F. J. GILL.

GEAR DRIVEN MACHINE FOR AFFIXING POSTAL STAMPS AND INSURANCE STAMPS.

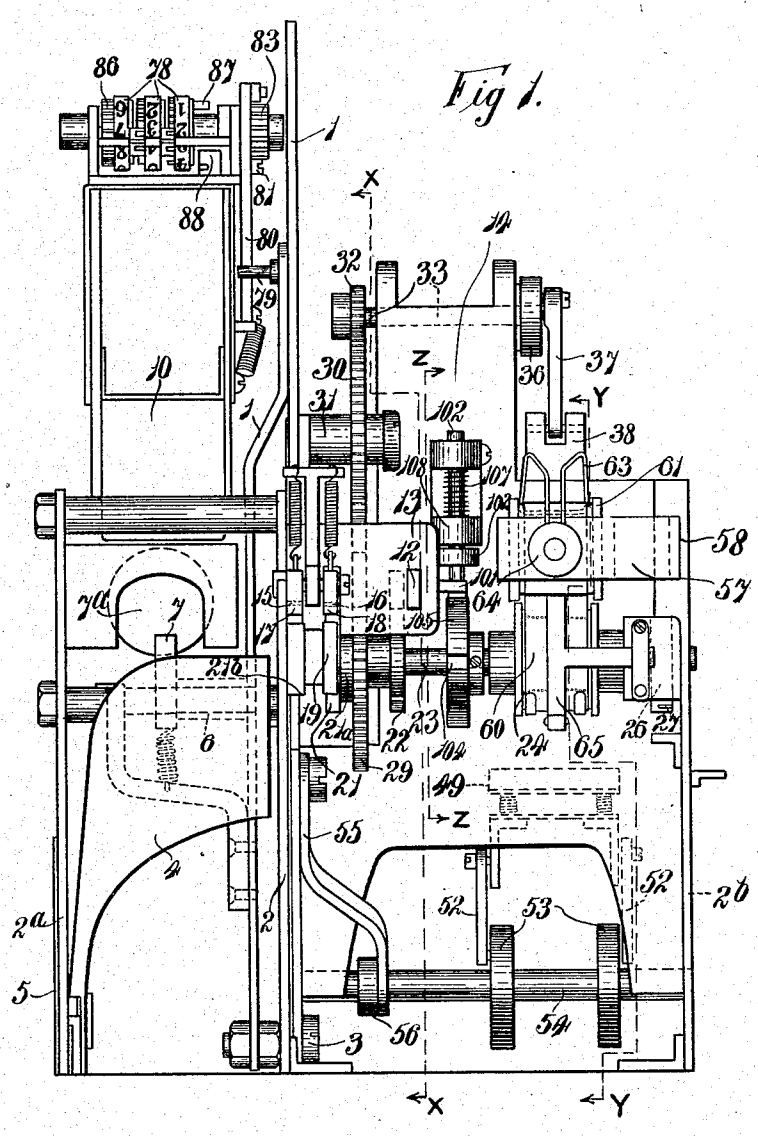
APPLICATION FILED NOV. 13, 1914.

1,174,562.

Patented Mar. 7, 1916.

5 SHEETS—SHEET 1.

Fig 1.



