

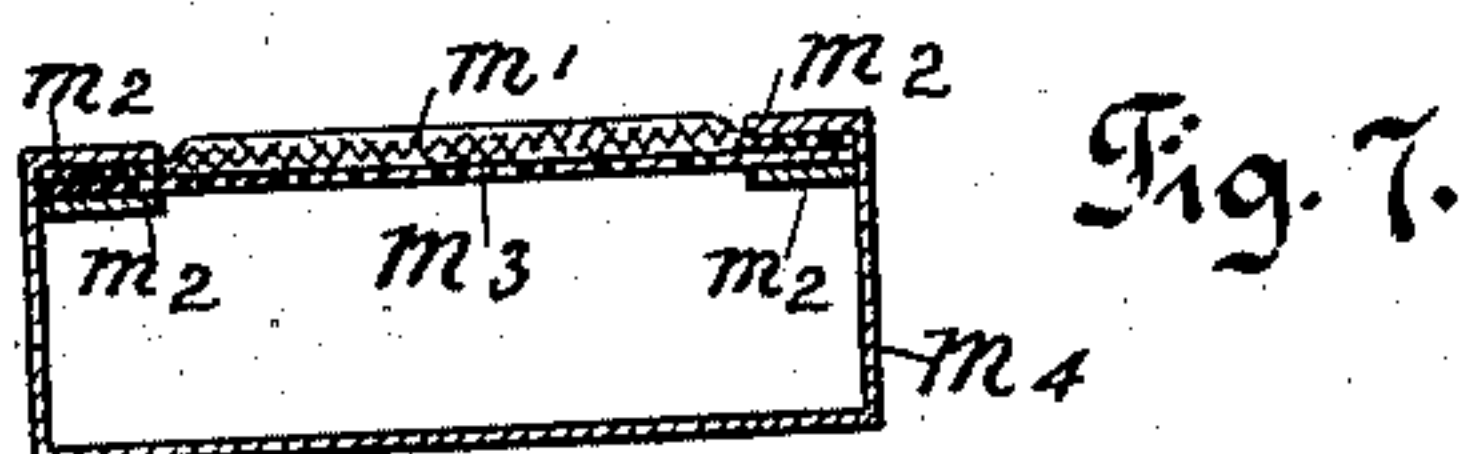
