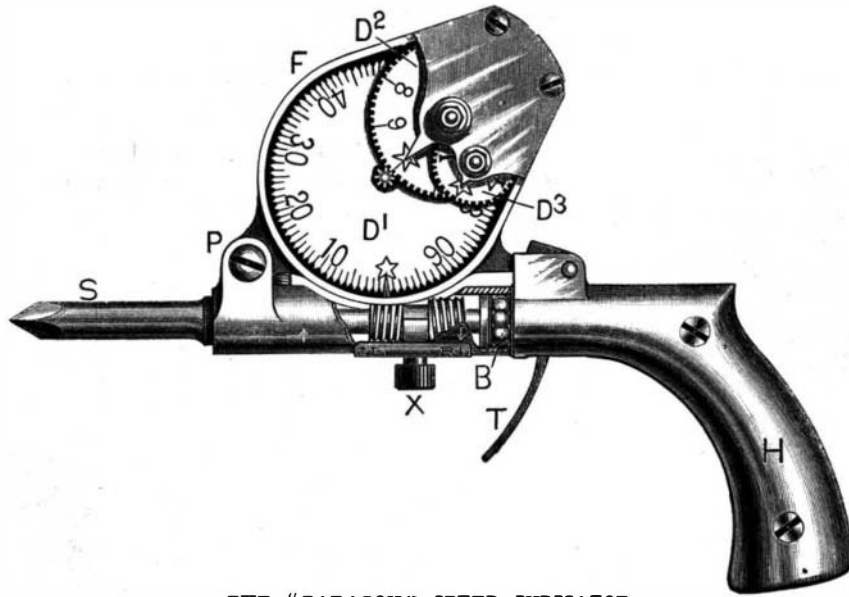


THE "PARAGON" SPEED INDICATOR.

A very convenient and handy speed indicator is shown in the accompanying illustration. The device is made in the form of a pistol, which it closely resembles in appearance. The handle is grasped firmly in the hand of the operator, the point being pressed against the end of the shaft and the indicating mechanism is set in operation by simply pulling the trigger. This simple contrivance enables the operator to time the indicator with the hands of a watch with considerable nicety, while the form in which it is manufactured is convenient and the parts are simple in construction.

In the illustration, a portion of the tubular bearing in which the spindle revolves is cut away, to show the worm gear connections and the ball bearing at the inner end of the spindle which sustains the end thrust when the device is in use. The handle, H, is of pistol grip form, the spindle, S, being angularly pointed, with the inner ball bearing, B. The frame, F, in which the dial wheels, D¹, D², D³, are mounted, is pivoted at P, so that it can be moved downward against the force of a spring to cause the teeth of the dial wheel, D¹, to engage with one of the worm gears on the spindle, S, the first wheel indicating units and tens, the second hundreds, and the third thousands of revolutions. By means of a thumb nut at the back of the dial frame, the dials are quickly and easily reset to zero, the star on each wheel being then opposite its pointer. A shifter slide, X, has two worms, one right hand and the other left hand, and this shifter may be moved to the right or left, as indicated by the letters R, L, according to the direction in which the shaft is running, whereby the revolutions may be counted by one set of figures, no matter in what direction the shaft may be running. The dial wheels are instantly brought

into operation by pulling the trigger-formed lever, T, the releasing of the trigger instantaneously disengaging the registering mechanism, even though the spindle continues to revolve. An accurate registration may thus be obtained without even looking at the instrument from the time it is applied until after its removal. The device is strong and well made throughout.



THE "PARAGON" SPEED INDICATOR.

Further information in regard to it may be obtained of Messrs. Lintner & Sporborg, Gloversville, N. Y.

