Aug. 13, 1929. J. W. HOAG 1,724,199

PRINTING PRESS FEEDER

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Fig. II.

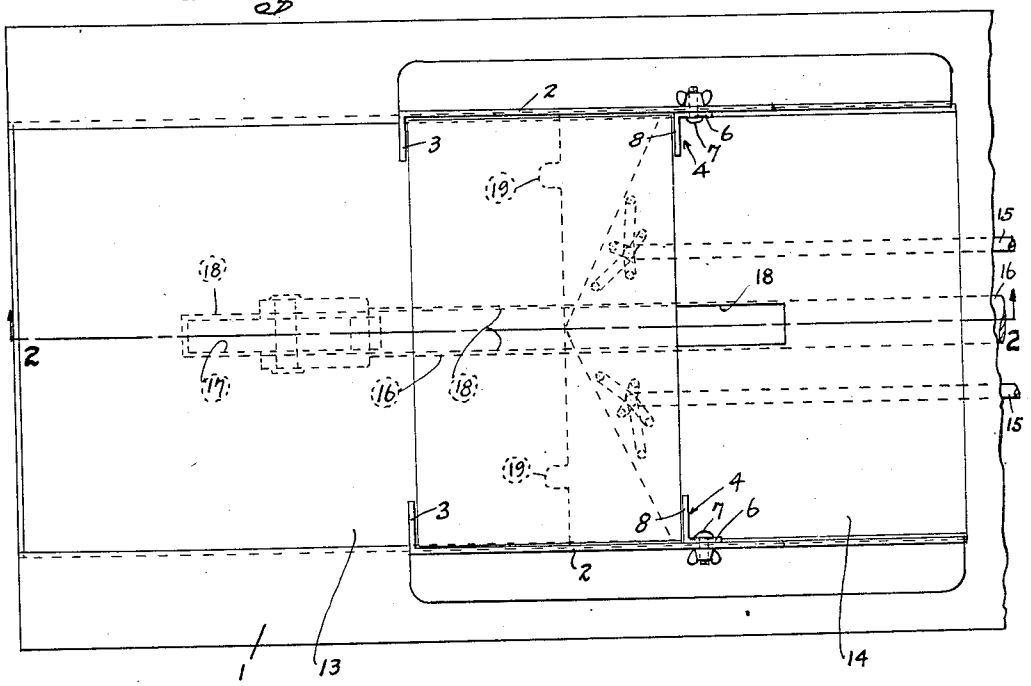
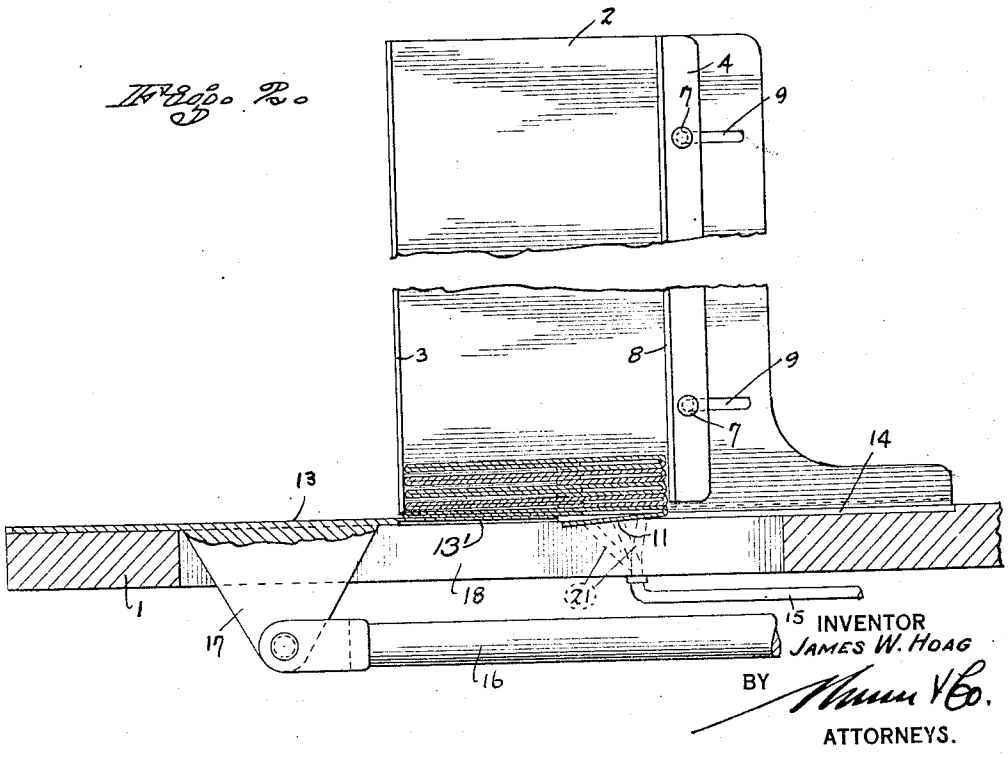


