

- [54] **DUAL FEEDING PRINTING PRESS**
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- [52] **U.S. Cl.**..... **101/232, 271/9**
- [51] **Int. Cl.**..... **B65h 3/06, B65h 3/44**
- [58] **Field of Search**..... **101/232, 137, 140, 101/142, 144, 145; 271/9**

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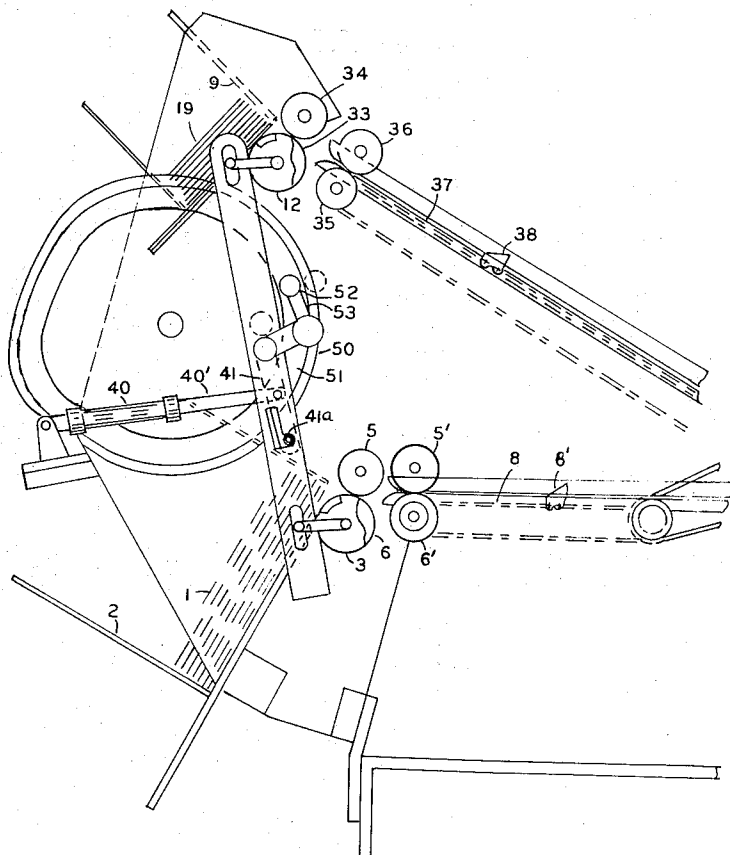
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[57] **ABSTRACT**

In a printing press of the type having a plate cylinder and an impression cylinder. A first feeder to feed papers to said cylinders on a first line tangent to said plate cylinder and said impression cylinder. A second envelope feeder means to feed envelopes to said cylinders on a second line at an angle to said first line. Letterheads may be printed on the papers from the first feeding means and the envelopes fed from the second feeder may be printed after the said papers are printed, with the same name and address, without changing the printing plate. Means are provided to shift the position of one of said cylinders when said envelopes are being fed by said second feeding means so as to adjust for difference in thickness between papers and envelopes. Means are also provided to simultaneously shut off said first paper feeding means and energize said second paper feeding means. Means are provided to adjust the position of the take-away rollers to accommodate different dimensions of the sheets and said envelopes.

