J. A. ALLEN.

PRINTING PRESS.

APPLICATION FILED JUNE 8, 1916.

1,305,431.

Patented June 3, 1919.

2 SHEETS—SHEET 1.

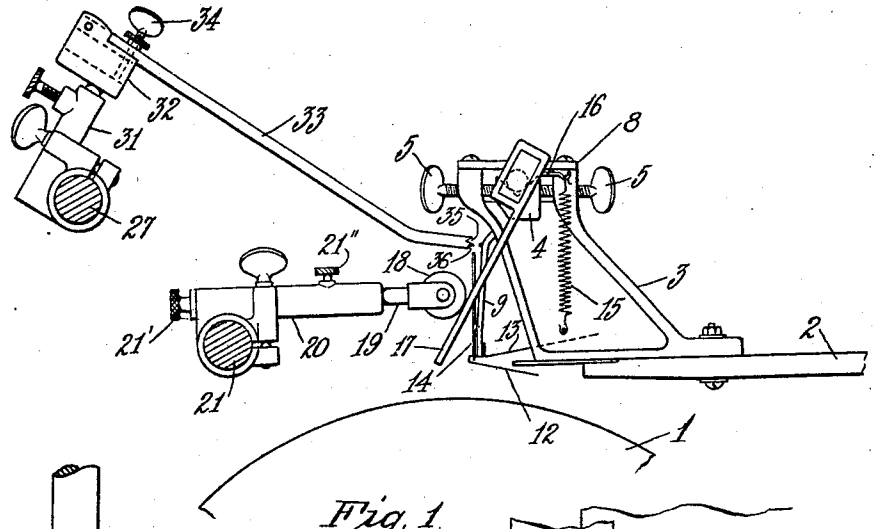


Fig. 1.

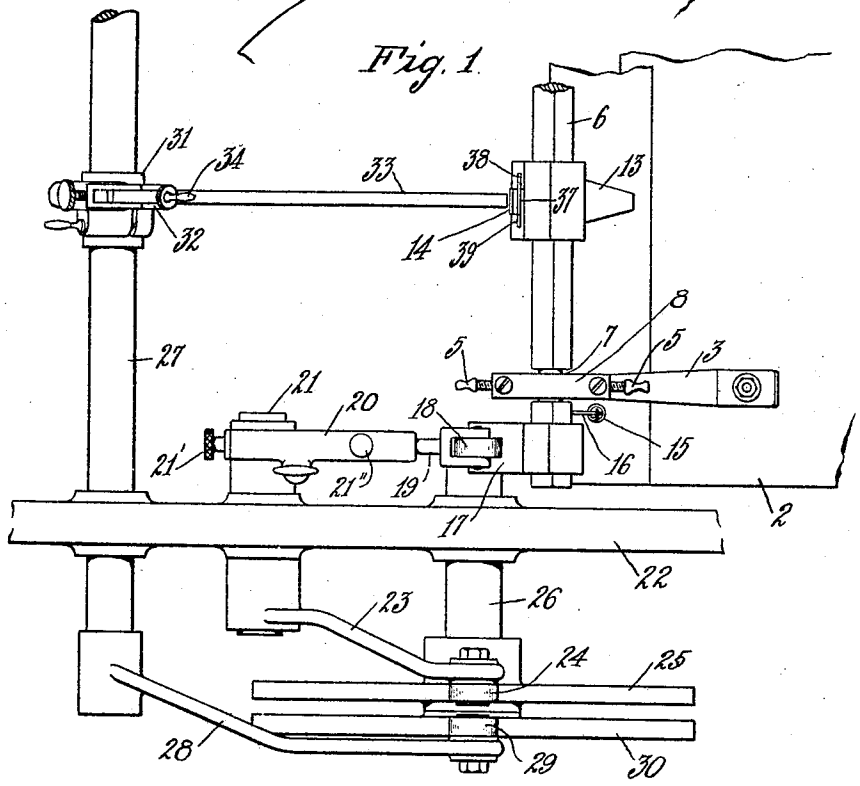


Fig. 2.

