

(No Model.)

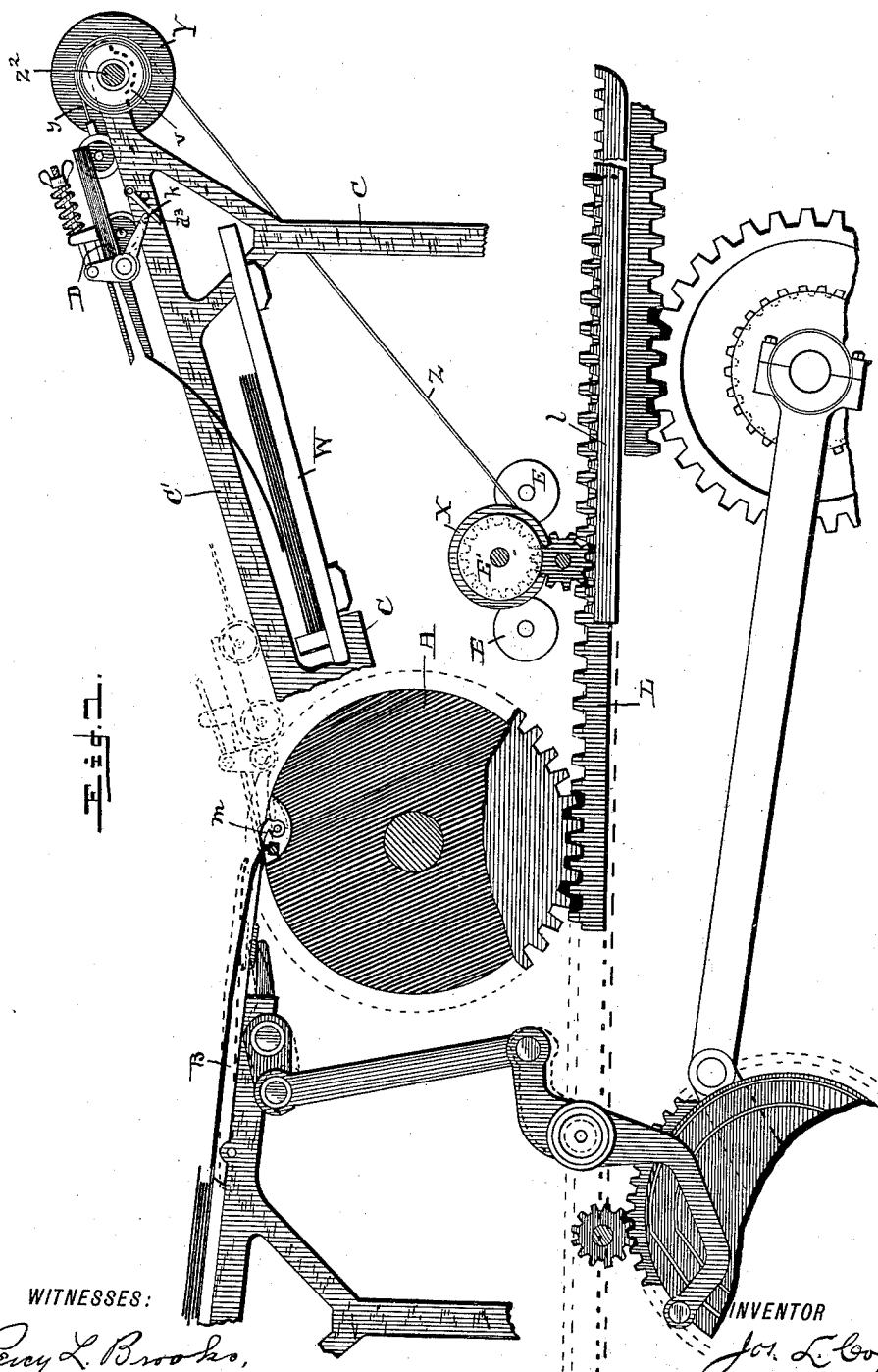
2 Sheets—Sheet 1.

J. L. COX.

DELIVERY MECHANISM FOR PRINTING PRESSES.

No. 464,923.

Patented Dec. 8, 1891.



WITNESSES:

Percy L. Brooks,
Arthur C. Sowell

INVENTOR

Jos. L. Cox

BY

W. Alexander
ATTORNEY.

(No Model.)

