

(No Model.)

2 Sheets—Sheet 1.

A. A. RHEUTAN.  
ENVELOPE MACHINE.

No. 248,564.

Patented Oct. 18, 1881.

FIG. 1.

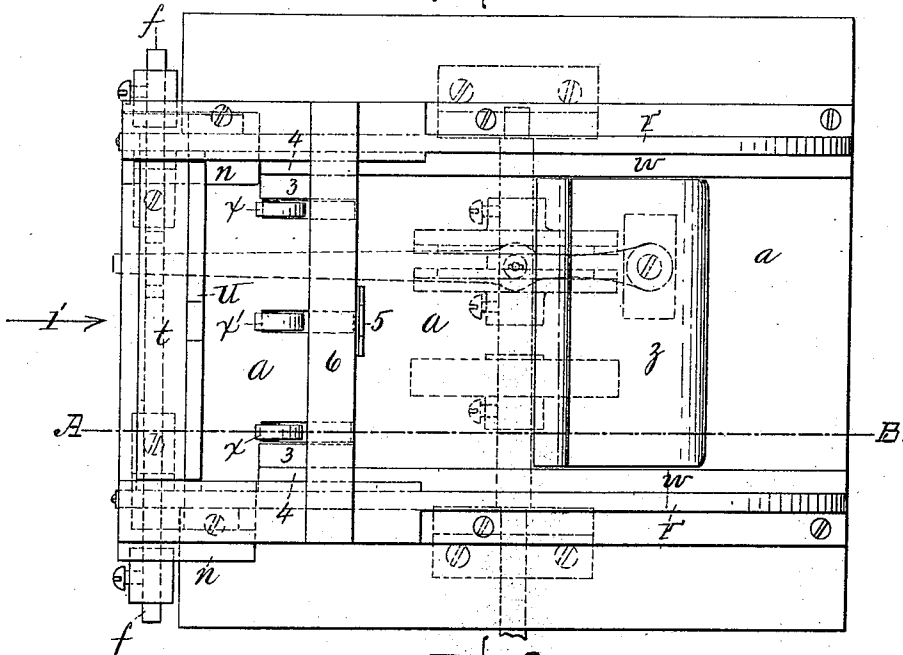
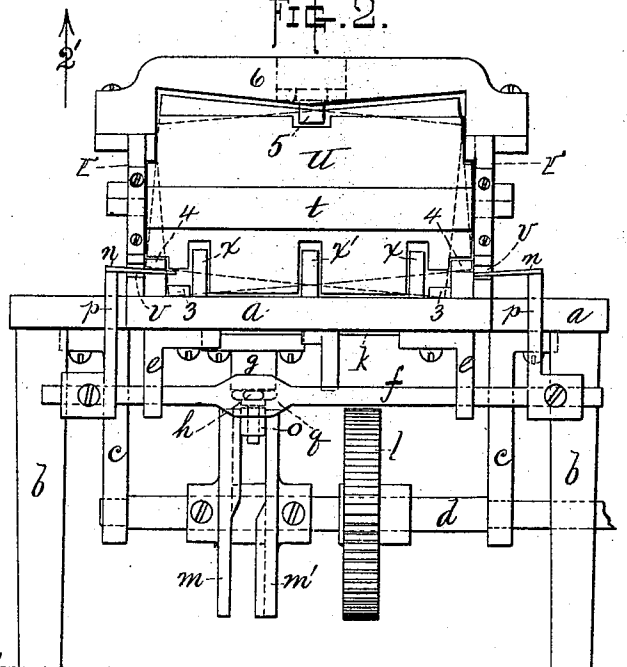


FIG. 2.



Witnesses,

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Albert A. Barker.

Inventor,  
Abram A. Rheutan.

(No Model.)

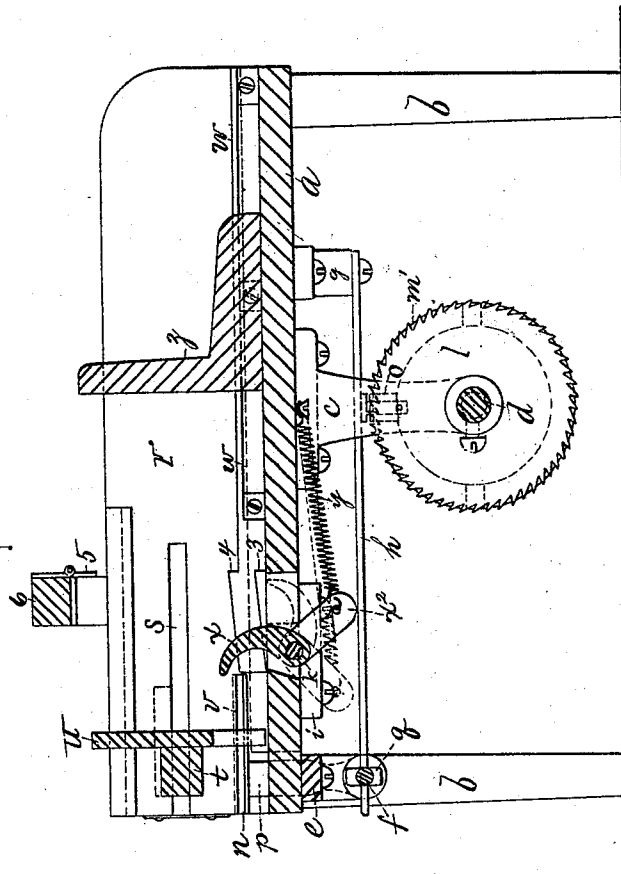
2 Sheets—Sheet 2.

