickness of material. The table top is attached to the frame with spaced wood screws driven in countersunk holes. If desired, the holes can be filled with wooden plugs after driving the screws. Note in Fig. 2 that the table top is supported at the center by a 2 x 2-in. cross member bearing on a 2 x 6-in. spreader glued between the rails. The cross member is notched through the front rail as shown. Sand the table top smooth and apply a thin coat of orange shellac. Finish with wax. The lower shelf, Fig. 2, can be omitted if desired.

The swinging column, motor shelf, guard and arbor mounting are detailed and pictured in Figs. 3 and 4. The top of the swinging column is attached to a cross member, and this is hinged to the horizontal support which is bolted to the top ends of the back table legs as in Fig. 1. Before attaching the hinges, cut out and drill backing plates from $\frac{1}{8}$ -in. flat steel so that the hinges can be attached with bolts as in the sectional view, Fig. 1. Lay the hinges on an anvil and indent the hinge eyes with a prick punch so that the pins will be a tight press fit when the hinges are assembled with the parts in place. This will prevent any play in the swinging arm and also will prevent the pins from working out while the saw is in operation. Note in Fig. 4, right-hand detail, that the motor shelf rides on a key, or guide, fitting in a groove cut on the back face and that the bolt



holes are elongated so that the motor may be adjusted to give the correct belt tension. Two pieces of angle iron are bolted to opposite sides of the column at the lower end to form a mounting pad for the saw arbor. Because of slight irregularities of the cast arbor housing, it's a good idea to insert a piece of $\frac{1}{4}$ -in. plywood between the arbor and the angle-iron pad as in the right-hand detail, Fig. 4. It is essential that the saw arbor and motor shaft be as nearly parallel as it is possible to make them. As dimensioned, the parts accommodate an 8-in. blade. After mounting the motor and arbor, make the belt and blade guard, following the details in Figs. 3 and 4. Now, mount the swing unit in the frame and locate at the proper height in relation to the table top by adjusting the supporting cross member of the frame slightly up or down. When properly adjusted for height the blade will cut a groove in the table top about $\frac{1}{8}$ in. deep. Screw the fence in place and make this first cut through the fence and across the table top. Then remove the fence and mark it in $\frac{1}{8}$ or $\frac{1}{16}$ -in. graduations to the right of the saw cut. Note in the right-hand detail in Fig. 1 that the swing support is blocked out from the uprights. These blocks are not necessary for cutting stock up to 10 in. wide, but for full capacity of about 13 in. they will move the unit forward just the right distance. For correct blade speed with a 1725-r.p.m. motor, use a 5-in. pulley on the motor and a 2-in. pulley on the arbor.



Belt guard is built up as a unit before attaching to swinging column. Note relative size of pulleys

Details below show the construction of column and angle-iron pad on which the saw arbor is mounted