Fig. I.



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Fig. 3.

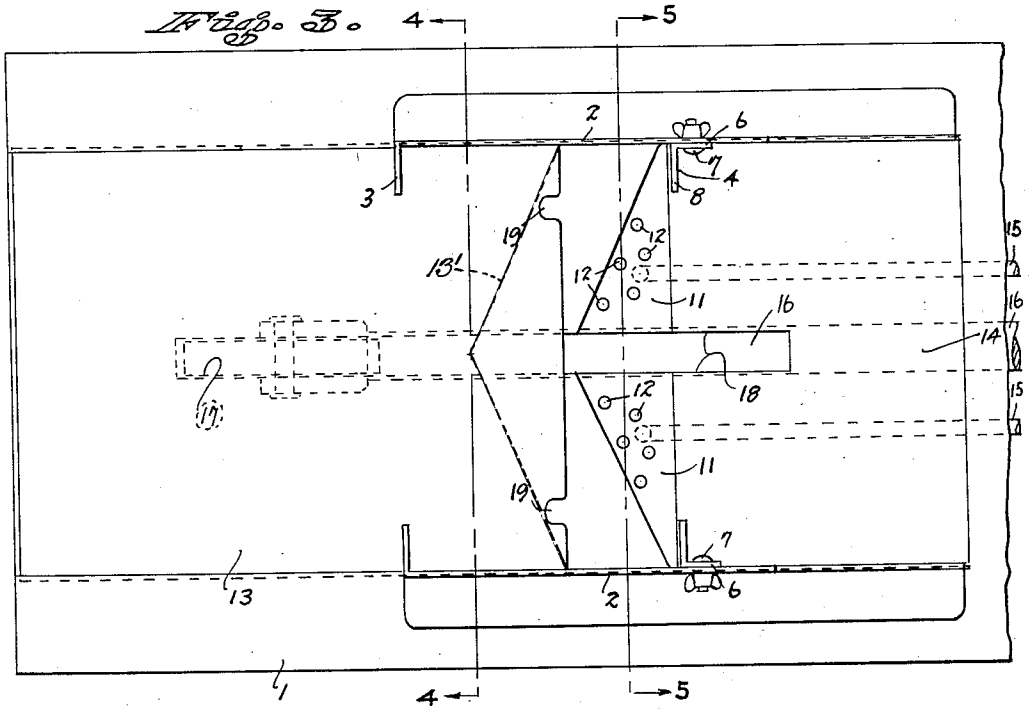


Fig. 4.

