

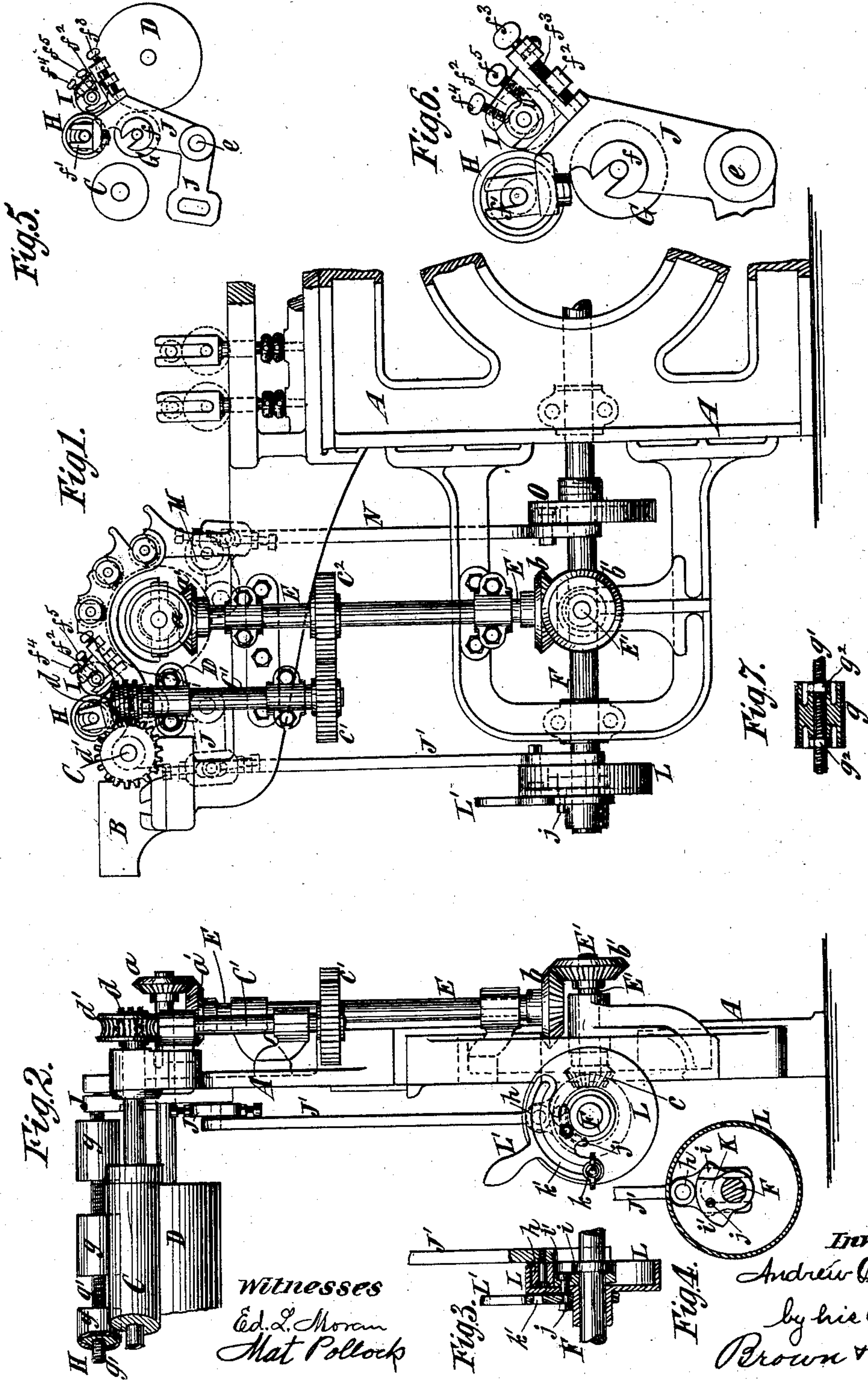
No Model.)

A. OVEREND.

INKING APPARATUS FOR PRINTING MACHINES.

No. 363,760.

Patented May 24, 1887.



UNITED STATES PATENT OFFICE.

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INKING APPARATUS FOR PRINTING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 363,760, dated May 24, 1887.

Application filed November 9, 1883. Serial No. 111,297. (No model.)

To all whom it may concern:

Be it known that I, ANDREW OVEREND, of the city and county of Philadelphia, in the State of Pennsylvania, have invented a new and useful Improvement in Printing-Presses, of which the following is a specification.