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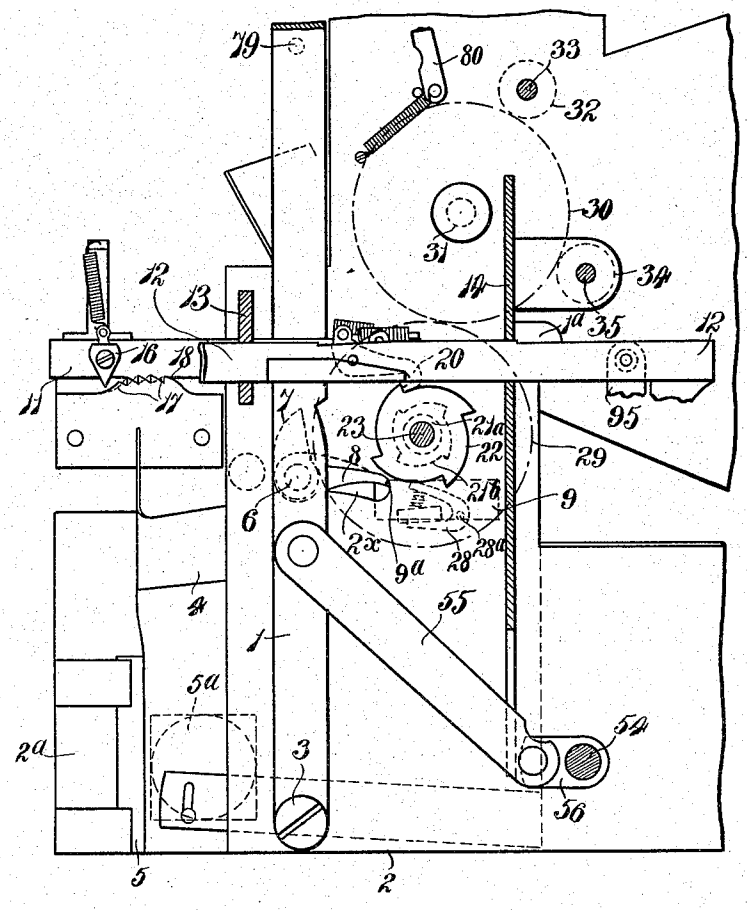
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5 SHEETS—SHEET 2.

Fig 2.



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5 SHEETS—SHEET 3.

Fig 3.

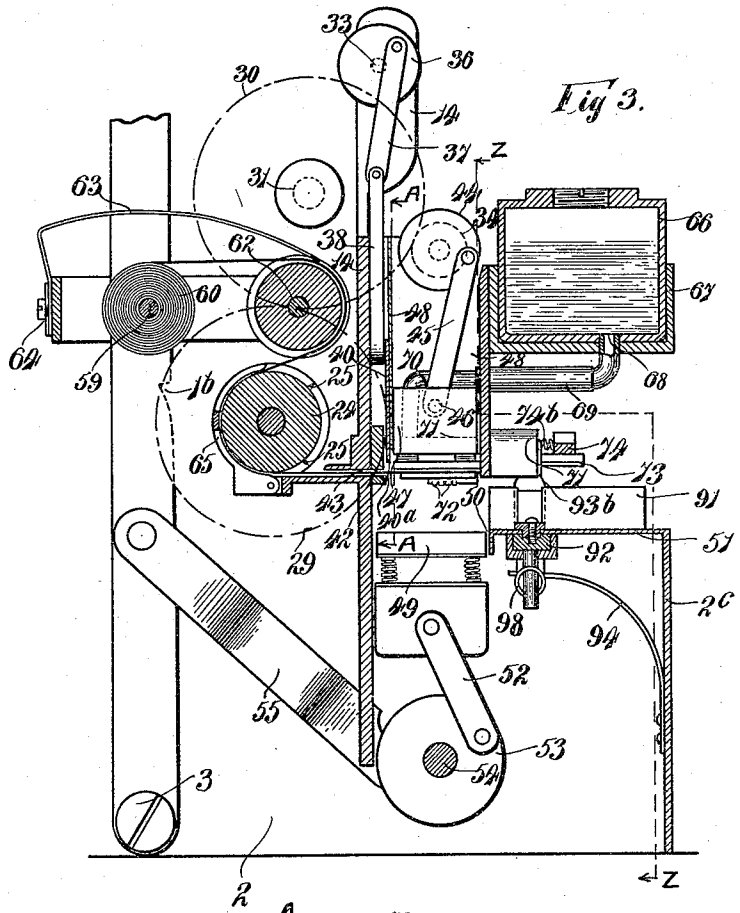
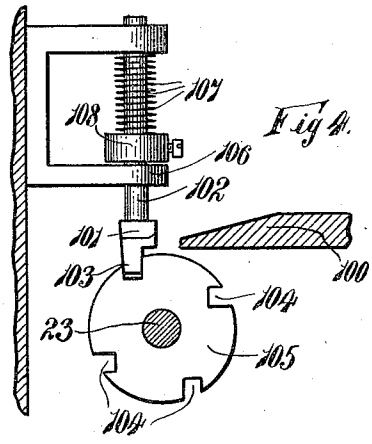


Fig 4.



