Modern Style of Miller

The following description of the Milwaukee Milling Machine gives an idea of up-to-date milling machine practice. There are three styles of these millers, the universal, the plain and the manufacturers' miller. The general features of these machines are the same, the difference being in the details.

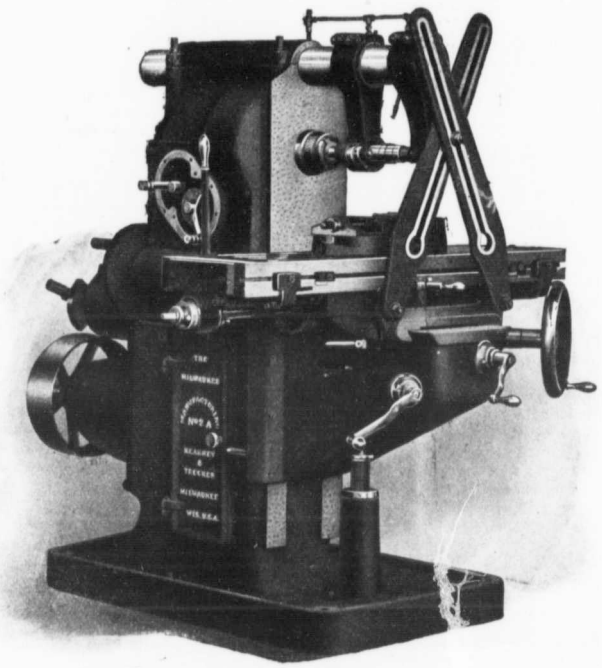

FIG. 1.—The Milwaukee Manufacturing Miller.

The first thing to consider in the design of a miller is the frame. The frame on these machines is cast in one piece and is entirely closed, providing great stiffness to withstand the strain of the cut. The knee is a box section, closed on both the top and bottom. The fact that the knee is cast without hole through the top is an important fact as this prevents all distortion due to clamping the saddle or from strains set up by a heavy cut. Large bearing surfaces are provided for the saddle and swivel carriage and the table.

The drive is through a single pulley which is belted direct to line shaft or the electric motor. The chief advantage of constant speed drive is that greater power can be delivered to the machine.

Maximum output demands that the cutters be given the correct surface speed, and in order that the operator will always use the correct speed it must be easily obtainable and the plate showing these speeds must be simple enough to be read at a glance. Eighteen spindle speeds are provided in geometrical progression. This all geared speed change makes the application of constant speed motor drive a simple matter.

Comparatively slow speed and coarse feed will, in most cases, give better results both in the life of the cutters and the amount of material removed. Coarse feeds are best obtainable when the feed is driven from a constant speed shaft, rather than from the spindle. In these machines the feed is driven from a constant feed shaft running about 100 R.P.M., the shaft lying midway between the highest and lowest spindle speeds.

Feed changes are obtained through the gear box bolted to the back of the machine. The power is transmitted to the knee through a universal joint shaft. Feed levers are conveniently located and arranged so that no mistakes can be made.

Automatic flooded lubrication is arranged for all gears and bearings in the main frame of the machine including the pulley bracket and feed box. The oil pump is simple spur gear construction. This is an exclusive feature of these machines.

These machines are provided with cutter lubrication system. Fifty per cent. greater output can be obtained by flooding the cutters with oil, and also the amount of sharpening necessary is very much reduced, and the life of the cutter increased.

The universal machines are provided with universal spiral dividing centre. A feature of these centres is the largeness of the worm-wheel, being twice as large as in ordinary practice, thus tending to reduce the error by one half, other things being equal. The index plunger is directly connected with the worm shaft.

The horizontal machines are provided with vertical spindle attachments.

Other attachments for the different machines are the rack cutter spindle and vice for cross cutting on long work; the rotary table, for the universal or plain machine; plain centres for rapid manufacturing work on the plain or universal machines; universal centres for use on the plain and manufacturing millers; the universal chuck and the vice.

These machines are made by Kearney & Treckner Co., Milwaukee, and sold in Canada by the A. R. Williams Machinery Co., Toronto.

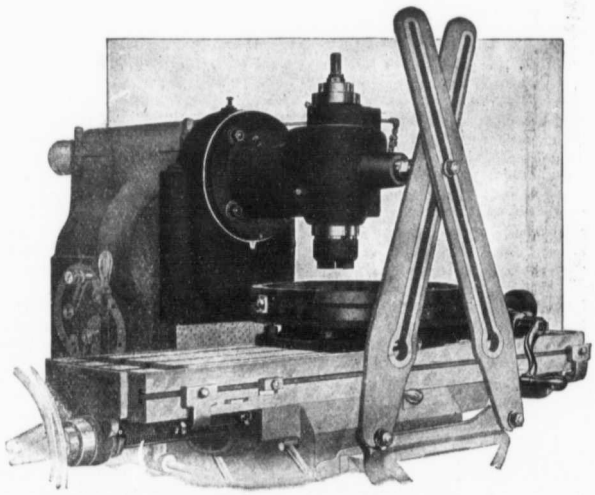

FIG. 2.—Vertical Spindle Attachment.

TRADE NOTES.

Fetherstonhaugh & Co., patent solicitors, have changed their Toronto offices from the Bank of Commerce Building to the new Royal Bank Building, 10 King St. East.

The Canada Furniture Manufacturers, Limited, are considering moving their head offices from Toronto to Woodstock.