

Fig. 1-16. Shopcraft wood lathe, 7" swing, 24" between centers, with direct drive $\frac{1}{3}$ hp, 3.0 amps, 120-volt motor.

a slightly larger faceplate disc on it is mounted on the motor shaft as described for the bicycle hub lathe. Cut two 1" square pieces of wood just long enough to reach from the right end of the board to the front end of the wooden disc plate. Screw and glue them down 2" from the front and back of the board. This should leave 6" between them for a sliding tool rest board. Drill a $\frac{3}{8}$ " hole through each of these boards about 2" from the right end. The holes should pierce the mounting board completely so that a $\frac{3}{8}$ " bolt can be fed up from beneath. Cut two more lengths of wood 1" square by 12" long. These are glued beneath the right and left ends of the mounting board to raise it off the work table.

Make the tool rest from a board 6" wide by 12" long. On the end closest to the headstock, mount an upright piece of wood 6" wide. Its height should make it about an $\frac{1}{8}$ " lower than the centerline of the motor shaft. Put a bevel on the top edge of it so that the cutting tools can be raised or lowered easily. Now it can be seen that if large washers and wing

nuts are put on the ends of the bolts feeding up through the mounting board on the right, they will lock the sliding tool rest board down. Mount a little knob about 1" high in the center of the slide about 1" from the end. This slide is for working the face of a piece. An L-shaped piece of wood about 3" wide can be clamped to the mounting board for working the edge of a piece. The whole device is simplicity itself—a motor on the left of a board and a tool rest that slides up to it between tracks. All manner of bowls, eggs, salt and pepper shakers, knobs, finials, and terminals can be turned on it.

SHOPCRAFT WOOD LATHE

This is a relatively new lathe (Fig. 1-16) manufactured by the BenchMark Tool Company of Jefferson City, Missouri, (a subsidiary of Shopsmith, Inc.). It is a direct drive, powered by a Universal 3.0 amps, 120-volt, $\frac{1}{3}$ hp motor. It has a 7" swing and is 24" between centers. It is fitted with a reinforced aluminum bed and an easily adjusted tool rest. Both

headstock and tailstock are moveable, which increases its versatility. The tailstock adjusts for drilling and boring. The motor is full enclosed with no belts or pulleys. It features a removable safety key to prevent accidental starting, plus a linear speed control to allow work to be started slowly and offers fast, one motion shut-off. It has a very real potential for more than just ordinary turning. The net weight is only 20 pounds, which means that it can be set up and used in a limited working space.

TURRET LATHES

Turret lathes, used basically for metal turning, are manufactured in a variety of types and sizes. They differ from the other lathes described above in that a hexagonal turret is substituted for the tailstock and a square turret replaces the usual tool-post holder

for many operations. The two shown here (Figs. 1-17 and 1-18) are considered small as turret lathes go—some are manufactured so large that they can be used to turn the huge rolling machinery in steel plants. Turret lathes are considered excellent for exactly duplicating items in quantities exceeding 100 or more. There are two basic types, the *ram-type* and the *saddle-type*. The ram-type are easy to handle, fast, and suited to small workpieces. The headstock will accept lengths of round stock through its hollow center and extending out the left end. Parts can be turned and then cut off when finished. Some of these lathes will accept such rods or "bar" stock up to 3" in diameter. Items up to 20" in diameter can be chucked in some turret lathes. The full story on the two appearing here is included in Chapter 15.

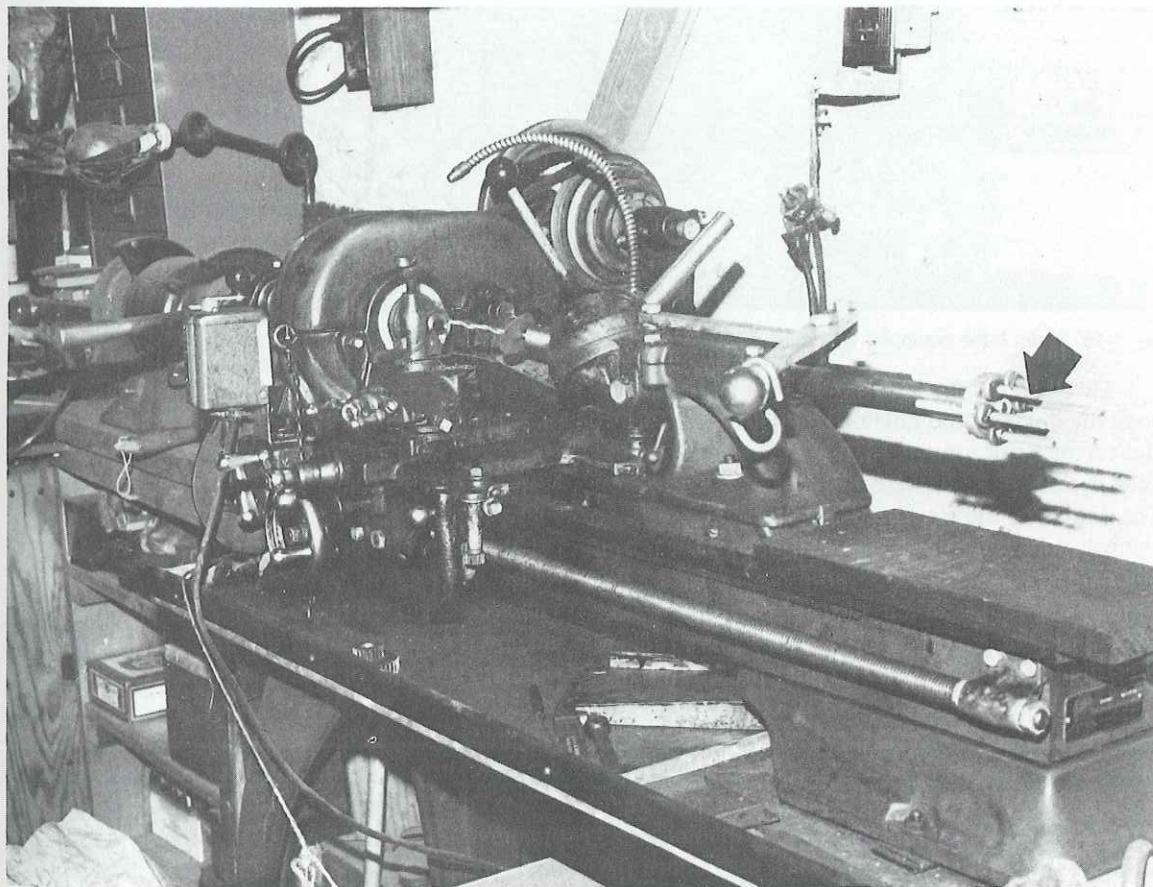


Fig. 1-17. Small turret lathe. Rods on end of ram (arrow) are stops to control feed.