2 Sheets—Sheet 2.

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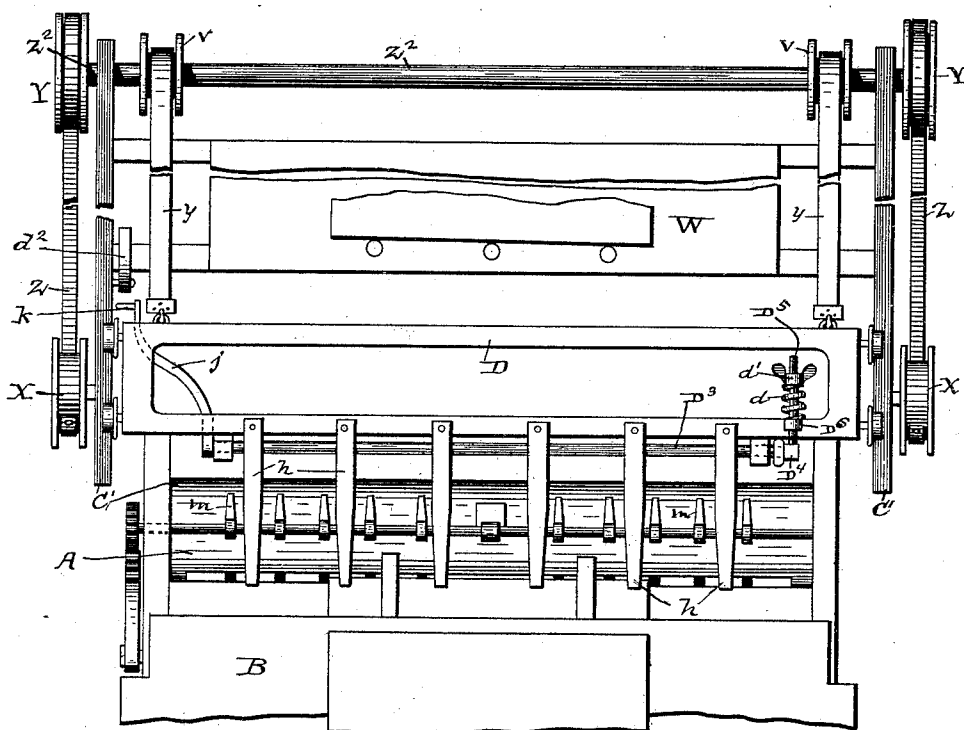


Fig. 3.

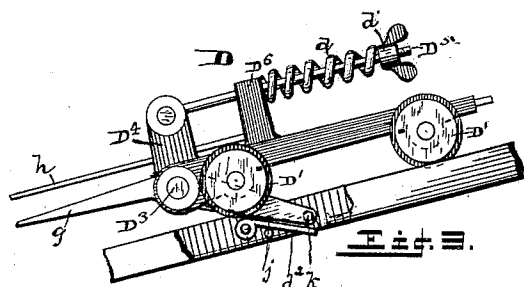


Fig. 4.

WITNESSES:

Permy L. Brooks.
Arthur E. Fowell

INVENTOR

Jos. L. Cox

BY

W. H. Alexander
ATTORNEY.

UNITED STATES PATENT OFFICE.

JOSEPH L. COX, OF BATTLE CREEK, MICHIGAN, ASSIGNOR TO THE DUPLEX
PRINTING PRESS COMPANY, OF SAME PLACE.

DELIVERY MECHANISM FOR PRINTING-PRESSES.

SPECIFICATION forming part of Letters Patent No. 464,923, dated December 8, 1891.

Application filed January 17, 1891. Serial No. 378,100. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH L. COX, of Battle Creek, in the county of Calhoun and State of Michigan, have invented certain new and useful Improvements in Delivery Mechanism for Printing-Presses; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form part of this specification, in which—

Figure 1 is a detail longitudinal sectional view of a printing-press, showing my improved paper-feed and delivery devices. Fig. 2 is a detail plan view thereof. Fig. 3 is an enlarged view of the gripper-car.

This invention is an improvement in paper-delivery mechanisms for printing-presses, and its object is to remove the sheets of paper from the cylinder while the latter is at rest, dispensing with any delivery or feeding tapes whatever; and it consists in the novel construction and arrangement of parts herein-after described and claimed, reference being had to the accompanying drawings, in which—

A designates the impression-cylinder of a printing-press. B designates the feed-board above the same and at one side thereof, and C are the delivery-frames at the side of the cylinder opposite the feed-board, said frames having top bars C' inclined toward the cylinder and forming a track-support for a gripper or delivery car D which travels thereon. This car is a rectangular frame mounted on flanged wheels D', and from its front bar or rail next the cylinder projects a series of fingers h, which, when the car is at the lower end of the track, will overlie the edge of the sheet of paper on the cylinder.

D⁸ is a rod journaled transversely in the car below fingers h and provided with a series of fingers g, which lie below and operate with fingers h. The rod D⁸ is provided with an up-standing crank D⁴, that is connected to a rod D⁵, playing through a perforated stud D⁶ on the end of the car and carrying on its end a coiled spring d, kept thereon and tensioned by a nut d', the spring serving to shift the rod so as to close fingers g against fingers h. On the opposite end of rod D⁸ is an arm j, downwardly and rearwardly inclined and having a finger

k on its extremity that engages a pivoted or spring tripping-lug d² on the inner face and lower end of one rail C', which lug is in such position that when the car is at the lower end of the rails the fingers will be caused to open to receive the edge of the printed sheet on the cylinder; but the fingers will disengage the lug just as the car reaches its lowest position, so that the fingers will remain closed as the car is retracted, the finger k passing under the lug on its return movement and merely causing the fingers g to bite the paper more tightly. Finger k engages another tripping-lug d³ on the upper end of rail C' when the car reaches its highest position and releases the sheet, permitting the latter to fall upon a bank-board W, that is supported upon frames C, as shown, and has proper stops and devices to prevent the sheets falling therefrom.

