B. S. MOLYNEUX.

AUTOMATIC MAILING MACHINE.

APPLICATION FILED MAY 12, 1903. RENEWED JUNE 21, 1913.

1,086,391.

Patented Feb. 10, 1914.

6 SHEETS—SHEET 1.

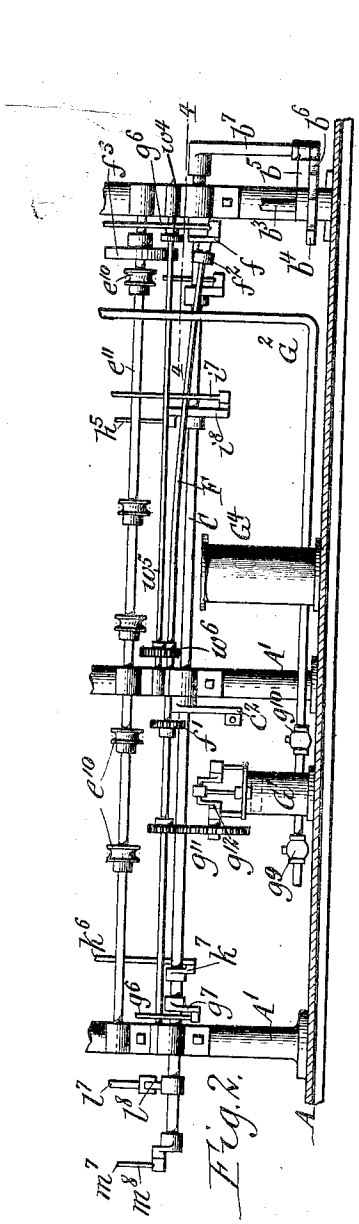


Fig. 2.

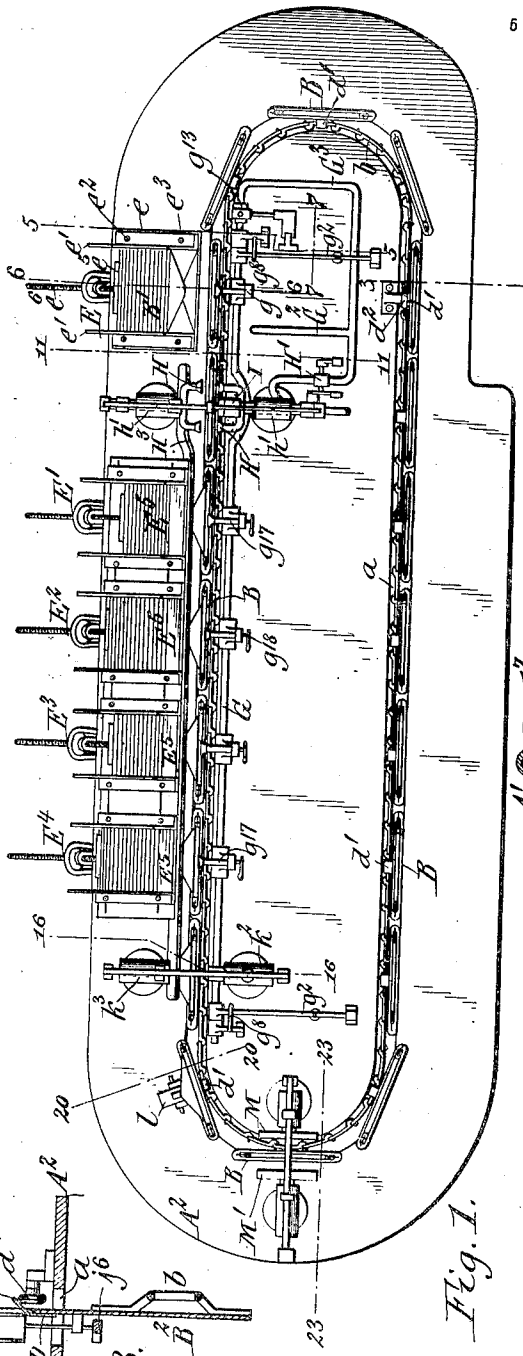


Fig. 1.

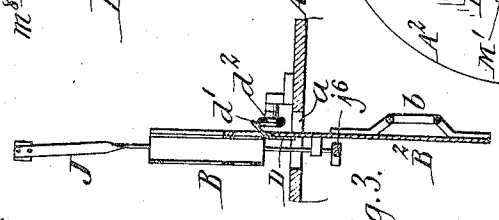


Fig. 3.

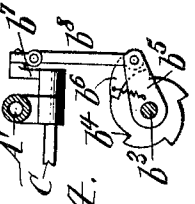


Fig. 4.

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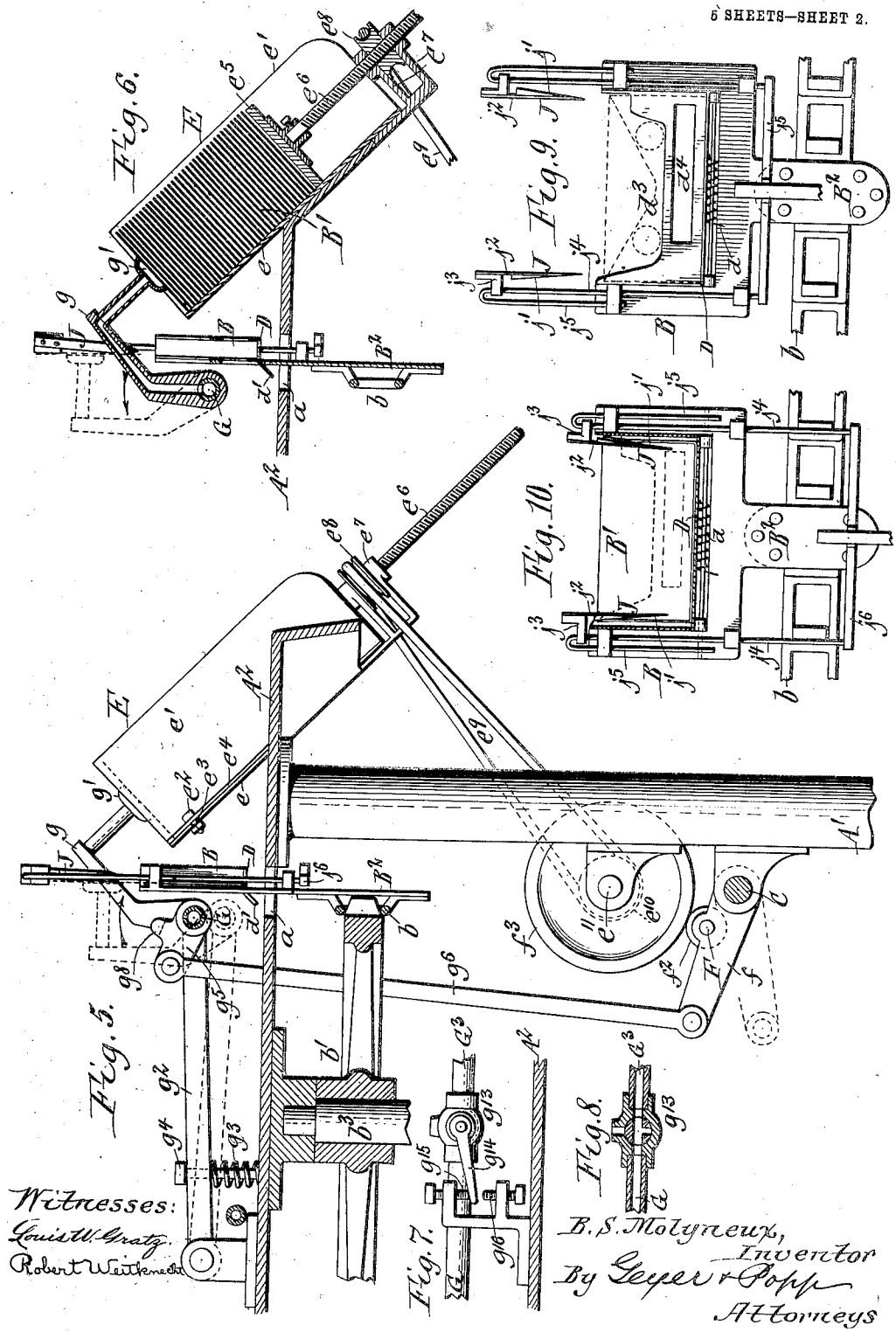
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5 SHEETS—SHEET 2.



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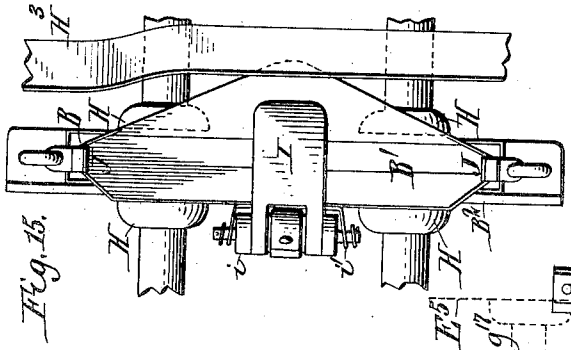


Fig. 15.

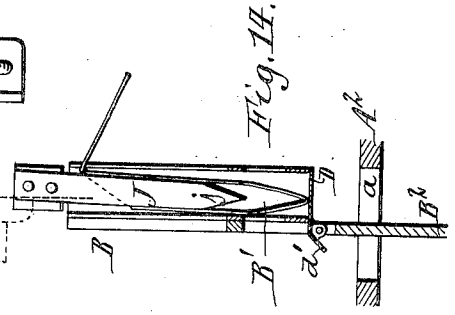


Fig. 14.

