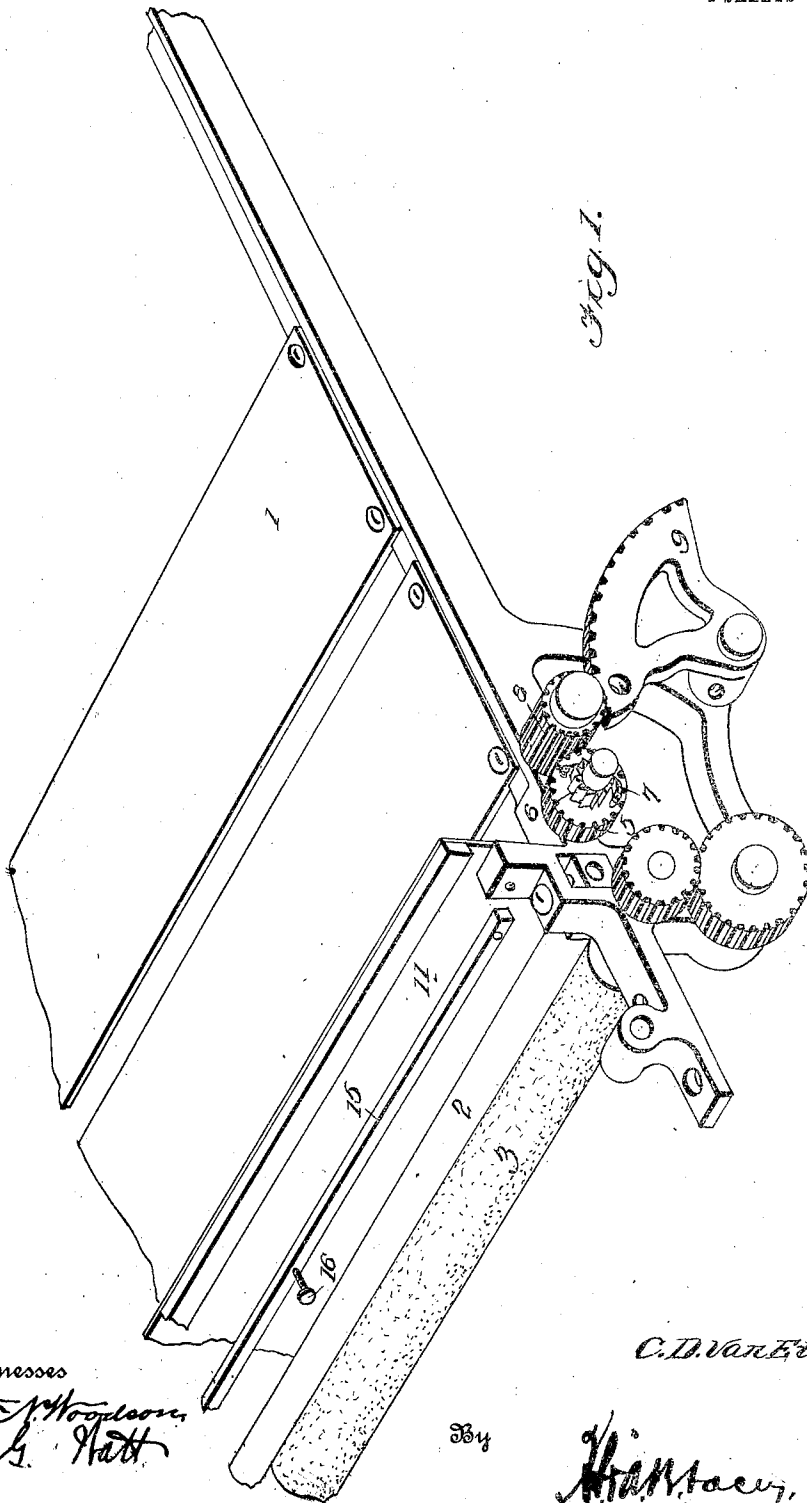


C. D. VAN ETTEŃ.
PAPER FEEDING MECHANISM.
APPLICATION FILED MAY 2, 1911.

1,058,500.

Patented Apr. 8, 1913.
2 SHEETS—SHEET 1.



