H. F. AYLOR.

ATTACHMENT FOR PRINTING PRESSES.

APPLICATION FILED JAN. 22, 1920.

1,366,859. Patented Jan. 25, 1921.

Fig. 1.

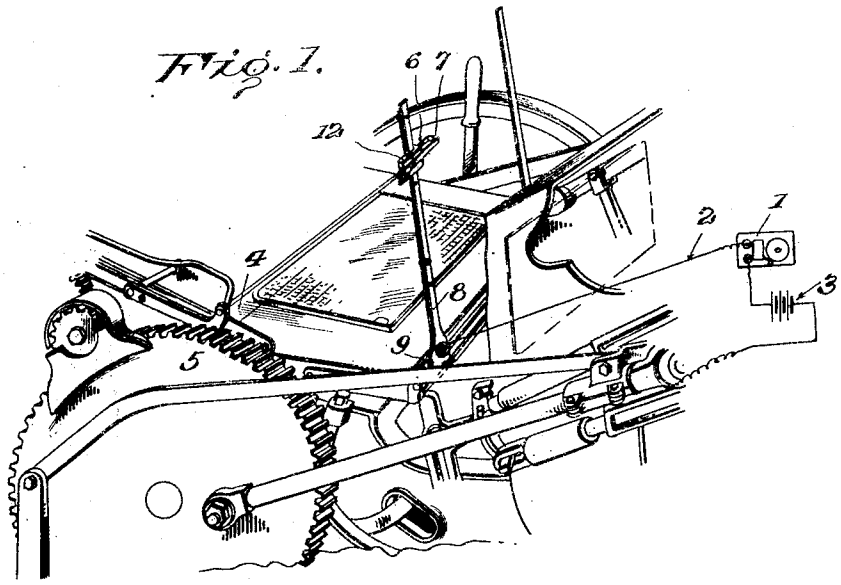


Fig. 2.

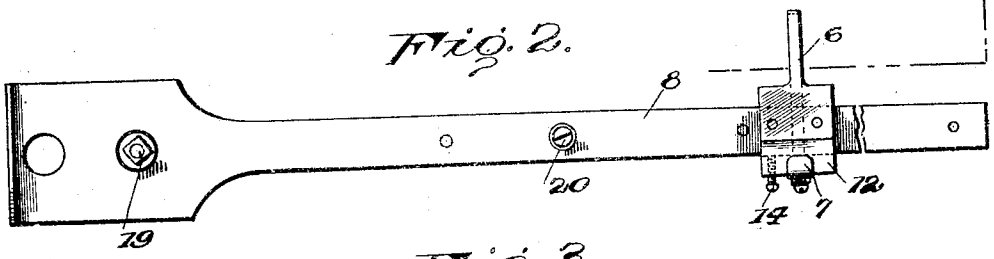


Fig. 3.

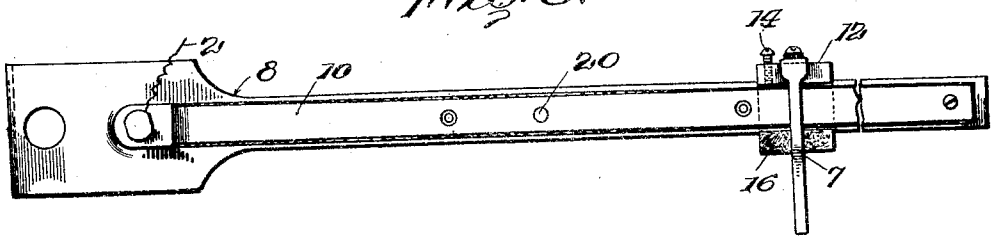


Fig. 4.

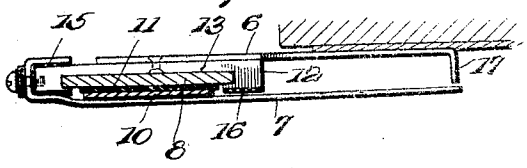
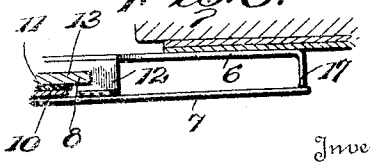


Fig. 5.



