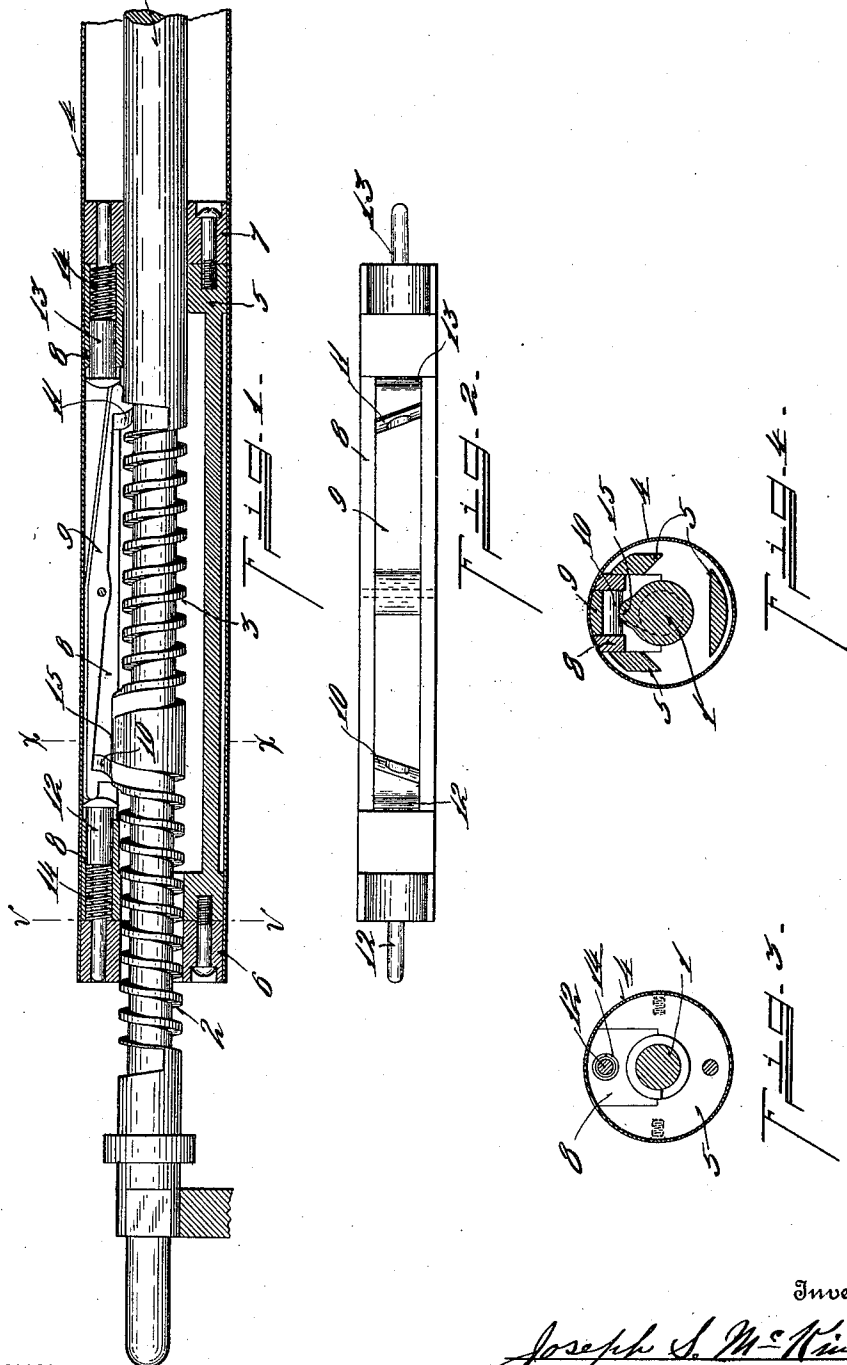


J. S. McKINLEY.
 INK DISTRIBUTING ROLL.
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1,022,563.



Witnesses

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UNITED STATES PATENT OFFICE.

JOSEPH S. MCKINLEY, OF CINCINNATI, OHIO.

INK-DISTRIBUTING ROLL.

1,022,563.

Specification of Letters Patent.

