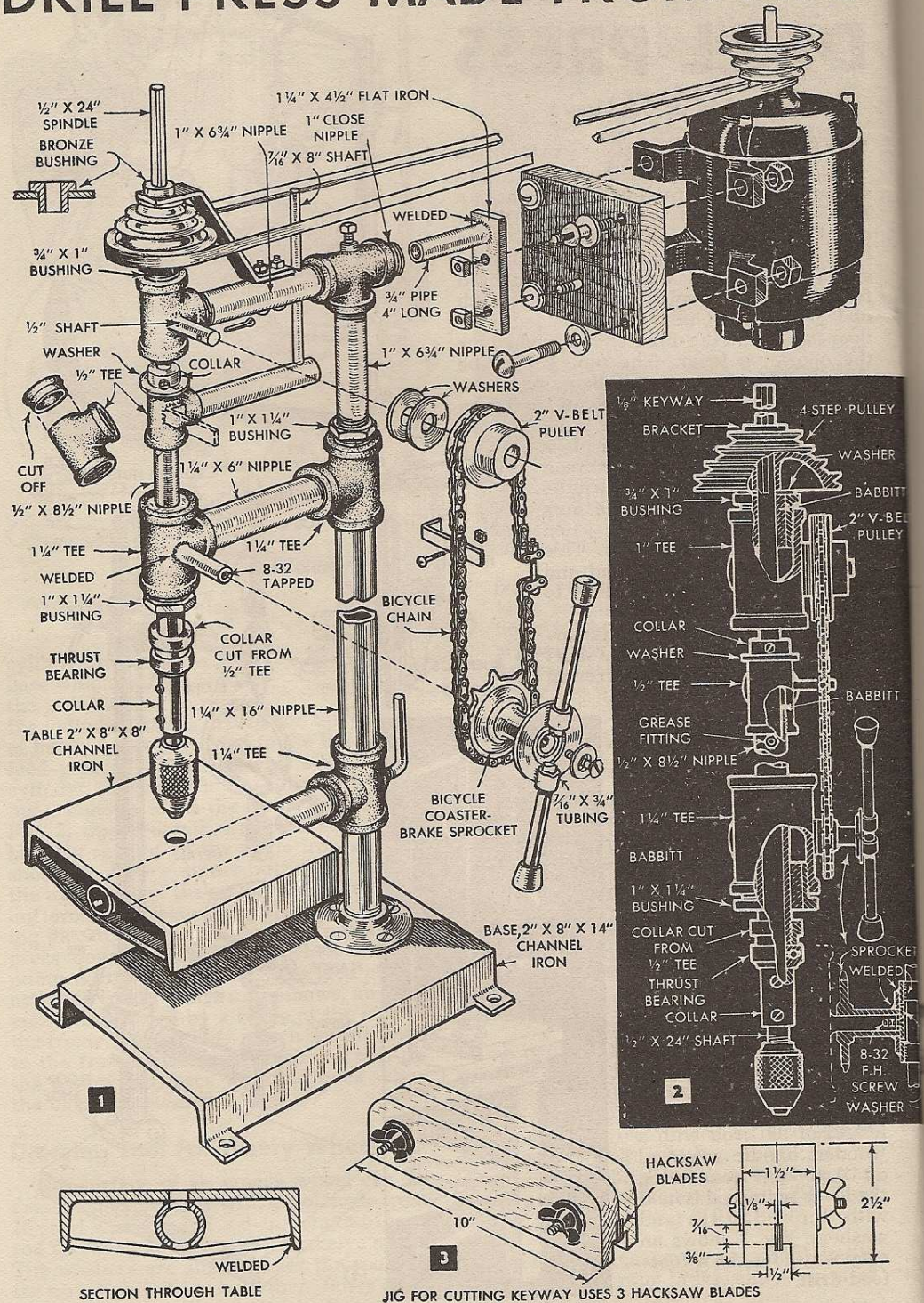


# DRILL PRESS MADE FROM PIPE





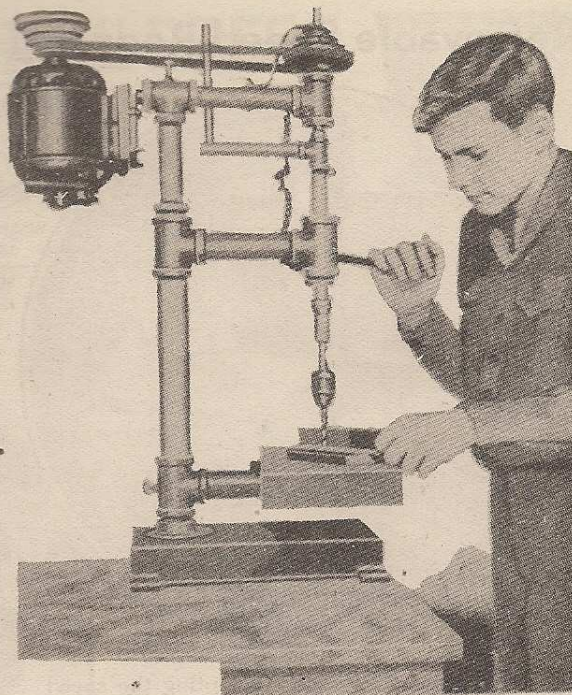
# FITTINGS

A practical tool for minimum outlay of time and money—that's the main feature of this 15-in. drill press made from pipe fittings

By James L. LeSuer

INEXPENSIVE and easy to assemble, this bench-type drill press is made mainly from pipe fittings. The hand-feed arrangement is simple and sensitive in action, giving a positive spindle feed which prevents breakage of small drills. Drill-press accessories driven by a  $\frac{1}{2}$ -in. chuck, such as router bits, plug cutters, planer heads and disk sanders, can be used.

Fig. 1 details the assembly of the column and head and names the fittings used. First make the base, which is simply a piece of 8-in. channel iron cut to the length given, with four bolt lugs welded to the legs of the channel. While you are at it, make up the drill table also. For the column, use a 16-in. black-pipe nipple. This is easier to polish than galvanized pipe. Place the nipple in a vise and polish smooth with a strip of abrasive cloth. Grasp the abrasive strip at each end and loop it once about the pipe. Then pull alternately on the ends of the strip. Ream the  $1\frac{1}{4}$ -in. pipe tee, on which the table swivels, to an easy fit over the column. Drill a  $\frac{5}{16}$ -in. hole through the top of the tee and weld on a  $\frac{5}{16}$ -in. nut. Thread one end of a short length of  $\frac{5}{16}$ -in. rod, bend at right angles just above the thread and you have the locking screw to hold the table



