No. 853,753. PATENTED MAY 14, 1907.

H. F. BECHMAN.

INKING MECHANISM.

APPLICATION FILED SEPT. 18, 1906.

Fig. 1.

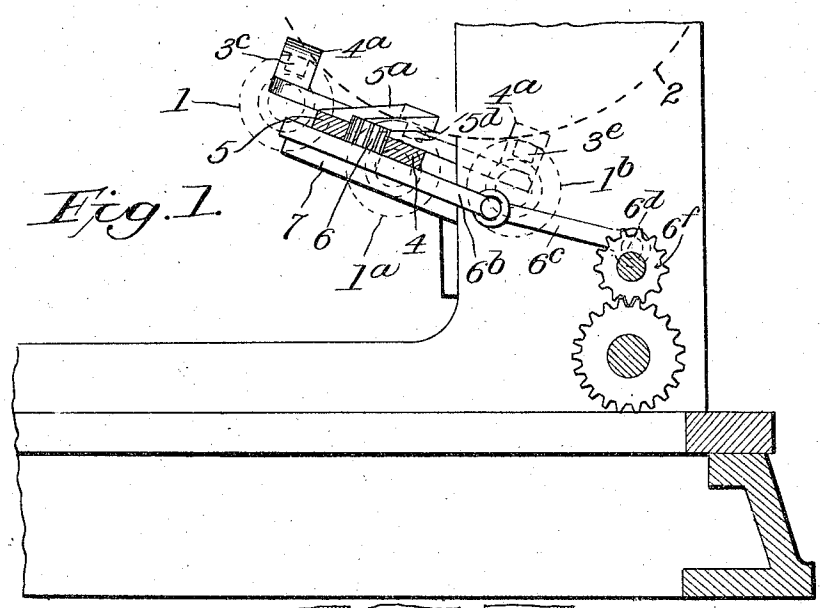
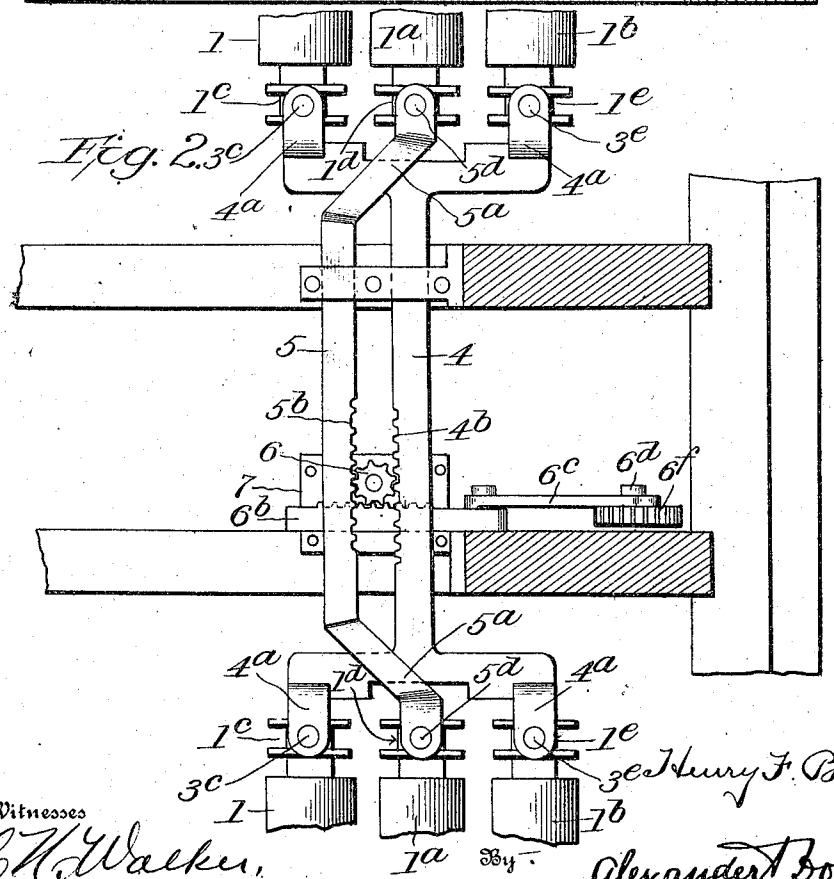


Fig. 2.



Witnesses

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INKING MECHANISM.

No. 853,753. Specification of Letters Patent. Patented May 14, 1907.

Application filed September 18, 1906. Serial No. 335,052.

