

MODERN BLUE-PRINTING.

By P. M. Morgan.*

The Pease "Peerless" continuous blue-printing equipment prints, washes and dries the paper automatically, delivering the prints at the end of the dryer in a loose roll, free from wrinkles or distortions, and ready for immediate use.

So noiseless is this apparatus in operation, owing to the method used for electrically controlling the speeds, that there is no objection to placing it in the drafting room. The entire apparatus occupies a floor space of only $5\frac{1}{2}$ x $6\frac{1}{2}$ feet.

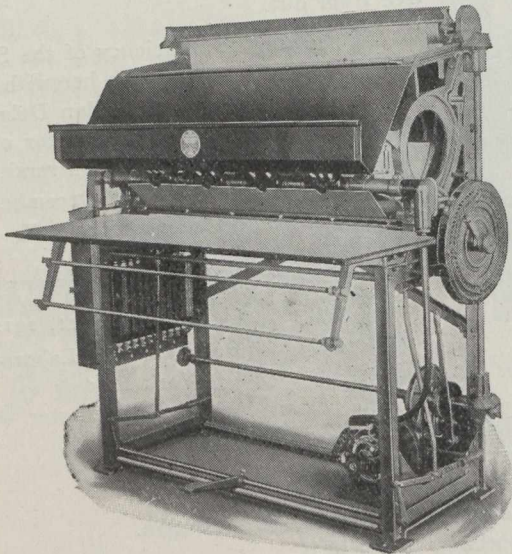


Fig. 1.

and there is no dirt or other objectionable features. It is easily possible for one operator to print, wash and dry 100 yards of blue-print paper per hour, the apparatus consuming during that time only 7 kw. of electric energy, 60 gallons of water, and 50 cubic feet of gas. Where a smaller outfit is desired it is equally practical to operate the machine for ten or fifteen minutes at a time and effect a considerable saving in the time and labor usually required in washing and drying. The printing machine can be used independently at any time if desired for an occasional print.

It can readily be seen that by placing this apparatus in the corner of the drafting room, the operator's time, when he is not engaged in operating the machine, can be used to excellent advantage for other work about the drafting room. These machines were designed for general practicability for all classes of electric printing, and with especial reference to low operating and maintenance expense. They are built in various sizes, to suit the largest or smallest engineering department.

Fig. 1 shows the machine ready for operation. The paper may be printed in sheets or in rolls as desired. Two spindles are provided underneath the feeding table for carrying different widths of paper. The tracings and paper are carried upward past a bank of arc lamps by means of an endless canvas belt. The tracings are returned direct to the operator's hand as he stands in front of the machine; which is a most important feature, as much saving of time is effected in this way. The exposed paper may be returned in the same way or pass over the top roll of the machine. The exposed paper may immediately be seen and the correct ex-

posure obtained before any prints are spoiled, merely by moving the finger on the dial of the rheostat which is placed on the end of the machine convenient to the operator's right hand.

No transparent bands or expensive glass cylinders are used, but in place thereof a short segment of heavy plate glass, which is so mounted and adjusted that breakage is practically impossible. Tension springs at either end of the machine automatically take up the stretch of the canvas belt, so that the most perfect contact between tracing and paper is obtained at all times, while a special device prevents side travel of the belt. Fig. 2 shows the machine with the heavy enameled iron tracing tray pushed back and one lamp turned down on the table, illustrating the method employed for trimming the carbons and cleaning the globes. These arc lamps were especially designed for this machine. It will be noted that they are connected in at the bottom, and each lamp is provided with an aluminum reflector. The resistance coils are carried away from the lamps underneath the table, thereby producing a uniform light and largely reducing the heat. All wiring is encased in steel tubing, and each lamp and motor is independently connected, the switches being enclosed in a metal box at the left-hand end of the machine. By means of the individual connection it is necessary to use only a sufficient number of lamps to cover the width of the tracing being printed. No friction discs or belts are used for controlling speeds, all speeds being electrically controlled directly through the motor. Any possible speed can be obtained, from four inches per minute, which allows sufficient exposure for the slowest negatives or black line prints, up to six feet per minute, which our experience has demonstrated is as fast as the average run of tracings can be properly fed to secure the greatest efficiency from electric energy consumed. A fan is provided for circulating the air, as shown on the left-hand end of the machine.

Fig. 3 shows the blue-printer connected with the Pease automatic washing and drying machine. The paper passes over the top roll of the printing machine into the washer,

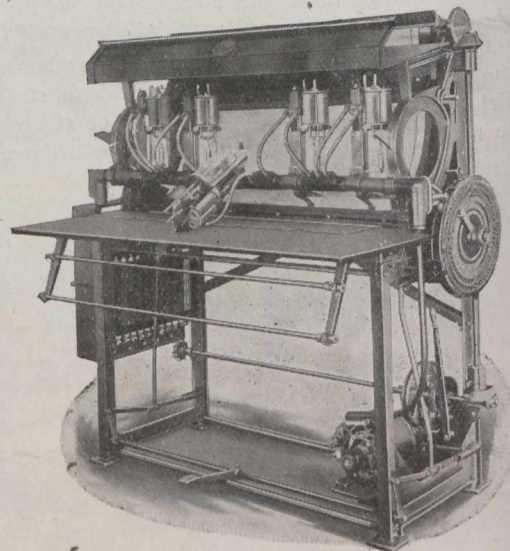


Fig. 2.

where it is first washed by a spray of clear water; then by a weak solution of bichromate of potash which is pumped over and over from the tank shown in the rear of the machine; and lastly by a spray of clear water, after which the paper passes up over the dryer and down into the winding-up device. The printing machine may be used independently

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