

Feb. 2, 1926.

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H. F. BECHMAN

INKING MECHANISM FOR PRINTING PRESSES

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Fig. 1.

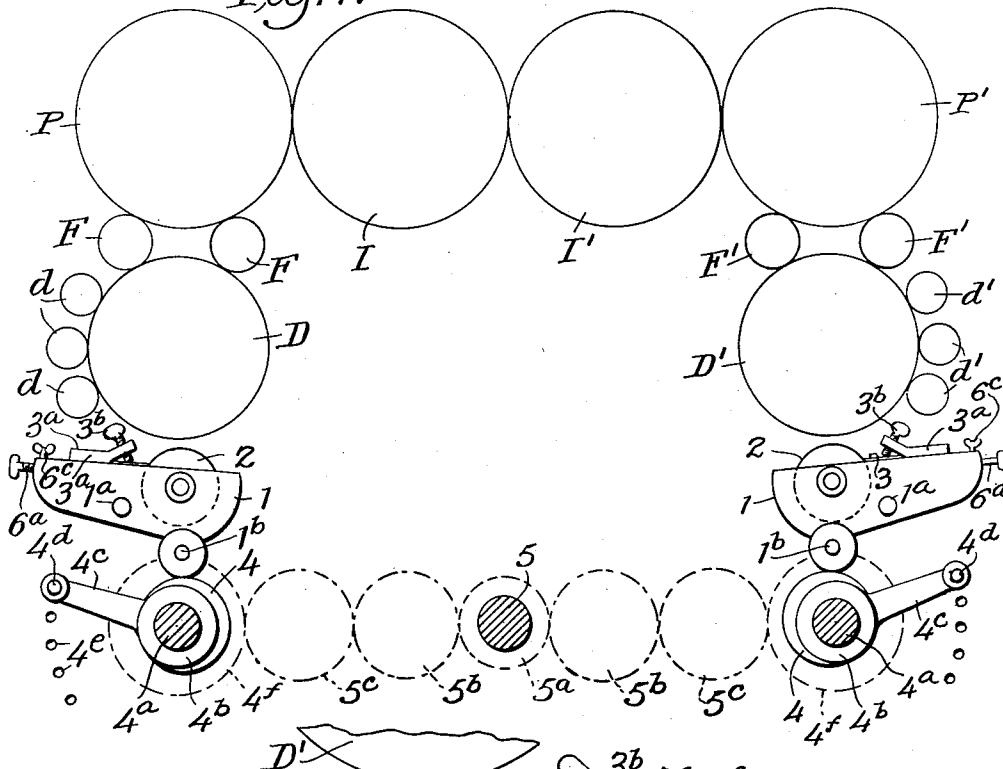
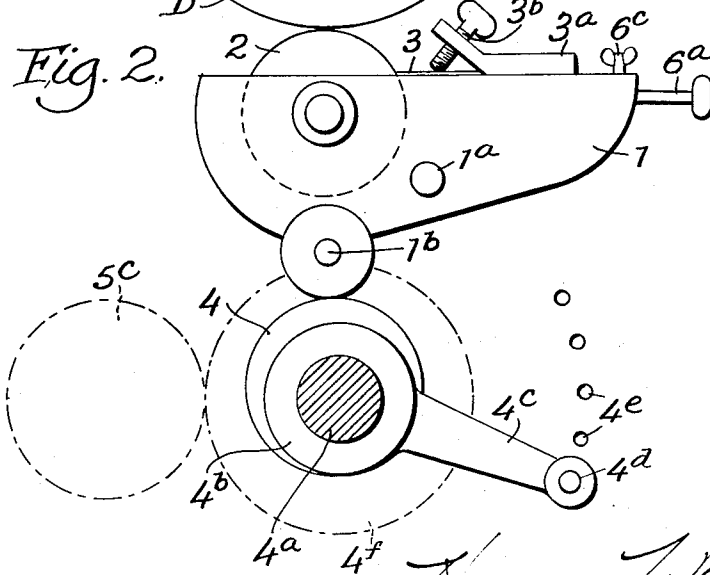


Fig. 2.



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UNITED STATES PATENT OFFICE.

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INKING MECHANISM FOR PRINTING PRESSES.

Application filed February 4, 1924. Serial No. 690,647.