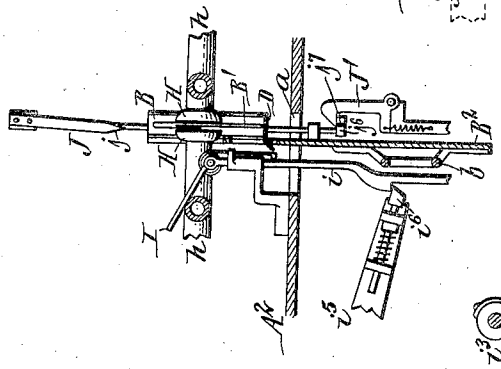


Fig. 12.

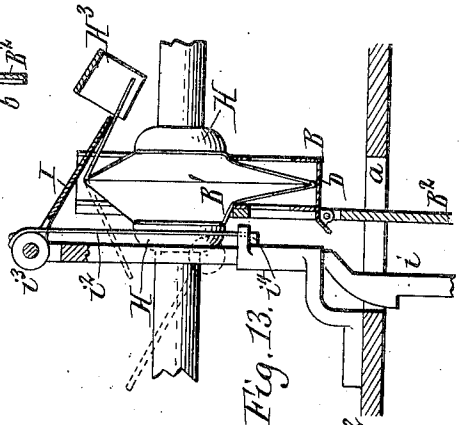


Fig. 13.

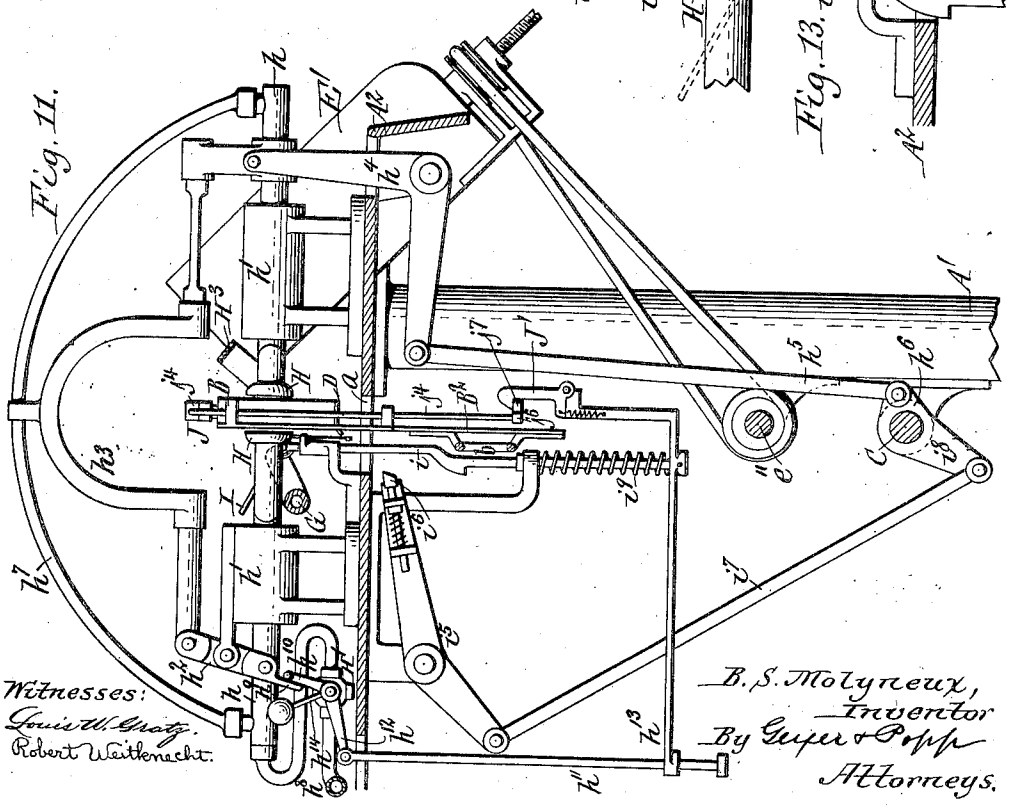


Fig. 11.

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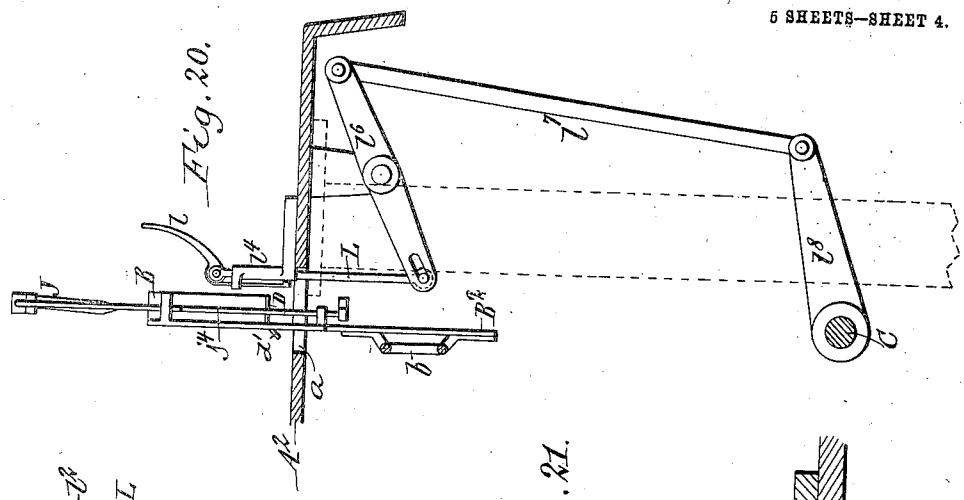


Fig. 20.

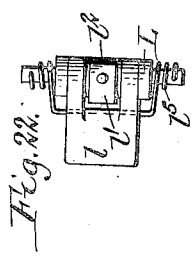


Fig. 22.

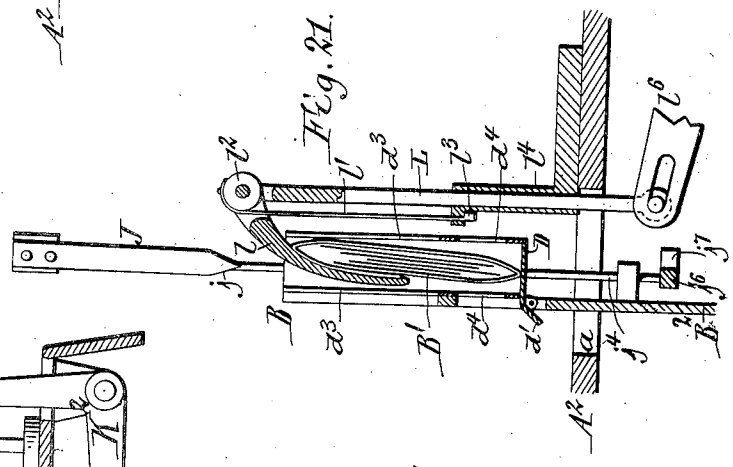


Fig. 21.

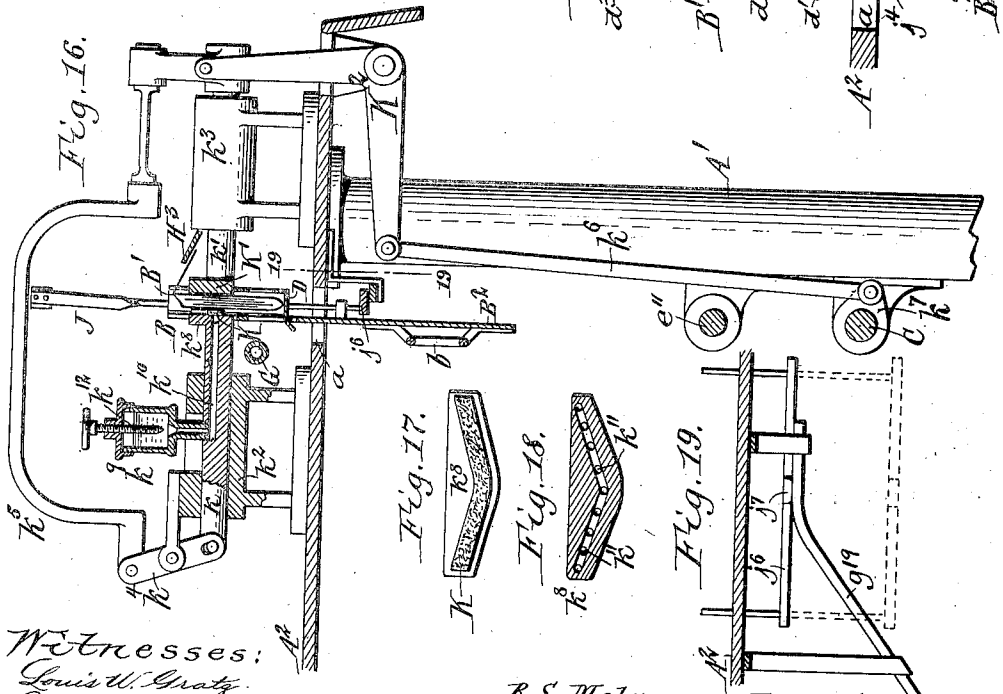


Fig. 16.

Fig. 17.

Fig. 18.

Fig. 19.

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AUTOMATIC MAILING MACHINE.

APPLICATION FILED MAY 12, 1903. RENEWED JUNE 21, 1913.

