

A. B. PEJEAU.  
PAPER FEEDING DEVICE.  
APPLICATION FILED JAN. 13, 1906.

1,013,308

Patented Jan. 2, 1912.  
2 SHEETS-SHEET 1

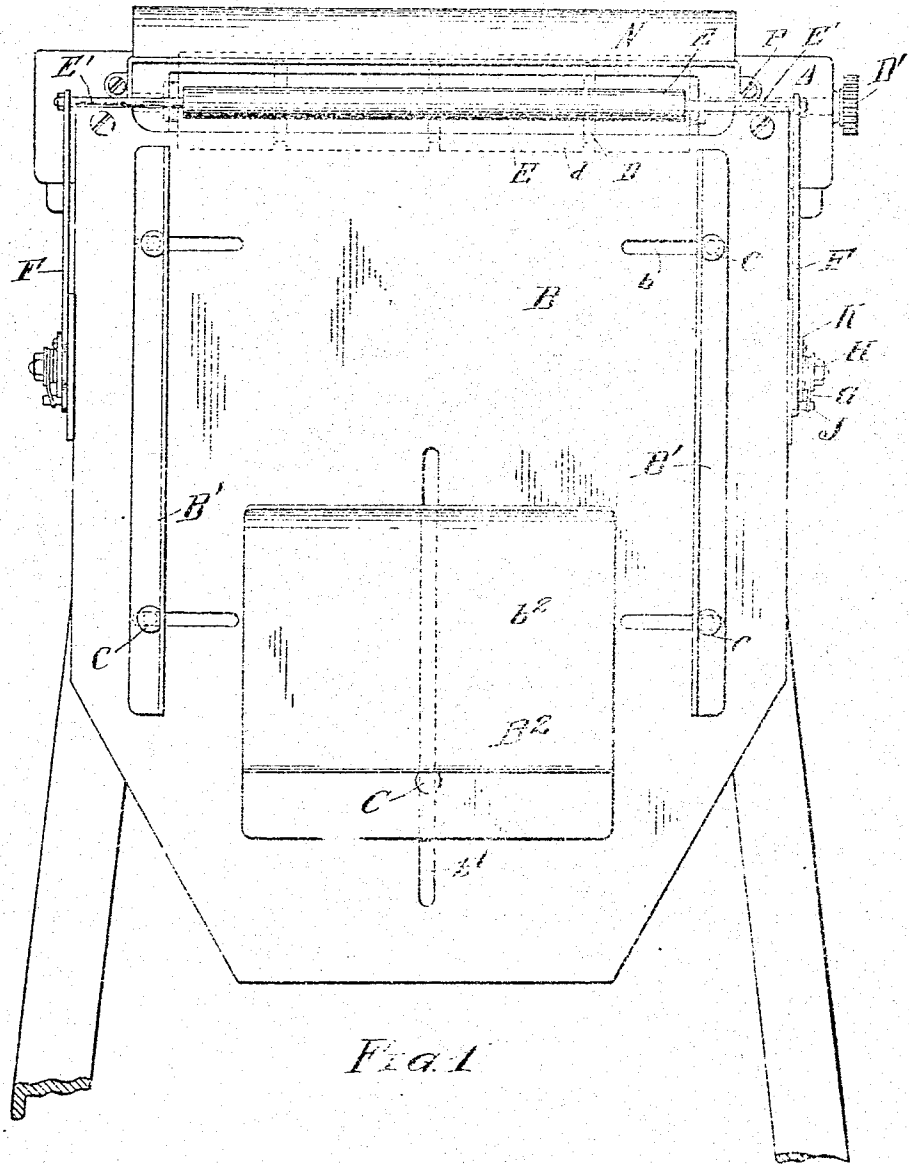


Fig. 1

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Albert D. Pejeau.  
BY Bakis, Fouts, & Hull  
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2 SHEETS—SHEET 2.

