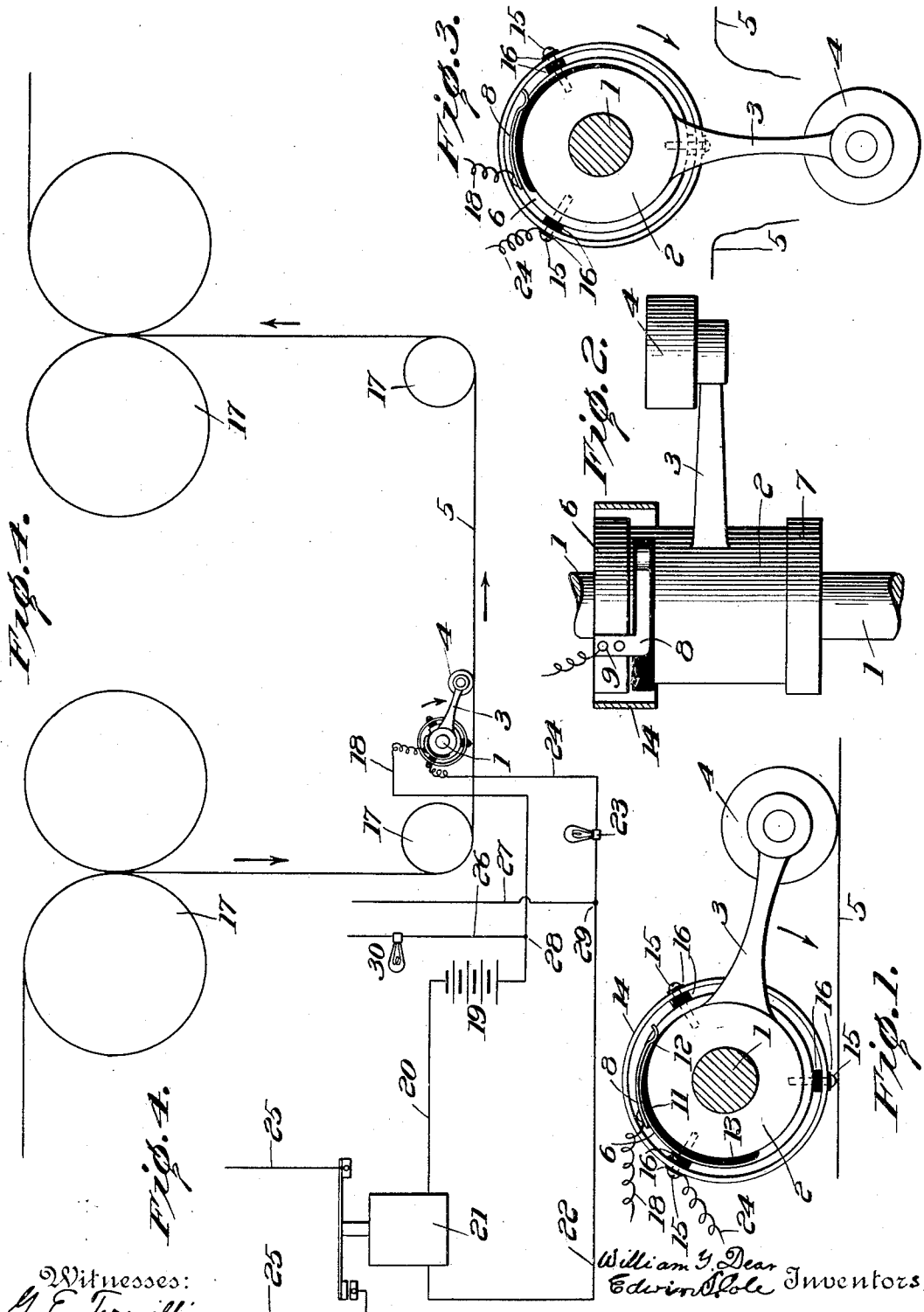


W. Y. DEAR & E. S. COLE.
 PROTECTIVE DEVICE FOR PRINTING PRESSES OR THE LIKE.
 APPLICATION FILED JULY 11, 1911.

1,068,573.

