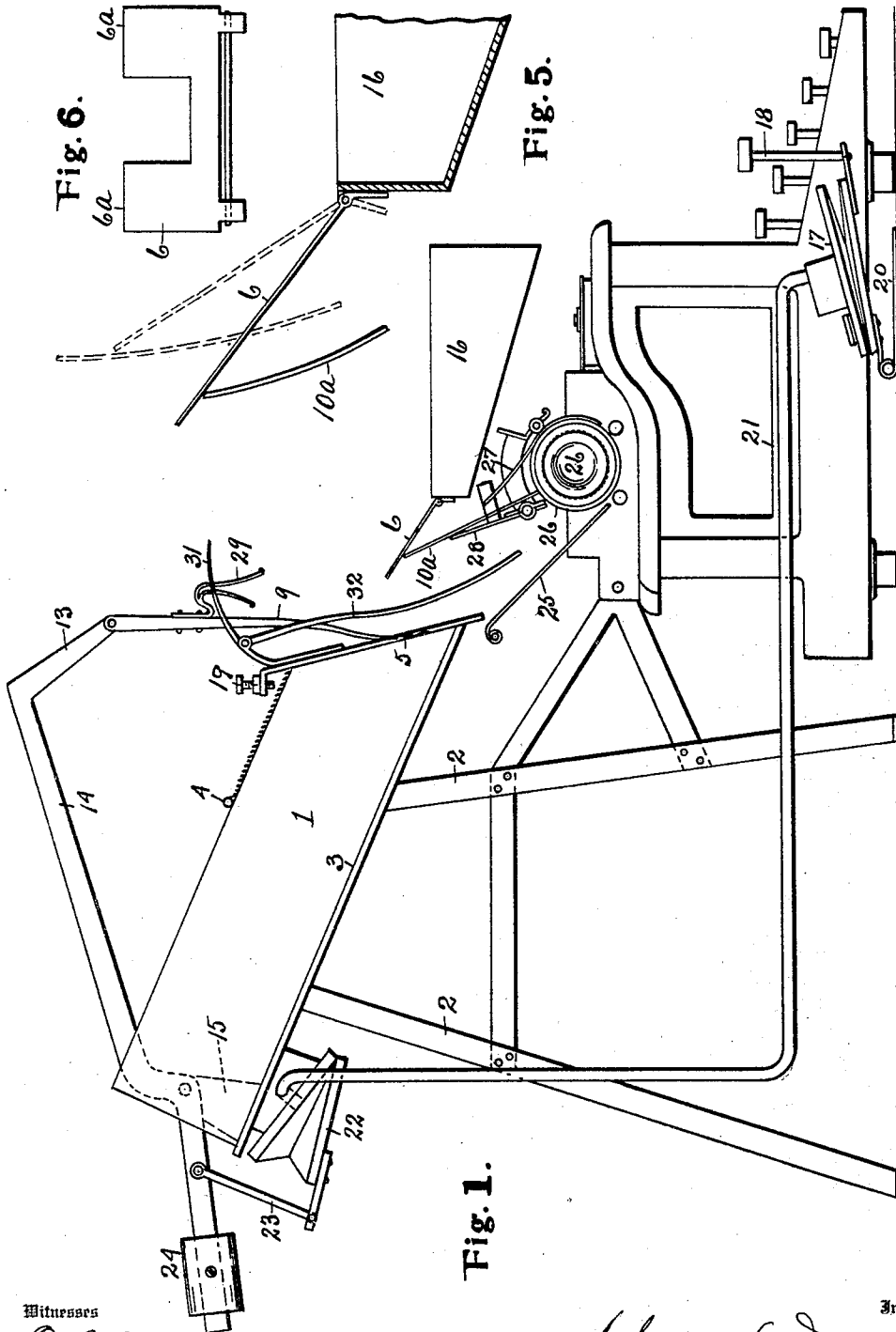


1,005,518.

C. L. DAVIS.
ENVELOP FEEDER.
APPLICATION FILED APR. 9, 1910.

Patented Oct. 10, 1911.

3 SHEETS-SHEET 1.



Witnesses
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Fig. 1.