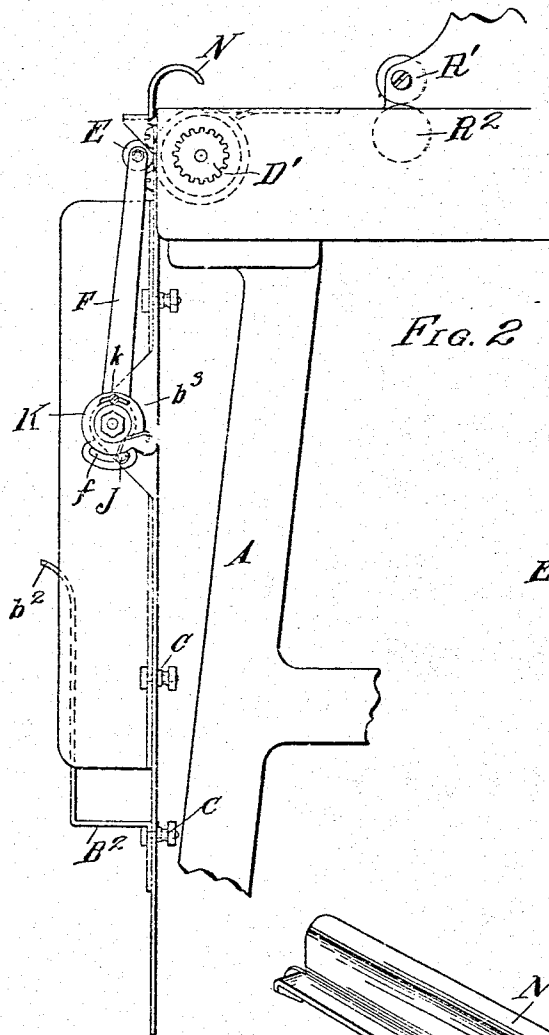


FIG. 2

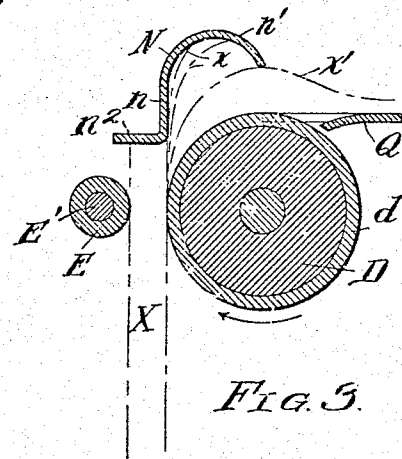


FIG. 3

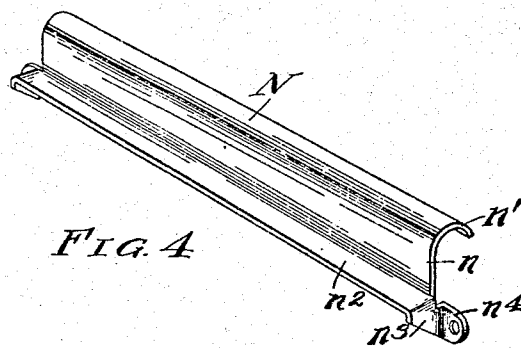


FIG. 4

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# UNITED STATES PATENT OFFICE.

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## PAPER-FEEDING DEVICE.

1,013,308.

Specification of Letters Patent.

Patented Jan. 2, 1912.

Application filed January 13, 1908. Serial No. 410,495.

*To all whom it may concern:*

Be it known that I, ALBURT D. PEJEAU, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented a certain new and useful Improvement in Paper-Feeding Devices, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings.

The object of this invention is to provide a very simple and effective mechanism for enabling the automatic feeding of sheets of paper.

My feeding mechanism may be advantageously employed in conjunction with a printing mechanism, folding mechanism, cutting mechanism, or other device where it is desired to have individual sheets fed successively.

In my mechanism I employ means frictionally engaging the paper and shoving forward one or more sheets thereof, and an overhanging shield adapted to engage such fed sheets and retard all of them but one, allowing its movement to continue. The invention covers such mechanism broadly.

The invention is hereinafter more fully described and its essential characteristics are summarized in the claims.

In the drawings, Figure 1 is a front elevation of my feeding mechanism adapted to carry a number of sheets standing vertically on edge and successively feeding the innermost sheet; Fig. 2 is a side elevation of such mechanism; Fig. 3 is an enlarged vertical cross section through the shield and main feeding roller; Fig. 4 is a perspective view of the shield.

Referring to the parts shown in the drawings by reference characters, A represents any suitable frame; which carries the paper support, the advancing mechanism and my retarding shield. The paper support as shown comprises the vertical plate B, adjustable side guides B', and the adjustable bottom support B<sup>2</sup>. The guides are held on the plate by set screws C passing through slots b in the back plate, whereby these guides may be adjusted in and out and clamped in place. A bottom support B<sup>2</sup> is similarly clamped in place, adjustable by reason of the vertical slot b'. It is provided

with an upwardly extending tongue b<sup>2</sup> which is adapted to bear on the front side of a pile of papers placed vertically on the support.

