(No Model.)

E. RAU.

ENVELOPE MACHINE.

No. 546,433. Patented Sept. 17, 1895.

Fig. 1.

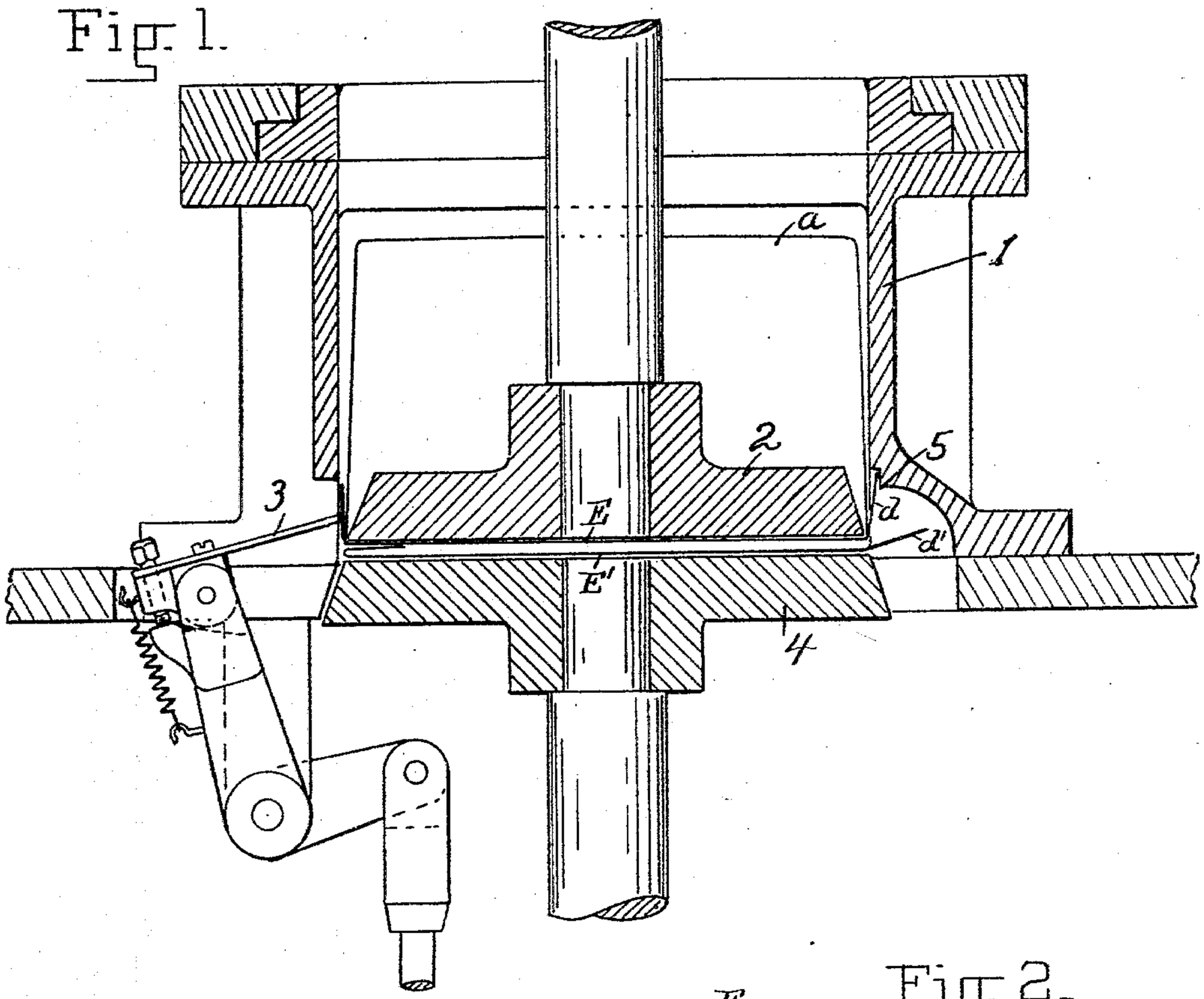
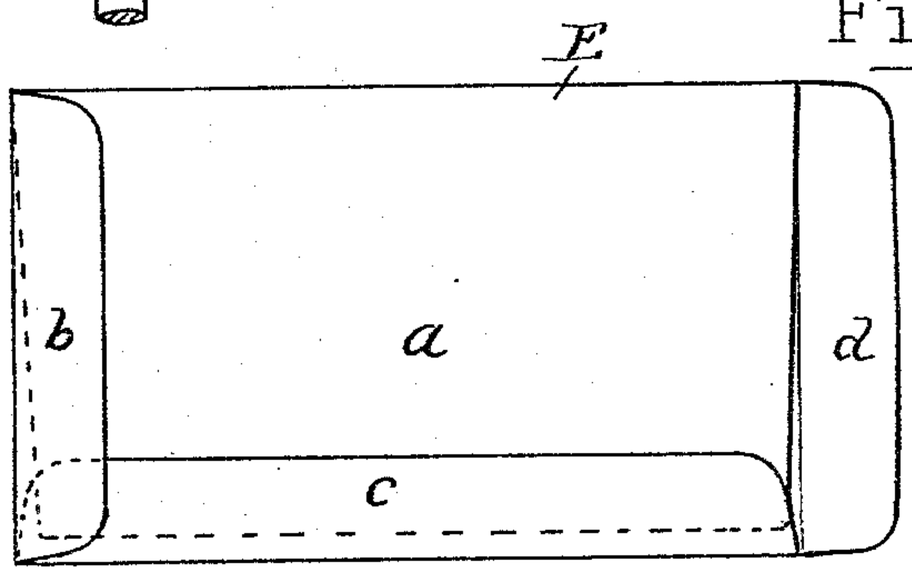


Fig. 2.



