

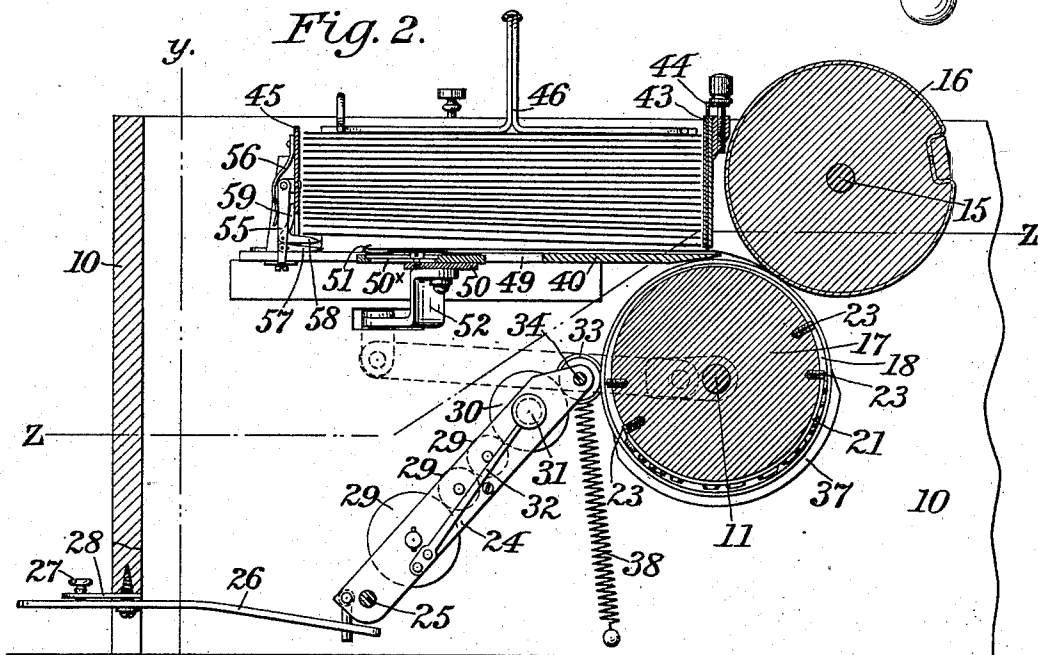
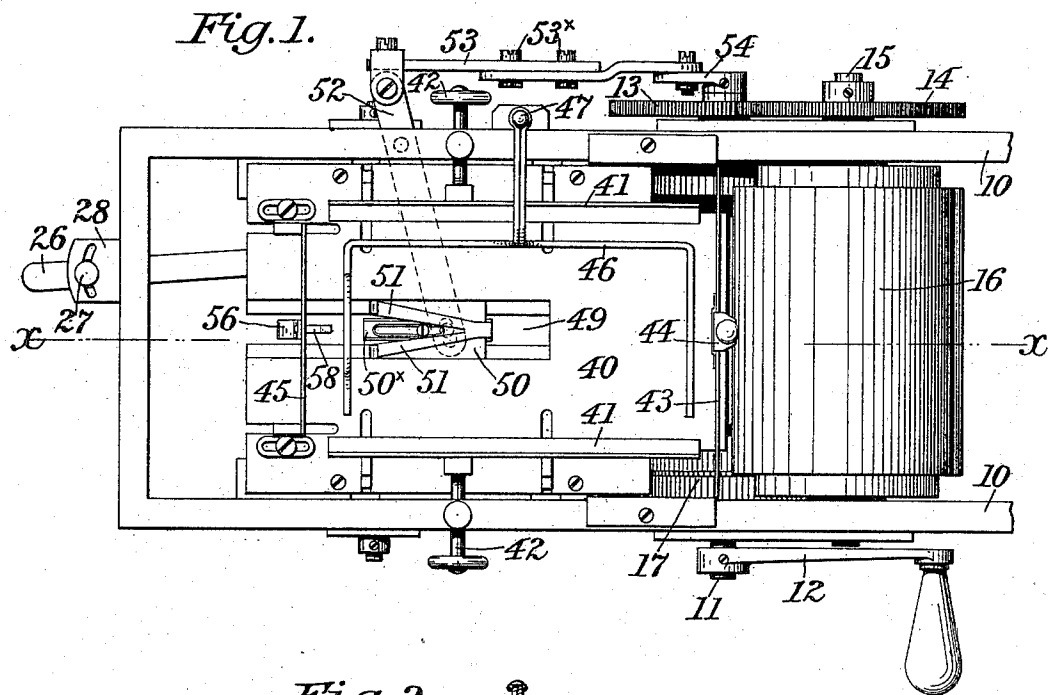
(No Model.)