Above the paper support and placed substantially tangentially with the outer surface of the plate B is the main feed roller D. This roller preferably has an elastic periphery, provided by sleeves d on a core, and is rotated in any convenient manner as indicated by the gear D'. In front of this roller D is a roller E which also preferably has an elastic periphery and is spring-pressed toward the roller D. The block of paper (indicated by X in Fig. 3) stands vertically with its upper portion between these two rollers.

The spring-pressing of the roller E may be accomplished in any suitable manner. As shown in the drawing, it is provided by extending the shaft E' of the roller E and mounting its end on a pair of arms F which are pivoted at a stationary point, as, for example, on ears b<sup>3</sup> turned forward from the back plate B, suitable springs being provided to act on the arms F. These springs are shown at G. They surround the pin H on which the arm F is journaled and are secured at one end to a stationary pin J projecting from the ear b<sup>3</sup> and at the other end to a disk K surrounding the stud H and adjustably clamped to arm F by the screw k acting through a slot in the disk. By this means the force of the spring on the arm F may be nicely adjusted to cause the roller E not only to bear with the desired pressure on the paper but to have the two ends bear equally. The pin J by passing through a slot f in the lower end of the arm F also forms a stop limiting the movement of the arm and preventing straining of the spring.

Suitably supported above the parts described is my shield N, which consists of a trough-like member extending horizontally in such position that the sheet of paper nearest the roller D may be fed into it. As shown, this shield has a vertical portion n, the rear face of which is a very slight distance in front of the front face of the plate B. From this vertical portion the shield curves rearwardly for approximately a semicircle, as shown at n'. From the lower end

of the vertical portion extends a horizontal flange  $n^2$  adapted to lie over the most of the block of paper. This flange  $n^2$  may be turned downward at its end as at  $n^3$ , and then turned laterally to provide ears  $n^4$  by which the shield may be secured to the frame A by screws P.

Q represents a plate or table at the rear of the roller D and tangent with its upper surface.

R' and R<sup>2</sup> designate a pair of rollers which are intended as an illustration of any suitable mechanism to which the paper is to be fed.

In the mechanism described, the paper is placed on the support by the operator swinging outwardly the roller E and dropping the paper into place on the bottom piece  $b^2$  and between the guide strips B'. The roller E then being released holds the block of paper against the front side of the roller D as shown in Fig. 3. Now when this roller D is rotated in the right hand direction, as indicated by the arrow in Fig. 3, the rear sheet of paper and several of the adjacent sheets are fed upwardly along the rear face of the vertical portion  $n$  of the shield into this shield. The upper edges of these fed sheets abut against the curved portion of the shield, as indicated at  $x$  in Fig. 3. This opposes sufficient resistance to the advancing paper that there is less friction between the rear sheet and the next adjacent sheet than the retarding force on any of the subsequent sheets, and accordingly the rear sheet slips on the next to the rear sheet and its upper edge buckles in the trough until the free edge curves under the extreme edge of the shield N, whereupon this sheet passes out from the shield and rearwardly above the table Q, as shown at  $x'$  in Fig. 3. The continued rotation of the roller D shoves this released sheet rearward until it passes to the mechanism indicated by the rollers R' and R<sup>2</sup>; then, as the bottom edge of the sheet clears the roller D, this roller acts on the next sheet, which is correspondingly advanced, and so on. The roller E acts ordinarily as a pressing bar, but rotates as the last sheet of paper is engaged and moved. It thus results that the rotation of the roller D, which may be continuous or intermittent as desired, causes the sheets to be fed one after the other. There are ordinarily several sheets of paper projecting into the shield during normal running. The number of such sheets varies with the thickness of the paper and the adjustments. Frequently three, or four, or more sheets thus project into the shield, but only the sheet nearest the feed roller escapes from the shield. This ability of the shield to take care of several sheets of paper obviates the necessity of fine adjustment and of continuous readjustment for different

thicknesses of paper. The mechanism operates rapidly, and with the desired precision, and there is nothing about it to get out of order.