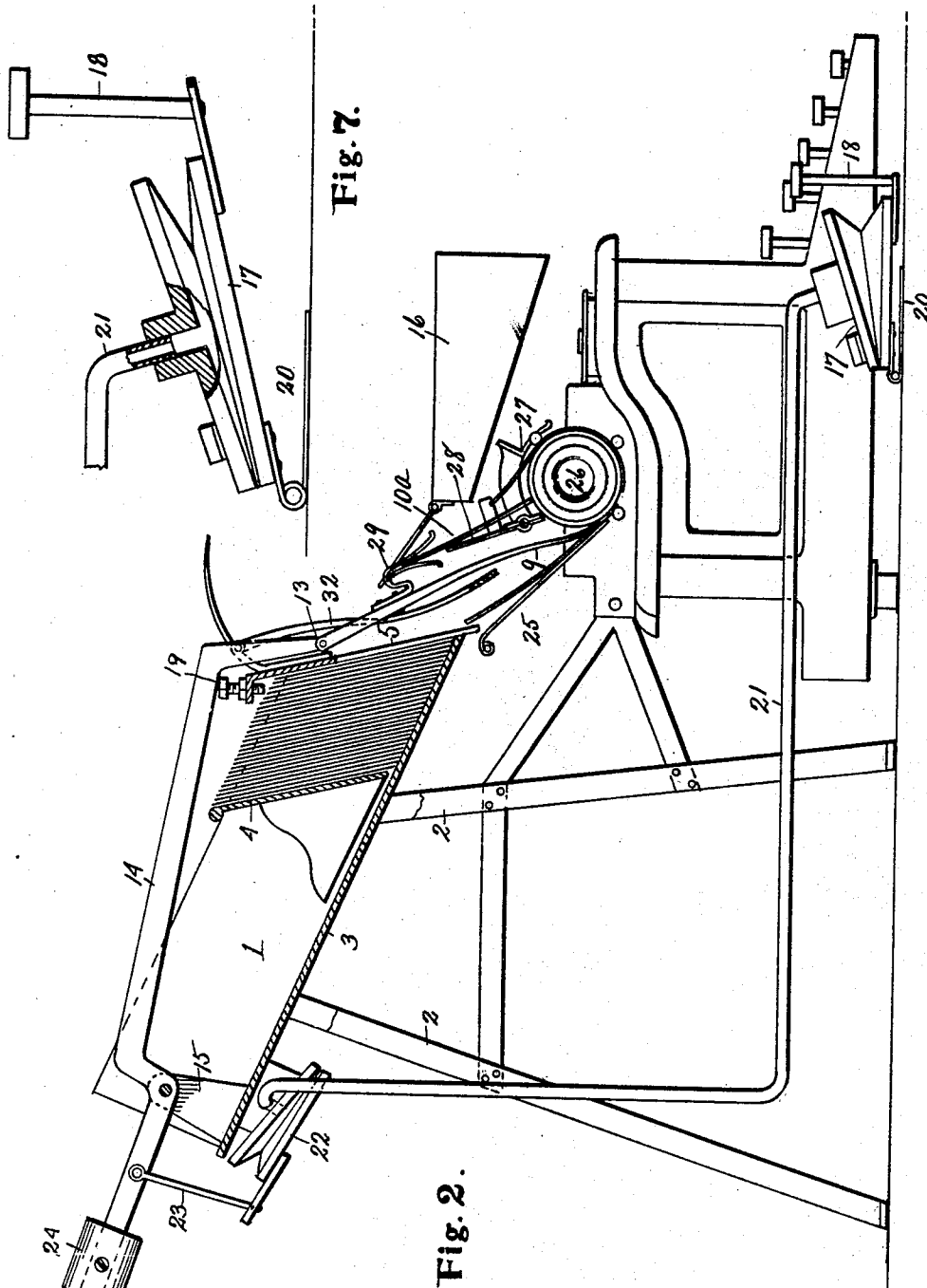
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3 SHEETS—SHEET 3.