3 Sheets—Sheet 1.

J. H. REINHARDT.
ENVELOPE PRINTING MACHINE.

No. 537,903.

Patented Apr. 23, 1895.



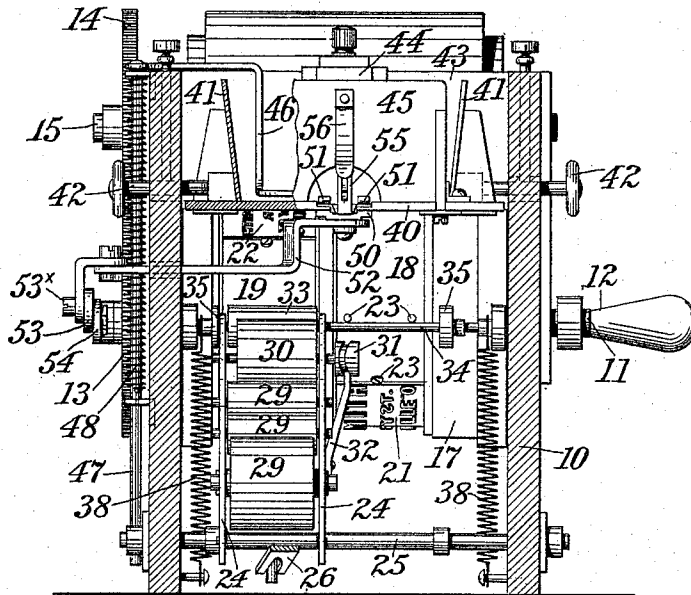
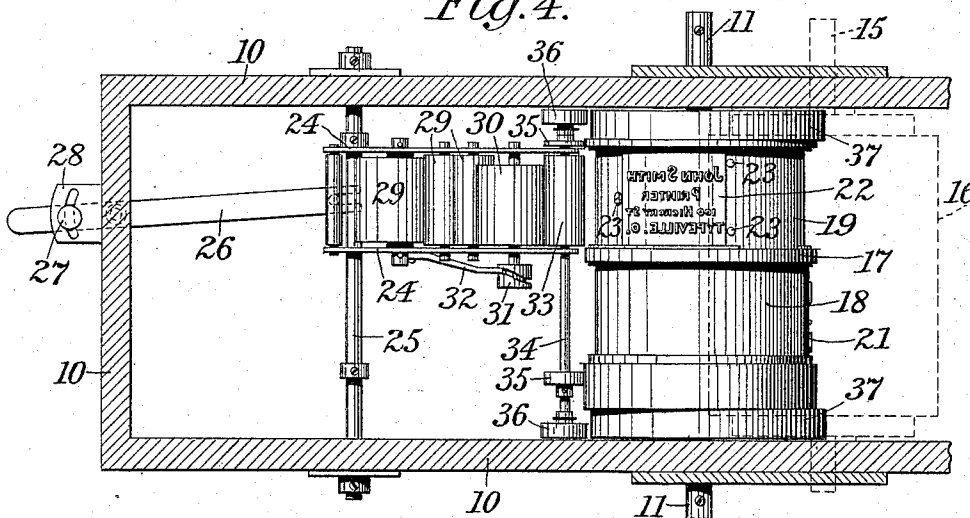
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Fig. 3.*Fig. 4.*