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5 SHEETS—SHEET 4.

Fig 5.

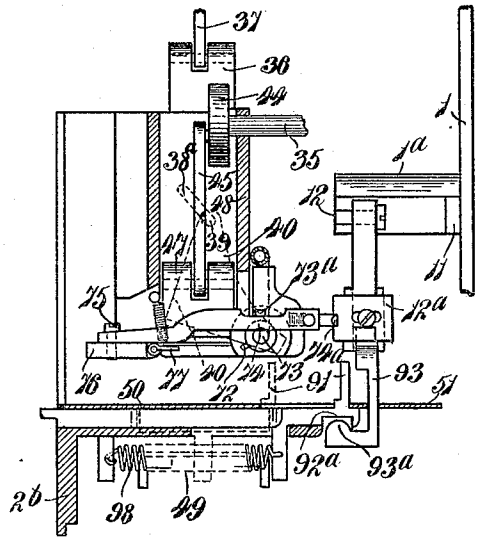


Fig 6.

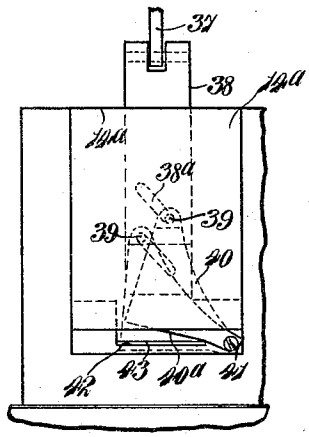


Fig 10.

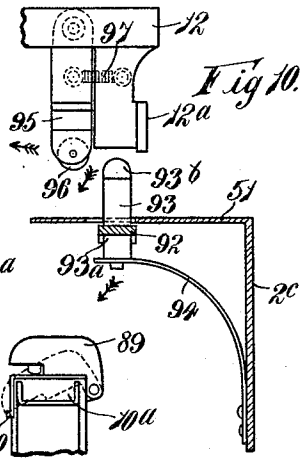


Fig 7.

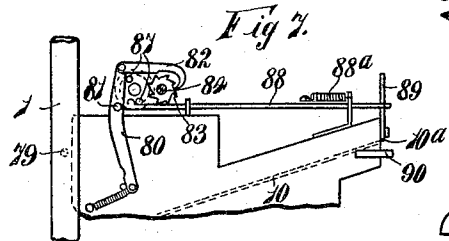


Fig 8.

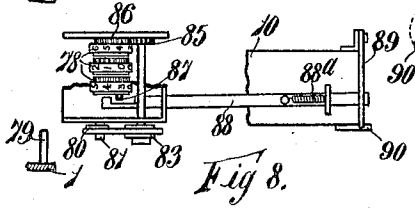


Fig 9.

Witnesses.
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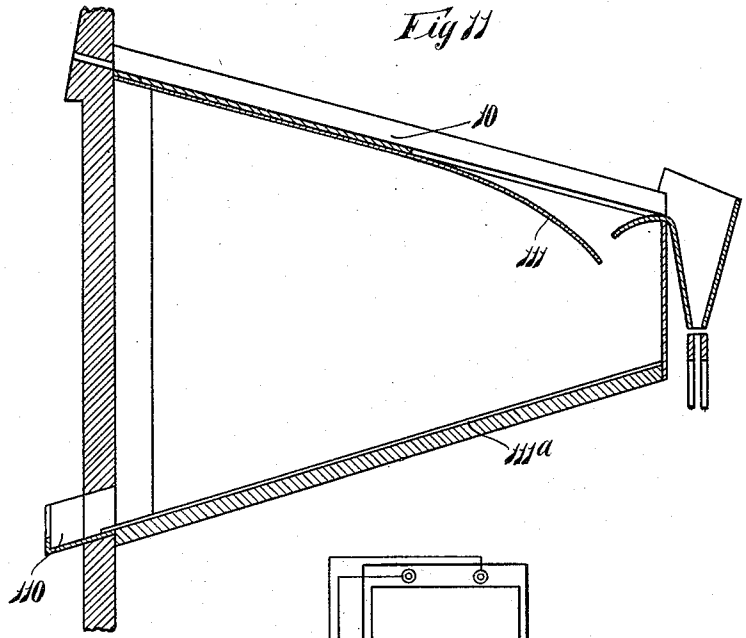
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5 SHEETS—SHEET 5.

