

Dec. 25, 1923.

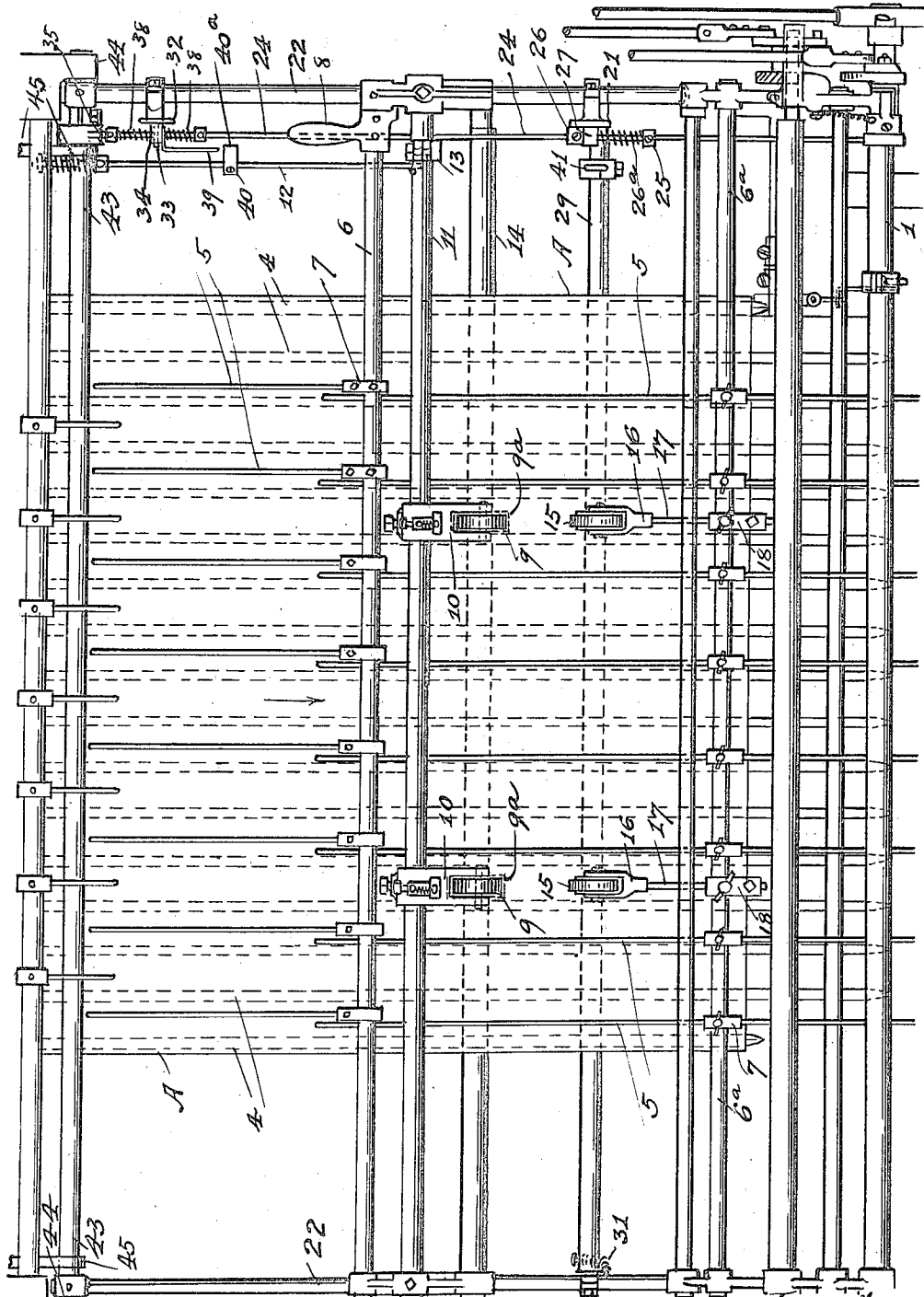
H. J. SCHULTZ

1,478,488

PRINTING PRESS

Filed April 16, 1920

4 Sheets-Sheet 1



Witness,
J. S. Mann

Fig. 1

Inventor,
Herman J. Schultz
By Frank A. Belknap, Att'y.