Witnesses

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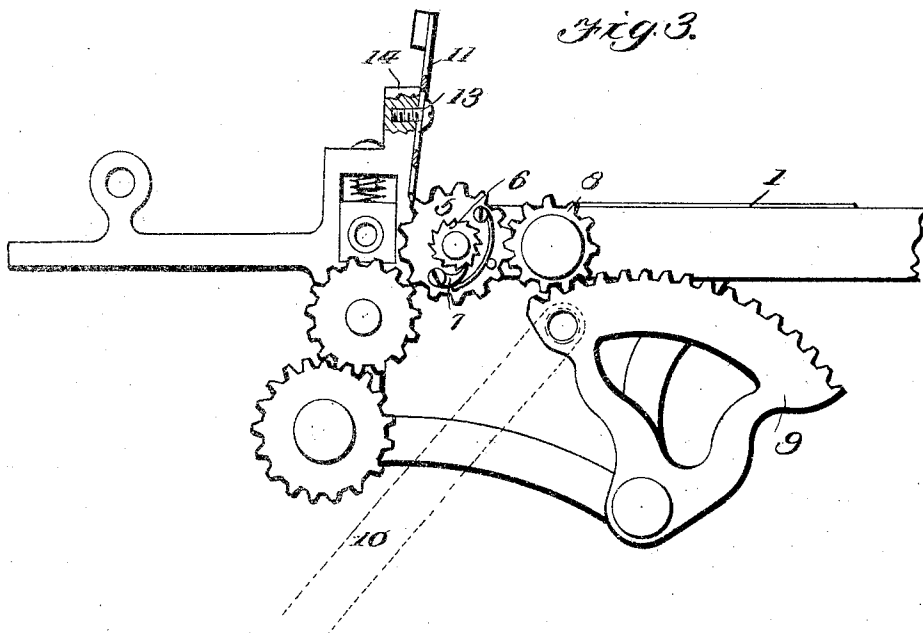
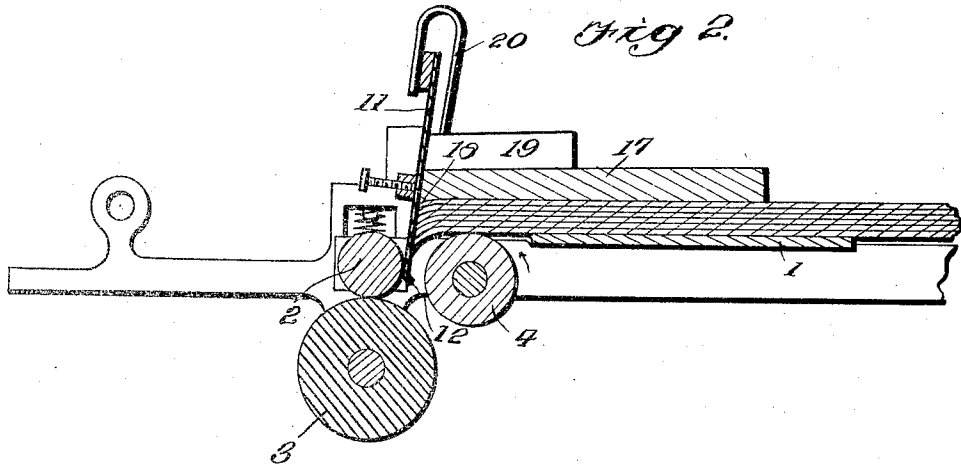
Attorney

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PAPER-FEEDING MECHANISM.

1,058,500.

Specification of Letters Patent.

Patented Apr. 8, 1913.

Application filed May 2, 1911. Serial No. 624,652.

To all whom it may concern:

Be it known that I, CHARLES D. VAN ETTEN, citizen of the United States, residing at Sidney, in the county of Shelby and State of Ohio, have invented certain new and useful Improvements in Paper-Feeding Mechanism, of which the following is a specification.

This invention relates to paper feeding mechanism for folding machines, printing presses, and the like, and contemplates feeding successive sheets of paper from the bottom of a stack.

One aim of the invention is to so construct the feeding mechanism that but a single sheet will be fed at a time and all of the other sheets of the stack will be restrained against movement.

A further feature of the invention resides in the provision of novel means for flexing the end of a stack of paper so that it will be more readily engaged and its sheets more readily separately fed, than if no means was provided for so flexing the stack.

Another aim of the invention is to provide means for adjusting the feeding mechanism to properly feed thick or thin, or loose or smooth sheets of paper.

For a full understanding of the invention reference is to be had to the following description and accompanying drawings, in which:—

Figure 1 is a perspective view of the feed mechanism embodying the present invention. Fig. 2 is a vertical longitudinal sectional view thereof. Fig. 3 is a side elevation thereof.

Corresponding and like parts are referred to in the following description and indicated in all the views of the accompanying drawings by the same reference characters.

In the drawings, the paper supporting table is indicated by the numeral 1 and is, as usual, mounted upon the frame of the folder or press.

The numerals 2 and 3 indicate cooperating carrier rolls which are arranged in advance of the table with their contacting peripheral portions below the plane of the table.

