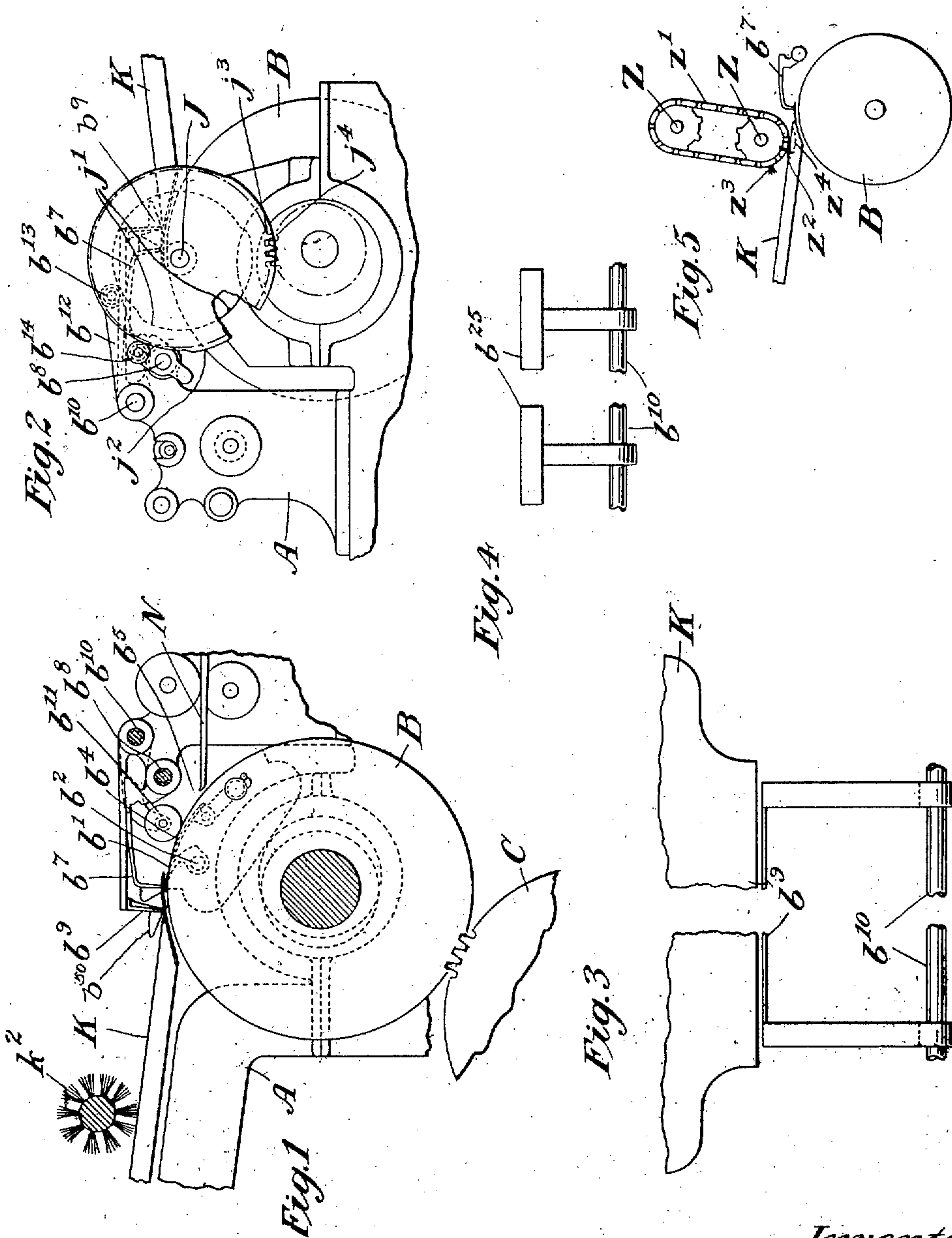


No. 850,104.

PATENTED APR. 9, 1907.

W. SCOTT.
PAPER FEEDING MACHINE.
APPLICATION FILED DEC. 11, 1902.



Witnesses:
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UNITED STATES PATENT OFFICE.

WALTER SCOTT, OF PLAINFIELD, NEW JERSEY.

PAPER-FEEDING MACHINE.

No. 850,104.

Specification of Letters Patent.

Patented April 9, 1907.

Original application filed August 11, 1902, Serial No. 119,212. Divided and this application filed December 11, 1902, Serial No. 134,753.