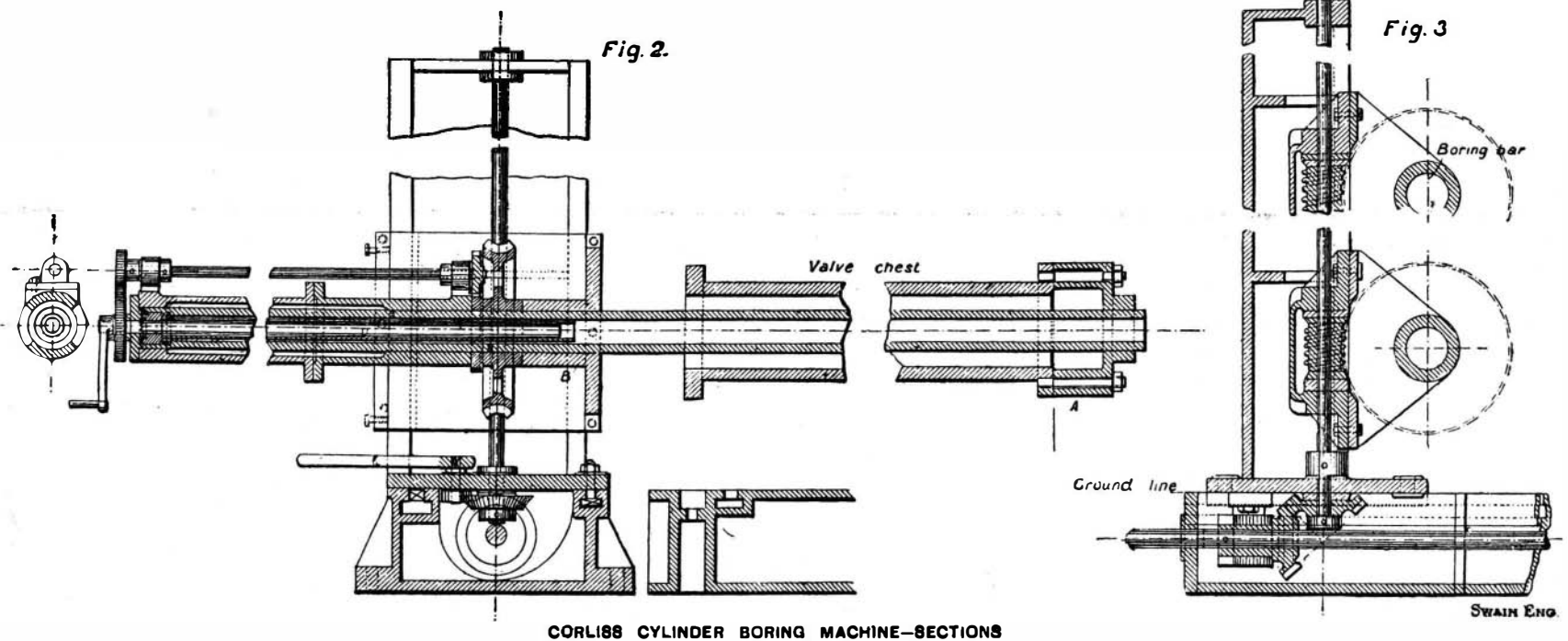
BORING MACHINE FOR CORLISS ENGINE CYLINDERS.

Herewith are illustrations, Figs. 1, 2, and 3, of a machine designed and constructed by M. H. Bollinecx, of Brussels, for boring the valve chests and cylinders of Corliss type engines at one operation.