Fig 11



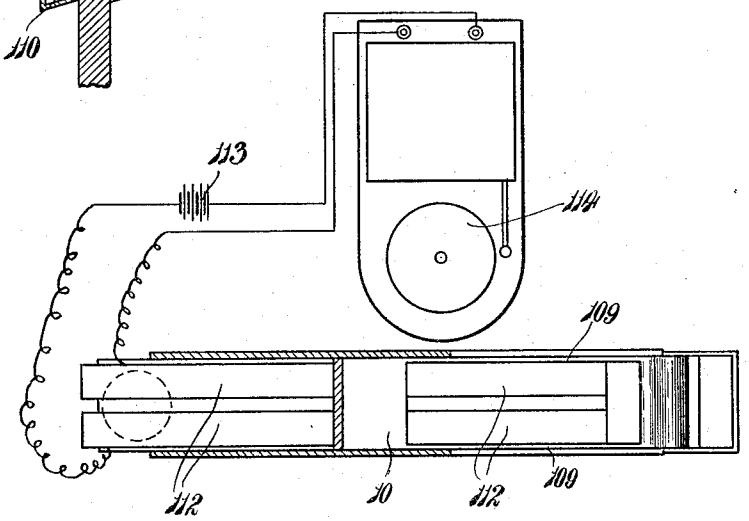


Fig 12.

Witnesses.
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UNITED STATES PATENT OFFICE.

FREDERICK JOHN GILL, OF SMETHWICK, BIRMINGHAM, ENGLAND, ASSIGNOR OF ONE-HALF TO THOMAS WALTON, OF TIPTON, ENGLAND.

GEAR-DRIVEN MACHINE FOR AFFIXING POSTAL STAMPS AND INSURANCE-STAMPS.

1,174,562. Specification of Letters Patent. Patented Mar. 7, 1916.

Application filed November 13, 1914. Serial No. 872,038.

To all whom it may concern:

Be it known that I, FREDERICK JOHN GILL, subject of the King of Great Britian, residing at 27 Dunsford road, Bearwood, Smethwick, Birmingham, in the county of Warwick, England, have invented a new and useful Improved Gear-Driven Machine for Affixing Postal Stamps and Insurance-Stamps; and I do hereby declare the following to be a full, clear, and exact description of the same.

This invention relates to an improved gear driven machine for affixing postage or insurance stamps.

The object of the invention is to construct a machine which shall be positive, simple and efficient in its action. The stamps are fed from a roll from which they are separated by means of a knife, the envelop or other missive to which the stamp is to be affixed is then moistened and the severed stamp is affixed to the letter or the like by means of pressure on the top and under surfaces of the missive.

In combination with the machine I may employ a coin operating mechanism which controls the operation of the machine, and a further feature of the invention is the addition of an adjustable stop plate by which the position of the envelop or the like is adjusted so that two or more stamps can be affixed side by side in the correct position, and preferably I also employ a mechanism for automatically counting the number of stamps issued by the machine.

