

No. 876,914.

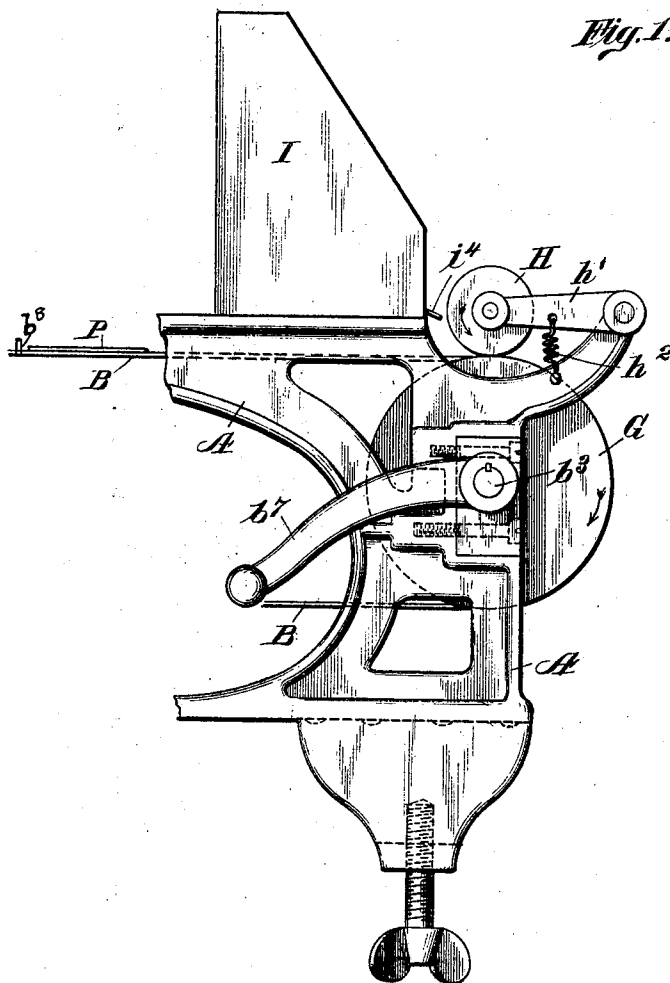
PATENTED JAN. 14, 1908.

R. N. ROGERS.

SELF FEEDER FOR ADDRESSING MACHINES AND THE LIKE.

APPLICATION FILED JUNE 18, 1906.

3 SHEETS—SHEET 1.



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Fig. 7.

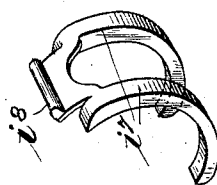


Fig. 6.

