(No Model.) 4 Sheets—Sheet 1.

A. A. RHEUTAN.

MACHINE FOR COUNTING AND PACKING ENVELOPES.

No. 350,505. Patented Oct. 12, 1886.

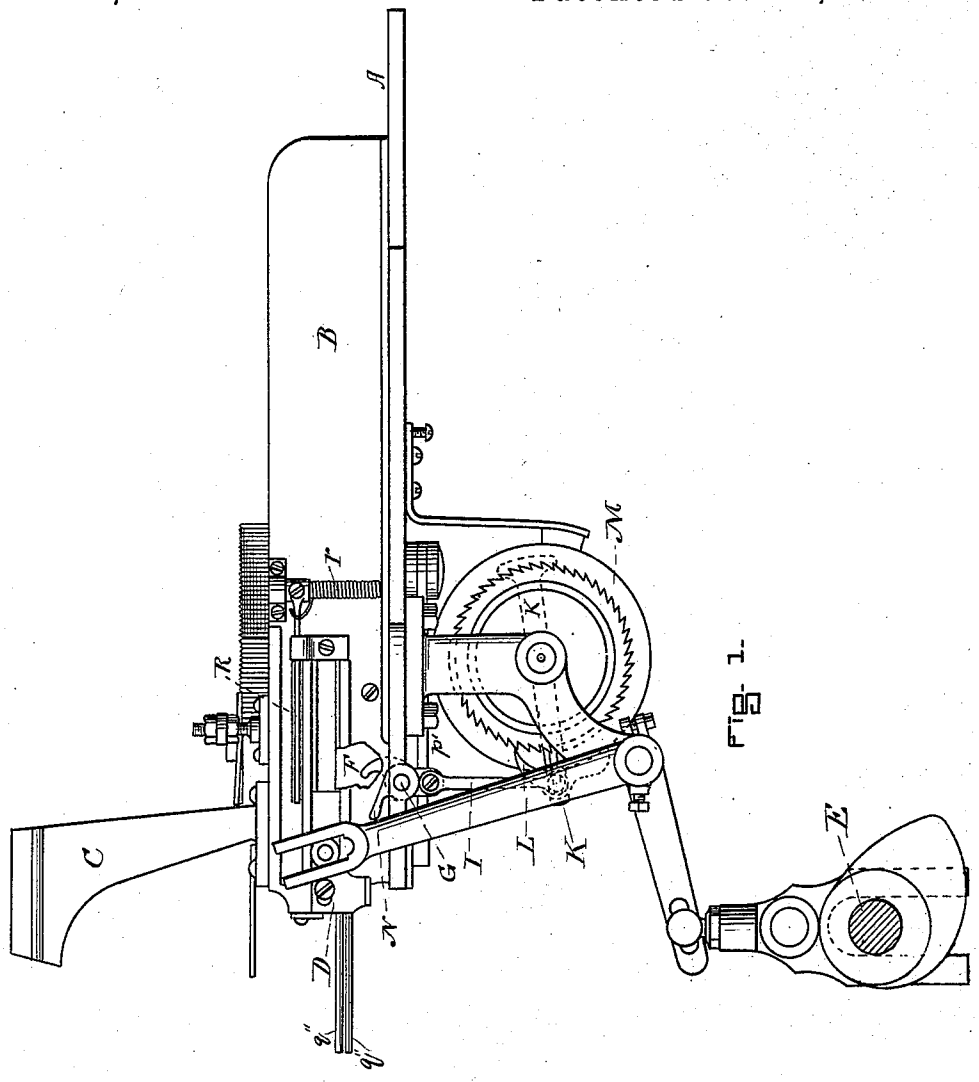


FIG. 1.

WITNESSES.

J. Henry Taylor.

James F. Bligh

INVENTOR.

Abram A. Rheutan

by Alex. P. Browne

attorney

N. PETERS, Photo-Lithographer, Washington, D. C.

(No Model.) 4 Sheets—Sheet 2.

A. A. RHEUTAN.

MACHINE FOR COUNTING AND PACKING ENVELOPES.

No. 350,505. Patented Oct. 12, 1886.

