H. K. HARRIS.

ENVELOP SEALING MACHINE.

APPLICATION FILED FEB. 15, 1909.

957,555. Patented May 10, 1910.

2 SHEETS—SHEET 1.

Fig. 1.

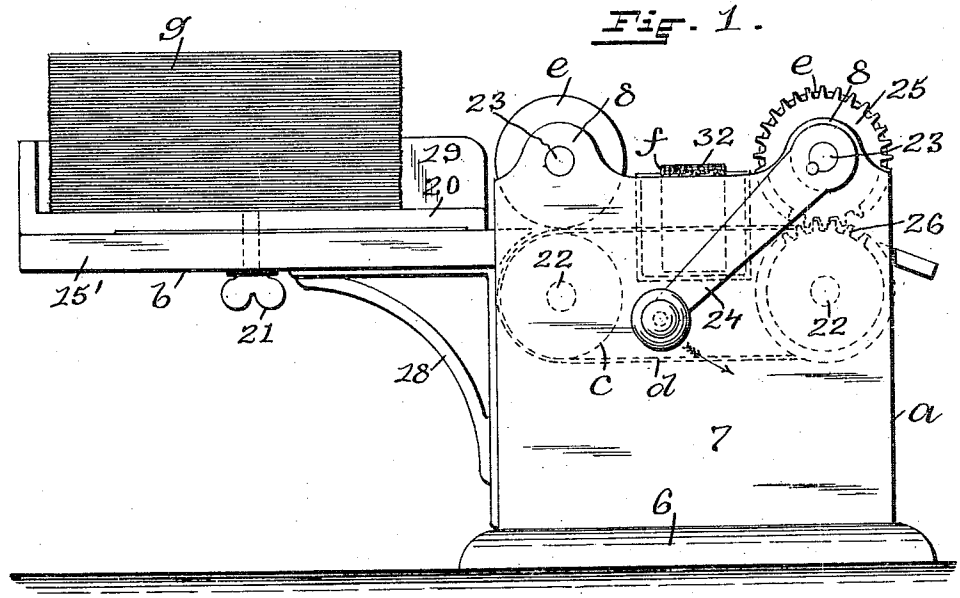
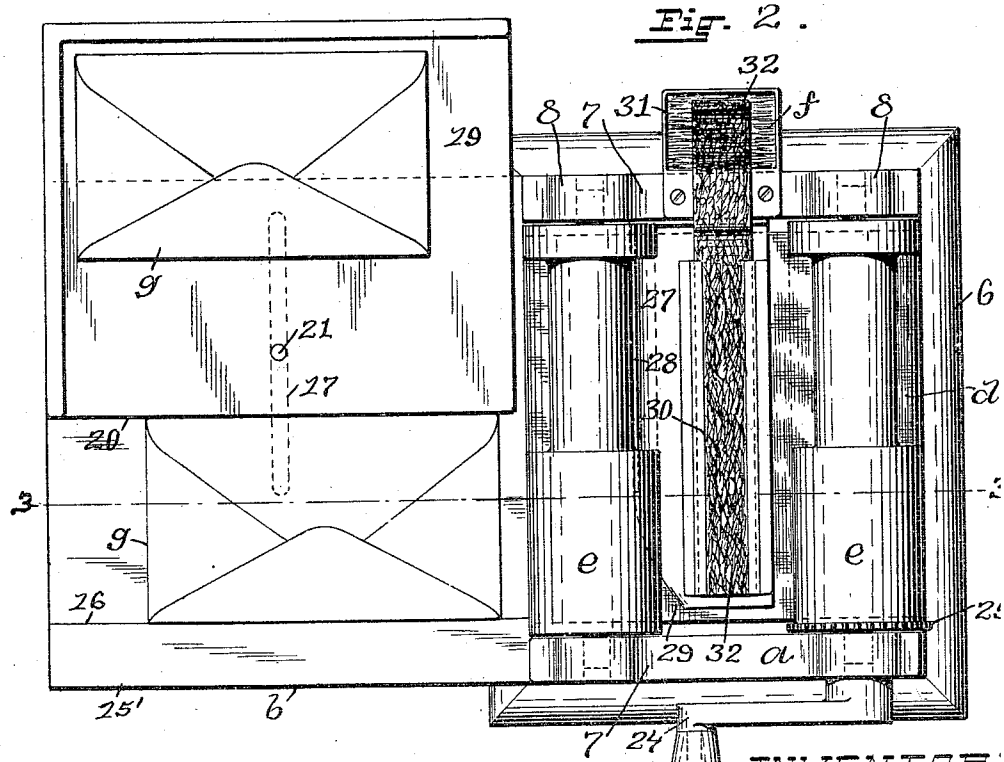


Fig. 2.



