

M. E. MAYO.
ENVELOP SEALING MACHINE.
APPLICATION FILED MAY 14, 1908.

923,193.

Patented June 1, 1909.

Fig. 1.

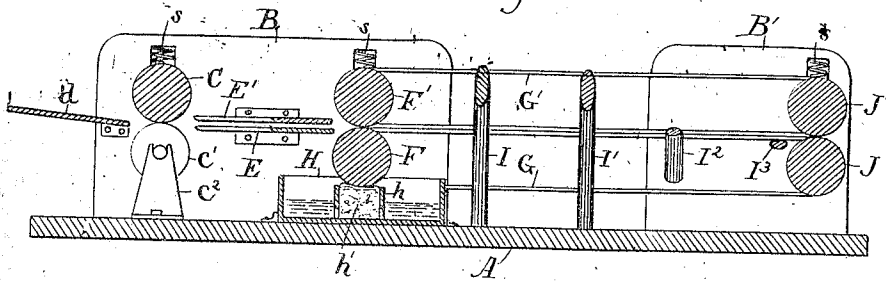


Fig. 2.

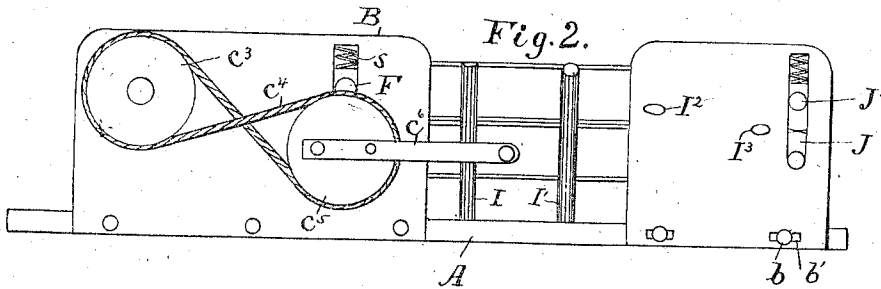


Fig. 3.

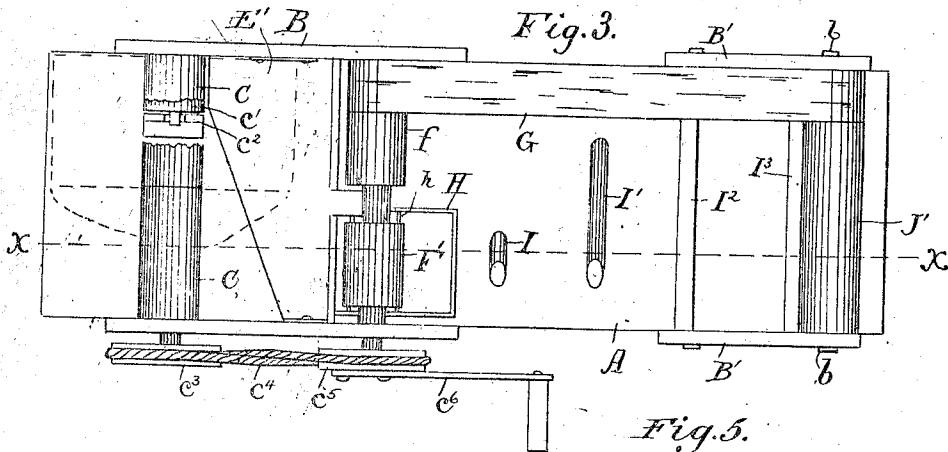


Fig. 5.

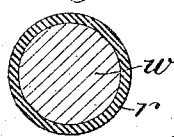


Fig. 4.



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UNITED STATES PATENT OFFICE.

MAURICE E. MAYO, OF SOUTH PORTLAND, MAINE, ASSIGNOR OF ONE-HALF TO WILLIAM N. TAYLOR, OF PORTLAND, MAINE.

ENVELOP-SEALING MACHINE.

No. 923,193.

Specification of Letters Patent.

Patented June 1, 1909.

Application filed May 14, 1908. Serial No. 432,762.

To all whom it may concern:

Be it known that I, MAURICE E. MAYO, of South Portland, in the county of Cumberland and State of Maine, have invented certain new and useful Improvements in Envelop-Sealing Machines, of which the following is a specification.

My invention relates to a machine for sealing envelopes and the object of the invention is to construct a machine which will be composed of few parts, which is simple in construction, cheaply made and easily operated.

The invention consists of the combination and arrangement of parts as hereinafter set forth.

I illustrate my invention by means of the accompanying drawing in which—

Figure 1 is a section on the line *x x* of Fig. 3, Fig. 2 is a side elevation, Fig. 3 is a plan and Fig. 4 is a detail of one of the flap closing members. Fig. 5 is a cross section of a feeding roll showing an alternate construction.

In the drawing, A represents the bed of the machine and B B stationary side pieces in which are located the bearings for the two first sets of feed rolls. The envelop is first placed flap down on a feed table *d* (shown only in Fig. 1) and is then seized by the initial feed rolls C and C'. As here shown the upper roll C is of the full width of the machine but the lower roll C' only comes in contact with the body of the envelop below the flap, leaving the latter free to be opened downward. Flap opening devices are placed next beyond the initial feed rolls and these as here shown consist of a pair of superposed plates E and E' shown as substantially of the same shape, the plate being separated by a narrow space through which the envelop passes after the flap is opened. The opening of the flap is effected by the edge of the lower plate which is formed at an inclination of the line of motion of the envelop.

The effect of the inclined edge is to slowly press the flap upward and open it so that the envelop with the flap extended may be drawn through the space between the plates E and E'.

