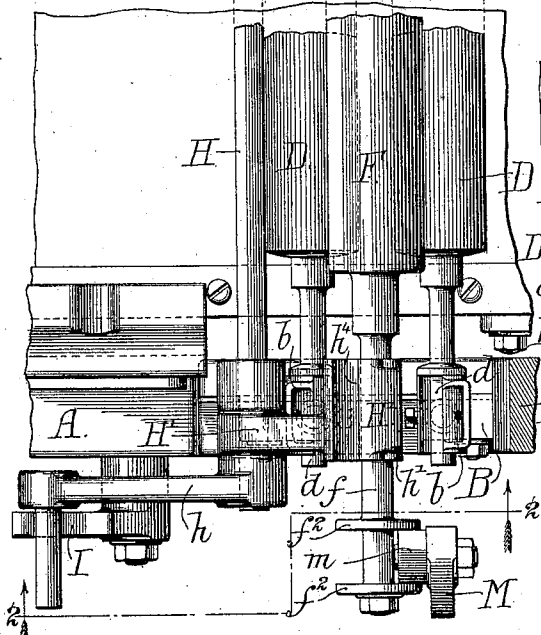
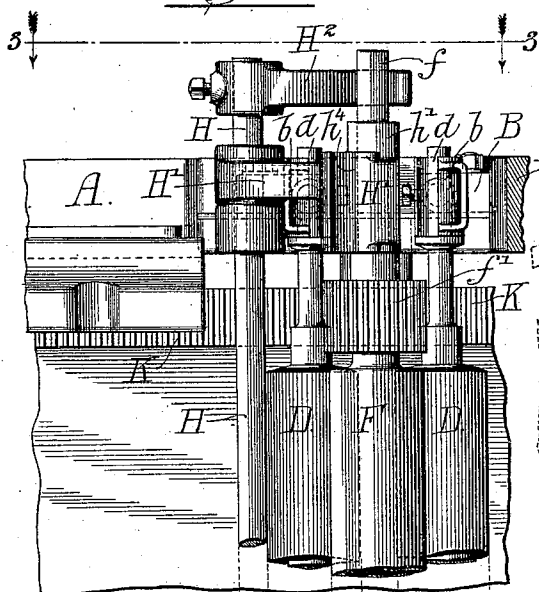


R. MIEHLE.
PRINTING PRESS.

Patented Dec. 29, 1896.

Fig. 1.



Witnesses:—

Louis M. F. Whitehead.

J. B. Heir

Fig. 2.

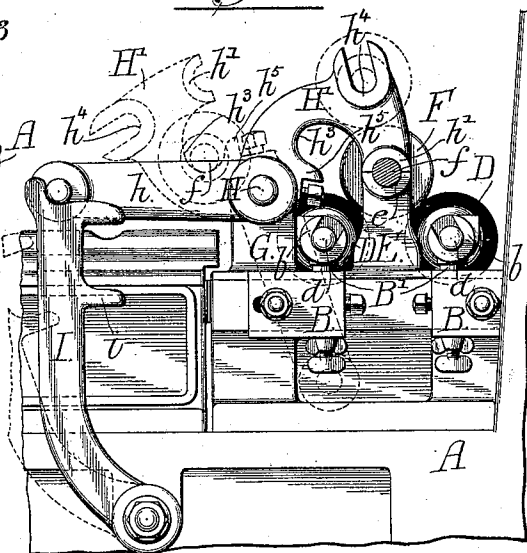
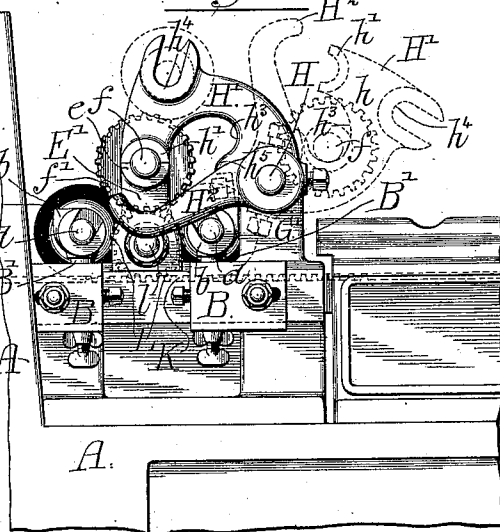


Fig. 3.