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2 SHEETS—SHEET 2.

Fig. 3.

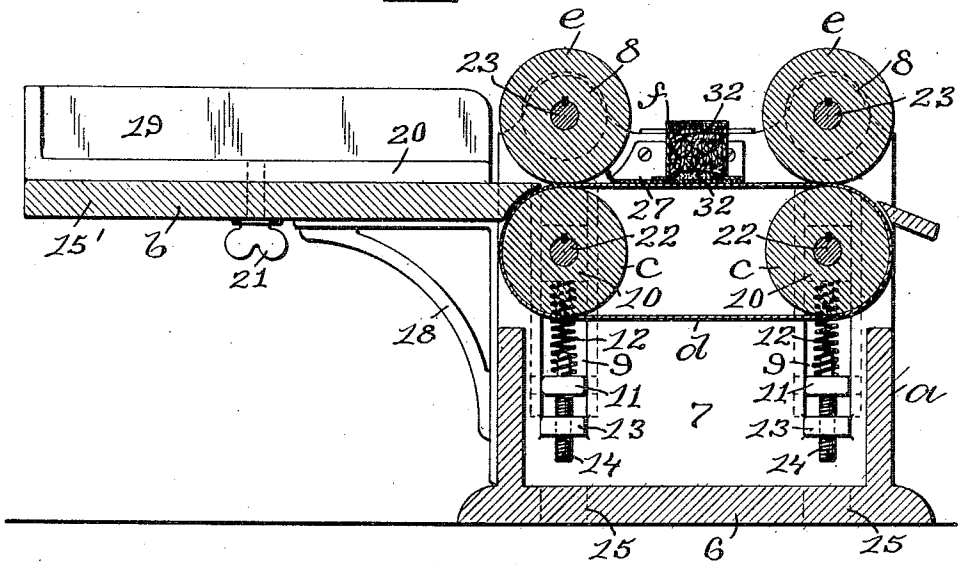


Fig. 4.

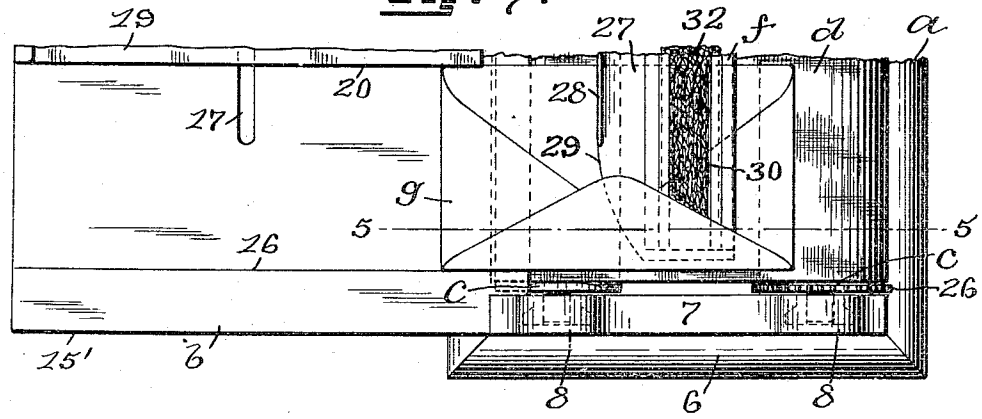
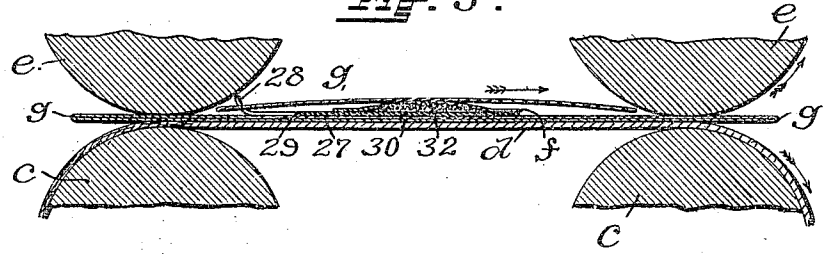


Fig. 5.