1,086,391. **Patented Feb. 10, 1914.**

5 SHEETS—SHEET 5.

Fig. 24.

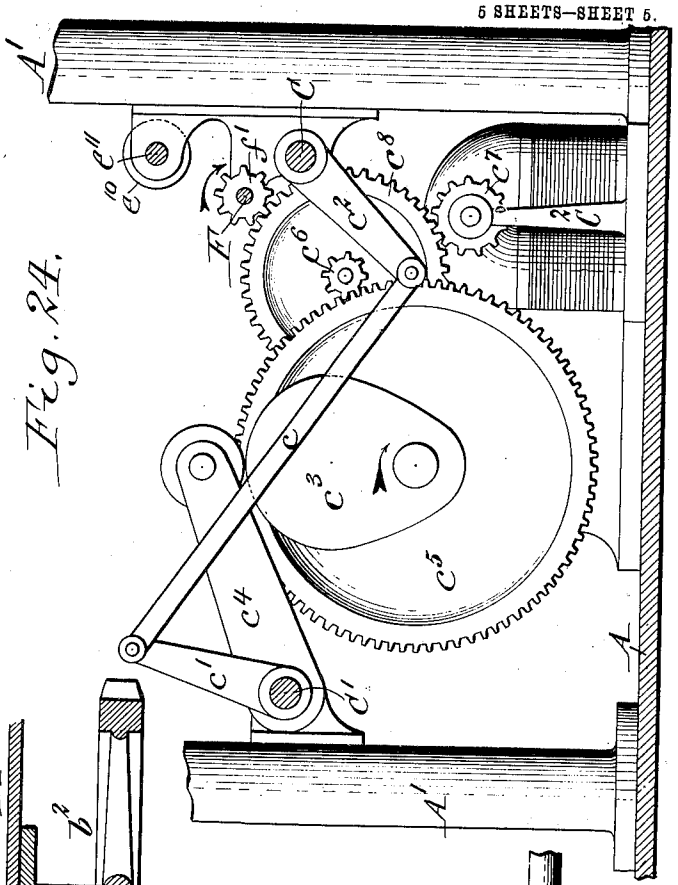
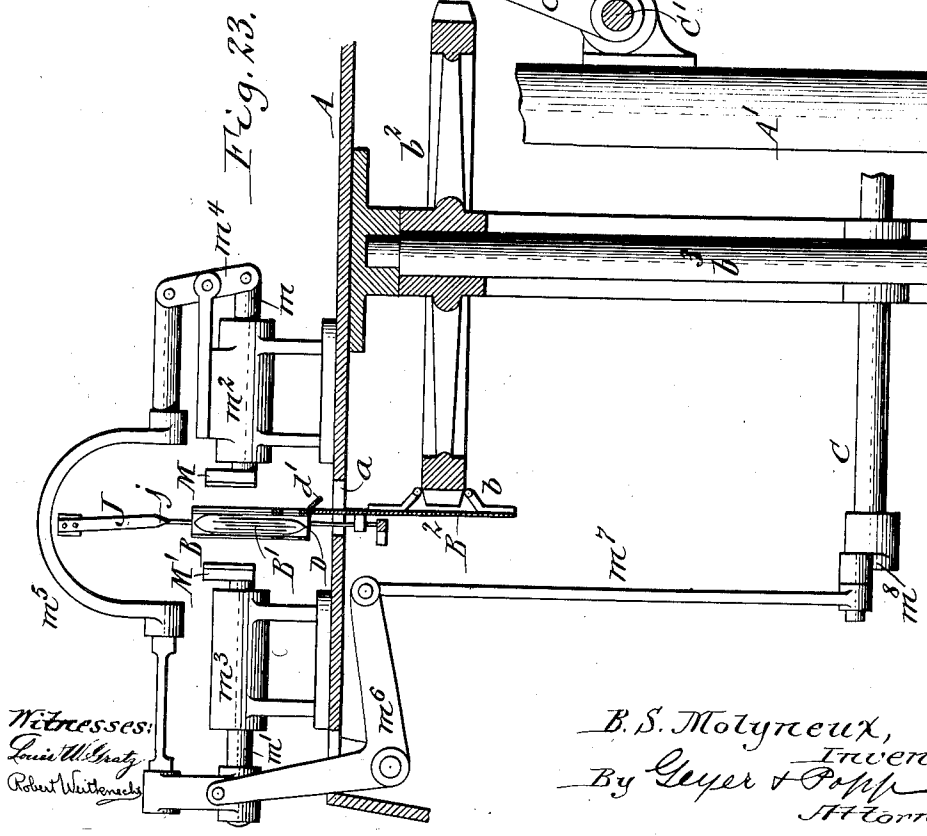


Fig. 23.



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UNITED STATES PATENT OFFICE.

BARTON S. MOLYNEUX, OF BUFFALO, NEW YORK, ASSIGNOR TO MOLYNEUX AUTO-MAILING MACHINE COMPANY, OF PIERRE, SOUTH DAKOTA, A CORPORATION OF SOUTH DAKOTA.

AUTOMATIC MAILING-MACHINE.

1,086,391. Specification of Letters Patent. Patented Feb. 10, 1914.

Application filed May 12, 1903, Serial No. 156,778. Renewed June 21, 1913. Serial No. 775,133.

To all whom it may concern:

Be it known that I, BARTON S. MOLYNEUX, a citizen of the United States, and resident of Buffalo, in the county of Erie and State of New York, have invented new and useful Improvements in Automatic Mailing-Machines, of which the following is a specification.

In business establishments which advertise extensively by mail, it has heretofore been the practice to effect, by hand, the operations of placing the mail matter in the envelops and sealing them preparatory to placing the stamps and addresses on the envelops and tying the prepared envelops into bundles of the required number.

The object of this invention is to produce a machine whereby these operations may be effected automatically and which only requires the various kinds of material manipulated by the machine to be replenished from time to time.

The general organization and operation of this machine is as follows: Upon an endless carrier are mounted a plurality of holders each of which is first presented to a device which places an envelop in the holder, then to an opening mechanism which turns the flap of the envelop into an open position and holds the body of the envelop in a distended position. The envelop while thus opened and distended is then presented successively to a plurality of article feeders each of which in its turn delivers one of the articles from its respective stack into the envelop. After the desired number of articles have been placed in the envelop and while its flap is still in an open position that part of the body of the envelop is moistened with which the gummed surface of the flap is designed to engage. Thereafter the flap is turned from its open into its closed position and pressed with its gummed surface against the moistened surface of the body, so as to seal the envelop. After the envelop has been thus sealed the same is automatically discharged from its holder and the latter is then successively moved by the carrier past the envelop feeding, opening, filling, closing and sealing devices, this cycle of operations being repeated during each round trip of an envelop holder.

In the accompanying drawings consisting of 5 sheets: Figure 1 is a top plan view of the machine, on a reduced scale. Fig. 2 is a fragmentary longitudinal sectional elevation of the lower part of the machine showing some of the driving mechanism and the air exhausting device. Fig. 3 is a fragmentary vertical section in line 3—3, Fig. 1, on an enlarged scale, showing the means for discharging the filled envelops from the holders. Fig. 4 is a horizontal section in line 4—4, Fig. 2. Figs. 5 and 6 are fragmentary transverse sections in lines 5—5 and 6—6, Fig. 1, on an enlarged scale, showing the means whereby the envelops are delivered successively from the stack into the holders. Fig. 7 is a fragmentary longitudinal section in line 7—7, Fig. 1, on an enlarged scale, showing the means for controlling the suction of the grippers of the envelop and article feeding devices. Fig. 8 is a longitudinal section of the valve which controls the operation of said grippers. Fig. 9 is a side elevation of one of the envelop holders, showing the device for retaining the envelop in a distended position. Fig. 10 is a vertical longitudinal section of the same showing the retaining device in an operative position. Fig. 11 is a fragmentary transverse section, on an enlarged scale, taken in line 11—11, Fig. 1, and showing the mechanism whereby the envelop is distended and the sealing flap is turned into an open position. Fig. 12 is a fragmentary sectional view of this mechanism taken centrally through the same and showing another position of the parts. Fig. 13 is a similar view, on an enlarged scale, showing still another position of these parts. Fig. 14 is a similar view showing the devices which hold the envelop in a distended position during the operation of filling the same. Fig. 15 is a fragmentary top plan view, on an enlarged scale, of the envelop distending and retaining mechanism. Fig. 16 is a fragmentary transverse section, on an enlarged scale, in line 16—16, Fig. 1, showing the device for moistening that part of the envelop body which receives the gummed surface of the flap. Fig. 17 is a detached face view of the moistening pad. Fig. 18 is a vertical longitudinal section of the same. Fig. 19 is a fragmentary longitudinal section, on an enlarged scale, in line 19—19, Fig. 16, showing the means for withdrawing the retaining devices from the envelop preparatory to closing its flap. Fig. 20 is a fragmentary cross section, on an enlarged

scale, in line 20—20, Fig. 1, showing the means for closing the flap preparatory to sealing the same upon the body of the envelop. Fig. 21 is a vertical section of the same, on an enlarged scale, the parts being represented in their operative position. Fig. 22 is a top plan view of the same. Fig. 23 is a fragmentary vertical section, on an enlarged scale, in line 23—23, Fig. 1, showing the means for pressing the gummed flap against the moistened body. Fig. 24 is a fragmentary section, on an enlarged scale, showing a portion of the driving mechanism.

Similar letters of reference indicate corresponding parts throughout the several views.