Referring to the accompanying drawings: Figure 1 is an elevation looking at the back of a coin operated machine constructed in accordance with this invention. Fig. 2 is a section on line X X of Fig. 1, illustrating the operating mechanism and gearing. Fig. 3 is a section on line Y Y of Fig. 1, illustrating the stamp feeding, controlling and affixing mechanism. Fig. 4 is a section on line Z Z of Fig. 1, illustrating a detail which is not seen in Fig. 3. Fig. 5 is a section on line Z Z of Fig. 3. Fig. 6 is a section on line A A of Fig. 3, illustrating the action of the knife. Fig. 7 is a side elevation of the counter actuating mechanism employed in conjunction with this invention, together with the means for closing the coin slot at determined periods. Fig. 8 is a plan of Fig. 7. Fig. 9 is an end view of part of the mechanism shown at Fig. 7 and Fig. 10 illustrates part of the mechanism seen in Fig. 3 for releasing the adjustable stop plate which controls the different positions of the envelop for stamping. Fig. 11 is a sectional elevation of an arrangement adapted to reject under-sized coins and to give an alarm in case of such rejection. Fig. 12 is a sectional plan of the same.

The machine is controlled by a hand lever 1 forked at its lower end on either side of the middle frame 2 and pivoted at its lower end to the frame by a screw or pin 3. Attached to the lower end of the hand lever 1 is a coin receiving bucket 4 which moves with the hand lever. Normally the hand lever is disposed in the position seen in the drawings in which position a coin contained in the bucket 4 would be seen through a window 5 formed in the side frame 2^a for the purpose of affording visible detection of false coins or for other purposes, this position of the coin 5^a is seen dotted in Fig. 2, the coin being subsequently discharged from the bucket upon the next operation of the machine into a tray or drawer positioned across the base of the machine.

Carried by the hand lever 1 is a spindle 6 on which is mounted a coin receiving pawl 7 and secured to the same spindle is a stop pawl 8 which normally contacts with a recess 9^a formed in a stop piece 9 fixed to the middle frame 2 (see Fig. 2). The spindle 6 can traverse in the arc slot 2^x in the frame upon operating the hand lever. The coins are inserted in the chute 10 at the inlet 10^a thereto and are delivered on to the pawl 7 as seen at 7^a in Fig. 1. When the coin is in this position and the lever 1 is pulled in the direction of the arrow Fig. 2 the pawl 7 will turn with the spindle 6 and lift the stop pawl 8 out of contact with the recess 9^a of the stop piece 9 and thus permit of the hand lever being traversed forward. The lever is fixedly connected by screws and the cross piece 1^a to two sliding bars 11 and 12 guided in the brackets 13 and 14. To the sliding bar 11 is pivoted two spring controlled downwardly depending pawls 15, 16, which respectively gear with two oppositely disposed ratchet segments, 17, 18, secured to the middle frame 2. The oppositely dis-

posed ratchet segments are for the known purpose of compelling a complete forward and backward stroke of the hand lever to be made at each operation of the machine.

Pivoted on the sliding bar 11 is a spring controlled pawl 19, and pivoted on the sliding bar 12 is another spring controlled pawl 20 oppositely disposed to the pawl 19, the pawls 19 and 20 gear respectively with ratchet wheels 21, 22, on the spindle 23, the ratchet wheel 21 being mounted on a sleeve 21^a loose on the spindle, whereas the ratchet wheel 22 is fixed to the spindle. On the spindle 23 is secured a feed drum 24 having needle points 25 thereon around the periphery at distances corresponding with the length of a stamp, the needles fitting into the perforations between the stamps in the ordinary way. Also mounted on the spindle 23 is a notched wheel 26 with which gears the bent free end of a leaf spring 27 to control and regulate the partial revolutions of the spindle 23. The ratchet wheel 21 loosely mounted on the spindle 23 is provided with a spring controlled non-return pawl 28 pivoted at 28^a to prevent the wheel 21 from moving in the reverse direction, and also mounted on the sleeve 21^a is another ratchet wheel 21^b which is engaged at the end of each forward stroke of the lever 1 by a notched recess 1^b formed in the lever, to prevent the gearing racing at the end of the stroke.