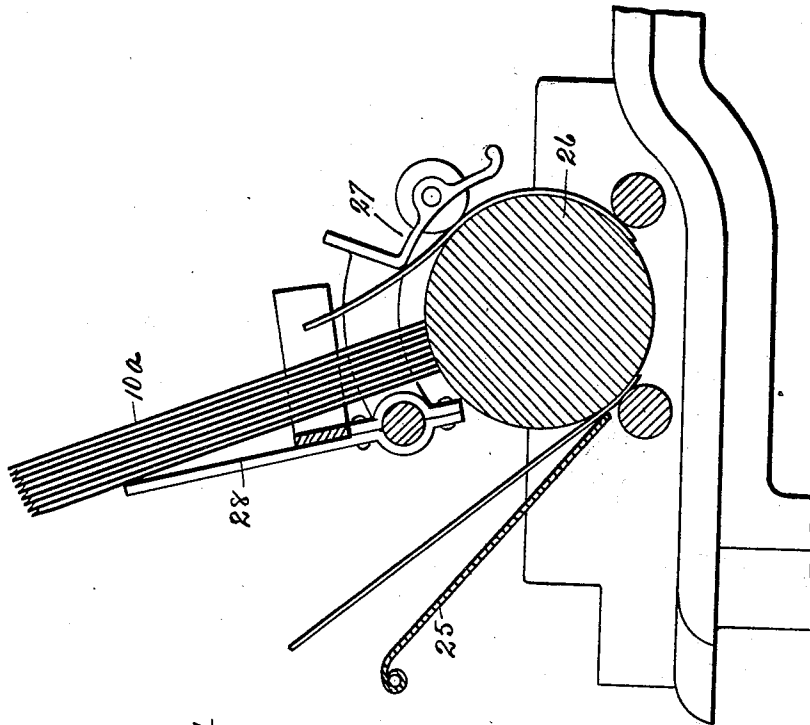


Fig. 4.

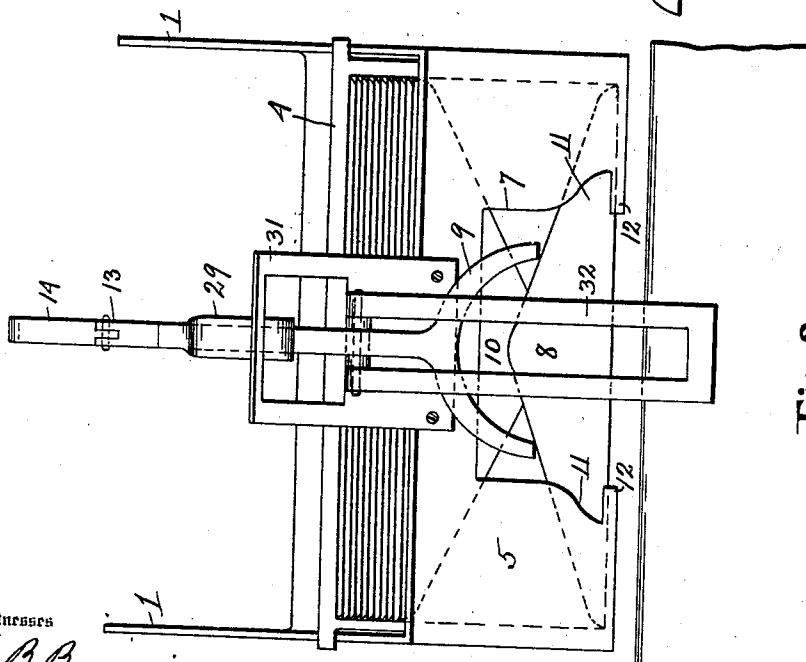


Fig. 3.

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UNITED STATES PATENT OFFICE.

CHARLES L. DAVIS, OF DETROIT, MICHIGAN.

ENVELOP-FEEDER.

1,005,518.

Specification of Letters Patent.

Patented Oct. 10, 1911.

Application filed April 9, 1910. Serial No. 554,425.

To all whom it may concern:

Be it known that I, CHARLES L. DAVIS, a citizen of the United States, residing at Detroit, county of Wayne, State of Michigan, have invented a certain new and useful Improvement in Envelop-Feeders, and declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

This invention relates to envelop feeders.

It has for its object an improved attachment adapted to be used in connection with typewriters or other addressing machines for the purpose of feeding to the platen or printing roll envelopes to be used in the machine, and for the purpose of removing the envelop from the platen after it has been printed and contemporaneously with the insertion of a new envelop upon which the succeeding imprint is to be made.

The drawings are diagrammatic.

In the drawings:—Figure 1, is a side elevation indicating the typewriting machine and showing a side elevation of the attachment. Fig. 2, is a section on a surface parallel with the plane of the side elevation of Fig. 1. Fig. 3, is a front elevation of the storage hopper. Fig. 4, is a cross section through the platen and the primary receiver of the printed envelopes. Fig. 5, is a detail showing in part the end of the storage hopper used where large numbers of envelopes are to be printed. Fig. 6, is a front elevation on a smaller scale of the bearing plate 6 shown on Fig. 1. Fig. 7, is a detail elevation, partly in section, of the spring supported primary actuating bellows and its adjacent parts.

