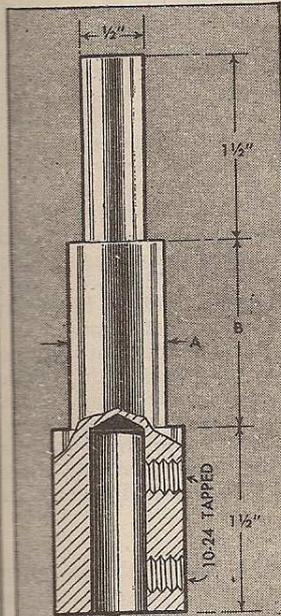
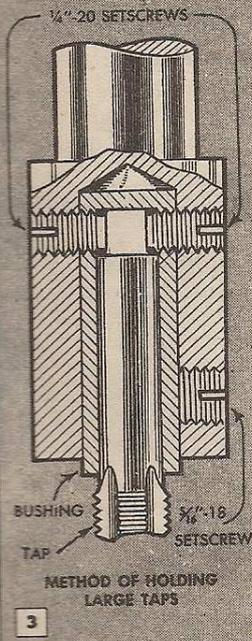


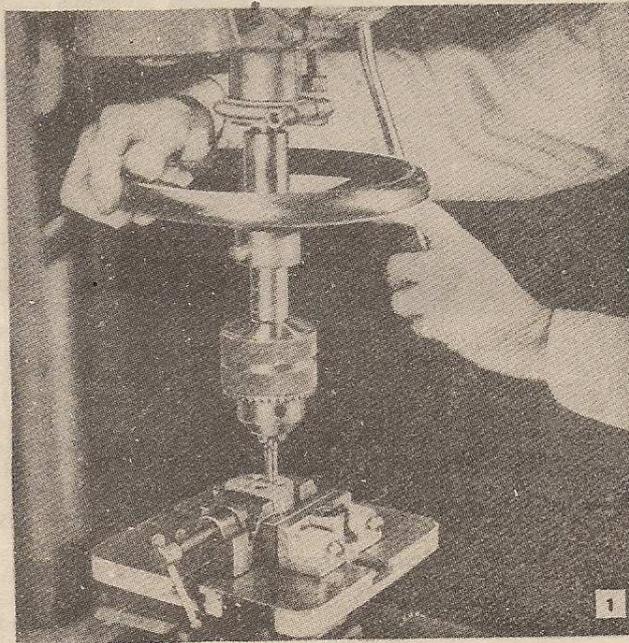
DRILL-PRESS TAPPING ATTACHMENT



2
 A=DIA. OF HANDWHEEL BORE
 B=LENGTH OF HANDWHEEL HUB



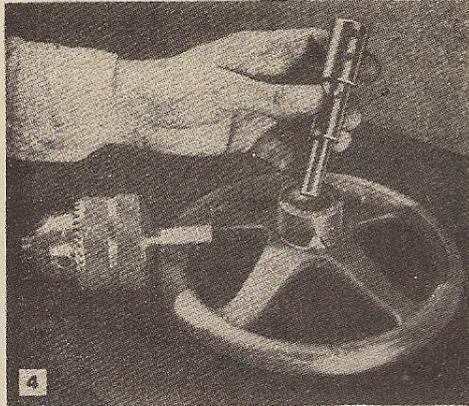
3
 METHOD OF HOLDING
 LARGE TAPS



By Walter E. Burton

THIS ATTACHMENT makes a hand tapping machine of any small drill press. The unit utilizes the accuracy of the machine to guide the tap squarely into the hole, a trick that is quite difficult to do by hand with an ordinary tap wrench. Fig. 1 shows the unit in operation. By using the hand feed of the drill press and turning the tap with the large handwheel, a delicate feed is obtained which avoids tap breakage. No power is used, the tapping being done by hand.

