

M. A. DROITCOUR.
INKING APPARATUS FOR PRINTING PRESSES.
APPLICATION FILED SEPT. 11, 1908.

956,316.

Patented Apr. 26, 1910.

2 SHEETS—SHEET 1.

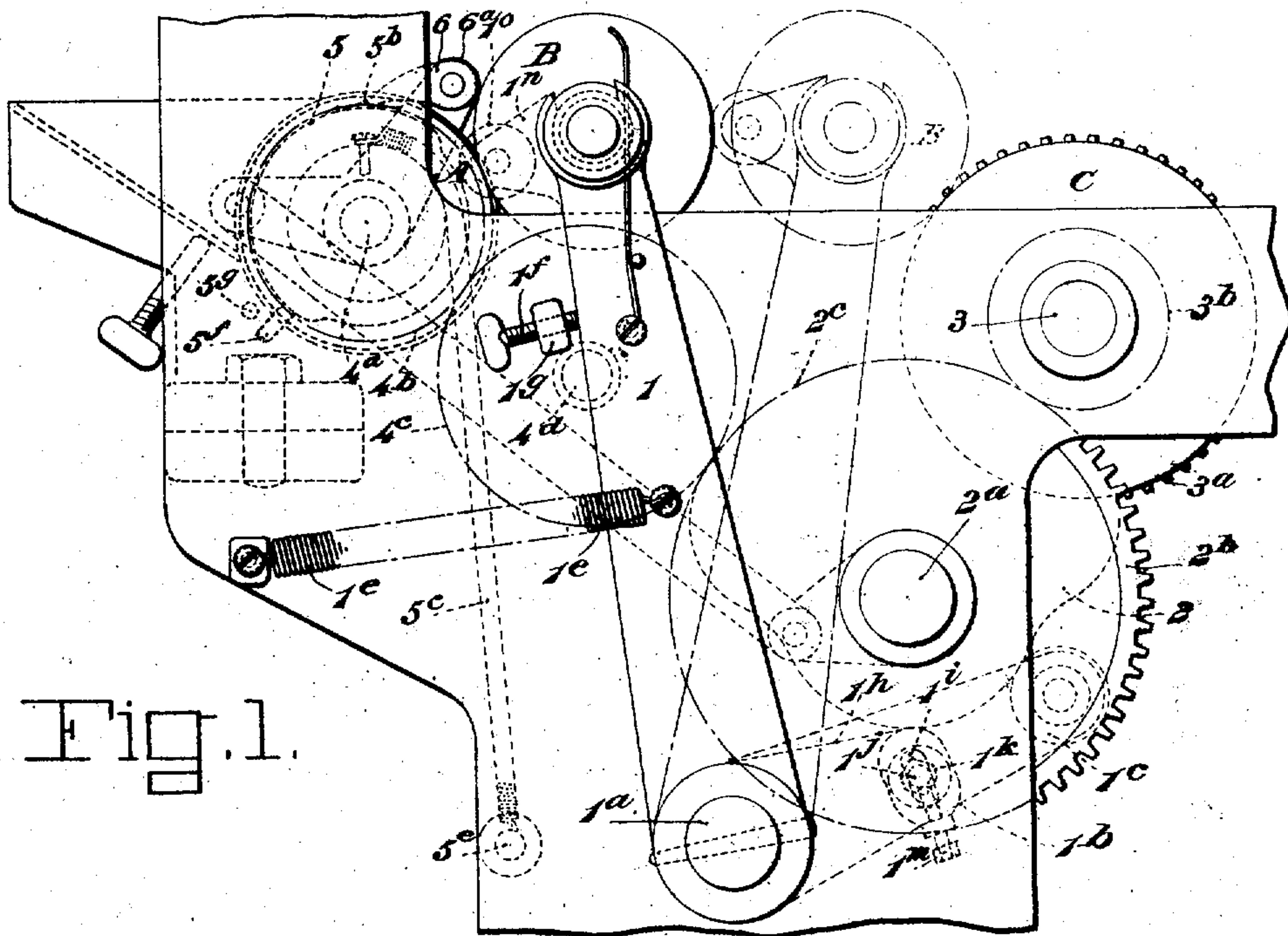


Fig. 1.

