

W. HAY.  
 FEEDING DEVICE FOR PRINTING MACHINES,  
 APPLICATION FILED FEB. 9, 1911.

1,078,281.

Patented Nov. 11, 1913.  
 2 SHEETS—SHEET 1.

Fig. 1.

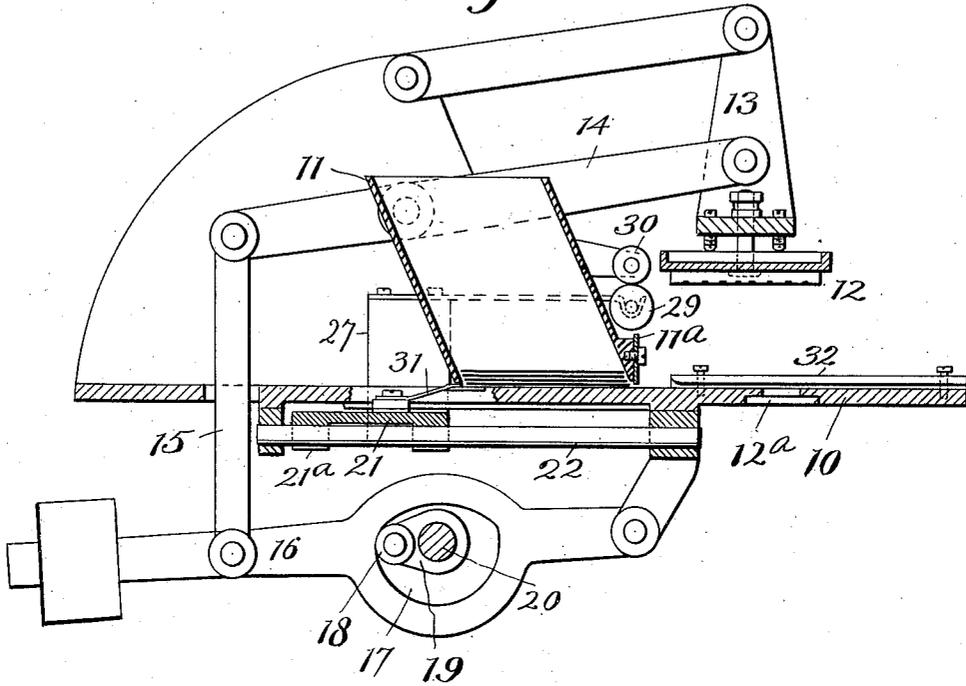
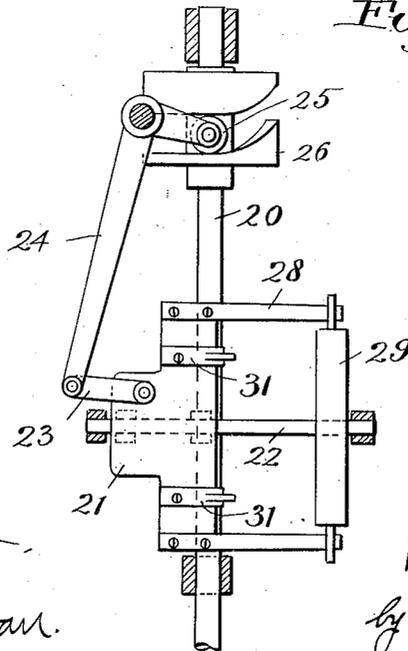


Fig. 2.



Witnesses.  
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Inventor  
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 by Thurston G. Kwie  
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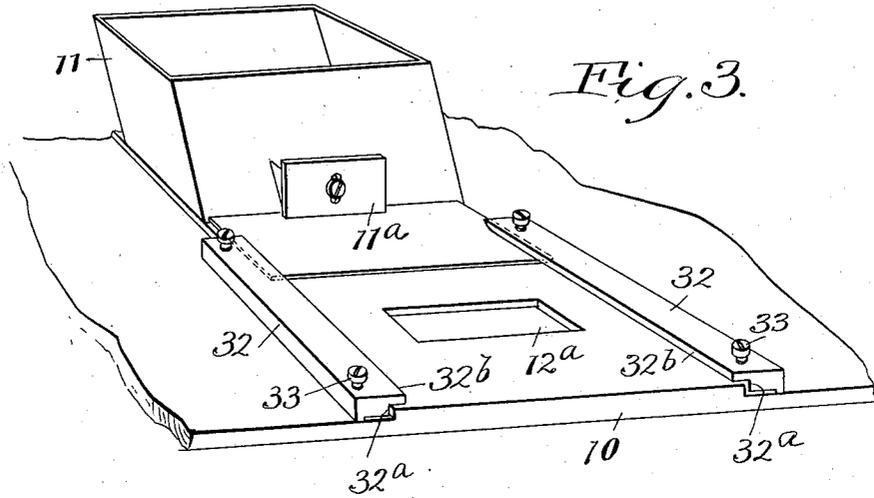


Fig. 4.