The main frame of the machine may be of any suitable construction to support the various parts of the machine. As shown in the drawings, this frame consists of a base A, columns or standards A^1 rising from the base, and a table or platform A^2 mounted on the upper ends of the standards. The table is provided with an endless slot *a* which is of oblong form and consists of two straight portions which are arranged lengthwise near opposite sides of the table and two semi-circular portions arranged at opposite ends of the table and uniting the corresponding ends of the straight portions of the slot.

B represents a plurality of holders or receptacles which receive the envelops B^1 and support the same while being filled, sealed, stamped and addressed. These holders are arranged in a continuous or endless series above the table and are supported by a carrier for presenting the envelops contained in the holders to the various devices which operate upon the same. This carrier preferably consists of an endless chain *b* which is arranged underneath the table adjacent to the slot and each of the holders is supported over this chain by means of upright wings B^2 extending through the slot and connected at its lower end to the belt while its upper end is secured to the inner side of the holder. The belt moves in a horizontal plane parallel with the table and passes around supporting wheel b^1, b^2 arranged below the table concentric with the curved portions of the slot. Each of these supporting wheels is mounted on the upper end of a vertical shaft b^3 which is journaled in bearings on the main frame. An intermittent motion is imparted to this belt for carrying the several holders successively from one operating device to another and permitting the holders to remain at rest, or nearly so, while the envelops therein are being operated upon. Various means may be employed for effecting this movement of the belt, the preferred means shown in the drawings, Figs. 2 and 3, consisting of a ratchet wheel b^4 mounted on the lower end of the shaft which carries the front supporting wheel b^1, a horizontal oscillating rock arm b^5 mounted loosely on the front shaft and provided with a pawl b^6 engaging with the ratchet wheel, and a horizontal rock shaft C journaled in bearings on the right hand side of the main frame and provided with a rock arm b^7 which is connected by a link b^8 with the ratchet arm. This ratchet mechanism is so constructed or timed that the carrying belt will be moved forward a space or distance equal to the distance between one of the operating devices and another during each oscillating movement of the rock shaft C. The latter and a similar horizontal rock shaft C^1 journaled lengthwise upon the opposite or left hand side of the main frame are the main shafts from which motion is derived for operating most of the various parts of the machine. These shafts are caused to move in unison but in opposite directions by means of a link *c* connecting an upwardly projecting arm c^1 on the shaft C^1 and a downwardly projecting arm c^2 on the shaft C, as shown in Fig. 24. The rocking movement of these shafts is produced by means of a rotary cam c^3 which engages with a roller on a rock arm c^4 connected with the shaft C^1, a gear wheel c^5 connected with the cam, a pinion c^6 meshing with the gear wheel, and an electric motor C^2 having its armature provided with a pinion c^7 which meshes with a gear wheel c^8 connected with the intermediate pinion c^6. Although this is the best means which has been at present devised for effecting this movement of the parts, the same may obviously be varied for obtaining the same result.

Each of the holders is preferably constructed in the form of an oblong box or receptacle which is arranged upright and moves in the direction of its length. The top of this receptacle is open to permit of introducing the envelop into the same and placing the articles to be mailed into the envelop while confined within the receptacle. The lower end of the receptacle is provided with a movable bottom or trap door D which is closed when the holder is in position to receive the envelop and confines the same therein while the various operations upon the same are being effected, and which is opened when these operations are completed and permits the prepared envelop to discharge downwardly from the receptacle to the bundling and wrapping mechanism. The movable bottom of each receptacle is preferably hinged on its inner end to its supporting wing and is normally held in its closed position by a spring *d*, as shown in Figs. 9 and 10. When the receptacle approaches the position for discharging the prepared envelop, its free end is dumped or swung downwardly for opening the bottom of the receptacle by means of a tail or

finger d^1 projecting from its inner end and engaging with a trip device d^2 arranged on the table, as shown in Fig. 3. This trip device preferably consists of a dumping roller mounted to turn upon a suitable bracket so as to operate the trap door easily. The side walls of the envelop receptacle are cut away in such manner so as to permit the various devices which operate upon the envelop to pass into the receptacle. For this purpose, each of the side walls of the receptacles is provided with a notch or recess d^3 in its upper edge and a longitudinal opening or slot d^4 below said recess, as shown in Figs. 9 and 21.

E represents a magazine which supports the stack or pile of envelops which are to be filled, sealed, stamped and bundled. This magazine is arranged on the right hand side of the table near the front end thereof and outside of the path of the holders, as shown in Fig. 1, and which consists of a flat bottom e which inclines outwardly and two upright walls e^1 which are arranged lengthwise on opposite sides of the bottom. These side walls are adjustably secured to the bottom for varying the width of the magazine by means of bolts e^2 passing through slots e^3 in the bottom and through flanges e^4 in the lower end of the side walls. The envelops are stacked transversely in this magazine and in such position that they rest at their lower edges on the bottom of the magazine while the back sides thereof having the flap face forwardly. The envelops are fed successively from the front of this pile into the holders as the same move successively in front of the envelop stack. The pile is gradually moved forward to make up for the envelops which have been fed off and keep the top or front of the pile in the proper relation to the devices which carry the same from the pile to the holders. This forward movement of the envelops may be produced by various means. As shown in the drawings, this is effected by means of a follower e^5 which engages with the back of the stack, a longitudinal screw rod e^6 extending through a pair of guides e^7 at the rear end of the magazine and secured at its front end to the follower, a screw nut pulley e^8 mounted on the rod between the guides and a belt e^9 passing around the screw nut pawl and a pulley e^{10} on a counter shaft e^{11}. The latter is journaled horizontally lengthwise on the adjacent right hand part of the frame. When the same is turned forwardly, the screw nut pulley causes the screw rod to move forwardly in the magazine and raise the pile of envelops. This forward movement of the stack is preferably effected intermittently and is so timed that the same takes place in the same measure as the envelops are fed off from the front of the pile. The preferred means for this purpose consists of a flexible shaft F arranged between the counter shaft e^{11} and the right hand rock shaft C and journaled at one end in fixed bearings on the main frame while its opposite end is journaled in a rock arm f secured to the rock shaft C. This shaft is rotated constantly from the motor C^2 by means of a gear pinion f^1 mounted on the shaft F adjacent to one of its fixed bearings and meshing with the gear wheel c^8, as shown in Fig. 24.

f^2 represents a friction pinion mounted on the flexible end of the shaft F adjacent to the rock arm f and adapted to be moved into and out of engagement with a friction wheel f^3 mounted on the adjacent part of the countershaft. Upon raising the rock arm f so as to engage the friction pinion with the friction wheel, as represented in Fig. 5, motion will be transmitted from the motor to the follower e^5 for feeding the stack forward while upon lowering said arm, as represented in dotted lines in the same figure the pinion will be disconnected from the wheel and the forward movement of the stack will be arrested.

Although various means may be employed for carrying the envelops from the stack to the holders, I prefer for this purpose the pneumatic mechanism shown in the drawings and which is constructed and operated as follows: G represents an exhaust shaft or pipe which is arranged lengthwise above the right hand part of the table on the inner side of the path of the holders. Opposite the envelop magazine this exhaust shaft is provided with a pneumatic gripper or sucker which is movable transversely toward and from the front of the envelop stack for carrying an envelop from the stack to the holder and also vertically for depositing the envelop in the holder. This gripper consists of a hollow arm g of angular form projecting upwardly from the exhaust shaft and having its conduit connected with that of the hollow shaft and a suction cup or mouth g^1 arranged on the free end of the arm and having its concave or hollow side facing the front of the envelop stack. The suction shaft is capable of rocking for moving the gripper transversely back and forth from the front of the stack into a position over the holder and is also capable of moving up and down bodily for moving the gripper toward and from the top of the holder. As shown in Figs. 1 and 5, the exhaust shaft is journaled at its opposite ends in bearings formed at the right hand ends of vertically movable rock arms g^2. These arms are pivoted transversely on the front and rear ends of the table within the path of the holders and are normally held in an elevated position by means of springs g^3 interposed between the top of the table and the underside of the arms. The upward

movement of the arms is limited by means of stops g^4 consisting of rods upon which the springs are mounted and which are secured at their lower ends to the table and provided at their upper ends with shoulders or heads which are engaged by the upper side of the arms. The rocking movement as well as the bodily downward movement of the exhaust shaft and the parts connected therewith is produced by means of two tappet arms g^5 secured to the exhaust shaft near opposite ends thereof and links g^6, one of which connects one of the tappet arms with the rock arm f while the other link connects the other tappet arm with a rock arm g^7 arranged on the opposite end of the rock shaft C and corresponding to the rock arm f.

In the position of the parts represented in full lines in Figs. 5 and 6, the exhaust shaft is raised into its uppermost position and is turned so that the pneumatic gripper is moved outwardly and engages its suction end or cup with the foremost envelop of the pile, these parts having been shifted into this position by the upward movement of the rock arms g^2. While the parts are in this position, the air is exhausted from the shaft and the gripper thereof causing the foremost envelop on the stack to be drawn against the suction cup. During the first part of the downward movement of the rock arms f, g^7, the exhaust shaft is turned in the direction of the arrow, Fig. 6, until the gripper has moved inwardly from the position shown in full lines, Fig. 6, to the position shown in dotted lines in the same figure, by which movement the foremost envelop is carried from the pile into a vertical position over the holder. During the continued downward movement of the rock arms f, g^7, after the gripper reaches the position shown by dotted lines in Fig. 6, the exhaust shaft together with the gripper is caused to move bodily downward in a substantially vertical line by means of tappets g^8 arranged on the tappet arms and engaging with the adjacent parts of the shaft arms g^2. This lowered position of the parts is indicated by dotted lines in Fig. 5. While being thus lowered, the gripper carries the envelop attached thereto downwardly into the holder below the same. When the gripper reaches its lowermost position, the suction upon the same is cut off and its exhaust cavity is connected with the atmosphere. During the subsequent upward movement of the rock arms g^2 the shaft together with the gripper is caused to move bodily upward by the springs g^3 until the arms g^2 strike the stops g^4, thereafter the shaft is turned in the direction of the arrow, Fig. 5, and causes the gripper to be moved outwardly into engagement with the top of the envelop pile for feeding the next envelop into the following holder. By cutting the suction off from the gripper and connecting the same with the atmosphere after the envelop has been deposited in the holder, the envelop becomes detached from the gripper and the latter rises independent of the envelop, leaving the same deposited in the holder. The gripper moves from the holder to the pile and back to the holder while the latter is at rest and then remains in its retracted position after delivering the envelop into the holder until the carrier has moved forward one step for advancing the holder which has just received an envelop and placing the next following empty holder in the proper position relatively to the gripper for receiving an envelop.