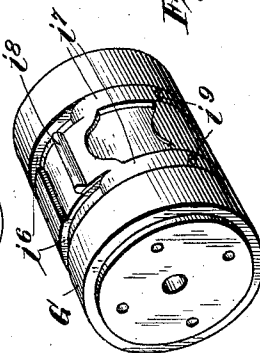
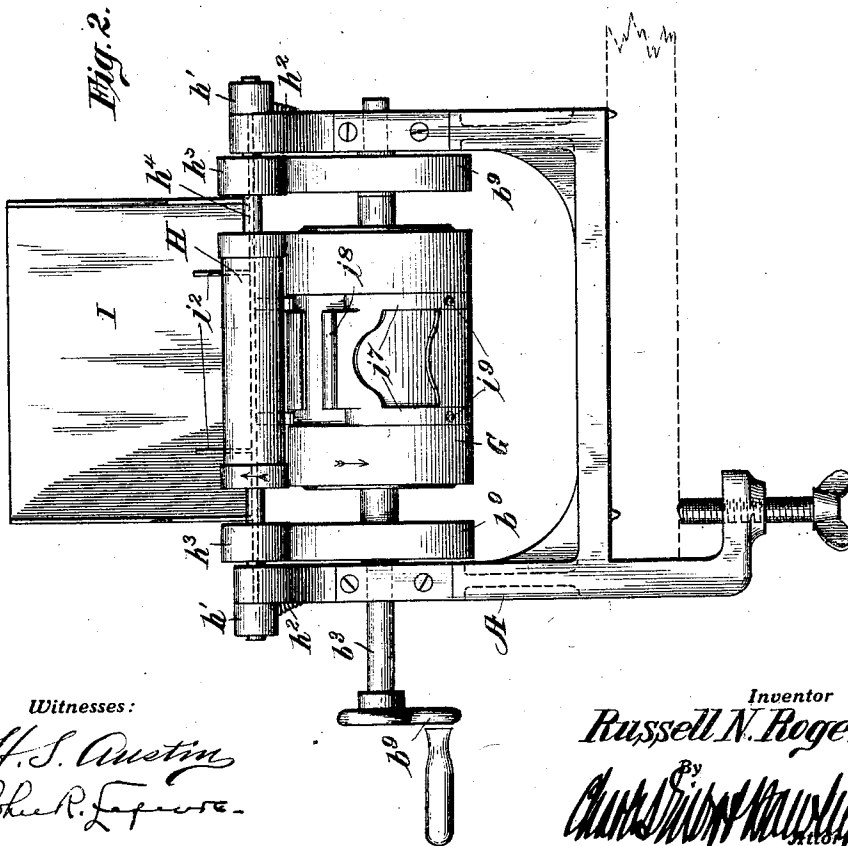


Fig. 2.



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3 SHEETS—SHEET 3.

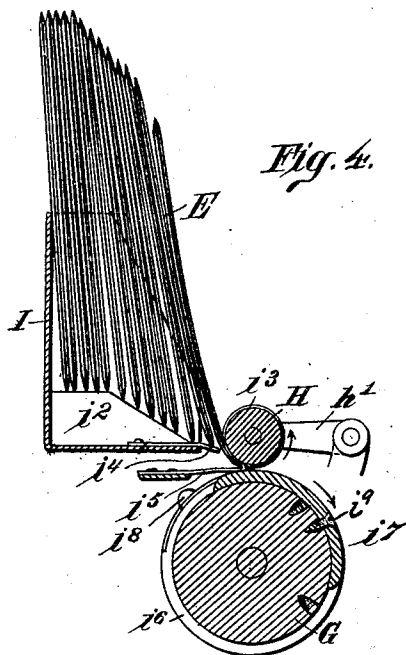


Fig. 4.

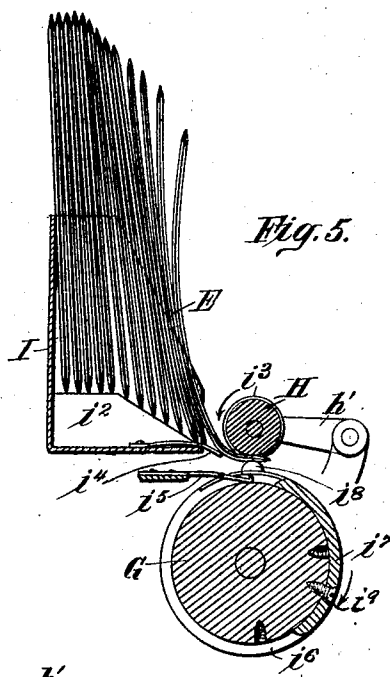


Fig. 5.

