

A. D. PEJAUO.
 PAPER FEEDING MACHINE.
 APPLICATION FILED DEC. 22, 1909.

1,074,455.

Patented Sept. 30, 1913.

3 SHEETS—SHEET 1.

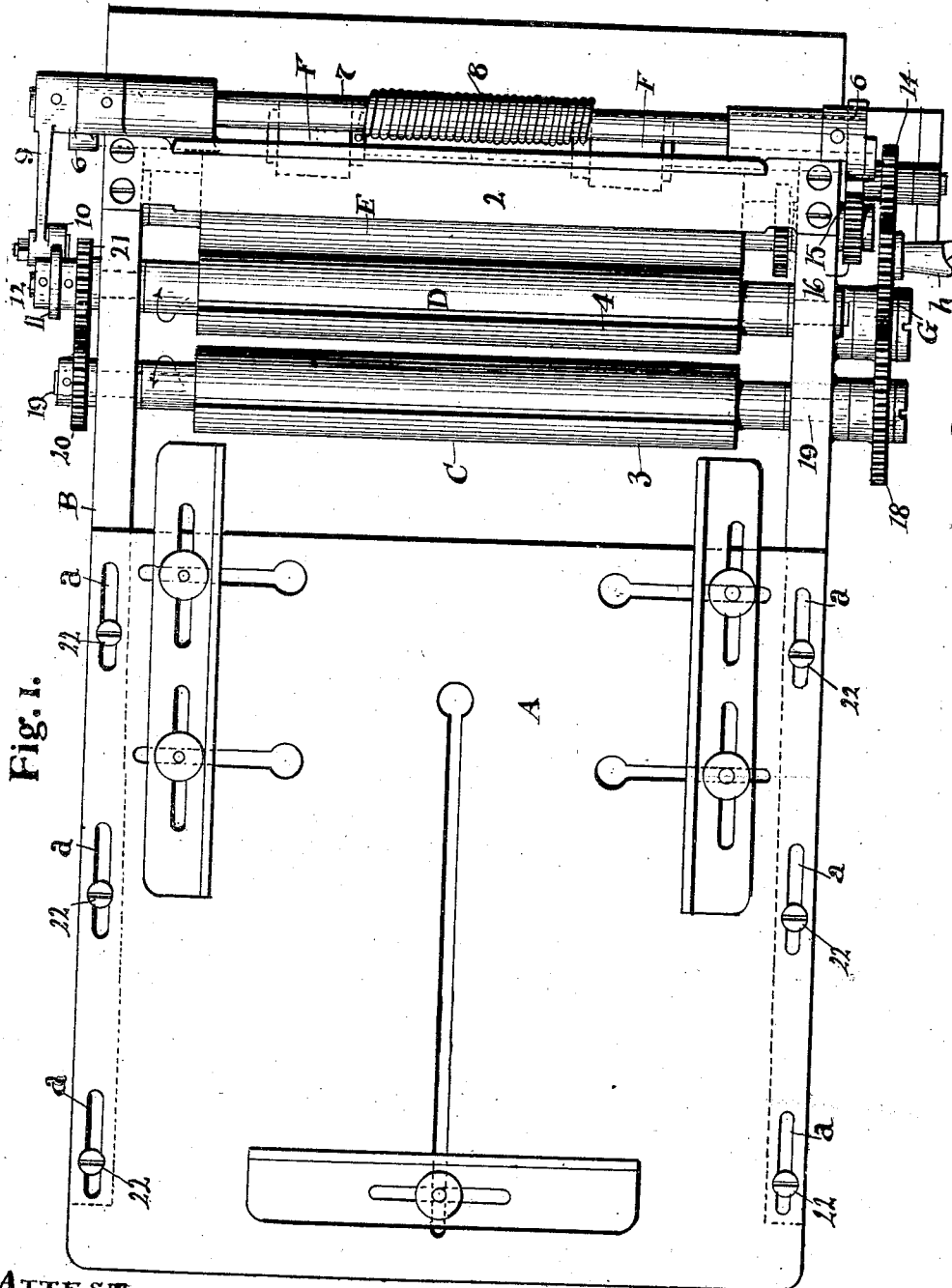


Fig. 1.

ATTEST
E. M. Fisher
J. C. Musson

INVENTOR
Albert D. Pejaud
 BY *Fisher & Usher* ATTYS.

