

(No Model.)

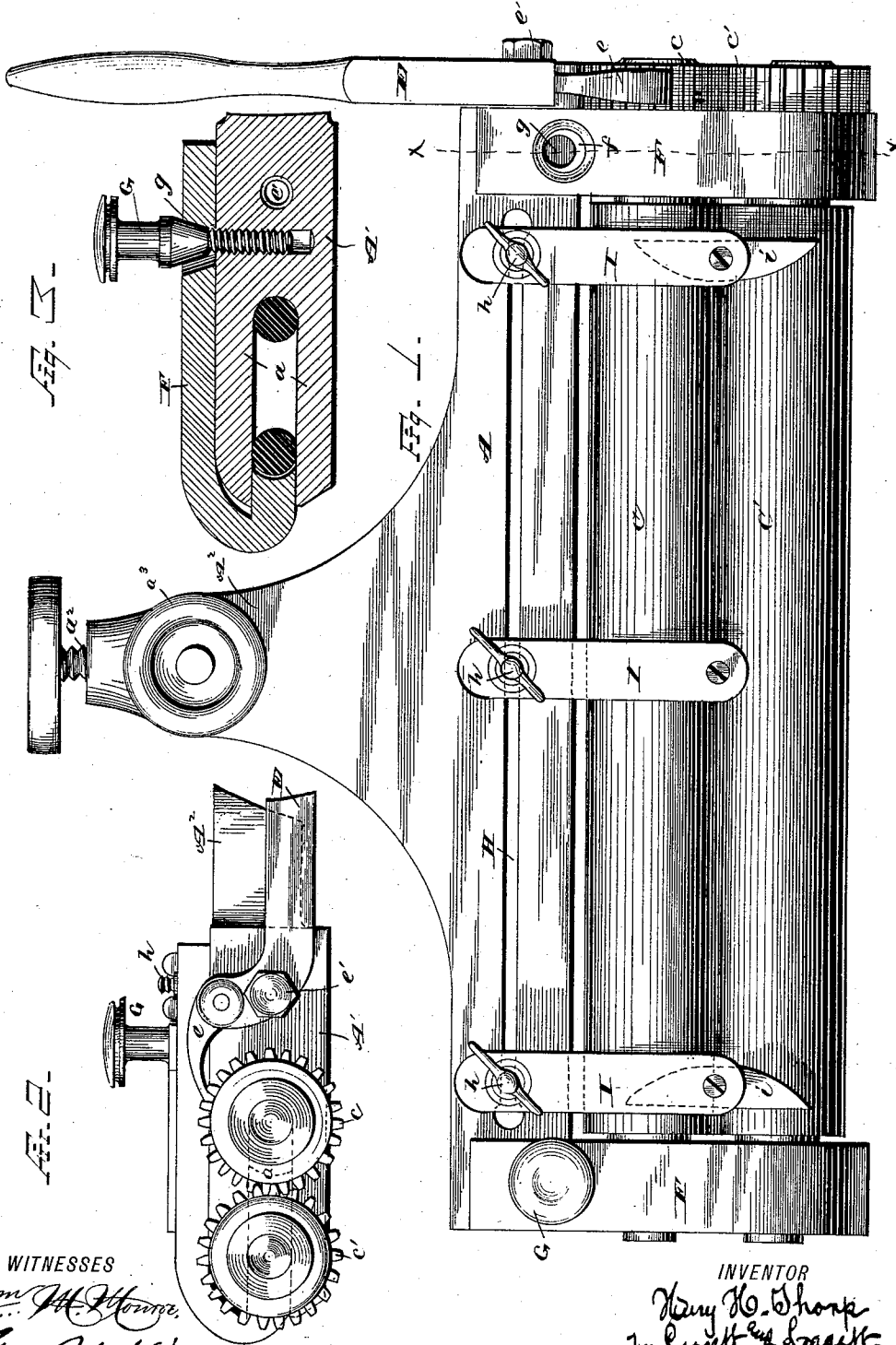
3 Sheets—Sheet 1.

H. H. THORP.

INK FOUNTAIN FOR PRINTING MACHINES.

No. 345,654.

Patented July 13, 1886.



WITNESSES

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(No Model.)