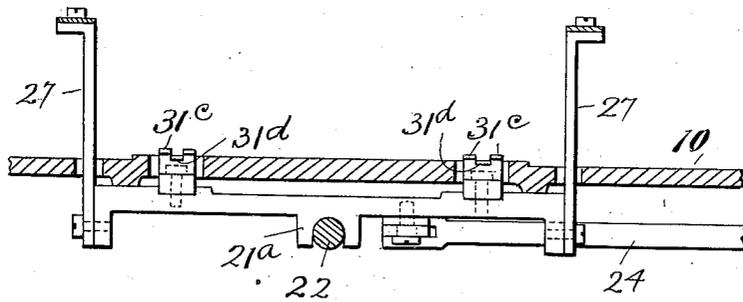
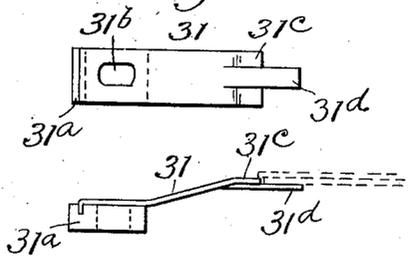


Fig. 5.



Witnesses:  
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Fig. 6.

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# UNITED STATES PATENT OFFICE.

WALTER HAY, OF SEVILLE, OHIO, ASSIGNOR TO THE POSTALGRAPH COMPANY, OF CLEVELAND, OHIO, A CORPORATION OF OHIO.

## FEEDING DEVICE FOR PRINTING-MACHINES.

1,078,281.

Specification of Letters Patent.

Patented Nov. 11, 1913.

Original application filed December 29, 1910, Serial No. 599,932. Divided and this application filed February 9, 1911. Serial No. 607,596.

*To all whom it may concern:*

Be it known that I, WALTER HAY, a citizen of the United States, residing at Seville, in the county of Medina and State of Ohio, have invented a certain new and useful Improvement in Feeding Devices for Printing-Machines, of which the following is a full, clear, and exact description.

This invention relates to feeding devices for printing machines and the present application is a division of my prior application, Serial No. 599,932, filed December 29, 1910, for combined printing and addressing machines.

The object of the invention is to provide an efficient feeding means for feeding and guiding cards or other blanks, upon which the printing is to be done, from a suitable magazine or receptacle to printing position. More specifically the invention aims to provide feeding means which will positively move the lowermost blank from the pile or stack in the magazine, the feeding means being so constructed that only a single blank will be engaged and fed forwardly at each stroke or forward movement of the mechanism.

Further, the invention aims to provide a simple and very effective means for guiding the blanks as they are fed forwardly from the magazine to and from printing position,—the guiding means being automatically adjustable for various thicknesses of blanks and being constructed with the view of preventing the wedging or jamming of the blanks at any point in their pathway and of preventing one blank sliding over or under another.

In the particular embodiment of my invention here shown the feeding means is applied to a combined printing and addressing machine adapted for printing on both sides of a blank, but it will be understood that the invention is capable of use with other types of printing machines.

My invention may be briefly summarized as consisting in certain novel details of constructions and combinations and arrangements of parts which will be described in the specification and set forth in the appended claims.

In the drawings, Figure 1 is a vertical sectional view through a printing machine equipped with my invention, parts being

shown in elevation. Fig. 2 is a partial plan view with the bed frame removed showing particularly the manner in which the blank feeding mechanism is operated. Fig. 3 is a perspective view of part of the printing machine showing particularly the magazine and guide bars which guide the blanks as they are moved forwardly from the magazine. Fig. 4 is a vertical sectional view through the bed frame showing the blank feeding mechanism in elevation, this view being taken at substantially right angles to the sectional view shown in Fig. 1. Fig. 5 is a plan view of one of the blank pushers. Fig. 6 is a side view of the same.