Having described my invention, I claim:

1. In a paper feeding mechanism, the combination of a feed roller, means for holding a block of paper against the same, a stop extending across the end of the bulk of the block, a deflector adjacent to said stop on the feed roll side thereof, said deflector being adapted to receive one or more sheets fed by the roller past the stop and to retard all but one sheet and deflect that sheet.

2. In a paper feeding mechanism, the combination of a paper feed roller, means for holding a block of paper in substantially upright position against the same, a stop extending across the upper end of such block and preventing its being fed, said stop allowing one or more sheets adjacent to the feed roller to be fed, and a deflector adjacent to said stop and having a downwardly facing recess adapted to receive one or more sheets and retard all but one sheet.

3. In a paper feeding mechanism, the combination of a feeding roller, a pressure roller, spring pressed arms carrying the same for pressing the block of paper against the feed roller, means for stopping the bulk of the paper, and a curved shield into which a plurality of sheets of paper may be fed by the feed roller, the shield having its concavity toward the block of paper and having an edge retarding all of the sheets but the one nearest the roller.

4. In a paper feeding mechanism, the combination of a feed roller, means for supporting a block of paper on edge with the foremost sheet in engagement with the roller near one end of the sheet, a roller bearing against the rear side of the block of paper opposite the feed roller, spring-pressed arms carrying such pressing roller, and a curved shield adjacent to the feed roller and having a concavity into which sheets of paper nearest the roller may be fed by rotation of the roller, and having an edge for retarding all the sheets but the foremost one.

5. In a paper feeding mechanism, the combination of a roller, means for rotating it, means for supporting paper in engagement with the roller near one end of the paper, a spring-pressed roller bearing against the other side of the paper opposite the roller, and a shield against which the sheets of paper nearest the roller may be fed by rotation of the roller and means adjoining the shield for stopping the sheets back of the first few.

6. The combination of a feeding roller, an adjustable bottom support for the block of paper standing on edge with the inner-

most sheet tangent to the roller and bearing against it, a shield having a concavity in the path of the paper and facing its edge as advanced by the roller, the forward edge of the shield forming a projection standing in the path of the sheet advanced along the shield.

7. In a paper feeding mechanism, the combination of a frame, a feed roller carried thereby and adapted to be rotated, means for supporting a block of paper tangent to the feed roller, a spring-pressed member forcing said block of paper against the feed roller, and a shield having a portion extending across the end of the block of paper and thereby adapted to stop the same as a whole but allowing sheets adjacent to the feed roller to be moved into the shield, the shield curving across the path of such sheets to retard all but the sheet nearest the feed roller.

8. In a paper feeding mechanism, the combination of a feed roller, a table at the rear thereof, gripping mechanism at the rear of the table, a paper support in front of the roller, means for pressing the paper against the roller, and a curved shield located in the path of the paper between its point of engagement with the feed roller and the gripping mechanism, said shield having a projection adapted to stand in the path of the advancing paper and retard it, allowing the foremost sheet to buckle and pass across said projection.

9. In a paper feeding mechanism, the combination of means for supporting a block of paper on edge vertically, a feed roller adjacent to one end of the block of paper and adapted to feed the sheet adjacent to the feed roller, a stop extending across the block of the paper, and a deflector extending across the feed roller and provided with a ridge, the ends of the sheets fed being retarded by the ridge and the sheet adjacent to the feed roller bending to clear the same and passing rearwardly.

10. The combination, in a paper feeding mechanism, of means for holding a block of paper in a substantially upright position, a paper feed roller on one side of said block, a spring-pressed roller opposite the paper feed roller on the other side of the block, means extending across one end of the sheets for stopping the bulk of the sheets in said block without stopping one or more sheets adjacent to the feed roller, and a deflector having a concavity adapted to receive one or more sheets fed by the feed roller.

11. The combination of a feed roller, means for holding a block of paper against the same, a stop for the bulk of said block, said stop releasing a plurality of sheets adjacent to the feed roller, and a deflector having a recess adapted to receive such plural-

ity of unstopped sheets, the deflector having a projection extending into the path of such sheets whereby such projection stops all but a single sheet.

12. The combination of means for holding a block of paper in substantially upright form, means for receiving such paper in a substantially horizontal path, a feed roller over which the paper is adapted to turn in changing its course, and a combined stop and deflector standing over the block of paper and preventing movement of the bulk of the paper but allowing movement of one or a few sheets, and when a few sheets are so moved retarding all but the foremost sheet.

