

No. 723,108.

PATENTED MAR. 17, 1903.

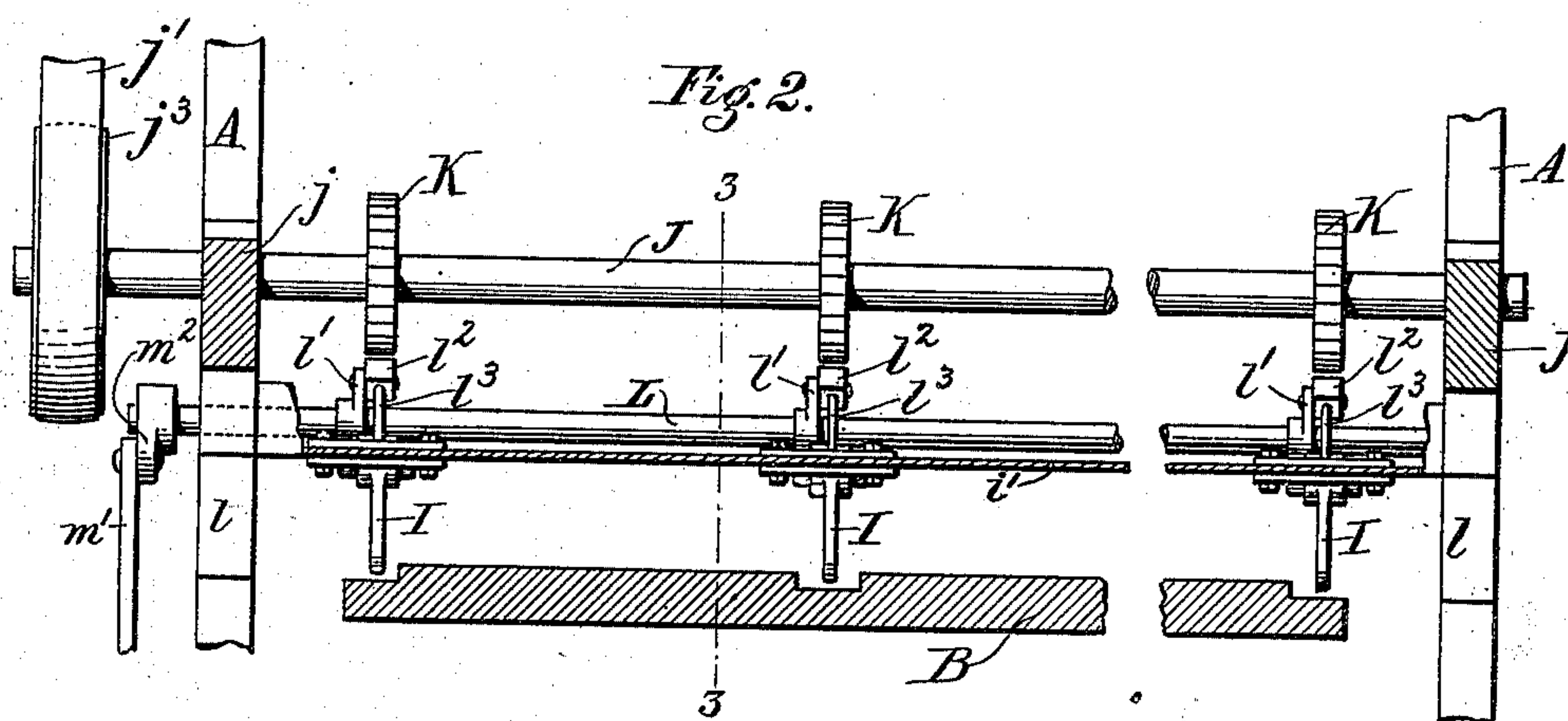
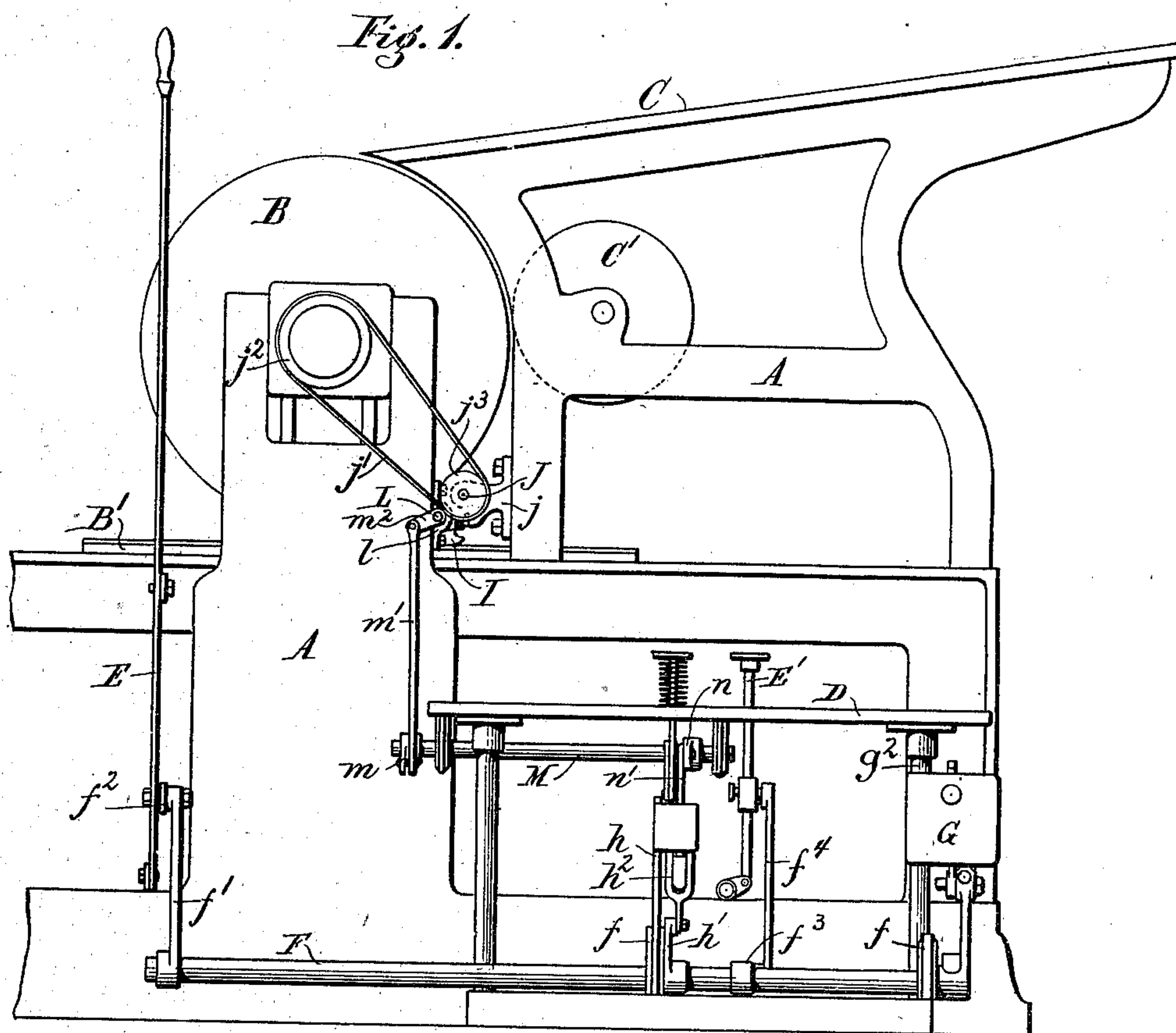
G. R. WILLIAMS.