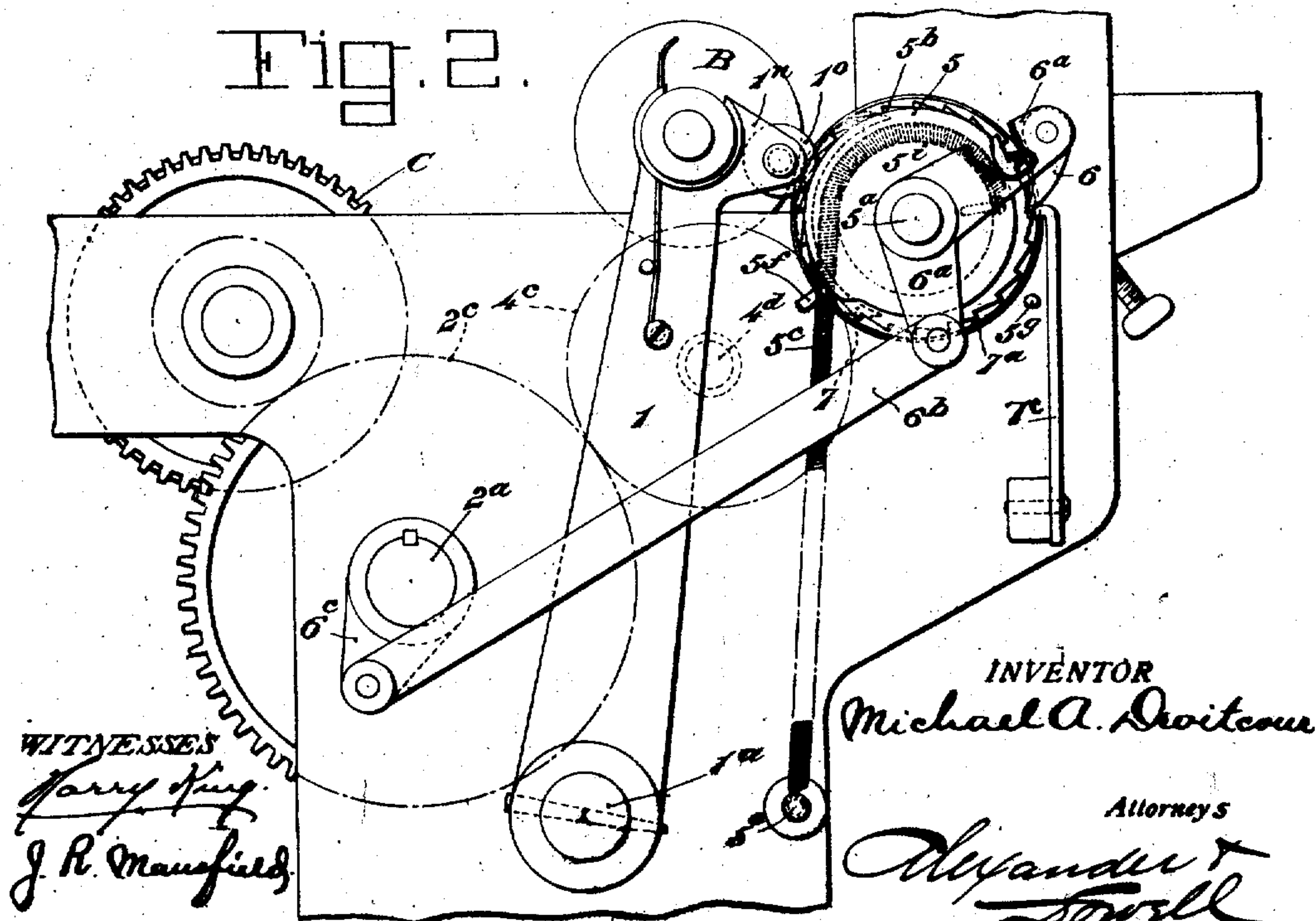


Fig. 2.