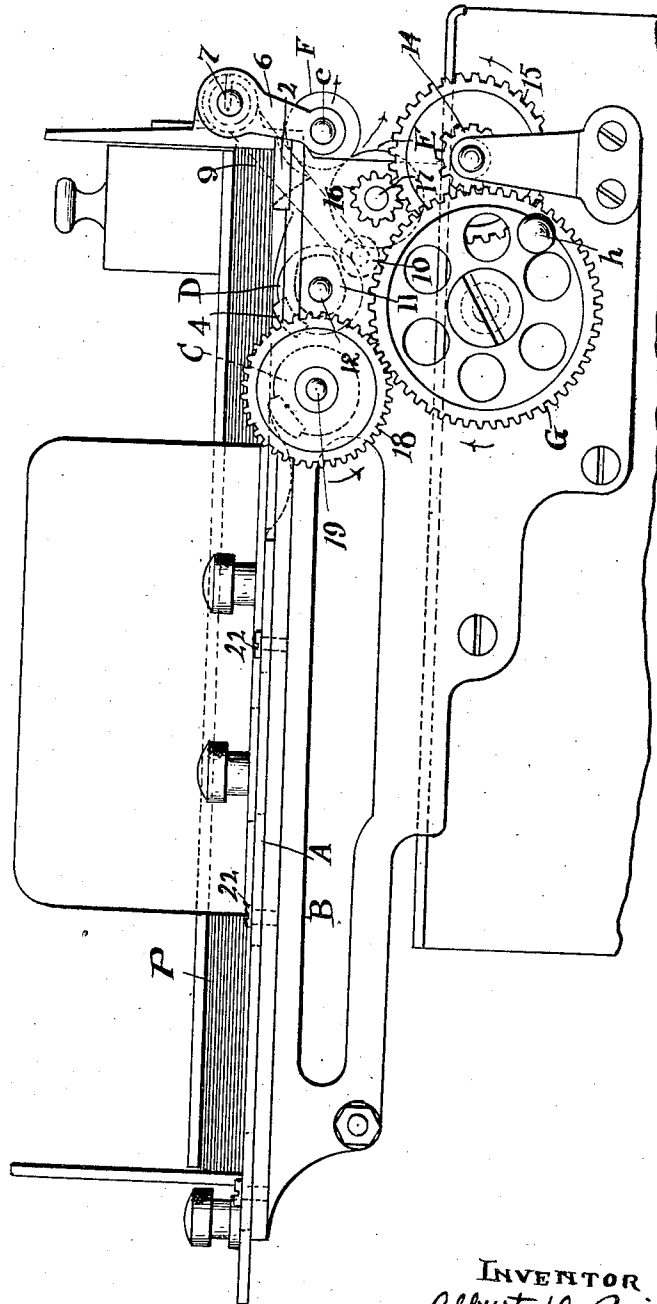
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3 SHEETS—SHEET 2.

Fig. 2.



ATTEST

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 30 Museum

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 3 SHEETS—SHEET 3.

Fig. 3.

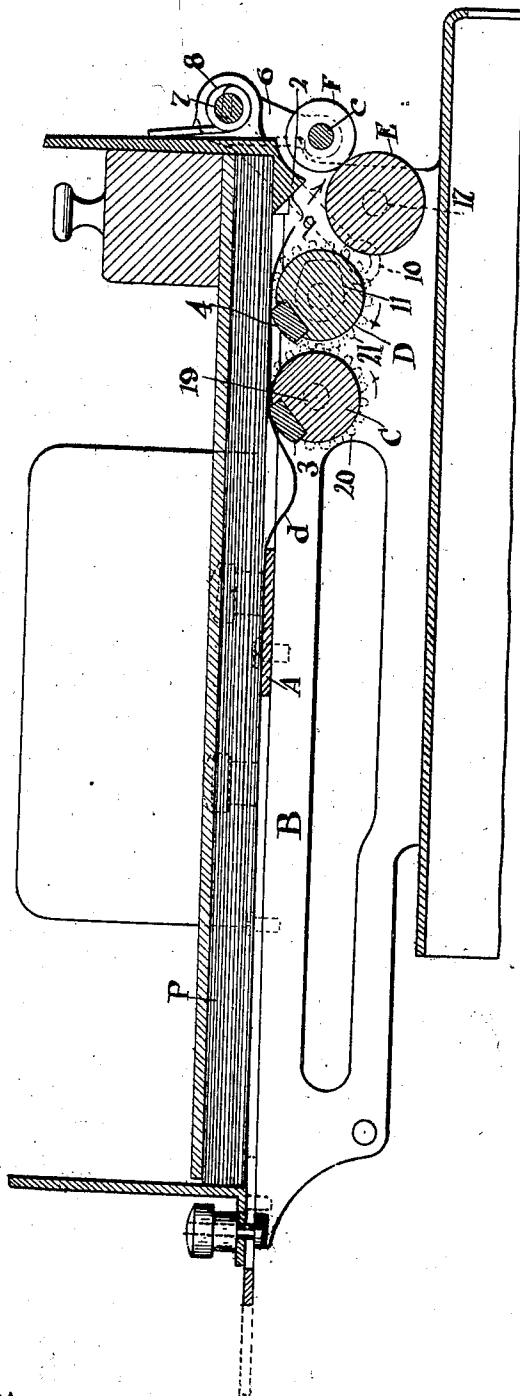
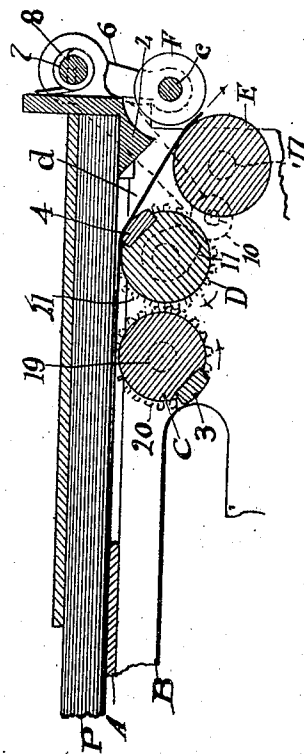


