

(No Model.)

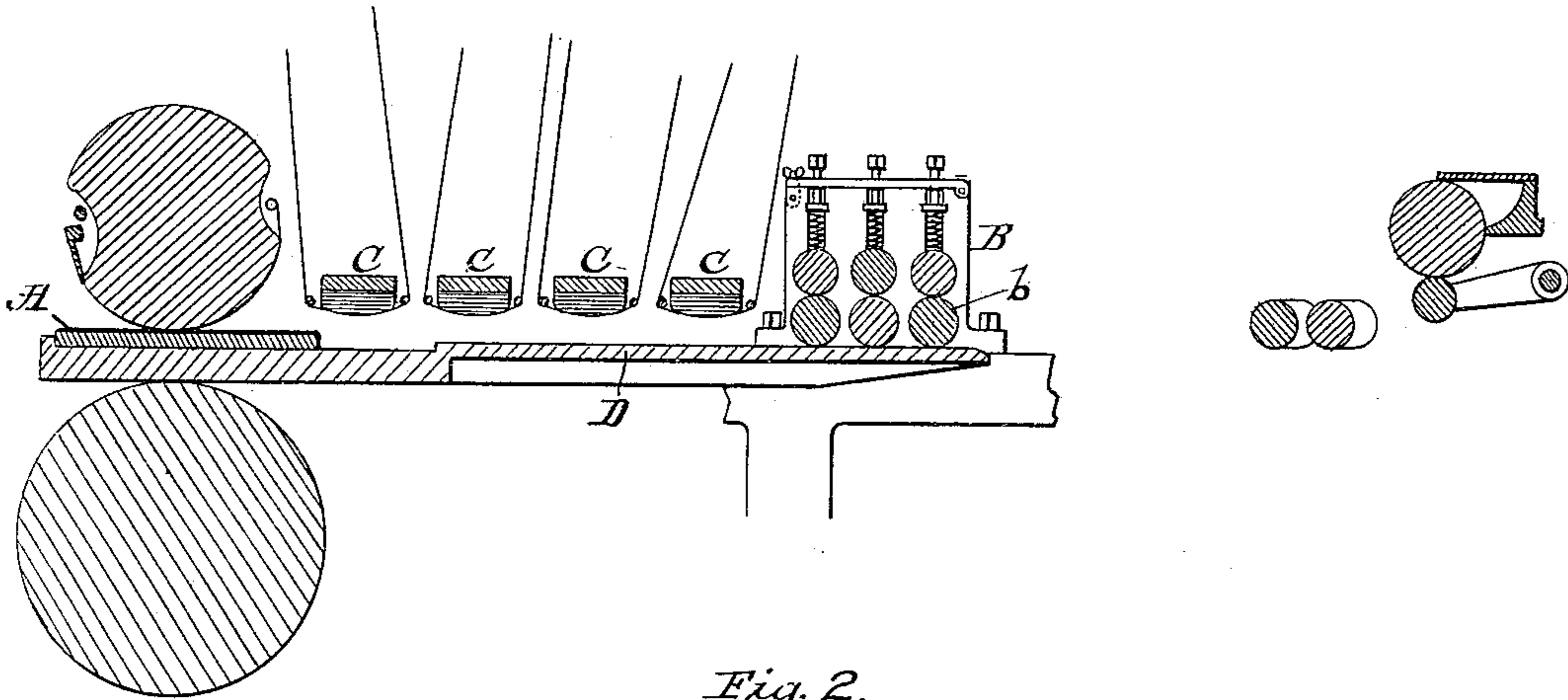
H. LEE.

INKING APPARATUS FOR PRINTING MACHINES.

