

H. F. BECHMAN.  
INKING APPARATUS.

APPLICATION FILED MAR. 20, 1909.

Patented Dec. 7, 1909.

2 SHEETS—SHEET 1.

942,703.

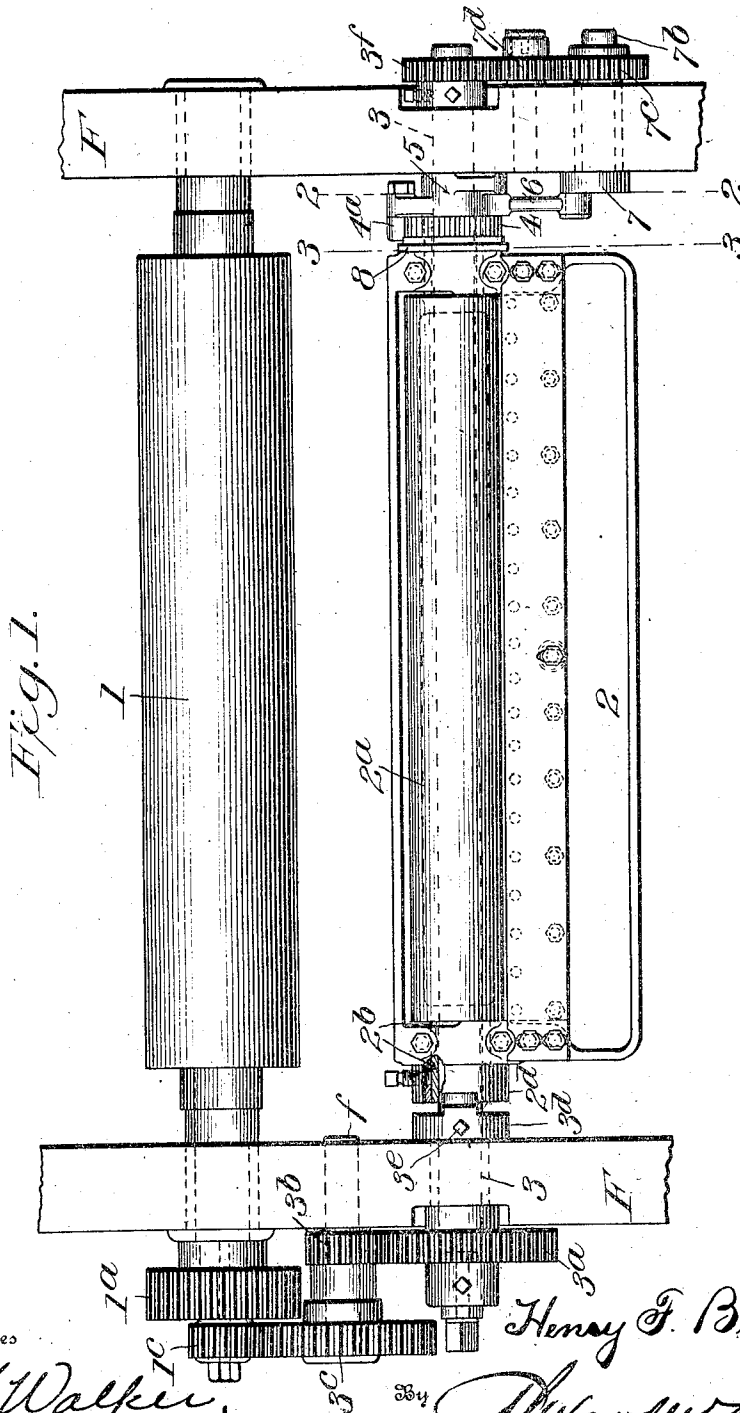


Fig. 1.

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Fig. 2.

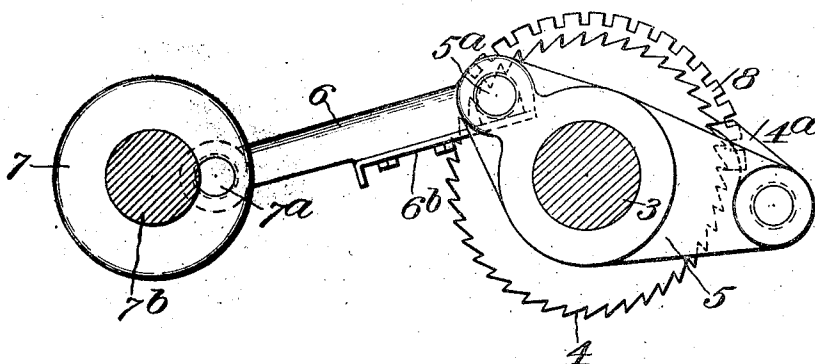
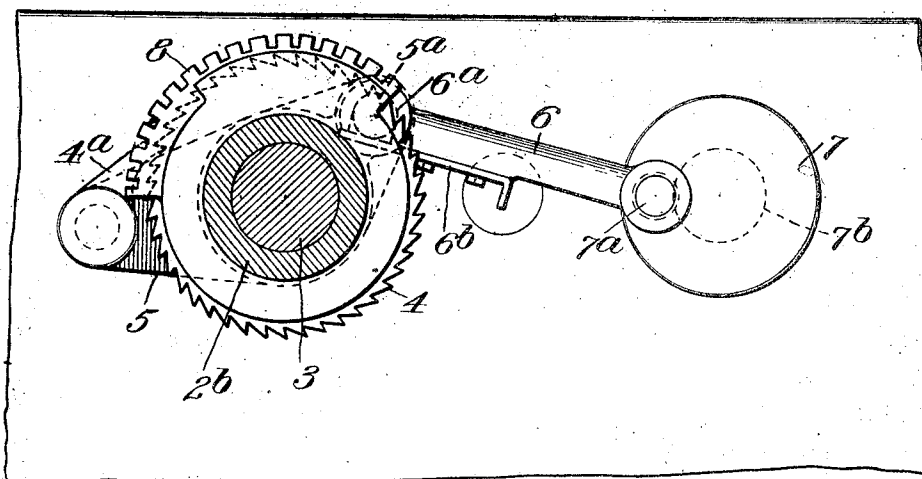


