

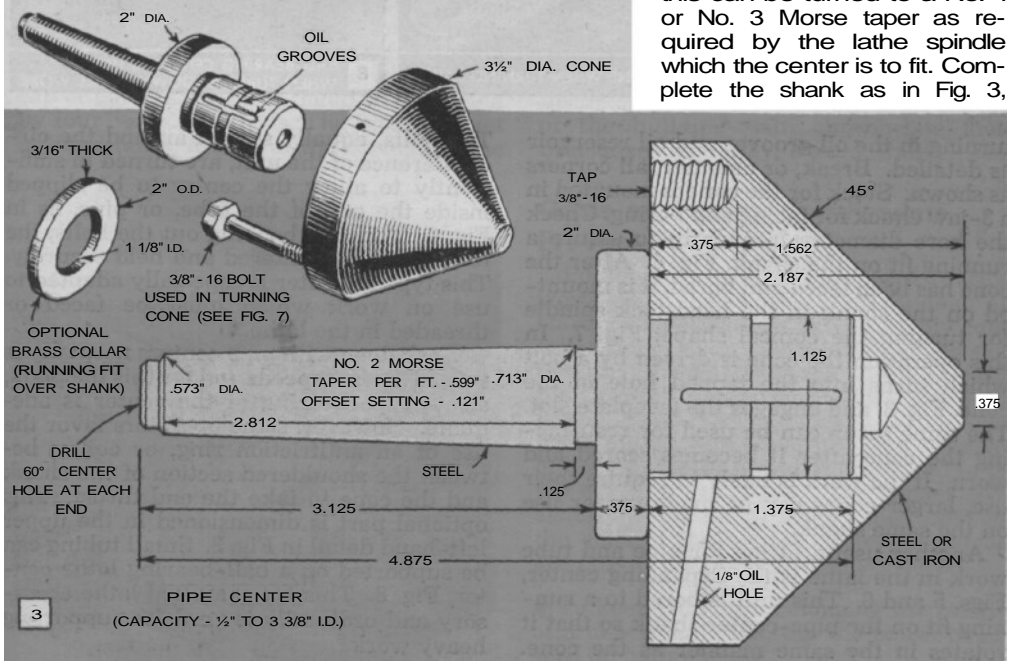


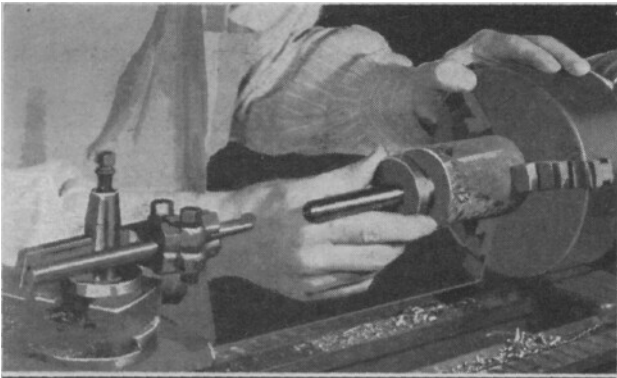
## LATHE PIPE CENTERS

By Sam Brown

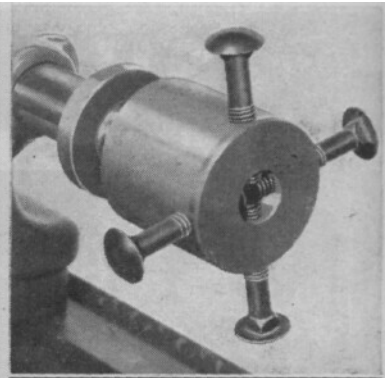


**S**mall job shops and individual craftsmen having only infrequent use for pipe centers can save both money and setup time by making one or a pair to handle those occasional jobs requiring the turning and threading of tubing or pipe in the lathe. The individual center consists of two parts. Fig. 3, a shank and a cone. Stock for the shank is faced to the net length and center-drilled. Then the shank is mounted between centers and the taper turned as in Fig. 1. Fig. 3 gives the specifications for a No. 2 Morse taper but this can be turned to a No. 1 or No. 3 Morse taper as required by the lathe spindle which the center is to fit. Complete the shank as in Fig. 3,