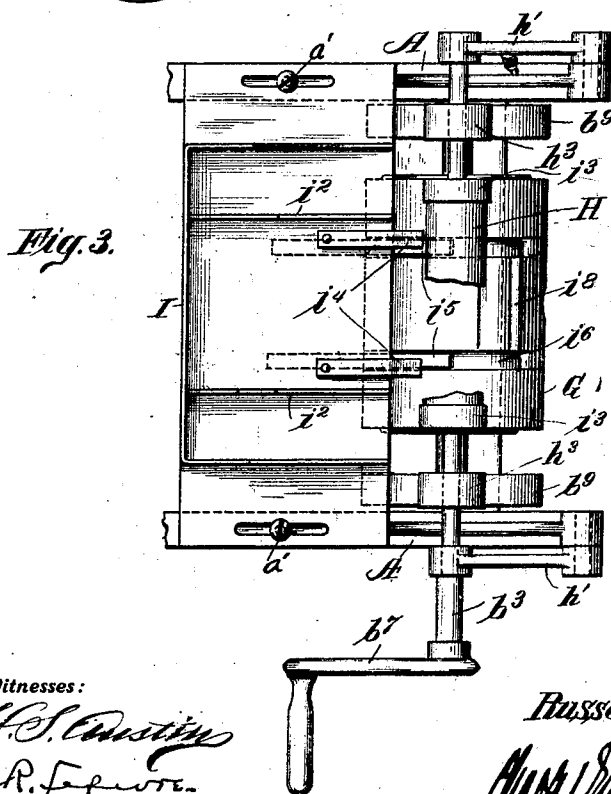


Fig. 3.

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UNITED STATES PATENT OFFICE.

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SELF-FEEDER FOR ADDRESSING-MACHINES AND THE LIKE.

No. 876,914.

Specification of Letters Patent.

Patented Jan. 14, 1908.

Original application filed January 20, 1906, Serial No. 297,001. Divided and this application filed June 18, 1906. Serial No. 322,212.

To all whom it may concern:

Be it known that I, **RUSSELL N. ROGERS**, a citizen of the United States, and a resident of Chicago, Cook county, Illinois, have invented a certain new, useful, and Improved Self-Feeder for Addressing-Machines and the Like, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it belongs to make and use the same.

This is a divisional application, the subject matter hereof having been first presented in my pending application, Ser. No. 297,001, entitled envelop addresser, filed January 20, 1906.

The present invention relates to improvements in printing machines, addressing machines, stamp canceling machines, check indorsing machines and the like, and has special reference to improvements in mechanisms for feeding sheets, cards or envelopes to such machines.

The object of this invention is to provide a simple, durable, effective and reliable automatic feeding mechanism for delivering envelopes or the like to various machines for various purposes, with special reference to the requirements of addressing, canceling and indorsing machines.

My invention consists generally in an improved automatic feeding mechanism of the construction and combination of parts hereinafter described and particularly pointed out in the claims, and will be more readily understood by reference to the accompanying drawings, forming a part of this specification, in which;

Figure 1 is a side elevation of a feeding mechanism embodying my invention; Fig. 2 is a front elevation of the mechanism; Fig. 3 is a plane view thereof; Figs. 4 and 5 are vertical sectional views illustrating the operation and the mechanism; Fig. 6 is a perspective view of the lower drawing and pressure roll; and Fig. 7 is a perspective view of the adjustable cam used on said roll.

As this is a divisional application and as the mechanism which forms the subject matter hereof may be employed upon envelop addressing machines, as well as upon many other machines. I have chosen to illustrate the invention in that form in which it appears in connection with an addressing machine. It will, however, be understood that my invention is not confined

to this specific use or to any particular printing, canceling, stamping, counting or other machine wherewith the invention may be employed.

My intention at this time and in this application is to carefully define and broadly claim the mechanism for feeding cards, sheets, envelopes, etc., to various machines, without limitation to any one or several uses to which the mechanism may be put. As stated, the drawings show my novel self feeder as a part of an envelop addressing machine, and in said drawings, A, represents a frame which is common to the addressing machine and the feeding mechanism. In said drawings, B, represents a conveyer or other machine element that is adapted to intermittently feed type or stencil plates, P, to the printing mechanism; said printing mechanism comprises two rolls, G and H. The arrangement is such that an envelop and a type plate enter between the rolls simultaneously. It is in this manner that the addresses are imprinted upon the envelopes. I have stated that the rolls, G and H constitute the printing mechanism; that is, they are the members which effect the necessary pressure upon the plates and envelopes, but as will be better explained hereinafter, said rolls, G and H, also constitute essential elements of the envelop feeding mechanism. A brief inspection of the drawings discloses the fact that one of the rolls, to-wit, H, is relied upon to draw or pull successive envelopes into position to be grasped by both rolls; the arrangement being such, that when an envelop is released from this position, it will be caught and passed through the rolls, to be immediately followed by a second envelop. The roll or roller, G, is preferably arranged on the shaft, d^3 , borne in the frame, A. Any suitable means may be used for rotating the roll, G. I prefer the simple crank, b^7 . The circumference of the roll, G, preferably somewhat exceeds the length of the longest envelop to be handled by the machine. The type plate feeder, B, approaches the opposed rolls at a tangent thereto and delivers successive plates between the rolls in time to meet successive envelopes. The bearing for the roll, G, are preferably stationary and as the plates are of considerable thickness, it is therefore necessary that the upper, and preferably smaller roll, H, shall be adapted to yield and move away from the roll, G, upon