STOP MOTION FOR PRINTING PRESSES.

APPLICATION FILED JULY 18, 1902.

NO MODEL.

2 SHEETS—SHEET 1.



Witnesses:

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UNITED STATES PATENT OFFICE.

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STOP-MOTION FOR PRINTING-PRESSES.

SPECIFICATION forming part of Letters Patent No. 723,108, dated March 17, 1903.

Application filed July 18, 1902. Serial No. 116,058. (No model.)

To all whom it may concern:

Be it known that I, GEORGE R. WILLIAMS, a citizen of the United States, residing at New York, in the borough of Brooklyn, in the county of Kings, in the State of New York, have invented new and useful Improvements in Stop-Motions for Printing-Presses, of which the following is a specification.

This invention relates to an automatic stop-motion for printing-presses and other machines of the character described in my application for United States Letters Patent filed of even date herewith and which is intended to stop the machine or throw it out of action when the material being acted upon sticks or adheres to the form, so as to interfere with the proper delivery of the material or prevent a perfect subsequent impression. The stop-motion described in said application is held out of action by an electrically-releasable latch controlled by detector mechanism arranged adjacent to the form and actuated by the material which sticks to the form.

The object of the present invention is to provide a simple and efficient mechanically-operated releasing device for the stop mechanism.

In the accompanying drawings, consisting of two sheets, Figure 1 is a side elevation of the feed end of a printing-press provided with an attachment embodying the invention. Fig. 2 is an enlarged fragmentary transverse section showing the detector devices and associated parts. Fig. 3 is a sectional elevation in line 3-3, Fig. 2. Fig. 4 is an end elevation of the stop mechanism.

