A. A. THACKER.

ENVELOP STAMPING AND SEALING MACHINE.

APPLICATION FILED APR. 15, 1920.

1,363,065. Patented Dec. 21, 1920.

3 SHEETS—SHEET 1.

Fig. 1.

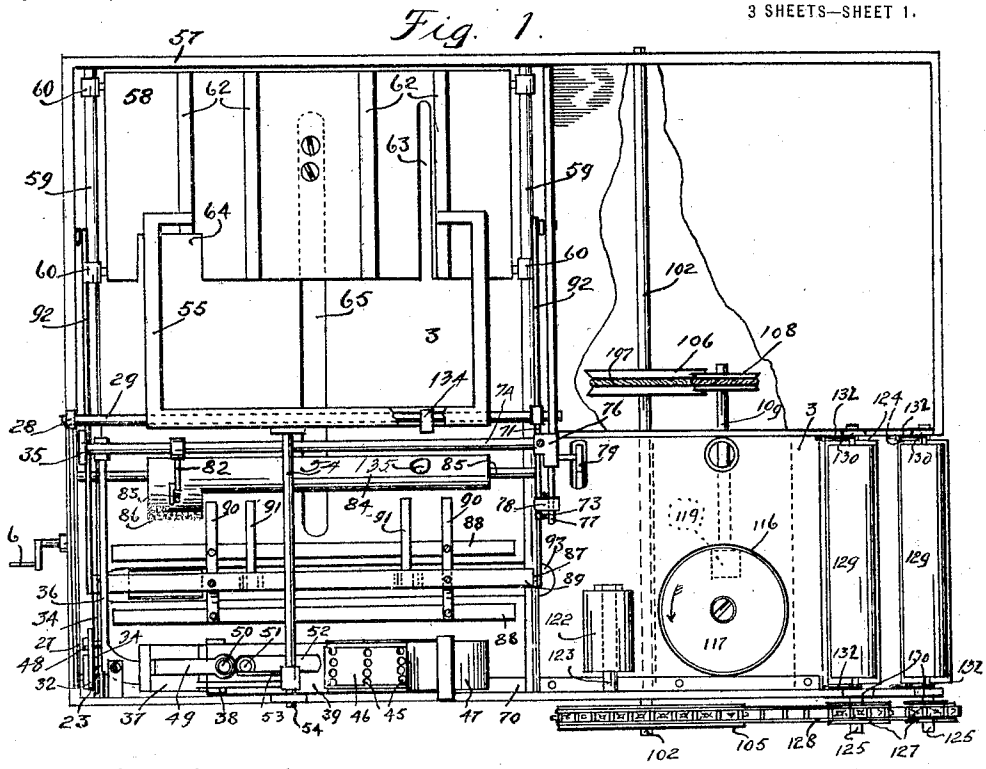
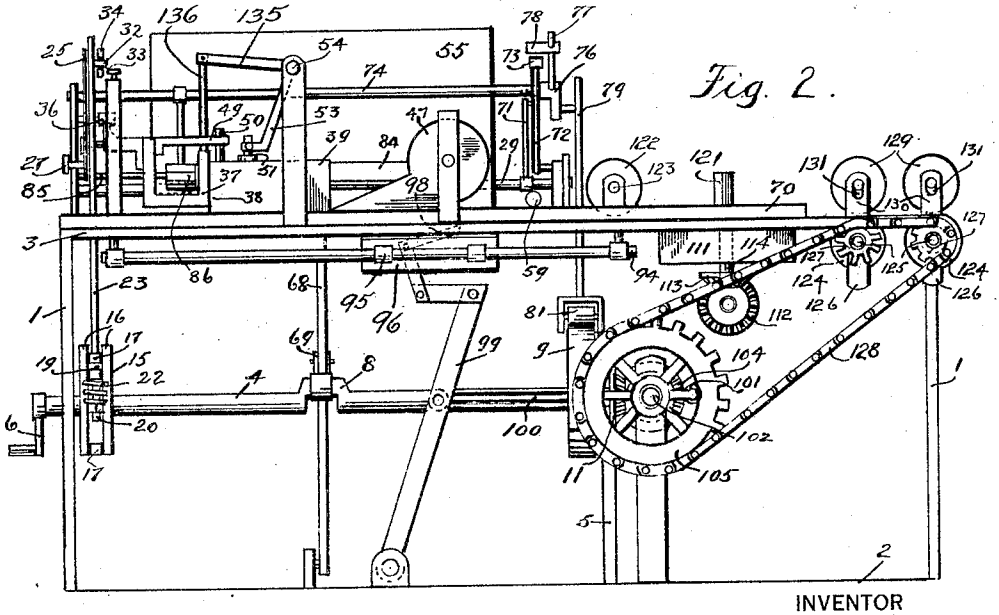