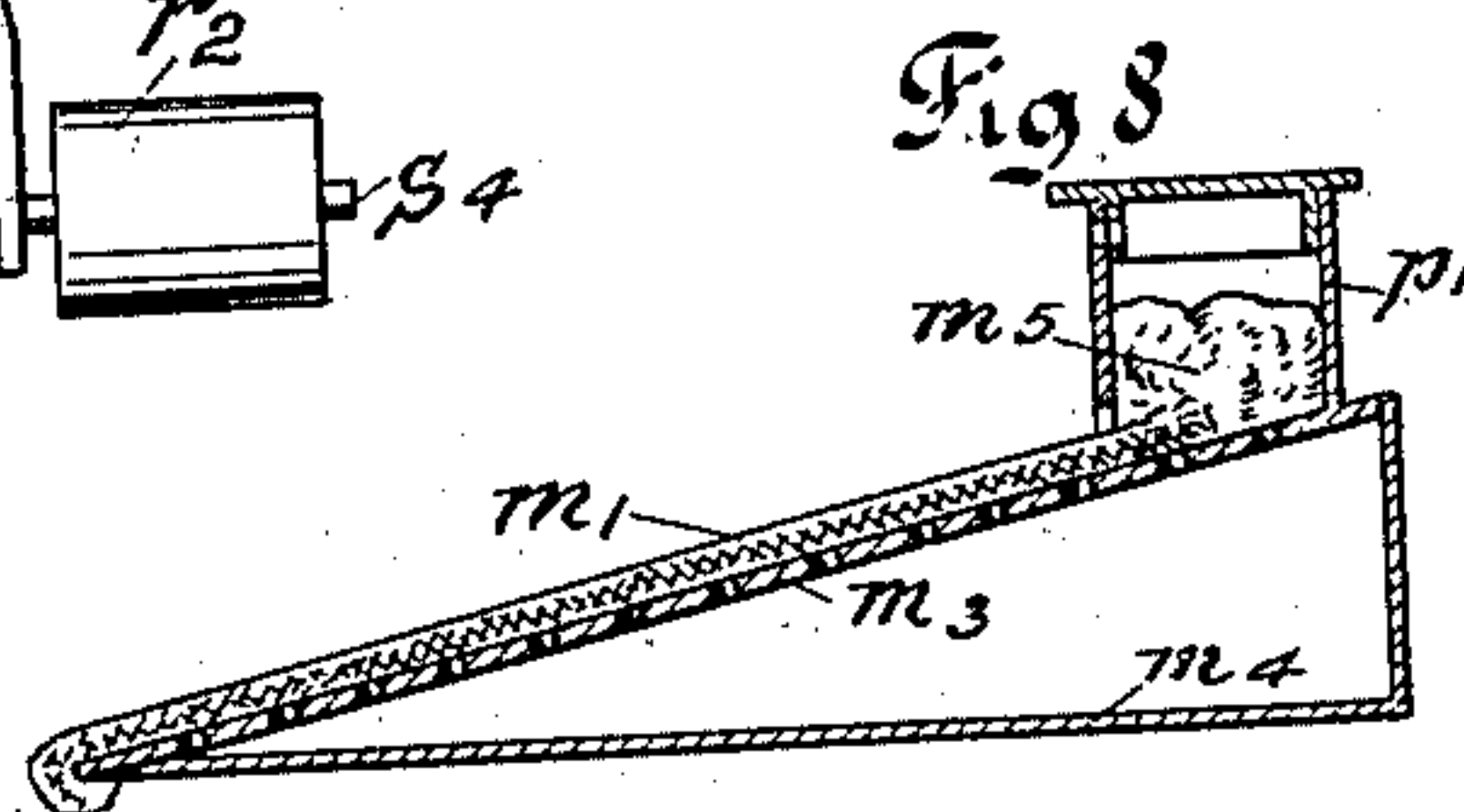
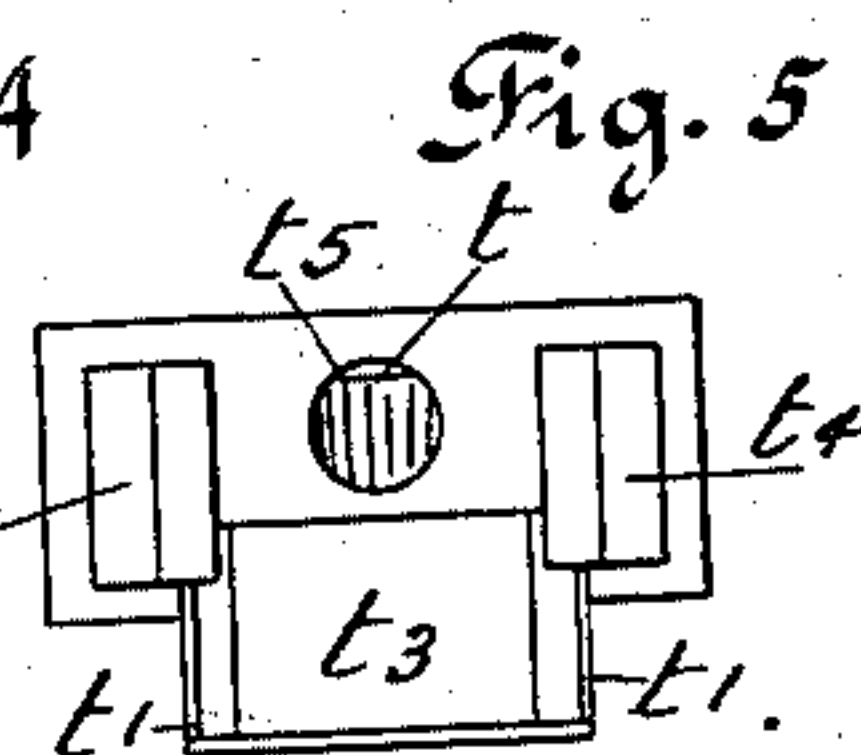
