A. CAMPBELL.

INKING APPARATUS FOR PRINTING PRESSES.

No. 184,337. Patented Nov. 14, 1876.

Fig. 1.

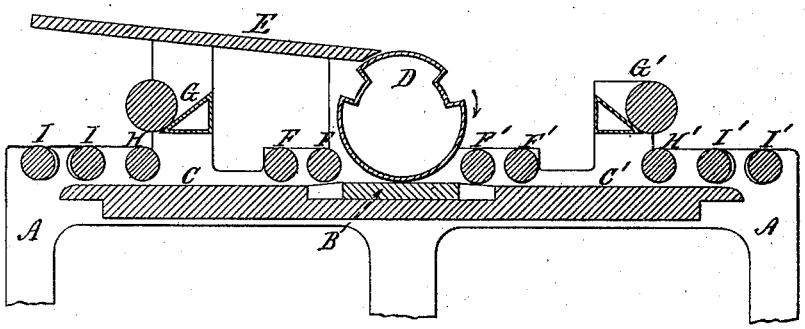
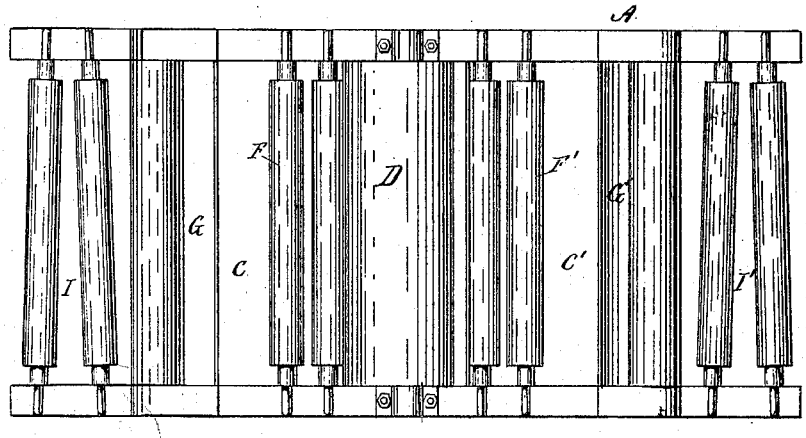


Fig. 2.



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UNITED STATES PATENT OFFICE.

ANDREW CAMPBELL, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN INKING APPARATUS FOR PRINTING-PRESSES.

Specification forming part of Letters Patent No. **184,337**, dated November 14, 1876; application filed January 26, 1876.

To all whom it may concern:

Be it known that I, ANDREW CAMPBELL, of the city of Brooklyn, in the county of Kings and State of New York, have invented certain Improvements in Inking Apparatus for Printing-Presses, of which the following is a specification:

The improvements which form the subject-matter of this application were included in an application for Letters Patent for improvements in printing-presses filed by me December 26, 1871, from which it has been withdrawn for the purpose of filing the present application.

My invention relates to that class of printing-presses known as the "bed and cylinder press," in which the form reciprocates under what is termed the printing or impression cylinder, that receives the paper to be printed and impresses it upon the form as the latter reciprocates thereunder. The form or type-bed is supplied with ink before each impression by means of what are termed "form-rollers," one or more of which (termed a set) are arranged on one side of the cylinder, so that the form, as it reciprocates, will pass back and forth under the same in contact therewith. As the rollers receive a fresh supply of ink for each impression, it is evident that the end of the form which first comes in contact therewith will take therefrom the greatest quantity of ink, and that the rollers will deposit less and less ink as they approach the opposite end of the form, whereby the latter is unevenly inked. It is also evident that the repeated passage of the form in the same direction under any number of rollers will not vary the result, as the same inequality in the inking will result, whether the form be rolled once or half a dozen times.

The object of my invention is to remedy this defect and insure an equal distribution of the ink over the form.

One part of my invention consists in the combination, with the impression cylinder and the form or type-bed, of two sets of form-rollers receiving ink independently of each other, and arranged on opposite sides of the impression-cylinder in such a manner that one end of the form will pass under one set of rollers as the bed reciprocates in one direction and be inked from end to end, as hereinbefore described, while the opposite end of the form, as the bed reverses, is brought in contact with the opposite set of rollers, which by rolling the form in a reverse direction from that of the former set, equalizes the supply and distribution of ink thereon before an impression is made.

The second part of my invention consists in the arrangement of the ink-fountains between the angle-rollers and the form-rollers, whereby the angle-rollers pass twice over the inking-table after the ink has been supplied thereto, instead of only once, as is the case where the fountain is outside of the angle-rollers, whereby a much better distribution is insured.

In the accompanying drawings, Figure 1 is a central longitudinal vertical section of the frame-bed, feed-table, printing-cylinder, and inking-rollers of a printing-press. Fig. 2 is a plan thereof.

Like letters of reference designate like parts in each of the figures.

A is the frame; B, the form or bed, and C C′ inking-tables at each end of the form; D, the printing-cylinder; E, the feed-table; F F and F′ F′, two sets of form-rollers; G G′, two ink-fountains; H H′, doctor-rollers, and I I′ two sets of angle-rollers. The bed and cylinder may be actuated by any of the well-known means employed for the purpose, and the two inking apparatus operated by similar means to that employed in double-cylinder presses.

In Fig. 1 the parts are represented in the act of printing a sheet, the cylinder and form moving in the direction indicated by the arrows, while one end of the form as it advances receives ink from the form-rollers F F preparatory to making the next impression. The form, being traversed by the rollers F in both directions, passes under the rollers F′ during the last part of its backward, and first part of its forward, movement, and is thus double-inked from opposite ends and in opposite directions before making the next impression. The cylinder makes two revolutions to each impression and reciprocation of the bed. The fountains and doctor-rollers G G′ H H′ supply ink to the tables C C′, from which, respectively, the two sets of form-rollers F F′ re-

ceive their supply in the ordinary manner in which a single set is supplied. Each set of form-rollers may be provided with a distributing-roller or not, as desired. At the same time that either set of the form-rollers are traversing back and forth over the form, the corresponding set of angle-rollers at the end of the machine are in a like manner passing back and forth over the ink-table in both directions and distributing the ink thereon.

Instead of the inking-tables and angle-rollers above described, the ink from the fountains (which may be of any suitable construction) may be transferred to the form-rollers by any suitable set or system of distributing-rollers, which will supply the two sets of four rollers with ink in as nearly equal quantities as practicable, in which case, as is obvious, the second part of my invention is not employed.

What I claim as my invention is—

1. The combination, with the impression-cylinder and form or type-bed, of two sets of form-rollers, receiving ink independently of each other, and so arranged on opposite sides of the cylinder as to successively ink the form from end to end from opposite ends thereof before each impression, whereby the ink thus received at both ends of the form is more evenly applied thereon, substantially as hereinbefore set forth.

2. The combination of the angle-rollers, form-rollers, ink-fountains, and reciprocating bed, the ink-fountains being arranged between the angle and form rollers, substantially as and for the purpose hereinbefore set forth.

ANDREW CAMPBELL.

Witnesses:
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