Patented July 29, 1913.



Witnesses:
 J. E. Ferwilligen
 Edmund Quincy Moore

William Y. Dear
 Edwin Cole Inventors
 By their Attorney
 Edward Davis

UNITED STATES PATENT OFFICE.

WILLIAM Y. DEAR AND EDWIN S. COLE, OF JERSEY CITY, NEW JERSEY, ASSIGNORS TO
THE JERSEY CITY PRINTING COMPANY, OF JERSEY CITY, NEW JERSEY, A CORPO-
RATION OF NEW JERSEY.

PROTECTIVE DEVICE FOR PRINTING-PRESSES OR THE LIKE.

1,068,573.

Specification of Letters Patent.

Patented July 29, 1913.

Application filed July 11, 1911. Serial No. 637,912.

To all whom it may concern:

Be it known that we, WILLIAM Y. DEAR and EDWIN S. COLE, citizens of the United States, residing in the city of Jersey City, county of Hudson, State of New Jersey, have invented certain new and useful Improvements in Protective Devices for Printing-Presses or the Like, of which the following is a specification.

Our invention relates to means for preventing damage to machines through which there normally passes a ribbon of flexible material, the breaking of which while the machine is in motion is likely to clog and disarrange the elements of the mechanism.

Our invention is particularly applicable to printing presses and the like, wherein a band of flexible material, the paper in the case of a printing press, is continuously passing through the machine. It is a common experience in printing offices to have the paper break after being threaded up through the press, and the continued operation of the press after the breakage occurs not only causes loss of stock in the shape of damaged paper, but is also likely to lead to more serious consequences in the way of actual breaking of parts of the machine, such as rollers or guides between which the paper passes.

The function of our device is to provide mechanism which will be sensitive to the breaking of the paper and which will cause the immediate stoppage of the press when such an accident occurs.

In the accompanying drawings which form a part of this specification, Figure 1 is a side elevation of the protective device in the position which it assumes in the normal operation of the printing press or other mechanism to which it is attached; Fig. 2 is a top view of Fig. 1; Fig. 3 is a side view similar to Fig. 2, showing the position which the device assumes in case of a break of the paper or other material being fed through the machine; Fig. 4 is a diagrammatic view illustrating the device in operation and indicating the electrical circuits which it controls.

Referring to the drawings in detail, the numeral 1 designates a stationary shaft secured to any suitable portion of the frame work of the press. Rotatably mounted on this shaft is a collar 2 carrying the arm 3,

upon the other extremity of which is rotatably mounted a roller 4, which, in the normal operation of the press, is adapted to bear upon and be supported by the paper 5, the axis of the arm being inclined to the vertical, as indicated in Fig. 1. A collar 6 is secured to the shaft 1 in a fixed position adjacent to the rotatable collar 2, and another collar 7 prevents the translation of the rotatable collar in the other direction along the shaft 1, so that the rotatable collar is free to move about its axis, but is allowed no substantial lateral movement. A contact spring 8 of spring brass or other suitable material is secured at 9 to the collar 6 and has an arm portion extending over the rotatable collar. The free end of this spring engages a cam 11 of fiber or other insulating material, which is fastened to the periphery of the rotatable collar. The portion 12 of this cam of shortest radius normally forms the seat for the free end of the contact spring, but rotation of the arm 3 in the direction of the arrow will cause the portion 13 of longer radius to force the end of the contact spring outward from the center of the shaft into electrical contact with a ring 14 surrounding the collar 6 and secured to it by the screws 15. Washers and bushings 16 of fiber or other insulating material are provided for preventing electrical contact between the ring 14 and the collar 6. It will be seen that the ring 14 further acts as a guard or shield to protect the contact spring.