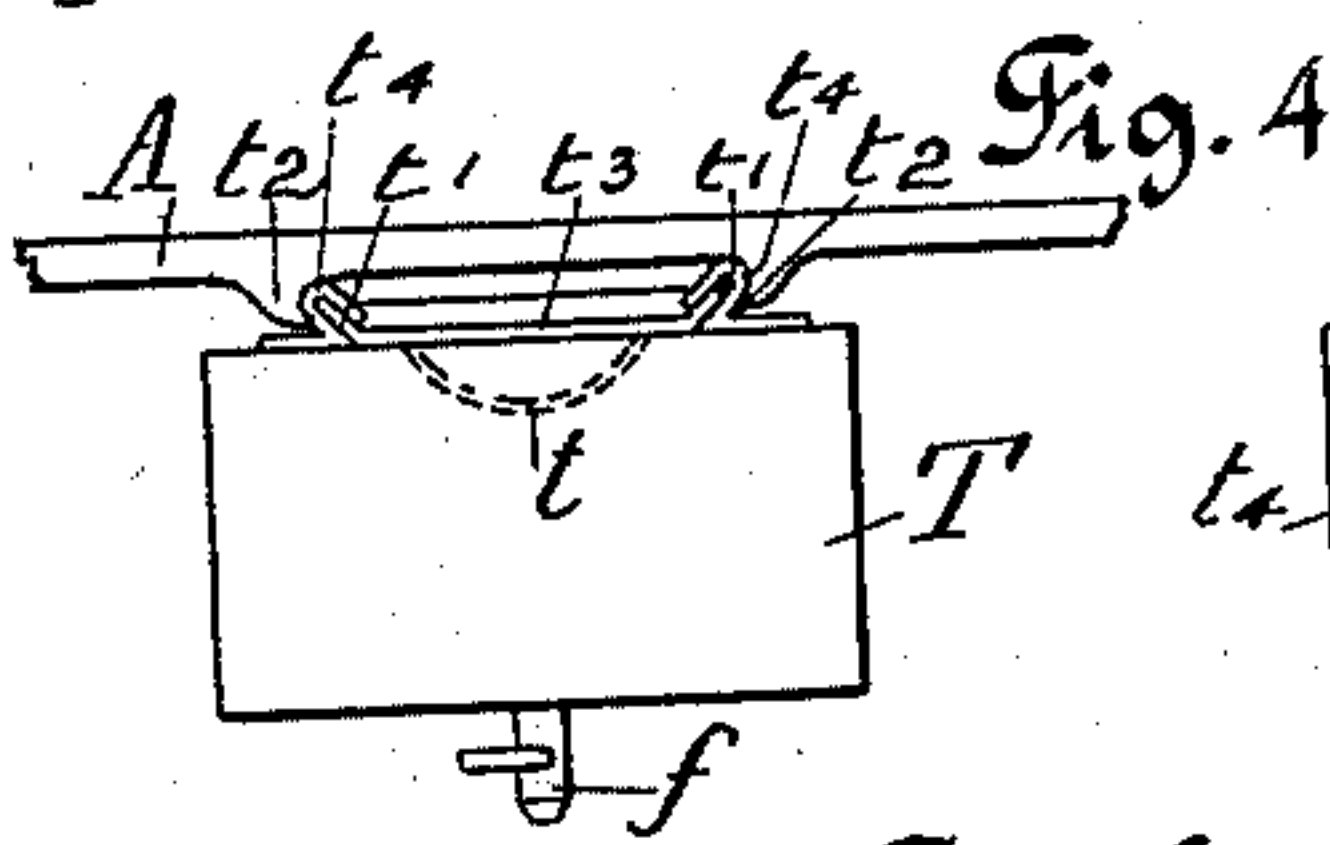