6 Claims, 5 Drawing Figures



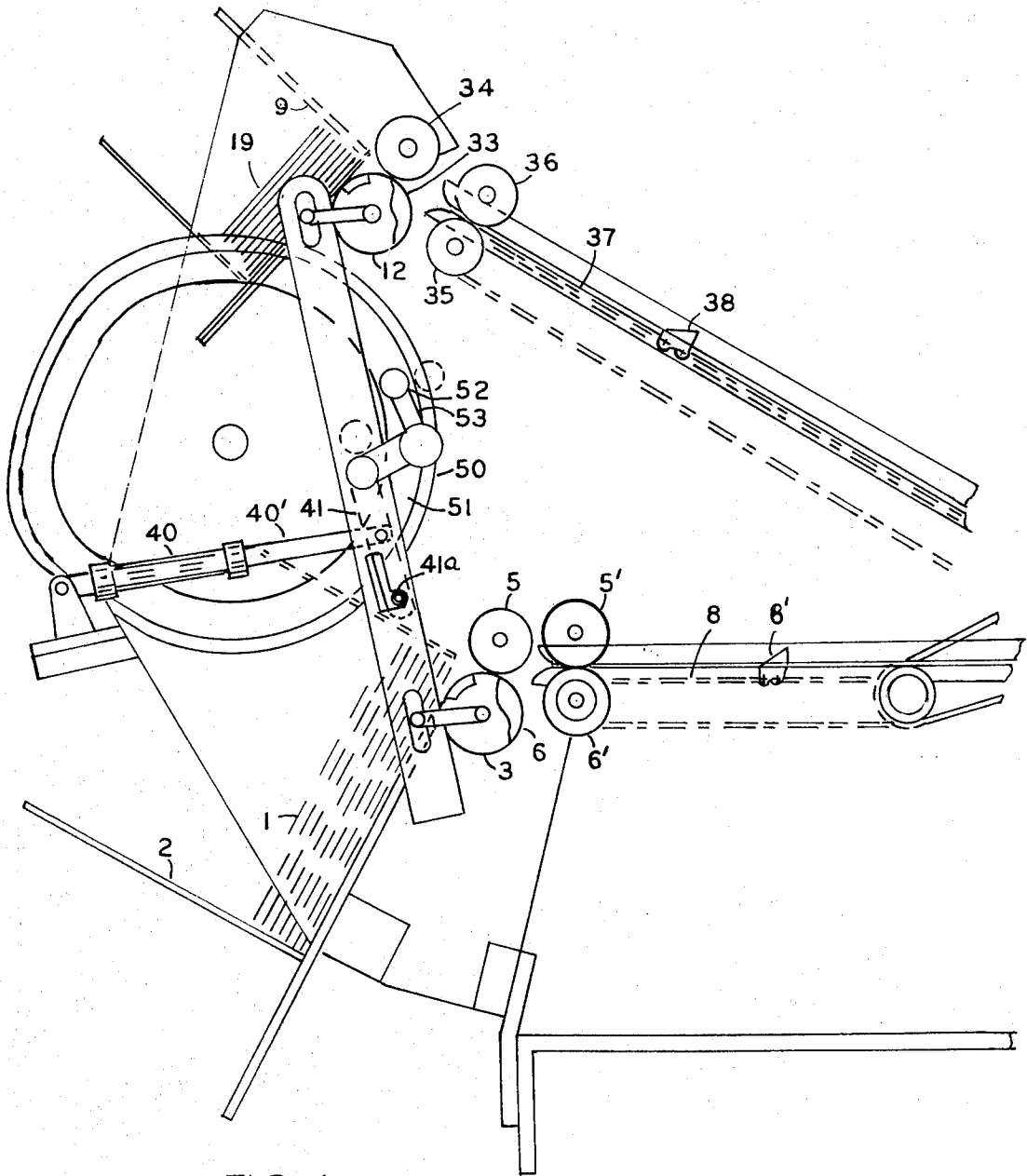


FIG 1

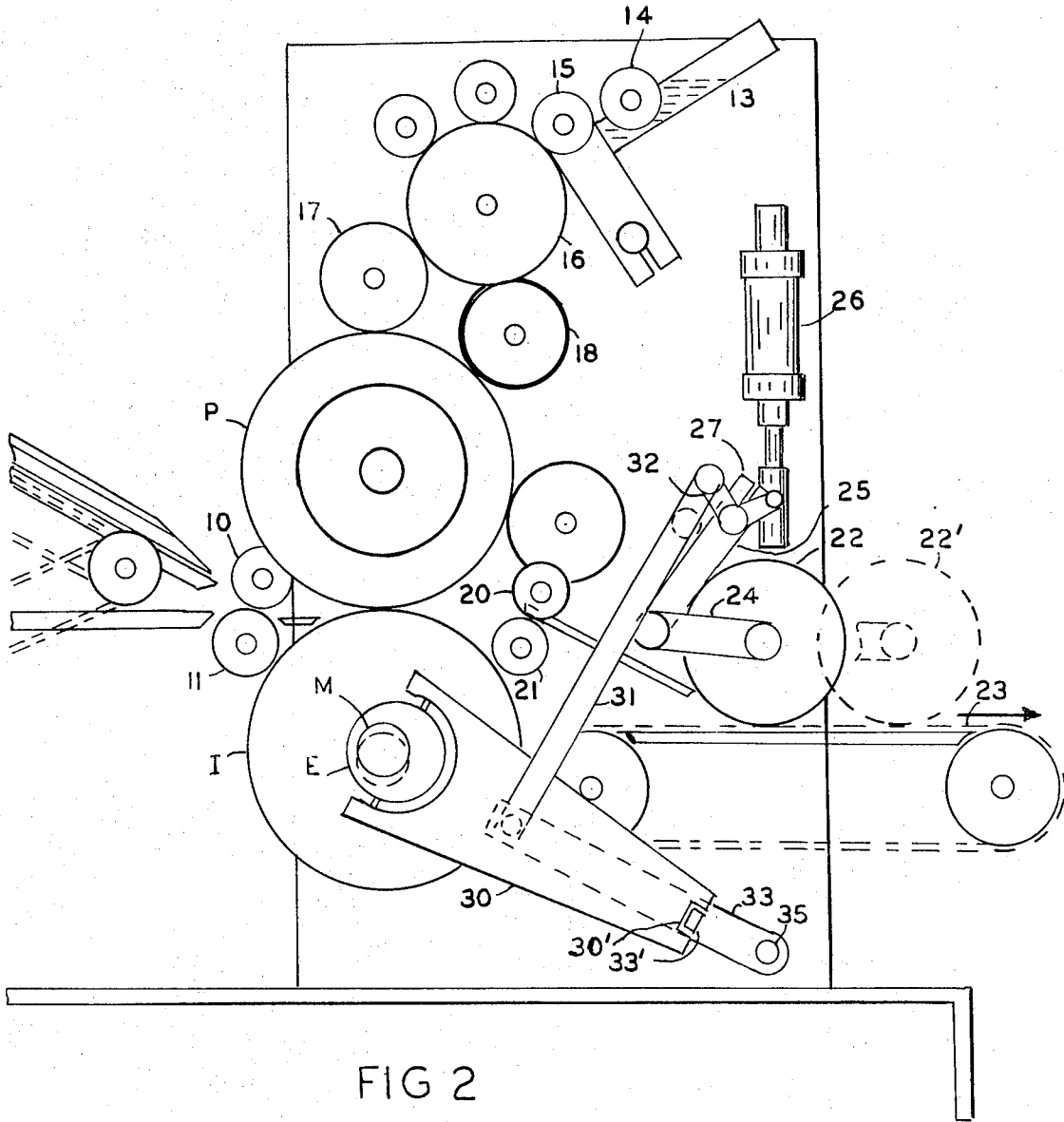


FIG 2

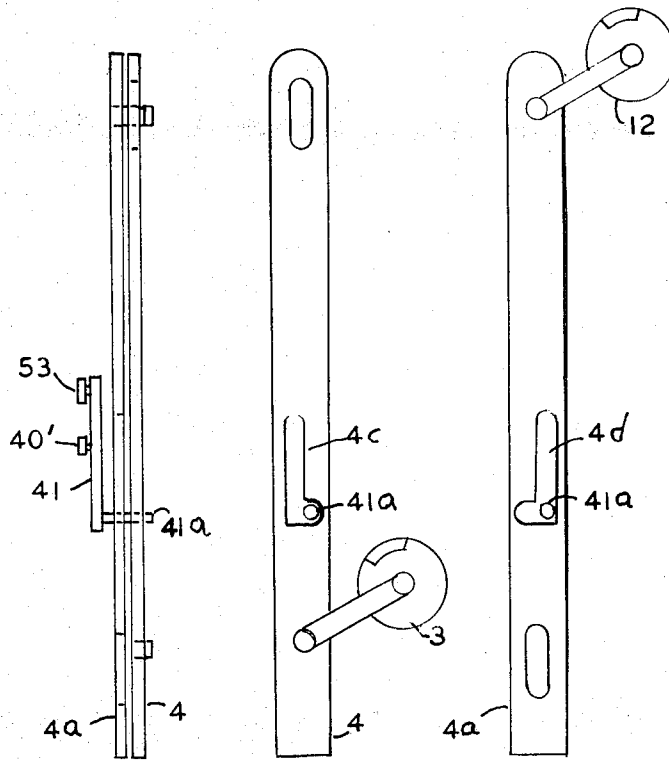


FIG 3B

FIG 3

FIG 3A

DUAL FEEDING PRINTING PRESS

This invention relates to printing presses and more particularly to printing press means having separate letterhead and envelope feeding means which are adapted to be printed by the same printing plate.

One of the problems in printing letterheads and envelopes with names and addresses is that due to the different size of the papers and the envelopes, it is necessary to first load the letterhead papers and then the envelopes and to change or adjust the paper feeding means and the printing plate between running the letterhead and the envelopes.

The present invention provides first means for feeding the letterhead to the printing plate and second means for feeding the envelopes to the same printing plate. Since the letterheads and envelopes are of different lengths, it is necessary to vary the take-away roller means between running the letterhead and the envelopes. It is necessary also to vary the spacing between the printing and impression cylinders to adjust for the different thickness between the letterheads and the envelopes.

The present invention provides means for automatically making these adjustments. Provisions may also be made for adding a second printing plate and second letterhead and envelope feeders so that two sets of letterheads and two sets of envelopes can be printed simultaneously.