To all whom it may concern:

Be it known that I, WALTER SCOTT, a citizen of the United States of America, and a resident of Plainfield, county of Union and State of New Jersey, have invented certain new and useful Improvements in Paper-Feeding Machines, of which the following is a specification.

My invention relates generally to paper-feeding machines, and has more particular reference to the sheet-feeding mechanism of a printing-press. In machines of this character the paper has to be fed very rapidly to the impression-cylinder and comes down against the feed-gages located adjacent to the same with a great deal of force. Inasmuch as these feed-gages are usually located a considerable distance apart, leaving a wide space therebetween, the paper is frequently torn or creased by reason of its great impact.

One object of my invention is to prevent this, and for this purpose I construct my machine with a primary detention device or a primary gage located on the feed-board in advance of the feed-gages proper. This primary feed-gage is made preferably in the form of a transverse bar extending all the way across the feed-board, or it may be made with a great number of contacting points, or it may be made in the form of a plurality of gages or bars in alinement with each other, so as to present practically a solid front to the sheets as they advance toward it. This device serves to check the speed of the sheets and to stop their progress, some means, as a brush or other device, being used to bring the sheets the additional distance to the feed-gages proper and to the impression-cylinder.

I shall describe a printing-press embodying my invention and afterward point out the novel features in the claims.

In the drawings I have embodied my invention in a machine similar to one shown in an application for Letters Patent filed by me on the 11th day of August, 1902, Serial No. 119,212; but changes in construction may of course be made within the scope of the claims.

In the said drawings, Figure 1 is a side view of a part of a two-revolution rotary printing-machine, showing the impression and plate cylinders, the feed-board, and adjacent parts. Fig. 2 is a view of the parts shown in Fig. 1 from the opposite side of the machine. Fig. 3 is a plan view of the

primary feed-gage. Fig. 4 is a plan view of a modification of the primary feed-gage shown in Fig. 3. Fig. 5 illustrates still another modification of the primary feed-gage.

Similar letters of reference indicate corresponding parts in the different views.

A indicates a framework of a suitable construction in which the parts are mounted in the proper manner.

B is the impression-cylinder, making two revolutions to each impression, and C is the plate-cylinder. The plate-cylinder is located below the impression-cylinder, so that the latter may be lifted out of contact with the same at the proper intervals in a well-known manner.

The impression-cylinder B is mounted with the usual grippers to seize the sheets, as v' , mounted on the rod v^2 and operated by pins or cams in the usual way, and is further provided with the throw-off fingers v^4 , mounted on the rod b^5 and operated by any means well known in the art. Above the impression-cylinder are mounted the feed-gages proper, b^7 , on the shaft b^8 of the framework, and the primary gage or gages b^9 on the rod or shaft b^{10} . On this same rod b^{10} is also mounted the binding-pulley b^{11} .

J is a shaft mounted in the framework carrying the cams j^1 and j^2 and a gear j^3 , meshing with the pinion j^4 on the shaft of the impression-cylinder, so that the shaft J makes one-half the number of revolutions of the said impression-cylinder.

The primary feed-gage b^9 and binding-pulley b^{11} are operated by means of the arm b^{12} , carried by the rod b^{10} , and provided with the roller b^{13} , which rests upon the cam j^1 . In like manner the shaft b^8 , carrying the feed-gages proper, is operated by the friction-roller b^{14} , coacting with the cam j^2 on the shaft J. In the present instance the feed-gages proper, b^7 , rest on an extension of the feed-board K, while the primary gage b^9 rests on the feed-board proper.

k^2 is a brush for causing the sheets to travel down to the feed-gages proper and to the impression-cylinder after their speed has been checked by the primary gage. The well-known holding-bar in front of both gages for holding the sheet while the grippers open to seize it may of course also be used in addition to the foregoing elements.

