

No. 636,344.

Patented Nov. 7, 1899.

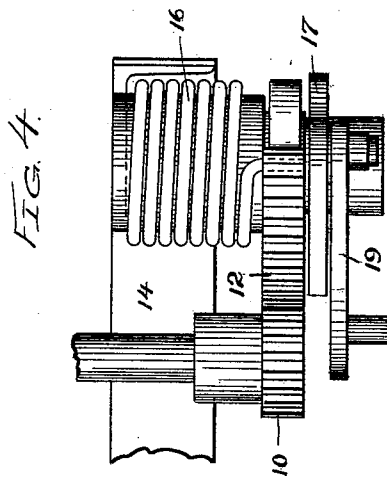
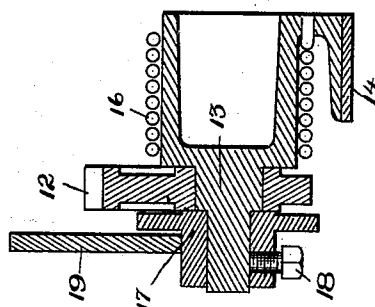
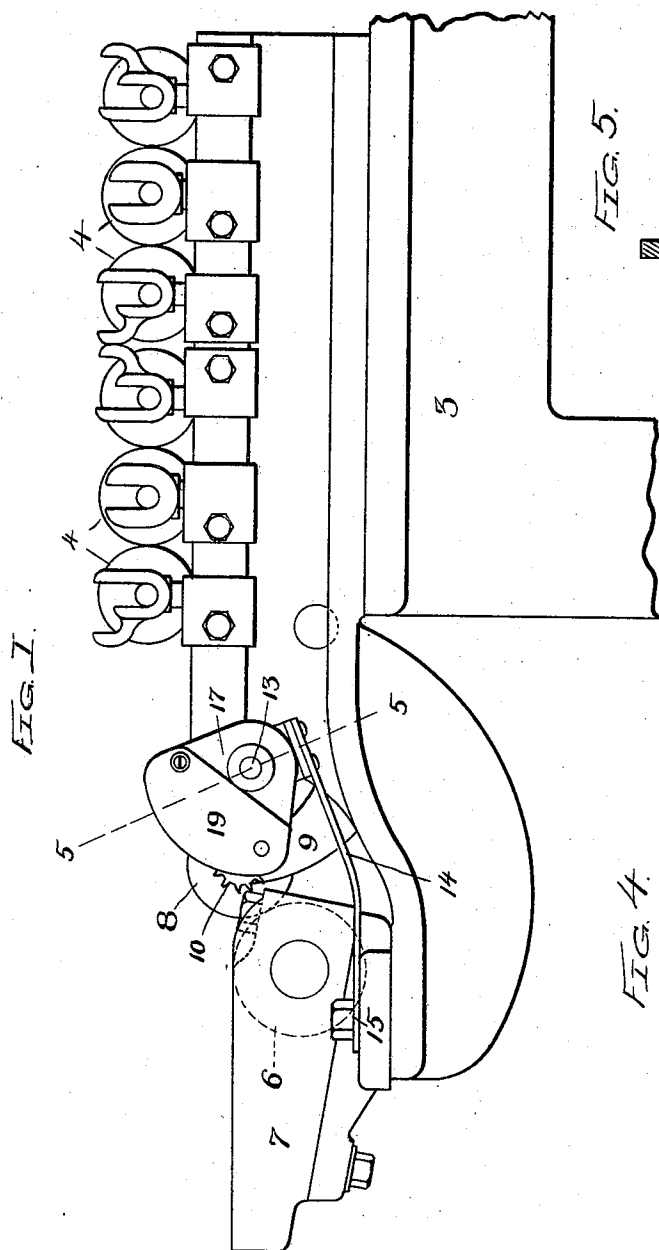
R. MIEHLE.