The air is exhausted from the shaft by means of an exhaust device of any suitable construction. As shown in Fig. 2 of the drawings, this exhausting device comprises a pump cylinder G^1 having an inlet and outlet provided with check valves g^9, g^{10}, and a piston driven from the shaft F by means of gear wheels g^{11}, and a crank shaft g^{12}, as shown in Fig. 2. The inlet of this pump is connected with one end of the exhaust shaft by a main air pipe or line G^2 having a flexible section G^3. An equalizing chamber G^4 is included in the main exhaust line whereby the suction of the pump is equalized.

g^{13} represents a three-way valve arranged between the exhaust shaft and the main air pipe and having the ports in its casing and a rotary plug so constructed that the exhaust shaft may be connected either with the air exhaust device for producing a suction through its gripper or the exhaust shaft may be connected with the atmosphere for causing the gripper to release its hold. The plug of this valve is turned automatically at the proper time by means of an arm g^{14} secured to the outer end of the plug and adapted to engage alternately with the upper and lower stops g^{15}, g^{16}. These stops preferably consist of screws mounted on a bracket which permits the same to be readily adjusted. During the last portion of the bodily upward movement of the shaft G, the valve arm g^{14} strikes the upper stop g^{15} and turns the plug into the position for connecting the exhaust shaft with the exhaust device preparatory to moving the gripper toward the pile and removing an envelop therefrom. During the last portion of the bodily downward movement of the exhaust shaft G, the valve arm g^{14} engages with the lower stop g^{16} and turns its plug in the direction for cutting off the shaft from the exhaust device and connecting the same with the atmosphere.

After the holder has received an envelop from the stack the same moves forward and comes to rest in the proper position to be operated upon by the devices which distend the

envelop therein and turn its flap backwardly to permit of subsequently depositing therein the articles to be mailed or incased. This mechanism is best shown in Figs. 1 and 9 to 14, and is constructed as follows: H represents two pairs of pneumatic grippers or suckers which are arranged on opposite sides of the path of the holders where the same come to rest for opening and distending the envelop contained therein. The grippers in each pair are arranged horizontally in line and are mounted upon a horizontal slide or pipe h which moves transversely in a guide h^1 mounted on the adjacent part of the table. These two pairs of grippers are caused to simultaneously move toward and from each other by means of a rock lever h^2 mounted on the inner guide and connected at its lower end with the inner slide h, a yoke h^3 connecting the upper arm of the lever with the outer end of the outer slide h, an elbow lever h^4 pivoted on the main frame and having its upper arm connecting with the outer slide and a link h^5 connecting the lower arm of the elbow lever with a rock arm h^6 on the shaft C. While the grippers are in their retracted position and on opposite sides of the path of the holder, the latter is moved forwardly between the same, as shown in Fig. 11. After the holder comes to rest, the grippers are moved toward each other and caused to bear against opposite sides of the body of the envelop within the holder, as represented in Fig. 12. The relative arrangement of these two pairs of grippers is such that the body is engaged by the grippers below the inclined edges of the flap, as shown by dotted lines in Fig. 9. While the body of the envelop is thus engaged by the grippers, the air is exhausted from the latter causing the opposite sides of the envelop body to adhere to the grippers, so that during the subsequent outward or retracting movement of the grippers, the envelop body will be distended, as represented in Fig. 13. While being thus distended, the flap of the envelop is turned from its closed position against one side of the envelop backwardly toward the opposite side of the body for opening or uncovering the upper end of the envelop. This is effected by means of a flap shifting blade or finger I which is pivoted at one end to the upper end of a vertically movable support or slide i arranged on the inner side of the path of the holders between the inner pair of grippers H. While the holder is moved into position between the grippers and the latter distend the body of the envelop, the slide i is in its lowermost position and the shifting finger is in its retracted position in which it inclines away from the envelop, as shown in Figs. 11 and 12. As the opposite sides of the envelop body are distended by the grippers, the flap is turned slightly upward into the position shown by dotted lines in Fig. 13, so as to project over the inner or pivoted end of the finger. During the last portion of the retracting movement of the grippers the vertically movable support and the finger rise and the latter during the first part of this movement engages near its pivot with the free end of the flap. During the continued upward movement of the finger until it reaches the end of its stroke the same is swung outward over the holder and gradually turns the flap from the position shown in dotted lines, Fig. 13, to the position shown in full lines in the same figure. When the flap reaches this position, the slide i drops and the finger is swung backwardly into the position shown in Fig. 12, preparatory to opening the flap of the envelop contained in the next following holder. The backwardly swinging movement of the finger is effected by means of a spring i^1 interposed between the finger and its support. The forwardly turning movement of the finger is effected by means of a band i^2 which is connected at its upper end with a drum i^3 on the pivoted end of the finger while its lower end passes loosely through the bracket in which the slide is guided and is provided with a head or stop i^4 which limits the upward movement of this band in the bracket. In the retracted position of the finger, the upper end of the band is wound upon the drum and its stop is arranged a considerable distance below its coöperating shoulder on the bracket. During the upward movement of the slide, the finger does not change its position relatively to the slide until the stop of the band engages with the bracket. The band being now held against further upward movement causes its upper end to turn the drum by unwinding from the same during the continued upward movement of the slide, thereby swinging the finger from the position shown in Fig. 12 to the position shown in Fig. 13. The upward movement of the slide i is produced by a trip lever i^5 pivoted on the underside of the table and provided on one arm with a spring latch i^6 adapted to engage with a shoulder on the adjacent side of the slide i and a link i^7 connecting the other arm of the ratchet lever with a rock arm i^8 on the shaft C. While the latter is turned in the direction for moving the grippers toward the envelop, the trip lever is turned from the position shown in Fig. 11 to the position shown in Fig. 12 in which its latch engages underneath the shoulder of the slide. During the reverse movement of the shaft C for retracting the grippers, the trip lever is caused to lift the slide by means of its latch until the finger has completely reversed and opened the flap and when this has been accomplished, the latch clears the shoulder of the slide and permits the latter to instantly descend for re-

tracting the finger. This quick descent of the bar may be effected solely by gravity but is preferably aided by means of a spring i^9 which is interposed between a shoulder at the lower end of the slide and a bracket in which the lower part of the slide is guided.

While the envelop body is in a distended condition and its flap has been opened, a pair of wedges or tongues J are moved downwardly into the envelop at opposite ends thereof for the purpose of retaining the envelop in a distended position and in condition to permit of reliably introducing into the same the articles to be mailed. Each of these tongues in its normal inoperative position is arranged vertically above one end of the holder and has its lower end tapered or pointed transversely, as shown at j, and its outer side inclined, as shown at j^1, the inclined faces of both tongues diverging upwardly, as shown in Figs. 9 and 10. Each of the tongues is secured at its upper end by a flexible neck j^2 with a block j^3 on a vertically sliding rod j^4. The latter is guided in lugs on the adjacent part of the holder supporting wing. While the envelop is distended, these tongues are lowered and enter the end portions of the envelop, as represented in Figs. 10 and 14, the entrance of the tongues into the envelop being facilitated by their inclined backs and tapering lower ends. By flexibly supporting the tongues and inclining the outer sides thereof, the same can adapt themselves to slight variations in the length of the envelop without liability of tearing the same. The tongues are preferably held in their elevated inoperative position by means of a spring tension device which is formed by bending the upper end of the rod j^4 downwardly to form a detent spring j^5 and engaging the same with an opening in the adjacent guide lug of its rod, as represented in Figs. 9 and 10. Each of these detents is introduced into its guide opening while under lateral strain, so that it always exerts an outward pressure against its guide lug and holds its tongue yieldingly either in an operative or inoperative position. The tongues of each holder are caused to move up and down in unison by means of a cross head j^6 which connects the lower ends of the slide rods. The downward movement of the tongues is effected by means of a spring latch J^1 which is carried by the vertically movable slide i. As the latter rises for effecting the opening of the flap, the latch moves upwardly with the same and engages over a lug j^7 on the central part of the cross head, as shown in Fig. 12. During the downward movement of the slide i after the flap has been opened, the latch carries the cross head and the parts connected therewith downwardly causing the tongues to enter the end portions of the envelop.