Inventor:
Robert Michle.

By: Dighton, Poole & Brown

His Attorneys

UNITED STATES PATENT OFFICE.

ROBERT MIEHLE, OF CHICAGO, ILLINOIS, ASSIGNOR TO THE MIEHLE PRINTING PRESS AND MANUFACTURING COMPANY, OF SAME PLACE.

PRINTING-PRESS.

SPECIFICATION forming part of Letters Patent No. 574,206, dated December 29, 1896.

Application filed January 25, 1893. Serial No. 459,736. (No model.)

To all whom it may concern:

Be it known that I, ROBERT MIEHLE, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful
5 Improvements in Printing-Presses; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon,
10 which form a part of this specification.

This invention relates to inking apparatus for cylinder-presses, and is applicable more particularly to the inking-rollers of such presses.

15 As is well known the composition surfaces of the inking-rollers rapidly accumulate dirt and floating particles, necessitating frequent renewals and consequent loss of time.

20 The present invention is designed to facilitate the renewal or exchange of these inking-rollers, and to this end it embraces devices by which the distributing-roll may be readily handled by a single attendant from one side of the press.

25 The invention consists in the matters hereinafter described, and pointed out in the appended claims.

30 In the accompanying drawings, Figure 1 is a plan view of a part of a cylinder-press embodying my improvements. Fig. 2 is a sectional elevation of the same, looking toward the front side of the press, taken on line 2 2 of Fig. 1, the shaft of the distributing-roller being shown in section. Fig. 3 is an elevation of the same, looking toward the rear side of the press.

35 In the drawings, A represents the frame of the press, to the opposite sides of which are secured the longitudinally-adjustable plates B, each of which carries a vertically-adjustable shank B', terminating at the top in open boxes b for the reception of the spindles d of the form-rollers D in the usual manner.

40 Secured to the opposite sides of the press, between the bearing of the form-rollers, are standards E E', provided at their upper ends with seats or bearings e, in which the ends of the shaft f of the distributing-roll F are journaled.

50 Adjacent to the standards E E' are other standards G G', having bearings in which

are journaled the ends of a rock-shaft H. Curved arms H' are secured at one end to this rock-shaft H, their other or free ends terminating in half boxes or caps h', designed, in conjunction with the seats e at the top of standards E E', to form complete bearings or boxes for the shaft f of the roll F. Open boxes h⁴ are formed in the other side of these arms to receive the shaft of another, or riding, distributing-roll (shown in dotted lines) in case it is desired to use one in securing extreme evenness of distribution of the ink. Such other distributing-roll is commonly made of composition like that of the inking-rolls.
60 The shaft H is further provided at the rear side of the machine outside of the roll-bearings with an arm H², which usually stands in an approximately horizontal position with its free end beneath the end of the shaft f of the distributing-roll, which shaft extends beyond its bearing a distance sufficient to engage the arm. Said arm H² is preferably curved or provided with an upturned end to prevent the escape of the shaft from the same, as will hereinafter more fully appear.
70 The rock-shaft H is further provided at the front side of the press with a crank or handle h, which may be grasped by the operator for actuating the rock-shaft. The said crank rests normally in engagement with the upper end of a detent I, pivoted at its lower end to the side of the frame, as shown in Fig. 2. The detent I is provided near its upper end with a finger i, the purpose of which will be hereinafter explained.
75

The sides of the arms H' nearest the standards E E' are provided with recesses h³ h³, or, in other words, the arms are caused to form goosenecks, said recesses being designed when the arms are thrown back by the depression of the handle h to receive and support the ends of the shaft of the distributing-roll F, as shown in dotted lines, Figs. 2 and 3, and to permit the ready removal of the same when occasion requires.
90

In operation, when it is desired to remove and replace rollers the operator releases the detent I and depresses the handle h, which, rotating the shaft H, will cause the free ends of the arms H' from the shaft F and cause the outer curved end of the arm H² to lift the
100

rear end of the shaft f and guide it as the arm rises into the recesses h^3 of the arm H' at the rear side of the press, the other end meanwhile being grasped by the operator and seated in the recess of the other arm H' . In this way the distributing-roll is supported upon the press, but at a distance from the form-inking rolls, thus leaving them free to be removed and replaced by clean-surfaced rolls.