Fig. 2.



INVENTOR

Anson A. Thacker.

BY

M. C. Gillham.

ATTORNEY

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3 SHEETS—SHEET 2.

Fig. 3.

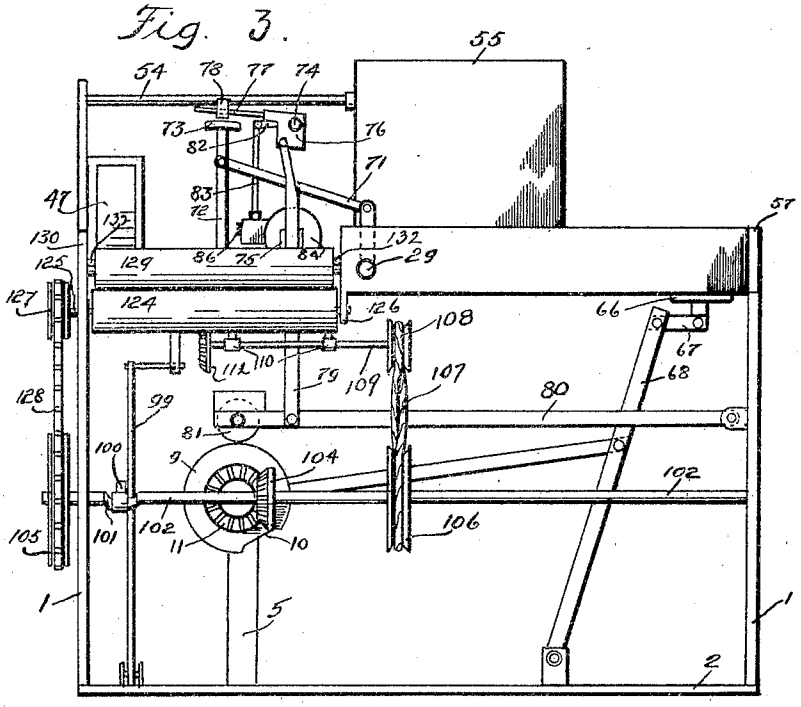


Fig. 4.

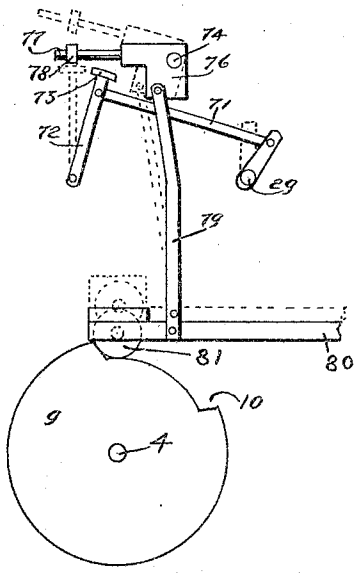
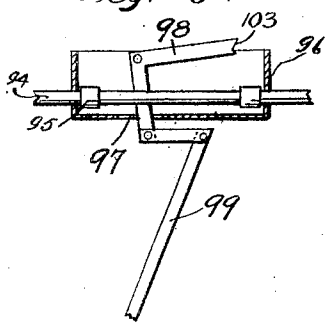


Fig. 5.



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BY

M. C. Gillham

ATTORNEY

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3 SHEETS—SHEET 3.

Fig. 6.

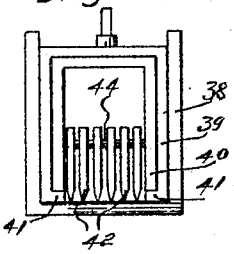


Fig. 7.