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UNITED STATES PATENT OFFICE.

EMANUEL RAU, OF BROOKLYN, NEW YORK.

ENVELOPE-MACHINE.

SPECIFICATION forming part of Letters Patent No. 546,433, dated September 17, 1895.

Application filed May 16, 1895. Serial No. 549,525. (No model.)

To all whom it may concern:

Be it known that I, EMANUEL RAU, a citizen of the United States of America, residing at Brooklyn, Kings county, New York, have invented certain new and useful Improvements in Envelope-Machines, of which the following is a specification.

My invention is applied to envelope-machines of the plunger class, wherein envelope-blanks are formed in a folding-box. In such machines the plunger forces the envelope-blank into the folding-box, thus partly folding the four flaps of the envelope, and then flap-folders enter from the sides and complete the folding. In such machines it has heretofore been customary to provide flap-folders to fold down all four flaps of the envelope and to prevent the sealing of the last flap either by omitting to gum it or by not pressing it down completely. An envelope when delivered from such a mechanism has this unsealed flap folded down, and it must be lifted in order to fill the envelope. My improvement is for machines of this class in order to enable them to deliver the envelope with the unsealed flap out straight, or nearly so. By producing envelopes in this form I find that they are much more salable, since the saving in time is considerable, when large quantities are being filled, by reason of the flaps not having to be first lifted.

In the accompanying drawings, which form a part of this specification, Figure 1 shows a vertical section through a folding-box with my improvement. The figure also shows the co-operating mechanism and two envelope-blanks in the course of formation. Fig. 2 shows an envelope which has been formed in the improved folding-box shown in Fig. 1.

These improvements, as here shown, are adapted to envelope-machines of the type known as the "Reay." Such a machine is shown in my United States Patent No. 518,427, which was issued April 17, 1894.

The folding-box 1 has a square opening at the top of the size of a completed envelope. The blank is brought over the top of the box in the usual way and forced into it by a plunger 2. This bends the four flaps of the blank at right angles. The plunger is next withdrawn, leaving the partly-folded blank at the bottom of the box with the partly-folded flaps in position to be engaged by the flap-folders, which complete the folding. There are two side-flap folders, which are not shown, and with my improvement there is only one end-flap folder 3. Since there is no flap-folder at the opposite end, certain modifications have been introduced in the construction of the folding-box at this end to prevent any displacement of the blank on the withdrawal of the plunger. This modification consists mainly in extending downward the end of the box as a guide for the end of the envelope. The end of the box is not carried entirely down to the bottom, but only to a point where it forms an edge 5 at a distance from the bottom about equal to the length of the end flap of the envelope. Below the edge the end of the box is cut away, so that as soon as the envelope-blank is pushed below it the partly-folded and unsealed flap can straighten out. In the style of machine which is shown the movement of the parts is so timed that there will be two envelope-blanks in different stages of formation in the folding-box at the same time. The blank E, whose formation has thus far been traced, lies on top of a previous blank E′, the flaps of which have been previously folded down. When the blank E thus rests on the blank E′, it is kept above the foundation 4 sufficiently to prevent the flap *d* from clearing the edge 5 of the end of the folding-box. The friction caused by this pressure of the flap *d* against the side of the folding-box co-operates with the friction of the other flaps *a*, *b*, and *c* against the flap-folders and keeps the blank from dropping out when the foundation is lowered to discharge the one beneath. To guard against this blank E being withdrawn with the plunger, a slight recess is provided just above the edge 5, which engages the edge of the flap. While the plunger is withdrawn the flaps *a*, *b*, and *c* are folded down. When the plunger comes down a second time with the succeeding blank, these flaps are pressed down and sealed. During this operation the blank rests directly on the foundation, and the flap *d*, coming below the edge 5, straightens out because of the elasticity of the paper. The foundation is next lowered to discharge this blank.

Having now described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In an envelope-machine the combination with a plunger, of flap-folders for folding the envelope-flaps which are sealed down, and a folding-box which is cut away on the side next to the open flap, to form an edge, substantially as described.

2. In an envelope-machine the combination with a plunger, of flap-folders for folding the envelope-flaps which are sealed down, and a folding-box which is cut away on the side next to the open flap to form an edge beneath which the unsealed flap can open and having a recess above the edge, substantially as described.

Signed by me, in New York city, this 10th day of May, 1895.

EMANUEL RAU.

Witnesses:
SAMUEL W. BALCH,
HY. H. WHITMAN.