May 17, 1927. 1,629,130

F. W. STORCK

ROTARY PRINTING DEVICE

Filed May 31, 1923 8 Sheets-Sheet 1

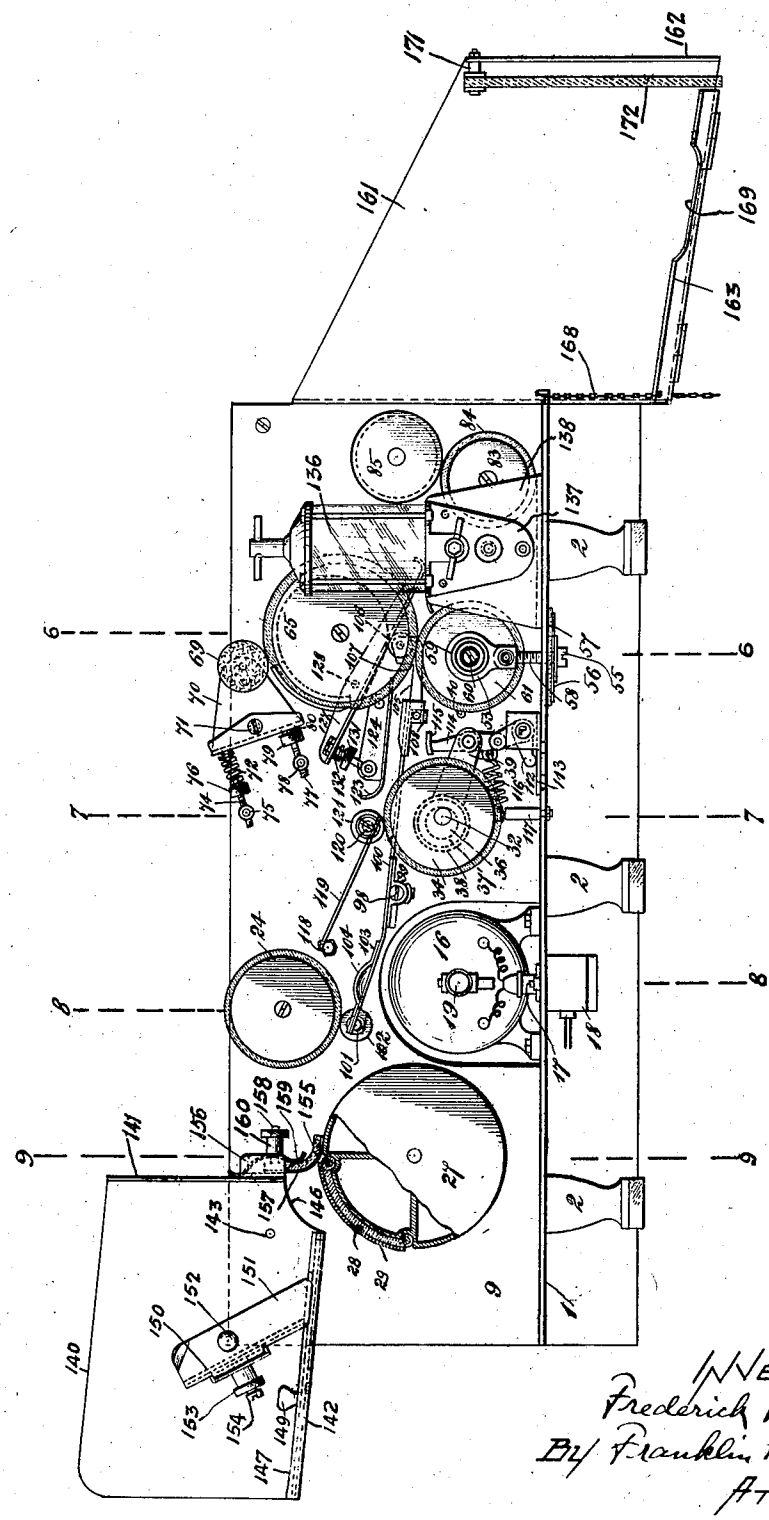


Fig. 1.