Dec. 25, 1923.

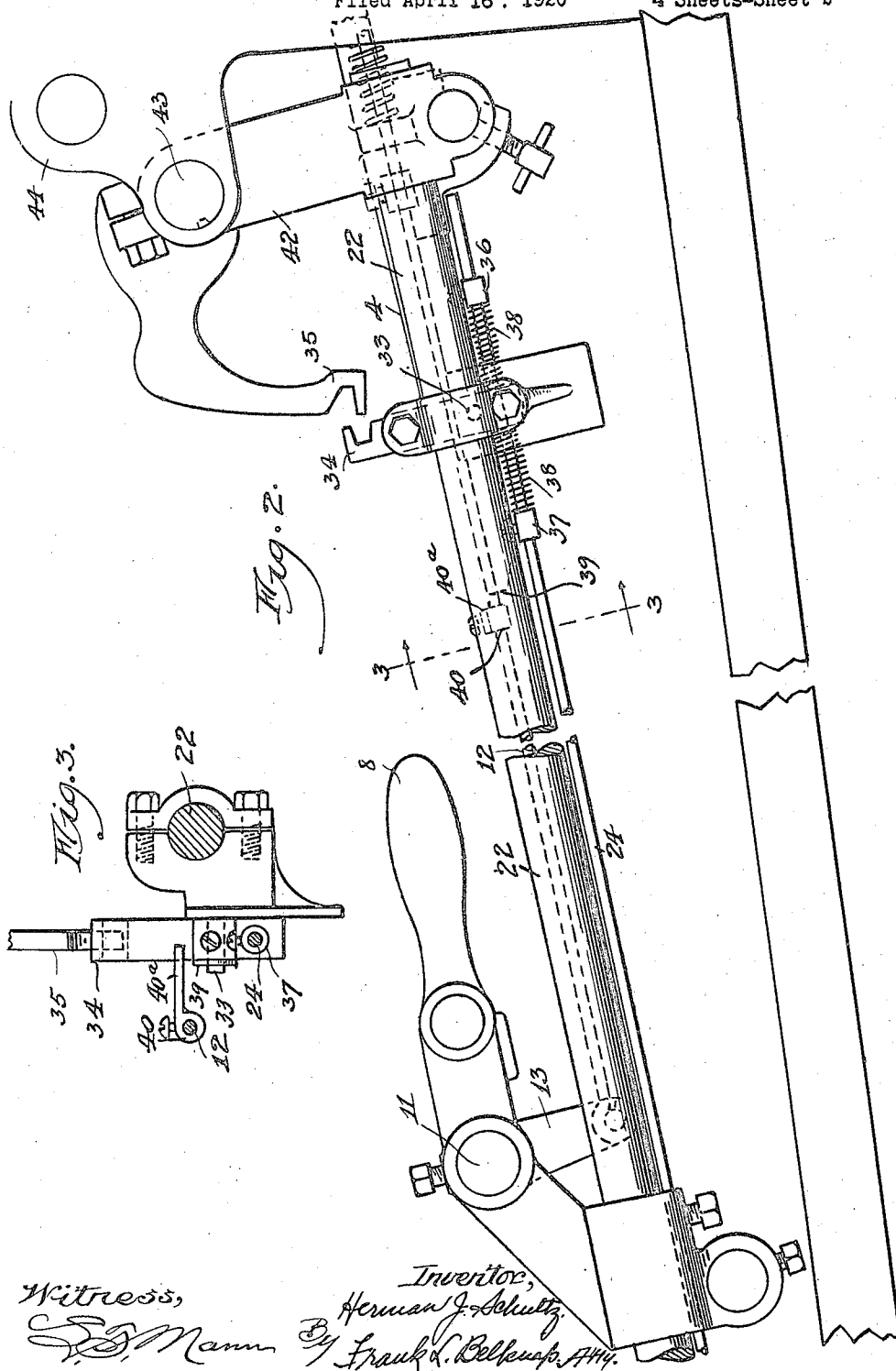
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4 Sheets-Sheet 3