The outer ends of both slides h are connected by a flexible air pipe h^7 which permits the same to move toward and from each other without disturbing the air connection. One of the slides, preferably the inner one, is connected with the main pipe of the air exhaust device by a branch pipe h^8 a part of which is flexible to permit the inner slide to move freely. In this branch pipe is arranged a three-way valve H^1 which is constructed similar to the valve shown in Fig. 8, so that the pneumatic grippers may be connected either with the exhaust device or with the atmosphere. The plug of this valve is turned for connecting the grippers with the exhaust device during the last portion of the forward movement of the grippers by means of a tappet h^9 arranged on the lower arm of the rock lever h^2 and engaging with an arm h^{10} on the plug of the valve H. The latter is held in this position until the tongues have entered the envelop and have nearly completed their downward movement into the same at which time the valve is reversed so as to cut off the pneumatic grippers from the exhaust device and connect the same with the atmosphere. This is effected by means of a rod h^{11} depending from an arm h^{12} on the valve plug and a tappet h^{13} arranged on the lower end of the slide i and engaging with a shoulder on the lower end of the rod h^{11}. In order to open and close the three-way valve quickly, the plug of the latter is provided with a weight arm h^{14}. This arm is so arranged that it is alternately shifted from one side of the dead center to the other by the operation of the tappets h^9, h^{13}, and when either of these tappets has shifted the weight arm from one side slightly past the dead center toward the opposite side, the shifting of the plug is quickly completed by the weighted arm. As the envelop flap is turned backwardly into its open position, its end is carried underneath a longitudinal retaining bar or rail H^3 which holds this flap in this position until it is required to be again closed.

After the envelop has been distended its holder moves the same successively to a plurality of magazines E^1, E^2, E^3, E^4, each of which contains a stack E^5 of advertising cards, sheets or other articles to be placed in the envelop. Each of these magazines is constructed the same as the envelop magazine E and is provided with a follower which is driven from the counter shaft e^{11} by means similar to that employed for operating the follower of the envelop magazine. Opposite each of the article magazines, a pneumatic gripper or sucker g^{17} is mounted on the exhaust shaft which is constructed and operated the same as the gripper of the envelop magazine. As the holder containing a distended envelop stops opposite each of these article magazines, the cor-

responding gripper swings outwardly over the same into engagement with the foremost article of the respective stack during which time this gripper is connected with the exhaust device for causing the article to become attached thereto. Then the gripper recedes until the article is vertically in line with the opening of the envelop, then the gripper is lowered, as shown by dotted lines in Fig. 14, together with the exhaust shaft, and then the gripper is cut off from the exhaust device and connected with the atmosphere for releasing the article and allowing the same to drop into the envelop. This operation is repeated as the envelop is presented to each one of the succeeding article magazines. Inasmuch as all of the pneumatic feeding grippers are connected with the same exhaust shaft they are all controlled by the same valve g^{13} and caused to simultaneously grip the articles in their respective magazine and to release the same after being deposited.

As shown for instance in Figs. 5, 14, 21, 23, the spreading or retaining tongues J are slightly tilted or inclined which causes the same upon entering the envelop to correspondingly tilt the same. This causes the cards or other sheet like articles upon being dropped into the envelop to stack or pile against the side of the envelop corresponding to the direction in which the tongue inclines, thereby insuring an open space in the envelop at all times for the admission of additional mail matter. If the envelops were arranged in a vertical position the mail matter would be apt to fall promiscuously into the same and render reliable filling of the same impossible. Although four mail matter or article magazines are shown in the drawings, it is obvious that this number may be increased or reduced. In practice it is desirable to provide a sufficient number of article magazines to supply the maximum number of pieces of mail matter which it is desired to put into the envelop, and if at any time it is desired to fill the envelop with a less number of articles one or more of the magazines and the corresponding feed devices may be rendered inoperative by drawing off the belt of the follower driving mechanism and by closing a valve g^{18} in the pneumatic gripper. After the required number of articles have been placed within the envelop, the tongues are withdrawn from the same. This is effected by means of a stationary incline g^{19} which is arranged in the path of the lug j^7 on the cross head. As the holder moves forwardly upon leaving the last article magazine, the lug by the time it reaches the top of the incline is gradually lifted from the position shown in dotted lines to the position shown in full lines, Fig. 19, thereby lifting the tongues out of the envelop, as shown in Fig. 16, in which position they are retained by the spring detents j^5.

After the tongues have been disengaged from the envelop, the holder comes to rest in the proper position for permitting a moistening device to operate upon the envelop for moistening the back side of the envelop so as to cause the gummed flap when subsequently pressed against the same to stick thereto and seal the envelop. This moistening device is arranged adjacent to the last article magazine on the right hand side of the table and consists essentially of a fibrous moistening pad K and a platen K^1 which are arranged on the inner and outer sides of the path of the holders and are movable toward and from opposite sides of the envelop. As shown in Fig. 16, the pad and platen are mounted respectively on slides k, k^1 which move transversely in guides k^2, k^3 and are reciprocated in unison by means of a rock lever k^4 pivoted on the inner guide and connected at its lower end with the inner slide k, a yoke k^5 connecting the upper arm of the lever with the outer end of the outer slide k^1, an elbow lever K^2 pivoted on the table and having its upper arm connected with the outer slide and a link k^6 connecting the lower arm of the elbow lever with a rock arm k^7 on the shaft C. The front end of the inner slide k is provided with a head k^8 to which the pad is attached. The latter has the form of a comparatively flat V corresponding to the gummed surface of the envelop flap and is kept constantly moist by means of water which is supplied from a reservoir or fountain k^9 mounted on the inner slide. The water is conducted from the bottom of this reservoir through a conduit k^{10} formed lengthwise in the inner slide and terminating in a plurality of openings k^{11} in the head which are so arranged that all parts of the pad are moistened uniformly. The supply of water to this pad may be regulated by means of a screw valve k^{12} arranged in the top of the reservoir and movable toward and from the outlet opening in the bottom thereof.

The envelop flap which has been held in its backwardly folded position by the retaining bar H^3 during the time that the envelop was presented to the various filling magazines and the moistening device now clears the rear end of this bar preparatory to being turned or folded against the back side of the envelop for engaging its gummed surface with the moist back of the envelop. This is effected by means of a flap restoring device in front of which the holder comes to rest during its intermittent movement. This restoring device is shown in Figs. 1, 20 to 22 and consists essentially of a vertically movable restoring slide L arranged on the outer side of the path of the holders, and a restoring finger l pivoted on the upper end of the

slide L. In the normal, inoperative position of these parts the slide is depressed and its finger is swung into an outwardly inclined position, as represented in Fig. 20. Upon raising the slide, the finger is turned inwardly and downwardly whereby the flap is shifted from the position shown in Fig. 14 against the back side of the envelop, as shown in Fig. 21. This movement of the finger is effected by means of an upright band l^1 which is connected at its upper end with a drum l^2 mounted on the pivotal end of the finger, while its lower end is provided with a stop l^3 which engages with a shoulder on the bracket l^4 which guides the restoring slide. Upon lowering the latter, the restoring finger is again returned into its outer inoperative position by means of a spring l^5. This means of oscillating the restoring finger is substantially the same as the means for oscillating the finger of the flap opening device shown in Figs. 11 to 15. The restoring slide is raised and lowered at the proper time by means of a rock lever l^6 pivoted underneath the table and connected at one end with the lower end of the slide while its opposite end is connected by a link l^7 with a rock arm l^8 on the shaft C.

The pressure of the restoring finger against the flap upon closing the same against the moistened surface of the envelop is usually sufficient for causing these parts to adhere firmly to each other, but it is desirable to supplement this by the action of an auxiliary pressing device to render the sealing of the envelop more certain and reliable. A device for this purpose is arranged at the rear end of the machine and consists of two presser platens M, M^1 which are arranged on opposite sides of the path of the holder and are adapted to press against opposite sides of the envelop in line with the gummed surface when the holder containing the envelop arrives at that point. These two platens are mounted on transversely movable slides m, m^1 which are supported in guides m^2, m^3 mounted on the table and moved simultaneously toward and from opposite sides of the envelop by means of a lever m^4 mounted on the inner guide m^2 and connected at its lower end with the inner slide, a yoke m^5 connecting the upper arm of the lever with the outer slide, an elbow lever m^6 connecting with the outer slide and a link m^7 connecting the elbow lever with a rock arm m^8 on the shaft C. This means of operating the slides is substantially the same as that employed for operating the slides of the moistening device and the envelop opening device.

After each envelop has been filled in the manner described, the holder carrying the same passes the trip device d^2 whereby the envelop is discharged from the holder. The latter now moves forward to the envelop feeding mechanism for beginning another cycle of operations. When the machine is in full running order all of the several operations are being performed relative to envelops in different holders, each envelop being one step in advance of the next following envelop in the order of operations on the same.

I claim as my invention:

1. In a machine of the character described, the combination of a movable envelop holder, an envelop supply magazine, a pneumatic feeder operating to carry the envelops successively from the magazine to said holder, and an envelop opener operating to open each envelop after the same has been delivered to said holder, substantially as set forth.

2. In a machine of the character described, the combination of a holder, a magazine for supporting a pile of articles, means for delivering articles from the magazine to said holder, a follower for moving the pile in the magazine, a screw rod connected with the follower, a rotary screw nut mounted on said rod, means for holding the nut against axial movement, a counter shaft, a pulley on the counter shaft, a belt passing around the screw nut and said pulley, a constantly rotating driving shaft having a portion thereof movable laterally, a friction pinion and wheel mounted on adjacent parts of the driving and counter shafts, respectively, and a rock arm for shifting the laterally movable part of said driving shaft and moving said pinion into and out of engagement with said wheel, substantially as set forth.

3. In a machine of the character described, the combination of a horizontally movable receptacle, a magazine arranged on one side of the receptacle and adapted to contain a pile of articles, an upright gripper arm supported on the opposite side of the receptacle and provided with a pneumatic gripper for transferring articles from the magazine to the receptacle, a vertically movable support on which the gripper arm is pivoted, and means for moving the support and for rocking the gripper arm on its pivot, substantially as set forth.