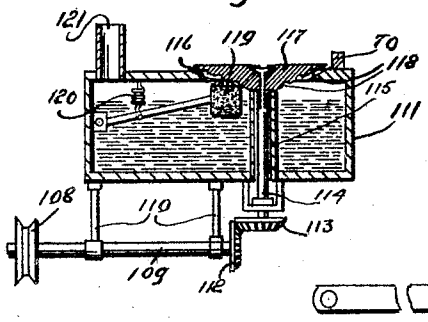
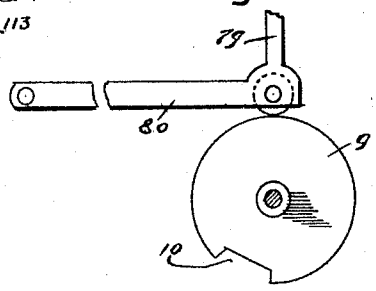


Fig. 8.



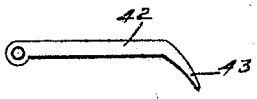


Fig. 9.

Fig. 10.

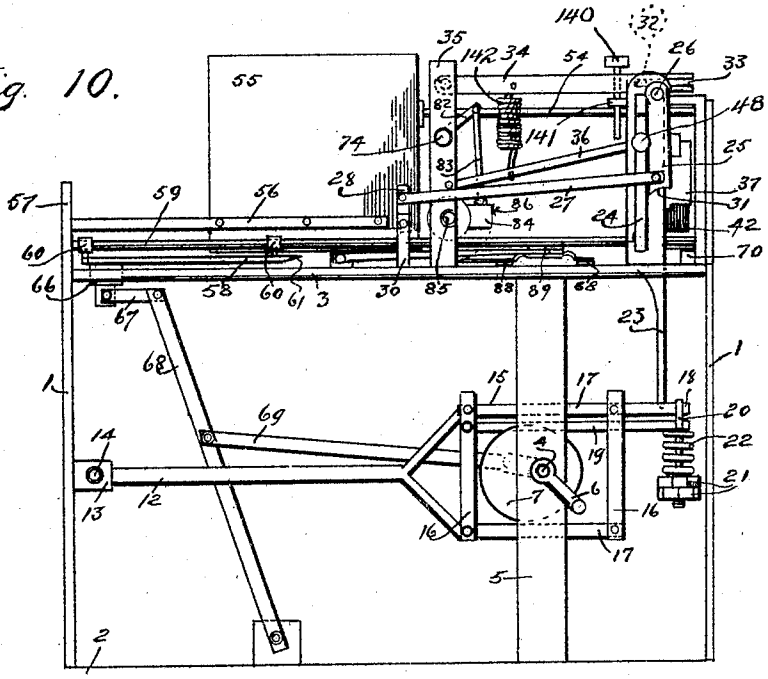
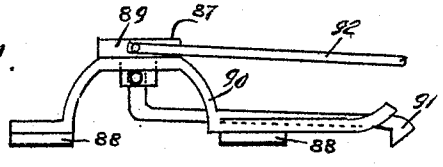


Fig. 11.



INVENTOR

Anson A. Thacker.

BY

M. C. Gillham

ATTORNEY

UNITED STATES PATENT OFFICE.

ANSON A. THACKER, OF KANSAS CITY, MISSOURI.

ENVELOP STAMPING AND SEALING MACHINE.

1,363,065. Specification of Letters Patent. Patented Dec. 21, 1920.

Application filed April 15, 1920. Serial No. 374,086.

To all whom it may concern:

Be it known that I, ANSON A. THACKER, a citizen of the United States, residing at Kansas City, in the county of Jackson and State of Missouri, have invented a new and useful Envelop Stamping and Sealing Machine, of which the following is a specification.

My invention relates to envelop stamping and sealing machines, and the object of the invention is to provide a simple automatic machine of this character and having facility for carrying the lowermost envelop from a pile of envelops and affixing thereto a postage stamp and sealing the envelop while the envelop is in transit, and for rendering the machine automatically inoperative when not feeding envelops thereto.