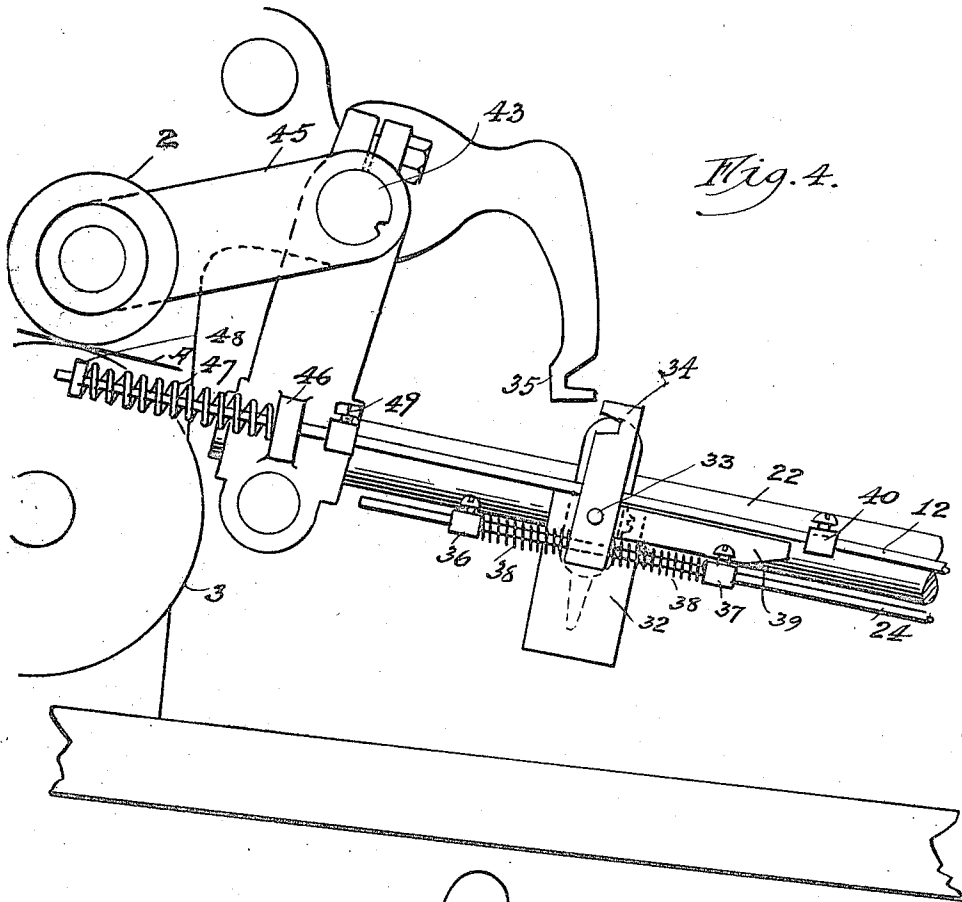


Fig. 4.

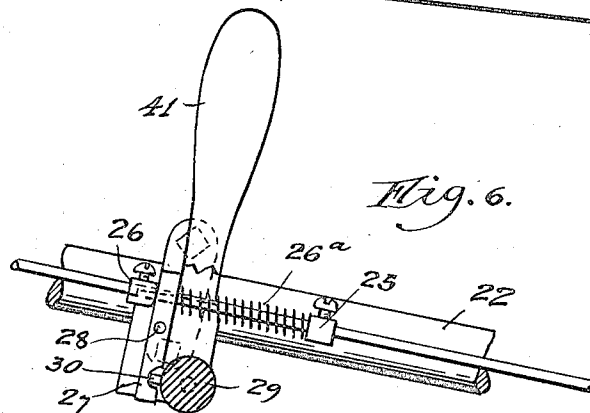


Fig. 6.