Fig. 4.



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UNITED STATES PATENT OFFICE.

ALBERT D. PEJAUO, OF CLEVELAND, OHIO, ASSIGNOR TO THE AMERICAN FOLDING MACHINE COMPANY, OF CLEVELAND, OHIO, A CORPORATION OF OHIO.

PAPER-FEEDING MACHINE.

1,074,455.

Specification of Letters Patent.

Patented Sept. 30, 1913.

Application filed December 22, 1909. Serial No. 534,411.

To all whom it may concern:

Be it known that I, ALBERT D. PEJAUO, citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Paper-Feeding Machines; of which the following is a specification.

My invention relates to paper feeding machines, and the invention consists in a machine constructed and adapted to operate substantially as shown and described and particularly pointed out in the claim.

In the accompanying drawings, Figure 1 is a plan view of the machine, and Fig. 2 is a side elevation thereof. Fig. 3 is a longitudinal sectional elevation showing the feed rolls and the lower sheet of paper in the changing position where the tucking or separating roll for the paper has acted and the feed roll is in position to carry the sheet forward, and Fig. 4 illustrates the further step wherein the feed roll has delivered the paper into the bite of the discharge roll and idler, all as will hereinafter fully appear.

The machine as thus shown is adapted to feed single sheets of paper from the bottom of a pile or stack of sheets indicated herein by P.

B represents a suitable bed or base covered in part by a plate A on which the paper is laid and held in a straight block or stack from which the bottom sheet is separated downwardly and out as is usual in such machines. Said bed or base B, however constructed otherwise, has an opening across its front or feeding end adapted to allow the sheets of paper as they are operated upon by the mechanism beneath to be handled by the rolls C and D and withdrawn from the ledge 2 at the front and to be fed to the discharge rolls E and F as will presently be seen.

In the operation of the machine after a bundle or stack of paper has been properly positioned on plate A and base B it is necessary, first, to withdraw the bottom sheet from off the ledge 2 so as to get control thereof by the feed mechanism and deliver the same bodily and quickly from the pile to the use for which it is intended after it passes through rolls E and F. To this end the initial or tucking or separating roll C is provided with a rubber or equivalent adhesive strip 3 lengthwise on its surface to

run next to said lower or bottom sheet and withdraw it from ledge 2. Mechanism for operating this roll and the others will be presently traced, but suffice it to say here that all rolls are under a continuous and unremitted movement at varying speeds here and there as their function or work may require. Thus it will be seen by the arrow that roll C has a reverse rotation turning over the top rearward and adapted to withdraw the sheets of paper successively from ledge 2 and thus cause a slack or tuck to form therein behind said roll as seen in Fig. 3. The size of said roll and the width of adhesive strip 3 are such as to make such withdrawal complete, as in Fig. 3, and wherein it is seen that said strip 3 has just done its work. This done forwardly rotating feed roll D with its adhesive strip 4 engages said sheet and projects it forward into the bite of rolls E and F which lie just to the front of said feed roll in right relation to receive the edge of sheet *d*. As to the rolls C and D they are of the same size and have the same width of engaging strips and the same relative throw by said strips respectively, one backward a given distance and the other forward the same distance and both rotate at the same speed but reversely. Hence being once set aright they must always work together in regular succession and without variance or failure.