The numeral 4 indicates a friction-starting-roll which is preferably rubber covered so as to frictionally engage with a sheet of paper to be fed from the stack upon the table 1 and the starting roll is journaled for rotation in the frame and has loosely mounted

ed upon its shaft, at one end, a pinion 5. A ratchet 6 is fixed upon the shaft and a dog 7 upon the pinion 5, rests in engagement with the ratchet and serves by reason of such engagement, to clutch the shaft for rotation with the pinion 5 when the pinion is turned in one direction. An idle pinion 8 is mounted upon the frame and meshes with the pinion 5 and a segmental gear 9 is mounted to oscillate upon the frame and is in mesh with the pinion 8. A connecting rod 10 is pivoted to the segmental gear 9 and its reciprocation results in oscillatory movement being imparted to the gear and an intermittent rotary movement being imparted to the shaft of the starting roll 4.

A plate 11 is positioned with its lower portion extending between the starting roll 4 and the carrier rolls 2 and 3 and its lower edge portion is curved as at 12 in the direction of the starting roll. This plate is supported for vertical adjustment in the frame by means of screws 13 which are secured through slots in the plate at the ends thereof and into upstanding portions 14 of the frame. A bar 15 is secured at its ends to the plate 11 near each end thereof, and an adjusting screw 16 is threaded through the intermediate portion of the bar and bears against the corresponding portion of the plate, it being understood that by turning this screw in one direction the plate may be flexed so that its intermediate portion will more closely approach the starting-roll 4, this adjustment being had when the paper to be fed is thin or smooth. Due to the fact that the plate 11 extends between the starting roll 4 and carrier-rolls 2 and 3, it is spaced from the table 1.

The stack of paper to be fed by the mechanism is placed upon the table 1 with one end resting upon the friction-starting roll 4 and against the plate 11. A deflector 17 is disposed upon the stack of paper and has at its forward edge a lip 18 which bears downwardly against the stack at its said end and serves to downwardly flex the same. A weight 19 is preferably disposed upon the deflector 17 and this weight may be provided with arms 20 extending upwardly therefrom and at their upper ends bent over to engage with and be supported by the plate 11 when the stack has been completely, or nearly completely, fed from the table.

It will be readily understood from the foregoing that upon the friction roll 4 being

positively rotated in the direction indicated by the arrow in Fig. 2 of the drawings, the lowermost sheet of the stack upon the table will be started in the direction of the carrier-rolls 2 and 3, the frictional engagement of the roll 4 with the sheet overcoming the friction between said sheet and the lowermost sheet of the stack. The said lowermost sheet will be fed past the rearwardly curved lower edge 12 of the plate 11 and to the carrier-rolls 2 and 3. The frictional contact between the lowermost sheet and the next to the lowermost sheet is, however, not sufficient to overcome that between the last mentioned sheet and the third sheet from the bottom of the stack, and although the next to the last sheet may be at times slightly advanced by the movement of the lowermost sheet, it will engage with the rearwardly bent lower edge of the plate 11 and be restrained against further movement until the first mentioned sheet has been fed past the starting roll 4.

Having thus described the invention what is claimed as new is:—

1. In paper feeding mechanism, the combination with cooperating carrier-rolls and a paper supporting table, of a friction-starting-roll arranged to support one end of a stack of paper upon the table, means for positively intermittently rotating the starting-roll, and a sheet restraining plate having its lower portion extending between the starting roll and the carrier-rolls and curved in the direction of the starting-roll.

2. In paper feeding mechanism, the combination with cooperating carrier-rolls, and a paper supporting table, of a friction-starting-roll arranged to support one end of a stack of paper upon the table, means for positively intermittently rotating the starting-roll, a sheet restraining plate positioned

with its lower portion extending between the starting roll and the carrier-rolls and bent in the direction of the starting roll, and a deflector adapted for disposal upon the stack of paper and against the said plate and having a lip arranged to flex the end of the stack.

3. In paper feeding mechanism, the combination with cooperating carrier-rolls and a paper supporting table, of a friction starting roll arranged to support one end of a stack of paper upon the table, a sheet restraining plate extending between the carrier rolls and the starting roll, a bar secured at its ends to the plate near the ends thereof, and a screw threaded through the bar and bearing against the intermediate portion of the plate for flexing the said intermediate portion of the plate.

4. In paper feeding mechanism, cooperating carrier rolls, a paper supporting table, a friction starting roll arranged to engage a sheet of a stack placed upon the table, means for operating the starting roll, and a sheet restraining plate extending between the starting roll and the carrier rolls and curved in the direction of the starting roll.

5. In paper feeding mechanism, cooperating carrier rolls, a paper supporting table, a friction starting roll arranged to engage a sheet of a stack placed upon the table, means for operating the starting roll, and a sheet restraining plate having its lower portion extending between the starting roll and carrier roll and having its lower edge curved in the direction of the starting roll.

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

CHARLES D. VAN ETEN. [L. s.]

Witnesses:

CHAS. C. HALL,
GRACE FITZGERALD.