4. In a machine of the character described, the combination of a horizontally movable receptacle, a magazine arranged on one side of the receptacle and adapted to contain a pile of articles, an upright gripper arm supported on the opposite side of the receptacle and provided with a pneumatic gripper for transferring articles from the magazine to the receptacle, a supporting rock arm upon which the gripper arm is pivoted, and means for moving the support and for rocking the gripper arm on its pivot, substantially as set forth.

5. In a machine of the character described, the combination of a receptacle, a magazine arranged on one side of the receptacle and

adapted to contain a pile of articles, an upright gripper arm supported on the opposite side of the receptacle and provided with a pneumatic gripper for transferring articles from the magazine to the receptacle, a supporting rock arm upon which the gripper arm is pivoted, a tappet arm connected with the pivot of the gripper arm and provided with a tappet arranged to engage the supporting arm, and means for actuating the tappet arm, substantially as set forth.

6. In a machine of the character described, the combination of a receptacle, a magazine arranged on one side of the receptacle and adapted to contain a pile of articles, an upright gripper arm supported on the opposite side of the receptacle and provided with a pneumatic gripper for transferring articles from the magazine to the receptacle, a supporting rock arm upon which the gripper arm is pivoted, a tappet arm connected with the pivot of the gripper arm and provided with a tappet arranged to engage the supporting arm, and an actuating rock arm connected by a link with the tappet arm, substantially as set forth.

7. In a machine of the character described, the combination of a receptacle, a magazine arranged on one side of the receptacle and adapted to contain a pile of articles, an upright gripper arm supported on the opposite side of the receptacle and provided with a pneumatic gripper for transferring articles from the magazine to the receptacle, a vertically movable support on which the gripper arm is pivoted, a spring for raising said support, means for lowering said support and a stop for limiting the upward movement of the support, substantially as set forth.

8. In a machine of the character described, the combination of a receptacle, a magazine arranged on one side of the receptacle and adapted to contain a pile of articles, an upright gripper arm supported on the opposite side of the receptacle and provided with a pneumatic gripper for transferring articles from the magazine to the receptacle, a supporting rock arm upon which the gripper arm is pivoted, a spring for raising the supporting arm, a rod which holds said spring in place and which is provided with a stop for limiting the upward movement of the supporting arm, a tappet arm connected with the pivot of the gripper arm and provided with a tappet arranged to engage with the supporting arm for depressing the same, and an actuating rock arm connected by a link with the tappet arm, substantially as set forth.

9. In a machine of the character described, the combination of a horizontally movable envelop receptacle, a magazine arranged on one side of the receptacle, a pneumatic gripper supported on the opposite side of the receptacle and having a transversely rocking and a bodily vertical movement, means for moving the gripper, an air exhausting device, a valve movable vertically with the gripper and constructed to connect the gripper either with the exhausting device or with the atmosphere, and means for reversing said valve at each end of its vertical movement, substantially as set forth.

10. In a machine of the character described, the combination of a receptacle, a magazine arranged on one side of the receptacle, a pneumatic gripper supported on the opposite side of the receptacle and having a transversely rocking and a bodily vertical movement, a hollow shaft carrying said gripper and having its conduit communicating with the suction cavity of the gripper, a vertically movable support in which said shaft is journaled, means for raising and lowering said support and for rocking said shaft, an air exhausting device, a valve on said shaft for connecting the conduit in the same with the exhausting device or with the atmosphere, an arm connected with the rotary plug of the valve, and stops arranged to be engaged by said arm for reversing the valve at each end of its vertical movement, substantially as set forth.

11. In a machine of the character described, the combination of an envelop holder, means for supporting one side of the envelop in the holder, a gripper, means for moving the gripper toward and from the opposite side of the envelop in the holder, means constructed and operating to cause said gripper to adhere to said envelop upon engaging the same in its forward position, means for releasing said gripper from the envelop while in its rearward position, and means constructed and operating to place an article in the envelop while open, substantially as set forth.

12. In a machine of the character described, the combination of an envelop holder, grippers arranged on opposite sides of the holder, means for moving the grippers simultaneously toward and from opposite sides of the envelop in the holder, means constructed and operating to attach the grippers to the envelop in the forward position thereof and to release the grippers from the envelop in the rearward position thereof, and means constructed and operating to place an article in the envelop while open, substantially as set forth.

13. In a machine of the character described, the combination of a holder having open sides and constructed to support an envelop, pneumatic grippers movable through the open sides of said holder and constructed for attachment against the opposite outer sides of the envelop, and means for actuating said grippers, substantially as set forth.

14. In a machine of the character described, the combination of a holder having open sides and adapted to receive an envelop, pneumatic grippers movable toward and from the sides of the envelop, means for moving said grippers and means for rendering said grippers operative and inoperative, substantially as set forth.

15. In a machine of the character described, the combination of a holder having open sides and adapted to receive an envelop, pneumatic grippers movable toward and from the sides of the envelop, means for moving said grippers, an air exhaust device, and a valve for connecting the grippers either with said exhaust device or with the atmosphere, substantially as set forth.

16. In a machine of the character described, the combination of a holder having open sides and adapted to receive an envelop, pneumatic grippers movable toward and from the sides of the envelop, means for moving said grippers, an air exhaust device, a valve for connecting the grippers either with said exhaust device or with the atmosphere, and automatic means for reversing said valve at each end of the movement of the grippers, substantially as set forth.

17. In a machine of the character described, the combination of a movable holder having open sides and adapted to receive an envelop, means for moving said holder, pneumatic grippers arranged on opposite sides of the path of the holder, means for moving said grippers toward and from each other in unison, and means for rendering said grippers operative and inoperative, substantially as set forth.

18. In a machine of the character described, the combination of a movable holder having open sides and adapted to receive an envelop, means for moving said holder, pneumatic grippers arranged on opposite sides of the path of the holder and movable toward and from each other, slides carrying the grippers, a rock lever having one arm connected with one of said slides, means for moving one of the slides, a yoke connecting the other arm of the lever with the slide of the other gripper, and means for rendering said grippers operative and inoperative, substantially as set forth.

19. In a machine of the character described, the combination of a movable holder having open sides and adapted to receive an envelop, means for moving said holder, pneumatic grippers arranged on opposite sides of the path of the holder and movable toward and from each other, slides carrying the grippers, a rock lever having one arm connected with one of said slides, a yoke connecting the other arm of the lever with the slide of the other gripper, an elbow lever having one arm connected with one of said slides, a rock shaft having an arm connected with the other arm of the elbow lever, and means for rendering the grippers operative or inoperative, substantially as set forth.

20. In a machine of the character described, the combination of a movable holder having open sides and adapted to receive an envelop, means for moving said holder, pneumatic grippers arranged on opposite sides of the path of the holder and movable toward and from each other, slides carrying the grippers, a rock lever having one arm connected with one of said slides, a yoke connecting the other arm of the lever with the slide of the other gripper, an elbow lever having one arm connected with one of said slides, a rock shaft having an arm connected with the other arm of the elbow lever, an air exhaust device, a valve for connecting said grippers either with said exhaust device or with the atmosphere, and a tappet arranged on said rock lever and operating to shift said valve, substantially as set forth.

21. In a machine of the character described, the combination of an envelop holder, having the form of a pocket and adapted to contain the envelop, means for distending the sides of the envelop, and means for opening the flap of the envelop, substantially as set forth.

22. In a machine of the character described, the combination of a movable envelop holder having open sides, means for moving said holder, means for distending the body of the envelop comprising pneumatic grippers arranged on opposite sides of the path of the holder, and means for opening the envelop flap comprising a shifting finger constructed and arranged to engage said flap, and means for operating the finger, substantially as set forth.

23. In a machine of the character described, the combination of a movable envelop holder having open sides, means for moving said holder, means for distending the body of the envelop comprising pneumatic grippers arranged on opposite sides of the path of the holder, and means for opening the envelop flap comprising a flap shifting finger which is normally arranged back of the envelop, and an actuating mechanism constructed to first lift said finger into engagement with said flap and then move said finger horizontally over the envelop for completing the opening of the flap, substantially as set forth.

24. In a machine of the character described, the combination of a movable envelop holder having open sides, means for moving said holder, means for distending the body of the envelop comprising pneumatic grippers arranged on opposite sides of the path of the holder, and means for opening the envelop flap comprising a vertically

movable support, a shifting finger pivoted on said support, and means for moving said support and finger, substantially as set forth.

25. In a machine of the character described, the combination of a movable envelop holder having open sides, means for moving said holder, means for distending the body of the envelop comprising pneumatic grippers arranged on opposite sides of the path of the holder, and means for opening the envelop flap comprising a vertically-movable support, means for moving said support, a flap-shifting finger pivoted on the upper end of said support, a drum arranged on the pivot of the finger, a band connected at one end with said drum, a stop for arresting the opposite end of said band, and a retracting spring applied to said drum, substantially as set forth.

26. In a machine of the character described, the combination of a movable envelop holder having open sides, means for moving said holder, means for distending the body of the envelop comprising pneumatic grippers arranged on opposite sides of the path of the holder, and means for opening the envelop flap comprising a vertically-movable support, a flap-shifting finger pivoted on said support, and a trip device constructed to raise said support and then release the same, substantially as set forth.