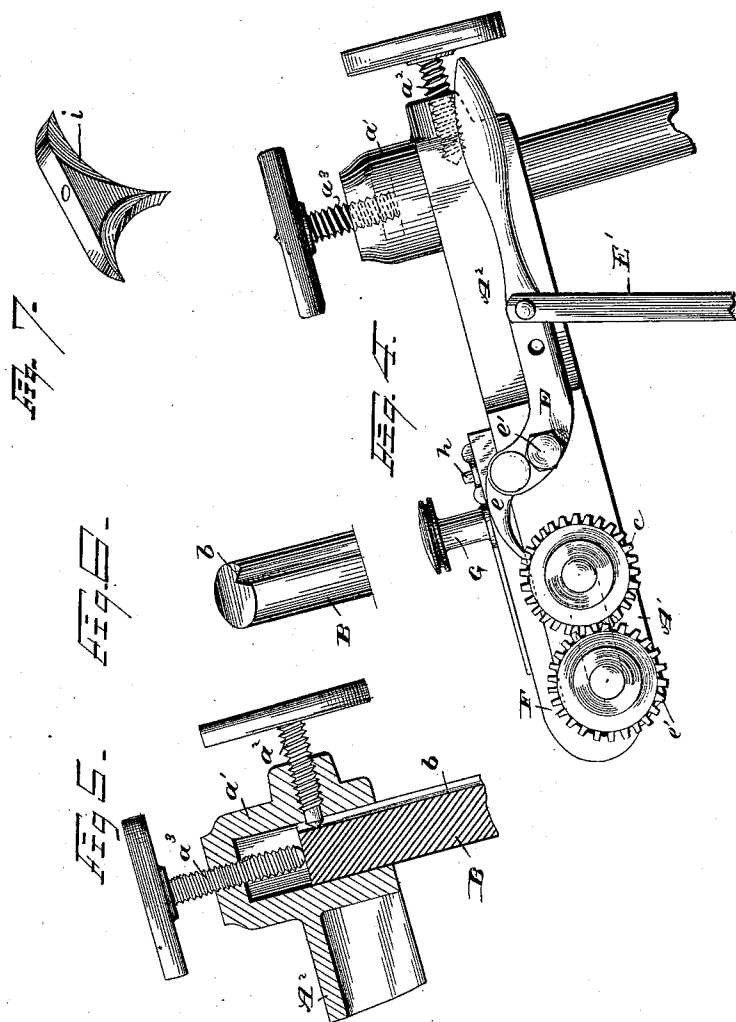
3 Sheets—Sheet 2.

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Patented July 13, 1886.



WITNESSES

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# UNITED STATES PATENT OFFICE.

HENRY H. THORP, OF CLEVELAND, OHIO.

## INK-FOUNTAIN FOR PRINTING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 345,654, dated July 13, 1886.

Application filed October 13, 1885. Serial No. 179,789. (No model.)

To all whom it may concern:

Be it known that I, HENRY H. THORP, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Ink-Fountains for Printing-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

My invention relates to improvements in ink-fountains for printing-machines; and it consists in certain features of construction, and in combination of parts hereinafter described, and pointed out in the claims.

Heretofore an ink-fountain for such purpose usually consisted of a single roller and a broad knife arranged longitudinally alongside of the roller and inclined laterally, with the edge or lower side engaging or in close proximity to the roller, to regulate the discharge of ink, that was placed in quantity upon the knife and roller. There were several objections to such construction, among which were the following, to wit: The thicker portions of the ink were kept back, and would not feed between the knife and rollers unless the two were separated so far that the thinner portion of the ink would feed too fast, and if the ink were quite thin the knife would have to be kept in actual contact with the roller to properly regulate the discharge, and such contact would cause the roller to move hard, and the parts would be worn by the consequent friction; also, as the ink became reduced in quantity, some of it would adhere to and dry onto the knife, that consequently had frequently to be cleaned, and considerable ink was wasted in consequence thereof. I have therefore devised an ink-fountain with two co-operating rolls, between which the ink is fed faster or slower, according to adjustment of the rolls toward or from each other.

I have chosen to illustrate my improved fountain in connection with an ordinary platen printing-press, and have shown so much of the latter as is necessary to understand the operation of my ink-fountain.

In the accompanying drawings, Figure 1 is a plan view of my improved ink-fountain. Fig. 2 is a front end elevation; and Fig. 3, an elevation in section on the line of  $xx$ , Fig. 1. Fig. 4 is an end view of the fountain, showing

also its connection with the printing-press. Figs. 5 and 6 are details, the former being an elevation in section, and the latter a view in perspective, illustrating the manner of adjusting the position of the fountain. Fig. 7 is a perspective view of one of the blocks; and Fig. 8 is a view in elevation and partly in vertical section of my improved device, showing the ink-rolls in position elevated to contact with the fountain-rolls.