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FIG. 3.



Witnesses,

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# UNITED STATES PATENT OFFICE.

ABRAM A. RHEUTAN, OF WORCESTER, MASSACHUSETTS, ASSIGNOR TO  
WADE H. HILL, OF SAME PLACE.

## ENVELOPE-MACHINE.

SPECIFICATION forming part of Letters Patent No. 248,564, dated October 18, 1881.

Application filed June 6, 1881. (No model.)

*To all whom it may concern:*

Be it known that I, ABRAM A. RHEUTAN, of the city and county of Worcester, and State of Massachusetts, have invented certain new and useful Improvements in Envelope-Counting Machines; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and in which—

Figure 1 represents a top or plan view of so much of an envelope-counting machine as is necessary to illustrate my present invention. Fig. 2 represents an end view of the machine shown in Fig. 1, looking in the direction indicated by arrow 1', same figure; and Fig. 3 represents a vertical longitudinal section through the machine, taken on line A B, Fig. 1, looking in the direction indicated by arrow 2', same figure.

My invention relates to that part of the mechanism of an envelope-counting machine used for the purpose of placing the envelopes in distinct packages after they are folded and delivered to the counting-machine, and is designed to be used upon any envelope-folding machine.

It consists of the ordinary box or trough into which the envelopes are delivered, with two horizontally-sliding plates arranged at each side of the rear end of the same upon a horizontal sliding shaft, for the purpose of giving to each alternate package of envelopes opposite inclined positions. It also consists in the mechanism employed for operating the aforesaid plates, as will be hereinafter more fully set forth.

To enable those skilled in the art to which my invention belongs to make and use the same, I will proceed to describe it more in detail.

In the drawings, the part marked *a* represents the bed or bottom of the box, which can be attached to the frame of an envelope-folding machine in any suitable manner. In this instance it is represented as being supported upon legs or standards *b* at each corner of the same.

To the bottom of bed *a* are secured the following parts: large hangers *c c*, upon which the main shaft *d* is hung, being arranged to

turn in suitable bearings formed in the lower ends of said hangers; small hangers *ee*, in the lower ends of which horizontal shaft *f* slides back and forth laterally; bearing *g*, to which the inner end of crank-lever *h* is hinged, and bearing-pieces *i i*, in which small horizontal shaft *k* is arranged to partially turn or rock back and forth, as hereinafter described.

Upon the main shaft *d* are secured the ratchet or counting wheel *l* and cam-wheels *m m'*, which latter operate the sliding shaft *f* and its top plates, *n n*, laterally by means of oscillating lever *h* and roll *o*.

Plates *n n* are formed or secured upon the upper ends of vertically-arranged bars *p p*, which in turn are secured to sliding shaft *f*. The outer end of lever *h* is in this instance passed through a slot formed in the enlarged portion *q* of sliding shaft *f*, although any other suitable connection may be employed, if desired.

Roll *o* is fitted to turn upon a stud formed or secured upon the lower side of lever *h*, and is arranged between the cam-wheels *m m'*, thereby imparting an alternate lateral motion to shaft *f* and its top plates, *n n*, when said cam-wheels are in operation, by each cam being cut away upon the inner side half-way around the same, and arranging them in reversed positions, as represented in Fig. 2 of the drawings.

Upon the top of bed *a* are secured side pieces, *r r*, which form the sides of the box, and through these side pieces are cut grooved ways *s s*, in which guide *t* (to which the pusher-plate *u* is secured) moves back and forth. Grooves or slots *v* are also formed in said side pieces to allow the top plates, *n n*, to pass through when operated. Said top plates, *n n*, are secured at their outer edges to upright supports *p p*, and are inclined downward slightly toward the inside of the machine. They are of sufficient width to extend in beyond the inner surface of side pieces, *r r*, one-half inch, more or less, when the inner edges of upright bars *p p* are brought in contact with or nearly to the outer edges of said side pieces, *r r*, and their lengths are from the rear ends of the side pieces to nearly over rocking shaft *k*. If preferred, instead of the top plates, *n n*, being formed or se-

cured upon the tops of upright supports  $p$ , said supports may be dispensed with, and the plates moved in and out, as described, by raising sliding shaft  $f$  up a sufficient distance to secure the plates directly to said shaft, or in any other similar and convenient manner.