Mounted on the sleeve 21^a which carries the ratchet wheel 21 is a toothed pinion 29 gearing with a pinion 30 mounted on the spindle 31 in the middle frame 2, the pinion 30 meshing with a small pinion 32 mounted on a spindle 33 which is carried by the bracket 14. The pinion 30 also meshes with a small pinion 34 mounted on a spindle 35 also carried by the bracket 14. On the spindle 33 is a crank disk 36 to which is pivoted the connecting rod 37, the connecting rod being in turn pivoted to a slide 38 moving vertically in a recess formed by the plates 14^a, the slide 38 has an inclined slot 38^a therein in which is disposed a pin 39 connected to the upper end of the pivoted knife 40. The knife 40 is pivoted at 41 to the bracket 14 and is operated upon the rotation of the crank disk 36 as will be clearly seen by reference to the two positions of the knife 40 shown in Fig. 5, the cutting edge 40^a of the knife passing a fixed cutting edge 42 which forms the bottom line of the slot 43 through which the stamps are fed before passing under the affixing block or pad.

Mounted on the spindle 35 is a crank disk 44 to which is pivotally connected the connecting rod 45 which in turn is pivoted at 46 to the affixing block or pad 47 which slides vertically between the plates 48 attached to the bracket 14. The affixing block or pad is preferably formed with an india-rubber or similar resilient lower surface and may also be provided with a spring controlled bottom plate which will allow of the block or pad adjusting itself to any irregularities in the thickness or shape of the envelop or the like to which the stamp is to be affixed. Operating conjunctively with the affixing block or pad 47 is a lower or under pad or block 49 which works through an opening 50 in the table 51. The block or pad 49 is also preferably formed with an india rubber or other resilient upper surface and has a spring controlled contact plate similar to the block or pad 47 to allow of the pad adjusting itself to any irregularities. The block or pad 49 is controlled by the rod 52 which is pivoted thereto at one end and at the other end is pivoted to a crank disk 53 mounted on a spindle 54 which has bearing in the middle frame 2 and the side frame 2^b of the machine. The crank disk 53 is rotated by the cranked lever 55 which is pivoted at one end to the lever 1 and at the other end is pivoted to a crank 56 fixedly connected to the spindle 54 so as to give a reciprocating motion to the crank disk 53 and consequently to the block or pad 49.

Mounted in a bracket 57 which slides in a groove 58 formed in the side frame 2^b is a spindle 59 on which is mounted the roll of stamps 60. The stamps are fed over a guide roller 61 mounted on a spindle 62 in the bracket 57 and the stamps are maintained on the roller 61 by means of the wire spring 63 which is connected at one end to the bracket 57 by means of the screw and washer 64, the stamps being led from the roller 61 around the drum 24 and through the slot 43, which is disposed below the knife 40, under the affixing block or pad 47. The stamps are maintained on the drum 24 by means of the needle points 25 and a strip of spring metal 65 which is positioned partly around the drum 24 so as to leave sufficient clearance for the needle points 25 and the stamps 60.

The moistening is effected from a tank 66 which is mounted in a trough shaped bracket 67 secured to the plates 48. The tank has an outlet pipe 68 which is connected by a junction piece 69 to a pipe 70 leading into a cylinder 71.

The cylinder 71 has needle point outlets 72 therein through which the water is ejected on to the envelop or other missive, the water being controlled by means of the piston 73. The piston 73 is connected to an arm 74 by means of a screw 73^a which works in a slot in the arm 74. The arm 74 is pivoted by means of a screw or pin 75 to a bracket 76 which is affixed to the plates 48. The free end of the arm 74 is formed as a spring pin 74^a and is arranged in the path of a plate

12[a] affixed to one end of the sliding bar 12 so that upon the forward movement of the sliding bar 12 the plate 12[a] will contact with the pin 74[a] on the end of the arm 74 and draw out the piston 73, which will withdraw water from the tank into the cylinder 71 from which it will be expelled through the outlets 72, the return stroke of the piston which is effected by the coil springs 74[b] attached at one end to the arm 74 and at the other end to the cylinder 71 closing the outlets.

