

(No Model.)

W. H. HUGHES.

INKING APPARATUS FOR PRINTING MACHINES.

No. 348,163.

Patented Aug. 24, 1886.

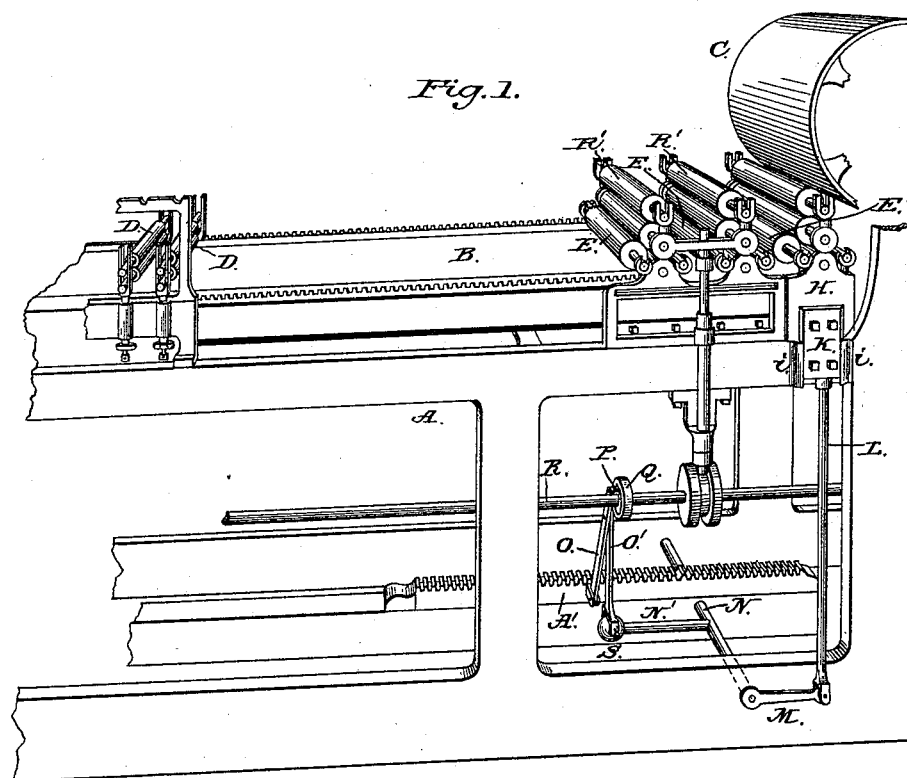
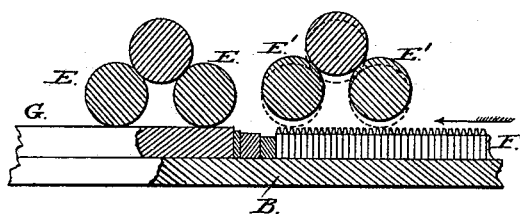


Fig. 2.



Attest:

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UNITED STATES PATENT OFFICE

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INKING APPARATUS FOR PRINTING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 348,163, dated August 24, 1886.

Application filed March 8, 1886. Serial No. 194,448. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. HUGHES, of the city, county, and State of New York, have invented a new and useful Improvement in Inking Apparatus for Printing-Machines; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification, in which—

Figure 1 is a view in perspective of a portion of a stop-cylinder printing-press having my improvement in the inking apparatus applied thereto, and Fig. 2 is a diametric sectional view illustrating more fully the operation of my invention.

My invention relates to devices for equalizing the distribution of ink upon the form of type carried upon a reciprocating bed under a series of inking-rollers.

In printing-presses in which the form is carried upon a reciprocating bed to pass alternately under the inking-rollers and under the impression-cylinder or platen the inking-rollers are customarily supplied with a definite amount of ink upon their surfaces at each movement of the bed. After the form has passed in one direction under the rollers the quantity of ink remaining upon the type will be greater upon that side of the form which is the last to leave the rollers, so that if there is sufficient ink upon the side first approaching the cylinder there will be too much upon the opposite side. This difficulty in obtaining a perfectly-uniform coating of ink over the entire form becomes very noticeable in printing fine work.

The object of my invention is to remedy it in a simple and effective manner by improved mechanism, substantially as hereinafter described, whereby the supply of ink to the form is equalized by means of rollers inked in the ordinary manner from a single fountain upon one side of the cylinder.