Witness,
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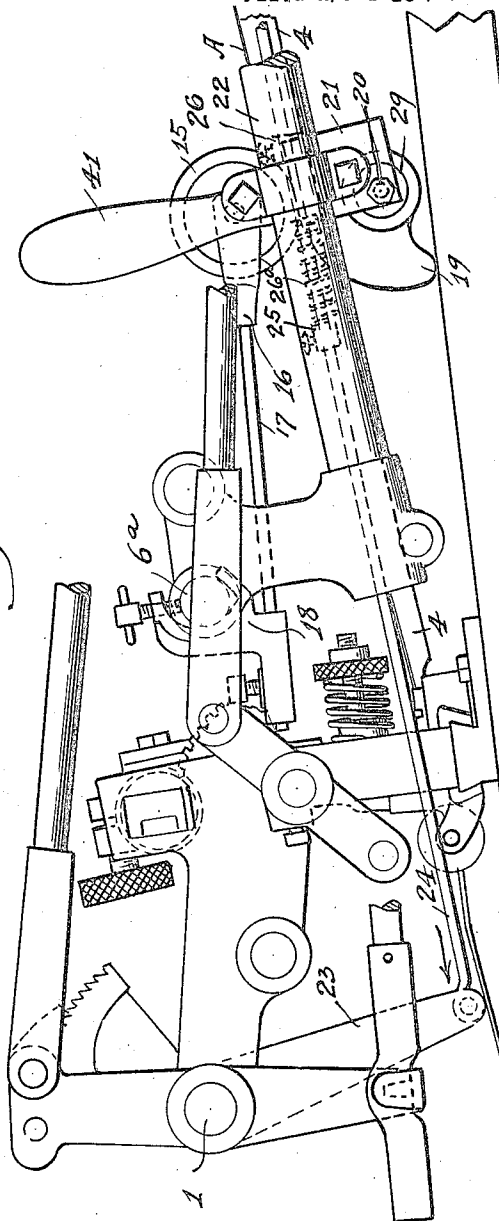
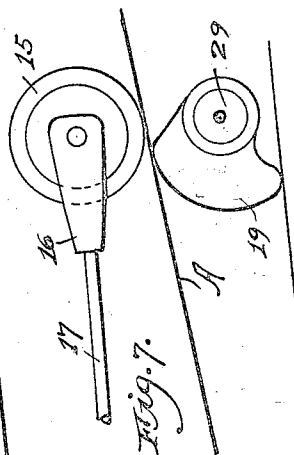
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4 Sheets-Sheet 4

Fig. 5.



Witness,
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By Frank L. Kellogg, Atty.

UNITED STATES PATENT OFFICE.

HERMAN J. SCHULTZ, OF CHICAGO, ILLINOIS.

PRINTING PRESS.

Application filed April 16, 1920. Serial No. 374,254.

To all whom it may concern:

Be it known that I, HERMAN J. SCHULTZ, a citizen of the United States, residing in the city of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Printing Presses, of which the following is a specification.

My invention relates to improvements in printing presses and refers more particularly to an attachment used in connection with the paper feed of a press by means of which the press is automatically stopped when the paper is being improperly fed thereto.

Among its salient objects are to provide a sheet saving device which will automatically stop the press when the paper sheets are not being fed properly into the press, one which not only prevents the feeding of the sheets to the press but also locks the secondary feed rolls which advance the paper sheet already fed to the press in an inoperative position, so that the paper is instantly stopped in its travel, thereby preventing the sheet being carried on by the machine's momentum to be fouled in the press after the power has cut off; to provide an attachment which is easily adapted to any type of press, one that is simple and light of construction, inexpensive and easily connected to the working parts of the press; to provide a device which keeps the sheets intact when the press is stopped, thereby obviating the necessity of tearing the sheets from the press or press feed when they have been fed improperly; to provide a device or attachment which is a time saver, as well as an economizer on the amount of paper stock wasted in that paper fouled in the press mechanism is often difficult to extricate and in general to provide a device or attachment of the character referred to.

In the drawings:

Fig. 1 is a plan view of that part of the press mechanism to which the sheet saver is connected.

Fig. 2 is a side elevation of a portion of the paper feed, with parts broken away.

Fig. 3 is a sectional detail taken on line 3—3 of Fig. 2, looking in the direction of the arrows.

Fig. 4 is an elevational view of a portion of the feed mechanism shown in Fig. 2, but taken from the opposite side of the press.

Fig. 5 is a continuation of the feed mechanism shown in Fig. 2, with parts omitted and parts broken away.

Fig. 6 is a detail elevation of the cam locking mechanism shown in Fig. 5.

Fig. 7 is a fragmentary detail of the cam and roller shown in Fig. 5.