To all whom it may concern:

Be it known that I, HENRY F. BECHMAN, a citizen of the United States, residing at Battle Creek, in the county of Calhoun and State of Michigan, have invented certain new and useful Improvements in Inking Mechanism for Printing Presses; and I hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form part of this specification.

This invention is a novel improvement in inking mechanism for printing presses, and while it is particularly designed and adapted for use in high speed rotary newspaper printing presses, the invention can be used in other types of presses which employ an ink distributing drum which is ordinarily supplied with ink from a fountain by means of a ductor roller.

The present invention particularly relates to the means for so supporting and operating the fountain in relation to the ink distributing drum that the latter receives its supply of ink directly from the fountain roll.

One object of the invention is to avoid the use of the so-called ductor roller and produce novel means whereby the fountain can be bodily rocked or oscillated so as to periodically bring the fountain roll into such relation to the distributing drum that the latter will receive its ink supply directly from the fountain roll without the employment of a ductor or other intermediate transfer roller. The ink can be distributed on the distributing drum by the usual means and transferred from the ink distributing drum to the forms by the usual means.

I will explain the invention with reference to the accompanying drawings to enable others to adopt and use the same, and summarize in the claims the essential features of the invention and the novel construction and novel combinations of parts for which protection is desired.

In said drawings Fig. 1 is a conventional end elevation of a rotary perfecting printing press provided with the usual inking drums and ink distributing and form rolls and an ink fountain and novel means whereby the ink is directly supplied by the fountain roll to the ink drum;

Fig. 2 is an enlarged view of the mechanism for operating the fountain, showing the parts in position when the fountain roll is supplying ink to the drum;

In the drawings, I, I' represent the impression cylinders; P and P' the plate cylinders; D and D' the ink drums arranged below the plate cylinders; D and D', the series of distributing rollers coacting with the drums D and D' respectively, for distributing the ink in the usual manner, and F and F' the form rollers which supply ink to the printing surfaces on the plate cylinders in the usual manner.

The aforesaid general arrangement of printing and inking mechanisms is common, and does not form an essential part of the present invention and may be varied to suit the design of the press builder, the only essential being that there should be an ink drum to which the ink may be supplied directly from the fountain, the fountain being arranged as hereinafter explained.

There will ordinarily be an ink fountain for each individual ink distributing drum employed in the inking mechanism. In the drawings there is shown one fountain supplying ink to the drum D and another supplying ink to the drum D'. As the fountains are constructed and operated alike the description of one will be sufficient to describe both, similar parts being similarly numbered.

The fountain 1 may be of any desired suitable type; and has a fountain roll 2 which may be mounted therein in the usual manner. The fountain roll may be rotated by any of the usual means or devices, either continuously or intermittently as may be preferred; such driving means being well known do not require any particular illustration herein. The fountain is preferably provided with a scraper blade 3 as usual, which is shown as attached to a bracket 3^a extending across the fountain, and the scraping edge of this blade which contacts the roll may be adjusted by screws 3^b in the usual manner so as to regulate the amount of ink carried up on the roll 2. The aforesaid parts per se form no part of the present invention.

The fountain 1 is pivotally supported at its ends, as indicated at 1^a, so that it can be oscillated on these pivots, to raise and lower the roll 2 toward or from the ink drum. The fountain is so disposed relative to the drum that the fountain roll 2 is in position to supply ink to the drum D.

The fountain 1 is pivotally supported at its ends, as indicated at 1^a, so that it can be oscillated on these pivots, to raise and lower the roll 2 toward or from the ink drum. The fountain is so disposed relative to the drum that the fountain roll 2 is in position to supply ink to the drum D.

tive to the ink distributing drum, (as D) that in its lower position there will be no contact between the fountain roll and the drum nor any transfer of ink therebetween, but in its elevated position (Fig. 2) the ink will be taken by the drum from the roll.

The fountain may be oscillated at the proper time to cause the fountain roll to supply ink to the drum by any suitable means; and by bodily oscillating the fountain on its pivot, the fountain roll is operatively moved to and from the drum.

Suitable means should be provided to regulate the operative relation between the drum and fountain roll to insure the proper transfer of ink from the roll to the drum.