INVENTOR=
Frederick W. Storck
By Franklin T. Philips Jr.
ATTORNEY=

May 17, 1927. 1,629,130

F. W. STORCK

ROTARY PRINTING DEVICE

Filed May 31, 1923 8 Sheets-Sheet 2

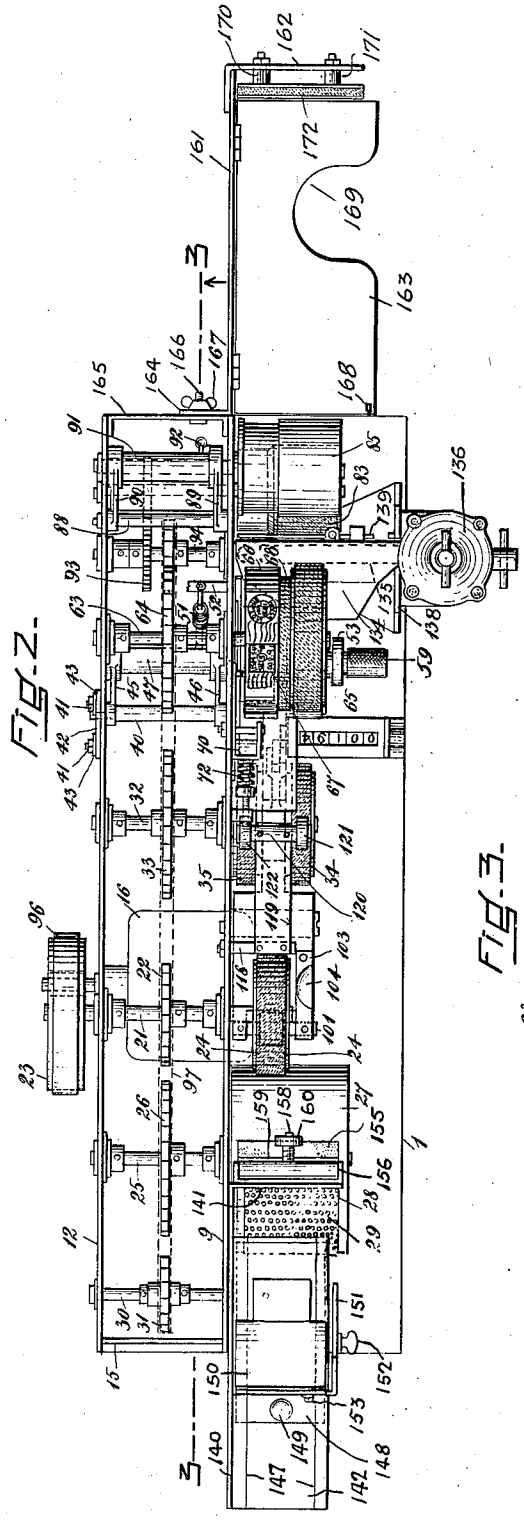


Fig. 2.

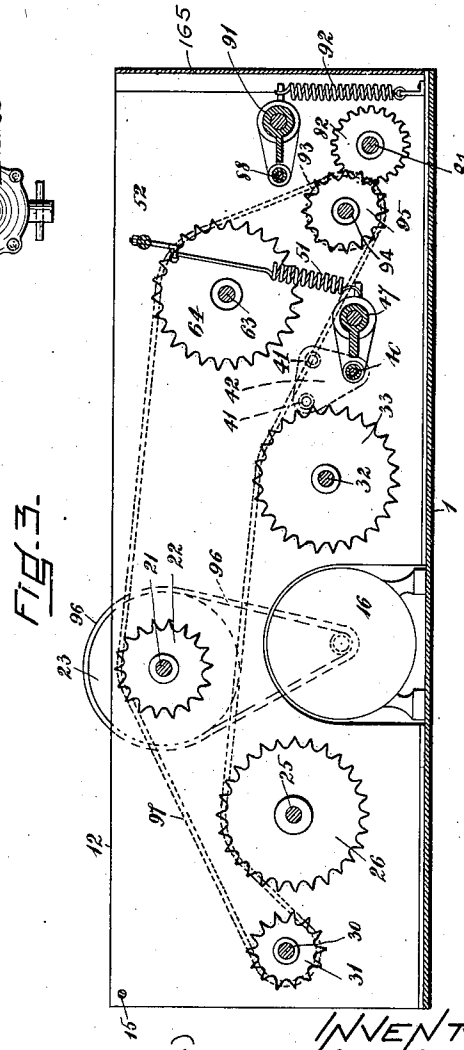


Fig. 3.

