

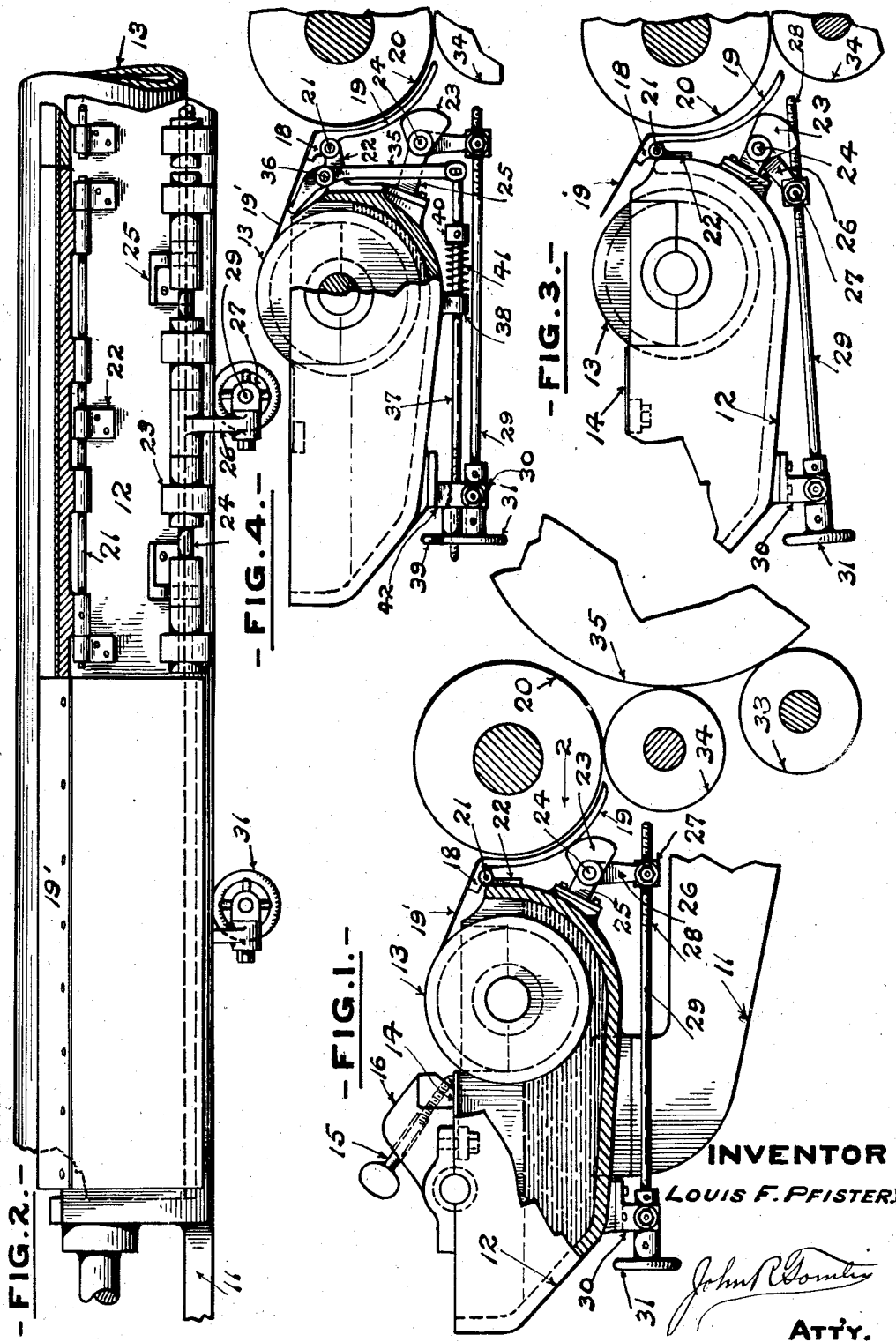
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INKING MECHANISM

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INKING MECHANISM

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*This invention relates to inking mechanism for printing presses, and especially rotary presses which print on a continuous web of paper.