Patented Apr. 9, 1912.

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To all whom it may concern:

Be it known that I, JOSEPH S. MCKINLEY, a citizen of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Ink-Distributing Rolls, of which the following is a specification.

My improvement relates to ink distributing rolls or rollers for printing machinery, and primarily, in means for laterally feeding such ink distributing roll.

The object of my invention is to provide an ink distributing roll supported upon a stationary shaft, with the roll adapted to contact with the inking rolls, employed in different types of printing presses, whereby the inking roll is revolved through its frictional engagement with such ink feeding rolls, or the roll can be revolved by power, with means for laterally feeding said roll during its rotation.

Another object of my invention is to provide an ink distributing roll journaled upon a stationary shaft or rod, said rod being provided with a right and left hand screw thread into which a rocking carrier engages to direct the lateral feed of the roll, with means for disengaging said carrier from one thread and engaging the same with the second thread automatically during the rotation of the roll.

Another object of my invention is to provide means for locking said rocking carrier in engagement with a respective thread in the lateral travel of the roll, and at the same time, assisting in shifting the carrier from one position to its second.

The features of my invention are more fully set forth in the description of the accompanying drawings, forming a part of this specification, in which:—

Figure 1 is a central vertical section through the ink distributing roll and carrier supporting frame, with the roll axle or rod shown in elevation, and one end thereof supported upon the frame of a printing machine. Fig. 2 is a top plan view of the rocking carrier and supporting frame. Fig. 3 is a section on line *v, v*, Fig. 1. Fig. 4 is a section on line *x, x*, Fig. 1.

My invention herewith shown and described consists in certain improvements upon my prior Patents—No. 678,019, dated July 9, 1901, for improvement in ink distributor, and No. 809,521, dated January 9,

1906, for improvement in ink distributor for printing presses.

The ink distributors shown in my prior patents were primarily designed to be used upon printing or lithographic presses, having a traveling ink distributing roll, while the improvement herein shown is more primarily adapted for the rotary type of ink distributing mechanism. It is obvious, however, that it can be advantageously employed in any of the types of printing presses. In the rotary type, the ink distributing roll rotates continuously in one direction, while in the platen type, the direction of rotation is reversed at the end of the travel of the ink distributing platen. Therefore, in the rotary type, two kinds of threads are required to laterally feed the roll during its rotation, owing to its continuous rotation in one direction.

1 represents a roll supporting rod or axle, suitably supported at its ends to the frame of the printing press and locked against rotation, or displacement.

2 represents a left hand screw thread, and 3, a right hand screw thread formed on the axle 1, with the ends of the threads terminating in cam-like formations, inclining from the depth of the thread toward the periphery of the rod at the opposing outer ends of the two sets of threads, while the inner ends terminate at a point above the periphery of the axle of a distance equal to the depth of the thread. This intermediate cam formation serves as means for automatically actuating the rocking carrier to disengage and engage from one thread with another.

4 represents the ink distributing roll journaled upon the axle 1.

5 represents a carrier supporting frame mounted within the roll 4, and preferably attached to the collars 6, 7, at each end thereof, said collars fitting the inner diameter of the roll and secured thereto in any well-known manner. The collars 6, 7, serve as journals for the roll 4, riding upon the periphery of the axle 1.

8 represents a skeleton frame detachably supported within the frame 5, with its ends of yoke or crescent formation to engage the periphery of the axle 1, and adapted to move or rotate with the frame 5 and roll 4.

9 represents a rocking carrier pivotally mounted within the skeleton frame 8, its ends provided with inclined lugs 10 and 11,

adapted to alternately engage with their respective screw threads 2, 3, to laterally feed the roll 4 in its rotation.

12, 13, represent spring actuated detents supported within a bore formed in the frame 8, with the ends of the pins, as illustrated, extended and engaging into a bore formed in each of the collars 6, 7, to serve as pins and additional means for securing the frames within the roll to the collars. The heads of the detents are preferably inclined toward the center thereof, to assist in the movement of the rocking carrier, and to lock the same in its shifted position. The rocking carrier ends in each shifting movement, moving beyond the center of the detents, so that the apex of the detent heads extends above and below alternately in the carrier movements and under tension by the outward pressure exerted by the springs 14 against their respective detents 12, 13.