Like letters of reference refer to like parts in the several figures.

The invention is herein described, and shown in the drawings, as applied to the well-known bed-and-cylinder printing-press; but it is not limited in its useful applications to such a machine. The stop mechanism may be arranged to trip the cylinder, shift the belt, and apply the brake, either or all; but it is only necessary to stop the press when the paper sticks to the form, and in the present application a stop mechanism is employed which only shifts the belt and applies the brake.

A represents the stationary frame; B,

the impression-cylinder; B', the reciprocating form-bed; C, the feedboard, and C' the delivery-cylinder for taking the sheets from the impression-cylinder and delivering the same to the discharge mechanism. (Not shown.) D represents the footboard, E the hand-lever for shifting the belt in stopping and starting, and E' the foot-spindle for applying the brake. These parts are all of ordinary construction.

The automatic stop mechanism shown in the drawings is arranged at the side of the press and is constructed as follows: F represents a rock-shaft which is journaled in suitable bearings f and is connected to the hand-lever E and the brake-spindle E', so that by rocking this shaft the belt is thrown off and the brake applied. The rock-shaft is connected to the hand-lever by an arm f' and a rod f^2 and to the brake-spindle by an arm f^3 and rod f^4 . The rock-shaft is rocked by a weight G, which is adjustably secured to the outer end of a weight-lever g , which is fulcrumed at its inner end on a fulcrum-pin g' , projecting from a suitable standard g^2 . The weight-lever is connected intermediate of its ends by a link g^3 with the outer end of an arm g^4 , fixed to the rock-shaft. The rock-shaft is controlled or held from movement by a latch which is controlled by the detector mechanism.

H, Fig. 4, represents the latch, which is pivoted to a forwardly-projecting portion of a standard h . h' represents a rock-arm secured to the rock-shaft adjacent to said standard h and connected with the upper part thereof by a toggle-joint consisting of a lower link h^2 , pivoted to the rock-arm, and an upper link h^3 , pivoted to the standard. The upper link is provided below the joint of the toggle with a bolt-socket, in which is arranged a spring-pressed catch-bolt h^4 , adapted to be engaged by the latch H. When the latch is lifted by the detector mechanism, the catch-bolt is released and the weight G rocks the rock-shaft to operate the hand-lever and brake-spindle. The stop mechanism above briefly described is shown and fully described in my application for United States Letters Patent filed March 18, 1902, Serial No. 98,738. While this mechanism is preferred in connec-

tion with the detector mechanism, any other suitable mechanism may be employed for stopping the press.

The detector mechanism shown in the drawings (see particularly Figs. 2, 3, and 4) is arranged and constructed as follows: I represents rocking detector devices, which are arranged adjacent to the reciprocating form-bed, preferably in the space between the discharge side of the impression-cylinder and the bed. One or more of these detector devices is employed. Preferably there is a detector device arranged opposite to each longitudinal space formed in the printing-form between the raised portions thereof. The detector devices are pivoted or hung on pivot-pins i , secured by brackets to a supporting-bar i' , which extends transversely over the form-bed and is secured at its opposite ends to suitable portions of the stationary press-frame. The lower edge of each detector device is preferably curved or rounded and projects into the longitudinal space between the raised portions of the printing-form, slightly below the upper surface of the latter, so as to be engaged and oscillated by the sheet or portion of the sheet being printed sticking or adhering to the printing-form.

J represents a ratchet-shaft which is journaled in suitable bearing-brackets j , fixed to the stationary frame of the press, and extends transversely over the form-bed parallel with the supporting-bar for the detector device. The shaft is positively driven from some moving part of the machine—for instance, by means of a belt j' , running around pulleys j^2, j^3 , secured, respectively, to the adjacent end of the impression-cylinder shaft and ratchet-shaft J. The ratchet-shaft is provided adjacent to each detector device with a ratchet-wheel K.

L represents a pawl or rock shaft which is arranged parallel with the ratchet-shaft and is journaled in suitable bearing-brackets l , secured to suitable portions of the stationary press-frame. The pawl-shaft is provided adjacent to each ratchet-wheel with a rock-arm l' , to which is pivoted a pawl l^2 , which extends toward the adjacent ratchet-wheel and is provided with a tooth adapted to cooperate therewith. The free end of the pawl is supported below or out of engagement with the teeth of the ratchet by an upright flange or portion carried by the supporting-bar for the detector device. Each detector device is provided with an upwardly-extending arm or finger l^3 , which lies beneath and is adapted to engage and lift the free end of the pawl when the detector device is rocked on its pivot.