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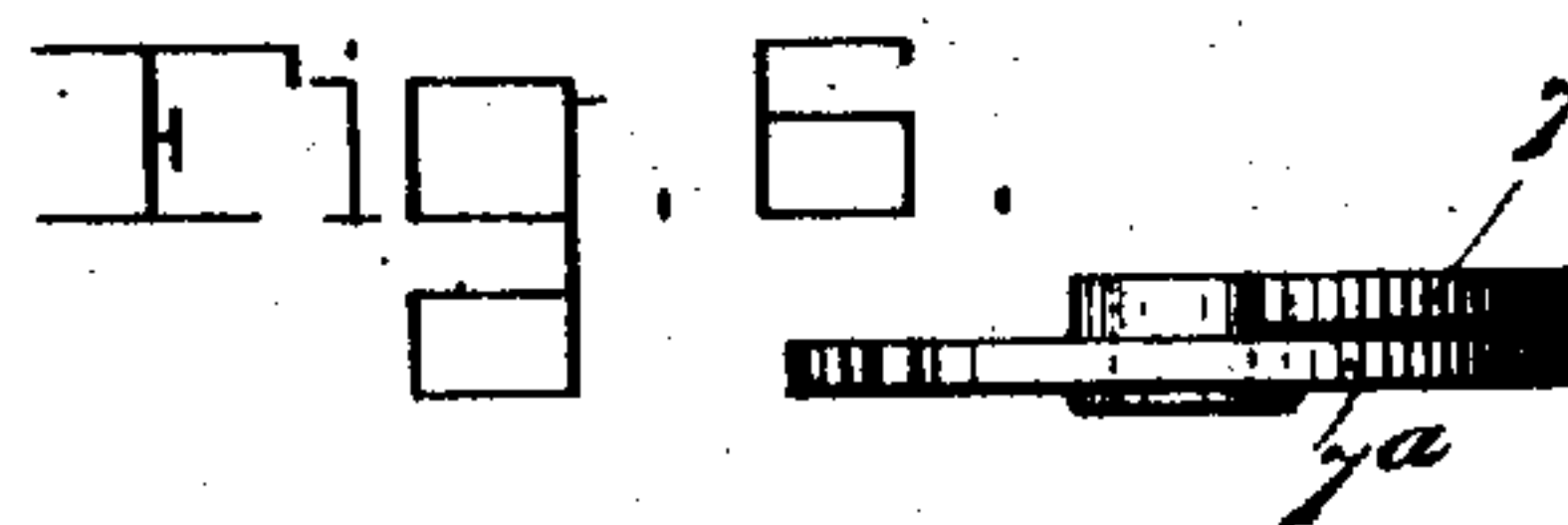