27. In a machine of the character described, the combination of a movable envelop holder, means for moving said holder pneumatic grippers arranged on opposite sides of the path of the holder and operating to distend the sides of the envelop, a shifting finger operating to open the flap of the envelop, a vertically movable support upon which said finger is pivoted, a trip lever provided with a spring pawl engaging with a shoulder on said support and operating to raise the latter, and a spring for depressing said support, substantially as set forth.

28. In a machine of the character described, the combination of an envelop holder, having the form of a pocket and adapted to contain the envelop means for opening the flap of the envelop, and means for holding the flap in its open position, substantially as set forth.

29. In a machine of the character described, the combination of an envelop holder, means arranged on one side of the holder and operating to open the flap of the envelop, and a retaining bar arranged on the opposite side of the holder and operating to hold the flap in its open position, substantially as set forth.

30. In a machine of the character described, the combination of an envelop holder, a bifurcated gripper for engaging the envelop body, a flap opener arranged between the members of said gripper, and means for operating said gripper and opener substantially as set forth.

31. In a machine of the character described, the combination of an envelop support, pneumatic grippers for engaging opposite sides of the envelop body and each comprising two suction cups arranged opposite the cups of the other gripper, a flap opener arranged between the suction cups of one of the grippers, and means for operating said gripper and opener substantially as set forth.

32. In a machine of the character described, the combination of an envelop support, means for opening said envelop comprising grippers constructed for attachment to the outer side of said envelop, and means for retaining the envelop in a distended condition comprising spreaders constructed to enter said envelop, substantially as set forth.

33. In a machine of the character described, the combination of a movable envelop support, means for moving said support, means for distending said envelop comprising grippers constructed to engage the outer sides thereof, and means for retaining the envelop in a distended condition comprising spreaders mounted on said movable support and constructed to enter the envelop, substantially as set forth.

34. In a machine of the character described, the combination of a movable envelop holder, means for moving said holder, means for distending the envelop and a retaining device for holding the envelop in a distended condition comprising two tongues arranged to enter opposite ends of the envelop, vertically movable slides guided on opposite sides of the holder and each carrying one of the tongues, a cross head connecting the lower ends of said slides, a depressing device arranged to engage said cross head for lowering the same, and an incline arranged to be engaged by said cross head for raising the same, substantially as set forth.

35. In a machine of the character described, the combination of a movable envelop holder, means for moving said holder, means for distending the envelop and a retaining device for holding the envelop in a distended condition comprising vertically movable slides guided on the holder, means for raising and lowering the slides and tongues adapted to enter opposite ends of the envelop and flexibly connected with said slides, substantially as set forth.

36. In a machine of the character described, the combination of a movable envelop holder, means for moving said holder, means for distending the envelop and a retaining device for holding the envelop in a

distended condition comprising vertically movable slides guided on the holder means for raising and lowering the slides and tongues adapted to enter opposite ends of the envelop, each tongue being flexibly connected with one of said slides and provided with an inclined outer side, substantially as set forth.

37. In a machine of the character described, the combination of a movable envelop holder, means for moving said holder, means for distending the envelop and a retaining device for holding the envelop in a distended condition comprising vertically movable slides guided on the holder means for raising and lowering the slides and tongues adapted to enter opposite ends of the envelop, each tongue being tapered at its lower end and connected at its upper end to one of said slides, substantially as set forth.

38. In a machine of the character described, the combination of an envelop holder, inclined tongues constructed and arranged to enter an envelop in the holder for distending and tilting the envelop, and means for operating said tongues, substantially as set forth.

39. In a machine of the character described, the combination of an envelop holder means for moving said holder, means for distending the envelop and means for retaining the envelop in a distended condition, comprising two vertically movable rods guided on the holder and each provided with a detent spring which engages frictionally with the holder, means for moving said rods and tongues arranged on the rods and adapted to enter opposite ends of the envelop, substantially as set forth.

40. In a machine of the character described, the combination of an envelop holder means for moving said holder, means for distending the envelop and means for retaining the envelop in a distended condition, comprising two vertically movable rods guided on the holder and each provided with a detent spring which engages frictionally with the holder, means for moving said rods and laterally inclined tongues arranged to enter the ends of the envelop each tongue being inclined on its outer side, tapered at its lowered end and flexibly connected with one of said rods at its upper end, substantially as set forth.

41. In a machine of the character described, the combination of an envelop holder, means operating to distend the sides of the envelop, means for opening the flap of the same, and means for retaining the envelop in a distended condition, substantially as set forth.

42. In a machine of the character described, the combination of an envelop holder, pneumatic grippers movable toward and from the outer side of the envelop body and operating to distend the same, means for moving said grippers a vertically and transversely movable shifting finger operating to open the envelop flap, means for moving said finger retaining tongues adapted to enter opposite ends of the envelop and retain the same in a distended condition, means for moving said tongues substantially as set forth.

43. In a machine of the character described, the combination of an envelop holder, means for opening the flap of the envelop, a moistening device constructed to moisten the back of the envelop body which receives the gummed surface of the flap, and means for closing the flap, substantially as set forth.

44. In a machine of the character described, the combination of a movable envelop holder, means for moving said holder, means for opening the flap of the envelop, a moistening pad and a platen movable toward and from opposite sides of the envelop, means for moving said pad and platen, and means for closing said flap, substantially as set forth.

45. In a machine of the character described, the combination of a movable envelop holder, means for moving said holder, means for opening the flap of the envelop, a device for moistening the back of the envelop comprising a pad and platen arranged on opposite sides of the path of the holder and each mounted on a slide, and means for causing said slides to move toward and from each other in unison, substantially as set forth.

46. In a machine of the character described, the combination of a movable envelop holder, means for moving said holder a device for moistening the body of the envelop comprising a pad and platen arranged on opposite sides of the holder slides supporting the pad and platen, a rock lever having one of its arms connected with one of said slides, and a yoke connecting the other arm of said lever with the other slide, substantially as set forth.

47. In a machine of the character described, the combination of a movable envelop holder, means for moving said holder, a moistening pad and platen arranged on the back and front sides of the path of the envelop, respectively, means for moving said pad and platen toward and from opposite sides of the envelop, and a water supply reservoir having its outlet constructed to deliver water to said pad, substantially as set forth.

48. In a machine of the character described, the combination of a movable envelop holder means for moving said holder and a device for moistening the body of the envelop comprising a pad and platen arranged on opposite sides of the holder slides

supporting the pad and platen, and a water reservoir mounted on the slide carrying the pad and connected with the latter by a conduit formed in said slide, substantially as set forth.

49. In a machine of the character described, the combination of a movable envelop holder means for moving said holder and a device for moistening the envelop comprising a supporting head provided with a water supply conduit terminating in a plurality of discharge openings which extend through the face of the head in a V-shaped row, and a fibrous pad applied to said head over said openings, substantially as set forth.

50. In a machine of the character described, the combination of an envelop holder, and means for closing the flap comprising a transversely oscillating finger arranged to engage with the outer side of the flap, a vertically movable support on the upper end of which the finger is pivoted, means for moving said support, a band connected at its upper end with a drum on the finger and constructed to engage its lower end with a stop for producing the forward turning movement of the closing finger, and a spring for moving the closing finger into its retracted position, substantially as set forth.

51. In a machine of the character described, the combination of a movable envelop holder, means for moving said holder means for sealing the flap of the envelop, presser heads movable toward and from opposite sides of the envelop, and means for operating said heads in unison, substantially as set forth.

52. In a machine of the character described, the combination of a movable envelop holder, means for moving said holder means for sealing the flap of the envelop, presser heads movable toward and from opposite sides of the envelop, slides supporting said heads, a rock lever having one arm connected with one of said slides, and a yoke connecting the other arm of said lever with the other slide, substantially as set forth.

53. In a machine of the character described, the combination of an envelop holder, a feed device constructed to deliver an envelop into said holder, and means separate from each other and operating to distend the body and open the flap of the envelop after the same has been fed to the holder, substantially as set forth.

54. In a machine of the character described, the combination of an envelop holder, a feed device constructed and operating to deliver an envelop into the holder, means constructed and operating to open the flap of the envelop, and separate means constructed and operating to distend the sides of the envelop, substantially as set forth.

55. In a machine of the character described, the combination of an envelop feeding device, an envelop distending device, a flap opening device, an envelop holder, and means operating to move said holder successively to said feeding device for receiving an envelop therefrom and then to said distending and opening devices to permit the latter to distend the envelop and open the flap, substantially as set forth.

56. In a machine of the character described, the combination of an envelop feeding device, means separate from each other for distending the body and opening the flap of the envelop, a device for feeding an article into an envelop, an envelop holder, and means for moving said holder successively to said feeding distending and opening devices, substantially as set forth.

57. In a machine of the character described, the combination of an envelop feeding device, a device for opening the flap of an envelop, a device for distending the sides of an envelop, a device for feeding an article into an open envelop, an envelop holder, and means for moving said holder successively to said envelop feeding, flap opening, side distending and article feeding devices, substantially as set forth.

58. In a machine of the character described, the combination of an envelop feeding device, an envelop opening device, an article feeding device, an envelop closing device, an envelop holder and means for moving said holder successively to the envelop feeding, envelop opening, article feeding, and envelop closing devices, substantially as set forth.

59. In a machine of the character described, the combination of an envelop feeding device, a device for opening the flap of the envelop, a device for feeding articles into the envelop, a device for moistening the body of the envelop, a device for closing the envelop flap against the moistened part of the body, an envelop holder and means for moving said holder successively to said envelop feeding, flap opening, article feeding, body moistening and flap closing devices, substantially as set forth.

Witness my hand this 7th day of May, 1903.

BARTON S. MOLYNEUX.

Witnesses:
JOHN W. COBB,
THEO. L. POPP.