

Cutting a 3 in. Keyway in a 16½ ft. Propeller

The Modern Keyseater Has Many Refinements—Quick Holding Fixtures are Big Asset—Rotary Tables Help to Speed up Work—Various Examples of Parts Completed on Keyseater

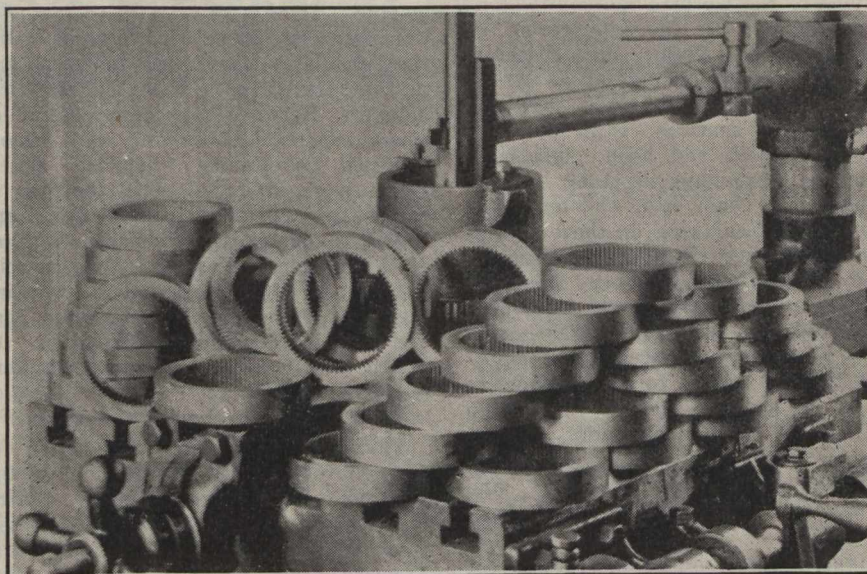
By J. H. MOORE

PERHAPS one of the most misunderstood machines existent at the present time is the keyseater. Like the hack saw, the keyseating machine has shown wonderful development within the past twenty years. Who would think of comparing an up-to-date rapid cutting metal saw, with the old fashioned frame that slowly and methodically almost rubbed its way through a steel bar?

Of course such a comparison would be ridiculous, and to speak of the modern keyseater as a tool to be used on rare occasions only, is likewise out of all reason. From a small, light constructed, and sometimes inaccurate machine, the keyseater has now reached the point where it can be classed as a production tool. In many plants, batteries of such machines are busy all day long on various work that twenty years ago would have been considered too good to trust to a mere keyseating machine. In other words they have proved their usefulness and adaptability to modern production methods. Through the courtesy of certain manufacturers of such tools we are able to reproduce several jobs which have been successfully completed in manufacturing plants on keyseating machines.

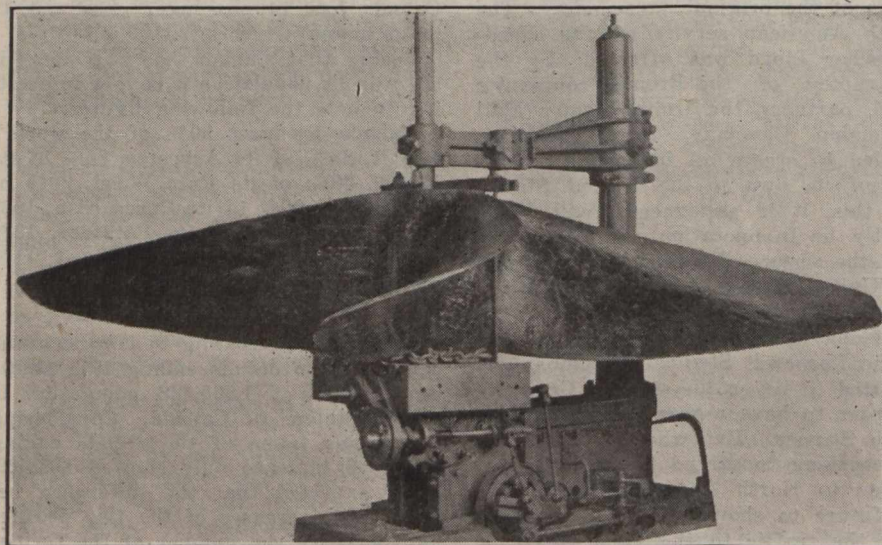
To enumerate all the various types existent would serve no special purpose, and to go into the question of design would be likewise futile. Various makers claim certain features for their particular product, but in all cases the principle is the same, (i.e.) to pass a cutter through the piece, thus cutting a keyway, or special shaped slot. When

*Photographs through courtesy of Baker Bros., Toledo, Ohio, and Morton Mfg. Co., Muskegon Heights, Mich.



special shaped slots are to be cut, it merely means the making of duplicate shaped cutters, which are placed in the standard bar, or if the work is of very intricate shape, a special bar may be used. In any case it does not interfere with the production of the machine itself.

As a general rule, the modern keyseater is equipped with some type of feed which relieves the cutter on the backward stroke, and which may be set to cut the keyway to any desired depth. Once having been set, the machine is started and will cut any number of keyways alike without further adjustment. Where the keyway is very small, or where there are only one or two pieces completed at a time, the hand method of feeding is usually found to be quite sufficient.



STEAM PRESSURE BOILER FEED PUMPS

By R. McLAREN

"In boiler-feed pumps the steam pressure available and the pressure pumped against are practically equal, so that it might be expected that the area of the steam piston would be made about 40 per cent. larger than the area of the water piston. In actual practice it is found, however, that pump manufacturers prefer to make the steam piston about three times the area of the water piston in very small pumps and about twice the area of the water piston in large pumps. The steam piston of boiler-feed pumps is made so largely in excess of what it really needs to be merely as a matter of safety; its large size simply tends to insure a prompt starting of the pump under almost all con-

Boiler Pressure 90 lbs
Scale 50 lbs.

key cycle cycle cycle

atmospheric line

Indicator diagram from pump steam chest. conditions likely to arise in practice."

With the above in mind I was curious to know what pressure there would be in the steam chest and therefore throughout the entire stroke of a duplex, direct acting, outside packed plunger pump whose steam piston is 7½ inch in diameter, water plunger 4½ inch in diameter and stroke 10 inch.