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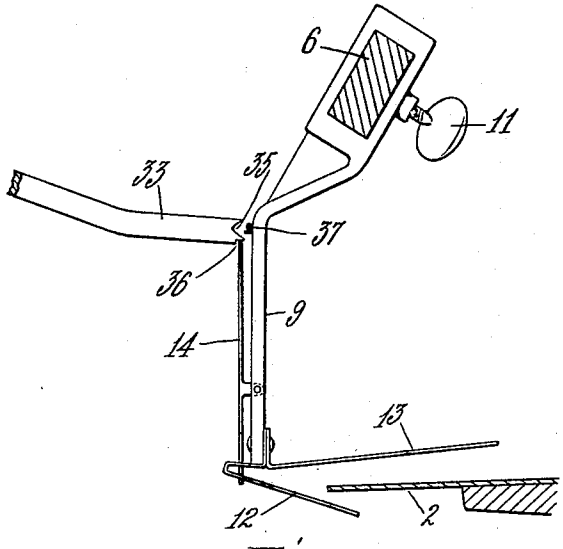


Fig. 3.

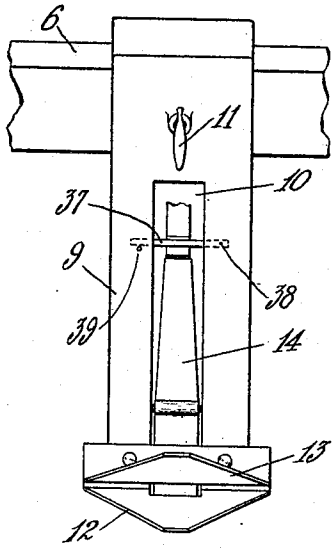


Fig. 4.

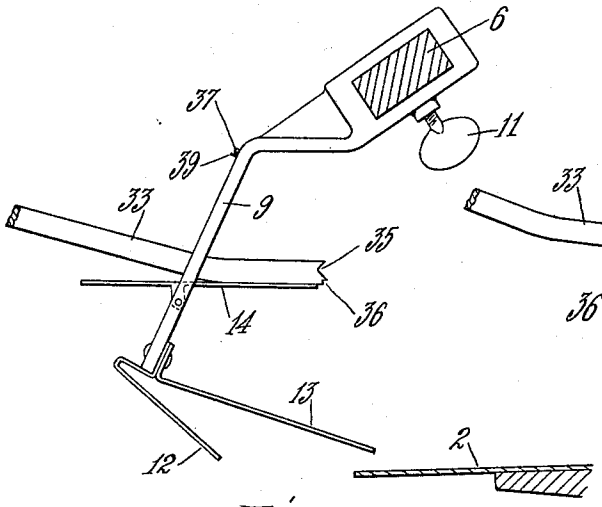


Fig. 5.

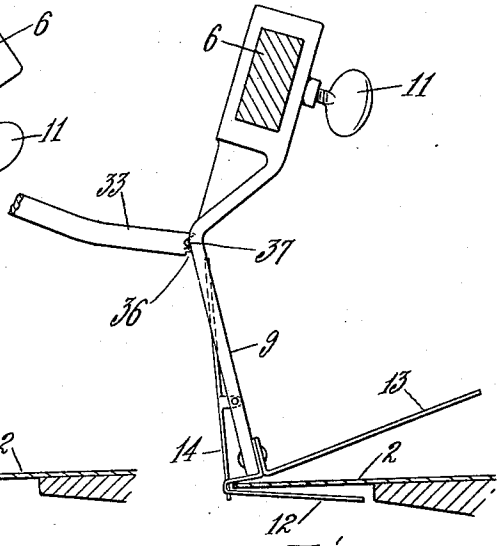


Fig. 6.

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UNITED STATES PATENT OFFICE.

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PRINTING-PRESS.

1,305,431. Specification of Letters Patent. Patented June 3, 1919.

Application filed June 8, 1916. Serial No. 102,409.

To all whom it may concern:

Be it known that I, JAMES A. ALLEN, of the city and county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Printing-Presses; and I do hereby declare the following specification, taken in connection with the accompanying drawings, forming a part of the same, to be a full, clear, and exact description thereof.

The invention relates to an improvement in printing presses and more particularly the rear end of the press where the blank sheets of paper to be printed are fed into said press.