In the accompanying drawings, A represents the frame, B the reciprocating bed, C the impression-cylinder, D D the supply-rollers, and E E E' E' a series of inking or form rollers, in a stop-cylinder press. This style of press is illustrated not as being the only form of press adapted to the use of my

invention, but as one form only of the many to which said invention is applicable, it being understood that it may be used with advantage on any printing-press in which the form is carried back and forth under a set of inking-rollers.

The mechanism for producing the reciprocating movement of the form of type F and of the inking-table G, (illustrated in Fig. 2, but not shown in Fig. 1,) being well known to the art, need not herein be described, it being understood that the form F is carried from under the form-rollers, by which it is inked, to and under the impression-cylinder C in the usual manner, and that in the meantime the form-rollers are supplied with a fresh coating of ink by contact with the inking-table G, carried under them as the form moves out beyond them.

Ordinarily the form F, after an impression has been taken therefrom, passes back into contact with all the form-rollers, and the advance edge of the form takes from each set of rollers in succession the fresh charge of ink thereon, so that all the rollers are comparatively deficient of ink when the rear edge of the form passes under them, the result being a comparative overcharge of ink at the advanced edge of the form, and a corresponding deficiency at its rear edge. By my invention the first one or more of the inner sets of form-rollers, E', so soon as they have been charged with ink, by contact with the inking-table G or otherwise, are lifted sufficiently to clear the type as the form moves back under the rollers, so that the form in moving back is brought into contact only with the outer set or sets of stationary form-rollers, E E, to take therefrom the charge of ink thereon. The first or inner set, E', of rollers consequently are not deprived of their new supply of ink by the return of the form, but when the form has commenced to move back toward the impression-cylinder they are made to drop back into position to come into contact with it as it again travels toward the cylinder, and thereby deliver the fresh charge of ink upon the edge thereof otherwise left comparatively deficient of ink, as above described. This movement of the first set of rollers, E' E', by which they are made to clear the form of type F as it moves back from the impression-cylinder C, and to

come into contact therewith as it returns toward said cylinder, may be obtained by attaching the end plates, H, in which the bearings for these rollers E' E' are formed, each to a vertically-sliding plate, K, mounted to reciprocate in suitable ways, *i i*, formed on the frame of the machine. (See Fig. 1.)

Each of the plates K on the opposite sides of the machine is connected by a coupling-rod, L, to an arm, M, projecting horizontally from a transverse rock-shaft, N, mounted in the lower part of the frame A, parallel with the rollers E' E'. This rock-shaft is made to oscillate, as required, by means of a lever, O, pivoted at one end to a longitudinal bar, A', in the lower part of the frame, the outer end of said lever being coupled by a connecting-bar, O', to an arm, N', projecting from the rock-shaft N in a direction opposite to that of its arms M M, said lever O being provided with a friction-roller, P, on its outer end, working in a cam-groove in the face of a cam-wheel, Q, mounted on the shaft R of the machine, from which the movement of the vibrators R' R' is obtained. The connecting-bar O' is coupled to the arm N' by means of a swivel-joint, S, to prevent any strain thereat.

The path of the cam-groove in the cam-wheel Q is so described as that the movement of the roller P' therein will produce the proper oscillation of the rock-shaft N in harmony with the regular reciprocating movement of the traveling bed B required to lift the rollers E'

E', as shown in positive lines, Fig. 2, at the moment the form begins to move back from the impression-cylinder in the direction of the arms to hold them up until the form begins its return movement toward said cylinder, and thereupon allow them to drop into their first position, as indicated by the dotted lines in said Fig. 2.

Two or more sets of form-inking rollers may be simultaneously lifted in manner as described, instead of a single set.

I claim as my invention—

The combination, with the traveling bed in a printing press and with its movable form-rollers, of bearing-plates at each end of said rollers, mounted to move at right angles to the bed, and in which the rollers are journaled, a shaft rotating in the frame of the machine, and driven by its prime motor, a cam-wheel upon said shaft, a rock-shaft oscillated mediate by said cam-wheel through intermediate connecting mechanism, and arms projecting from said shaft and coupled to said bearing-plates, all substantially in the manner and for the purpose herein set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM H. HUGHES.

Witnesses:

J. F. ACKER, Jr.,
S. M. MADDEN.