Pivoted to the bottom of one of the plates 48 is a spring controlled hinge 77 which bears against one edge of the under surface of the stamp so as to maintain it in its correct position.

Mounted upon the slide 12 is a projecting portion 100 having a sloping upper surface adapted to engage a projecting piece 101 formed upon a plunger 102, whose lower end 103 is adapted to engage with slots 104 in the wheel 105 mounted upon the shaft 23. The plunger 102 is guided in a bracket 106 and is pressed downwardly by a spring 107 acting upon a collar 108. The plunger is raised by the action of the piece 101 as the slide 12 is advanced, and coming down again as it is returned it definitely fixes the rotation of the shaft 23 according to the spacing of the slots 104 which is so proportioned as to insure that the stamp roll shall be fed to the exact length of one stamp.

For the purpose of counting the number of times the hand lever 1 is operated and also the number of stamps issued by the machine, a three disk counter 78 is provided of a known type. The counter is operated by means of a pin 79 on the lever 1 which on the forward stroke of the hand lever contacts with a spring controlled two armed lever 80 pivoted at 81. The upper end of the lever 80 is pivoted to a pawl 82 which engages with a ratchet wheel 83 mounted on the spindle 84, also mounted on the spindle 84 is a toothed wheel 85 which gears with the toothed wheel 86 connected with the unit disk of the counter.

For the purpose of closing the coin slot at the end of each roll of stamps, for instance at the 500th. operation of the machine, two pins 87 are connected to the hundreds disk of the counter in such manner that upon revolution of the counter they will at periods of each 500 operations of the machine contact with a spring controlled sliding bar 88, one end of which is normally disposed under a pivoted shutter 89 disposed above the inlet 10[a] of the coin chute. When one of the pins 87 contacts with the sliding bar 88 it draws the bar from under the pivoted shutter 89 against the resistance of the spring 88[a] and allows the shutter to fall on the stop piece 90 formed on the underside of the coin chute 10 and thus prevents the insertion of any more coins until another roll of stamps has been inserted in the machine and the mechanism reset.

For the purpose of permitting of the affixing of more than one stamp to an envelop or other missive I provide an adjustable stop plate 91 which is connected to a sliding bar 92 having a recess 92[a] therein in which is disposed one end of a spring maintained catch 93, the catch 93 is connected to a leaf spring 94 which is secured at one end to the frame 2[c]. The catch 93 is operated by means of a pivoted spring controlled arm 95 having a roller 96 mounted at the lower end thereof. Assuming the sliding bar 92 together with the stop plate 91 to be in the position seen in Fig. 4; that is maintained by the nose 93[a] of the catch 93, the roller 96 of the pivoted arm 95 will on the forward stroke of the lever 1 and bar 12 ride over the rounded upper surface 93[b] of the catch 93, owing to the inclination of the arm 95 about its pivot. When the arm 95 has passed the catch 93 it will resume its normal position under the control of the spring 97 and on the return or backward operation of the lever 1 and sliding bar 12, that is after the stamp has been affixed, the contact of the roller 96 with the catch 93 will force the catch 93 downward in the direction shown by the arrows Fig. 9 which movement of the catch will remove the nose 93[a] from the recess 92[a], and the sliding bar 92 and stop plate 91 will move to the position indicated by dotted lines in Fig. 4 under the control of the coiled spring 98. The movement from the full line position to the dotted line position in Fig. 4 represents the width of a stamp so that it is thus possible to affix two stamps side by side. The sliding bar 92 and stop plate 91 are returned to the position seen in full lines in Fig. 4 by pressing an extension of the sliding bar in the direction of the catch 93. The spring controlled movement of the sliding bar and stop plate also shoot the envelop or other missive out of the machine after the stamp has been affixed thereto.

The coin slot may be so proportioned as to refuse to admit any coin or disk of greater dimensions than that to be employed, while coins or disks of less diameter fall through between the edges of the slides 109 forming the chute 10 and are returned to the pocket 110 along the lower chutes 111 and 111[a]. The lower chute 111[a] may have two parts or slides 112 or other parts insulated from one another but adapted to be bridged by a rejected coin, thus closing the circuit of the battery 113 and bell 114 and giving notification of the rejection.