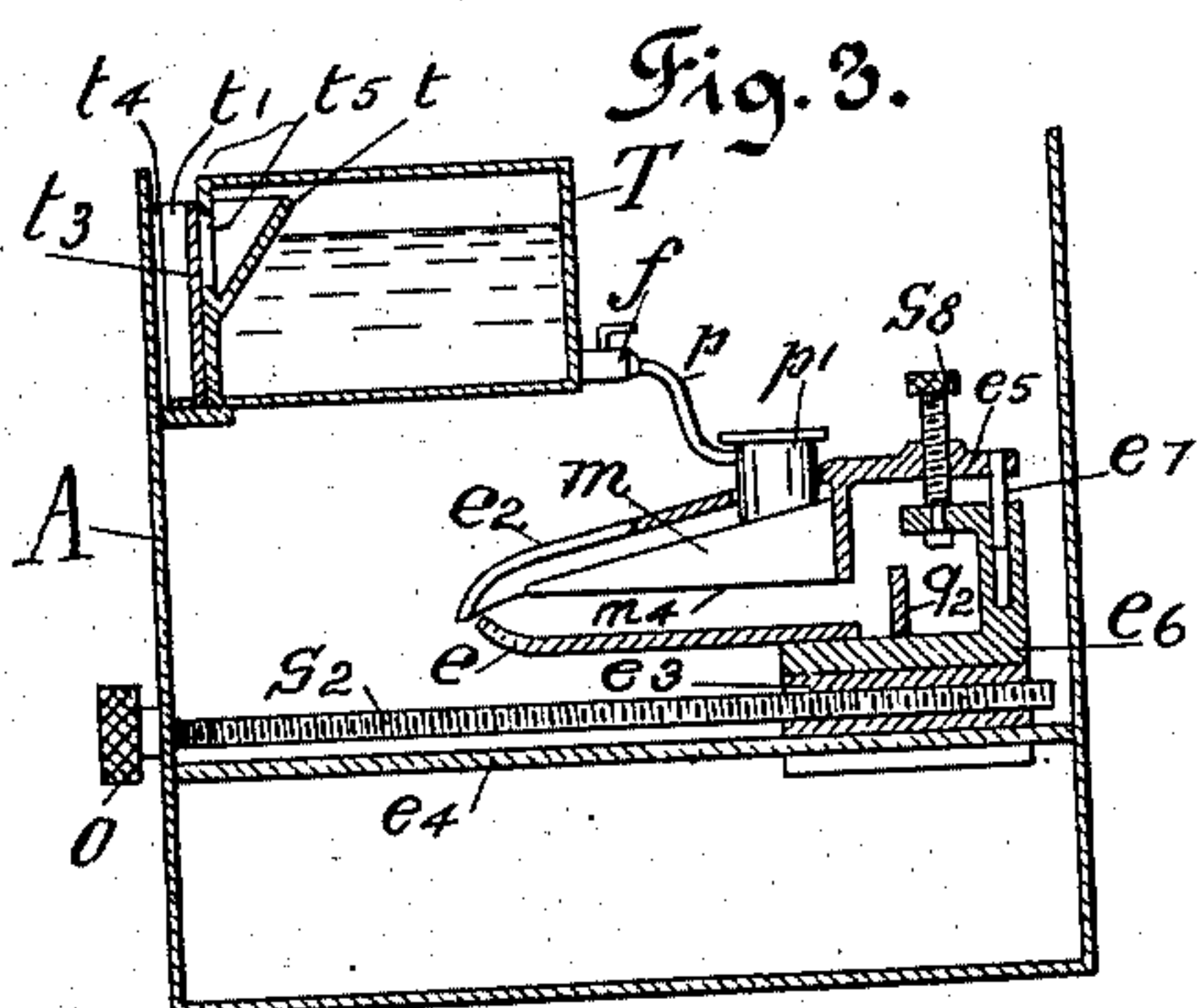
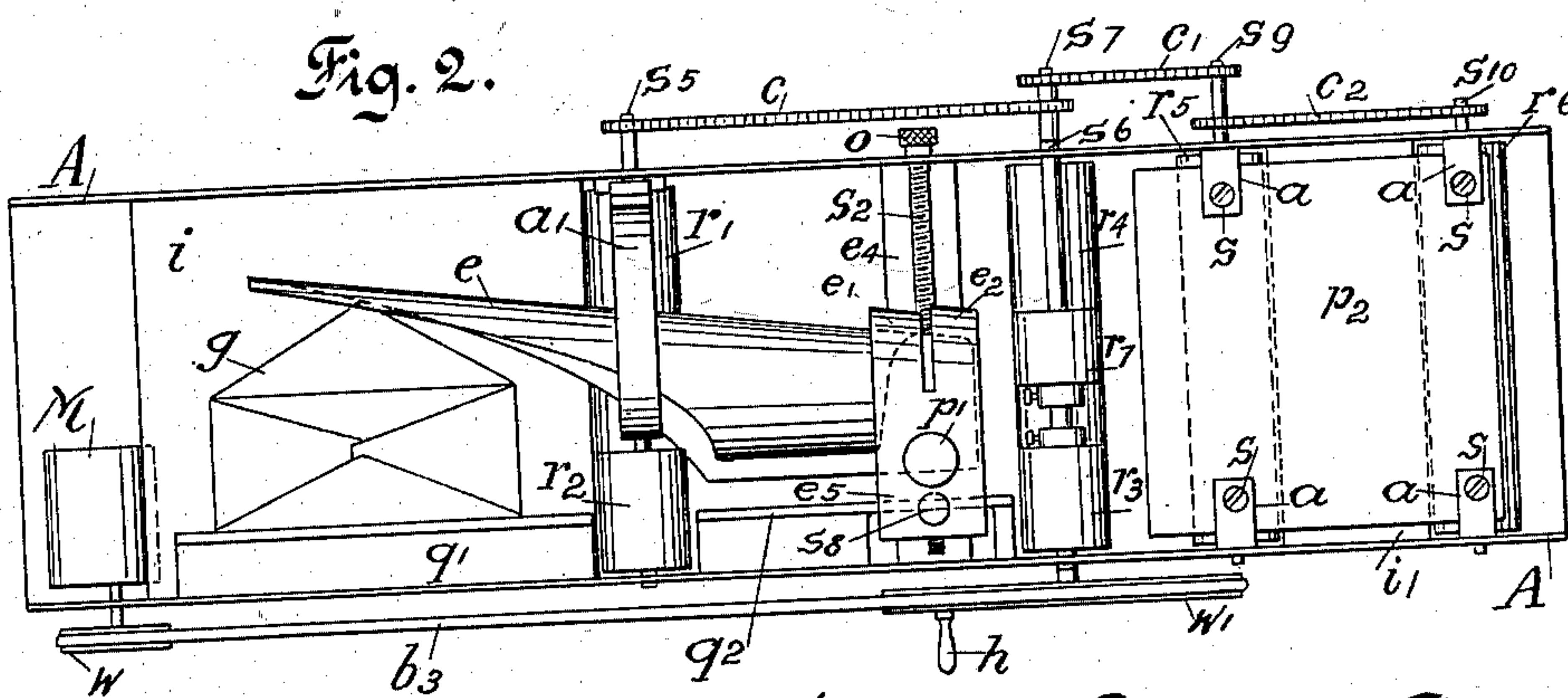
