B. O. FANSLOW.

PRINTING AND REPRODUCING MACHINE.

APPLICATION FILED MAR. 25, 1907.

1,122,267.

Patented Dec. 29, 1914.

2 SHEETS—SHEET 1.

Fig. 1.

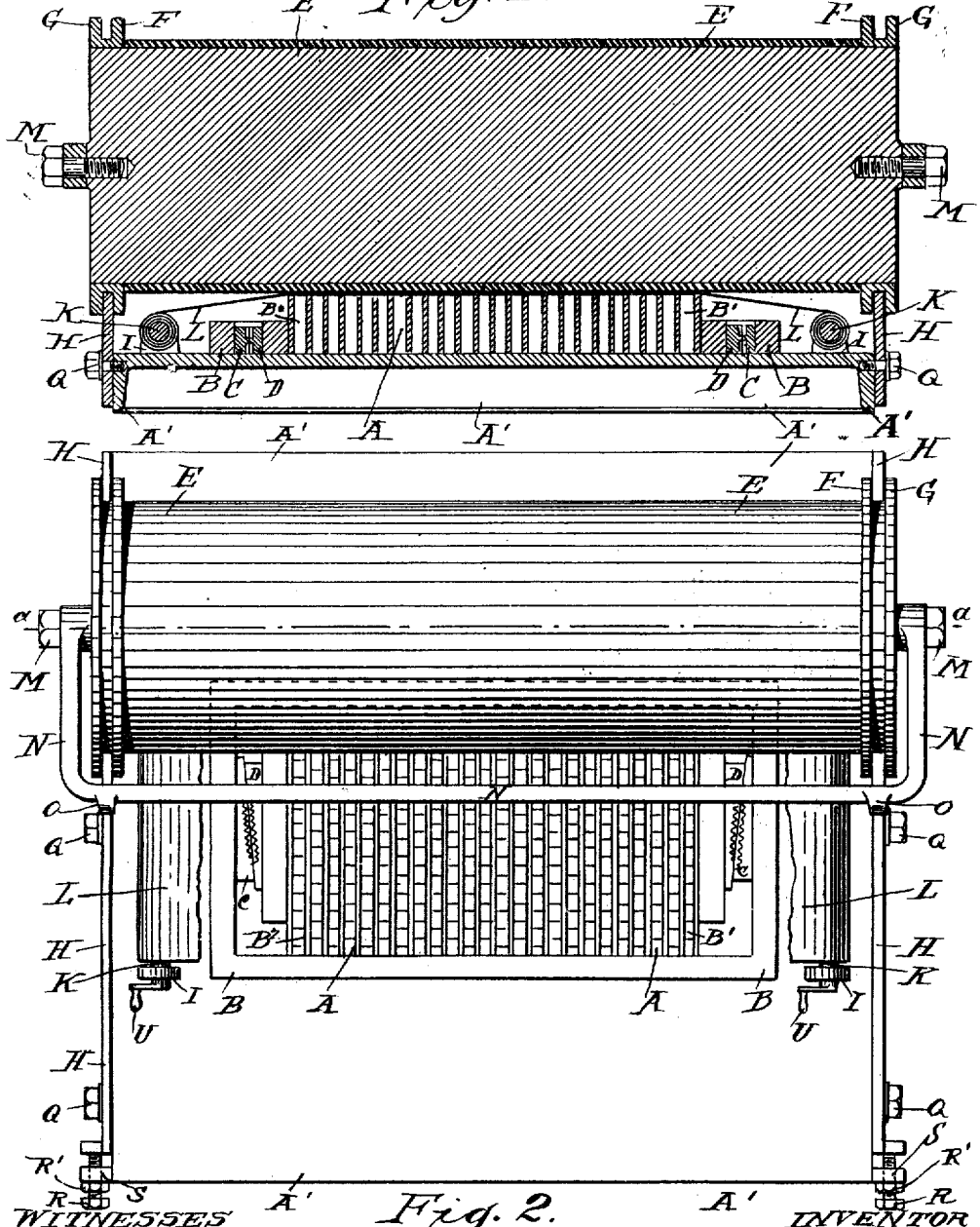


Fig. 2.