When used as a coin controlled machine, the normal operation is as follows:—Upon insertion of a coin in the chute 10 it falls on to the pawl 7 and upon pulling the hand

lever 1 the stop catch 8 is raised to permit of the forward traverse of the hand lever and of the sliding bars 11 and 12. The pawl 19 pivoted to the sliding bar 11 drives the ratchet wheel 21 and the toothed pinion 29 which is mounted on the same sleeve, forward a distance corresponding with that of a stamp. The partial revolution of the pinion 29 correspondingly rotates the pinions 30, 32, and 34, the revolution of the pinion 32 effecting one down and up stroke of the knife 40 to sever the stamp which was already in position under the affixing pad 47. The revolution of the pinion 34 has effected a down and up stroke of the affixing block or pad 47 and at the same time the cranked arm 55 pivoted to the hand lever 1 has effected a reciprocation of the lower block or pad 49, the envelop or other missive being gripped and squeezed between the two blocks or pads and the stamp affixed. The initial forward movement of the sliding bars effects a contact of the plate 12^a of the bar 12 with the spring end 74^a of the pivoted arm 74 connected to the piston 73, which movement of the piston allows water to be ejected through the outlets 72 of the cylinder 71 before the affixing pad 47 descends sufficiently to press the severed stamp on to the envelop or the like. Immediately the plate 12^a has passed the end of the pivoted lever 74, the pivoted lever under the influence of the coil spring 74^b returns to its normal position and closes the outlets from the cylinder. The stop 79 on the hand lever 1 contacts with the two armed lever 80 operating the counter on the forward movement of the lever as will be readily understood, and counts one for each operation of the lever. Upon the return or backward movement of the hand lever, the pawl 20 pivoted on the sliding bar 12 rotates the ratchet wheel 22 which is fixed to the spindle 23 in a backward direction for a distance equivalent to the length of a stamp, which rotation is imparted to the drum 24, thus feeding another stamp through the slot 43 in position to be severed and affixed at the next operation of the machine. As explained the distance of feed is strictly regulated by the plunger 102.

The stamp affixing mechanism can be used without the addition of the coin operating mechanism when desired without altering the mechanism of the stamp delivering and affixing machine, and I may employ other coin operating mechanism of known form.

What I claim is:—

1. In a stamp delivering and affixing machine the combination of mechanism for ejecting moisture upon the article to be stamped; mechanism for severing a stamp from a roll of stamps; mechanism adapted to press said stamp upon said article; a spring pressed plunger; a wheel provided with slots in which said plunger is adapted to engage; a drum adapted to feed the stamps forward from the roll; a shaft carrying said wheel and said drum; a member operatively connected to all said mechanism and adapted to operate them in the course of a forward and return stroke; and a cam-member adapted to raise said plunger at the beginning of the forward stroke and to permit it to be lowered at the end of the return stroke in such manner that it engages in successive slots in said wheel.

2. In a stamp delivering and affixing machine the combination of mechanism for ejecting moisture upon the article to be stamped; mechanism for severing a stamp from a roll of stamps; an upper pressure pad adapted to contact with the top surface of the article to be stamped; a lower pressure pad adapted to contact with the lower surface of said article; mechanism for reciprocating said pads; mechanism for feeding another stamp from the roll into position in readiness for the subsequent operation of the machine; a spring pressed plunger; a wheel provided with slots in which said plunger is adapted to engage; a drum adapted to feed the stamps forward from the roll; a shaft carrying said wheel and said drum; a member operatively connected to all said mechanism and adapted to operate them in the course of a forward and return stroke; and a cam-member adapted to raise said plunger at the beginning of the forward stroke and to permit it to be lowered at the end of the return stroke in such manner that it engages in successive slots in said wheel.

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

FREDERICK JOHN GILL.

Witnesses:

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ARNOLD S. ILLSTON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents. Washington, D. C."