The sheets are fed down on top of the feed-board K by suitable means, either from a

roll cut into sheets, from a pile by any of the well-known sheet-feeders, or they may be fed by hand in the usual way. When running at great speed, the automatic sheet-feeders will preferably be used. As the sheets advance they strike the primary gages b^9 , whereby their speed is checked or stopped without creasing or tearing the edge of the sheet. As soon as this has taken place the said gages b^9 are raised, allowing the brush k^2 to feed the sheet at a reduced speed to the gages proper, b^7 , which latter at this moment are raised, allowing the sheet to pass on to the impression-cylinder, where it is seized by the grippers b' . The grippers b' carry the sheet around the impression-cylinder, receiving an imprint while passing between the cylinders B and C. When it reaches the upper side of the cylinder B, after having received the said imprint, and has passed to a point beyond the binding-pulleys b^4 , the sheet is released by the grippers b' , and the throw-off fingers b^4 raise the front edge of the sheet and place it upon the guides N. Simultaneous with this the binding-pulleys b^4 descend, thereby facilitating the transfer of the sheet from the cylinder to the said guides. The binding-pulleys and the primary gage remain in their downward position until the next sheet has had its speed checked against the said primary gage, while the sheet in passing over the guides N is slit by the slit, if desired, and then passes to a suitable collecting or delivery device.

In Fig. 4 I have shown a plurality of gages b^{25} instead of the unbroken gage b^9 . These gages b^{25} are made with large contacting portions for the sheet, as shown, so as to present practically a solid front to the advancing sheet. They operate in a manner similar to the gage b^9 .

In Fig. 5 I have shown still another modification of the primary gage. In this form it is made with sprocket-wheels Z on both sides of the feed-board and connected by the chain z' , which carries a transversely-extending bar z^2 or other means for checking the speed, the parts being so timed as to bring the bar down to the feed-board at the proper moment. This bar will of course be rotating when the sheets strike against it and would probably only have the effect of checking the speed of the paper without stopping the same. However, if necessary, a brush, as z^3 , could be attached to the chain for the purpose of causing the sheets to travel the extra distance to the feed-gages proper. In order to prevent the sheets from passing beneath it, the bar z^2 could be provided with lugs at intervals extending into slots, as z^4 , in the feed-board. To prevent the forward edge of the sheet from flying upward as it strikes the primary gage, an additional member, as b^{50} , can be used.

The word "checked" as used in the

claims is to be construed to cover both a device in which the sheet is merely retarded as well as a device in which the sheet is completely stopped.

Having thus described my invention, what I claim is—

1. In a machine of the character set forth, the combination with a cylinder having grippers or other means for receiving the sheet, and a feed-board, of gages for registering the sheet as it comes from the feed-board and is taken by the grippers on the cylinder, a primary gage located in advance of the gages proper, and mechanism for raising the primary gage first and the gages proper afterward whereby the speed of the sheet is checked before it reaches the gages proper.

2. In a machine of the character set forth, the combination with a cylinder having grippers or other means for receiving the sheet, and a feed-board, of gages for registering the sheet as it comes from the feed-board and is taken by the grippers on the cylinder, a primary gage located in advance of the gages proper and presenting practically a solid front to the sheet as it advances, and mechanism for raising the primary gage first and the gages proper afterward whereby the speed of the sheet is checked before it reaches the gages proper.

3. In a machine of the character set forth, the combination with a cylinder having grippers or other means for receiving the sheet, and a feed-board, of gages for registering the sheet as it comes from the feed-board and is taken by the grippers on the cylinder, a primary gage located in advance of the gages proper, mechanism for raising the primary gage first and the gages proper afterward whereby the speed of the sheet is checked before it reaches the gages proper, and means for moving the sheet down to the gages proper after the speed of the said sheet has been checked.

4. In a machine of the character set forth, the combination with a cylinder having grippers or other means for receiving the sheet, and a feed-board, of gages for registering the sheet as it comes from the feed-board and is taken by the grippers on the cylinder, a primary gage mounted on a rock-shaft and located in advance of the gages proper, a binding-pulley adapted to assist in removing the sheet from the cylinder, mounted on the same rock-shaft as the primary gage, and mechanism for raising and lowering the primary gage and the binding-pulley once to each two revolutions of the cylinder, and means for raising the gages proper once to every two revolutions of the cylinder but subsequently to the raising of the primary gage and the binding-pulley.

5. In a machine of the character set forth, the combination with a cylinder having grippers or other means for receiving the sheet,

and a feed-board, of gages for registering the sheet as it comes from the feed-board and is taken by the grippers on the cylinder, a plurality of primary gages extending transversely in alinement with each other over the feed-board and in advance of the gages proper, and mechanism for raising the primary gages first and the gages proper after-

ward whereby the speed of the sheet is checked before it reaches the gages proper. 10

Signed at New York this 26th day of November, 1902.

WALTER SCOTT.

Witnesses:

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