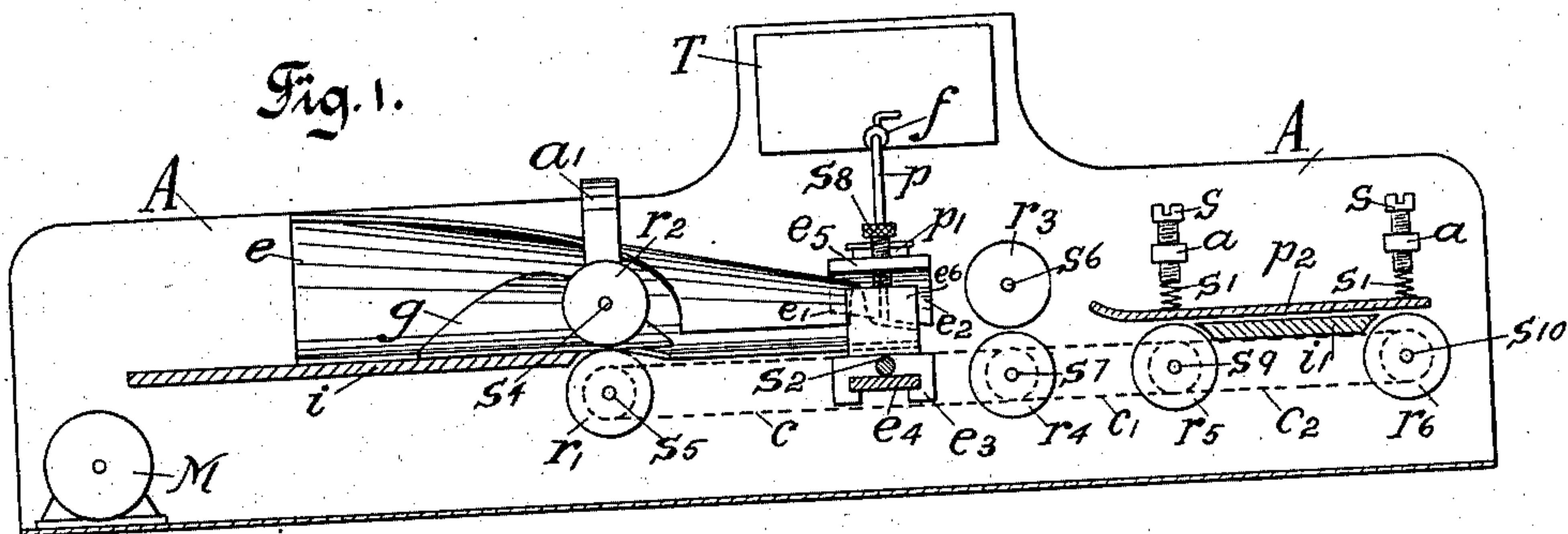
No. 749,377.