The attachment consists of a hopper in which a number of envelopes are placed and arranged with that edge of each from which the usual sealing flap extends, placed to the bottom of the hopper. A finger engages the envelop under the flap and between the flap and the body part of the envelop and pushes it out from the hopper onto the paper guide behind the platen of the typewriter, and inserts it so far underneath the platen of the typewriter that the rolling platen continues to move the envelop forward, and it is brought around to proper position for the type action on the envelop, after which the

platen continues its feeding movement, and carries it up between guides and it comes to rest with the bottom edge (the edge opposite the flap edge) resting on the top run of the platen and with the envelop itself resting in an inclined position against the rest or against an envelop that has been previously treated where it remains until the operator of the typewriter desires to remove the addressed envelop from its position, or, if the receiving hopper 16 is employed, the finger which feeds the on-coming envelopes grasps the finished envelop and lifts it over the guide plate 6 and drops it into the storage hopper 16, where it remains until the accumulation is removed by some means.

The primary receiving or storage hopper 1 is mounted at the rear of the typewriter on suitable supports 2 properly secured and braced to the typewriter frame and arranged with its bottom 3 inclined to the plane of the table upon which the typewriter rests. The hopper 1 is provided with a follower 4 that rests upon the bottom 3 of the hopper, and maintains the envelops contained in the hopper, and in front of the follower in a sufficiently compact relation so that the foremost of the envelops engages quite closely against the end 5 at the front of the hopper. The lower edge of the end 5 is so far spaced from the lower front end of the bottom 3 of the hopper that an envelop may be slipped through between the end and the hopper bottom; the face of the end 5 is cut away to provide a broad and deep rectangular notch or opening 7 through the plate which is sufficient in extent, along the retaining end 5 from end to end of the notch 7 to allow the flap of the envelop to spring out from the body thereof, as it will do naturally, as envelops are ordinarily made, so that the finger 9 will readily engage underneath the flap 8 and in front of the body 10 of the envelop. Preferably, that edge of the notch that lies downward is provided with side notches 11 triangular in shape that give still greater freedom to the flap 6, while the inward projecting ends 12 below the notch 11 serve to prevent any improper bending or arching of the envelop. A forked expelling finger 9 is pivotally connected to the end 13 of a lever 14, which is itself pivoted to the hopper 1, the pivotal connection being at any convenient place near the rear end of the hopper. As shown

in the drawing the connection is made to a stud 15 that rises from the bottom 3 of the hopper and the lever 14 is so angled or arched that in its rocking or oscillating movement which will be described, it is at all times clear from the envelopes in the hopper. The downward throw of the lever 14 is regulated by an adjusting screw 19 properly maintained with relation to the front of the hopper to regulate the extreme downward throw of the point of the finger 9. The lever 14 is actuated from the key board of the typewriter, and may be actuated by any convenient system of linkages. The system that is shown in connection with this description, and the one which I prefer to use, employs an air conduit and pneumatic bellows, of which the primary actuating bellows 17 is itself actuated by the operator by means of a push key 18 that resembles the ordinary levers of the typewriter, and the lever is shown to be actuated as a suction bellows expanded by the operator against the tension of the spring 20 which serves to collapse it when the finger of the operator is removed from the key 18. The air conduit 21 leads from the suction bellows 17 to the bellows 22 that is secured to the frame-work of the hopper 1 at some position convenient to the lever 14 and a link 23 pivotally connected to the bellows 22, or an extension from the bellows 22 is also pivotally connected to the lever 14 and actuates the lever 14 upon the actuation of the bellows 17. A counter-weight 24 on the projecting rear end of the lever 14 is adjustable to bring the acting parts into a condition of substantial balance.