I attain these objects and other advantages by means of the mechanism illustrated in the accompanying drawing in which—Figure 1, is a top plan view of a machine embodying my invention. Fig. 2, is a side elevation of the same. Fig. 3, is a rear elevation of the same. Fig. 4, is a detail view of the locking device for rendering the machine inoperative, a part of my invention. Fig. 5, is a detail view, partly sectioned, of the means for advancing the envelop after receiving its stamp. Fig. 6, is a view of the front end of the stamp feeding device, a part of my invention. Fig. 7, is a longitudinal section through the water tank and rotary moistening disk, a part of my invention. Fig. 8, is a side view of the notched wheel. Fig. 9, is an elevation of one of the stamp feeding fingers. Fig. 10, is a front elevation of the machine and, Fig. 11, is an end view of the lifting bridge, and showing the finger guides thereon.

Similar numerals of reference refer to corresponding parts throughout the several views.

The standards 1, bottom plate 2, and bedplate 3, fairly represent the provision made for supporting the organized mechanism hereinafter described. The machine consists of a main drive shaft 4, which is journaled in posts 5. A crank 6, is mounted on the shaft, outward of the machine and which may be operated by hand or by motor. An eccentric wheel 7, is mounted on the shaft, a little distance inward of the machine, a little farther inward with a crank 8, and then a notched wheel 9, and at the inner end of the shaft with a gear 11, the notch in the wheel 9 being shown at 10. The devices, above described, comprise the means for imparting motion to the organized parts of the machine. A lever 12, is pivoted horizontally on a plate 13, attached on the frame, by pivot pin 14, the inner end of the lever is forked and a substantially square frame 15, having side members 16, and upper and lower members 17, the upper member 17, projecting a distance beyond the frame, as shown at 18, in Fig. 10. A lever 19, is pivoted between the inner vertical members 16, at the upper ends thereof, and it is extended between the outer vertical members and beyond a distance corresponding with the projecting portion of the upper member 17. The lever is adapted for bearing on the periphery of the eccentric wheel. A rod 20, is attached on the outer end of the upper member 17, and is loosely extended through the lever 19, and therebelow and its lower end portion is provided with external screw threads adapted for receiving adjusting nuts 21. A spring 22, is mounted on the rod, between the nuts and the lever. A pitman 23, is mounted vertically on the projecting end of the upper member 17, and pierces the bed plate 3; the upper end portion of the pitman is broadened and, at the inner side of the broadened portion, a longitudinally extending slot 24, is apertured. A latch 25, is pivoted at its upper end and on the upper end of the pitman 23, by pivot 26, and a connecting rod 27, is connected between the lower end of the latch and an arm 28, on a shaft 29, which is journaled in posts 30. The lower end of the latch is concaved, as shown at 31. An inwardly extending pin 32, is fixed on the inner side of the upper end of the pitman and the pin is extended through a slot 33, in the outer end of a lever 34, which is pivoted at its inner end, on a standard 35. A lever 36, is also pivoted on the standard 35, and is extended to closely adjacent the inner side of the pitman, the outer end of the lever is attached on a broad U-shaped press member 37, which is adapted for pressing down upon a postage stamp and cause the same to be separated from a strip of stamps by the edge of a knife edge blade 38, which is mounted on the sides of a box member 39, which is provided within with a movable bottomless box section 40, slidably arranged on the inturned flanges 41, on the lower sides of the box 39, and provided within the section 40, with a series of gravity oper-

ated fingers 42, having downwardly curved terminals 43, the fingers pivoting at their inner ends on a transverse shaft 44, are adapted for engaging the perforations 45, in a strip of stamps 46, which is rolled and stored in a housing 47, and carry the strip forward to a distance of one stamp. A pin 48, is fixed on the lever 36, and is extended through the slot in the upper end of the pitman and its free end is provided with a head to hold the pin in the slot in the pitman, and a screw 140, is adjustably mounted in a bracket arm 141, and arranged therein for limiting the back stroke of the lever 36, and a retractile spring 142, is connected between the levers 34 and 36, to hold the latter against the end of the screw 140. A bar 49, is attached on the press member 37, and is projected over and above the end of the box 39, the free end of the bar is provided with a hole through which a guide post 50, attached on the box, passes. A vertical post 51, is mounted on the top of the box section 40, and extends through a slot 52, in the top of the box 39. The lower arm 53, of a bell crank on a shaft 54, is attached on the post 51, and the other arm 135 of the bell crank is pivotally connected with a rod 136, connected on the press member 37.