After passing through the plates E and E', the envelop is seized by the intermediate feeding rolls which comprise the main rolls

f which seize the body of the envelop and the moistening rolls F and F' both on the same arbor with the main rolls *f* and separated therefrom by a space.

Water is supplied to the lower roll F by a water reservoir H set on the bed of the machine. As here shown the roll runs in contact with a fibrous pad *h'* held in a compartment formed by the partitions *h* and connected by openings with the body of the reservoir.

Some distance beyond the intermediate feed rolls are placed the sealing rolls J J' journaled in the adjustable side pieces B' which are secured to the base of the machine by bolts *b* passing through slots *b'* whereby the rolls may be adjusted to tighten the belts G and G' which connect the two pairs of rolls F' and J' and F and J respectively.

The belts G and G' are carried in shallow recess in the ends of the rolls so that the outer surfaces of the belts will come flush with the surfaces of the rolls and the belts are only of sufficient width to grasp the body of the envelop below the flap thereby allowing the flap to be folded in before reaching the sealing rolls.

Between the intermediate rolls and the sealing rolls are placed flap closing devices which as here shown are composed of rods I, I', I² and I³, the former being placed nearest the rolls F F' and being slightly inclined from the vertical so that it will give the extended flap a slight inward motion. The other rods are placed at inclinations gradually approaching the horizontal, the rod I³ being substantially horizontal and being placed just in front of the sealing rolls J J'. Thus the flap is gradually closed in by the action of the series of rods until it reaches the sealing rolls where it is finally pressed down and sealed.

From what has been said the operation of my machine is obvious. The envelops with their flaps turned down but slightly loosened as they will be after having been once opened, are placed on the feed table *d* and are fed one at a time through the initial feed rolls C C' and thence between the plates E E' the inclined edge of the lower plate forcing the flap open into an extended position. The body of the envelop is now grasped by the rolls *f* and the flap passes between the moistening rolls F F' and the envelop is then

carried along by the belts G G' which grasp the body and allow the flap to be closed in and sealed as described.

The machine is made large enough so that it will run through envelops of ordinary size either large or small, the only adjustment necessary being the variation of the position of the surface of the rods I and I' where the flap gets its initial inward bend. I provide for this adjustment to suit variations in width by making the rods I and I' oblong in cross section with a stud i at one end and off the center so that as the rod is turned the impinging edge will be at different distances from the belts G G'.

Each of the rolls is provided with spring pressed journals for the purpose of holding them in contact as is usual in such rolls.

The surfaces of the rolls are made of some yielding substance. They may be of metal with rubber vulcanized on the outer surface or they may be wood with their rubber cemented or otherwise secured to the outer surface all according to the amount of cost which is put into the machine.

In Fig. 5, I have shown a cross section of a roll constructed with a solid body *w* and a yielding surface *z* which may be of rubber or other yielding material.

I claim:

1. In an envelop sealing machine, the combination of a pair of initial feed rolls, one of which is shorter than the other to allow the flap to open, a pair of superposed flap opening plates beyond the feed rolls having a space between them, a pair of intermediate rolls beyond the opening plates comprising main rolls in line with the body of the envelop and moistening rolls in line with the flap, a pair of sealing rolls, a pair of feeding belts connecting the intermediate rolls and the sealing rolls and flap closing devices between the intermediate and sealing rolls.

2. In an envelop sealing machine, the combination of a pair of initial feed rolls, one of which is shorter than the other to allow the flap to open, a pair of superposed flap opening plates beyond the feed rolls having a space between them, one of said plates having its forward edge inclined to the line of motion for gradually opening the flap, a pair of intermediate rolls beyond the opening plates comprising main rolls in line with the body of the envelop and moistening rolls in line with the flap, a pair of sealing rolls, a pair of feeding belts connecting the inter-

mediate rolls and the sealing rolls and flap closing devices between the intermediate and sealing rolls.

3. In an envelop sealing machine, the combination of two pairs of rolls having corresponding annular recesses therein, a pair of feeding belts running in said recesses and connecting the pairs of rolls, the outer surfaces of said belts being flush with the surfaces of said rolls and means for actuating said rolls to feed the envelop.

4. In an envelop sealing machine the combination of a pair of initial feed rolls, one of which is shorter than the other to allow the flap to open, a pair of superposed flap opening plates beyond the feed rolls having a space between them, a pair of intermediate rolls beyond the opening plates comprising main rolls in line with the body of the envelop and moistening rolls in line with the flap, a pair of sealing rolls, a pair of feeding belts connecting the intermediate rolls and the sealing rolls and adapted to grasp body of the envelop below the flap and flap closing devices in front of said sealing rolls.

5. In an envelop sealing machine, the combination of a pair of initial feed rolls adapted to act on the body of the envelop below the flap, a flap opening device beyond said feed rolls, a pair of intermediate feed rolls beyond the flap opening device comprising main rolls in line with the body of the envelop and moistening rolls in line with the flap, a pair of sealing rolls, a pair of feeding belts connecting the intermediate rolls and the sealing rolls and having their outer surfaces flush with the surfaces of the rolls and flap closing devices between the intermediate and sealing rolls.

6. In an envelop sealing machine, the combination of a pair of feeding rolls, a pair of sealing rolls each having an annular recess therein and a pair of feeding belts connecting said rolls, running in said recesses and being flush with the outer surface of said rolls, said belt being located to grasp the envelop below the flap and flap manipulating devices at one side of said belt.

In testimony whereof I have affixed my signature, in presence of two witnesses.

MAURICE E. MAYO.

Witnesses:

S. W. BATES,
ELEANOR W. DENNIS.