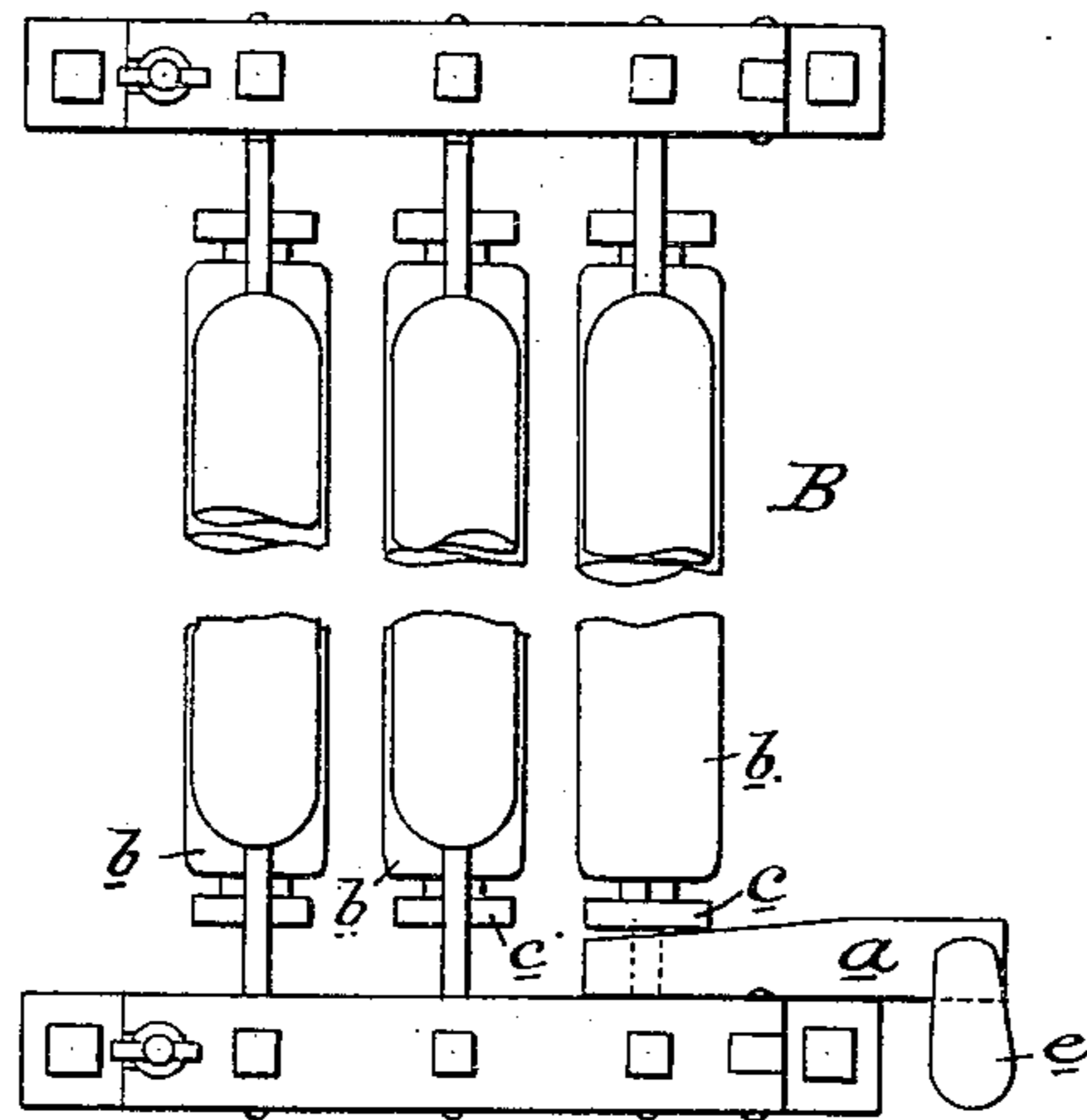
No. 353,792.

Patented Dec. 7, 1886.