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ENVELOP-SEALING MACHINE.

957,555. Specification of Letters Patent. Patented May 10, 1910.

Application filed February 15, 1909. Serial No. 478,022.

To all whom it may concern:

Be it known that I, HENRY K. HARRIS, a citizen of the United States, residing at Providence, in the county of Providence and State of Rhode Island, have invented a new and useful Improvement in Envelop-Sealing Machines, of which the following is a specification.

This invention has reference to an improvement in office labor saving appliances and more particularly to an improvement in envelop sealing machines.

The object of my invention is to improve the construction of an envelop sealing machine whereby the sealing of envelops is greatly facilitated and the time and cost of sealing the envelops materially reduced.

My invention consists in the peculiar and novel construction of an envelop sealing machine, said machine having details of construction, as will be more fully set forth hereinafter and claimed.

Figure 1 is a front elevation of my improved envelop sealing machine. Fig. 2 is a top plan view of the machine. Fig. 3 is a vertical sectional view of the machine taken on line 3 3 of Fig. 2. Fig. 4 is a top plan view of the front portion of the machine with the top rolls removed and showing an envelop in the machine with the flap raised and the gummed portion of the flap being moistened, and Fig. 5 is an enlarged detail sectional view taken on line 5 5 of Fig. 4 with the envelop in a central position between the rolls and showing the means for raising the flap and for moistening the gummed portion of the flap of the envelop.

In the drawings, *a* indicates the frame of the machine, *b* the table, *c c* the lower rolls, *d* the endless flexible apron, *e e* the upper rolls, *f* the envelop flap opener and moistening mechanism, and *g g* envelops shown to illustrate the operation of the machine. The frame *a* has the base 6 and the ends 7 7, each end 7 having the fixed bearings 8 8 for the upper rolls *e e* and the vertical ways 9 9 in which are the slide bearing blocks 10 10 for the shafts of the lower rolls *c c*, as shown in dotted lines in Figs. 3 and 4, the slides 11 11 in the ways, the coiled springs 12 12 intermediate the bearing blocks 10 10 and the slides 11 11, the lugs 13 13 below the slides, the screws 14 14 screw-threaded through the lugs 13 13 and engaging with the slides 11 11, and holes 15 15 in the base 7 directly under the screws 14 14, as shown in dotted lines in Fig. 3.

The table consists of a flat fixed member 15′ having the gage line 16 on the top and the slot 17 and secured to the frame *a* by the brackets 18 18 in a position to bring the upper flat surface on a line centrally between the rolls *c* and *e*, and a flat gage member 19 adapted to hold a stack of envelops and having a straight front edge forming a gage 20 for the envelops and adjustably secured to the fixed member 15′ by a thumb screw 21 which extends through the slot 17 in the fixed member and screws into the gage member, as shown in Figs. 1 and 2. The lower rolls *c c* are each secured to a shaft 22 which is journaled at each end in the bearing blocks 10 10. The endless apron *d* is formed of flexible fabric or other flexible material and extends around both of the lower rolls *c c* in a stretched or taut condition, as shown in Fig. 3. The upper rolls *e e* each have a reduced portion adjacent the rear end, and are each secured to a shaft 23 which is journaled at each end in the bearings 8 8. The right hand shaft 23 extends through the bearing 8 on the front and is revolved preferably by a crank 24, as shown in Figs. 1 and 2. A gear 25 is secured to the shaft 23 and meshes with a gear 26 secured to the shaft 22, as shown in full and broken lines in Fig. 1.