It will be evident that the breaking of the paper 5 in the course of its travels over the rollers 17 will cause the arm to drop by gravity in the direction of the arrow, since the supporting surface of the paper is taken away. Through this rotation the insulating cam will force the spring to contact with the ring 14 and an electrical circuit will be completed from spring 8, through wire 18, battery 19, or other source of electro-motive force, wire 20, solenoid 21, or other means for closing an auxiliary circuit, wire 22, lamp 23, wire 24, and ring 14. The closing of this circuit will cause the solenoid 21, diagrammatically illustrated in Fig. 4, or any other appropriate device which may be substituted in its place, to close an auxiliary circuit 25, which is connected to any suitable well known mechanism for stopping a press by the closing of an electric circuit, or, if it

is desired, the action of the solenoid may be to open the secondary or auxiliary circuit, performing the same function in a manner which is well known to the art and which need not be described here.

Inasmuch as the paper may break at any one of a number of points in a large press, it is desirable to equip the press with a number of protective devices at several different points in the course of the paper through the machine. These are connected across the same circuit in multiple, as illustrated in Fig. 4, by the wires 26 and 27 connected at 28 and 29, respectively, to the main circuit. Each circuit has its own tell-tale lamp 30 which will light when that particular circuit, and only when that particular circuit, is closed, thus indicating to the pressman at a glance the location of the trouble. In the absence of these tell-tale signal lamps, any one of a half dozen protective devices might operate and cause the stoppage of the press, and it would require an extended search in the case of a complicated press to discover where the break had occurred.

While we have described our invention as applied to a printing press, it will be obvious that it may be used in connection with any one of a number of devices, and we do not desire to be limited either to the particular construction set forth and described or to the application shown.

Having thus described our invention, we claim:

1. A protective device for printing presses or the like comprising a movable element normally supported by material fed through the press, a resilient contact normally stationary, a second contact normally electrically insulated from the first and surrounding the same to form a shield therefor, said contacts forming a portion of an electrically actuated stop device for said press, and means for causing the resilient contact to engage the second contact when said supporting material is deranged.

2. A protective device for printing presses or the like comprising a movable element normally supported by material fed through the press, a pair of contacts forming a portion of an electrically actuated stop device for said press, means for altering the position of said contacts when said movable element is displaced, one of said contacts surrounding and forming a shield for the other contact.

3. A protective device for printing presses or the like comprising a movable element having a member rotatable about an axis, a cam surface on said member, a contact spring engaging said cam surface and forming a portion of an electrically actuated stop device for said press, a fixed contact member surrounding said spring and forming a shield therefor and means normally supported by material fed through the press for holding said rotatable member in a predetermined position.

4. A protective device for printing presses or the like comprising a movable element normally supported by material fed through the press, a stationary ring, a movable contact mounted within the limits of said ring and normally stationary, said ring and contact forming a portion of an electrically actuated stop device for said press, and means for altering the relative position of said contacts when said movable element is displaced.

5. A protective device for printing presses or the like comprising a movable element having a collar rotatable about an axis, a cam surface on said collar, a contact spring engaging said cam surface, an arm extending from said collar normally bearing upon and supported by material fed through the press, the center of gravity of the movable element being such as to cause said element to rotate about its axis when the supporting material is removed, whereby the cam surface is caused to displace said contact spring.

6. A protective device for printing presses or the like comprising a collar rotatable about an axis, a fixed collar concentric with and spaced from said rotatable collar, a cam surface on said rotatable collar, a fixed contact spring engaging said cam surface, an arm extending from said rotatable collar, a roller on said arm normally bearing upon and supported by material fed through the press, the center of gravity of the rotatable collar and arm being such as to cause the same to rotate about its axis when the supporting material is removed, and thereby cause the contact spring to be forced into contact with said fixed collar, making electrical contact therewith.

WILLIAM Y. DEAR.
EDWIN S. COLE.

Witnesses:

GERALD E. TERWILLIGER,
JOHN S. WATSON.