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 Mechanism; 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 apparatus for printing presses and particularly in the means for operating the vibrator rollers; and specifically is an improvement upon the inking apparatus shown in my Patent No. 823,098, dated June 12, 1906; and its object is to enable one or more vibrator rollers to be moved endwise simultaneously and in opposite directions by one actuating device; and also to enable one actuating device to operate two axially alined sets of vibrator rollers.

The device in brief comprises one or more parallel vibrator bars meshing with an intermediate pinion, which also meshes with a reciprocatory rack bar lying at right angles to the vibrator bars and operated by a pitman connection, or other suitable device from an adjacent gear wheel, which may be on or operated from one of the distributing roll shafts, or the ink-drum shaft. The vibrator bars extend in alinement with the vibrator rolls, when the latter are in operative position, and are provided with devices adapted to engage the ends of the adjacent vibrating rollers so as to vibrate the latter when the rack bar is reciprocated.

The invention will be fully understood from the accompanying drawings and the following explanation thereof,—the said drawings however are not drawn on a working scale, but will suffice to enable a mechanic to fully understand the construction and to apply it to the inking mechanism of a printing press and particularly to the mechanism illustrated in my aforesaid patent.

In the drawings—Figure 1 is a detail view of part of the inking mechanism of a printing press with the novel vibratory-roll operating mechanism; and Fig. 2 is a top plan view of Fig. 1.

In the drawings 1, 1^a and 1^b indicate vibrator rolls which are adapted to co-act with the ink drum 2, for distributing the ink, this arrangement of rolls and drum being well understood.

Each vibrator-roll is provided with a grooved collar (1^c, 1^d and 1^e) for engagement with the mechanism for vibrating the rolls. As shown the collars 1^c and 1^e on rollers 1 and 1^b are engaged by pins 3^c and 3^e on arms 4^a on the end of a bar 4, which bar is supported in axial alinement with the rolls, and is adapted to be reciprocated, longitudinally of the rolls, by means of rack-teeth 4^b, engaging a pinion 6, which is journaled in a bracket 7, attached to the main frame and upon which bracket the bar 4 is also supported.

Beside bar 4, is a similar bar 5, whose inner end is bent as at 5^a so as not to conflict with the arms 4^a on bar 4, and is provided with a pin 5^d adapted to engage the collar 1^d on the intermediate roller 1^a. Vibrator bar 5 is also provided with a toothed portion 5^b which engages the pinion 6 at the side opposite bar 4, consequently when the pinion 6 is rotated the vibrator bars 4 and 5, will be reciprocated in opposite directions, and consequently by imparting rotatory movements to pinion 6, reciprocatory movements will be imparted to the vibrator bars 4 and 5, and vibrator rollers 1, 1^a and 1^b, but vibrator roller 1^a will move oppositely to vibrator rollers 1, 1^b.

Mounted on bracket 7 is a rack-bar 6^b, which lies at right angles to vibrator bars 4 and 5, and engages the pinion 6 below the bars 4 and 5,—and by reciprocating rack-bar 6^b bars 4 and 5, will also be reciprocated at right angles to bar 6^b. The rack-bar 6^b may be operated by means of a pitman 6^c, pivotally connected to said bar and to a crank-pin 6^d on a gear 6^f which may be driven from the ink-drum or from any other continuously rotating shaft, or the said gear could be placed on the shaft of one of the rotating rolls adjacent the vibrator actuating mechanism.

Where two sets of inking mechanisms are arranged end to end and closely adjacent, one vibrator actuating mechanism can be employed to operate two sets of vibrators. This is easily done—as shown in Fig. 2—by simply extending the vibrator bars 4 and 5 on both sides of the bracket 7, and providing

each end of bar 4 with arms 4^a and forming each end of bar 5 alike, so that they can engage the vibrator rollers in each set of inking mechanism, as shown.

Obviously by simply preferably shaping the ends of the vibrator bars 4 and 5, they can each be caused to simultaneously operate two or more vibratory rollers at each end or both ends, and therefore I do not wish to be restricted to the particular construction and arrangement of the ends of the vibrator bars, and the particular number and arrangement of vibrator rollers operated thereby, illustrated in the drawings.

The device is very simple and effective and can readily be applied to many of the inking mechanisms now in use. The vibratory rollers 1, 1^a and 1^b, may be mounted upon swinging supports as shown in my said patent, so that they can be thrown into or out of contact with the ink-drum 2, being shown in contact therewith in full lines in Fig. 1, and out of contact therewith in dotted lines.