INVENTOR:
Frederick W. Storck
By Franklin T. Rhiel, Jr.
ATTORNEY.

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F. W. STORCK

ROTARY PRINTING DEVICE

Filed May 31, 1923 8 Sheets-Sheet 3

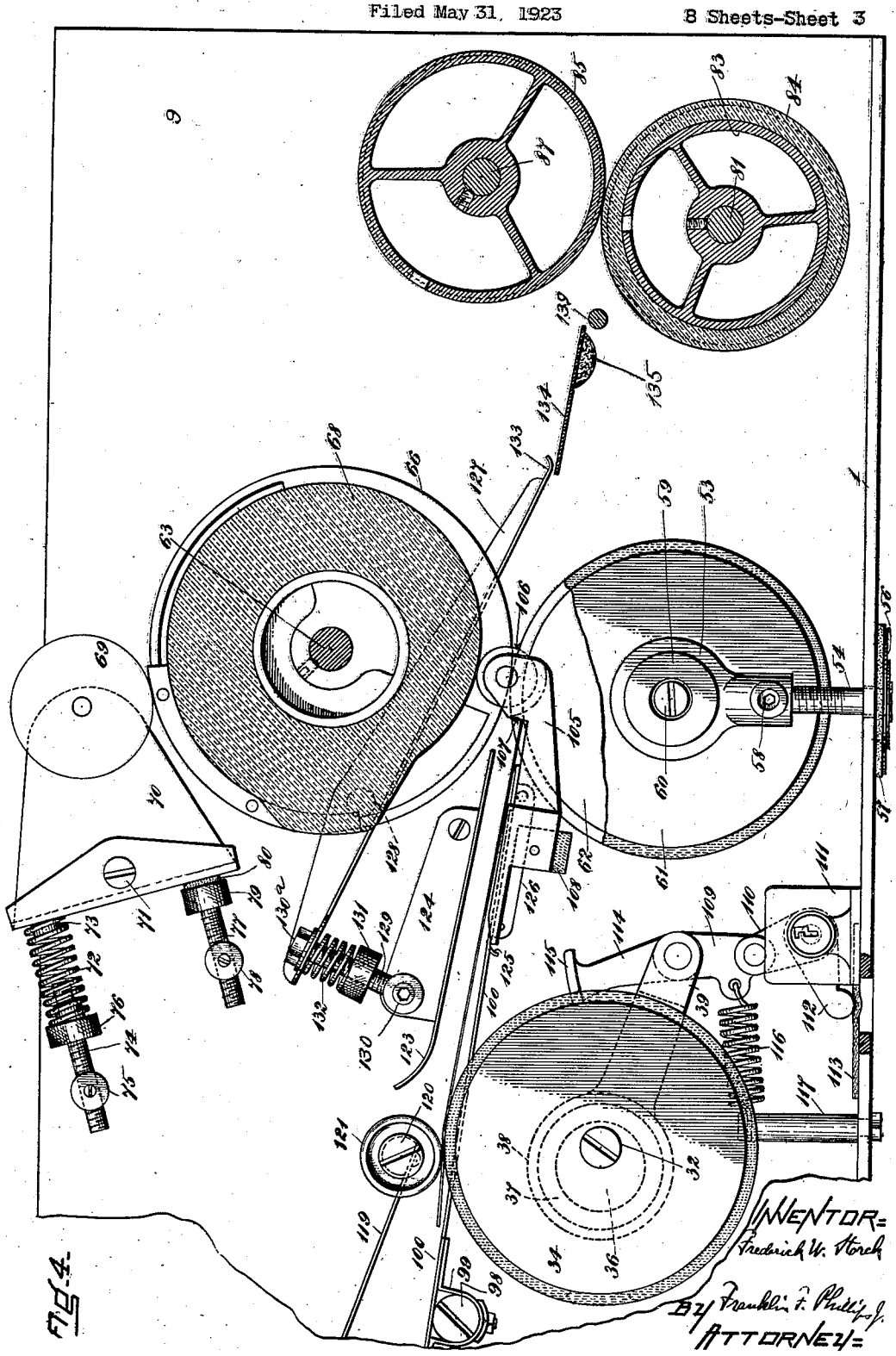


FIG. 4.