The envelop flap opener and moistening mechanism *f* consists of a thin flat arm 27 rigidly secured at one end to the rear end 7 of the frame *a* in a position to lie flat on the top of the apron *d* intermediate the top rolls *e e* and constructed to have a curled up lip 28 on the feed side of the arm, merging into a thin curved edge 29 which terminates at the free end of the arm (where it is preferably bent slightly downward to facilitate the entrance of the curved edge 29 between the flap and body of the envelop), a trough 30 on the top of the arm extending practically the length of the arm parallel with the rolls *e e*, a water reservoir 31 secured centrally to the back of the rear end frame 7 and a wick 32 of fiber or similar material extending from the water reservoir 31 out and through the trough 30 to the end of the trough, as shown in Fig. 2. The edges of the trough 30 are preferably clamped down onto the edges of the wick, thereby holding the wick firmly in position in the trough, and the upper surface of the

wick extends slightly above the edges of the trough, as shown in Fig. 5.

In the operation of my improved envelop sealing machine, the tension of the rolls *c c* on the rolls *e e* is adjusted to give the required pressure by turning the screws 14 14 with a screw driver inserted through the holes 15 15 in the base 6 of the frame *a*, the water reservoir 31 is filled with water and the wick 32 is thereby kept constantly saturated or moistened with water from the reservoir by capillary attraction. The gage member 19 of the table *b* is adjusted on the fixed member 15 so that when the bottom edge of the envelop *g* is against the gage 20 the top edge of the envelop will coincide with the gage line 16 on the table *b*, and the gage member secured in the adjusted position by tightening the thumb screw 21. A pile of the envelops *g g* is now placed in a convenient position on the gage member 19 of the table *b*, the crank 24 turned in the direction of the arrow, as shown in Fig. 1, an envelop *g* placed on the table with the bottom edge of the envelop against the gage 20 and fed between the first rolls *c* and *e* onto the opener *d*. The top of the apron *d* and the envelop *g* move in the direction of the arrow, as shown in Fig. 5. The end edge of the body of the envelop strikes the curled up lip 28 of the flat arm 27 and passes under the arm 27 onto the top of the apron *d* and the thin curved edge 29 of the flat arm 27 passes under the flap of the envelop and raises the flap over the arm 27, as shown in Figs. 4 and 5, thereby moistening the gummed portion of the flap by drawing the same over the moistened wick 32. The envelop now passes through the last pressure rolls *c* and *e* which force the flap down onto the body of the envelop, thereby positively sealing the envelop.

By this construction the entire gummed portion of any form of an envelop flap is quickly and positively moistened, thereby insuring the certain sealing of the envelop.

In sealing pay envelops the coin is shaken down into the bottom of the envelop, thereby forming an increased thickness in the envelop where it passes easily under the reduced portions of the top rolls *e e*.

Having thus described my invention, I claim as new and desire to secure by Letters Patent;—

1. In an envelop sealing machine, the combined envelop flap elevator and moistener, consisting of a blade adapted to extend transversely across the path of movement of an envelop in a sealing machine, said blade having an upturned guide edge and a flap engaging knife-edge merging in said guide edge, parallel opposing overhanging flanges forming a channel longitudinally along said blade on its upper face, and a moistening wick clamped in said longitudinal channel formed on said blade.

2. An envelop sealing machine, comprising, in combination, a walled frame, rollers journaled across said frame, an endless apron inclosing said rollers and driven thereby, rollers superposed above said first mentioned rollers and bearing on said apron, each of said superposed rollers having an intermediate reduced portion, a blade mounted to extend between said superposed rollers and having an upturned guide-edge extending into the reduced portion of the first superposed roll, and a knife-edge underlying the full portion of said first roll to engage the envelop flaps, and moistening means extending longitudinally along the length of the blade.

3. An envelop sealing machine, comprising a frame, upper and lower feed rolls rotatably supported in the frame and adapted to feed the envelop with the flap closed, means for exerting a spring tension on the lower feed roll, a table secured to the frame and adapted to hold a stack of envelops, adjustable means on the table for gaging the feed position of the envelop, a moistening mechanism consisting of a flat arm secured at one end to the frame and having a curled-up lip merging into a thin curved edge, a water reservoir and a wick extending from the water reservoir out onto the arm, the whole adapted to raise the flap of the envelop and moisten the gummed portion of the flap, upper and lower pressure rolls rotatably supported in the frame and adapted to close the flap down onto the body of the envelop under pressure, means for exerting a spring tension on the lower pressure roll, an endless apron connecting the lower feed and pressure rolls, means for adjusting the tension on the lower feed and pressure rolls, and means for revolving the rolls.

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

HENRY K. HARRIS.

Witnesses:
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J. A. MILLER.