My invention relates to the inking apparatus for printing-machines; and its object is to provide means whereby the quantity of ink delivered onto the ink-cylinder may be varied both by decreasing or increasing the quantity of ink uniformly throughout the length of the ink-cylinder and width of the form, and by increasing the quantity of ink delivered onto certain portions or sections of the ink-cylinder and form. Provision for increasing the quantity of ink delivered onto different portions of the width of the form is particularly desirable in printing an illustrated newspaper or other publication, the form for which has the cuts arranged in straight lines or courses lengthwise of it, as the quantity of ink applied to the strips or portions of the form wherein the cuts are arranged may be increased without correspondingly increasing the quantity of ink applied to those portions of the form which lie between the strips or portions in which the cuts are arranged.

The invention consists in novel combinations of parts and features of construction, hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a side elevation of a portion of a printing-press embodying my invention. Fig. 2 is a partial end view thereof. Figs. 3 and 4 are respectively a longitudinal and a transverse section of variable mechanism for moving a ductor and spotting-rollers, hereinafter described. Fig. 5 is an end view of a portion of the inking apparatus detached from other parts. Fig. 6 is an end view of the ductor and spotting-rollers with their carrier, and upon a larger scale; and Fig. 7 is a sectional view of a portion of one of the spotting-rollers.

Similar letters of reference designate corresponding parts in all the figures.

A designates the side frames of the press, at one end of which the inking apparatus is arranged; and B designates the ink-fountain.

C D designate, respectively, the fountain-roller and ink-cylinder, which are mounted in fixed bearings in the side frames, A. The shaft of the ink-cylinder D is provided with a bevel gear-wheel, *a*, with which engages another similar wheel, *a'*, on the upright shaft E. The shaft E is connected by bevel-wheels *b b'* with a horizontal shaft, E', and said shaft E' is itself connected by bevel-wheels *c* with a shaft, F, extending lengthwise of the press.

The fountain-roller C is operated by an upright shaft, C', provided at the upper end with a worm or screw, *d*, engaging with a worm-wheel, *d'*, on the shaft of the fountain-roller, and the shafts C' and E are geared together by spur-wheels *e' e''*.

The fountain-roller C and ink-cylinder D may both be made of iron, as is usual.

G H I designate, respectively, the ductor and the two spotting rollers, which are here represented as mounted in and moved by a carrier, J, which consists simply of L-shaped or bell-crank frames fulcrumed at *e*. Only one of these frames is here shown, a similar one being at the opposite side of the press. The ductor G and second spotting-roller, I, may be made of composition, the other spotting-roller, H, being of felt or other material. To the carrier J is connected a rod, J', whereby the carrier may be moved or oscillated to bring its rollers G H I into contact, alternately, with the fountain-roller C and the ink-cylinder D.

As here shown, the ductor G is mounted in bearings *f*, which are formed integral in the carrier J, and the spotting-roller H is supported in bearings *f'*, attached to said carrier. The second spotting-roller, I, is mounted in bearings *f''*, which are free to slide on the carrier, and may be adjusted thereon by means of a screw, *f'''*, applied to each, as best shown in Fig. 6. The roller I is held in place in its bearings *f''* by means of a set-screw, *f''''*, while below the journal of the roller is a second screw, *f'''''*, having a conical point. By tightening the screw *f'''''* and loosening the screw *f''''*, the roller I will be moved outward in its bearings, while by loosening the screw *f'''''* and tightening the screw *f''''* the roller will drop farther into its bearings and be there held. These two

adjustments of the roller I enable it to be so set that it will preserve proper contact with the otherspotting-roller, H, and will make contact with the ink-cylinder D simultaneously with the ductor G.

The spotting-rollers H I are not continuous from end to end, but are made up of sections, placed side by side and separated from each other, as best shown in Fig. 2. The same result would be attained if the roller were not literally composed of sections, but were turned down at certain points, instead of being continuous from end to end, as its surface would then be composed of sections or isolated portions. As here shown, the sections *g* of each roller are capable of adjustment toward and from each other upon a threaded shaft, *g'*, as best shown in Fig. 7; and when each section is properly adjusted it is locked by means of jam-nuts *g²*, which are received in the recessed or hollowed ends of the sections, as shown in Fig. 7.