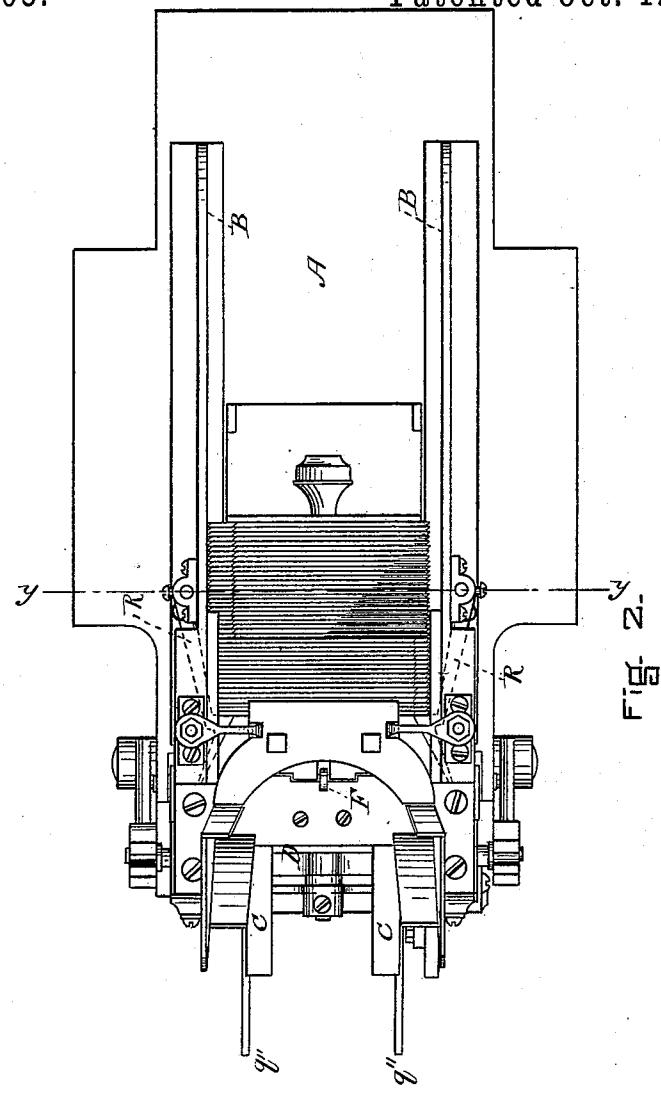


Fig. 2.

WITNESSES.

J. Henry Taylor.

James F. Bligh

INVENTOR.

Abram A. Rheutan

by Alex P. Browne

attorney

N. PETERS, Photo-Lithographer, Washington, D. C.

(No Model.) 4 Sheets—Sheet 3.

A. A. RHEUTAN.

MACHINE FOR COUNTING AND PACKING ENVELOPES.

No. 350,505. Patented Oct. 12, 1886.

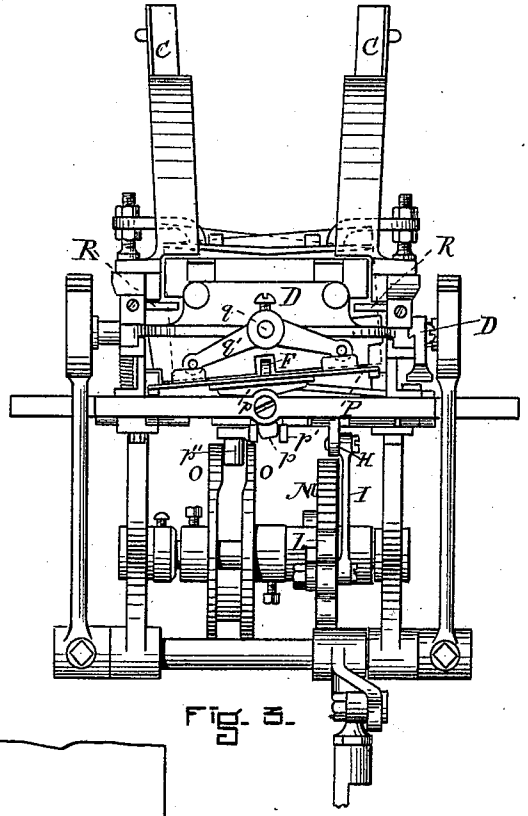


Fig. 3.