Fig. 3.



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# UNITED STATES PATENT OFFICE.

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## INKING APPARATUS.

942,703.

Specification of Letters Patent.

Patented Dec. 7, 1909.

Application filed March 20, 1909. Serial No. 484,617.

*To all whom it may concern:*

Be it known that I, HENRY F. BECHMAN, of Battle Creek, in the county of Calhoun and State of Michigan, have invented certain new and useful Improvements in Inking Apparatus; 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 an improvement in inking mechanism for printing presses, and is especially adapted for use with rotary printing presses.

The object of the present invention is to enable the ink fountain roller to be operated continuously, or intermittently, as preferred, and to be stopped at will when desired, without necessarily stopping the rotation of the fountain roller driving mechanism.

The invention in brief comprises a shaft extending axially through the fountain roll and driven continuously by suitable gearing; and means whereby the fountain roller can be locked to said shaft, or can be driven from the shaft by a ratchet movement, the ratchet being operated indirectly from the said shaft. In this way the amount of ink delivered from the fountain can be readily controlled according to the class of the work being performed on the press in which the fountain is employed. Also when making ready the press the fountain roller can be readily thrown out of operation so that the inking mechanism can be worked up into proper condition preparatory to starting the press; or the press may be turned in making ready without ink being supplied from the fountain.

One embodiment of the invention is illustrated in the accompanying drawings, and I will now describe the same with reference thereto; and set forth the features of the invention for which protection is desired in the claims following the description.

In said drawings:—Figure 1 is a plan view of the complete fountain and its operating mechanism showing the parts in position for operating the fountain roll by a ratchet feed. Fig. 2 is a section on line 2—2, Fig. 1, looking inward. Fig. 3 is a section on the line 3—3, Fig. 1, looking outward.

In the drawings, 1 designates an ink drum journaled in suitable bearings in the

frame F of the press. Adjacent this ink roll is an ink fountain 2 in which is a fountain roller 2<sup>a</sup>, which is hollow and is provided with hollow gudgeons 2<sup>b</sup> that are journaled in and extend through the end plates of the fountain, as shown. This fountain is supported in any suitable manner on the frame F so as to be held firmly in relation to and parallel with the roll 1.

Through the fountain roll 2<sup>a</sup> and its gudgeons 2<sup>b</sup> extends a driven shaft 3 which preferably runs entirely free of the gudgeons and is journaled in independent bearings in the frame F, as shown. This shaft 3 may be driven by means of a gear 3<sup>a</sup> and intermediate 3<sup>b</sup>, 3<sup>c</sup>, from a pinion 1<sup>c</sup> on the shaft of the ink drum 1; which drum may be driven by a gear 1<sup>a</sup>, meshing with a suitable driver gear, not shown. The gears 3<sup>b</sup>, 3<sup>c</sup>, are journaled on a stud *f* attached to frame F. In this way continuous rotation is imparted to shaft 3 so long as ink drum 1 is driven.