the entrance of a plate and envelop. I therefore arrange the shaft, h^1 , of the upper roll H in swinging arms, h^1 . These arms are pivoted on the frame and the roll is held down by gravity or by springs, h^2 , the pressure exerted by the roll being sufficient to hold an article such as a type plate envelop, sheet or card upon the power driven roll, G, to the end that said article may be drawn between and propelled from the rolls. The roll, H, is made of a soft composition resembling very soft rubber, and as such a roll would be distorted if pressed directly upon the roll, G, I prefer to support the roll, H, by separate carrying wheels or pulleys, b^0 and h^3 , upon the shafts, b^3 and h^4 respectively. These wheels, b^0 and h^3 , also operate as drivers for the roll, H, and hence said roll will continue in rotation at all times whenever the larger roll, G, is rotated. This is necessary as I depend upon the roll, H, to draw successive envelops from the holder which I shall now describe.

In the drawings, I, represents an envelop holder, box or tray having an open front or side adjacent to the roll, H. This holder is adjustably secured upon the frame, A, by the screws, a' , and may be moved either toward or from said roll. The bottom of the holder, I, contains two inclines or slanting rails, i^2 , and envelops which are placed in the holder settle downward on these inclines, until the front envelop engages the side of the roller, H. The rolls rotate in the direction indicated by the arrows and therefore the moment an envelop engages the roll, H, the latter tends to draw it down between the roll and the edge of the holder, I. To insure the proper operation of the roller upon the exposed envelop, I provide the ends of the roller with enlargements, usually made by placing small rubber bands, i^3 , thereon. These firmly engage and adhere to the envelop which is pressed against the roll by the weight of the other envelops. Small spring fingers, i^4 , or other flexible edge or edges upon the box or holder extend from the bottom thereof to a point close to the pressure roll, H, leaving a space just sufficient (when the fingers are flexed) to permit a single envelop to pass downward between the fingers and the roll. The envelop which is drawn down holds back the other envelops as indicated in Figs. 4 and 5. The bands or enlargements, i^3 , on the roll H, coöperates with the springs i^4 , to the extent that they tend to bend the envelop transversely and thus assist in holding back the second envelop. The draft or pull of the roll, H, upon the envelop is sufficient to pull the envelop down as soon as it comes in contact with the roll, and it is obvious that a second envelop will make contact with the roll as soon as the first envelop has passed beneath the fingers, i^4 . This being the case, the envelops will be fed from the

holder one after another, a second envelop following close upon the first. The machine may be made to operate continuously in this manner if desired, but in all machines of the character of addressing machines, it is necessary to positively time or regulate the feeding of the envelops, sheets, cards or the like; the reason being, that the type plates are fed intermittently and hence the envelops must be delivered in like manner. I therefore prefer to provide means whereby an envelop will be caused to pause after being drawn out of the holder, and will be so held until the moment when it should be released to meet a type plate, canceling stamp or the like, arranged either on the conveyer or carried by the roll, G, as the case may be. The means which I employ consist in two stop fingers, dogs or hooks, i^5 , placed beneath the roll, H; that is, between the two rollers. These dogs are arranged to rise into the path of an incoming envelop to retard its motion and to thereafter at a certain moment drop out of the way and thereby release the envelop and permit it to pass between the rolls. The fingers, i^5 , are attached to an adjacent part of the frame beneath the plate feeder, if such feeder is used. The hooked ends of the fingers are operated by cams on the roller, G, being held in cam grooves provided in said roller.