INVENTOR=
Frederick W. Storck
By Franklin T. Phillips
ATTORNEY=

May 17, 1927. 1,629,130

F. W. STORCK

ROTARY PRINTING DEVICE

Filed May 31, 1923 8 Sheets-Sheet 4

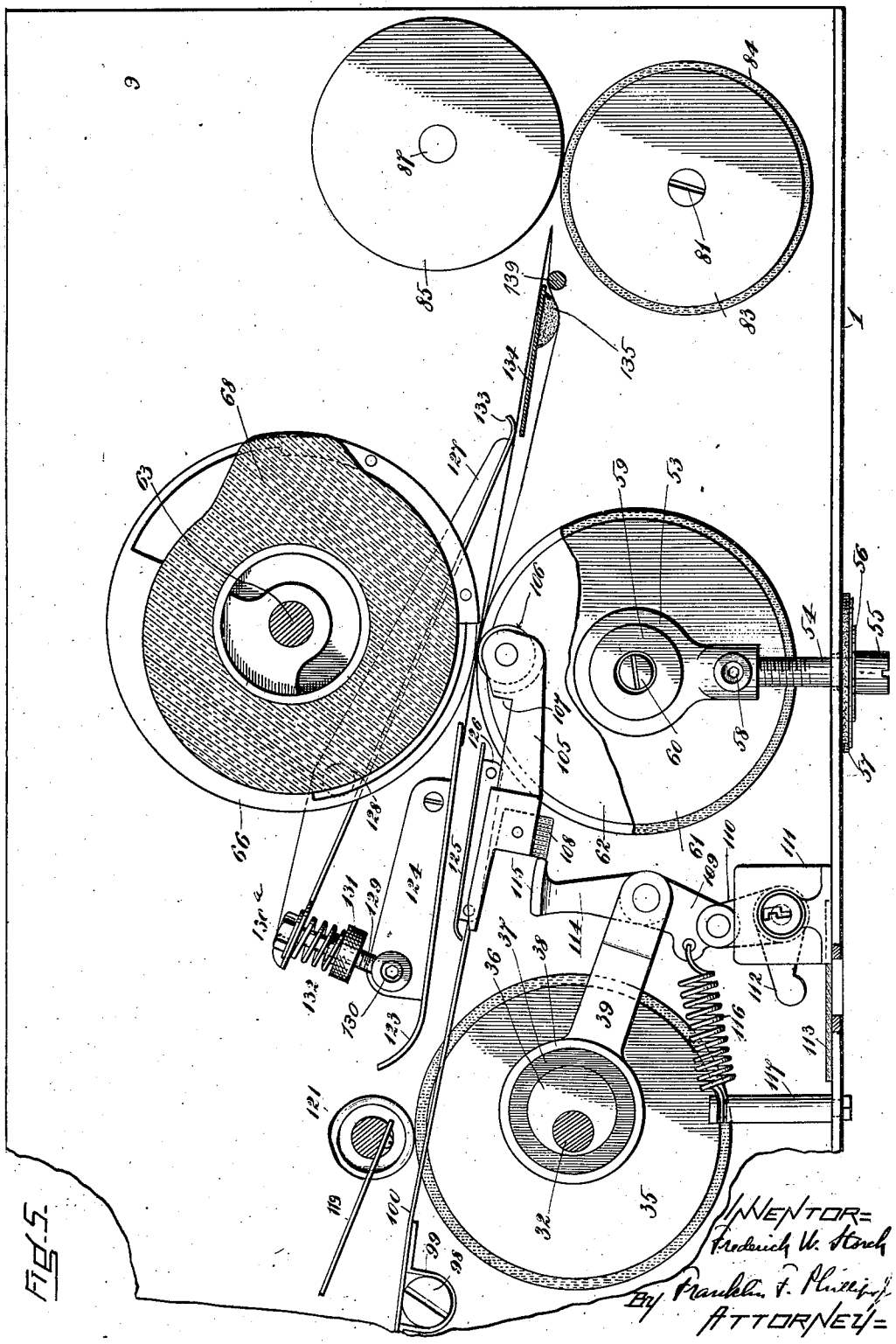


Fig. 5.