An envelop receptacle 55, is suspended a suitable distance above the bed plate 3, by arms 56, attached on plate 57. A carrier 58, is slidably mounted on slide rods 59, by slides 60, which are connected with the carrier. The inner edge of the carrier is beveled upward, as shown at 61 in Fig. 10, so that it will engage the flaps of envelops when lodged flap down on the bed plate in the receptacle 55, when moving inward. Longitudinally extending parallel bars 62, are attached on the upper side of the carrier and their inner ends are beveled upward forming with the beveled edge of the carrier a blade. A slot 63, is recessed in the carrier for a purpose that will presently appear. A substantially square recess 64, is provided in the forward edge of the carrier, adjacent the right corner thereof, and the recess is adapted for receiving the press member 37, when the plate is advanced thereunder. A slot 65, is apertured in the bed plate 3, centrally of the carrier 58, through which slot a boss 66, is loosely projected and attached on the lower side of the carrier. A link 67, is pivoted on the lower end of the boss and on the upper end of a pivoted vertical lever 68. A crank rod 69, operating on the crank 8, is pivoted on the lever 68, and thereby the revolving crank 8 imparts a forward and backward stroke to the carrier 58. A rail 70, is laid along the edge of the bed plate 3, at the right side thereof, and on this rail the box 39 and housing 47, are mounted, in such a manner that the carrier shall have opportunity to move thereunder at the limit of its forward stroke. A connecting rod 71, is pivoted at its one end, on the arm or post 30, on shaft 29, and its other end is pivoted on a vertically pivoted rod 72, having a head 73. A shaft 74, is revolubly mounted in post 35 and post 75, and a crank member 76, including a rod extension 77, having a stop member 78, is disposed thereon over the head 73. A vertically extending rod 79, is pivoted at its upper end, on the crank member 76, and, at its lower end, pivoted on a horizontally pivoted lever 80, having a roller 81, at its free end, which constantly bears on the periphery of the wheel 9. An arm 82, is mounted on the shaft 74, and a rod 83, is pivoted vertically on the arm 82, and on a water reservoir 84, on a revoluble shaft 85, which reservoir is provided with an outlet portion stuffed with absorbent fabric as shown at 86, and arranged for depositing moisture on the envelop carried by the carrier as it passes thereunder, when the reservoir is rotated. A lifting bridge 87, is arranged on the bed plate 3, and over the slot 65, which bridge comprises bearing plates 88, and an elevated upper plate 89, which plates are held in place by arched fingers 90, rigidly connected between them. Stop members 91, are pivotally arranged on the lower side of the plate 89. Levers 92, are connected with the ends of the upper member 89, and pivoted on the sides of the bed plate and are adapted for allowing the bridge to be lifted. An elongated slotted opening 93, is apertured in the bed plate, directly below the upper member of the bridge. Slide bars 94, are mounted on the lower side of the bed plate, adjacent the sides of the slot 93, and are provided with slides 95, which are associated with the sides of a box member 96, having a slotted aperture 97, in the lower side thereof. A finger 98, is pivoted in the sides of the box and is adapted for turning thereon. A lever 99, is pivoted vertically on the lower end of the finger and a crank rod 100, operating by a crank 101, on a revoluble shaft 102, is pivoted thereon. The free end of the finger is beveled, as shown at 103.