In replacing the shaft f in its bearings the crank-handle is operated in the opposite direction or raised, the shaft being supported in the recesses of the arms H' H' until the outer curved end of the arm H^2 has nearly reached the level of the bearing e on that side of the press. The front end of shaft f is then transferred to its bearing by hand, while by a continued movement of the crank the other end of the shaft will be restored to its bearing by the arm H^2 , and the further movement of the handle replaces the caps h' . The detent I being engaged with the crank the shaft f is secured against accidental displacement.

A longitudinal rack K is secured to the bed of the press at the rear side, with which a pinion L , mounted on a stub-shaft l , secured to the standard E' , engages, the pinion L in turn meshing with a pinion f' , carried by the shaft f , and actuating the distributing-roll F positively, as is usual in similar presses, the roller being also shifted longitudinally to more perfectly distribute the ink by means of a lever M , actuated from some moving part of the press and provided at its upper end with a friction-roll m , engaging between two flanges f^2 on the front end of the shaft f .

When the supplementary or riding distributing-roll is on the press, the handle h , when operated as before stated, may be caught by the finger i of the detent I , thus holding arm H' in such position that both of the distributing-rolls will be supported by said arms clear of the form-rollers.

In the particular construction shown the arms H' H' are provided with spurs or projections h^3 h^3 , which serve to give such shape to the recesses or inwardly-curved parts of the goosenecks that they will properly support the distributing-roller shaft f when the crank is engaged with the said finger i . The presence of such projections is not essential, however, as the arms I themselves may obviously be so shaped as to secure the desired result without the use of the projections referred to as a distinctive feature.

In addition to its use in removing and replacing the form-inking rollers the device described is of great convenience for lifting and holding the distributing-roller clear of the inking-rollers when the press is not in use, so as to avoid distortion of the composition inking-rollers, which is liable to occur if the distributing-roller remains long in contact therewith.

It will be understood that I do not wish to be limited strictly to the details of construc-

tion hereinbefore described, as many modifications thereof may be made without departing from the spirit of my invention. For instance, the arms H' and H^2 may be made in one piece, or the one secured to the other instead of to the rock-shaft. Furthermore, the crank-handle may be replaced with a hand-wheel or other equivalent device, and another appropriate form of lock or stop may be used to perform the functions of the detent I ; also, if preferred, an arm H^2 may be used at each end of the shaft H , though I deem this unnecessary, and, indeed, I contemplate in some instances dispensing with the arm H^2 described.

The features of construction herein described as applied to the form-rollers of a press may also obviously be used in connection with the ink-distributing rollers when the latter are provided with riding rollers.

While I have shown my invention as applied to a press in which the inking-rollers are arranged in pairs and one distributing-roller acts on two adjacent inking-rollers, yet the same features of construction may be applied with the same general advantages to presses having a single inking roller or rollers and a distributing-roller over each inking-roller.

What I claim is—

1. The combination with the side frame-plates of a printing-press, of an inking-roller, a distributing-roller, standards rising from the side plates and notched at their upper ends to form the lower parts of bearings for the distributing-roller, pivoted arms provided at their ends with notches to form the upper parts of the bearings for the distributing-roller, a rigid connection between said arms by which the same are moved together when turned on their pivots, a crank rigidly attached to one of said arms, and a pivoted detent constructed to engage said crank to hold the parts of the bearings together, substantially as described.

2. The combination with an inking-roller and a distributing-roller located over the same, of bearings for the distributing-roller, consisting of standards provided with recesses forming the lower parts of the bearings, pivoted arms provided at their free ends with notches forming the upper parts of said bearings, a lifting-arm located beneath and adapted to engage the shaft or journal of the distributing-roller, and a connection between the said several arms, by which the same may be simultaneously turned upon their pivots, substantially as described.