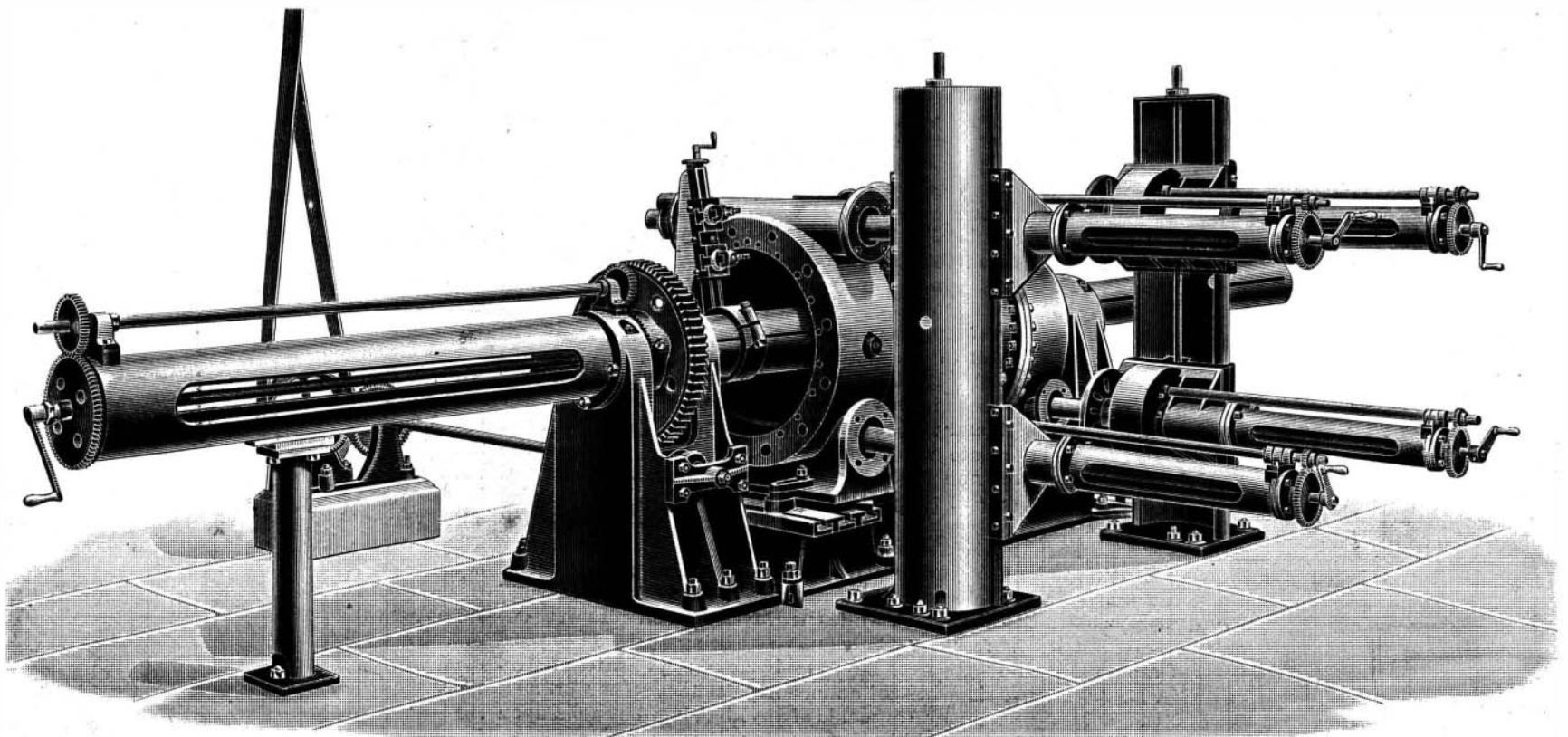
The *Engineer*, London, to which we are indebted for our illustrations and particulars, says: "From the

general view, Fig. 1, it will be seen that the machine consists of a horizontal bed plate, at each end of which stands a head supporting the boring bar and the driving gear. In front of the machine are two upright columns, on whose faces move four carriages, two on each, containing the driving and feeding gear for the four horizontal bars employed for boring the valve chests. We give sectional views, Figs. 2 and 3, of the gearing used in these carriages.

"In the boring operation the entire bar moves, being supported at its further or back end by the guide piece marked A in Fig. 2, a piece bolted to the valve chest face, and at the driving end by the long bearing constituting part of the actual carriage; the projected end of it enters the long sleeve extending backward from the carriage. This boring bar, it will be observed, is a tube—inside of which passes the feeding screw—passing through a plate at the end of the long sleeve, and having on its end the gear wheels necessary for automatic action, and the handle for manual use. The screw passes through a nut at the end of the bar, and is covered by an interior sleeve to prevent the entrance of grit. The bar is caused to rotate by means of worm gearing through the vertical shaft driven by the bevel wheels beneath the bed of the machine. The bar has a long key way cut in it, in which slides a feather attached to the worm wheel, and similarly for the worms themselves. There are two identical devices on each column, but they are independent, and can be placed in any relative position to each other, so as to accommodate many different sizes of cylinders. The columns also slide on bed plates by means of a rack and pinion worked by a spanner, and can be placed in positions closer together or further apart, in accordance with the demands of the cylinder.



CORLISS CYLINDER BORING MACHINE—SECTIONS



CORLISS CYLINDER BORING MACHINE.