5 The inking mechanism used on many presses of this type consists of a fountain or reservoir containing ink, and a fountain roller that is rotated at a relatively slow speed. The fountain roller picks up a film of
10 ink as it rotates and the ink is then transferred to the ink distributing cylinder by a roller carried on oscillating arms and generally known as a ductor roller. The ductor roller is brought to bear on the fountain
15 roller, the rotation of which deposits ink on the ductor roller. The oscillating arms then move the ductor roller away from the slow running fountain roller and into contact with the ink distributing cylinder which is run-
20 ning at the speed of the printing cylinders, and transfers ink thereto. The frequent acceleration and deceleration of the ductor roller is an objection inherent in the fountain type of inking mechanism heretofore used.
25 It is the principal object of the present invention to eliminate the ductor roller and substitute therefor a simple means for transferring ink from the fountain roller to the ink distributing cylinder.

30 Another object of the invention is to provide an inking mechanism in which the ink is supplied from an ink fountain to the distributing rollers in a continuous flow, instead of in an intermittent manner, as is the result
35 where employing the usual form of ductor roller mechanism.

Another object of the invention is to provide inking mechanism in which the ink supply may be accurately and conveniently ad-
40 justed to the requirements of the printing.

Another object of the invention is to provide an inking mechanism whereby ink may be withheld from any desired portion of the printing cylinder.

45 Another object of the invention is to provide an inking mechanism which can be economically manufactured.

Other objects not specifically referred to herein, will be apparent to those versed in
50 the art, or may be learned as the description

proceeds or through practice with the invention.

The invention consists of certain novel parts, arrangements and combinations which will be fully described in connection with the accompanying drawings, and the novel features thereof pointed out in the claims hereunto annexed. A preferred embodiment of the invention has been illustrated in these drawings, wherein:

Figure 1 shows a section through a portion of a printing press with the ink rollers shown in outline, and with a side view of the ink fountain partly broken away.

Figure 2 is a view partly in section of a portion of the ink fountain, with the ink rollers removed, as viewed in the direction of arrow 2 on Figure 1, and

Figure 3 is a side view of the ink fountain, similar to a portion of Figure 1 with the ink feeding member shown in the inoperative position.

Figure 4 is a side view of an ink fountain similar to Figure 1 in which means are provided for separately adjusting the feeding and discharge portions of the ink feeding member.

Referring to the drawings, 11 indicates a portion of the frame of a printing press, which supports an ink fountain 12. A fountain roller 13 is mounted to rotate within the fountain and is driven by means, not shown, which may be a pawl and ratchet or other mechanism which imparts a relatively slow rotary motion. A fountain blade 14 of the usual type is adjusted by means of a row of fountain blade screws extending lengthwise of the fountain. One of these screws is shown at 15, and it is threaded into a support 16. The fountain blade being flexible, the screws
15 effect adjustment of the gap between the end of the blade and the fountain roller 13.

Ink conveyor or feed members 18 are formed with an arcuate discharge portion 19 shaped to conform with the surface of the first ink distributing cylinder 20. The members 18 are hinged on a shaft 21 supported by brackets 22 mounted on the adjacent wall of the ink fountain 12, and the ink feeding

members 18 also carry flexible blades 19' which bear on the fountain roller 13.

Adjustment of the distance between the curved portion 19 of the ink feeding members and the ink distributing cylinders 20 is effected by the setting of the cams 23. These cams are secured to the shaft 24 which is carried on brackets 25 fixed to the wall of the ink fountain 12. Also secured to the shaft 24 is a lever 26 carrying the swivel nut 27 which engages the screw thread 28 on the rod 29. This rod is supported in a bearing swiveled to the support 30 and is secured to the hand wheel 31 by means of which the rod 15 may be turned to communicate motion to the cams 23, thereby effecting adjustment of the ink feeding members 18 with relation to the ink distributing cylinder 20. It will be understood that the blade 19' being flexible, the discharge portion 19 of the ink feed member may be adjusted over the required range without causing the blade 19' to separate from the fountain roller 13.

The cams 23 are so shaped that, when they are in the position shown in Figure 1, a certain movement of the handwheel 31 will cause only a small movement of the discharge portion 19 of the ink feeding member. However, when the cams 23 are moved to the position shown in Figure 3, a similar movement of the handwheel 31 will cause a much greater movement of the ink feeding member. A simple mechanism is thus provided for obtaining close adjustment between the feeding member and distributing cylinder to permit the proper transfer of ink from the feeding member to the distributing cylinder, and also for rapidly moving the ink feeding member into and out of operating position.