Referring now to the drawings, 10 represents the bed frame upon which is supported in any suitable manner a magazine or hopper 11 adapted to receive a stack or pile of cards, such as postal cards, or blanks of any other form. The blanks are adapted to be fed forwardly from this hopper to printing position or to a position between a vertically movable printing platen or member 12 for printing upon the top face or side of a blank, and a suitable opening 12<sup>a</sup> in the bed frame, through which opening is adapted to be projected the type of a series of lower printing devices each adapted to print an address or other matter on the lower side of a blank. This lower printing mechanism has been omitted for the sake of clearness as it forms no part of the present invention. The upper printing member 12 is carried by a holder 13 which is reciprocated by a pivoted lever 14, the latter being connected by a link 15 to a second lever 16 having a cam-shaped opening 17 in which is rotated a roller 18 carried by a crank 19 secured to the main operating shaft 20 extending horizontally beneath the bed frame. This printing mechanism and other parts of the machine are more fully described in my prior application above referred to.

The movement of the cards to printing position and the inking of the printing platen 12 are effected by means of the following described mechanism. A slide plate 21 is centrally mounted on a transversely arranged rod 22 secured at each end to the bed frame beneath the same and is steadied by its overhanging ends being in contact with bearing surfaces formed on the lower

side of the bed frame, thus providing a three-point bearing as plainly shown in Fig. 4. The slide plate 21 is provided with grooved lugs 21<sup>a</sup> which engage the rod 22 and prevent lateral displacement of the

slide plate. The slide plate is reciprocated in a horizontal plane beneath the bed frame by mechanism including a link 23 connected to the longer arm of a bell crank 24 pivotally connected to the bed frame and provided at its shorter arm with a roller 25 which enters the slot of a cam 26 secured to the operating shaft 20. This cam is so formed as to effect a complete forward and return movement of the slide plate during a one-half revolution of the shaft.

Secured to each end of the slide plate is a standard 27 which projects upwardly through a slot in the bed frame and has secured to its upper end a forwardly projecting flexible arm 28. These arms are formed at their front ends with U-shaped portions in which an inking roller 29 is supported and adapted to rotate. The inking roller 29, when in its rearmost position, is adapted to engage with a distributing roller 30 supported just above the roller 29. On the forward movement of the slide plate the inking roller 29 is adapted to ink the printing member 12, as will be apparent from Fig. 1. Secured also to the slide plate 21 are a pair of blank pushers or feeders 31, said pushers projecting upwardly and forwardly through slots in the bed frame. These pushers, a plan and side elevation of one of which is shown in Figs. 5 and 6, are preferably made of yieldable spring material and are mounted on blocks 31<sup>a</sup> which are secured to the slide plate and are adapted for adjustment thereon. An elongated slot 31<sup>b</sup> through which a holding screw is passed, permits adjustment of the pushers to suit various widths of the blanks to be printed. As shown, the pushers are each provided with pushing members 31<sup>c</sup> and with a single gage tongue 31<sup>d</sup> which projects somewhat beyond the members 31<sup>c</sup> and is depressed therefrom to an extent approximately three-fourths of the thickness of a card, envelop, etc., to be printed. In operation, the gage tongue is caused to bear against the under side of the lowermost blank in the magazine 11 and to act as a gage to prevent the pushing members 31<sup>c</sup> from engaging more than one blank at a time. During the return movement of the slide plate the forward ends of the pushing members 31<sup>c</sup> are depressed by the weight of the stack of blanks under which they slide and this depression continues until the pushing members have reached the rear edge of the lowermost blank, from which point they will spring upwardly into position to engage and move

a blank, the gage tongue limiting the upward movement so as to prevent engagement by said pushing members with the second card above, as will be seen clearly from Fig. 6. It will be understood that the gage tongue is not permitted to slide past the blank at the end of the return stroke. While these pushers are preferably formed of spring material, they may, if desired, be otherwise formed without varying the principle of their operation.

Referring to Figs. 1 and 3, it will be seen that the magazine 11 is provided along the bottom and at the front side with a space or slot through which the blanks may successively be pushed or fed, and adjustably secured to the magazine above this slot is a gate or gage piece 11<sup>a</sup> adapted for vertical adjustment. This gage piece will be so adjusted that more than one blank cannot be fed from the magazine at one time.