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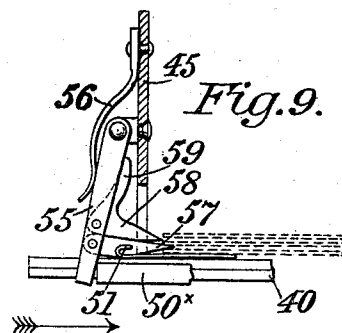
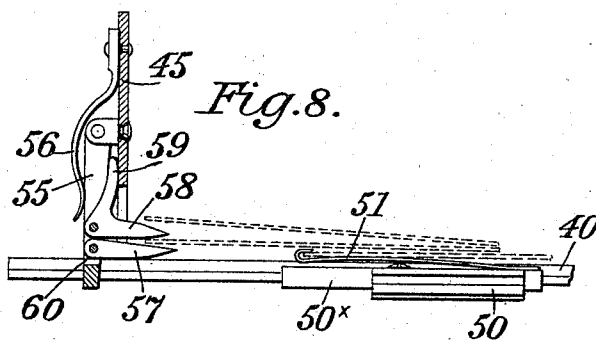
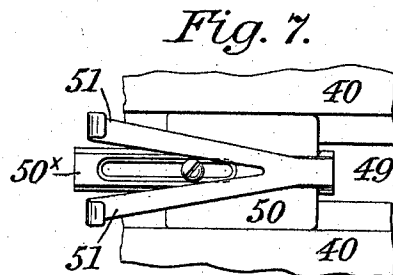
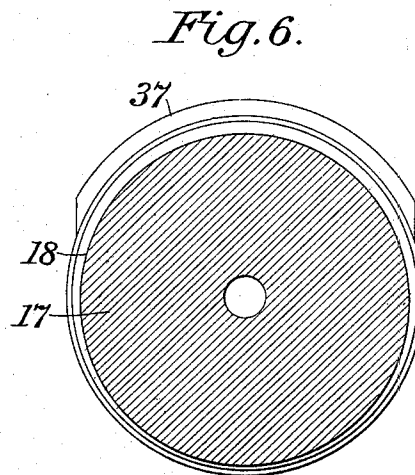
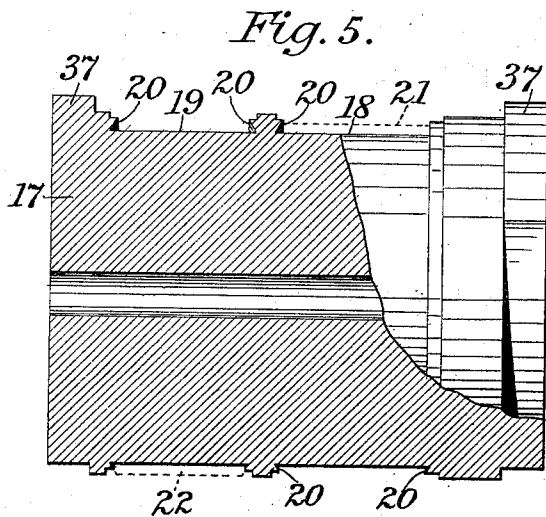
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3 Sheets—Sheet 3.

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UNITED STATES PATENT OFFICE.

JAMES H. REINHARDT, OF NEWARK, NEW JERSEY.

ENVELOPE-PRINTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 537,903, dated April 23, 1895.

Application filed July 11, 1894. Serial No. 517,210. (No model.)

To all whom it may concern:

Be it known that I, JAMES H. REINHARDT, of Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Envelope-Printing Machines; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the numerals of reference marked thereon, making a part of this specification.

The general object of this invention is to produce a machine for the purpose of printing addresses or return cards upon envelopes which shall be of comparatively small cost, shall be effective and which can be operated without special knowledge of the art of printing, whereby it can be sold to persons or firms who have occasion from time to time to use a considerable number of envelopes with the same address thereon or with a return card or business card thereon.

The invention relates particularly to the means for feeding the envelopes one by one to the printing surface; to the means whereby the machine can be adapted readily for printing either an address in the usual position or a return card or similar matter in the usual position thereof, and to the means for applying ink to the printing surface.

The several features of construction wherein the invention consists will be more particularly pointed out hereinafter.

In the accompanying drawings, Figure 1 represents a plan view of an envelope printing machine which embodies my improvements, the receiving end of the box or casing being broken off. Fig. 2 is a longitudinal section on the line $x-x$ of Fig. 1. Fig. 3 is a transverse section on the line $y-y$ of Fig. 2. Fig. 4 is a horizontal section on the irregular plane indicated by the line $z-z$ of Fig. 2, the impression cylinder being removed. Fig. 5 is a detail view, partly in longitudinal section and partly in elevation, of the type cylinder. Fig. 6 is a transverse section of the same. Fig. 7 is a detail, plan view of the feeding slide and fingers. Fig. 8 is a detail view, partly in vertical section and partly in elevation, of the feeding devices; and Fig. 9 is a similar view showing the parts in different positions.