PATENTED JAN. 12, 1904.

H. HARTE & R. J. STEVENS.  
ENVELOP-SEALING MACHINE.

APPLICATION FILED NOV. 13, 1902.

NO MODEL.



Witnesses:  
Fred P. Mansfield  
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# UNITED STATES PATENT OFFICE.

HENRY HARTE AND RICHARD J. STEVENS, OF ROCHESTER, NEW YORK,  
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## ENVELOP-SEALING MACHINE.

SPECIFICATION forming part of Letters Patent No. 749,377, dated January 12, 1904.

Application filed November 13, 1902. Serial No. 131,151. (No model.)

To all whom it may concern:

Be it known that we, HENRY HARTE and RICHARD J. STEVENS, citizens of the United States, residing at Rochester, in the county of Monroe and State of New York, have invented an Improvement in Envelop-Sealing Machines, of which the following is a specification.

The object of our invention is the production of an envelop-sealing machine adapted to effectually seal the envelops without any tendency to distort them or to in any way modify or change the location of the fold or crease between the flap and the body of the envelop, and also to provide a folding mechanism for such flaps which may be adjusted for different widths and thicknesses of envelops.

With these objects in view our invention consists in the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a side view of the sealing-machine with the side toward the observer and the fences  $q'$  and  $q''$  parallel therewith removed, with the receiving-table  $i$  on the left-hand end, the guide  $e'$  in the middle, and the delivery-table  $i'$  on the right-hand end of the machine shown in section. Fig. 2 is a top view of the machine with the water-tank T removed. Fig. 3 is a transverse sectional detail view showing the support of the folding mechanism and the water-tank T. Fig. 4 is a detail top view of the water-tank T. Fig. 5 is a detail view of that side of the water-tank T from which such tank is supported. Fig. 6 is a detail view of the support  $a'$  for the inner end of the shaft  $s^4$  of the roll  $r^2$  as seen from the front end of the machine. Fig. 7 is an enlarged sectional view of the moistener  $m$ , taken longitudinally of the machine; and Fig. 8 is an enlarged sectional view of the moistener  $m$ , taken transversely of the machine through the center of such moistener, and shows the top plate  $m^3$  and the part carried by such plate.

Similar letters refer to similar parts throughout the several views.

As seen in Figs. 1 and 2, the machine is provided with two pairs of feed-rolls  $r'$   $r^2$  and  $r^3$   $r^4$ , supported from the frame A of the machine

by shafts  $s^5$  and  $s^4$  and  $s^6$  and  $s^7$ , respectively, in such a way that the envelops  $g$  are fed by the rolls  $r'$  and  $r^2$  through the folder  $e$  and to the pressure-rolls  $r^5$  and  $r^6$ , supported on shafts  $s^9$  and  $s^{10}$  from the frame A of the machine.

The envelops, of which one is shown at  $g$ , are placed upon the plate or bed  $i$  at the left-hand end of the machine against a fence  $q'$  attached to the bed  $i$  near the inside of the frame A, located toward the observer and fed one at a time to the feed-rolls  $r'$  and  $r^2$ , the flaps being extended or opened at this time.

The fence  $q''$ , which forms only a continuation of fence  $q'$ , is also supported in a similar way to the fence  $q'$  and so constructed that it extends through the folding and moistening mechanism, as shown in Figs. 2 and 3, in such a way as not to interfere with any parts of this folding and moistening mechanism when they are moved laterally to fit different widths of envelops, as will be explained.

One end of the roll  $r^2$  is supported by the arched piece  $a'$ , as indicated in Fig. 6, in order that an extension of the folder  $e$  may pass through beneath it and form a guide for the envelops  $g$ , as seen in Figs. 1 and 2.