From the above description it will be understood that the ductor G makes contact with the fountain-roller C throughout its length, and also makes a similar continuous contact with the ink-cylinder D; hence the form receives a uniform inking from side to side. The sections of the spotting-rollers take the ink from portions only of the fountain-roller and deposit it on the ink-cylinder in the form of bands separated from each other and at different points in the length of said cylinder, according as the sections of the spotting-rollers have been adjusted. The increased quantity of ink is deposited on the form in stripes extending from end to end thereof.

I will now describe the means whereby the time that the ductor G and spotting-roller H are held in contact with the fountain-roller C may be varied.

I would here remark that the two frames J on opposite sides of the press are operated simultaneously by separate rods, *J'*, and hence the mechanism for moving the said rods *J'* should be duplicated on opposite sides of the press, there being a shaft, F, on each side thereof. The rod *J'* is forked or bifurcated at the lower end, to embrace the shaft F, and on it is a roller, *h*, which is acted upon by a variable cam, K, to raise the rod and swing the carrier J, so as to move the ductor G and spotting-roller H into contact with the ink-cylinder D and hold them in contact therewith. This variable cam is composed of two sections, *i i'*, the former, *i*, being fast on the shaft F, and the latter, *i'*, being adjustable around the shaft, so as to make it overlap the section *i* more or less, and thus form in connection with the section *i* a cam of variable length. The cam K is arranged within a cylindric case, L, and on the outer side of this case is a lever, L', to which the adjustable cam-section *i'* is connected by a bolt, *j*, passing through a segmental slot, *j'*, in the case L. When the lever L' is turned or moved relatively to the case L, the

adjustable cam-section *i'* is moved relatively to the section *i*, and the lever and cam-section *i'* may be secured after adjustment by means of a thumb-nut and a clamping bolt or screw, *k*, fixed in the case and passing through a segmental slot, *k'*, in the lever L', as best shown in Fig. 2.

When the cam K passes the roller *h*, the rod *J'* falls by its weight and carries the ductor G and spotting-roller H into contact with the fountain-roller C. It will therefore be understood that by lengthening the cam K the spotting-roller I and ductor G will be held a longer time in contact with the ink-cylinder D, and the period of contact of the ductor G and spotting-roller H with the fountain-roller C will be correspondingly shortened, while by shortening the cam K a reverse effect will be produced.

M designates the second ductor, supported in a swinging frame or bearing in the usual way; and N designates a rod, which receives motion in the usual way from a cam, O, on the shaft F, and serves to move the ductor M into and out of contact with the ink-cylinder.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination, with the fountain-roller C and ink-cylinder D, of the ductor G, the oscillating or swinging carrier J and its rod *J'*, the shaft E, the cam K, composed of the fixed and adjustable sections *i i'*, the case L, fixed relatively to the section *i*, and the hand-lever L', to which the adjustable section *i'* is connected, and which is adjustable on the exterior of the case L, substantially as herein described.

2. In a printing-press, the combination, with an ink-fountain, a fountain-roller, and an ink-cylinder, of a spotting-roller composed of sections separated from each other, and a carrier wherein the spotting-roller is journaled, and which is movable, as described, to move the spotting-roller first into contact with the fountain-roller and then toward the ink cylinder, substantially as set forth.

3. The combination, with a fountain-roller and an ink-cylinder, of a ductor movable between said roller and cylinder for delivering ink from one to the other, and spotting-rollers, each composed of sections arranged side by side, but separated from each other, and also movable between said fountain-roller and ink-cylinder for the purpose of taking ink from portions of the length of the fountain-roller and delivering it upon portions of the length of said ink-cylinder, substantially as herein described.

4. The combination, with an ink-fountain, its fountain-roller, and an ink-cylinder, of a ductor, a spotting-roller composed of sections arranged side by side, and a carrier wherein said ductor and spotting-roller are journaled, and which is movable to carry the ductor and spotting-roller into and out of contact with the fountain-roller, substantially as herein described.

5. The combination, with the carrier J, of the spotting-rollers H I, movable bearings f^2 for said roller I, and screws f^3 for adjusting said bearings, substantially as herein described.

bearings, and the conical-pointed screws f^5 for raising or lowering the roller I in said bearings, substantially as herein described.

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6. The combination, with the carrier J, of the spotting-rollers H I, movable bearings f^2 for the roller I, screws f^3 for adjusting said

Witnesses:

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