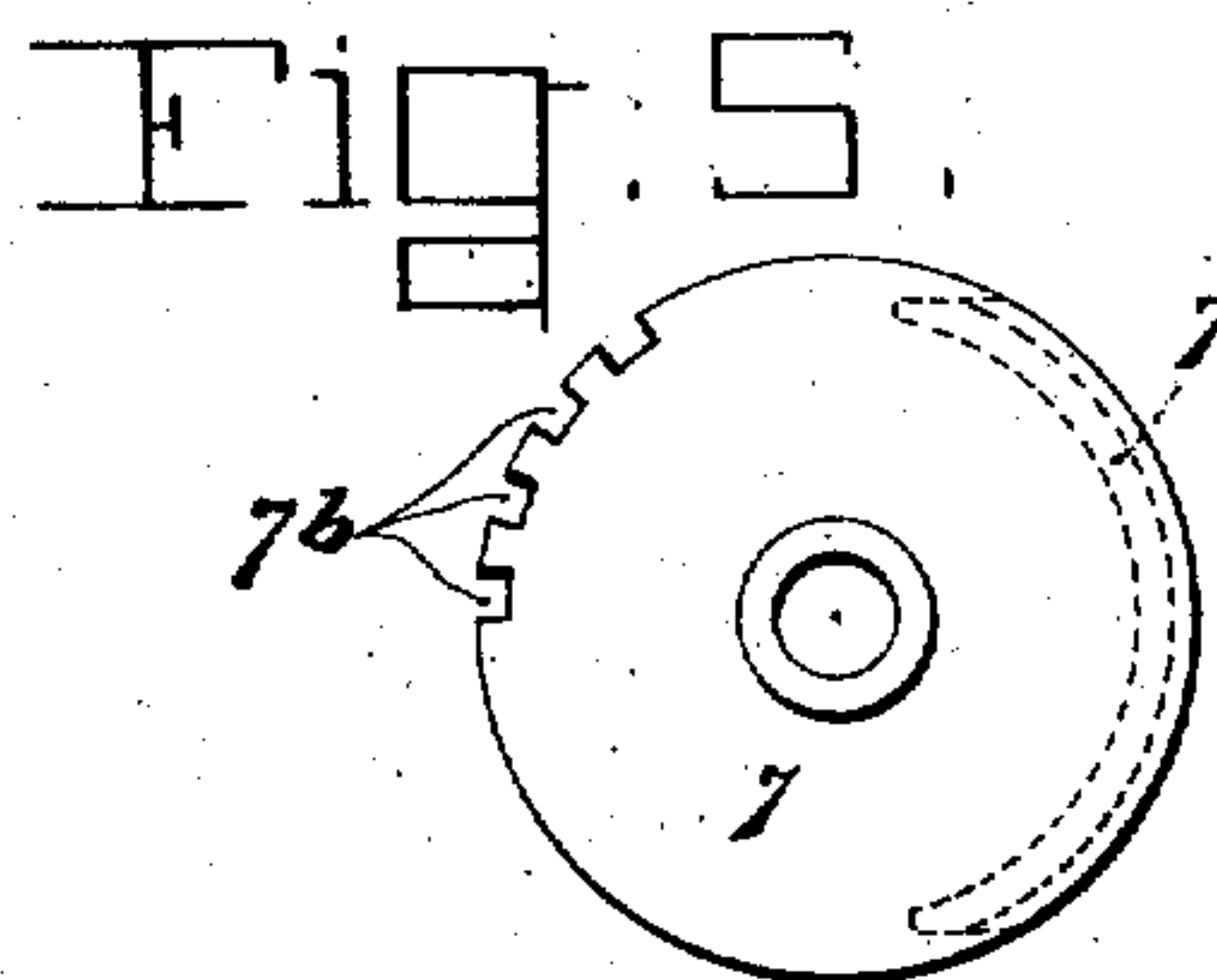
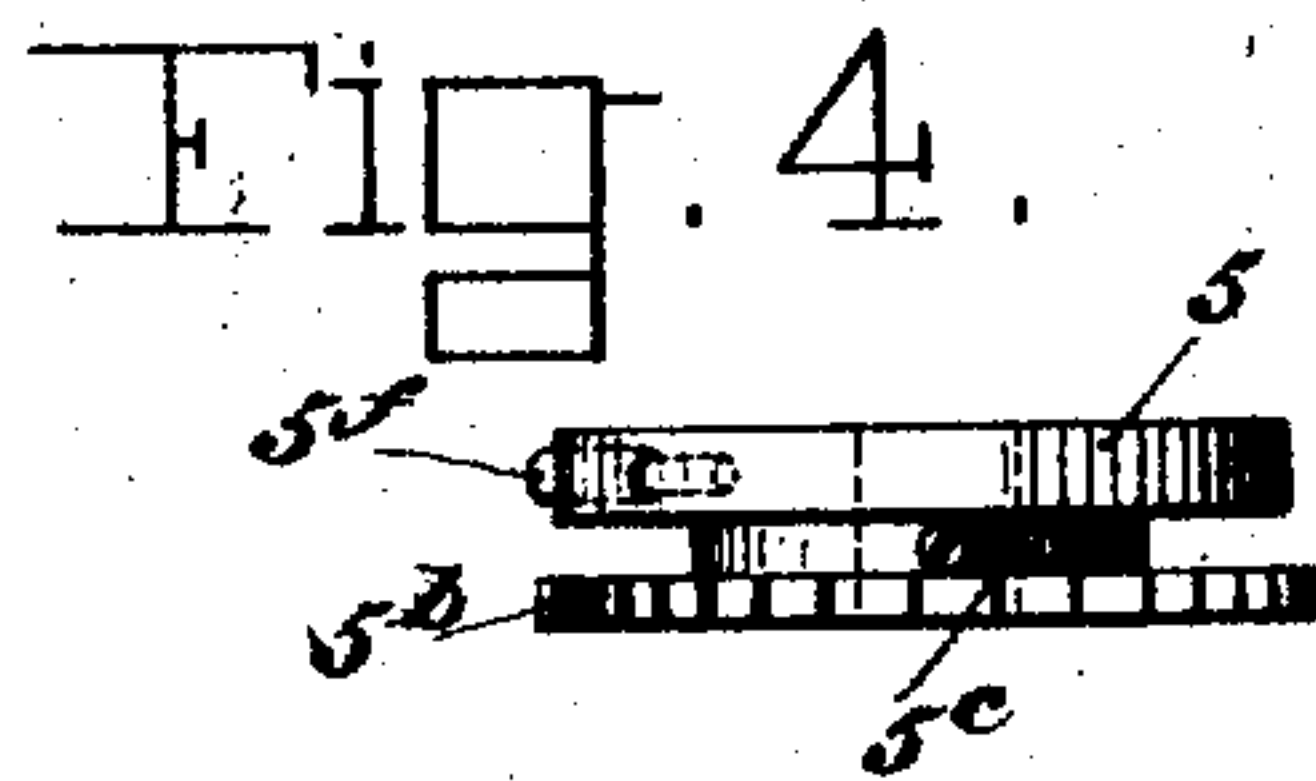