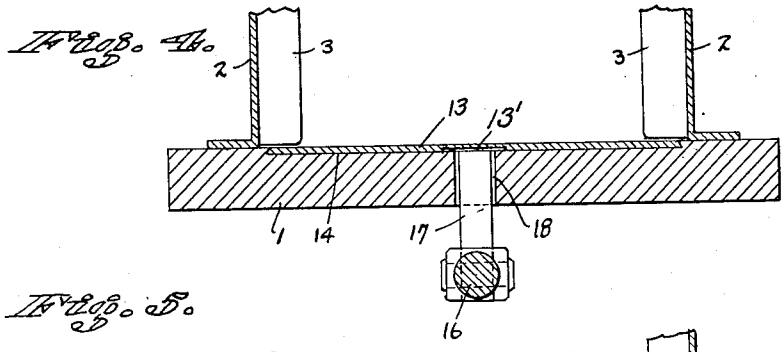
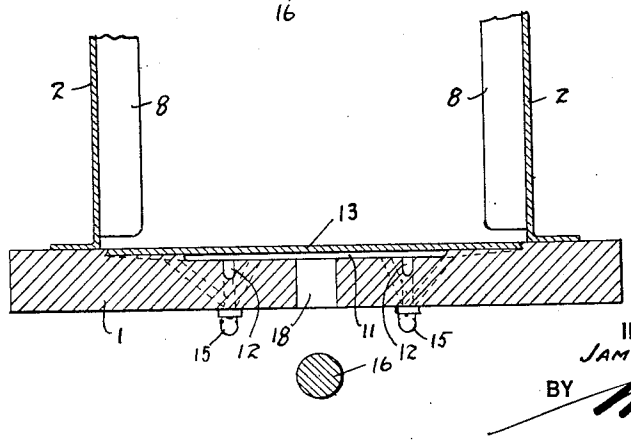


Fig. 5.



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UNITED STATES PATENT OFFICE.

JAMES W. HOAG, OF OAKLAND, CALIFORNIA, ASSIGNOR OF ONE-HALF TO THOMAS L. SHULTZ, OF ALAMEDA, CALIFORNIA.

PRINTING-PRESS FEEDER.

Application filed June 7, 1927. Serial No. 197,065.

The present invention relates to improvements in a printing press and its principal object is to provide automatic feeding means for a press of the character described.

My invention has reference more particularly to the feeding of envelopes to be printed and the principal feature of the invention is to provide means allowing the envelopes to be stacked flap downward, and to be individually advanced into printing position by means entering between the flap and the body of the lowermost envelope and pushing against the inside of the front edge formed by the flap and the body.

A further object of the invention is to provide suction means positively separating the flap from the body of the lowermost envelope for allowing the pushing element to enter therebetween.

A further object of the invention is to provide means in connection with the pushing element allowing the envelopes to be easily separated therefrom after the printing operation is completed.

A further object of the invention is to form the pushing element in such a manner that it may serve as a "make-ready" for the envelopes so as to form a suitable base for the printing operation.

Further objects and advantages of my invention will appear as the specification proceeds.

The preferred form of my invention is illustrated in the accompanying drawing, in which

Figure 1 shows a top plan view of my feeding means with a stack of envelopes in operative position;

Figure 2 a vertical section taken along line 2—2 of Figure 1;

Figure 3 a top plan view of my feeding means without the envelopes;

Figure 4 a vertical section taken along line 4—4 of Figure 3;

Figure 5 a vertical section taken along line 5—5 of Figure 3 and Figure 6 shows a partial view of a modified form of slide.

While I have shown only the preferred form of the invention, I wish to have it understood that various changes or modifications may be made within the scope of the claims hereto attached without departing from the spirit of the invention.

In the form shown in the drawing my feeding means comprises a flat bed plate 1 having suitable means thereon for supporting a stack of envelopes on the same. This means may comprise two spaced walls 2 separated by the width of an envelope and formed with inwardly turned flanges 3 supporting the rear edges of the stack. Two angle bars 4 have one flange 6 fastened to the walls 2 by means of bolts 7 so that the second flanges 8 form retaining members for the front edges of the stack. The position of the angle irons may be adjusted by shifting of the bolts 7 in slots 9 in the walls 2.

The envelopes are positioned between these confining members in such a manner that the flaps are presented downwardly and the edge formed by the body of the envelope and the flap is the leading edge and rests against the flanges 8.

The bed plate itself is formed with a recess 11 extending rearwardly from the leading edge of the envelope and preferably coinciding in form with the flap so that the latter may be depressed thereinto. The recess preferably slants downwardly from the leading edge toward the rear end thereof. The bed plate is provided with a number of perforations 12, terminating in the recess and these perforations are connected through a conduit 15 to a source of a vacuum which causes the flap of the lowermost envelope to be sucked into the recess and to be separated from the body portion of the envelope.