The folding mechanism proper consists of the funnel-shaped piece  $e$ , the bottom plate of which is supported, as shown in Figs. 1 and 3, from the block  $e^3$ , and having its larger opening on the left side, so as to receive the envelops from the table  $i$  until engaged between the two rollers  $r'$  and  $r^2$ .

The moistener  $m$  consists, essentially, of a box  $m^4$ , rigidly supported from arm  $e^5$ , as shown in Fig. 3. This arm  $e^5$  is connected to bracket  $e^6$  by means of screw  $s^8$  in such a way that such screw is supported by an extending part of bracket  $e^6$ , while the upper end of screw  $s^8$  is threaded through arm  $e^5$ . In the outer right-hand side of bracket  $e^6$  is formed a cylindrical hole into which fits a projecting cylindrical guide-piece  $e^7$  fastened to arm  $e^5$ , so as to permit the arm  $e^5$  to move vertically when the screw  $s^8$  is turned.

The two fingers  $e'$  and  $e''$  (shown in Figs. 1 and 2 and partially in Fig. 3) are also rigidly supported by arm  $e^5$  in such a way that there



is a small space between such fingers and the top of the moistener-box  $m^4$  large enough to allow the flaps of the envelopes to pass through after having been turned over by the folder  $e$  while conveyed through the folder—by means of rollers  $r^1$  and  $r^2$ , as described. The bracket  $e^6$  is also supported from the block  $e^3$ , threaded upon screw  $s^2$  and movable along guide  $e^4$ , suitably supported from the sides of the machine A, as indicated in Figs. 1, 2, and 3.

It will be understood that by turning the screw  $s^8$  the distance between the bottom of the moistener  $m$  and the bottom plate of the folder  $e$  may be adjusted to suit different thicknesses of envelopes or packages to be sealed, while fingers  $e^1$  and  $e^2$  are always retained in the same position relative to the moistener  $m$ . The folding and the moistening mechanisms being supported by block  $e^3$  can be adjusted laterally of the machine by turning the milled head  $o$  on one end of screw  $s^2$  to suit different widths of envelopes or packages to be sealed. Fingers  $e^1$  and  $e^2$  operate to properly press the flaps of the envelopes against the top of the moistener-box while conveyed through moistener  $m$ , the flaps being closed when engaged by the rolls  $r^3$  and  $r^4$ .

The box  $m^4$  of moistener  $m$ , as seen in Fig. 7, has at its top guides  $m^2$   $m^2$   $m^2$   $m^2$ , between which the top plate  $m^3$  of such box is arranged to slide, as indicated. This top plate carries upon its surface a wick or felt  $m$ , which is clamped along its edges between the guides  $m^2$   $m^2$  and the plate  $m^3$  by the sliding of such plate into place. As seen in Fig. 8, the upper end of the felt or wick  $m'$  extends into the lower part of the tube  $p'$  through a suitable opening therein and comes in contact with a sponge  $m^5$ , contained in such tube  $p'$ . Tube  $p'$  is rigidly secured to plate  $m^3$ . The moistener  $m$  is supplied with water or suitable liquid from tank T, supported from one side of the machine A, through the regulating-valve  $f$  and flexible hose  $p$ , which delivers the liquid through the tube  $p'$  to the sponge  $m^5$  and therethrough to the felt or wick  $m'$ , with which the gummed flaps of the envelopes are brought into contact by the pressure of the fingers  $e^1$  and  $e^2$ . The plate  $m^3$  is perforated, so that if for any reason there be an excess of moisture in the felt or wick  $m'$  it will drop through such perforations and be caught in the box  $m^4$  beneath.

The tank T has secured to the rear side thereof of two lugs  $t^4$   $t^4$ , as seen in Figs. 3, 4, and 5, so bent as to form the guides for the plate  $t^3$ , the ends  $t'$   $t'$  of which are bent so as to engage these lugs  $t^4$   $t^4$ . This plate  $t^3$  serves to close the opening  $t^5$  in the rear side of the tank T, through which such tank is filled. A piece  $t$  is secured inside the tank, as indicated, so as to prevent the water from running out through the opening  $t^5$ .

The lugs  $t^4$   $t^4$  are so bent as to engage also the lugs  $t^2$   $t^2$ , formed on the frame A of the

machine, and thus to support the tank T. On the shaft  $s^6$  is also supported a short roll  $r^7$ , which may be adjusted so as to apply pressure to the sealed envelopes, as desired.