As represented in the drawings, these several parts of the mechanism are supported by a box or casing 10, in the side walls of which is journaled a shaft 11 having fixed thereon an actuating crank 12 and a gear 13 which meshes with a corresponding gear 14 upon the end of a shaft 15, journaled in the side walls of the casing 10 parallel with the shaft 11. The shaft 15 has fixed thereon an impression cylinder 16 while a type or printing cylinder 17 is fixed upon the shaft 11. As the cylinder 17 is of peculiar construction in order that the machine may be adapted with little difficulty for printing either an address or a return card I will proceed to describe it. The cylinder is formed with two circumferential, eccentric recesses 18 and 19 having undercut sides, as indicated at 20 in Fig. 5, to form ways in which the electrotypes or plates 21 and 22 are free to move. The plate 21 bears the type characters required to form the address and the plate 22 bears those required for the return card.

If the machine is used for printing an address upon a number of envelopes the plate 21 is moved to the highest part of the eccentric recess so that the type characters thereon may be brought to the plane of print while the plate 22 is moved to the lowest part of the recess 19 so that its type characters are retired from the plane of print. The plates may be held in position, if necessary, by pins or screws 23 driven into the body of the cylinder, as indicated in Figs. 2, 3 and 4. As represented in the drawings, the plate 21 is in the lowest part of its recess and the plate 22 is in the highest part of its recess, whereby the machine is adapted for printing a return card near one corner of the envelope.

In order to prevent a waste of ink and the possible besmirching of the type cylinder with ink it is desirable that the inking devices should be capable of being shifted from one side to the other according to the use of the machine for printing addresses or return cards. Accordingly, I have mounted them in a frame 24 which is free to slide from one side to the other upon its pivot shaft 25, a lever 26 engaging the frame at one end and having its other end extended through the end of the casing 10 for the convenience of the operator. The lever may be provided with

a locking-screw 27 which co-operates with a slotted plate 28 for the purpose of retaining the inking devices in the position in which they may have been set. The inking devices
 5 comprise a fountain or one or more ink rollers 29, 29, journaled in the side bars of the frame 24, a distributing roller 30, having upon the end of its shaft a grooved cam 31 which co-operates with a fixed finger 32 for the purpose of reciprocating the roller longitudinally
 10 as it rotates, and an inking roller 33 which applies the ink to the type surfaces. The roller 33 is mounted loosely on a long shaft 34 which has stops 35 to limit the lateral movement of the frame and disks 36 to bear upon
 15 cams 37 formed on the cylinder 17 out of line with the type characters, whereby the inking roller is pushed away from the cylinder after the type surface has passed beyond it so that
 20 the cylinder itself may be kept clean. Springs 38 may be attached to the ends of the shaft 34 to hold the inking roller toward the type cylinder.

The envelopes to be printed are placed in
 25 a feed box which has a slotted bottom 40, movable sides 41 carried by adjusting pins 42, an end-piece 43 having a vertically movable gate 44 which is adjusted according to the thickness of the envelopes to permit only the bottom one of the pile to escape, and an adjustable end-piece 45. The envelope may be
 30 pressed down in the box by a weight or by a wire frame 46 carried by a rod 47 and acted upon by a spring 48. In a slot 49 in the bottom 40 is supported a slide 50 having hooked spring fingers 51 which are adapted to engage the rear edge of the bottom envelope of the pile and to push it forward until its forward edge enters the bite of the cylinders 16 and 17. The
 40 slide is connected to one end of a lever 52 which is pivoted to the casing 10. The other end of the lever is connected by a rod 53 to a crank 54 fixed to the shaft 11, whereby the slide 50 is reciprocated to and fro at each rotation of the cylinder 17. The fingers 51 are
 45 carried by a bar 50^x adjustable upon the slide 50 and the connecting rod 53 is made in two parts which are adjustably secured together by bolts 53^x, so that the feed mechanism is
 50 readily adapted to envelopes of different lengths. In order to insure the engagement of the fingers 51 with the bottom one only of the pile of envelopes the end plate 45 might be rearwardly inclined and the envelopes be
 55 piled against it so that only the bottom one would be in position to be engaged by the fingers, but the device represented in Figs. 8 and 9 is found to be more certain in its action. This device comprises a bar or frame 55 which
 60 is pivoted to the end plate 45 and is pressed toward the envelopes by a spring 56, and two dogs 57 and 58, which are pivoted to the arm or frame 55, both of the dogs having pointed ends and the dog 58 being shorter than the
 65 other. The dog 58 has an arm 59 which is held normally by the weight of the dog against the end plate 45. The dog 57 is held by a shoulder