The main object of the invention is to provide means whereby an imperfect sheet of paper or a sheet of paper that is improperly presented to the impression cylinder, or to the gripping jaws, or feeding-in means, will be automatically moved back out of position to be engaged by the gripping jaws and away from the impression-cylinder.

To these ends the invention consists of the novel construction and arrangement of parts hereinafter described and more particularly set forth in the claims.

In describing the invention in detail, reference will be made to the accompanying drawings, in which—

Figure 1 is a side view of my improved device;

Fig. 2 is a top plan view;

Fig. 3 is a side view, on an enlarged scale, of the guide-finger in its normal position;

Fig. 4 is a front view of the same;

Fig. 5 is a side view of the guide-finger in its forward position;

Fig. 6 is a side view of the guide-finger in its rearward position.

Referring to the drawings, 1 represents the impression-cylinder and 2 the inclined feed-table upon which the blank sheets of paper are fed into the press, both of which are of the usual and ordinary construction. Bolted upon each side of the inclined table 2 adjacent the inner edge of said table is a bracket 3, in the top of which is mounted a sliding journal-block 4, which is adapted to be slidably adjusted by means of the adjusting screws 5.

Mounted in the journal-blocks 4 and extending across the entire width of the table 2 is a rectangular rock-shaft 6 having the circular bearing portions 7, which are mounted in the journal-blocks 4, held therein by means of the plates 8 secured upon the top of the brackets 3.

Slidably mounted upon the rock-shaft 6 between the standards 3 is a downwardly extending rectangular arm 9 provided with a central longitudinal slot 10, as shown in Fig. 4. The arm 9 is secured in position upon the rock-shaft 6 by means of the set-screw 11 and carries at its lower free end two guiding jaws 12 and 13. Pivotally mounted in the sides of the slots 10 is a guide-plate 14, the lower end of which extends down between the guiding jaws 12 and 13, as shown in Fig. 3.

The rock-shaft 6 is rocked in one direction by means of a spring 15, one end of which is secured to a pin 16 extending from the rear side of the rock-shaft 6, the other end of which is secured to the bracket 3, as shown in Fig. 1.

Mounted upon the end of the rock-shaft 6 is a downwardly extending inclined arm 17 which is arranged to be engaged by a roller 18 upon the end of an actuating rod 19 adjustably mounted in a holder 20, which is clamped upon a rock-shaft 21. The actuating rod 19 is arranged to be adjusted by means of the adjusting screw 21′ and to be held in adjusted position by means of the set-screw 21″. The rock-shaft 21 is mounted in the frame 22 and carries at its outer end an arm 23 provided with a cam-roller 24, which engages a rotary cam-wheel 25 mounted on the cam-shaft 26, which is continuously driven by the main driving shaft through connections not here shown.

Mounted in the frame 22 in advance of the rock-shaft 21 is another rock-shaft 27 which carries upon its outer end a cam-arm 28 provided with a cam-roller 29 which engages the cam-wheel 30 likewise mounted upon the cam-shaft 26.

Adjustably secured upon the rock-shaft 27 is a holder 32. A rearwardly extending actuating finger 33 is pivotally mounted at one end in the holder 32 and is adapted to be adjusted vertically by means of the adjusting screw 34. The free end of the adjusting finger 33 is arranged to be normally in alinement with and adjacent to the upper

end of the guide-plate 14, and is provided with a notch 35 and upon the underside with a shoulder 36, as shown in Fig. 3.

Secured upon the forward side of the arm 9 and extending across the slot 10 just above the upper end of the guide-arm 14 is a cross-bar 37. Said bar is pivoted at one end at 38, and has its opposite end arranged to engage a stop 39 as shown in Fig. 4.

While only one side of the guiding jaws 12 and 13, together with the guiding plate 14 and one actuating finger 33, is shown in the drawings, it will be understood that another set is employed upon the other side of the inclined table 2 and an intermediate set or sets can be arranged in the central portion of the table if desired.

The operation of the device is as follows:— Fig. 1 shows the parts in their normal position, with the free end of the actuating finger 33 resting above and in close proximity to the upper end of a guide-plate 14. As the cam-wheel 30 revolves, the cam-arm 28 is dropped and the rock-shaft 27 rocked to the right in Fig. 1, which moves the actuating finger 33 rearward and downward, so that the free end will rest upon the upper end of the guide-plate 14 with the shoulder 36 bearing against the front face of said guide-plate, as shown in Fig. 3.