Referring to Figs. 3, 4 and 5 it will be seen that the said grooves, i^6 , contain elevations or cams, i^7 , and when such parts are in contact with the hooks, the latter are elevated beneath the roller, H, to intercept and hold the envelop, E. When the cam elevations move from beneath the hooks, the latter drop into the grooves and are thus removed from the path of the envelop and likewise from the path of the type plate. To insure the starting of the envelop at exactly the right moment, a flexible or rubber piece, i^8 , is provided on the roll, G, to engage the end of the envelop at the moment it is released from the stops, i^5 . The rotation of the roll, G, has a definite relation to the positions of the plate lugs or pins, b^8 , on the plate feeder or conveyer, hence the relation of the starting or draft piece, i^8 , to an approaching type plate is also fixed. This being the case, the point at which the imprint of the type will be applied to the envelop and the adaptation of the machine to envelops of different sizes may be determined and accomplished by simply shifting the draft piece, i^8 , backward or forward upon the roll, G. To adjust the machine for short envelops, the piece, i^8 , is moved rearwardly, while for longer envelops it is moved forward on the roll, G. It should be observed that the adjustment of the draft piece makes necessary the adjustment of the cams, i^7 , for the reason that the stops, i^5 , must always be dropped away before the draft piece engages the envelop; otherwise

there would be danger of tearing the envelop. As like adjustments of the parts, i^7 and i^8 , are required they are preferably formed in one piece, as shown in Figs. 5, 8 and 9. 5 Screws, i^9 , serve to secure the parts in either of three or more positions.

The complete operation of the mechanism is as follows: The holder, I, is first filled with envelops, which in the case of the machine 10 illustrated are placed on end in said holder. It is obvious that the forward envelop will drop into contact with the roll, H. When the crank is turned to rotate the rolls G and H, in the direction indicated by arrows, the 15 first work of the roll, H, is to draw down the envelop which rest against it. Meantime the flexible fingers, i^4 , separate the first and second envelops and the second envelop is held back as before explained. At the moment of starting the operation, the dogs, i^5 , 20 are in their elevated positions, resting upon the cams, i^7 , hence the envelop which is drawn by the roll is arrested by the dogs, i^5 , and will be held thereby against the drawing tendency of the roll, H. Further rotation of 25 the roll, G, carries the cams, i^7 , past the dogs and thereupon said dogs drop into the grooves in the roll, G. At the next instant the draft piece, i^8 , on the roll, G, catches the end of the envelop and forcibly starts the 30 same between the rolls. After the passage of the draft piece, the pressure of the roll H, upon the roll, G, is sufficient to insure the further feeding of the envelop. As soon as the upper end of the first envelop passes the 35 fingers, i^4 , the next envelop follows it into the space between said fingers and the roll, H, and the feeding operation is repeated. As stated the machine is readily adjustable to the feeding of cards, sheets, envelops and 40 the like, of different lengths, by mere adjustment of cam pieces, i^7 , and the draft piece, i^8 . It is obvious that the machine is adjustable to cards, sheets and envelops of different 45 thickness also, such adjustment being secured by moving the holder, I, toward or from the roller, H, as required, to properly fix the feeding space between the flexible fingers and said roll. In practice the fingers 50 substantially make contact with the roll, H, so close is their adjustment:

As various modifications of my invention will readily suggest themselves to one skilled in the art, I do not confine or limit my invention to the specific constructions herein contained. 55

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

60 1. In a feeding mechanism of the class described, a box or holder having an open front and adapted to contain a loose pack of sheets or envelops, in upstanding position, in combination with means for feeding the 65 latter forward in said box, flexible restrain-

ing devices or supports provided at the bottom of said holder, a frictional drawing roll presenting its side to the ends of said supports and another roll in substantial contact with and cooperating with said drawing roll, substantially as described. 70

2. An envelop feeding mechanism comprising a holder having an open front and an inclined bottom, in combination with envelop supporting fingers provided at the 75 bottom of said holder, a frictional drawing roll presenting its side to the ends of said fingers, a cooperating drawing roll, and envelop stopping and releasing means, relatively between said rolls, substantially as 80 described.