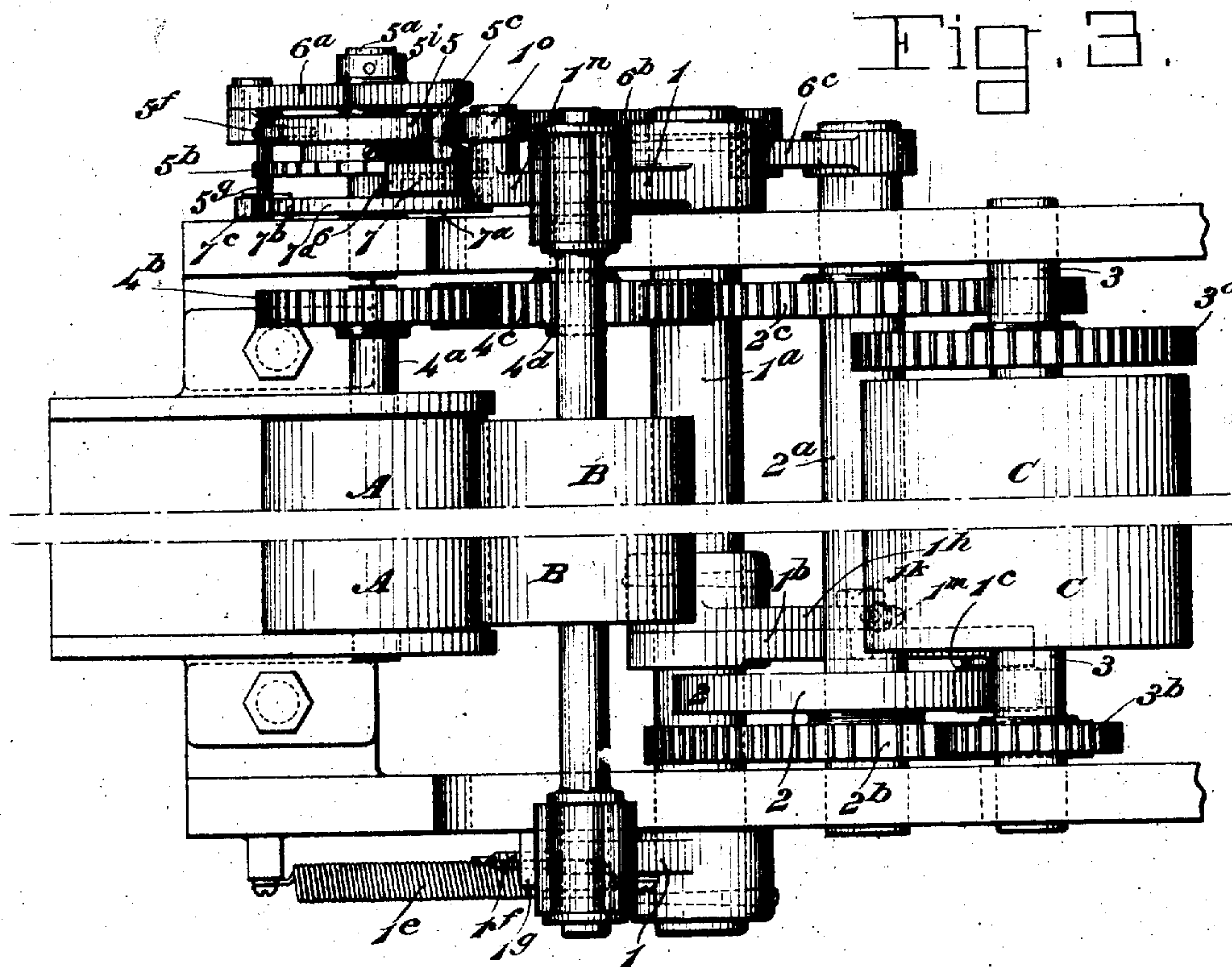
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WITNESSES