The pressure-plate  $p^2$  is secured in place by adjustable screws  $s$ , which so cooperate with springs  $s'$  that an adjustable yielding pressure may be applied to the plate  $p^2$ . The screws  $s$  are supported by lugs  $a$  from the frame A of the machine. A bed-piece  $i'$  is provided beneath the plate  $p^2$  between the rolls  $r^5$  and  $r^6$  and suitably supported from the sides of the machine.

The roll  $r^4$  is driven directly by wheel  $w'$ , connected to shaft  $s^7$ , such wheel  $w'$  being driven by means of belt  $b^3$  from the pulley  $w$  of motor M or by means of handle  $h$ , as desired. The shaft  $s^7$ , by means of sprocket wheels and chains  $c$  and  $c'$ , drives shafts  $s^5$  and  $s^9$ , respectively, while shaft  $s^9$  similarly drives shaft  $s^{10}$  by means of chain  $c^2$ . Thus rolls  $r^1$ ,  $r^4$ ,  $r^5$ , and  $r^6$  are positively driven, while rolls  $r^2$ ,  $r^3$ , and  $r^7$  are driven from the rolls beneath them.

The operation of our mechanism is as follows: The tank T is filled with water and the flow to the moistener properly adjusted by valve  $f$ . Then by means of screw  $s^2$  the proper adjustment of the guide and folder  $e$ , fingers  $e^1$  and  $e^2$ , and moistener  $m$  is secured for the width of envelopes to be sealed, and by means of screw  $s^8$  the moistener  $m$  and fingers  $e^1$  and  $e^2$  are properly adjusted relative to the folder  $e$  for the thickness of the envelopes to be sealed. Then the envelopes are fed to the rolls  $r^1$  and  $r^2$  one at a time with the flaps against the guide and folder  $e$  and gummed side up. Then the motor M is started in right-handed direction and the rolls of the machine are set in motion. As each envelop is fed by hand to rollers  $r^1$  and  $r^2$  and then by them through the machine the guide and folder  $e$  first move it up snug against the fences  $q^1$  and  $q^2$  and then folder  $e$  folds the flap over, so that it passes beneath the fingers  $e^1$  and  $e^2$ , which press it against the moist wick or felt  $m'$  of the moistener  $m$  as the rollers  $r^1$  and  $r^2$  send the envelopes along through the folder  $e$ . As the envelop passes out from the folder  $e$  it is engaged by the rolls  $r^3$ ,  $r^7$ , and  $r^4$ , which press the flap down and pass the envelop to the roller  $r^5$ , which passes it between the pressure-plate  $p^2$  and the table  $i'$  and causes it to be finally engaged by the roll  $r^6$  and delivered from the machine.

We have found that the use of the sponge  $m^5$  in the cup  $p'$  so regulates the supply of liquid to the pad  $m'$  as to maintain an even and uniform degree of moisture therein.

The rollers are so separated from each other longitudinally of the machine that the envelop is always engaged at least by one pair of cooperating rollers.

What we claim is—

1. In an envelop-sealing machine, a recep-



tacle for moistening liquid, lugs on such receptacle and cooperating projections on the frame of the machine for supporting such receptacle from such lugs, such lugs also constituting means for retaining in place a cover to the opening for introducing liquid to such receptacle.

2. In an envelop-sealing machine, two positively-driven sealing-rolls placed a less distance apart than the length of the envelops to be sealed, a fixed bed-piece located between such rolls and with the surface thereof nearly or quite in the same plane with the operating-surfaces of the said rolls, and an adjustable pressure-plate extending between and beyond the operating-surfaces of both of such rolls and cooperating therewith and with such bed-piece to seal and smooth out the envelops as they are advanced by such rolls.

3. In an envelop-sealing machine, two positively-driven sealing-rolls placed a less distance apart than the length of the envelops

to be sealed and an adjustable pressure-plate extending between and beyond the operating-surfaces of both of such rolls and cooperating therewith to seal and smooth out the envelops as they are advanced by such rolls.

4. In an envelop-sealing machine, a moistening mechanism consisting in a receptacle for liquid, and plates thereon for holding a sheet of suitable absorbent material, a bed-piece cooperating with such plates to hold such sheet of absorbent material in place and having perforations therein to allow the surplus moisture from such absorbent material to escape through into such receptacle, and means for feeding suitable liquid to such sheet of absorbent material.

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