3. An envelop feeding mechanism comprising a pair of rolls, the circumference of the larger of which is substantially equal to the length of an envelop, in combination 85 with an envelop holder adjacent to the smaller roll to present the side of an envelop in frictional contact therewith, and envelop stop and releasing means in the intake opening between said rolls and actuated in time 90 with the rotation of said rolls, substantially as described.

4. In an envelop feeding mechanism, an envelop holder or magazine, having an inclined bottom, an open front and a closed 95 back to support envelops in rearwardly inclined position, in combination with a drawing roll arranged for rotation adjacent to the lower edge of said holder, to first partly and then completely withdraw an envelop 100 from said holder and envelop stop and releasing devices extending beneath said roll and means intermittently operating said devices, substantially as described.

5. In an envelop feeding mechanism, an 105 envelop holder or magazine having an inclined bottom and an open front, in combination with a frictional drawing roll adjacent to said holder to engage the front envelop therein, envelop supporting fingers 110 upon said holder, envelop stopping and releasing fingers arranged beneath said holder, and cooperating drawing means for extracting an envelop from the holder when released, substantially as described. 115

6. In an envelop feeding mechanism, a pair of rolls suitably pressed together, in combination with an envelop holder having an inclined bottom terminating adjacent to the side of one of said rolls, envelop stop 120 and releasing means arranged between said rolls, and means upon one of said rolls for actuating said stop and releasing means, substantially as described.

7. In an envelop feeding mechanism, a 125 pair of horizontally arranged drawing rolls, in combination with an envelop holder having an inclined bottom to support envelops in upstanding position and terminating close to the intake side of the upper roll, whereby the 130