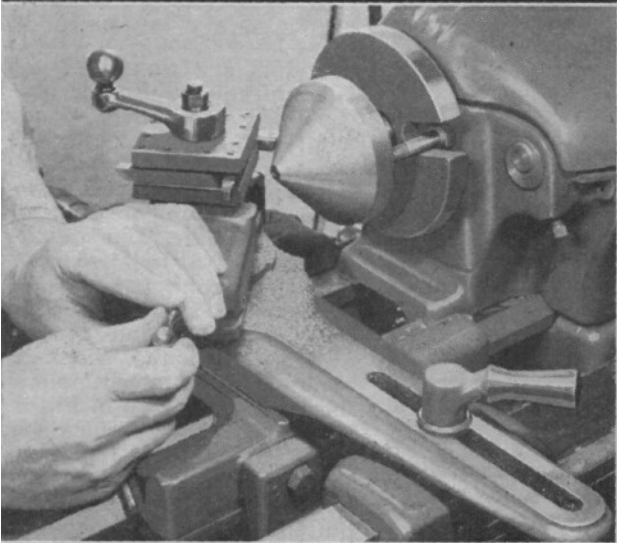




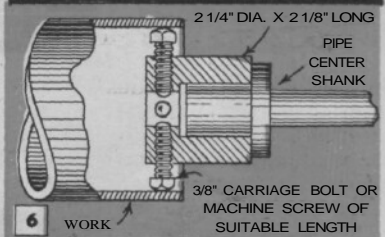
**4** CONES AND OTHER FITTINGS ARE BORED TO TAKE SHANK



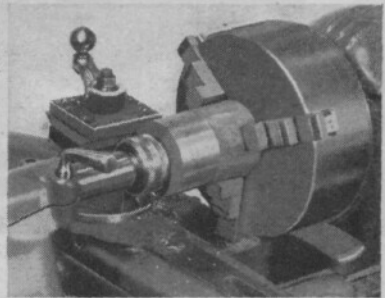
**5** EXPANDING PIPE CENTER



**7** BOLT IN SLOT OF FACEPLATE ROTATES CONE WHEN TURNING TAPER



**6** WORK



**8** BALL-BEARING CENTER IS USED WHEN TURNING DOWN SMALL WORK

turning in the oil grooves and oil reservoir as detailed. Break, or chamfer, all corners as shown. Stock for the cone is mounted in a 3-jaw chuck for facing and boring. Check the bore diameter frequently to assure a running fit on the shank, Fig. 4. After the cone has been faced and bored, it is mounted on the shank in the headstock spindle for turning the conical shape, Fig. 7. In this operation the cone is driven by a bolt which turns into the tapped hole in the cone, Fig. 3, and engages the faceplate slot. The same setup can be used for resurfacing the cone after it becomes scored and worn. If the work is likely to require their use, larger cones can be made up for use on the same shank.

Another useful fitting for pipe and tube work in the lathe is the expanding center, Figs. 5 and 6. This unit is bored to a running fit on the pipe-center shank so that it rotates in the same manner as the cone.

The bolts, equally spaced around the circumference of the unit, are turned in sufficiently to allow the center to be slipped inside the end of the tube, or pipe, as in Fig. 6. Then, by backing out the bolts, the tubing can be centered and held securely. This type of center is especially adapted to use on work which must be faced or threaded in the lathe.

Work done with pipe centers normally is turned at slow speeds and for this the plain, sleeve-type bearing of the center is adequate. However, some operators favor the use of an antifriction ring, or collar, between the shouldered section of the shank and the cone to take the end thrust. This optional part is dimensioned in the upper left-hand detail in Fig. 3. Small tubing can be supported on a ball-bearing lathe center, Fig. 8. This is a standard lathe accessory and ordinarily is used for supporting heavy work.