60 from dropping below the position indicated in Fig. 8. As the slide 50 moves to the rear to and through the position shown in
 70 Fig. 9 the bar 50^x strikes the arm 55 and pushes it to the rear, allowing both dogs 57 and 58 to drop to their lowest position and permitting the bottom envelope, which before
 75 had rested upon the dog 58 or upon the dog 57, to slip off and to rest upon the floor of the feed-box. As the slide moves forward the arm 55 is swung forward by its spring and the arm
 80 59 of the dog 58 strikes the plate 45, whereby the dog is tilted, as indicated in Fig. 8, to raise all the envelopes above it so as to take their weight from the envelope or envelopes below. As the slide continues its forward movement the fingers 51 engage the bottom envelope and
 85 push it forward until it is engaged by the cylinders 16 and 17. The dog 58 is made shorter than the dog 57 and has its end beveled off on the under side about the thickness of an envelope so that it may enter between the second and third envelopes and separate them
 90 to render the dropping of the second at the next movement of the parts more certain. It may sometimes happen that the bottom envelope will be picked up by the dog 57, in which case the second envelope will be lifted by the
 95 dog 58 and the spring fingers 51, being relieved of pressure, will rise sufficiently to engage the bottom envelope.

In preparing the machine for use one stereotype plate, electrotypes or whatever
 100 other form of type-bearing or printing plate is employed, is shifted in the eccentric recess in the cylinder 17 until it is brought to the proper position for printing, and the other is retired in a similar manner. The inking devices
 105 are then shifted into line with the required printing block or plate and the envelopes are placed in the feed box. The machine is then ready for operation and upon each rotation of the crank 12 the bottom envelope of the pile is drawn forward by the
 110 fingers 51 into the bite of the cylinders by which it is grasped and carried forward, receiving the imprint in its passage.

I claim as my invention—

1. In a machine for printing envelopes and the like, a printing cylinder having an eccentric, circumferential recess in combination with a type block mounted in said recess, whereby the type block can be retired from
 120 the plane of print without being removed from the cylinder, substantially as shown and described.

2. In a machine for printing envelopes and the like, the combination of a printing cylinder having two eccentric, circumferential recesses, type-blocks mounted in said recesses, each being movable from the plane of print, and an inking device movable laterally and adapted to be shifted from the line of one
 130 type-block to the other, substantially as shown and described.

3. In a machine for printing envelopes and the like, the combination of a printing cyl-

inder having two eccentric, circumferential recesses, type-blocks mounted in said recesses, each being movable from the plane of print, a frame mounted to swing upon a rod and
5 movable laterally thereon, and inking rollers carried by said frame, whereby either type block can be inked at will, substantially as shown and described.

4. The combination of a feed-box for en-
10 velopes and the like having a slotted bottom, a slide adapted to move to and fro in the slot in said box and having fingers to engage the bottom envelope, means to actuate said slide, a bar pivoted to the end of said box and nor-
15 mally pressed forward but adapted to be thrust backward by the movement of the slide, and a dog pivoted to said bar and extending within the box, said dog having an arm to contact with the end of the box and
20 rock said dog upward as the bar swings forward, substantially as shown and described.

5. The combination of a feed box for en-

velopes and the like having a slotted bottom, a slide adapted to move to and fro in the slot
25 in said box and having fingers to engage the bottom envelope, means to actuate said slide, a bar pivoted to the end of said box and normally pressed forward but adapted to be thrust backward by the movement of the
30 slide, a dog pivoted upon said bar and extending within the box, said dog having an arm to contact with the end of the box and rock said dog upward as the bar swings for-
35 ward, and a second dog pivoted to the bar below the first dog, substantially as shown and described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JAMES H. REINHARDT.

Witnesses:

A. N. JESBERA,

A. WIDDER.