Accordingly, a principal object of the invention is to provide new and improved printing press means.

Another object is to provide dual paper and or envelope feeding means to supply the same printing plate so that letterheads and envelopes may be printed sequentially using the same printing plate.

Another object of the invention is to provide new and improved means for adjusting the take-away rollers for different length blanks.

Another object of the invention is to provide new and improved means for adjusting the spacing between the plate cylinder and the impression cylinder for different thickness blanks.

These and other objects of the invention will be apparent from the following specification and drawings, of which:

FIGS. 1 and 2 show a side view of an embodiment of the invention.

FIGS. 3, 3A and 3B show detail views of the control member oscillating the vacuum suckers.

Referring to the Figures, the papers 1, are stacked in a rack 2, and are separated one by one by the vacuum sucker 3. From the vacuum sucker 3, the papers are fed between the rollers 5 and 6 and 5', 6' onto a chain 8, having registration pushers 8'. The papers are then fed between the rollers 10 and 11 and then between the printing cylinder P and the impression cylinder I. Ink is fed from the reservoir 13 through the inking rollers 14, 15, 16, 17, 18, etc., on to the printing cylinder P. After the papers are printed, they are fed by the rollers 20 and 21 on to an exit chute and to take-away belt 23.

The apparatus thus far is conventional. One improvement of the present invention comprises a second paper feeding means, comprising the rack 9 which contains a stack of envelopes 19. The envelopes are separated from the bottom of the stack and fed one by one by means of the vacuum sucker 12 between rollers 33 and 34 and then between rollers 35 and 36 on to the chain 37 which has registration pusher members 38.

The envelopes are then fed between the rollers 10 and 11 and then between the printing cylinder P and the impression cylinder I.

The purpose of adding an extra feeder for the envelopes so that small quantities of letterheads and envelopes may be imprinted. With the present arrangement, it is possible to run, for instance, 50 letterheads and then 50 envelopes, which imprint the back flap of the envelopes with the name and address using the same printing plate for the letterhead and envelope. Additional efficiency may be obtained by adding a second printing plate and adding a second set of paper feeders, one for a second set of envelopes and the other for a second set of letterheads, and printing them simultaneously.

Means are provided to oscillate only one vacuum sucker at a time. In other words, the required quantity of letterheads are first printed and then the vacuum sucker 3 is turned off and the upper vacuum sucker 12 is turned on to feed the required number of envelopes.