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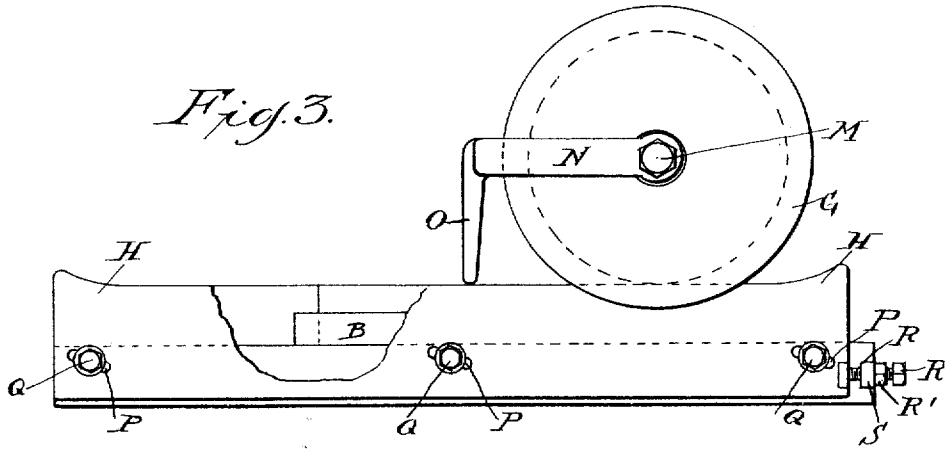
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2 SHEETS—SHEET 2.

Fig. 3.



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UNITED STATES PATENT OFFICE.

BENJAMIN OTTO FANSLOW, OF LOS ANGELES, CALIFORNIA, ASSIGNOR, BY MESNE ASSIGNMENTS, TO POLYGRAPH DUPLICATING TYPEWRITER COMPANY, A CORPORATION OF NEW YORK.

PRINTING AND REPRODUCING MACHINE.

1,122,267. Specification of Letters Patent. Patented Dec. 29, 1914.

Application filed March 25, 1907. Serial No. 364,719.

To all whom it may concern:

Be it known that I, BENJAMIN OTTO FANSLOW, of the city of Los Angeles, in the county of Los Angeles, in the State of California, have invented a new or Improved Printing and Reproducing Machine, of which the following is a full, clear, and exact specification, reference being had to the annexed drawings and to the letters and figures marked thereon.

My said invention relates to a new or improved machine for reproducing copies of documents, drawings, and pictorial representations, and has for its object to effect such reproduction by printing operations performed in and by the machine hereinafter described.

The object of my invention is the same as that set forth in my application for Letters Patent, Serial Number 362064, filed March 11th, 1907, namely, to attain extreme simplicity in the machine used for effecting the aforesaid operations, and so that all mechanical arrangements for retaining the travel of the impression roller in a definite to and fro course upon the guides or rails of the base of the machine wherein the type or other surface to be printed from is carried, and with other appurtenances as hereinafter set forth.

In my improved machine when used for printing operations, the lines of type may be arranged either at right angles to the length, or the direction of travel, of the impression roller, and the inking ribbon instead of traveling lengthwise of the machine as shown and described in my aforesaid application for Letters Patent, may move in a direction at right angles to the direction of the movement of the impression roller, or the lines of type may be at right angles to both the direction of travel of the impression roller, and the inking ribbon, in which case the impression roller and the inking ribbon both travel in the same direction, that is to say, at right angles to the direction of the lines of type. A loop handle is attached to the axis of the impression roller, which latter is made heavy or of a weight great enough to press the paper to be printed upon to the inking ribbon, and the inking ribbon to the printing surface consisting of type, electro-type, engravings, half tone blocks, or other equivalent printing surfaces.

The impression roller is formed with deep flanges at its ends to run upon parallel guides, one at each side of the machine, and instead of the loop handle, the impression roller may be mounted upon an axle in a carriage, the ends of which carriage are provided with rollers for running upon parallel guides or rails at the sides of the machine.

In the accompanying drawings: Figure 1 is a vertical section on the line *a*—*a*, of Fig. 2; Fig. 2 is a top plan view of one form of my machine; and Fig. 3 is a side elevation of the machine shown in Fig. 2.

In my new machine as shown in Figs. 1 and 2, the lines of type A are contained in the chase B, in the usual manner, by the toothed wedges C and D, respectively, operated by a galley-key in the ordinary manner, and the chase B, with the types A fastened therein, rests upon the flat top surface of the base A′ of my machine.

The impression-roller E is formed with flanges F and G, at each end thereof, respectively, which engage with the rails or guides H, H, attached adjustably to each side of the base A′. Rising up from the base A′ are four bearing-blocks I, which contain the bearings for the inking-ribbon rollers K, K, so that the inking-ribbon rollers are in position parallel to the rails or guides H, H, and at right-angles to the axis of the impression-roller E. The angular direction of movements of the impression-roller E and the inking ribbon rollers K, K, are therefore at right-angles to each other, while the travel of the inking-ribbon L is at right-angles to the direction of travel of the impression-roller E relatively to the frame, and at right-angles to the lines of type A, A, contained in the chase B; whence it follows that, while the impression-roller E travels over the lengths of each line of types A, it simultaneously travels over the width of the inking-ribbon L, as shown at Figs. 1 and 2. The impression-roller E is provided with two tap-bolts M, M, which are screwed into its center, as shown at Figs. 1 and 2, and which, when in place, constitute the bearings for the loop N, which also constitutes the handle whereby when taken hold of by the hand the impression roller E, may be traversed to and fro upon the parallel rails or guides H, H, and to press the paper situated between the lower

part of its surface, and the upper surface of the inking ribbon L, and the inking ribbon L, down upon the types A, A.