Arranged forwardly of the magazine are a pair of guide bars 32 which guide the blanks in their movement across the face of the bed frame to and beyond printing position. These guide bars are provided with side walls 32<sup>a</sup> which extend below the surface over which the blanks are moved and which guide the blanks in their movement. By extending the side walls below the surface over which the blanks move, it is impossible for a blank to slip under the guide bars and become wedged at any point in its pathway. The guide bars are provided also with overhanging or overlying portions 32<sup>b</sup> adapted to rest or bear upon the end portions of the blanks for the purpose of preventing one blank from "climbing" upon or slipping over or under another. The guide bars are not rigidly supported but are loose upon the bed frame and are so constructed and supported that they swing inwardly so as to rest upon the blanks and to automatically accommodate themselves to blanks of different thicknesses. The guide bars are kept in their proper positions, which depends upon the size of the blanks being printed, by means of screws 33 which pass loosely through the guide bars and are adjustably secured to the bed frame. Ordinarily the weight of the guide bars will provide sufficient pressure on the blanks to hold the latter in place and to prevent one blank from sliding under or over another, but if the weight of the guide bars should not be sufficient for this purpose, they may be yieldingly pressed downward by springs which may be placed beneath the heads of the screws.

In the operation of the feeding mechanism, when the printing member 12 is raised, the slide plate and blank pushers are moved forwardly so as to slide a blank from the magazine through the slot at the forward front edge of the same, the printing

member 12 being inked during the forward movement of the blank feeding mechanism, and thence the feeding mechanism and the inking roller are retracted before the printing member is again lowered to print on the blank which is in printing position. In their forward movement from the magazine the blanks are guided by the guide bars in the manner previously described, it being understood that a blank coming from the magazine into printing position is employed to push the printed blank out of printing position and off the bed frame.

I claim—

1. In a printing machine, a bed frame, a printing member, a receptacle for containing blanks to be printed, and feeding mechanism for automatically feeding the blanks, one at a time, from the bottom of the receptacle to printing position, said mechanism comprising a pusher adapted to engage the lowermost of said blanks, and means for reciprocating the same, said pusher comprising a resilient member fixed at one end, and provided at its free end with a yielding gage tongue adapted to bear against the lower face of the blank being fed, and with a shoulder adapted to engage the rear edge of such blank, said shoulder being of a depth less than the thickness of the blanks.

2. In a printing machine, a bed, a movable printing member, a receptacle adapted to contain blanks to be printed, means for automatically feeding the blanks one at a time from the receptacle to printing position, comprising a reciprocating slide arranged beneath the bed, and a pusher projecting upwardly through the bed, said pusher having a yieldable portion adapted to engage the rear edge of the lowermost blank in the receptacle, and a resilient gage tongue projecting forwardly beyond said portion and adapted to engage the underside of the lowermost blank so as to prevent said portion from engaging more than one blank at a time.

3. In a printing machine, a bed frame, a movable printing member, a receptacle adapted to contain blanks to be printed, means for feeding the blanks from the receptacle to printing position, and means for guiding the blanks, such means comprising a horizontal table of the same width as said blanks, and a guide strip disposed adjacent each edge of said table, the inner edge of each of said strips being grooved so as to provide a vertical wall with which the edges of said blanks may engage, and a horizon-

tally projecting portion overhanging said table, said strips being loosely supported at their outer edge upon said bed frame, whereby said overhanging portion tends to bear upon the upper surface of the blanks on said table, and thus yieldingly maintain them in proper position.

4. In a printing machine, a bed, a movable printing member, a receptacle adapted to contain blanks upon which printing impressions are to be made, mechanism for feeding the blanks from the receptacle to printing position, and means for guiding the blanks, comprising a pair of parallel guide bars loosely supported on the bed on their outside edges only and provided with portions extending downward beneath the surface over which the blanks move and with portions which overhang the edges of the blanks.

5. In a printing machine, a bed, a movable printing member, a receptacle adapted to contain blanks upon which printing impressions are to be made, mechanism for feeding the blanks from the receptacle to printing position, and means for guiding the blanks comprising a pair of parallel guide bars having on their inner sides longitudinally extending grooves forming upright guide members for the edges of the blanks, and inwardly extending portions which overhang the blanks, and means loosely and pivotally connecting said guide bars to the bed so that the former may tip inwardly by gravity and the overhanging portions thereof may bear upon the blanks.

6. In a printing machine, a bed, a movable printing member, a receptacle adapted to contain blanks to be printed, means for automatically feeding the blanks one at a time from the receptacle to printing position, said feeding mechanism comprising a reciprocating slide arranged beneath the top of the bed, and a pusher carried by the slide, said pusher comprising a resilient member having a portion bent so as to form a shoulder adapted to engage the rear edge of the lowermost blank in the receptacle, and a gage tongue projecting forwardly beyond the shoulder and adapted to engage the underside of the lowermost blank.

In testimony whereof, I hereunto affix my signature in the presence of two witnesses.

WALTER HAY.

Witnesses:

E. J. BELL,  
W. S. SURGERT.