INVENTOR=
Frederick W. Storck
By Franklin F. Rhinehart
ATTORNEY=

May 17, 1927. 1,629,130

F. W. STORCK

ROTARY PRINTING DEVICE

Filed May 31, 1923 8 Sheets-Sheet 5

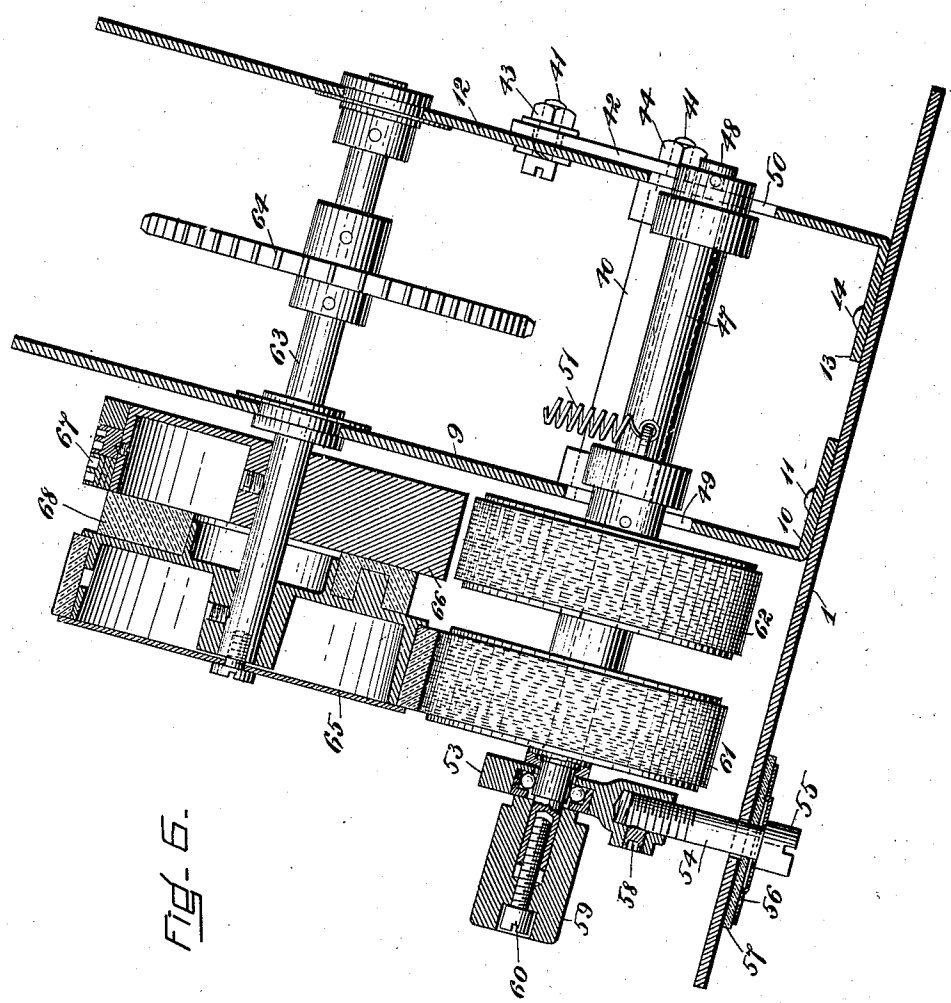


Fig. 6.