An ink roller 34 conducts the ink from the first distributing cylinder 20 to the second ink distributing cylinder 35 which is shown broken away. Other rollers, one of which is shown at 33, distribute the ink and transfer it to printing plates carried on a printing cylinder. These parts are not shown as they form no part of the invention and are well known in the art.

In operation the adjusting screws 15 will be set to effect such an adjustment of the fountain blade 14 with relation to the fountain roller 13, that the required amount of ink will be carried past the blade as the fountain roller is rotated in a clockwise direction. The ink which thus passes the fountain blade 14 will be carried over and taken off by the blade 19'. As a result of the combined action of the force of gravity and capillary attraction the ink deposited on the blade 21 will flow to the discharge portion 19 of the ink feed member 18 and be taken off by the distributing cylinder 20, which is rotated in a counter-clockwise direction. By operating the hand wheel 31, the proper adjustment

can be made so that the ink flowing over the feeding member will be distributed in a film over the surface of the distributing cylinder 20.

The regulating screws 15 provide means for adjusting the quantity of ink fed to selected portions of the feeding member so that certain portions of the distributing cylinder may be supplied with ink in greater or less quantity as required by the printing plates carried on the corresponding portion of the printing cylinder.

Newspaper presses usually print either two or four pages widthwise of the web, and it is frequently desired to print on webs narrower than the full width. Thus, on a four page wide press, it may be desired to print a web which is either two or three pages in width, in which case the inking mechanism must be arranged to cut off the ink supply from the portion of the printing cylinder where no ink is to be used. This invention provides a convenient means of accomplishing this as the ink feeding members 18 may be one page in width, and when a web narrower than full width is being printed, certain of the cams 23 are moved to the position shown in Figure 3, allowing one or more of the ink feeding members to swing back so the blades 21 which they carry do not bear on the fountain roll, and thus no ink is taken off by those feeding members.

In the arrangement shown in Figure 4 the discharge portion 19 of the feeding or conveyor member 18 is adjusted by the means previously described and a separate means is provided for moving the scraper portion 19' of said member out of contact with the fountain roller 13. A lever 35 is pivoted to the bracket 22 as indicated at 36. The short end of the lever 35 bears on the under side of the flexible scraper 19' and the long end is pinned to a rod 37 which slides in the bracket 42 and the lug 38, and is threaded into a handwheel 39. A collar 40 is secured on rod 37 and forms an abutment for the spring 41 which, acting through the mechanism just described, biases the short end of lever 35 away from scraper 19', except as restrained by the handwheel 39 abutting against the bracket 42. By turning the handwheel 39 the short end of lever 35 may be moved and either raise or lower the portion of blade 19' that bears on roller 13. It will be understood that when the feeding member 18 is made in sections a lever 35 and cooperating mechanism is provided for each section of the feeding member, thus constituting means for moving the scraper portion of each section of the member into and out of operating relation with the fountain roll, without affecting the adjustment of the discharge portion of the ink feeding member with relation to the distributing cylinder.

While the invention has been shown in a practical form it will be understood that it is not restricted to the particular application shown and that various modifications may be made without departing from the spirit of the invention as defined by the claims hereunto annexed.

What I claim is:

1. In an ink feeding mechanism for printing presses, an ink fountain, a fountain roller, a distributing cylinder, and normally stationary means cooperating with the circumference of the distributing cylinder to remove ink from the fountain roller and transfer it to the distributing cylinder.

2. In an ink feeding mechanism for printing presses, an ink fountain, a fountain roller, a distributing cylinder, and an ink feeding member in operating relationship with the periphery of the distributing cylinder, arranged to remove ink from the fountain roller and to form a path for the flow of ink to the distributing cylinder.

3. In an ink feeding mechanism for printing presses, an ink fountain, a fountain roller, a distributing cylinder, and an ink feeding member consisting of a scraper portion engaging the fountain roll and a discharge portion conforming with the circumference of the distributing cylinder.