When any one of the detector devices is oscillated by the engagement therewith of the material which sticks to and moves with the printing-form, the adjacent pawl is raised by the arm l^3 on the detector device into engagement with its ratchet-wheel, which draws the pawl forward and rocks the pawl-shaft L. The movement of the pawl-shaft is trans-

mitted to the latch which controls the rock-shaft of the stop mechanism by any suitable connections. In the construction shown a rock-shaft M, Fig. 1, is provided, which is journaled in suitable bearings depending from the footboard. This shaft is provided at one end with an arm m , which is connected by a link m' with a rock-arm m^2 , fixed to the end of the pawl-shaft. The other end of the shaft M is provided with a rock-arm n , Fig. 4, which is connected by a link n' with the free end of the latch H. When the pawl-shaft is rocked, as above described, the shaft M is also rocked and the latch lifted to disengage the catch-bolt on the toggle connected to the rock-shaft F of the stop mechanism and release the latter to permit the weight G thereof to operate the shaft and throw off the belt and apply the brake.

I claim as my invention—

1. The combination with a printing-press or the like, of a stop mechanism therefor, a movable detector device operated by the engagement therewith of the material to be operated upon when it sticks to the form, and movable connections between said detector device and said stop mechanism whereby the movement of the detector device operates to release said stop mechanism, substantially as set forth.

2. The combination with a printing-press or the like, of a stop mechanism therefor, a movable detector device arranged adjacent to the form and adapted to be operated by the material which sticks to said form, and movable connections between said detector device and said stop mechanism whereby the movement of the detector device operates to release the stop mechanism, substantially as set forth.

3. The combination with a printing-press or the like, of a stop mechanism therefor, a pivoted detector device arranged adjacent to the form and adapted to be oscillated by the material which sticks to said form, and movable connections between said detector device and said stop mechanism whereby the movement of the detector device operates to release the stop mechanism, substantially as set forth.

4. The combination with a printing-press or the like, of a stop mechanism therefor, a releasing device for said stop mechanism, a detector device arranged adjacent to the printing-form and adapted to be moved by the material which sticks to said form, and movable connections between said detector device and said releasing device whereby the movement of the detector device operates said releasing device, substantially as set forth.

5. The combination with a printing-press or the like, of a stop mechanism therefor, a detector device arranged adjacent to the form and adapted to be operated by the material sticking to said form, a positively-driven part, means operated by said detector device adapted to be connected with said positively-driven

part, and connections between said means and said stop mechanism for releasing the latter, substantially as set forth.

6. The combination with a printing-press or the like, of a stop mechanism therefor, a releasing device for said stop mechanism, a pivoted detector device arranged adjacent to the form and adapted to be oscillated by the material sticking to said form, a positively-driven part, and mechanism controlled by said detector device for connecting said releasing device with said positively-driven part, substantially as set forth.

7. The combination with a printing-press or the like, of a stop mechanism therefor, a releasing device for said stop mechanism, a rotary shaft, a detector device arranged adjacent to the printing-form and adapted to be operated by the material sticking to said form, and mechanism controlled by said detector device for connecting said releasing device with said rotary shaft, substantially as set forth.

8. The combination with a printing-press or the like, of a stop mechanism therefor, a releasing device for said stop mechanism, a rotary shaft, a ratchet-wheel thereon, a pawl, a detector device arranged adjacent to the printing-form and adapted to be operated by the material sticking to said form to move said pawl into engagement with said ratchet, and connections between said pawl and said releasing device, substantially as set forth.

9. The combination with a printing-press or the like, of a stop mechanism therefor, a releasing device for said stop mechanism, a

rotary shaft, means for mounting the same on the press, a ratchet-wheel on said shaft, a detector device adapted to be operated by the material sticking to the form, means for supporting said detector device on the press adjacent to said form, a pawl actuated by said detector device, means for supporting said pawl on the press, and connections between said pawl and said releasing device, substantially as set forth.

10. The combination with a printing-press, of a stop mechanism therefor, a movable detector device operated by the engagement therewith of the material to be operated upon when it sticks to the form, and movable connections between said detector device and said stop mechanism whereby the movement of the detector device operates to actuate said stop mechanism, substantially as set forth.

11. The combination with a printing-press, of a stop mechanism therefor, an actuating device for said stop mechanism, a detector device arranged adjacent to the printing-form and adapted to be moved by the material which sticks to said form, and movable connections between said detector device and said actuating device whereby the movement of the detector device operates said actuating device, substantially as set forth.

Witness my hand this 15th day of July, 1902.

GEORGE R. WILLIAMS.

Witnesses:

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