- latter is adapted to continuously engage and draw down upon the front or "first" envelop in the holder, "second" envelop supporting devices projecting from the bottom of said holder into substantial contact with said upper roll to support or hold back the envelop following the first, and said upper roll having enlarged ends adjacent to said devices, substantially as and for the purpose specified.
8. In an envelop feeding mechanism, a drawing roll of soft material having enlarged ends, in combination with an envelop holder having an inclined bottom and flexible fingers projecting therefrom into substantial but not actual contact with the middle portion of said roll at points adjacent to the enlarged ends thereof, substantially as and for the purpose specified.
9. In an envelop feeding mechanism, a drawing roll having enlarged ends, in combination with an envelop holder having an inclined bottom, to present successive "first" envelops against said roll, restraining devices comprising yieldable fingers projecting from the edge of said bottom toward the middle portion or body of said roll, to support "second" envelops and intermittent envelop drawing means co-acting with said roll, substantially as described.
10. In an envelop feeding mechanism, a drawing roll, in combination with an envelop holder having its forward edge adjacent to the side of said drawing roll, from which envelops are fed to said roll, a cooperating roll, envelop stop and releasing fingers arranged between said rolls, and means upon the second roll for actuating said fingers, substantially as described.
11. In an envelop feeding mechanism, a drawing roll, in combination with an envelop holder for presenting envelops to the side of said drawing roll, a second roll, envelop stop and releasing fingers arranged between said rolls and adjustable finger operating means upon said second roll, substantially as described.
12. In an envelop feeding mechanism, an envelop holder or magazine having an inclined bottom and provided with envelop supporting fingers, a drawing roll adjacent to said fingers, a second drawing roll, a longitudinal drawing member on the latter, stationary envelop stop and releasing fingers arranged between said rolls and actuated by the second roll, and means for adjusting said drawing member and the finger actuating means upon said second roll, substantially as described.
13. In a feeding mechanism of the class described, a box or holder, provided with a bottom, adapted to receive a pack of envelops in upstanding position and to automatically feed them forward, in combination with "second envelop" restraining devices projecting from the forward edge of said bottom, a pair of drawing rolls the upper of which presents its intake side to the ends of said restraining devices, in position to engage and initially draw down the "first" envelop, and means operative beneath said restraining devices and between said rolls, automatically controlling the final or complete withdrawal of each envelop by said rolls, substantially as described.
14. In a feeding mechanism of the class described, a box or holder, provided with a bottom, adapted to receive a pack of envelops and automatically feed them forward, in combination with "second envelop" restraining devices projecting from the forward edge of said bottom, a pair of drawing rolls the upper of which presents its intake side to said restraining devices, in position to engage and initially draw down the "first" envelop, and means co-acting with said rolls and timing the final drawing action of said rolls, substantially as described.
15. In a feeding mechanism of the class described a box or holder having a bottom, and open at the front in combination with "second envelop" restraining devices projecting at the forward edge of said bottom, a drawing roll having its side in close proximity to said restraining devices and adapted to continuously engage the "first" envelop in the holder, and to draw the same down past said restraining devices, means beneath said devices automatically limiting the initial down draft or movement of the "first" envelop, and automatically actuated to release the same and permit the complete withdrawal thereof by said roll, substantially as described.
16. In a feeding mechanism of the class described, a holder to receive a pack of articles such as envelops, placed on edge therein, said holder having an open front towards which the articles are pressed, in combination with yielding restraining devices or fingers projecting from the bottom of said holder, a drawing roll presenting its intake side to said fingers and suitably rotated, a coacting draft device and stop and releasing means beneath said roll and periodically inserted and removed from the path of each article withdrawn from the holder by said roll in advance of the operation of said draft device thereon, substantially as described.
17. In an envelop feeding mechanism, an envelop holder or magazine having an open front, in combination with a frictional drawing roll adjacent to said holder to engage the "front" envelop therein, "second" envelop supporting fingers yieldably arranged at the bottom of said holder, "first" envelop stopping and releasing means arranged beneath said roll and periodically actuated, and

a cooperating drawing roll for completely extracting an envelop from the holder when released, substantially as described.

18. In an envelop feeding mechanism a pair of rolls suitably pressed together, in combination with an envelop holder having an inclined bottom terminating adjacent to the intake side of the upper roll, and envelop stop and releasing means beneath said bottom and actuated by the lower roll, substantially as described.

19. In a feeding mechanism of the class described, a pair of drawing rolls, in combination with a tray or holder containing means for feeding the articles forward against the intake side of the upper roll, whereby the latter is adapted to draw envelops from said holder, supporting devices at the bottom, forward edge of said holder, and feed controlling means operating in the intake opening of said rolls, substantially as and for the purpose specified.

20. In an addressing machine, the combination of a printing mechanism with an envelop holder adjacent thereto, a portion of said mechanism being adapted to withdraw envelops from said holder in two steps or stages and an intermediate stopping and releasing means actuated by said mechanism

and governing the drawing action thereof, substantially as described.

21. In an envelop feeding mechanism, a pair of horizontal rolls, in combination with an envelop holder adapted to present the ends of successive upstanding envelops to the intake side of the upper roll, suitable separating means, and envelop stop and releasing means between said rolls and actuated by the lower roll, substantially as described.

22. In an addressing machine the combination of a printing mechanism with an envelop holder adjacent thereto, a portion of said mechanism being adapted to withdraw envelops from the said holder, and intermittent envelop stopping and releasing means actuated by said mechanism and permitting first, the partial withdrawal of an envelop from said holder, and second, permitting its passage through and discharge from said mechanism, substantially as described.

In testimony whereof, I have hereunto set my hand, this 27th day of April, 1906, in the presence of two subscribing witnesses.

RUSSELL N. ROGERS.

Witnesses:

CHARLES GILBERT HAWLEY,
M. SIMON.