MECHANISM FOR CONTROLLING INK TRANSFER ROLLS.

(Application filed Aug. 17, 1899.)

(No Model.)

2 Sheets—Sheet 1.



WITNESSES:

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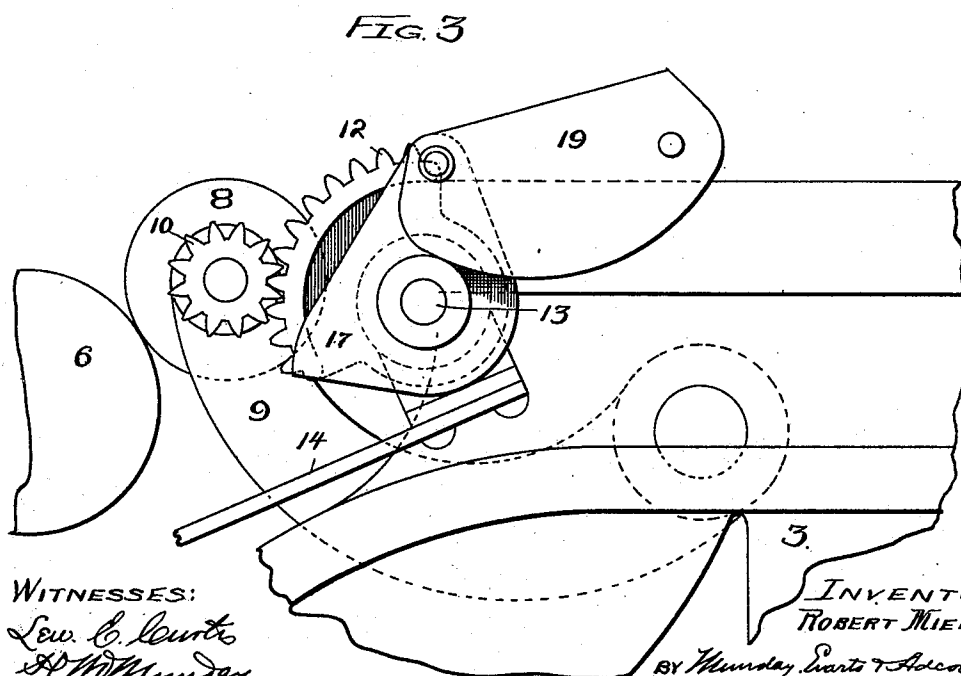
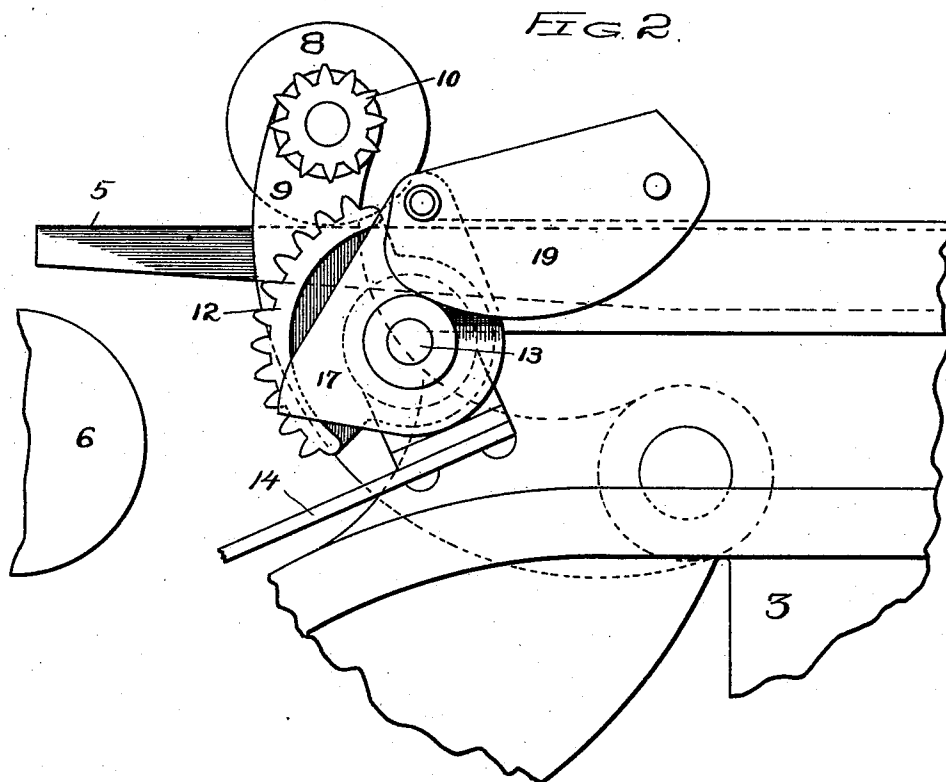
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MECHANISM FOR CONTROLLING INK TRANSFER ROLLS.