A represents the frame of the fountain, the same having arms  $A^1$  extending forward and an arm,  $A^2$ , extending rearward. The arms  $A^1$  are slotted at  $a$ , and the arm  $A^2$  has a hub,  $a'$ , that is bored to fit the spindle B. This spindle is secured in any suitable manner to the printing-press, usually by means of an arm,  $B'$ , that is connected with the bed of the press. The shaft B has a broad V-shaped groove,  $b$ , and the hub  $a'$  has a thumb-screw,  $a^2$ , with a conical end, to fit the groove  $b$ . A screw,  $a^3$ , passes through a threaded hole in the top of the hub, and abuts the end of the shaft B. By means of the screw  $a^3$  the fountain is elevated or depressed, to bring the rolls of the fountain in the desired vertical adjustment relative to the ink-rolls D. The screw  $a^2$  holds the fountain in its lateral adjustment. By loosening the screw  $a^2$  the fountain may be swung out of the way for cleaning the ink-rolls, or for other purposes, and, when swung back approximately to its proper position, by tightening the screw  $a^2$  the fountain is brought again to an accurate lateral adjustment. The screw  $a^3$ , meantime, not having been changed, the fountain does not lose its vertical adjustment when moved laterally.

C and  $C'$  are co-operating rolls, the trunnions of which are journaled in the slots  $a$ . (See Fig. 3.) The one set of trunnions have engaging-gears  $c$  and  $c'$ , the former serving also as a ratchet-wheel, the teeth of which are engaged by the pawl  $e$  of the lever E of the bell-crank variety, and arranged as shown, whereby the rolls are actuated by elevating the free end of the lever. The lever E is pivoted on the stud  $e'$ , that screws into a threaded hole in the frame A.

The lever E has pivoted thereto a push-bar,  $E'$ , for operating the lever. This push-bar may be connected with any part of the press mechanism that will give the required end

movement to the push-bar; but it is usually attached to the mechanism (not shown) that rotates the ink-disk *D'*.

The trunnions of the roll *C* are journaled at the back end of the respective slots *a*, as shown in Fig. 3. The trunnions of the roll *C'* are engaged, respectively, by yokes *F*, that are made to press the roller *C'* toward the roll *C*, by means of mechanism, as follows: The yokes have conical holes *f*, of considerable size, through which pass the thumb-screws *G*, that screw into the frame *A*. The screw-threaded holes in the frame do not register with the respective holes *f*, and the arrangement of parts is such that the conical portions *g* of the thumb-screws engage the yokes at the rear side of the holes *f*, and move the yokes rearward, more or less, according to the distance the screw is turned. Of course, the rearward movement of the yokes presses the rolls together, and by adjusting these thumb-screws the desired feed is had. By removing the thumb-screws *G* the yokes and roll may be easily removed for cleaning or other purposes, and may as easily be reassembled.

A slot, *H*, in the frame *A* is for the passage of bolts *h*, that hold the fingers *I*. One of such fingers is arranged at or near either end of the roll, to support the blocks *i*. These blocks are usually of wood, and shaped substantially as shown in Fig. 7, and prevent the ink from working off at the ends of the rolls.

One or more fingers and blocks may be distributed along the rolls, to separate different-colored inks, when necessary.

Some provision is usually made in the mechanism of the printing-press for elevating the ink-rolls at the end of their rearward movement, by means of which the ink-rollers are lifted from the ink-disk and brought in contact with the fountain-rolls just as the latter are rotated. Such mechanism for elevating the ink-rolls belongs with the printing-press, and is no part of the ink-fountain. In case there is no such provision for elevating the ink-rolls, the fountain is depressed (by means of the screw

*a*<sup>3</sup>) until the fountain-rolls and the ink-rolls will touch each other in passing.

What I claim is—

1. An ink-fountain consisting, essentially, of a frame or support and two rollers journaled therein in close proximity to each other, the said rollers adapted to hold the ink and be turned to feed the ink by contact with the ink-rolls of the press.

2. The combination, with an ink-fountain pivoted to a shaft, of an abutment-screw connected with the fountain-frame and abutting the pivotal shaft, for adjusting the elevation of the fountain, the parts being arranged substantially as indicated, whereby the fountain may be turned laterally without losing its vertical adjustment.

3. The combination, with an ink fountain pivoted on a shaft having a V-shaped groove therein, of a conical-ended set-screw for engaging said groove, said set-screw being connected with the fountain-frame, and the parts arranged substantially as described, whereby the frame is brought to an accurate lateral adjustment by tightening the set-screw.

4. In an ink-fountain, the combination, with co-operating rolls having trunnions operating in slots of the fountain-frame, of the yokes *F*, the parts being arranged and operated substantially as set forth.

5. The combination, with the yokes *F*, having conical holes *f*, of the thumb-screws *G*, having conical shanks *g*, operating in the respective holes *f*, said set-screws engaging threaded holes in the fountain-frame, the latter holes being out of line with the contiguous holes *f*, and arranged substantially as described, whereby the yokes are made to press the rolls together by tightening the thumb-screws.

In testimony whereof I sign this specification, in the presence of two witnesses, this 25th day of September, 1885.

HENRY H. THORP.

Witnesses:

CHAS. H. DORER,  
WM. M. MONROE.