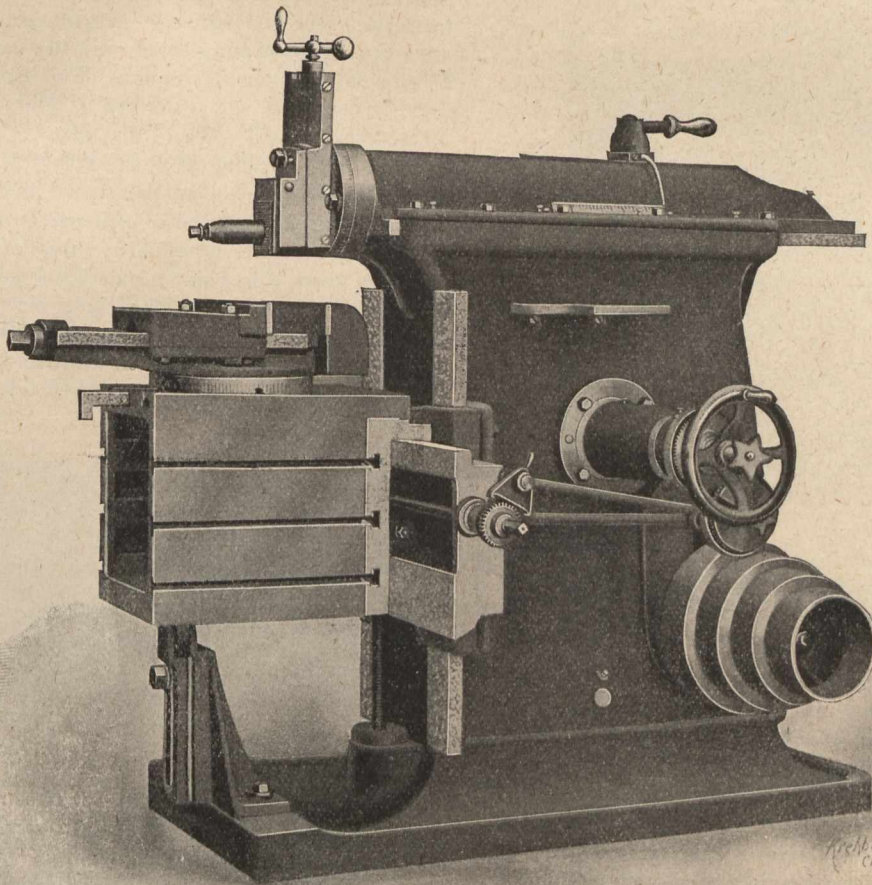


irrigation is necessary on most of the land in the valley. Electrically driven centrifugal pumps are employed to raise the water to the irrigating ditches. This cheap method of placing in the hands of the farmer the ability to obtain water away from streams and creeks has made him independent of the great water companies, and has rendered it possible to develop large areas of land which would otherwise be practically desert wastes. Many thousands of motors are already in operation in California driving pumps for irrigation work, and immense developments are yet to ensue from this application of electric power. The same thing can be done in many districts of Western Canada, where ordinary canal irrigation cannot be carried out.

BACK GEARED CRANK SHAPER.

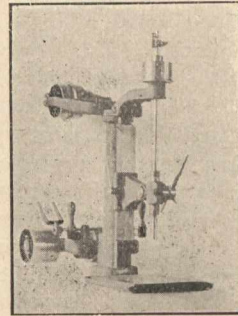
The accompanying cut is an illustration of a 16-inch back geared crank shaper now placed on the Canadian market by the Fairbanks Co., of Montreal, who have gone more largely than heretofore into machine tools. This tool is of new design, and has a number of valuable features. The column is of unusual depth, and is strongly braced internally. The ram is very long and wide, its position can be changed while in motion, through the hand wheel shown near the head of the ram. Various lengths of stroke are indicated by a pointer.



The tool head is graduated, the down feed screw is also marked with graduations. It has a single gear crank, and can be instantly changed to a back geared machine by means of a lever located at the rear of the column. The table has T slots on the top and either side, giving ample opportunity for securing the work. The vise has tool steel faced jaws and centre points, the base of the vise being graduated. Key-seating of the shaft and similar work is provided for by an opening through the column, all the gears are cut from the solids, and accuracy of alignment is a special feature, it is also fitted with self adjustable feeding machine.

MANUFACTURERS' BENCH DRILL.

This drill is designed to meet the requirements of manufacturers who want a thoroughly well made tool at a moderate price. They are carefully made in large lots, with special tools and fixtures for their manufacture, and each machine is thoroughly inspected before leaving the works. The spindle is a special forging, made from high-grade spindle steel, as hard as can be worked and is carefully ground on dead centres. It is driven by a 1½ inch flat belt,



has three speeds, cut steel rack and pinion feed, and an adjustable stop to gauge depth of holes. It is entirely relieved of belt strain and is counter balanced by a weight inside the column, which makes it extremely sensitive and uniform to the touch. It is also provided with means for taking up wear or lost motion, and is fitted to No. 1 Morse taper. The spindle head is adjustable on slide. The table has an oil

groove entirely around it. A thoroughly well-made reliable counter-shaft is securely bolted to the machine. The shifter is very conveniently arranged, having two handles, whereby it can be manipulated from either side of the machine. Drill chucks and drill shanks can be supplied if required. This drill is made by the Hamilton Tool and Optical Co., Hamilton, Ont.

A 100-h.p. Wheelock tandem engine has been installed by the Brussels Electric Light Co.