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MICHAEL A. DROITCOUR, OF CHICAGO, ILLINOIS, ASSIGNOR TO MIEHLE PRINTING PRESS AND MANUFACTURING COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

INKING APPARATUS FOR PRINTING-PRESSES.

956,316.

Specification of Letters Patent.

Patented Apr. 26, 1910.

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To all whom it may concern:

Be it known that I, MICHAEL A. DROITCOUR, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Inking Apparatus for Printing-Presses; 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 its object is to regulate the amount of ink supplied from the fountain roll to the ductor roll by providing means whereby the time and duration of contact between the ductor roll and the fountain roll can be varied, so that more or less ink will be taken by the ductor from the fountain roll according to the length of time that the ductor is permitted to contact with the fountain roll.

The invention consists in very simple, efficient and novel means for accomplishing this object, as hereinafter described and a preferred form of mechanism embodying the invention is illustrated in the accompanying drawings in which:

Figure 1 is a side elevation of a portion of the inking apparatus embodying the invention, indicating the relation of the several parts in dotted lines. Fig. 2 is a view of the rear side of Fig. 1, showing the cam in position to prevent contact between the ductor and fountain roll. Fig. 3 is top plan view of Fig. 1, partly broken. Fig. 4 is a detail view of the cam and ratchet. Fig. 5 is a side view of the pawl detainer and adjusting device. Fig. 6 is a top view of Fig. 5.

In the drawings A designates the ink fountain roll; C the ink distributing cylinder or drum; and B the ductor roller, which is adapted to transfer ink from the fountain roll to the ink cylinder. The ductor roller is mounted upon oscillating levers 1 which are attached to a rock shaft 1^a, journaled in the frame of the machine, and provided with an arm 1^b carrying a roller 1^c adapted to engage a cam 2 keyed on a shaft 2^a, journaled in the main frame adjacent the inking cylinder, and by which cam the arms 1 are periodically vibrated so as to move the ductor B from the fountain roll to the inking cylinder. The ductor is drawn toward the fountain roll by a spring 1^e attached to one arm 1

and to the frame as shown in Fig. 1, and said spring also causes the levers to draw roller 1^c into engagement with the face of cam 2, but permits the levers 1 to be arrested as hereinafter described before the ductor contacts with the fountain roller.

Stop bolts 1^f are tapped through lugs 1^g on the frame as indicated in Fig. 1 so as to positively arrest the spring actuated movement of the levers 1 and regulate the pressure of the ductor roll B against the fountain roll A.

Preferably arm 1^b is adjustably attached to shaft 1^a, by being loosely fitted on the shaft beside a short arm 1^h fast thereto, said arm 1^h having an arc slot 1ⁱ transfixed by a threaded stud 1^j on arm 1^b, and by means of a nut 1^k on said stud the arms 1^b, can be securely locked to arm 1^h. An adjusting bolt 1^m is tapped through arm 1^h into engagement with stud 1^j. By means of this connection the roller 1^c can be so adjusted relatively to the cam 2, as to cause the ductor B to contact with the ink cylinder C with the desired pressure.