This device or attachment used in connection with printing presses having automatic paper feeds is adapted to instantly stop the progress of the paper sheets which have been fed to the printing press in case a sheet has been improperly fed. For the purpose of detecting faulty alignment of the paper, I use an attachment explained in detail in my applications, Serial No. 308,843, filed July 5, 1919, and Serial No. 358,630, filed February 14, 1920.

As is explained in detail in those applications, when the paper is improperly fed to the press, these sheet detector attachments which are positioned at the margins of the paper, together with the side guides and side guide gripping members operate the kickoff shaft 1 to stop the printing press when a sheet has been fed to the press improperly. The attachment here described also operates in connection with the kickoff shaft and is actuated when the kickoff shaft operates to stop the press. The function of this device, as previously mentioned, is to instantly lock the feed members in an inoperative position so that the paper sheets are prevented from advancing to the printing rolls due to the momentum of the press after the power has been cut off.

The paper A is fed from the source of supply (not shown) through the feed rolls 2 and 3, the upper roll 2 being of rubber composition, the lower roll being the driven roll and made of steel. From these feed rolls, the paper sheets advance onto the wooden sticks 4 upon which they are fed to the press. Above the paper are arranged steel guide rods 5, which are fixed to transverse shafts 6 by means of suitable clamps 7. The shaft 6 may be rotated by means of the handle 8 which will raise the guide rods in a vertical position and make the paper more accessible in case a sheet has to be removed from the feed or realigned.

The paper is fed over the sticks 4 by means of upper and lower intermittently contacting rollers. The upper rollers 9 are mounted on small shafts 11 bearing in the bifurcated ends of the members 10. These

holding or bearing members 10 are fixedly attached to the shaft 11, which is intermittently rotated through a small arc to raise the rolls out of contact with similar driven rolls below the paper sheet shown at 9^a, Fig. 1. The intermittent raising and lowering of these upper rolls is caused by the reciprocation of the rod 12 connected to the shaft 11 through the arm 13. The driving rolls which are positioned directly below the rolls 9 and contact the same when the latter are in a lowered position, are mounted on the shaft 14 and are driven through gears (not shown), receiving their power from the press mechanism. To the shaft 6^a which supports a set of the guide rods 5 are also attached the slowdown saver rolls 15, mounted in the bifurcated bearings 16, which are fixed to the shaft by means of the connecting rods 17 and clamps 18. Directly below these sheet saver rolls are positioned cams 19, which are on a shaft 29 pivoted at 20, to the plates 21 which are in turn clamped to the lateral rods 22. When the paper is being fed to the press, there is a clearance of about $\frac{1}{4}$ " between the cam 19 and the sheet saver rolls 15. This permits the paper sheets to run freely therethrough, being fed by the driven feed rolls 9^a and pressure rolls 9, the latter mounted on the shaft 11 which intermittently contacts the rolls 9 as previously explained.

In case a sheet is improperly fed, the press will be stopped due to the operation of the kickoff shaft as previously explained. With the operation of the kickoff shaft, the link member 23 is actuated, pulling the connecting rod 24 longitudinally in a direction shown by the arrow. The movement of this rod 24, upon which are mounted the collars 25 and 26, releases the latch 27, the upper part being contacted by the collar 26. Interposed between these collars is a coil spring 26^a, which cushions the longitudinal movement of the rod in operating the latch 27. The rotation of this latch upon its pivot 28 frees the shaft 29, which was held by the latch 27 by means of the pin 30. Upon this shaft 29 are mounted the cams 19 and when the shaft is released, by the actuation of the latch, it is caused to rotate by means of the spring 31, thereby raising the cams so that they contact the sheet saver rolls 15 and prevent the paper sheet from advancing to the press.

At the same time, the rod 24 pulls the pivot bar latch 34 which is pivoted at 33 to plate 32 so that the pivot bar latch 34 engages the hook portion 35. Collars 36 and 37 are mounted upon the rod 24 and positioned between these collars and the pivot bar latch 34 are coil springs 38, which cushion the action of the member 34. To the pivot bar latch 34 is fixedly attached the lug 39 so that when the latch is rotated

and the pivot bar latch 34 engages the hook 35, the lug 39 will be raised to a position where it obstructs the motion of the collar 40 mounted on the reciprocating shaft 12, by contacting the extending finger 40^a.