With this mechanism it is an easy matter to impart any desired length of endwise movement to the vibrator rollers, and any desired rapidity of reciprocation thereto, relative to the surface speed of the drum, this being merely a matter of properly proportioning the gearing.

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

1. In an inking mechanism, the combination of vibrator rollers, a pair of vibrator bars respectively engaging different rollers, a gear meshing with both bars, and means for imparting movements to said gear.

2. In an inking mechanism, the combination of oppositely reciprocating vibrator rollers, a pair of oppositely reciprocating bars engaging the oppositely reciprocating vibrators, a rotatory gear meshing with both bars and means for operating said gear.

3. In an inking mechanism, the combination of oppositely reciprocating vibrator rollers, a pair of oppositely reciprocating vibrator bars respectively actuating the oppositely reciprocating vibrator rollers, a gear meshing with both bars and means for operating said gear.

4. In an inking apparatus, the combination of an ink drum, vibrator rollers co-acting with the drum, a rotatory gear, a slidable reciprocatory bar engaging said gear, connections between the inner end of said bar and the vibrator rollers, and means for operating the gear.

5. In an inking apparatus, the combination of an ink-drum, adjacent vibrator rollers co-acting with the drum, a gear, parallel bars provided with teeth meshing with opposite sides of said gear, connections between the inner ends of said bars and separate vibrator rollers, and means for operating the gear.

6. In an inking apparatus, the combination of an ink-drum, vibrator rollers co-acting with the drum, a rotatory gear, a reciprocatory slide bar engaging said gear, connections between the inner end of said bar and the vibrator rollers, and means for operating the gear: said means comprising a rack bar meshing with the gear, and a pitman and crank connections for operating said rack-bar.

7. In an inking apparatus, the combination of an ink-drum, adjacent vibrator rollers co-acting with the drum, a rotatory gear, parallel bars provided with teeth meshing with opposite sides of said gear connections between the inner ends of said bars and separate vibrator rollers, and means for operating the gear; said means comprising a rack-bar meshing with the pinion, a pitman connected to the rack-bar and a crank for operating said pitman.

8. In an inking mechanism, the combination of a bracket, a rotatory gear journaled thereon, a vibratory bar meshing with said gear, an oppositely arranged vibrator bar also meshing with said gear; with an ink-drum, vibrator rollers co-acting therewith, and connections between said rollers and the vibrator bars, substantially as described.

9. In combination, an ink-drum, vibrator rollers adapted to co-act therewith, a pair of vibrator bars adapted to engage different vibrator rollers, a gear interposed between and meshing with racks on both the said bars, and means for operating said gear.

10. In combination, an ink-drum, vibrator rollers provided with grooved collars, a pair of vibrator bars provided with pins to engage the grooved collars on different vibrators, a rotatory gear interposed between and meshing with both the said bars, and means for operating said gear.

11. In combination, an ink-drum, vibrator rollers adapted to co-act therewith, a pair of vibrator bars adapted to engage different vibrator rollers, a gear interposed between and meshing with racks on both the said bars, and means for operating said gear; said means comprising a rack-bar meshing with said gear below the vibrator bars, a rotating crank and gear, a pitman pivotally connected to said crank, gear and rack-bar, substantially as described.

12. In combination, an ink-drum, vibrator rollers provided with grooved collars, a pair of vibrator bars provided with pins to engage the grooved collars on different vibrators, a rotatory gear interposed between and meshing with both the said bars, and means for operating said gear; said means comprising a rack-bar arranged at right angles to the vibrator-bars and meshing with said gear below the latter, a rotating gear, and a pitman pivotally connected to said gear and rack-bar, substantially as described.

13. In an inking apparatus, the combination of adjacent inking mechanisms, a pair of vibrator parallel bars extending between said mechanisms, and connections between the ends of said bars and the adjacent vibrator rollers in said inking mechanisms; with means for operating said bars whereby both sets of vibrator rollers in the adjacent inking mechanisms can be operated simultaneously, and vibrator rollers in each set reciprocated oppositely.

14. In an inking apparatus, the combination of adjacent inking mechanisms, a pair of parallel bars extending between said mechanisms, and connections between the ends of said bars and the adjacent vibrator rollers in said inking mechanisms, a rotatory pinion interposed between and meshing with both of said bars, a rack-bar meshing with said pinion, a rotating crank gear, and a pitman pivotally connected to said crank gear and to said rack-bar, substantially as described.

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

HENRY F. BECHMAN.

In presence of—

WILLIAM JAMES MOLYNEUX,

F. W. DUNNING.