4. In an ink feeding mechanism for printing presses, an ink fountain, a fountain roller, a distributing cylinder, and an ink feeding member consisting of a scraper portion engaging the fountain roll and a discharge portion cooperating with the circumference of the distributing cylinder and conforming thereto.

5. In an inking mechanism for printing machines, an ink fountain, a fountain roller, an ink distributing cylinder, and multiple ink feeding members adapted to engage the periphery of the fountain roller and shaped to conform with the periphery of the ink distributing cylinder; said members being movable into and out of operating relation.

6. In an inking mechanism for printing machines, an ink fountain, a fountain roller operable therein, a cylinder operable exteriorly of the fountain, and ink carrying means cooperating with the fountain roller and with the circumference of the cylinder and comprising separate components movable independently of each other into and out of cooperable relation with the fountain roller.

7. In an inking mechanism for printing machines, an ink fountain, a fountain roller, a distributing cylinder, and multiple ink feeding members cooperating with the fountain roller and with the circumference of the distributing cylinder and separately movable into and out of operating position, whereby the ink supply may be withheld from a section of the ink distributing cylinder.

8. In an inking mechanism for printing machines, an ink fountain, a fountain roller, a distributing cylinder, and multiple ink feeding members cooperating with the fountain roller and with the circumference of the distributing cylinder, each controlling the ink supplied to a section of the distributing cylinder, and means to independently move the members into and out of feeding relation.

9. In an inking mechanism for printing machines, an ink coated roller driven at a relatively slow speed, an ink distributing cylinder driven at a higher rate of speed, and a normally stationary ink feeding member engaging with the periphery of the roller and cooperating with the circumference of the distributing cylinder to remove ink from the ink roller and conduct it to the ink distributing cylinder; said ink feeding member being shaped to conform with the circumference of the distributing cylinder.

10. In an inking mechanism for printing machines, an ink fountain, a fountain roller, a distributing cylinder, a conveyor member cooperating with the fountain roller and distributing cylinder and means for adjusting a portion of the conveyor member relative to the distributing cylinder.

11. In an inking mechanism for printing machines, an ink fountain, a fountain roller, a distributing cylinder, a conveyor member comprising a scraper portion normally in engagement with the fountain roller and a discharge portion shaped to conform with the periphery of the distributing cylinder, and means for moving the said scraper portion from engagement with the fountain roller.

12. In an inking mechanism for printing machines, a fountain roller, a distributing cylinder, an ink feeding member having a scraper portion engaging the fountain roller and a discharge portion cooperating with the circumference of the distributing cylinder, and means for adjusting said discharge portion relative to said distributing cylinder.

13. In an ink feeding mechanism for printing presses, an ink fountain, a fountain roller, a distributing cylinder, an ink feeding member arranged to remove ink from the fountain roller and transfer it to the distributing cylinder, and means for imparting relatively slow motion to the ink feeding member to adjust it relative to the distributing cylinder and for imparting a more rapid motion to move the said feeding member from operating position.

14. In an inking mechanism for a printing machine, an ink fountain with a fountain roller rotating therein, a fountain blade cooperating with the fountain roller and adjustable with relation thereto to regulate the volume and distribution of ink carried past the fountain blade, a distributing cylinder,

ink feeding members having blades bearing on the fountain roller which remove the ink that has passed the fountain blade, and means cooperating with the periphery of the distributing cylinder to deposit thereon the ink as distributed on the fountain roller.

15. In an inking mechanism for a printing machine, an ink fountain, a fountain roller with a coating fountain blade, a distributing cylinder, a normally stationary ink feeding member adapted to remove ink from the fountain roller and convey it to the distributing cylinder, and means for regulating the quantity of ink supplied to a selected portion of the distributing cylinder whereby it may be supplied with ink in greater or less quantity than other portions.

16. In an inking mechanism for a printing machine, an ink fountain, a fountain roller, a distributing cylinder, and an ink feeding member adapted to remove ink from the fountain roller and conduct it and apply it to the distributing cylinder, said feeding member being arranged to conform with the ink distributing cylinder and to form one side of a narrow area, the other side of which is formed by the periphery of the cylinder.

In testimony whereof, I affix my signature.

LOUIS F. PFISTER.

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