The contacting of the finger 40^a on the reciprocating shaft with the lug 39 holds the rolls 9 mounted on the shaft 11 in a raised position, thereby preventing further progress of the sheets toward the press. The reciprocation of the rod 12 is transmitted thereto by the oscillation of the member 42, which is secured to rock the shaft 43 mounted on the frame 44 of the feeder. This rod 12 bears in a lug 46 on the member 42, the reciprocating motion transmitted to the rod being cushioned by coil spring 47, positioned between collars 48 and lug 46. A collar 49 restricts the longitudinal motion of the rod.

The shaft 43 to which the member 42 is fixed has also the hook 35 fixedly attached thereto and when the pivot bar latch 34 is linked to the hook 35, this hook through the link 45, holds the rubber feed roll 2 out of contact with the driven feed roll 3, thereby preventing further feeding of the paper sheets.

When the paper sheet has been cleared and realigned so that it feeds properly to the press, the mechanism may be again put in operative position by means of the handle 41, which rotates the cams out of contact with the sheet saver rolls 15 and through the rod 24, adjusts the entire mechanism so that the paper feeding mechanism is again set in operative condition.

Briefly the action of the device is as follows: With the actuation of the kickoff shaft to stop the press, the rod 24 is moved longitudinally of the press and through a series of connections previously described rotates the cams to contact the sheet saver rolls, the rotation of the cams causing the paper sheet to be pushed two or three inches against the feed of the press. Simultaneous with the operation of the cams, the reciprocation of the rod 12 is prevented by the raising of the lug 39 and the contacting of said lug with the finger 40^a. This prevents the intermittent raising and lowering of the rolls 9 and holds the rolls in a raised position. The contacting of these rolls with the driven feed rolls positioned directly beneath them feeds the paper along the sticks 4. With the raising of the lug 39, the pivot bar latch 34 is linked with the hook 35, thereby positioning the feed rolls 2 and 3 in an inoperative position.

Formerly when the press mechanism was stopped by the operation of the kickoff shaft, there was always sufficient momentum to carry the paper sheet improperly aligned into the press and this has caused innumerable difficulties, due to the sheet becoming

fouled in the press rolls or mechanism relative thereto.

By means of the present device, with the actuation of the kickoff shaft, the progress of the paper sheets is instantly stopped.

I claim as my invention:

1. In a printing press the combination with mechanism for feeding the paper sheets to the press, mechanical means comprising connections with feed rolls, pressure feed rolls and retarding mechanism automatically functioning with the improper feeding of the sheets to position the feeding means in an inoperative position and the retarding mechanism in operating relation to the sheets.

2. In a printing press the combination with mechanism for feeding the paper sheets to the press, mechanical means comprising connections with feed rolls, pressure feed rolls and retarding mechanism simultaneously and automatically functioning with the improper feeding of the sheets to position the feeding means in an inoperative position and the retarding mechanism in operating relation to the sheets.

3. In a printing press the combination with mechanism for automatically feeding the paper sheets to the press and means for stopping the press when the sheets are improperly fed thereto, of means connecting to said stopping means and operating therewith comprising connections with feed rolls,

pressure feed rolls and retarding mechanism functioning with the improper feeding of the sheets to position the feeding mechanism in an inoperative position, and the retarding mechanism in operating relation with the sheets, thereby stopping the progress of the paper sheets with the actuation of the stopping means regardless of the momentum of the press.

4. In a printing press, the combination with an automatic stopping device, actuated by improper feeding of the paper sheets, of a feed mechanism comprising feed rolls and a cam roller mechanism, means connected with said stopping device for locking the feed mechanism in an inoperative position and functioning the cam and roller mechanism for stopping the progress of the paper sheets with the actuation of the stopping device.

5. In a printing press, the combination with a mechanical automatic stopping device actuated by improper feeding of a paper sheet, of a feed mechanism comprising feed rolls and upper and lower slow down rolls, means operable with the stopping device for locking the rolls of said feed mechanism in an inoperative position, a cam and cam roller cooperating therewith and operable with the stopping mechanism to retard the progress of the fed sheet.

HERMAN J. SCHULTZ.