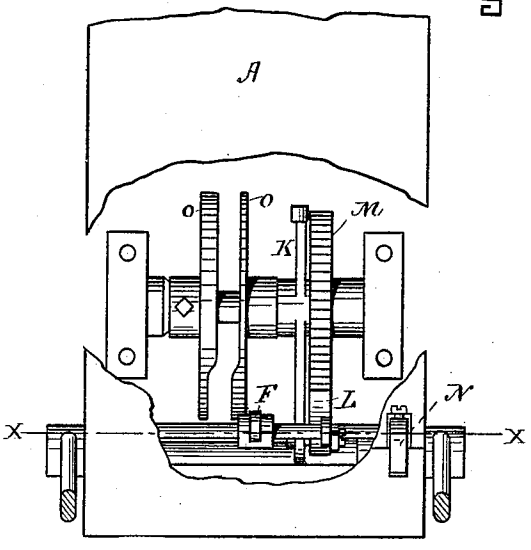


Fig. 4

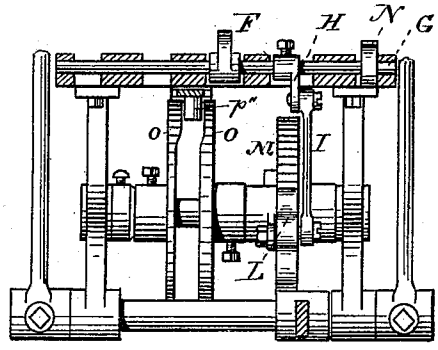


Fig. 5.

WITNESSES.

J. Henry Taylor

James F. Bligh.

INVENTOR.

Abram A. Rheutan

by Alex. P. Browne

attorney

N. PETERS, Photo-Lithographer, Washington, D. C.

(No Model.) 4 Sheets—Sheet 4.

A. A. RHEUTAN.

MACHINE FOR COUNTING AND PACKING ENVELOPES.

No. 350,505. Patented Oct. 12, 1886.

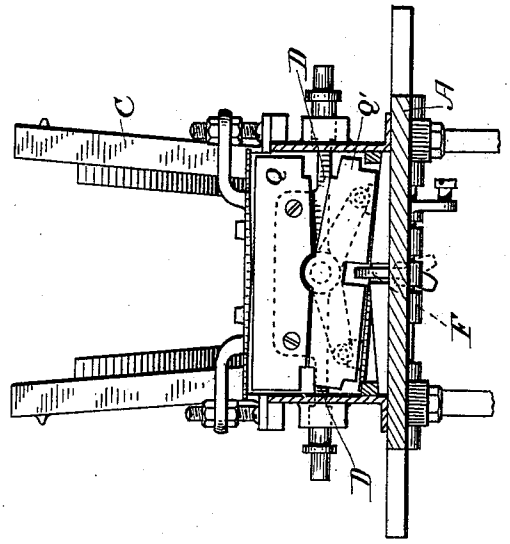


Fig. 7.

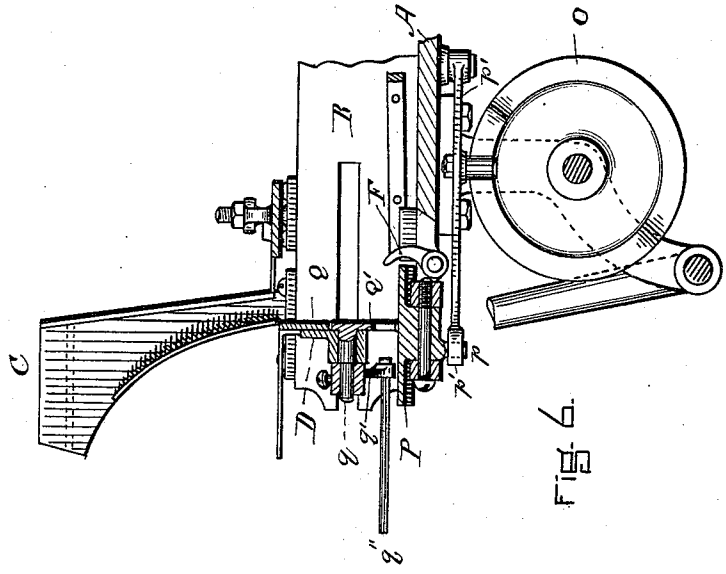


Fig. 6.

WITNESSES:

J. Henry Taylor.

James F. Bligh.

INVENTOR

Abram A. Rheutan

BY

Alex. P. Browne

ATTORNEY

N. PETERS, Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

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

MACHINE FOR COUNTING AND PACKING ENVELOPES.

SPECIFICATION forming part of Letters Patent No. 350,505, dated October 12, 1886.

Application filed March 12, 1885. Serial No. 158,524. (No model.)

To all whom it may concern:

Be it known that I, ABRAM A. RHEUTAN, of Worcester, in the county of Worcester and State of Massachusetts, a citizen of the United States, have invented certain new and useful Improvements in Machines for Counting and Packing Envelopes, of which the following is a specification.