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By [signature]

his Attorney

UNITED STATES PATENT OFFICE.

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ATTACHMENT FOR PRINTING-PRESSES.

1,366,859. Specification of Letters Patent. **Patented Jan. 25, 1921.**

Application filed January 22, 1920. Serial No. 353,194.

To all whom it may concern:

Be it known that I, HOWARD F. AYLOR, a citizen of the United States, residing at Washington, District of Columbia, have invented certain new and useful Improvements in Attachments for Printing-Presses, of which the following is a specification.

This invention relates generally to an improvement in printing presses, and particularly to a protective means whereby to advise the operator in the event more than a single sheet is in printing position on the platen of the press for presentation to the type for printing.

Considerable difficulty and resultant damage has resulted from the accidental feeding to the platen of more than a single sheet of paper for printing, as the additional thickness nearly always results in damage to the type and requires a new set up to complete the work. It has been heretofore proposed to sound an alarm and stop the press in the event more than one sheet is being fed to the platen, but such constructions only take care of automatic feeding of a particular type, and could not be used in hand feeding or simple gripper feeding.

The present invention is directed to protecting the press and type against damage by sounding an alarm as the gripper arms move onto the paper on the platen to hold the same for printing, in the event that more than one thickness of paper or more than the desired thickness should be on the platen; the alarm indication permitting the operator to actuate the trip to hold the platen from moving to full printing position.

The invention, broadly stated includes an alarm circuit, terminating at the gripper arm in normally spaced contacts, which under a proper paper thickness on the platen will not be brought together to close the circuit, any additional thickness, however, closing such contact for alarm sounding.

More specifically, the invention provides a contact strip which is secured to the under side of the gripper arm and insulated therefrom, the strip forming one terminal of a circuit, the other terminal being grounded to the machine and hence leading through the gripper arm proper. A slide is mounted for adjustment longitudinally of the gripper arm, and provides metallic contact with such arm. A contact arm is secured to and in electrical contact with such slide, and a second contact arm is secured to the slide but insulated therefrom. The second arm overlies and bears on the contact strip, and the inner terminals of the contact arms are bent toward each other and normally spaced the required distance. When the terminals of the contact arms are forced together by contact with an excess of paper, the circuit is closed, as the contact strip serves to complete the circuit through the contact arm overlying the same, in any adjusted position of the slide. The invention also contemplates means whereby the closing movement of the gripper arms may be adjustably limited to compensate for any additional thickness of material usually employed on the platen in making ready for the job.

In the drawings:—

Figure 1 is a perspective view, of sufficient a portion of a conventional type of press to illustrate the application of the invention.

Fig. 2 is an enlarged perspective view of a gripper arm with the contacts in position thereon.

Fig. 3 is a bottom plan of the same.

Fig. 4 is a view in elevation partly in section illustrating the position of the parts when coöperating with a sheet of predetermined thickness.

Fig. 5 is a similar view showing the positions of the parts when coöperating with a sheet of greater thickness, or with two sheets.

As here shown, the improvement is directed particularly to an alarm mechanism, including an alarm 1, a circuit 2, and source of energy 3, adapted to be normally open under all proper working conditions, and to be particularly closed in the event, an undesirable number of sheets of paper are on the platen 4 of the press 5, for presentation to the type.

The circuit 2 is controlled by the thickness of paper when in printing position on the platen, and for such control there is provided a circuit closer including contact plates 6 and 7 secured to the gripper arm 8, which arm is operated by the gripper bar 9 in the usual manner.

In specifically arranging the contact plates 7 and 8 for coöperation with the gripper arm it is necessary to have such plates adjustable longitudinally of the arm

to provide for use with paper of different lengths, and avoid interference with the alarm circuit conditions during and following such adjustment.

To secure this result, a contact strip 10 is arranged on and secured to the lower surface of such gripper arm 8, such strip 10 extending substantially the full length of the arm and being insulated thereupon by suitable insulating material 11. A metallic block 12, recessed at 13 to receive the gripper arm 8, is slidably mounted on such gripper arm and held in adjusted position longitudinally of such arm by set-screw 14. One of the contact plates as 7 projects from the inner edge of such block 12, being preferably an independent section as of copper, secured to the upper surface of the block, as shown. The other contact plate 6 is secured to the outer edge of the lower surface of the block 12, and insulated from such block, as at 15. The plate 7 extends across the contact strip 10, beneath the inner edge of block 12, being protected from contact with such block by an insulating strip 16 secured on the block.