It will be seen, that the width of the groove of the threads 3, 4, at their outer ends is increased to insure the action of the carrier, and prevent the carrier from being shifted or held in a neutral position out of engagement with any one of the threads. The intermediate cam 15 is formed on the axle 1 and is of such height as to move or swing the carrier sufficiently to insure the lugs 10, 11, to properly engage within the grooves of the threads, but without interfering with the free rotation of the roll 4.

In operation, the carrier is shifted when one of its lugs 10 or 11 engages with the cam 15, the grooves of the threads tapering toward the outer surface of the cam, moving the ends of the carrier toward the medial line or apex of the detents, compressing the springs 14 until the ends of the carrier have been moved slightly beyond the apex of the detents, when the stored pressure upon the detents will exert itself and throw the carrier to its limits of movement in advance of the movement or rotation of the carrier lugs upon the cam, thereby quickly shifting the carrier and locking the same in such shifted position.

As shown in Fig. 1, the lug 10 of the carrier has reached the highest point of the cam 15, and moved the opposite end of the carrier downward to bring the lug 11 into engagement with its thread and thereby reverse the lateral travel of the roll during its rotation until the lug 11 comes into engagement with the cam 15 when the reverse movements take place.

Having described my invention, I claim:—

1. In an ink distributing roll, means for laterally feeding the roll during its rotation, comprising a shaft having oppositely disposed right and left hand screw threads, a rocking carrier mounted within the roll, adapted to alternately engage with said screw threads, means intermediate of said

screw threads and at the terminals thereof, adapted to shift said carrier to disengage the same from one thread and engage the same with the second, and means for locking said carrier in its shifted positions.

2. An ink distributing roll, in combination with means for laterally feeding the same during its rotation, comprising a stationary shaft, right and left hand screw threads formed on said shaft, a carrier pivotally mounted within said roll and rotating therewith, its ends adapted to alternately engage with said screw threads, means formed on said shaft at one terminal of each of said screw threads for shifting said carrier to alternately engage with the respective screw threads and to move the roll laterally during its rotation, detent means adapted to engage with said carrier to maintain the same in its shifted position during the lateral feed of the roll.

3. An ink distributing roll, in combination with means for laterally feeding the same during its rotation, comprising a stationary shaft, oppositely directed ways formed on said shaft, a carrier mounted within the roll, adapted to alternately engage with said ways, means for shifting said carrier from one way to the second at the terminals of the lateral feeding movement of the roll, and spring actuated detent means to assist in the carrier shift and maintain the same in position during the lateral feed of the roll.

4. An ink distributing roll, in combination with means for laterally feeding the same during its rotation, comprising a stationary shaft, right and left hand screw threads formed upon said shaft, a frame supported within the roll journaled upon said shaft, a supplemental frame supported within said first frame, a rocking carrier pivotally mounted within said second frame, having oppositely disposed lugs projecting therefrom, adapted to engage alternately with their respective screw threads, spring actuated detents mounted within said second frame, having inclined heads, adapted to engage the ends of the carrier, a cam projecting from said shaft at one terminal of each of said threads, for rocking said carrier beyond the apex of the detents and maintained in such position by said detents during the lateral travel of the roll in either direction.

5. An ink distributing roll, in combination with means for laterally feeding the same during its rotation, comprising a stationary shaft, right and left hand screw threads formed upon said shaft, with the groove of each thread at one terminal end enlarged to provide free shifting movement of the roll carrier engaging therewith, a frame supported within the roll journaled upon said shaft, a supplemental frame sup-

ported within said first frame, a rocking carrier pivotally mounted within said second frame, having oppositely disposed lugs projecting therefrom, adapted to engage alternately with their respective screw threads, spring actuated detents mounted within said second frame, having inclined heads, adapted to engage the ends of the carrier, a cam projecting from said shaft at one terminal of each of said threads, for rocking said car-

rier beyond the apex of the detents and maintained in such position by said detents during the lateral travel of the roll in either direction.

In testimony whereof, I have hereunto set my hand.

JOSEPH S. McKINLEY.

Witnesses:

OLIVER B. KAISER,
EMMA SPENER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."