My present invention relates to improvements in machinery of the character shown in Reissue Letters Patent No. 9,755, granted to me June 14, 1881; and it has for its object to provide improvements in such machinery.

In the accompanying drawings, Figure 1 is a side elevation of a machine in which my present improvements are embodied in the form now best known to me. Fig. 2 is a plan view of the same. Fig. 3 is a back end elevation. Fig. 4 is a top plan view of a portion of the machine, and Fig. 5 is a section view of the same portion of the machine on a vertical plane through the line *x x* of Fig. 4. Fig. 6 is a view in section of the machine on a vertical plane through the trough of the machine, behind the double pusher-plate hereinafter described, and illustrates its construction. Fig. 7 is a vertical section of the upper portion of the machine on the central line of Fig. 3, illustrating the construction and location of the lever which operates the tilting table, and also the construction of the pusher-plate, as hereinafter described.

The first feature of improvement over what is shown in my reissue patent above mentioned is in the simplification of the mechanism whereby the envelope in the course of its passage through the machine is caused to actuate the counting mechanism. As is set forth in my reissue patent, the counting mechanism is not directly connected to the main source of power by which the machine is driven, but is so arranged relatively thereto that the passage of an envelope causes the counting mechanism to be brought into operative connection with, and thus to be operated by, the main source of power, the function of the envelope being merely to actuate some part whereby the counting mechanism is brought into connection, as described. In my former patent I employed a reciprocating bar connected with and constantly driven by the main shaft of the machine, and I caused the envelope in its passage through the machine to bring into the path of motion of this reciprocating bar some part which operated a train of mechanism connecting with and moving the counting-wheel. In my prior patent the sole function of this reciprocating bar was to actuate the counting mechanism in the manner I have just described. In my present machine I have dispensed altogether with this reciprocating bar, or with any special reciprocating part, thereby reducing the number of working parts and simplifying the machine throughout.

In the drawings, A represents the bed of the machine, and B the walls which form the trough in which the envelopes are packed.

C is a chute or feed by means of which the envelopes enter the machine.

D represents the part which moves the envelope forward through the machine, which part I shall call the "pusher." It is connected by a crank or lever connection, as shown, with a main shaft, E, or other source of power. This pusher is arranged to slide in slots in the side walls, B, (see Fig. 1,) and has a regular forward and backward motion at each revolution of the main shaft E, to push the envelopes forward through the machine as they come from the chute.

F is a finger projecting into the space traversed by the envelope as it passes through the machine. The pusher D is slotted opposite this finger, so as to pass freely by it, except when an envelope lies between the pusher and the finger. In that case the envelope covering the slot is forced against the finger and moves it.

Thus far the mechanism is substantially similar to that shown in the reissue patent. The finger F is secured to a shaft, G, (see Fig. 5,) and to the same shaft is attached a crank, H, carrying a connecting-rod, I, which operates a lever, K, and pawl L, engaging with the teeth upon the counting-wheel M; also, upon the same shaft G is mounted a projection, N, set thereon at such an angle relatively to that of the finger F (see Fig. 1) that when the finger F is in its normal position the projection N is recumbent, as shown. The pusher-slide reciprocates immediately above this part N, but so as to pass clear of it when the latter is in its normal or

recumbent position. When, however, the finger F is moved by a passing envelope, it rocks the shaft G and throws the projection N into the path of travel of the pusher, which, striking against the projection N, rotates the shaft G, and thereby, through the intervening connecting-rod, lever, and pawl, moves the counting-wheel forward one tooth.

From the above construction it follows that whenever for any cause the pusher travels forward past the finger F without carrying an envelope the counting mechanism remains still, and therefore the machine registers only the envelopes as they pass. On the other hand, whenever an envelope is present between the pusher and the finger F, the projection N is thrown into engagement with the pusher, and its forward motion advances the counting-wheel one tooth. In this way I avail myself of the motion of the pusher to move the projection which is attached to and drives the pawl which moves the counting-wheel, and no other or special moving part need be provided.

It is obvious that the benefit of my invention is not confined to the specific form of pusher shown herein, but that it is equally applicable to any other envelope-counting machine in which there is a part which moves or carries the envelope.

The next feature of my improvement is in the construction of the cam-wheel by which the tilting of consecutive packages of envelopes in opposite directions is obtained, and also in the intervening mechanism by which the tilting is accomplished.