3. The combination with an inking-roller, and a distributing-roller located over the same, of bearings for the distributing-roller, consisting of standards provided with recesses forming the lower parts of the bearings, pivoted arms provided at their free ends with notches forming the upper parts of said bearings, a lifting-arm located beneath and adapted to engage the shaft or journal of the distributing-roller, said arm being provided with an upturned end, and a connection be-

tween the said several arms by which the same may be simultaneously turned upon their pivots, substantially as described.

4. The combination with an inking-roller and a distributing-roller located over the same, of bearings for the distributing-roller consisting of stationary and movable parts, pivoted arms carrying the movable parts of the bearings and provided with recesses to support the distributing-roller when the latter is removed from its bearings, and a connection between the arms by which the same may be simultaneously turned upon their pivots, substantially as described.

5. The combination with an inking-roller and a distributing-roller located over the same, of bearings for the distributing-roller consisting of stationary and movable parts, pivoted arms carrying the movable parts of the bearings and provided with recesses to support the distributing-roller when the latter is removed from its bearings, a lifting-arm located beneath and adapted to engage the shaft or journal of the distributing-roller, and a connection between the said several arms by which the same may be simultaneously turned upon their pivots, substantially as described.

6. The combination with the side plates of a printing-press, of an inking-roller, a distributing-roller located over the same, standards rising from the frame-plates and having notches at their upper ends forming the lower parts of the distributing-roller bearings, a rock-shaft journaled adjacent to the inking-roller, arms rigidly attached to the rock-shaft and provided with notches which form the upper parts of the distributing-roller bearings, a crank attached to the said shaft, and a pivoted detent constructed to engage said crank to hold the parts of the bearings together, substantially as described.

7. The combination with an inking-roller and a distributing-roller located over the same, of bearings for the distributing-roller consisting of stationary and movable parts, a rock-shaft journaled adjacent to the rollers, arms attached to the rock-shaft and carrying the movable parts of the bearings and a lifting-arm also attached to the rock-shaft and adapted to engage the shaft or journal of the distributing-roller, substantially as described.

8. The combination with an inking-roller and a distributing-roller located over the same, of bearings for the distributing-roller consisting of stationary and movable parts, a rock-shaft journaled adjacent to the rollers,

arms attached to the rock-shaft and carrying the movable parts of the bearings, a lifting-arm also attached to the rock-shaft and adapted to engage the shaft or journal of the distributing-roller, and means adapted to engage a part of or upon the rock-shaft for holding the latter in different positions, substantially as described.

9. The combination with an inking-roller and a distributing-roller located over the same, of bearings for the distributing-roller consisting of stationary and movable parts, a rock-shaft journaled adjacent to the rollers, arms attached to the rock-shaft and carrying the movable parts of the bearings, a lifting-arm also attached to the rock-shaft and adapted to engage the shaft or journal of the distributing-roller, and a detent acting upon a part of or upon the shaft for holding the parts of the bearings together, substantially as described.

10. The combination with an inking-roller and a distributing-roller located over the same, of bearings for the distributing-roller consisting of stationary and movable parts, a rock-shaft journaled adjacent to the rollers, arms attached to the rock-shaft and carrying the movable parts of the bearings, a lifting-arm also attached to the rock-shaft and adapted to engage the shaft or journal of the distributing-roller, and a crank or hand lever attached to said shaft for actuating the same, substantially as described.

11. The combination with an inking-roller and a distributing-roller located over the same, of bearings for the distributing-roller consisting of stationary and movable parts, a rock-shaft journaled adjacent to the rollers, arms attached to the rock-shaft and carrying the movable parts of the bearings, a lifting-arm also attached to the rock-shaft and adapted to engage the shaft or journal of the distributing-roller, a crank attached to the shaft, and a pivoted detent adapted to engage said crank to hold the parts of the bearings together, said detent being provided with an arm or spur adapted to engage the crank when the arms upon the rock-shaft are in an intermediate position, substantially as described.

In testimony that I claim the foregoing as my invention I affix my signature in presence of two witnesses.

ROBERT MIEHLE.

Witnesses:

TAYLOR E. BROWN,
S. K. WHITE.