(Application filed Aug. 17, 1899.)

(No Model.)

2 Sheets—Sheet 2.



WITNESSES:

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UNITED STATES PATENT OFFICE.

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

MECHANISM FOR CONTROLLING INK-TRANSFER ROLLS.

SPECIFICATION forming part of Letters Patent No. 636,344, dated November 7, 1899.

Application filed August 17, 1899. Serial No. 727,485. (No model.)

To all whom it may concern:

Be it known that I, ROBERT MIEHLE, a citizen of the United States, residing in Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Mechanism for Controlling Ink-Transfer Rolls, of which the following is a specification.

This invention relates to improved means for controlling the transfer-roll of the inking apparatus of printing-presses during the interval occurring between the contact of said roll with the ink table or cylinder and its contact with the fountain-roll. The means adopted by me for this purpose act to stop and reverse the direction of rotation received by the transfer-roll from the ink-bed about the time said roll reaches the fountain-roll. I thus prevent the shocks and wear caused when those rolls come together with their surfaces moving in opposite directions at the point of contact. This checking and reversing device as I prefer constructing it consists of a pinion on the shaft of the transfer-roll adapted to engage a spring-controlled segment placed in the path of the pinion as the roll is carried from the ink-table to the fountain-roll. By this means the pinion during its movement from the ink-table engages the segment, giving the latter a rotation against the pressure of its spring. The resistance of this spring is such that the rotation of the transfer-roll is stopped shortly before or at about the time the transfer-roll contacts with the fountain-roll, and thus reduces the wear on the transfer-roll. When the transfer-roll is moved from the fountain-roll toward the ink-table, the spring-controlled segment acts to start the transfer-roll in the proper direction for its engagement with the ink-table.

The invention consists in the combination, with the transfer-roll, of means essentially such as described for thus stopping its rotation prior to contact with the fountain-roll, and in the novel construction of parts and devices and in the novel combinations of parts and devices herein shown and described, and specified in the claims.

In the drawings, Figure 1 is a side elevation of a portion of a printing-press, showing my invention as applied to a reciprocating-bed printing-press. Figs. 2 and 3 are enlarged

detail views of the stopping and reversing devices. Fig. 4 is a plan view of the same. Fig. 5 is a section on the line A A of Fig. 1.

In said drawings, 3 represents the frame of the press, 4 a series of ink-distributing rollers, and 5 the reciprocating table.