On one of the gudgeons 2<sup>b</sup> of the fountain roller 2<sup>a</sup> is secured a clutch ring 2<sup>d</sup>, opposite which, on shaft 3, is a clutch ring 3<sup>d</sup> provided with a set-screw 3<sup>e</sup>. The clutch ring 3<sup>d</sup> can be moved into or out of engagement with the clutch ring 2<sup>d</sup>, and when in engagement therewith the fountain roller will be rotated with shaft 3; when the rings 3<sup>d</sup>, 2<sup>d</sup>, are disengaged the fountain roll will either be idle or rotated by ratchet devices at the opposite ends of the fountain. On the other gudgeon of the fountain roller 2<sup>a</sup> is fixed a ratchet 4, which ratchet is adapted to be engaged by a pawl 4<sup>a</sup> pivoted on one arm of an oscillating lever 5, which lever is loosely mounted upon the shaft 3 intermediate the gear 4 and the adjacent side frame F. On the other arm of this lever 5 is a pin 5<sup>a</sup>, which is adapted to be engaged by the hooked end 6<sup>a</sup> of a pitman 6, the other end of which is pivotally connected to a crank-pin 7<sup>a</sup> on a disk 7 mounted on the inner end of a shaft 7<sup>b</sup> journaled in the side frame F and carrying on its outer end a pinion 7<sup>c</sup> meshing with an intermediate 7<sup>d</sup>, which in turn meshes with a pinion 3<sup>f</sup> on the adjacent end of shaft 3. In this way a continuous oscillatory motion can be imparted to the pawl 4<sup>a</sup> during the rotation of the shaft 3, and if the clutch members 3<sup>d</sup>, 2<sup>d</sup>, are out of operation and the ratchet devices in operative condition the fountain roller will be turned intermittently. The hook end 6<sup>a</sup> may

be disengaged when desired from the pin 5<sup>a</sup>, so as to put the ratchet devices out of operation. The hook 6<sup>a</sup> may be held in engagement with the pin 5<sup>a</sup> by any suitable devices, a slide latch 6<sup>b</sup> being shown in the drawings. The extent of motion imparted by the ratchet to the fountain roller can be regulated by means of the usual ratchet throwout 8, attached to the end plates of the fountain adjacent the gear 4, as indicated in the drawings.

It will be obvious from the foregoing description that if the clutch members 3<sup>a</sup>, 2<sup>a</sup>, are disengaged, and the pitman 6 is also disengaged from the ratchet-lever, then the fountain roller will be idle although the shaft 3 is running; and in this condition of parts the press can be made ready, or the inking mechanism worked up without any over supply of ink. If the clutch member 3<sup>a</sup> be shifted into engagement with clutch member 2<sup>a</sup> the fountain roller will be continuously driven. By disengaging the clutch members 3<sup>a</sup>, 2<sup>a</sup>, and engaging the pitman 6 with lever 5, the ratchet mechanism will be put in operation and the fountain roller will be operated with a step by step movement. The extent of rotation imparted to the roller at each reciprocation of the pawl 4<sup>a</sup> can be determined by the position of the ratchet stop 8 in the usual manner. By these means it is obvious that the fountain roller can be operated with either a continuous feed or intermittent feed as the pressman may desire, and the feed can be changed from one motion to the other very readily.

Having described my invention what I claim as new and desire to secure by Letters Patent thereon is:

1. In an inking mechanism the combination of an ink fountain, a fountain roller, a driven shaft passing through said roller, means for locking said roller to said shaft at the will of the operator and means for indirectly operating the roller from said shaft at the will of the operator.

2. In an inking apparatus the combination of an ink fountain, a fountain roller journaled therein, a driven shaft extending axially through said roller, a ratchet on the fountain roller, a pawl engaging said ratchet, and means for oscillating said pawl actuated by said shaft.

3. In an inking mechanism for printing presses the combination of a fountain, a fountain roller, a driven shaft extending axially through said roller, a ratchet on the gudgeon of said roller, an oscillating lever mounted on the shaft opposite the ratchet, a

pawl carried by said lever engaging said ratchet, a rotatable crank, a pitman connecting said crank to said lever, and gearing for rotating said crank from said shaft.

4. In an inking mechanism the combination of an ink fountain, a fountain roller, a driven shaft passing through said roller, clutch devices for locking said roller to the shaft at the will of the operator, a ratchet on the fountain roller, a pawl engaging said ratchet, and means whereby said pawl may be driven by said shaft at the will of the operator.

5. In an inking mechanism the combination of a fountain, a fountain roller, a driven shaft extending axially through said roller, a ratchet on the gudgeon of the fountain roller, an oscillating lever mounted on the shaft opposite the ratchet, a pawl carried by said lever engaging said ratchet, a rotatable crank, a pitman connected to said crank and having a hook end adapted to be detachably connected to said lever for operating the latter, and gearing for rotating said crank from said shaft.

6. In an inking apparatus the combination of an ink fountain, an ink roller journaled therein, a clutch member on one end of the roller, a ratchet on the other end of the roller, a driven shaft extending through the roller, means for driving said shaft, a clutch member on said shaft adapted to be engaged with the clutch member on the roller, a lever pivoted on said shaft beside the roller ratchet, a pawl on said lever engaging the ratchet, and means for operating said lever from said shaft.

7. In an inking apparatus the combination of an ink fountain, an ink roller journaled therein having hollow gudgeons, a clutch member on one gudgeon of the roller, a ratchet on the other gudgeon of the roller, with a driven shaft extending through the roller, means for driving said shaft, a clutch member on said shaft adapted to be engaged with the clutch member on the roller gudgeon, a lever pivoted on said shaft beside the roller ratchet, a pawl on said lever engaging said ratchet, a crank pin, a pitman connected to said pin and detachably engaged with said lever, and gearing for rotating said crank pin from said shaft.

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

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Witnesses:

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