The sheet *d* having been fed to the rolls E and F, it is withdrawn with a specially quick movement both because the operation of the machine requires this for clearance and because of the possible demand of the printing or other machines to which the sheets are supplied. To these ends the roll E is geared for speed as shall be seen, and the rolls or rollers F are idlers mounted on a shaft *c* which is suspended at its ends in hangers 6 from a shaft 7 which is provided with a spirally wound spring 8 adapted to hold said rolls normally in close and constant working relations with roll E. However, there are moments when said rolls E and F are out of touch as will now be seen. Thus, the said shaft 7 has a lever or arm 9 (see Fig. 1) fixed on one end and provided with a roller 10 at its side adapted to be engaged by a cam or projection 11 fixed on the corresponding end of shaft 12 which carries roll D, or what may be the spindle of said roll. As said cam rotates it slightly

depresses arm 9 against the sustained action of spring 8 and lifts idler rolls F momentarily from the positive roll E. This is done to allow the edge of the sheet of paper to be thrust between said rolls as seen in Fig. 4. Then as the said cam has passed said arm the idler F drops into engaging position and the high speed at which roll E is driven causes the sheet to be withdrawn in a sort of instantaneous movement and while both the rolls C and D are yet out of working relation with the paper. Of course as soon as said rolls C and D complete their rotation another sheet is withdrawn and so on continuously. Hangers 6 and arm 9 are rigid with shaft 7.

Now, having reference to the driving mechanism for the several rolls, either hand or power may be used according to the size of the machine. In the present case the large drive gear G is shown as having a hand crank h, and said gear meshes with a pinion 14 mounted on a short shaft carrying gear 15 and which meshes with pinion 16 on shaft or trunnion 17 of roll E. Thus geared the speed of roll E obviously is greatly increased as compared with the source of rotation in gear G. On the other side the said drive gear G meshes with a gear 18 on the shaft 19 of roll C and which shaft has a pinion 20 at its opposite end meshing with a like gear 21 on the shaft 12 of roll D and of the same size in order to obtain uniform rotation of said rolls. If power were employed it would be applied by any suitable means to or in connection with gear G. Obviously, this transmitting mechanism may be mechanically varied or changed and the same results obtained in so far as operative effects are concerned. In this connection it will be seen that the bed plate A is provided with longitudinal slots a (see Fig. 1) adapted to afford longitudinal adjustment in respect to bed B and, particularly to increase or diminish the space for the drop of the paper in the opening in said plate as it comes behind roll C in order to accommodate the machine to papers of different degrees of stiffness or thickness and to allow more or less room for the sag or slack of the paper at that point when withdrawn from ledge 2 according to its quality or character in these particulars. This is exceedingly important in machines of this kind, and screws 22 are shown to lock plate A in slots a.

It is especially to be noted herein that all movements of the operating parts are con-

tinuous in the same direction, and that all rolls rotate without cessation and at appointed speed. Furthermore, the slack producing roll C is arranged at the rear of roll D, which brings the initial forward feed roll D nearest to final feed roll E. The gap between the last named rolls is thus reduced to a minimum, and therefore each sheet requires but a comparatively slight initial forward feed before being gripped by and between the more positive and faster final feed rolls E—F. Strips 3 and 4 may be of different widths to feed the bottom sheet different distances, either forward or backward. Obviously the throw forward must always be sufficient to enter the paper between rolls E and F.

Ledge 2 is shown in the drawings as having a beveled face b to direct the sheet downward if too stiff to flex and bend freely of its own accord and by its own weight. The upper face of this ledge is also preferably on a higher plane than the top surface of plate A, thus raising the pile at the front end of the sheets more than at plate A. Release of the paper from ledge A and its discharge into rolls E and F is thereby more freely and surely effected. The difference in elevation between these resting parts for the paper is relatively slight, but important, and though not apparent to the eye in the drawings at first glance, it is nevertheless thus shown.

What I claim is:

A paper feeding machine having a bed for the paper provided with an opening in its front and bottom and a fixed transverse ledge at the front end of said bed at the edge of said opening having an inclined deflecting edge for the paper, a rotatable separating roll beneath said opening adapted to withdraw the lower sheet of paper backward from said ledge, a feed-roll next in advance of said separating roll adapted to rotate in the opposite direction from said separating roll and carry the paper forward, and a pair of discharge rolls next in advance of said feed-roll adapted to withdraw the sheet of paper bodily from the machine, said feed-roll and said separating roll each having adhesive strips to engage the paper.

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

ALBERT D. PEJAUO.

Witnesses:

JOHN J. ZEITZ,
PHILIP MONREAL.