A beveled gear 104, is mounted on the shaft 102, and is engaged by the gear 11, on the shaft 4. A sprocket wheel 105, is mounted on the shaft 102, outwardly of the machine. A grooved pulley 106, is mounted on the shaft 102, rearwardly of gear 104, and is provided with a crossed belt or cable 107, which travels over a grooved pulley 108, on a shaft 109, journaled in hangers 110, attached on the lower side of a water tank 111, which is attached on the lower side of the bed plate 3. A beveled gear wheel 112, is mounted on the end of the shaft 109, and is engaged by a gear 113, on the lower end of a vertical shaft 114, which passes upwardly through the tank, through a tubular

housing 115, which rises through the tank. A circular opening 116, is provided in the upper side of the bed plate and through the upper side of the tank, and a disk 117, having a beveled lower side provided with a plurality of indentations 118, adapted for receiving and retaining moisture received from a revolving brush 119, is pivoted on the inner side of the tank and suspended by a retractile spring 120, attached on the upper side of the tank. An inlet 121, is provided for filling the tank with water. An idle roller 122, is arranged on the stud 123, to lie closely adjacent the bed plate, so that it will engage envelops passing thereunder to the flap moistening disk 117. Rollers 124, provided with pivots 125, operating in flanges 126, are adjusted so that the upper sides of the same shall lie in the plane of the bed plate. The rollers are preferably made of rubber. Sprocket wheels 127, are mounted on the projecting pivots of the rollers and an endless sprocket chain 128, is mounted on the sprockets 105 and 127. Rollers 129, are revolubly mounted in flanges 130, directly above and closely adjusted to the rollers 124, the pivot holes being slotted, as shown at 131, in Fig. 2, so that the rollers may yield when an envelop is passing between the rollers; the said rollers are yieldingly held in place by means of springs 132, which press on the roller pivots and yield when the rollers yield. A compartment 133, is provided on the bed plate for a convenience.

Envelops are piled, flaps down, in the receptacle 55; water is supplied to the reservoir 84, through inlet 135, and also supplied to the tank 111. Crank 6, is turned to the right and the eccentric 7, crank 8, wheel 9, and gear 11, are revolved in the same direction; the latter drives the gear 104, pulley 106, crank 101, and sprocket 105, on shaft 102. The eccentric 7, raises and lowers the frame 15, also the pitman associated therewith. The crank 8, with lever 68, reciprocates the carrier 58. The notched wheel 9, provides opportunity once in each revolution, for the lever 80, to drop and turn the crank 76. The pulley 106 and crossed belt or cable 107, imparts motion to the gear 112, and the latter drives the disk 117, in the direction of the arrow marked thereon, in Fig. 1. The crank 101, rocks the lever 99, and thereby reciprocates the box member 96, as well as rotates the finger 98. The sprocket 105, by means of the sprocket chain 128, traveling on the sprockets 127, drives the rollers 124. When the pitman rises to a point adapted for bringing the concaved end of the latch over the pin 48, the carrier has advanced and engaged the lowermost of the envelops and further advanced to bring the edge of the envelop conveyed, to and against the dog 134, rotating the same and the shaft 29, thereby pulling the latch over the pin 48, whereupon the pitman makes its down stroke and thereby, carries down the lever 36, to a pressing contact with the bed plate, so that the head 37, may press down on a stamp placed thereunder and affix the same on the envelop transported there by the carrier. The action described also accomplishes the separation of the stamp from the strip of stamps, by aid of the blade 38. At the time the rod 27 is pulled back, the rod 71, is also pulled back through the same agency, and thereby the lever head 73, on lever 72, is drawn back from the rotative field of the stop 78, thus permitting the crank 76, to rotate downward, when the roller 81, drops into the notch or recess 10, in wheel 9; thereby the shaft 74, is rocked, likewise the reservoir 84, by means of the bell crank arms 82 and 83, thus rocking the moist brush 86, down against the envelop in transit and depositing moisture thereon to receive the gummed side of the stamp. When the envelop has been carried forward to receive the stamp and a stamp has been affixed thereon, the crank 101, has moved the lever 99, to the forward end of the slot 97, in the bottom of the box 96, and the lever slides the box on bars 94, to the forward end of the machine and, as the crank goes over, the box is started in reverse direction by the lever 99, moving rearward, and the finger 98, is rotated upward, to engage the end of the envelop, assuming substantially the position shown in Fig. 5, the finger forcing the envelop from under the bridge 87, and beneath the roller 122, to the revolving disk 117, and the latter being elevated a little above the bed plate, the flap of the envelop is carried thereunder and the gummed edge of the envelop flap receives moisture from the indentations 118, and then passes from the disk to and between the rollers 124 and 129, the pressure of the rolls effecting a sealing of the envelop in the well known manner. After the envelop is carried forward by the carrier and has rotated the dog 134, the envelop and carrier pass under the bridge 87, first engaging the ends of the fingers 90, and stop levers 91 and passing thereunder force the bridge to lift and turn on the pivoted levers 92, the gravity of the bridge holding the envelop in place after the carrier has withdrawn therefrom to make its back stroke. At this time the stops 91 drop behind the back edge of the envelop and prevent lateral movement thereof during the stamp affixing process and during its transit to the sealing devices. When the lever 36 is forced down by the pitman and the press 37 has separated and affixed a stamp on the envelop, the bell crank on the shaft 54 is turned, the arm 53 thereof carrying back with it the inverted box member 40, and the fingers 42, therein, far enough