The vacuum suckers 12 and 3 are oscillated by the members 4 and 4a FIGS. 3 and 3A and 3B. The member 4 is connected to oscillate the lower vacuum sucker 3, and the member 4a is adapted to oscillate the upper vacuum sucker 12. The vacuum suckers are selected by means of the control cylinder 40 and the member 40' which moves the linkage member 41 so that its lower pin 41a, engages the foot in slots 4c or 4d in either the member 4 or the member 4a. The member 4 is mounted on top of member 4a so that by moving the pin 41a one or the other vacuum suckers may be oscillated. The long slots are provided for free movement of pin 41a past the non-engaged member. Roller 41a is oscillated by the linkage comprising the cam 50 which has a slot 51 in which cam follower 52 rides. The cam follower 52 is mounted on crank arm 53 which is adapted to oscillate the member 41 and its pin 41a.

The papers and envelopes are fed through the printing rollers P and the impression roller I, where they are printed. They are then fed by the take-away rollers 20, 21 to the collecting roller 22 which feeds them to the belt 23. Due to the difference of the length of the sheets and the height of the envelopes, two different positions for the roller 22 are provided. The position 22 is the envelope position and 22' is the paper position. The roller 22 is mounted on a member 24 which is pivotally connected to a linkage member 25 which is actuated by the control cylinder 26 by means of the connecting link 27.

In order to accommodate the difference of thickness between the papers and the envelopes, the impression cylinder is adapted to be moved by a lever 30. The shaft M of the impression roller is rotatably mounted in a member E which is eccentrically mounted and movable by the lever 30. The lever 30 is actuated by the linkage comprising member 33 which is pivotally connected to the member 31 which in turn is connected to the members 32 and 27 and the control cylinder 26. The projection 33' on member 33 fits in notch 30' of member 30. Shaft 35 extends to the other side frame and operates a similar linkage on that side.

When cylinder 26 is in down position, the member 33 is rotated clockwise causing the lever 30 to lift and rotate counter-clockwise the eccentric mounting E of shaft M, providing a greater spacing for the envelopes. The lever 30 and the mounting 30a of shaft 30 pivot about the point 30'.

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When the cylinder 26 is in the down position, then the members 25 and 27 rotate clockwise causing the collector roller 22 to take the position shown in full lines to grip the envelope which has a shorter dimension.

A counter is preferably provided to count the papers and envelopes and automatically activate the control cylinders 26 and 40 to make the adjustments and select papers or envelopes for feeding.

The basic construction of the printing press is conventional. All rollers are mounted in side frames and gear driven by conventional gear drive means.

We claim:

1. In a printing press of the type having a plate cylinder and an impression cylinder,
first paper feeding means to feed papers to said cylinders on a first line tangent to said plate cylinder and said impression cylinder,
second paper feeding means to feed envelopes to said cylinders on a second line at an angle to said first line,
said first and second paper feeding means comprising,
first and second oscillatable vacuum cylinders,
means to selectively oscillate said first and second vacuum cylinders comprising,
a first oscillatable elongated member connected to said first vacuum cylinder,
a second oscillatable elongated member connected

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to the second vacuum cylinder, an oscillating linkage, means to selectively connect said oscillating linkage to said first and second elongated members, whereby letterheads may be printed on the papers from said first feeding means and said envelopes fed from said second feeding means may be printed after the said papers are printed, with the same name and address, without changing the printing plate.

2. Apparatus as in claim 1 having means to shift the position of one of said cylinders when said envelopes are being fed by said second feeding means so as to adjust for difference in thickness between papers and envelopes.

3. Apparatus as in claim 1 having means to simultaneously shut off said first paper feeding means and energize said second paper feeding means.

4. Apparatus as in claim 2 having take away rollers and means to adjust the position of said rollers to accommodate different dimensions of said sheets and said envelopes.

5. Apparatus as in claim 4 having means to simultaneously shut off said first paper feeding means and energize said second paper feeding means.

6. Apparatus as in claim 4 having two printing plate cylinders on the same shaft and having two paper feeding means and two envelope feeding means.

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