When a sheet of paper is properly presented by the operator, the inner edge will enter between the guiding jaws 12 and 13 and engage the lower end of the guide-plate 14, so as to move said guide-plate upon its pivot and move the upper end thereof out of engagement with the actuating finger 33. As the guide plate 14 is moved out of engagement with the free end of the actuating finger 33, the free end of said finger drops down in front of the upper end of the guide-plate 14 and the rock-shaft 27 is further rocked by the cam-wheel 30, so as to move the actuating finger 33 to the rear through the slot 10 in the arm 9. As the actuating finger 33 begins its rearward movement, the cam-wheel 25 actuates the rock-shaft 21 to raise the actuating rod 19, thereby permitting the spring 15 to turn the rock-shaft 6 to the left in Fig. 1, and raise the guiding jaws 12 and 13 into the position shown in Fig. 5. When the guiding jaws are in this position, the front edge of the paper is in proper position to be engaged by the gripping jaws and presented to the impression-cylinder.

When the actuating finger 33 returns to its normal position, the rock-shaft 21 is moved clockwise in Fig. 1 and the roller 18 will engage the inclined arm 17 and move the rock-shaft 6 and the gripping jaws 12 and 13 back to their normal positions.

When now a sheet is improperly presented or an imperfect sheet is presented within the guiding jaws 12 and 13, it will be seen that the inner edge of the paper will not come in contact with the lower end of the guide-plate 14 and said guide-plate will not be rocked upon its pivot, to permit the free end of the actuating finger 33 to drop down in front of the same. When, however, the rearward movement of the actuating finger 33 continues with the free end raised upon the upper end of the guide-plate, the forked end 35 will come in contact with the cross-bar 37 and move the arm 9 and guiding jaws 12 and 13 to the rear and into the position shown in Fig. 6, thereby pushing the forward edge of the paper back upon the inclined table 2, and so as not to be engaged by the gripping jaws and presented to the impression-cylinder.

As the actuating finger 33 returns to its normal position, the spring 15 will move the rock-shaft 6 and gripping jaws 12 and 13 back into their normal position, with the inclined arm 17 resting against the roller 18 upon the end of the actuating rod 19. It will be seen that, if desired, the cross-bar 37 may be swung about upon its pivot 38 and leave the actuating finger 33 free to pass through the slot 10, without operating the guiding jaws 12 and 13 in their rearward direction.

What I claim as my invention and desire to secure by Letters Patent is:

1. In a printing-press, the combination with a guiding jaw of means adapted to move said jaw in one direction when a sheet of paper is properly presented and in the opposite direction to engage the front edge of the sheet when said paper is improperly presented to the impression-cylinder.

2. In a printing-press, the combination with a guiding jaw of means adapted to move said jaw in one direction when a perfect sheet of paper is presented and in the opposite direction to engage the front edge of the sheet when an imperfect sheet is presented to the impression-cylinder.

3. In a printing-press, the combination with a feed-table of a rock-shaft mounted over the inner edge of said table, an arm suspended from said rock-shaft, two guiding jaws secured to the free end of said arm and normally straddling said table, sheet controlled means arranged to rock said shaft and move said guiding jaws away from said table and an actuating finger arranged to move said jaws in the opposite direction.

4. In a printing-press, the combination with a feed-table of two guiding jaws, sheet controlled means for moving said jaws in the forward direction, and an actuating rod for moving said jaws back to normal position.

5. In a printing-press, the combination with a feed-table of two guiding jaws, an actuating finger for moving said jaws in a

rearward direction and sheet controlled means for moving said jaws back to normal position.

6. In a printing-press, the combination with a feed-table of two guiding jaws, an actuating finger for moving said jaws in a rearward direction, sheet controlled means for moving said jaws back to normal position, and a stop for limiting the movement of said jaws by said spring.

7. In a printing-press, the combination with a feed-table of two guiding jaws, a pivoted guide-plate extending between said guiding jaws and adapted to be moved upon its pivot by the insertion of a sheet of paper into said jaws, means for moving said guiding jaws in the forward direction when said guide-plate is moved upon its pivot, and means for moving said guiding-jaws in the opposite direction when said guide-plate is not moved upon its pivot.