I form the cam-wheel in two independent sections, O O, (see Figs. 3, 4, and 5,) each section being splined on the shaft which carries them. I thus am enabled by sliding either section on the shaft to adjust the interval between their opposed vertical faces, and in this way to take up any wear that may occur, and also to regulate at pleasure the extent of throw of the tilting table. This tilting table (marked P, and seen best in Fig. 3) is centrally mounted upon a pivoted standard, *p*, the lower part of which extends below the bed of the machine and enters the forked end of a lever, *p'*. (See Fig. 7.) This is the free end of the lever, its other end being pivotally connected to the under side of the main frame of the machine, and this pivotal connection forming its fulcrum. On the same lever, and between its forked end and its fulcrum, is a stud, *p''*, (best shown in Fig. 5,) which lies between the two parts O O of the cam-wheel. (Shown in Figs. 3, 4, and 5.) As this stud is moved laterally in either direction by the cam-faces upon O O, its lateral motion is transmitted by the free end of the lever to the lower end of the pivoted standard of the table P, and the pivoted standard is thus moved in either direction around its pivot, thereby altering the inclination of the table. As the sole source of motion of the cam-wheel O O is the counting-wheel M, which is mounted upon the same shaft, it is obvious that the tilting of the table will occur only when the counting-wheel has been moved through a predetermined distance, and consequently only when a predetermined number of envelopes have passed through the machine, this feature being the same as in my prior patent.

Another feature of my present improvement is in the improved construction of the pusher. I form the pusher-plate Q Q' in two parts, as shown in Figs. 6 and 7, instead of making it in one piece, as in my prior patent. The upper part, Q, of the pusher-plate is rigidly attached to the slide or carriage of the pusher D; but the lower part, Q', is centrally pivoted on the pusher D by means of a shaft, *q*, passing through it, as shown at Fig. 3. Attached to this shaft, and in the rear of the pusher, is a yoke, *q'*, the ends of which carry rods *q''*, (best seen in Figs. 2 and 7,) which bear upon the end of the tilting table. As will be seen, the double yoke *q'* and rods *q''* thus form a double rock-shaft for altering the angle of the lower portion, Q', of the pusher-plate, so that its incline shall always coincide with the incline of the tilting table.

For receiving and retaining each envelope as it is brought forward by the pusher, I employ two notched catches, R R, Figs. 1 and 2, hinged upon the side walls, B, and working through slots therein. These catches, by means of the coiled springs *r*, are normally held with their notched portions projecting within the line of travel of the envelope. (See Fig. 1.) Each envelope as it is moved forward by the pusher displaces these catches outwardly against the pressure of their springs *r;* but as soon as the envelope has passed beyond the notch, which is so located as to be substantially at the end of the forward motion of the pusher, the springs *r* throw the catches inwardly and their notches catch and retain the ends of the envelope, thereby preventing it from following the pusher back. The pusher-plate is suitably slotted to pass these catches without interference, as shown in Figs. 3 and 6.

I claim—

1. In an envelope-counting machine, the combination, with the envelope-forwarding mechanism and the mechanism which actuates the counting-wheel, all substantially as described, of a finger lying normally within the line of travel of the envelope, and a projection connected with the mechanism which actuates the counting-wheel, and lying normally outside the line of travel of the envelope-forwarding mechanism, the said finger and the said projection being connected together by a suitable connection, substantially as herein set forth, whereby the movement of the finger by the passing envelope brings the projection into position to be acted upon by the envelope-forwarding mechanism.

2. In an envelope-counting machine, the combination, with the envelope-forwarding mechanism, the counting-wheel, and its operat-

ing mechanism, all substantially as described, of the finger F, shaft G, and projection N, all substantially as herein set forth.

3. In an envelope counting and sorting machine, the combination, with the counting-wheel and its shaft, of a two-part cam-wheel, O O, carried upon the said shaft and in splined or adjustable connection therewith, all substantially as set forth.

4. In an envelope counting and sorting machine, the combination of the two-part cam-wheel O O, stud p'', lever p', pivoted standard p, and tilting table P.

5. In an envelope counting and sorting machine having a tilting table, the double pusher-plate Q Q', herein described, it consisting of an upper part, Q, rigidly attached to the slide or carriage, and a lower part, Q', centrally pivoted thereon, whereby the said lower part is free to rock or change its angle, so as to coincide with the double incline of the tilting table.

6. In an envelope counting and sorting machine, the combination of the double pusher-plate Q Q', shaft q, yoke q', rods q'', and tilting table P.

In testimony whereof I have hereunto subscribed my name this 9th day of March, A. D. 1885.

ABRAM A. RHEUTAN.

Witnesses:
J. HENRY TAYLOR,
JAMES F. BLIGH.