The loop N, is provided with a pair of supporters O, one of which is shown at Fig. 3, by which part of the loop rests upon the upper surface of the adjustable rails or guides H, and maintains the loop N, in convenient operative position. As the operative surfaces, namely, the upper edges of the guides or rails H, H, may from time to time require adjustment so as to insure that the cylindrical surface of the impression roller E, is perfectly true, level and coincident with the upper surface of the types A, or other printing or impression surface placed in the chase B, the rails H, are constructed with inclined slots P, P, P, as shown at Fig. 3, through which the tap bolts Q, Q, Q, Figs. 1, 2, and 3, pass. At one end of each of the rails or guides H, the point of the adjusting screw R, is pressed into contact with the adjustable rails H, being each carried in the lugs S, so that by turning the adjusting screws R, in either direction, each of the rails or guides H, is moved longitudinally and rises upward or downward accordingly with the direction in which the adjusting screws R, are turned, and thereby the relationship of parallelism and closeness of contact of the impression roller E, with the inking ribbon L, the types A, and the paper carried thereon, is capable of being adjusted with the utmost precision from time to time as required. Each adjusting screw R, is provided with a check nut R′, for holding the adjusting screws in any position required, as is well understood. As at each printing operation, a length of the printing ribbon L, equivalent to the length of the rows of types, that is to say, from the outermost row B′, to the outermost row B^2, moves it follows that a fresh surface of printing ribbon L, corresponding to whatever may be the distance between the outermost rows of type B′, and B^2, respectively, is necessarily required to be drawn over the type for each successive printing operation, therefore it is essential that a quantity or length of the printing ribbon L, shall be wound off one of the ribbon rollers K, and on to the other of the ribbon rollers K, during the interval between each two printing movements or operations of the impression roller E. For this purpose the outer ends of the axles of each of the ribbon rollers K, is provided with a crank handle U, by turning either of which, the requisite length of unused printing ribbon L, is wound off one of the printing ribbon rollers K, and on to the other printing ribbon roller K. The inking ribbon passes over the types A, and on to the printing ribbon rollers K, K, in the directions as shown in section in Fig. 1.

In my invention, it will be noted that the ribbon-supporting means are arranged on the surface of the base of the machine at opposite ends thereof and between the guide-rails and chase in which the composition is held, and that the ribbon-supporting means or bearing-blocks I, for the rollers K, K, of the inking-ribbon, are not sufficiently extensive to cause the inking-ribbon upon the rolls to extend above the surface of said guide-rails. In other words, the ribbon-supporting means are arranged at opposite ends of the frame between the guide-rails and composition and below the surface of said rails. This arrangement of parts is particularly for the purpose of maintaining the ribbon-rollers and supporting means out of the way of the rails and the impression-roller in the travel of the latter over the composition. And this position is, of course, maintained notwithstanding adjustments of the rails as hereinbefore set forth.

I claim as my invention—

1. In combination with the bed of the machine having parallel guide-rails, a flat composition arranged between said rails, an impression-roller having means at its opposite ends coöperating with the said guide-rails to prevent the roller from having endwise movement relatively to the bed, a loop journaled upon the impression-roller, depending arms carried by said loop and coöperating with a fixed part of the machine for supporting the loop in operative position, and means on opposite portions of the bed between the composition and rails for supporting a ribbon in coöperative relation to the impression-roller.

2. In combination with the bed of the machine having parallel guide-rails, an impression-roller having means at its opposite ends coöperating with said guide-rails whereby to prevent endwise movement of the latter relatively to the bed, a loop journaled upon the said roller, means carried by the loop for coöperating with the said guide-rails whereby to support the loop in operative position, and means carried on opposite portions of the bed for supporting a ribbon in coöperative relation to the impression-roller.

In testimony whereof, I have hereunto set my hand and seal at the city of Los Angeles, in the county of Los Angeles, and State of California, in the presence of two subscribing witnesses.

BENJAMIN OTTO FANSLOW. [L. S.]

Witnesses:
ST. JOHN DAY,
IDA M. DASKAM.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."