6 is the fountain-roll, supported in the fountain 7, and 8 is the transfer-roll, supported by vibrating arms 9, only one of which is shown, but which are operated in the usual manner to carry the transfer-roll between the positions shown in Figs. 2 and 3. Upon one end of the shaft or journal of the transfer-roll I apply a pinion 10, which when the transfer-roll begins to descend from its upper position encounters and enters into mesh with a toothed segment 12, mounted on a stud 13 and supported upon the end of a spring or yielding arm 14, attached to a stationary part of the press at 15. The segment turns on the stud, but is controlled by the spring, which is shown at 16 as being wound around the larger diameter portion of the stud 13, with one end secured in the stud and the other end in the segment. At the time the pinion thus engages the segment the transfer-roll is rotating under the momentum received from the ink-table, and this momentum causes the pinion to turn the segment against the resistance of spring 16 from the position approximately of Fig. 2 to that of Fig. 3. By this time the transfer-roll will have reached the fountain-roll and its momentum will also have been overcome by spring 16. The partial turn thus imparted to the segment stores up power in the spring, which, as soon as the transfer-roll leaves the fountain-roll, tends to start the transfer-roll to rotating in a direction the reverse of the rotation last received from the ink-table. This reversed rotation reduces the rubbing occurring when the roll again comes in contact with the ink-table, as it is in the same direction the table is then moving.

The segment is confined on the stud by a flanged sleeve or keeper 17, held in place by set-screw 18, and at 19 is a guard-plate attached to the flange of the keeper.

The operation of the device is substantially as indicated below. The transfer-roll is of course operated by the ink-table while

it is in contact therewith, so that when the table retreats and passes out from under the roll the latter will have acquired some momentum and under the power of such momentum will continue to rotate for some time after the table ceases to be in contact. This rotation through the pinion and segment winds up the spring; but the tension of the latter will arrest the rotation of the roll shortly before or at the time the roll is carried by its supporting-arms against the fountain-roll. As a result of this the contacting surfaces of the two rolls will not when the first contact occurs rub against each other, as they have done in previous constructions, and as soon as the transfer-roll is withdrawn from the fountain-roll the power of the spring is immediately felt by the transfer-roll and causes it to turn back and to be under motion when it again meets the ink-table.

While I have shown the invention as applied to a press having a reciprocating ink-table, it will be understood that I do not wish to be limited thereto, as the invention is obviously adapted to be used with any press having an ink-distributing surface imparting rotation to the transfer-roll.

The teeth of the pinion are narrow at the point, so they will readily enter into mesh with the segment; but if they should fail to thus readily find their positions between the teeth of the segment no harm will be done the press, because in that event the supporting-arm will yield. Said arm also tends to reduce the noise and jar occasioned when contact first occurs between the pinion and segment.

I claim—

1. The combination with the transfer-roll of means for checking and reversing the rotation of the roll, consisting of a pivoted spring-controlled toothed segment and a pinion on the journal-roll meshing with the segment, substantially as specified.

2. The combination with the transfer-roll, of a pinion attached to the end of the roll, a

toothed and pivoted segment located in the path of the pinion, and a spring resisting the turning of the segment by the pinion, substantially as specified.

3. The combination with the transfer-roll and the fountain-roll, of means for overcoming the momentum of the roll after it leaves the ink-distributing device and starting it in a reverse rotation, such means consisting of a pinion on the transfer-roll, a toothed segment engaging said pinion and turned thereby, and a spring put under tension by the turning of such segment, substantially as specified.

4. The combination with the transfer-roll of means for reversing the rotation of the roll, consisting of a motor in which power is stored by the roll itself, and means for transmitting motion from one to the other, substantially as specified.

5. The combination with the transfer-roll of mechanism for controlling said roll while being vibrated from the ink-table to the fountain-roll, said mechanism consisting of a spring-motor positively engaged by the roll and acting first to stop its rotation and then to rotate it in the opposite direction, substantially as specified.

6. The combination with the transfer-roll of mechanism for controlling said roll while moving from the ink-table to the fountain-roll, said means consisting of a spring or its equivalent, and means whereby the spring may be put under tension by the roll while the latter is rotating by momentum, substantially as specified.

7. The combination with the ink-transfer roll, of a spring device engaging the roll and adapted to yield thereto, and acting to gradually overcome its momentum, substantially as specified.

ROBERT MIEHLE.

Witnesses:

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