The bed plate has furthermore a slide 13 arranged in a depression 14 thereof, the slide consisting preferably of a thin plate of substantially the width of an envelope and being adapted to be reciprocated by means of a rod 16 engaging a depending lug 17 which latter rides in a slot 18, in the bed plate. The rod 16 may be actuated in any suitable manner as for instance by a crank shaft, not shown in the drawing. The plate or slide 13 is preferably formed at the front edge thereof with notches 19 which allow the front edge of an envelope to be gripped by suitable gripping members, not shown in the drawing, for removing the envelope from the plate.

In operation a stack of envelopes is placed on the bed plate between the confining members 3 and 8, with the flaps on the underside and the edges formed by the flaps and the body portions of the envelope presented for-

ward. In this position the flap of the lowermost envelope overlies the recess 11 and when suction is applied through the conduit 15, the flap of the envelope is sucked into the recess and thereby separated from the body portion. As the plate or slide 13 is advanced it passes underneath the stack of envelopes and enters, on continuing its movement, between the flap and the body portion of the lowermost one of the envelopes, until it finally strikes the front edge and pushes the lowermost envelope forward for positioning the same relative to the printing device, not shown in the drawing. It will be seen that the slide or plate 13 may form a "make-ready" for the envelopes during the printing operation and if required a plate may be suitably built up, see the recess 13' Figures 2, 3 and 4, to compensate for unevenness in the face to be printed on. After the printing operation is completed any suitable structure may be used for gripping the envelopes at the notches 19 so as to allow the envelopes to be separated from the plate.

While it is intended in the present application to cover the broad principle of advancing the envelope by means of a member entering between the flap and the body portion and engaging the leading edge of the envelope in connection with suction means for separating the flap from the body portion preparatory to the entering of the pushing means, it will be understood that the principle may be carried out in different ways and that different methods may be used for synchronizing the various movements in a desired manner.

I claim:

1. Means for successively feeding stacked envelopes to a printing press comprising suction means active on the flap of the lowermost envelope for separating the same from the body of the envelope and means entering between the body and the flap and engaging the front edge thereof to push the same forward.

2. Means for successively feeding stacked envelopes to a printing press comprising a bed plate for the envelopes formed with a recess allowing the flap of the lowermost envelope to be accommodated therein, suction means active on the flap for drawing the same into the recess for separating the flap from the envelope and means entering between the body and the flap and engaging the front edge thereof to push the same forward.

3. Means for successively feeding stacked envelopes comprising a bed plate for the envelopes and a reciprocating pusher plate adapted to enter between the flap and the body of the lowermost envelope and to engage the front edge of the envelope for pushing the same from beneath the pile.

4. Means for feeding an envelope to a printing press comprising a bed plate for the envelope and a member movable over the bed plate engaging the front edge of the envelope between the body and the flap thereof for advancing the envelope.

5. Means as defined in claim 4 in which suction means are active on the flap for separating the same from the body of the envelope.

6. The method of feeding envelopes successively to a printing press which comprises stacking the envelopes, flap downward, on a support, drawing the flap away from the lowermost envelope and advancing the edge formed by the body of the envelope and the flap.

7. In a device of the character described, a bed plate, means for confining a stack of envelopes thereon, flap downward, a pusher plate movable over the bed plate and means for separating the flap from the body of the lowermost envelope for allowing the pusher plate to enter therebetween for advancing the front edge of the envelope.

8. A device as defined in claim 7 in which the bed plate is formed with a recess allowing the flap to be drawn thereinto.

9. Means for successively feeding stacked envelopes to a printing press comprising means entering between the body and the flap of the lowermost envelope and engaging the front edge thereof to push the same forward, the said means being built up to compensate for unevenness in the printing surface of the envelope to serve as a make-ready and being arranged to remain in position for receiving the impression.

JAMES W. HOAG.