The plates 6 and 7 extend beyond the inner edges of the block as spaced fingers in superimposed alinement and one, as 6 has its free edge 17 bent toward the other plate 7, so that said plates are so arranged that their free edges are immediately adjacent each other and normally spaced apart a distance slightly in excess of the thickness of a single sheet of paper 18 of the character being printed, so that when said arm 8 presses upon such single sheet no contact of such edges 17 can result, and the circuit remains open. If, however a greater thickness than that desired is on the platen, as for example two or more sheets of paper, then the additional thickness will cause the contacts 17 and 7 to meet, the circuit 2 will be closed, and the alarm 1 sounded.

It will be understood that under any contact movement of arm 8 the circuit is completed through and by contact with strip 10, the latter being terminally provided at 19 with circuit wire connecting means. The other circuit wire is grounded through the press, this including the gripper arm 8 in proper circuit.

The operator may then operate the trip or throw out and prevent a full printing movement of the platen, and liability of injury to the type is prevented.

In making ready, it is frequently necessary to build up the platen by strips or sheets of paper or cardboard for a proper printing surface. To compensate for the additional and permanent thickness, means must be provided to correspondingly increase the necessary relative movement of the contacts or limit the closing position of the gripper arm.

There is here shown a means for such purpose, indicated by a set screw 20 adjustable in and inverted from the gripper, and operative to limit the closing position of such arm to compensate for the additional thickness of platen material. Of course this result can be gained through a variety of mechanical expedients, and the specific detail here shown in such connection, is designed to indicate any and all such known mechanical elements for this purpose when used in combination with the contact members described.

While preferring an audible alarm 1, a usual or desired type may be used as best suited to the particular user.

Claims:

1. A gripper arm of a printing press, and a circuit closing attachment to be moved into contact with the paper engaged by said arm, said attachment being operated by a predetermined thickness of such paper to close a circuit.

2. A printing press gripper arm having circuit closing contacts carried thereby, said contacts having normally spaced ends projecting beyond the inner edge of the arm.

3. A printing press gripper arm having circuit closing contacts carried thereby, one of said contacts having an inturned end projected toward the other contact and normally spaced therefrom, the operative ends of the contacts projecting beyond the inner edge of the arm.

4. A printing press gripper arm having circuit closing contacts carried thereby, said contacts having normally spaced ends projecting beyond the inner edge of the arm, and means for adjusting the closing limit of such arm.

5. A printing press gripper arm having contact plates secured in recesses in the upper and lower surfaces of such arm, means to insulate such plates from the arm, said plates projecting transversely of the arm and beyond one side edge thereof, the ends of the plates beyond the arm being bent toward each other and alined, the free edges of such ends being normally spaced.

6. A printing press gripper arm having contact plates secured in recesses in the upper and lower surfaces of such arm, means to insulate such plates from the arm, said plates projecting transversely of the arm and beyond one side edge thereof, the ends of the plates beyond the arm being bent toward each other and alined, the free edges of such ends being normally spaced, and a set screw threaded through the arm and adapted to be adjusted relative to the paper-engaging surface of the arm.

7. A printing press gripper arm, a contact strip secured thereon and insulated therefrom, a block adjustable longitudinally of said arm, a contact plate carried by said

block, and a second contact plate carried by and insulated from said block, said second arm being adapted to be energized by said strip.

8. A printing press gripper arm, a contact strip secured thereon and insulated therefrom, a block adjustable longitudinally of said arm, a contact plate carried by said block, and a second contact plate carried by and insulated from said block, said second arm being arranged to directly contact with said strip in a circuit closing movement of such plate.

9. A printing press gripper arm, a contact strip secured thereon and insulated therefrom, a block adjustable longitudinally of said arm, a contact plate carried by said block, and a second contact plate carried by and insulated from said block, said second arm being adapted to be energized by said strip, said plates projecting beyond the inner edge of the arm and having their terminals bent toward each other.

In testimony whereof I affix my signature.

HOWARD F. AYLOR.