securely in any position on the column.

Build up the column and arms, beginning with a  $1\frac{1}{4}$ -in. floor flange attached to the base with four  $\frac{5}{16}$ -in. flatheaded cap screws, finishing this part of the assembly with all nipples, bushings, and all tees except those two which will form bearings for the spindle. Draw all joints tight. Weld  $\frac{1}{2}$ -in. shafts to the bearing tees for the sprocket and idler pulley of the raising-and-lowering mechanism, Fig. 1. Then screw the tees onto the nipples and line them up. Fig. 2 details the spindle assembly. As indicated in Fig. 1 the spindle is 24 in. long and the first operation on it is cutting a  $\frac{1}{8}$ -in. keyway extending from the top of the spindle to the bottom of the 4-step pulley, Fig. 2. Have this milled at the local machine shop or do it by hand with the improvised keyway cutter detailed in Fig. 3. Thread the lower end of the spindle to take the tapped mounting sleeve of a  $\frac{1}{2}$ -in. chuck. By checking the spindle assembly in Figs. 1 and 2 you can see the sequence of operations necessary to put the parts together correctly. Because the supporting parts are made from pipe fittings, it is impossible to give precise dimensions for the location of bearings, collars and guides. This must be worked out by trial assembly. Fig. 4 shows how the babbitt bearings are poured, using a counterbored wooden block as a retainer.