In the construction shown, the fountain is provided with pins 1^b, which preferably carry anti-friction rollers, which rest upon or engage cams 4 which are attached to a shaft 4^a eccentrically journaled in bushings 4^b. These eccentric bushings may be provided with arms 4^c, by which the bushings may be rocked so as to bodily adjust the shaft 4^a toward or from the pins 1^b, and thus vary or regulate the operative relation between the fountain roll and the drum when the latter is taking ink from the roll. The bushings may be secured in any desired adjusted position by various means; as f. i. by bolts 4^d engaging the arms 4^c and any one of a series of holes 4^e in the framing, or a part attached to the framing.

Any suitable driving means may be employed which will at the proper times cause the cams 4 to raise and lower the fountain roll to supply ink to the drum. As shown the shaft 4 may be driven by means of a gear 4^f on the shaft driven by intermediate gears 5^c, 5^b, from a gear 5^a on a driven shaft 5, which may be the main shaft of the press.

With this invention no ductors are used; the ink is supplied directly to the drum by the fountain roll by a very slight oscillation or vibration of the fountain. The amount of ink delivered or transferred from the fountain roll to the drum can be easily regulated by varying extent of the upward movement of the fountain so that just the proper quantity of ink will be taken.

The periphery of the drum D moves much faster than the periphery of the fountain roll and consequently for a small extent of surface movement of the roll the drum makes a much greater movement, and this results in spreading the ink taken by the drum from the fountain roll over a large extent of surface of the drum during the time the drum is taking ink from the roll. The ink is thus distributed much better than it would be by a ductor roller. The amount of ink transferred at each operation is regulated by so adjusting the parts that the

periphery of the roll and drum at the instant of transfer are so related that only the desired amount of ink will be transferred. By properly locating its pivot pins the fountain can be so nicely balanced that very little power is needed to operate it.

Among other practical advantages of the invention, are the reduction in cost by eliminating the ductor and the operating mechanism therefor; saving of space, which is particularly valuable in the type of press illustrated in the drawing in which the inking mechanism is arranged below the plate cylinder; and better conditioning of the ink, due to the fact that the movement of the fountain keeps the ink therein in motion so that there is less tendency of the roller to back up the ink in the fountain and thereby cause an oversupply or undersupply.

I claim:

1. In inking mechanism for printing presses, an ink drum; an ink fountain having a fountain roll; and means for moving the fountain to move the roll to and from the ink drum to supply ink directly from the fountain roll to the drum, said means comprising a driven shaft and a cam thereon engaging the fountain and partly supporting the latter; with means for laterally adjusting the shaft to correspondingly vary the extent of movement of the fountain roll toward the drum.

2. In inking mechanism for printing presses, an ink drum; a pivotally supported ink fountain having a fountain roll; and means for oscillating the fountain on its pivots to move the fountain roll to and from the drum to supply ink directly from the fountain roll to the drum, said means comprising a driven shaft and cam means thereon engaging the fountain and supporting the latter; with means for adjusting the bearings of said shaft to raise or lower the shaft and correspondingly vary the extent of movement of the fountain roll to or from the drum.

3. In an inking mechanism for printing presses, an ink drum; an ink fountain having a fountain roll; means for moving the fountain to and from the ink drum to supply ink directly from the fountain roll to the drum; and means for bodily adjusting the said fountain moving means to vary the limit of movement of the fountain roll toward the drum.

4. In inking mechanism for printing presses, an ink drum; a pivotally supported ink fountain having a fountain roll; a cammed shaft for oscillating the fountain on its pivots to move the fountain roll to and from the drum to supply ink directly from the fountain roll to the drum; and means for adjusting the said shaft to vary the limit of movement of the fountain roll toward the drum.

5 5. Inking mechanism for rotary newspaper printing presses in which the ink mechanism is arranged below the plate cylinder, said inking mechanism including a rotary ink drum; an oscillating ink fountain below the drum, said fountain having a fountain roll; means for oscillating the fountain to move the fountain roll to and from the ink drum, whereby the ink is supplied directly from the fountain roll to the drum; and means for bodily adjusting the fountain oscillating means to vary the limit of movement of the fountain roll toward the drum. 10

In testimony that I claim the foregoing as my own I affix my signature. 15

HENRY F. BECHMAN.