On shaft 2^a is keyed a gear 2^b (Fig. 2) which meshes with a gear 3^b on the shaft 3 that carries inking cylinder C. This shaft 3 may be driven by any suitable means, as by a train of gearing, not shown, engaging a gear 3^a on said shaft. And from shaft 3 motion is transmitted to the other parts of the inking apparatus as hereinafter described. The fountain roll A is mounted on a shaft 4^a which is constantly rotated by means of a gear 4^b meshing with an intermediate 4^c, on a stud 4^d attached to the frame; the intermediate 4^c meshing with a gear 2^c on shaft 2^a. With the parts arranged as shown and described, during each rotation of the shaft 2^a the ductor B will be vibrated once between fountain roll and inking roll.

The time or duration of contact between the ductor roll B and the fountain roll A is regulable and controllable by the following devices. On one lever 1 is a projection 1ⁿ carrying a roller 1^o which is adapted to contact with an oscillating cam 5 which is preferably mounted on a stud 5^a, which may be conveniently arranged in axial alinement with the shaft 4^a of the fountain roller. Said cam 5 is so shaped that in its normal position its projecting portion or swell will

be engaged by the roller 1° and thus hold the ductor B out of contact with the fountain roller as indicated in Fig. 2. The cam is loose on the stud 5^a but is fastened to a ratchet 5^b also loose on stud 5^a. Said ratchet and cam are returned to and held in normal position, when permitted, by means of a helical contractile spring 5^c attached to the hub of the ratchet and to a pin 5^d on the main frame as shown.

The cam and ratchet are arrested when returned to normal position (by the action of the spring 5^c) by means of a pin 5^e inserted in the periphery of the cam and adapted to engage a pin 5^f on the frame as shown. A dog or pawl 6 is pivotally connected to one arm of a crank lever 6^a, loosely mounted on stud 5^a, the parts being retained in position on the stud by a collar 5^g as shown, and said dog is adapted to engage the ratchet 5^b, when the lever 6^a is oscillated, and turn the ratchet and cam so as to bring the low part of the cam opposite roller 1° and allow the ductor B to contact with the fountain roll A. The other arm of lever 6^a is connected by a pitman 6^b to an arm 6^c fast on shaft 2^a, so that the rotary movements of shaft 2^a impart reciprocating movements to the pawl 6. And on the forward stroke of the pawl it engages with the ratchet 5^b and imparts a partial rotary movement to the cam 5, so as to bring the low part of the cam opposite the roller 1° and permit the ductor roll to contact with the fountain roll.

The time and extent of movement imparted to the cam 5 by the pawl 6 is regulated by means of a drag, or pawl detainer, 7 which is preferably arc-shaped and fixedly attached to the side of a disk 7^a, loosely mounted on stud 5^a adjacent the ratchet. The drag 7 lies beside ratchet 5^b and projects slightly beyond the teeth of the ratchet, and is adapted to be engaged by the pawl when the latter is retracted and cause the latter to ride up out of engagement with the ratchet, see Fig. 2. The disk 7^a is provided with a series of peripheral notches 7^b any one of which may be engaged with a spring catch 7^c, fastened to the frame of the machine as shown, and this disk 7^a can be rotatorially adjusted by hand so as to bring the drag 7 into position to keep the pawl out of engagement with the ratchet, and according to the position of this drag the pawl will be kept out of engagement with the ratchet 5^b for a greater or less portion of its forward stroke, and consequently the time and extent of shift of the cam 5 by the pawl will be correspondingly varied. The longer time the pawl is in engagement with the drag the shorter will be the time that the ductor is permitted to contact the fountain roll, and by lessening the length of engagement between the pawl

and drag the time of contact between the ductor and fountain roll will be increased.

Operation: The ductor roll B is oscillated between the fountain roll A and the ink cylinder C by means of cam 2 and spring 1° as described; when the ductor roll moves toward the fountain roll, the roller 1° contacts with the projecting portion of cam 5, which normally stands in position and holds the ductor out of contact with the fountain roll; but as pawl 6 is moved on its forward stroke it passes off the drag 7 and engages the ratchet 5^b and moves cam 5 so as to bring its low portion opposite roller 1°, which permits the ductor to be moved into contact with the fountain roll and to remain in contact therewith until it is moved away by the action of the cam 2. The pawl 6 may be kept out of engagement with the ratchet for any desired portion of its forward stroke by properly adjusting the drag 7; by turning the drag in one direction a longer contact will be permitted between the ductor and fountain roll, and by turning the drag in the opposite direction the contact will be shortened. When the pawl 6 starts backward, the ductor moves toward the ink roll C, the spring 5^c returns the ratchet 5^b and cam 5 back to normal position—see Fig. 2—in which the raised part of the cam 5 is in position to engage the roller 1° and will keep the ductor out of contact with the fountain roller until cam 5 is again shifted by the pawl and ratchet.