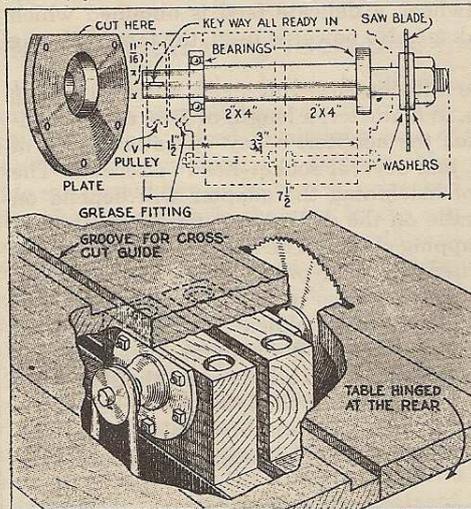
To make the attachment, you need a true-running handwheel 8 in. in diameter, a length of 1-in. cold-rolled-steel shafting for the adapter, a key-operated chuck of 1/2-in. capacity, and several socket-head setscrews. The exact method of machining the adapter will depend on the type of spindle on the drill press and the method of mounting the tapping chuck. The adapter shown in Figs. 1 and 2 is attached to a drill-press spindle having a collar with a 1/2-in. hole and two setscrews for holding router bits, etc. It takes a drill chuck fitted with a 1/2-in. straight shank. Fig. 2 details the adapter for a straight-shanked chuck. It is machined all over and shouldered to three diameters. The hole drilled in the large end is reamed to finish diameter. Transverse holes are drilled and tapped for 10-24 socket-head setscrews. Machine the



other end of the adapter, Fig. 2, to a diameter of $\frac{1}{2}$ in. for a distance of about $1\frac{1}{2}$ in. This diameter will fit most drill-press spindles of the type shown. Drill and tap the handwheel hub for a $\frac{5}{16}$ -in. No. 18 socket-head setscrew. File a flat on the middle section of the adapter to provide a seat for the handwheel setscrew, and then bore and

Saw Mandrel Made Inexpensively From Generator Parts

A ball-bearing mandrel for a homemade circular saw can be assembled at little cost by using the armature shaft from an old car generator. The pulley end of the shaft and end plate of the generator housing can be used without alteration. The other end of the shaft will have to be turned down to take the saw blade and to fit the bearing in the end plate of another generator. If both ends of the shaft extend through the plates, you can use them by simply turn-



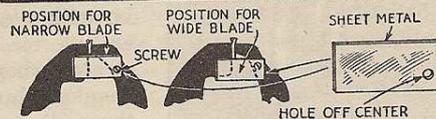
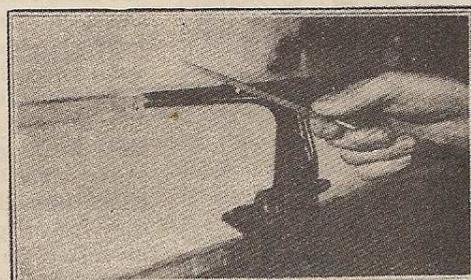
ream the handwheel hub to a tight slip fit.

A key-type chuck like that shown is satisfactory for taps up to $\frac{3}{8}$ in., but for larger taps a special chuck, Fig. 3, is needed. In construction, this is similar to the adapter shown in Fig. 2, except that it holds the tap by means of setscrews and bushings, several of which are made to fit varying sizes of taps. Notice that $\frac{1}{4}$ -in. No. 20 setscrews turn into holes drilled and tapped through both the adapter sleeve and the bushing, Fig. 3. The setscrews seat on the squared end of the tap, making a positive nonslip drive. The detail shows a closed-end bushing, the closed end acting as a stop when the tap is inserted. This provision is handy on short-run production, but open-end bushings can be used, of course. Fig. 4 shows the three parts of the unit required for installation on the average drill press. Careful machine work is necessary as any misalignment will cause repeated tap breakage. Work must be mounted securely on the drill-press table and tap holes should be drilled with the drill press to assure accuracy.

ing down the shaft so that the bearing can be moved in to allow for the saw. In assembling the mandrel, the plates are bolted to blocks on the underside of the saw table as indicated, being sure that the plates are in perfect alignment to avoid binding.

Guides Permit Filing Bandsaw In Ordinary Saw Vise

The addition of these guides to the ends of the stationary jaw of your saw vise converts it to hold a bandsaw blade. Drill



and tap both ends of the jaw so that rectangular pieces of sheet metal can be pivoted to them to support the blade at the correct height above the jaws.