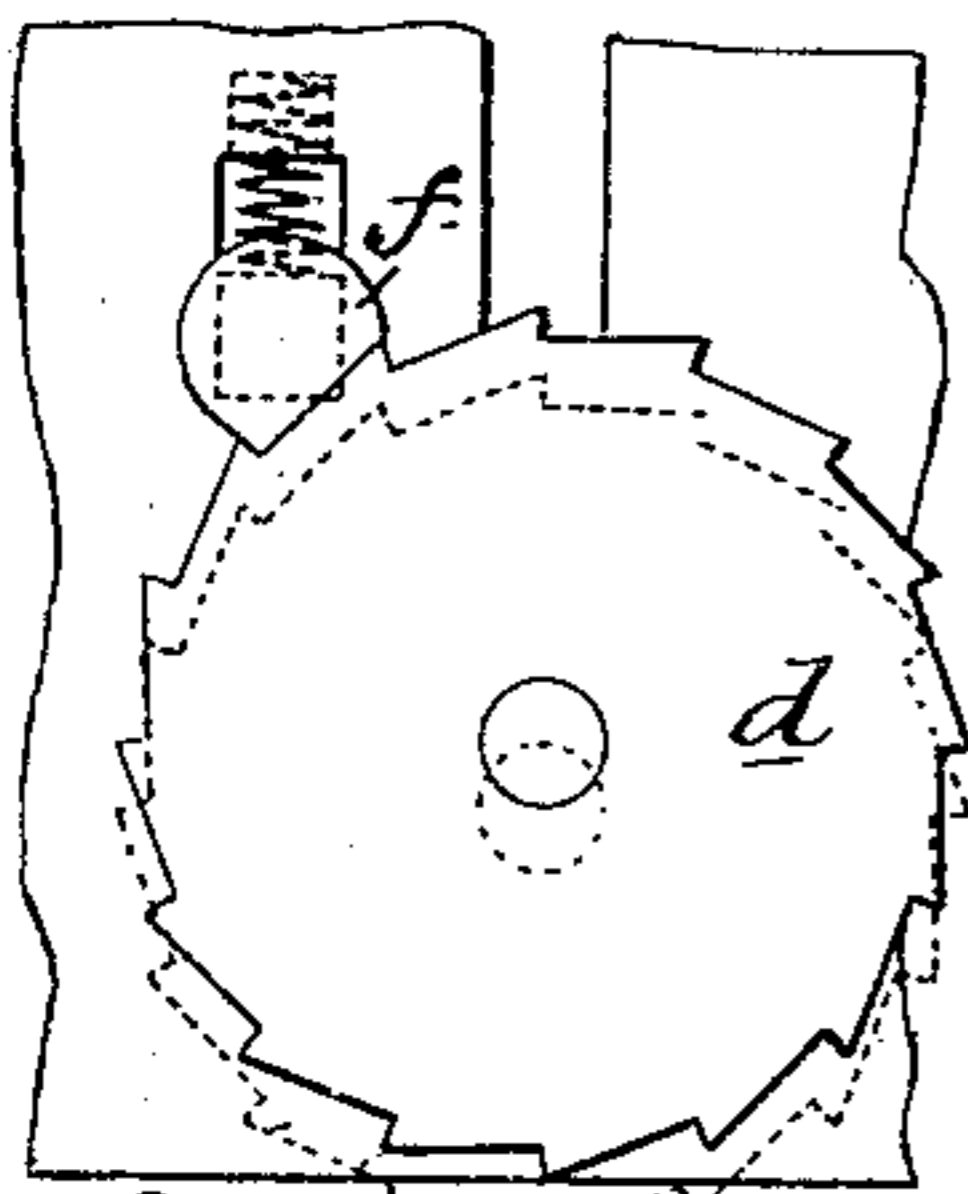
*Fig. 1.*



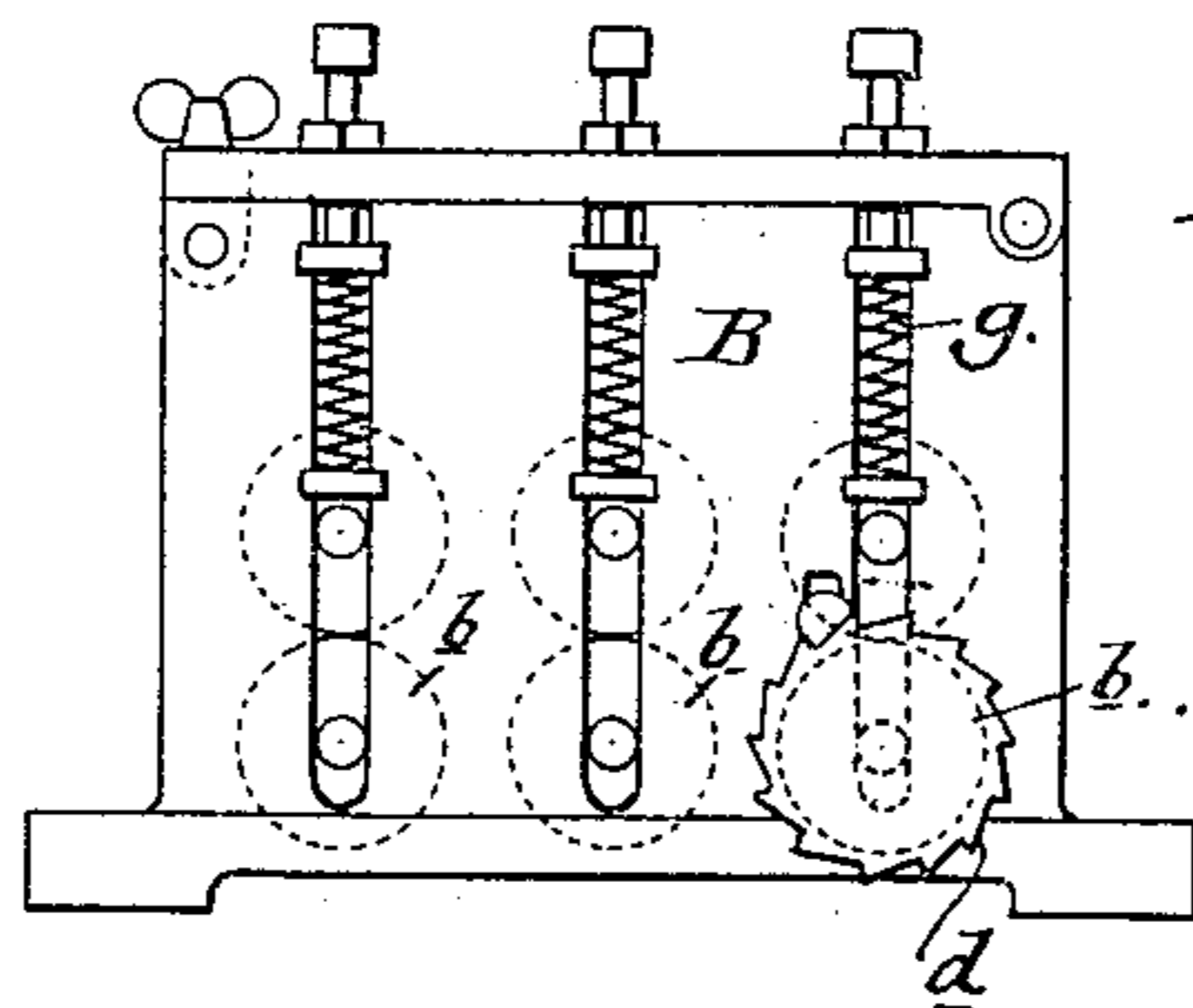
*Fig. 2.*



*Fig. 3.*



*Fig. 4.*



ATTEST.

*The B. M. Steel  
J. A. Heavey*

*INVENTOR.  
Homer Lee*

# UNITED STATES PATENT OFFICE.

HOMER LEE, OF NEW YORK, N. Y.

## INKING APPARATUS FOR PRINTING-MACHINES.]

SPECIFICATION forming part of Letters Patent No. 353,792, dated December 7, 1886.

Application filed November 2, 1881. Serial No. 45,006. (No model.)

*To all whom it may concern:*

Be it known that I, HOMER LEE, a citizen of the United States, residing in the city of New York, county of New York, and State of New York, have invented certain new and useful Improvements in Inking Apparatus for Printing-Machines, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

My invention relates to inking mechanism for printing-machines, and is particularly designed to be used in connection with those presses which print from intaglio surfaces. In this class of printing, which is known generally as "plate-printing," the design to be reproduced, instead of being in relief upon the printing-surface, is cut in intaglio, and the surface printed upon takes the ink from the sunken lines of the engraving. In order to produce good work from a printing-surface of this character, it is necessary that all the lines of the engraving should be uniformly and completely filled with ink, or, as it is termed in the art, thoroughly "inked in." This inking-in is attended with considerable difficulty and labor in hand-presses, and in those presses in which the inking is accomplished automatically and at a considerable degree of speed it has often been so imperfectly done as to make the work of an inferior quality.

It is the object of my invention to remedy this defect; and to this end my invention consists in an inking mechanism one or more of the rollers of which is or are retarded, so as to produce a dragging or rubbing action upon the plate.

It further consists in certain details of construction and combinations of parts, all of which will be hereinafter fully explained, and pointed out in the claims.

In said drawings, Figure 1 is a longitudinal vertical sectional view of so much of the plate-printing machine shown and described in United States Patent No. 237,558 as is required to illustrate the application of my present invention. Fig. 2 is a plan view of the inking-rollers, showing one means which I have devised for retarding or stopping one of said rollers. Figs. 3 and 4 are side elevations of the inking mechanism, showing another means for accomplishing the same result.

The construction and operation of the press shown are fully set forth in said patent, and need not be described here.

A is the engraved printing-surface, which, by the reciprocations of the bed of the press, is carried under the inking-rollers. These rollers give ink to the plate as it passes under them in each direction. In the patent referred to these rollers revolve by frictional contact with the plate, and so of course have a surface speed just equal to that of the plate.