13. In a paper feeding mechanism, the combination with means for receiving paper moving in a substantially horizontal plane, of means for holding a block of such paper in a substantially vertical position, a paper feed roller around which the paper is adapted to be deflected from the vertical to the horizontal position, and a combined stop and deflector for holding in original position the bulk of the paper while allowing the partial advancement of a few sheets and the complete advancement of only one sheet.

14. The combination of a plate, a feed roller located substantially behind the plane of the plate but with that plane substantially tangent thereto, a pressure roller opposite the feed roller and adapted to press paper against the face of the plate and against the feed roller, means for supplying spring pressure to the pressure roller, a bottom support for the block of paper standing on edge between the two rollers, and a curved shield facing the edge of the paper as advanced by the feed roller and having a projection tending to retard the sheets.

15. In a paper feeding mechanism, the combination with means for holding the block of paper in upright form, of means for advancing successively the foremost sheet in said block, a deflector extending transversely of such sheet and presenting a stationary concave guide thereto and a projection at the rear edge of the concavity across which the paper must buckle to pass.

16. In a paper feeding mechanism, the combination of a paper feed roll, means for supporting paper in an upright form against the feed roll, a pressure member on the opposite side of the block of paper, means for stopping the paper at the upper end except near the feed roll, and a deflector having a downward recess adapted to receive one or more sheets fed by the feed roll, said deflector having a downward projection beneath which the foremost sheet may pass.

17. In a paper feeding mechanism, the combination of a paper feed roll, means for holding a block of paper against the same,

a stop for one end of said block, an adjustable support for the opposite end adapted to hold it substantially against the stop, and a deflector stationary in operation and having a recess adapted to receive sheets clearing such stop.

18. In a paper feeding mechanism, the combination of a feed roll, a cooperating pressure roll, means for holding a block of paper between the two, a stop extending across the end of such block of paper, and a deflector stationary in operation adjacent to the stop and having a recess facing the paper adapted to receive one or more sheets of paper clearing the stop, the foremost sheet being adapted to buckle and pass from the forward edge of said recess in an approximately horizontal path.

19. In a paper feeding mechanism, the combination of a feeding roller, a cooperating pressure member, an adjustable bottom support for holding a block of paper between the two, a curved shield having a recess facing the edge of the paper and adapted to receive one or more sheets, said shield having an edge tending to retard the advancement, a plate substantially tangent with the feeding roller and forming an abutment for the block of paper, and a guide for the foremost sheet advanced by the feed roller.

20. The combination of means for holding a block of paper and for feeding one or more sheets thereof, of a deflector having a recess adapted to receive such fed sheets and having at the rear edge of the recess a projection toward the feed roller adapted to retard all but the foremost sheet while allowing it to buckle and pass across such projection.

21. The combination of means for holding a block of sheets of paper, a feed roller for dislodging a few sheets adjacent to the feed roller, and a separator having a recess into which such few sheets may be fed by the feed roller, the rear wall of such recess projecting across the path of the paper and retarding all but the foremost sheet while allowing it to pass out of the recess.

22. In a paper feeding mechanism, the combination of a paper support comprising a plate, side guides and a foot support, a feed roller adjacent to one end of the support and substantially tangent to the upright surface thereof, a shield across the feed roller and adapted to receive a plurality of sheets of paper advanced by the feed roller and having a terminal edge, the rear surface of which is non-tangential to the path of the paper, whereby said shield will allow the escape of the sheet nearest the feed roller, while retarding the other sheets.

23. In a paper feeding mechanism, the

combination of a paper support, a feed roller, a shield over the feed roller and adapted to receive a plurality of sheets of paper advanced by the feed roller, said shield having an adjacent portion adapted to stand opposite the end of the block of paper on the support and allow the advancement into the shield of only a few sheets of such paper.

24. In a paper feeding mechanism, the combination of a paper support comprising a plate, side guides, and a foot support, a feed roller adjacent to one end of the support and substantially tangent to the surface thereof, a spring-pressed member opposite the feed roller, a shield parallel with the axis of the feed roller and adapted to receive a plurality of sheets of paper advanced by the feed roller, said shield retarding all of the sheets but allowing the escape of the sheet nearest the feed roller.