The cams  $m$   $m'$  are of the proper form to give to the plates  $n$ , through lever  $h$ , roll  $o$ , shaft  $f$ , and upright bars  $p$ , the before-described lateral motion when the machine is in operation.

Upon the inner sides of side pieces,  $r$   $r$ , near the bottom, are secured ways  $w$   $w$ , which extend from the ends of plates  $n$  forward the full length of said side pieces, and projecting in toward the center of the box one-half inch, more or less, as desired. The tops of said ways  $w$  are arranged to come upon a line, or nearly so, with the tops of plates  $n$ , so that the envelopes may readily slide along from the surfaces of the latter to those of the former, when pushed forward by the guide and pusher-plate  $t$ .

Rocking shaft  $k$  is provided with projecting arms or fingers  $x$   $x'$ , which extend up through and above bed  $a$ , for the purpose of retaining the envelopes in position as they are fed into the machine, and moved forward by the pusher-plate.

Upon the under side of the center finger,  $x'$ , and extending downward, is formed or secured a crank-arm,  $x^2$ , by means of which and spring  $y$  the fingers are sprung back when pushed forward by the envelopes, as hereinafter described.

The pusher-plate  $u$  is cut out upon its under side to allow it to pass over the ways  $w$ , and by the fingers  $x$   $x'$ , without moving the latter when there is no envelope in front of the pusher-plate.

Operation: The guide and pusher-plate  $t$  are connected through suitable mechanism with the main shaft of the envelope-folding machine, and have imparted to them a forward and backward movement with each revolution of said shaft of the folding-machine. The envelopes, after being completed in the folding-machine, are conducted through suitable guideways or feeding mechanism, and delivered in a vertical position in front of and between the pusher-plate  $u$  and fingers  $x$   $x'$ , one end of the envelopes resting upon the bed of the box, while the other end rests upon one of the plates  $n$ , which has previously been moved forward to receive them. The envelopes are then pushed forward by the forward movement of the slide and pusher-plate  $t$ , and brought in contact with the fingers  $x$   $x'$ , which are consequently forced forward and down, causing rocking shaft  $k$  to turn part way around in its bearings. By the partial turning of rocking shaft  $k$ , as above described, motion is imparted to crank-arm  $x^2$  upon the center finger,  $x'$ , and ratchet or count-

ing wheel  $l$  is turned one notch or tooth forward.

Any suitable and convenient mechanism may be used for connecting crank-arm  $x^2$  with the ratchet-wheel  $l$ , whereby the movement imparted to said crank-arm, through the fingers  $x$   $x'$ , rocking shaft  $k$ , slide and pusher-plate  $t$ , and the envelopes, would cause the ratchet-wheel  $l$  to move one notch for each and every envelope moved forward by said slide and pusher-plate. As the envelopes are moved forward by the slide and pusher-plate, they are carried past the circle described by the fingers  $x$   $x'$ , and beyond the stops 3 4 5, arranged on the ways  $w$ , bed  $a$ , and cross-bar 6, which prevent the envelopes from returning or falling back when the pusher-plate moves back. The envelopes being held by said stops, the fingers  $x$   $x'$  are thereby enabled to return and assume their upright positions, ready for the next envelope. The envelopes are retained in their upright positions after passing stops 3 4 5 by means of the usual sliding weight,  $z$ , which slides back as fast as the envelopes are moved forward past said stops.

The number of envelopes to a package is governed by the number of teeth in ratchet-wheel  $l$ . The usual number being twenty-five, the ratchet-wheel will therefore be provided, as in this instance, with fifty teeth, as the positions of the envelopes are changed at each half-revolution of said ratchet-wheel  $l$ , by cams  $m$   $m'$  being arranged in reversed positions, as before stated, and shown in Fig. 2 of the drawings.

As the envelopes are moved forward off of plates  $n$ , they are retained in their inclined positions by means of the ways  $w$ , one end of each alternate package being supported upon the opposite way to that upon which the others are supported, while their opposite ends rest upon the bed of the box near the way, and are so held in position to the full extent of the box, or until removed by the operator.

Lines 7 and 8, Fig. 2, represent the inclined positions of the envelopes after they have been pushed by the stops 3, 4, and 5, as before described.

Having described my improvements in envelope-counting machines, what I claim therein as new and of my invention, and desire to secure by Letters Patent, is—

1. In an envelope-counting machine, laterally-moving plates  $n$ , arranged and operating substantially as and for the purposes set forth.

2. In an envelope-counting machine, the combination of plates  $n$ , their vertical supporting-arms  $p$ , and sliding shaft  $f$ , substantially as and for the purposes set forth.

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Witnesses:

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