By my present invention I retard one or more of the lower set of these rollers during the time the plate is passing beneath them either in one or both directions, and thus cause the roller or rollers to act upon the plate with a dragging or "rubbing-in" action. The ink will thus be piled up to some extent between the roller and plate, and the tendency will be to smear or force it into all of the lines of the engraving. This will be so thoroughly done that it will not be wiped out by the rubbing action of the wiper-pads C. The roller or rollers which are not retarded will act as distributing-rollers to redistribute the ink over the surface of the plate.

In Fig. 2 I have shown a means by which one of the inking-rollers can be retarded by an attendant in charge.

The lower set of rollers *b* are provided with wheels *c* upon their shafts, which run upon bearers or ways upon the side of the bed. The attendant is furnished with a block or wedge, *a*, having a handle, *e*, when the distributing-table D has passed under the inking-rollers and given them a supply of ink, and at the moment the plate is about to enter under said rollers the attendant places the wedge or block between the side of the frame which carries the inking-rollers and one of the wheels, *c*, thus retarding such rollers. The wedge must be removed as soon as the plate passes from under the inking-rollers, so that said rollers will not drag across the ink-distributing table. One or more of the rollers *b* can be retarded in this manner.

Although the best results will be obtained by retarding one or more of the inking-rolls, yet the inking-in may be effectually accomplished under some circumstances by wholly stopping such roll or rolls while in contact with the plate. This may be done by prop-

erly adjusting the wedge or block shown in Fig. 2, or as in Figs. 3 and 4, in which I have illustrated a means for automatically accomplishing the retarding or stopping of an inking-roller.

The inking-rollers are, as shown, journaled in open bearings, so that they have vertical play against the tension of springs *g*. The end of the shaft of one of the rollers *b* has rigidly attached to it a ratchet-wheel, *d*, which engages at certain times a weighted or spring pawl, *f*. When the distributing-table *D* is passing under the inking-rollers, said rollers are allowed to drop in their bearings, so that the ratchet-wheel is disengaged from the pawl, as shown in dotted lines at Fig. 3, and the roller is allowed to revolve unobstructedly. When, however, the plate reaches the inking-rollers, the rollers, riding up onto the surface of the plate, will be elevated, so that the ratchet *d* will be thrown into engagement with the pawl *f*, as shown in full lines in Figs. 3 and 4. This will stop the roller *b*, to which the ratchet is attached, and give it the rubbing-in action upon the plate. More than one of the rollers *b* may be provided with a ratchet-wheel and pawl if it is desired to give the rubbing-in action to more than one.

A friction device of any well-known construction may be used to connect the ratchet *d* to the shaft of the roller *b*, so that instead of being stopped it will only be retarded.

The construction shown in Figs. 3 and 4 will only stop the roller *b* during the movement of the plate in one direction. Another ratchet-wheel with teeth cut in the opposite direction may, however, be provided upon the other end of the shaft of roller *b*, so as to act when the one shown is idle, and thus stop or retard it while the plate moves in each direction; or one or more of the rollers may be stopped or retarded while the plate moves in one direction, and one or more of the others stopped or retarded while it moves in the opposite direction.

Instead of effecting the stopping or retarding of the roller *b* by means of a ratchet-wheel and pawl, as shown, I may use a plain disk, which when the roller is elevated will be engaged by a friction-dog.

I have shown my improved inking apparatus as applied to a press printing from a flat surface; but it may be applied to presses using other forms of printing-surfaces without departing from the spirit of my invention.

What I claim is—

1. In an inking mechanism for printing-presses, an inking-roller which drags while in contact with the printing-surface, substantially as described.

2. An inking mechanism for printing-presses in which a portion of the form-rollers drags while in contact with the printing-surface, substantially as described.

3. In an inking mechanism for printing-presses, an inking-roller which drags across the plate in one direction and runs free in the other direction, substantially as described.

4. In an inking mechanism for printing-presses, an inking-roller which drags when in contact with the plate and runs free when in contact with the inking-table, substantially as described.

5. An inking mechanism for printing-presses in which a portion of the form-rolls drags when in contact with the plate and runs free when in contact with the inking-table, substantially as described.

6. The combination of a plate-carrier and plate with inking-rolls and means for retarding one of said rolls while in contact with the plate, all substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

HOMER LEE.

Witnesses:

THOMSON H. PALMER,  
J. A. HOVEY.