8. In a printing-press, the combination with a feed-table of two guiding jaws, a pivoted guide-plate having one end extending between said guiding jaws, and an actuating finger arranged to coöperate with said guide-plate to permit the forward movement of said guiding jaws.

9. In a printing-press, the combination with a feed-table of a rock-shaft mounted above said table, a downwardly extending arm mounted upon said shaft, guiding means carried by said arm and an actuating finger arranged to coöperate with said arm and move said guiding means in a rearward direction.

10. In a printing-press, the combination with a feed-table of a rock-shaft mounted above said table, a downwardly extending arm mounted upon said rock-shaft, guiding means carried by said arm, an inclined arm extending downwardly from said rock-shaft, sheet controlled means for rocking said shaft in the forward direction, a second rock-shaft mounted in advance of said first rock-shaft, means for rocking said second shaft, an actuating rod mounted upon said second rock-shaft and arranged to coöperate with said inclined arm to rock said first rock-shaft in the rearward direction.

11. In a printing-press, the combination with a feed-table of a rock-shaft mounted above said table, a downwardly extending arm adjustably mounted upon said rock-shaft, two guiding jaws carried by said arm, a downwardly and forwardly extending arm adjustably mounted upon said rock-shaft, sheet controlled means arranged to rock said shaft in the forward direction, a second rock-shaft mounted in advance of said first rock-shaft, an arm extending from said second rock-shaft and having its free end resting upon a rotary cam and an actuating rod mounted upon said second shaft and having its free end arranged to engage said downwardly and forwardly extending arm.

12. In a printing-press, the combination with a feed-table of a rock-shaft mounted above said table, a downwardly extending arm mounted upon said rock-shaft, two guiding jaws carried by said arm, a spring arranged to rock said shaft in the forward direction, means for limiting the forward movement of said shaft, a second rock-shaft mounted in advance of said first rock-shaft, an actuating finger mounted upon said second rock-shaft and arranged to engage said downwardly extending arm to rock the first rock-shaft in the rearward direction, and means for rocking said second rock-shaft.

13. In a printing-press, the combination with a feed-table of a rock-shaft mounted above said table, a downwardly extending arm adjustably mounted upon said rock-shaft, two guiding jaws carried by said arm, a spring arranged to rock said shaft in the forward direction, a stop for limiting the movement of said rock-shaft by the action of said spring, a second rock-shaft mounted in advance of the first rock-shaft, an actuating finger slidably mounted upon said second rock-shaft, and a cam for operating said second rock-shaft.

14. In a printing-press, the combination with a feed-table of a rock-shaft mounted above said table, a downwardly extending arm adjustably mounted upon said rock-shaft and provided with a longitudinal slot, and a pivoted latch-member in said slot, two guiding jaws upon the free end of said arm, a spring arranged to rock said shaft so as to move the guiding jaws in the forward direction, an inclined arm slidably mounted upon said rock-shaft, a second rock-shaft mounted in advance of said first rock-shaft, an actuating finger slidably mounted thereon, a rotary cam arranged to operate said second rock-shaft, an intermediate rock-shaft, an actuating rod slidably mounted upon said intermediate shaft and arranged to coöperate with said inclined arm, and a rotary cam arranged to operate said intermediate shaft.

15. In a printing-press, the combination with a feed-table of a rock-shaft mounted above the inner edge of said table, a downwardly extending arm adjustably mounted upon said rock-shaft and provided with a longitudinal slot, a pivoted bar extending across the upper portion of said slot, two guiding jaws secured to the free end of the arm and arranged to straddle the inner edge of said table, a latch-bar pivoted in said slot and having the lower end extending between said guiding jaws and the upper end located beneath said pivoted bar, a spring arranged to rock said shaft in the forward direction, an inclined arm slidably mounted upon said rock-shaft, a second rock-shaft mounted in

advance of said first rock-shaft, an actuating finger mounted thereon, a rotary cam for operating said second rock-shaft, an intermediate rock-shaft, an actuating rod slidably mounted thereon and provided at its free end with a roller arranged and adapted to engage said inclined arm, and a rotary cam arranged to operate said intermediate rock-shaft.

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