to allow the fingers to drop into the perforations at the rear of the advanced stamp and move the strip of stamps forwardly to bring the end stamp directly below the press 37. If the carrier should make its forward stroke without carrying an envelop, the dog 134, would be received in the slot 63, and the shaft 29 would not be rotated, the latch would not engage the pin 48, and the head 73, on lever 72, would not be withdrawn from the rotative field of the stop 78, so that the crank 76, could not be rocked to rock the reservoir nor the roller 81, permitted to drop into the recess 10, in the periphery of the wheel 9, although the opportunity to do so was presented once in each revolution of the wheel 9. The automatic arrangements render the stamping and sealing operations inoperative in the event there is no envelop in transit. The disk 117, is supplied with moisture by means of the rotary brush 119, which is partly submerged in the water in the tank.

Having described my invention what I claim is—

1. In an envelop stamping and sealing machine, the combination of a receptacle for envelops, a carrier for transporting individual envelops from said receptacle, a driving shaft, means operable by said shaft for reciprocating said carrier, a pitman, means operable by said shaft for reciprocating said pitman, a retarded vibrating lever having a head for pressing on the envelop transported thereunder by said carrier and provided with a pin which projects loosely through said pitman, a latch pivoting on said pitman, a rock shaft operable by the envelop transported by said carrier, means operable by said rock shaft for latching said lever with said pitman, means for detaining said lever to permit said rock shaft to unlatch said pitman therefrom, a rock shaft having a crank member provided with an outlying adjustable mass, a vibrating stop member operable by said first mentioned rock shaft and normally holding said last mentioned rock shaft inoperative, means operable by said driving shaft for operating said last mentioned rock shaft when said vibrating stop member is vibrated from the mass on the crank thereof, a rotatable moisture carrying brush operable by said last mentioned rock shaft for brushing the envelop transported by said carrier, a series of spaced apart individual fingers, means operable by said vibrating lever for reciprocating said fingers to bring the advanced stamp of a strip of stamps on the envelop transported by said carrier to permit the head on said vibrating lever to affix a stamp thereon, a shaft driven by said driving shaft, a pivoted finger for slidably transporting the envelop endwise after a stamp is affixed thereon, means operable by said driven shaft for simultaneously reciprocating and rotating said finger, a rotary moisture carrying disk adapted for receiving thereunder the flap of the envelop transported by said pivoted finger, means operable by said driven shaft for operating said disk, automatic means for continuously supplying moisture to said disk, and rollers arranged to be operable by said driven shaft for receiving the envelop from said disk and sealing the same.

2. The combination of a receptacle for unsealed envelops, a carrier for transporting envelops from said receptacle, a driving shaft, means operable by said driving shaft for reciprocating said carrier, a rock shaft operable by an envelop being transported by said carrier, a pivotally mounted bridge member arranged to be lifted by the forward stroke of said carrier, and stops pivoting on said bridge member for detaining and guiding the envelop transported by said carrier.

Kansas City, Missouri, April 5th, 1920.

ANSON A. THACKER

Witnesses:

E. T. McKay,

H. D. Ellinwood.