E E designate the form-rollers, and E' the distributing-roll above the same, driven by gearing from a rack l on the reciprocating type-bed L in the press indicated in the drawings, the reciprocation of the bed imparting alternate rotatory movements to the inking-rods.

X is a sheave-pulley on the outer end of the shaft of roll E', to which is fastened one end of a belt or chain Z, which runs up to and is wrapped around and secured to a sheave-pulley Y on the end of a horizontal shaft Z², journaled in the upper ends of rails C', and on drums v on said shaft are wrapped cords or straps y y, the ends of which are connected to the car D. By this arrangement the straps y are unwound as the bed is reciprocated forward and the car D descends by gravity on its tracks, and when the bed moves backward the car is hauled up on the tracks. The cylinder is so geared that it makes one revolution while the car is down on its tracks, but is at a standstill while the car is moving up thereon.

The mechanism for operating the cylinder forms no part of my present invention and any suitable devices may be employed.

The cylinder is provided with a set of ordinary gripping-fingers m m, which catch the edge of a sheet of paper fed thereto from the feed-board and carry the sheet around during the printing operation while the car D is

moving downward, the cylinder stopping with its gripping-fingers uppermost just as the car reaches the lower end of its tracks, and the edge of the sheet of paper on the cylinder is thus brought between the tips of fingers *g* and *h*, which are opened, as described, by the tripping devices and closed upon the edge of the sheet just as the fingers *m m* are opened. The gripper-fingers *g* and *h* are so arranged on car D that they will alternate with fingers *m* of the cylinder and grip the edge of the sheet of paper simultaneously with its release from the cylinder, and while the cylinder is at a standstill during the return movement of the bed *t* the sheave X and belt Z causes shaft Z² to wind straps *y y* and draw the car up its tracks until lever *j* is tripped and the fingers opened. The printed sheet is then free to drop upon bank-board W. At the same time a new sheet is fed to the cylinder, which commences to revolve during the forward movement of the bed, while the car moves down in position to catch and remove the imprinted sheet from this cylinder when it again comes to a stop after completing one revolution.

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

1. In a paper-delivery for a printing-press, the combination of the inclined ways and a gripper-car moving on said ways having a series of fixed fingers, a series of movable fingers co-operating with said fixed fingers and mounted on a spring-controlled rod, a tripping-lever on said rod, the tripping-lugs on said ways adapted to engage said tripping-lever and thereby open the fingers when the car reaches the extremities of the ways, and drums, belts, and straps for operating said car, substantially as specified.

2. The combination, with the cylinder-grippers and the reciprocating bed and sheave-pulley driven from a rack on said bed, of the inclined ways, the gripper-car moving thereon, the shaft in the upper end of said ways operated by a strap from said sheave-pulley, and the cords attached to said shaft

and to the car, whereby the latter is drawn up the ways, substantially as described.

3. The combination of the main frame, the reciprocating bed, the inking-rollers driven by a rack on said bed, and the cylinder with the paper-delivery consisting of inclined ways, a shaft journaled in the upper end of said ways and operated by a belt and pulleys from one of the inking-rollers, and the gripper-car moving on said ways and having fixed gripping-fingers *h* and spring-actuated fingers *g*, constructed and arranged substantially as described.

4. The combination, in a paper-delivery mechanism, of inclined ways and the oppositely-inclined tripping-lugs *d² d³* thereon, with the gripper-car D moving on said ways and provided with a series of stationary fingers *h*, a series of fingers *g*, mounted on a rod beneath fingers *h*, the spring controlling said rod and keeping the fingers closed, the arm *j* on the opposite end of the bar, having a finger *k* adapted to engage said tripping-lugs at upper and lower portions of the ways, and the drums and flexible connections, substantially as described, for moving said car, all substantially as and for the purpose described.

5. The combination of the cylinder, its paper-grippers, and a paper-delivery consisting of inclined ways, a wheeled gripping-car D, moving on said ways and having fixed fingers *h*, adapted to overlie the edge of the sheet held by the cylinder-grippers when the cylinder is at rest, and having movable fingers *g*, arranged to underlie the edge of the sheet and grip the same against the fingers *h*, with drum belts and straps, substantially as described, whereby the gripping-car is moved away from the cylinder to remove the printed sheet while the latter is at rest, substantially as described.

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

JOSEPH L. COX.

Witnesses:

T. H. ALEXANDER,
S. BRASHEARS.