It will be seen that the drag is adjustable by hand and it can be shifted without stopping the machine, and remains stationary. The controlling mechanism is very simple, and can be readily adapted for use in connection with various makes of inking mechanisms employing vibrating ductors.

Having thus described my invention what I claim as new is:

1. In an inking apparatus, the combination of a fountain roll, a ductor roll, and means for reciprocating the ductor roll; with an oscillatory cam adapted to normally prevent actual contact between the ductor and fountain rollers, a ratchet fast to the cam, and a reciprocating pawl adapted to engage the ratchet and move said cam to permit contact of the fountain and ductor rolls.

2. In an inking apparatus, the combination of a fountain roll, a ductor roll, vibrating levers carrying the ductor roll, a cam for operating said levers for moving the ductor roll away from the fountain roll, and a spring for causing said levers to move the ductor roll toward the fountain roll; with an oscillatory cam adapted to normally prevent actual contact between the ductor and fountain rollers, a ratchet attached to said cam, a spring for holding the cam in normal position, and an oscillating pawl

adapted to engage the ratchet and move said cam to permit contact of the fountain and ductor rolls.

3. In an inking apparatus, the combination of a fountain-roll, a ductor roll, and means for reciprocating the ductor roll, with an oscillatory ratchet, a cam attached to the ratchet and adapted to normally prevent actual contact between the ductor and fountain rollers, a spring for holding the cam in normal position, an oscillating lever beside the ratchet, a pawl carried by said lever, adapted to engage the ratchet, and an adjustable drag beside the ratchet whereby the time of operative engagement between the pawl and ratchet may be varied.

4. In an inking apparatus, the combination of a fountain roll, an ink distributing cylinder, a ductor roll, and means for reciprocating the ductor roll; with an oscillatory cam adapted to normally prevent actual contact between the ductor and fountain rollers, a spring for holding the cam in normal position, a ratchet attached to the cam, an oscillating lever beside the ratchet, a pawl carried by said lever adapted to engage the ratchet and shift the cam to permit contact of the ductor and fountain roll, a rotatably adjustable drag mounted beside the ratchet whereby the time of operative engagement between the pawl and ratchet may be varied.

5. In an inking apparatus, the combination of a fountain roll, an ink distributing cylinder, a ductor roll, vibrating levers carrying the ductor roll, a cam for operating said levers for moving the ductor roll away from the fountain roll; with an oscillatory

cam adapted to normally prevent actual contact between the ductor and fountain rollers, a ratchet connected to said cam, an oscillating lever beside the ratchet, a pawl carried by said lever adapted to engage the ratchet and move said cam to permit contact of the fountain and ductor rolls, and a rotatably adjustable drag beside the ratchet whereby the time of operative engagement between the pawl and ratchet may be varied.

6. In an inking apparatus, the combination of a fountain roll, an ink distributing cylinder, a ductor roll, and means for reciprocating the ductor roll, vibrating levers carrying the ductor roll, a cam for operating said levers for moving the ductor roll away from the fountain roll, and a spring for causing said levers to move the ductor roll toward the fountain roll; with an oscillatory cam adapted to normally prevent actual contact between the ductor and fountain rollers, a ratchet beside the cam, a spring for holding the ratchet and cam in normal position, an oscillating lever beside the ratchet, a pawl carried by said lever adapted to engage the ratchet, a rotatably adjustable disk beside the ratchet, a pawl drag on said disk whereby the time of operative engagement between the pawl and ratchet may be varied, and means for locking said disk when adjusted.

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

MICHAEL A. DROITCOUR.

Witnesses:

HARRY M. HOBBS,
PERCY G. SHAW.