The envelop, pushed by the finger 9 into feeding relation between the paper guides 25 and the platen 26, is seized by the platen and fed forward when the platen is turned by the operator in the usual way, and brings the envelop to a position for the action of the type thereon, after which the continued movement of the platen carries the envelop behind the guide 27 and against the rest 28 that is located in an inclined position above the platen and somewhat to the rear of the upper run thereof; the envelop takes a position against this rest with an inclination that is practically parallel to that which it occupied in the hopper 1. If the final storage hopper 16 is used, a pair of split fingers 29 are secured to the front of the finger 9 in relation to engage between their spreading members and the top edge of the envelop 10^a when the front end of the lever 14 is depressed in the act of inserting a following envelop under the platen. The split and spreading fingers 29 are of light, flexible, resilient material and are sufficiently rigid to maintain their hold on the envelop and draw it up from under the pressure plate 6 until the bottom of the envelop clears the top

of the pressure plate 6, and also until the now top edge of the envelop engages the projecting bar 31, which stops the envelop and allows the fingers 29 to draw away from the envelop and release it when it drops on the now top or forward surface of the plate 6, and slides into the hopper 16. The plate 6 is in pivotal relation with the rear of the hopper 16, and serves not only to press back the envelop against the rest 28, but after the envelop has been transferred to a position above the plate 6 and has dropped and slid partly down it serves to continue the travel of the envelop into the hopper 16 as it is itself lifted by the next succeeding envelop in process of transfer. The fingers 29 travel clear of the plate 6 which is deeply notched between its ends and at the notched part forms no obstacle to the fingers 29, although its end parts 6^a extend back and project over the envelop resting against the rest 28.

The storage hopper 16 is not necessarily used with the remainder of the attachment. It is preferably employed where quantities of envelops are to be addressed because it is capable of containing a larger number of envelops than can be stored at one time on the machine without it. The machine without this storage hopper is shown in Fig. 4, which is sufficient for the storage of a few envelops, 30 or 40, and this may be removed by hand and the use of the storage hopper 16 entirely omitted if desired.

What I claim is:—

1. A feeding device for typewriters, having in combination a hopper, an oscillatory expelling member engaging across the delivery end thereof, a lever actuating the same, a counterweight mounted on the end of said lever, pneumatically controlled actuating means connecting said arm to the key board of the typewriter, and a key controlling said pneumatic actuating means.
2. A feeding device for typewriters, having in combination a hopper, an expelling member adapted to successively remove individual envelops from the delivery end of said hopper, a lever pivotally supported near its central point and adapted to actuate the same, an adjustable counter-weight slidable on the arm of said lever, pneumatic actuating means connecting said arm to the key board of the typewriter, and a key controlling said pneumatic means.
3. A feeding device for typewriters, having in combination a hopper, an expelling member, a lever adapted to actuate said expelling member, a bellows actuating said lever, a second bellows adjacent the key board of the typewriter, a key adapted to actuate said second bellows and a pneumatic tube connecting the two bellows.
4. In a typewriting machine, the combination with a platen, of means for feeding

sheets and means above the platen to retain the written sheets supported on the periphery of the platen, substantially as described.

5 5. The combination of a typewriter provided with a rest adapted to catch the printed matter and also provided with a feeding device having an oscillatory expelling member, a receiving hopper, means carried on said expelling member for grasping and
10 lifting said printed matter, and means for dropping said printed matter into said hopper.

6. The combination of a typewriter provided with a rest adapted to catch the printed matter and also provided with a feeding
15 device having an oscillating expelling member, a receiving hopper, means carried by said expelling member for grasping and lifting said printed matter from said rest,
20 means for detaching said printed matter from said lifting means and means for guiding said printed matter into said hopper, substantially as described.

7. In combination with a typewriter provided with a rest adapted to catch the printed matter and also provided with a feeding
25 device, a receiving hopper, means for lifting said printed matter from said rest, means for detaching said printed matter from said lifting means and a pivoted guide disposed
30 on either side of the path of the lifting

means and under the detaching means and adapted to be moved out of the path of the returning expelling member and to return to position, substantially as described.

8. In a typewriting machine, in combination with a rest above the platen periphery adapted to retain the written sheets supported on the periphery of the platen, a feeding device having an oscillating expelling member, a receiving hopper, means carried on said expelling member for grasping and lifting the written sheets, means for detaching the same from the expelling member and means for guiding the same into the
35 40 45 hopper, substantially as described.

9. In a typewriting machine, in combination with a platen a rest above the platen adapted to retain the printed sheets, a feeding device having an expelling member, a
50 receiving hopper, fingers carried by said expelling member adapted to lift the written sheets from the rest, means for detaching said written sheets from said fingers and means for guiding said sheets into the hopper, substantially as described.

In testimony whereof, I sign this specification in the presence of two witnesses.

CHARLES L. DAVIS.

Witnesses.

CHARLES F. BURTON,
VIRGINIA C. SPRATT.