25. In a paper feeding mechanism, the combination of a paper support, a feed roller adjacent to the head end of the support and substantially tangent to the surface thereof, a spring-pressed roller opposite the feed roller, a shield over the feed roller and adapted to receive a plurality of sheets of paper advanced by the feed roller, said shield retarding all of the sheets but allowing the escape of the sheet nearest the feed roller, means adjacent to said shield adapted to stand opposite the end of the block of paper on the support and allow the advancement into the shield of only a few sheets of such paper.

26. The combination of a frame, a roller mounted therein, means for revolving said roller, a shield carried by the frame and having its under surface curved, a stop projecting forwardly from the lower edge of the shield, a plate and guides for supporting a block of paper against the feed roller and with all but the rearmost few sheets beneath said stop, a roller on the forward side of the paper, and spring means for pressing said roller toward the feed roller.

27. In a paper feeding mechanism, the combination of a paper support comprising a stationary upright plate, adjustable side guides and a bottom support, a feed roller adjacent to one end of the support and substantially tangent to the surface thereof, a pressing device opposite the feed roller comprising a roller and a pair of spring pressed arms carrying it, and a shield having a concavity parallel with the axis of the feed roller and adapted to receive a plurality of sheets of paper advanced by the feed roller, the rear edge of said concavity retarding all of the sheets but allowing the escape of the sheet nearest the feed roller.

28. In a paper feeding mechanism, the combination of a paper feed roll, means for

- supporting paper in an upright form against the feed roll, a pressure member on the opposite side of the block of paper, means for stopping the paper at the free end except near the feed roll, and a deflector having a recess facing the roll adapted to receive one or more sheets fed by the feed roll, said deflector having a shoulder across which the foremost sheet only may pass.
29. The combination of means for holding a block of paper in substantially upright form with all except the foremost few sheets blocked against feeding movement, means for receiving such paper in a substantially horizontal path, a feed roller around which the paper is adapted to turn in changing its course, and a combined deflector and retarder standing crosswise of the fed sheets and having a concavity which is non-concentric with the feed roller and having a rear edge in the path of the advancing sheets, whereby when a few sheets are so moved the concavity will hold back all but the foremost sheet.
30. In a paper feeding mechanism, the combination of a guiding plate, a feed roller adjacent to one end of the plate and substantially tangent to the surface thereof, a spring-pressed member opposite the feed roller, a shield parallel with the axis of the feed roller and adapted to receive a plurality of sheets of paper advanced by the feed roller, said shield retarding all of the advanced sheets but allowing the escape of the sheet nearest the feed roller, and means adjacent to said shield adapted to stand opposite the end of the block of paper against the plate and allow the advancement into the shield of only a few sheets of such paper.
31. In a paper feeding mechanism, the combination of an upright plate, adjustable side guides carried thereby, an adjustable foot support, a feed roller substantially tangent with the plate, and a pressure roller adapted to press paper against the feed roller and plate.
32. In a paper feeding mechanism, the combination of a sheet metal plate, adjustable side guides, an adjustable foot support, a feeding roller having its feeding surface substantially tangent to the plate, a pressure roller, a pair of pivoted arms carrying the same, and independent springs acting on said arms.
33. The combination of a plate, a feed roller having its feeding surface substantially tangent thereto, a pressure roller, arms carrying the same, independently adjustable springs acting on the arms respectively, and a retarding shield into which the paper may be fed.
34. The combination of a feed roller, a plate tangent thereto, a pressing device adapted to press a block of paper against the plate and the feed roller, a pair of gripping rollers and a shield interposed between the feed roller and the gripping rollers and having a concavity toward the feed roller and a retarding edge serving to assist in deflecting the paper and directing it to the gripping rollers.
35. The combination of an upright plate, a horizontal feed roller located substantially on the back side of the plate and having a feeding portion substantially tangent with the face of the plate, a pressure roller, a pair of pivoted arms carrying the same at its ends respectively, a pair of independent springs acting on said arms, a pair of coacting gripping rollers at the rear of the feed roller, and a curved shield interposed into the path of the paper from the feed roller to the gripping rollers, said shield having a concavity toward the feed roller and a retarding edge whereby, when a plurality of sheets are fed into the shield all but the foremost are held back, the shield acting also as a deflector and serving to direct the fed sheet to the gripping rollers, and an adjustable bottom support for the block of paper held between the feed roller and the pressure roller.
- In testimony whereof, I hereunto affix my signature in the presence of two witnesses.
- ALBURT D. PEJEAU.
- Witnesses:  
W. DUNLAP,  
Miss B. JEWELL.