INVENTOR=
Frederick W. Storck
By Franklin T. Philipp
ATTORNEY=

May 17, 1927. 1,629,130

F. W. STORCK

ROTARY PRINTING DEVICE

Filed May 31, 1923 8 Sheets-Sheet 6

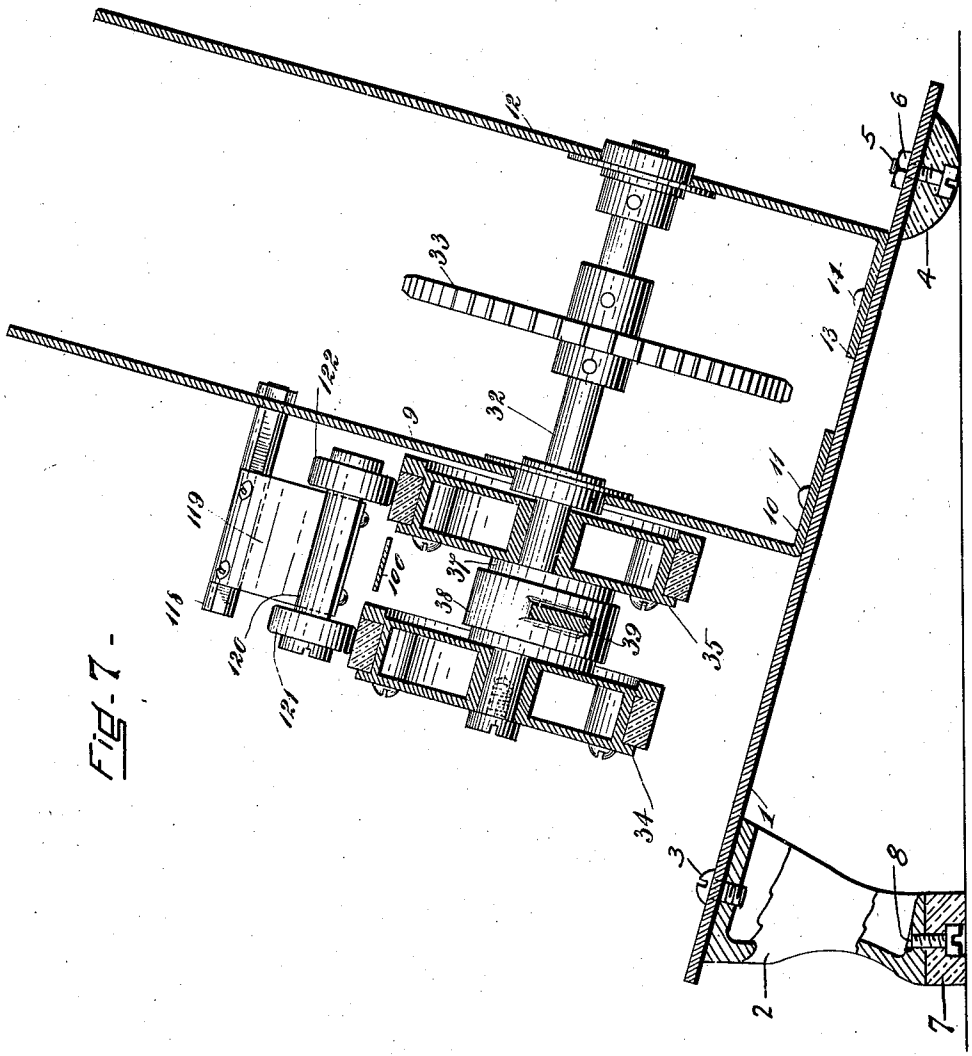


Fig. 7.

INVENTOR=
Frederick W. Storck
By Franklin F. Phillips Jr
ATTORNEY=

May 17, 1927. 1,629,130

F. W. STORCK

ROTARY PRINTING DEVICE

Filed May 31, 1923 8 Sheets-Sheet 7

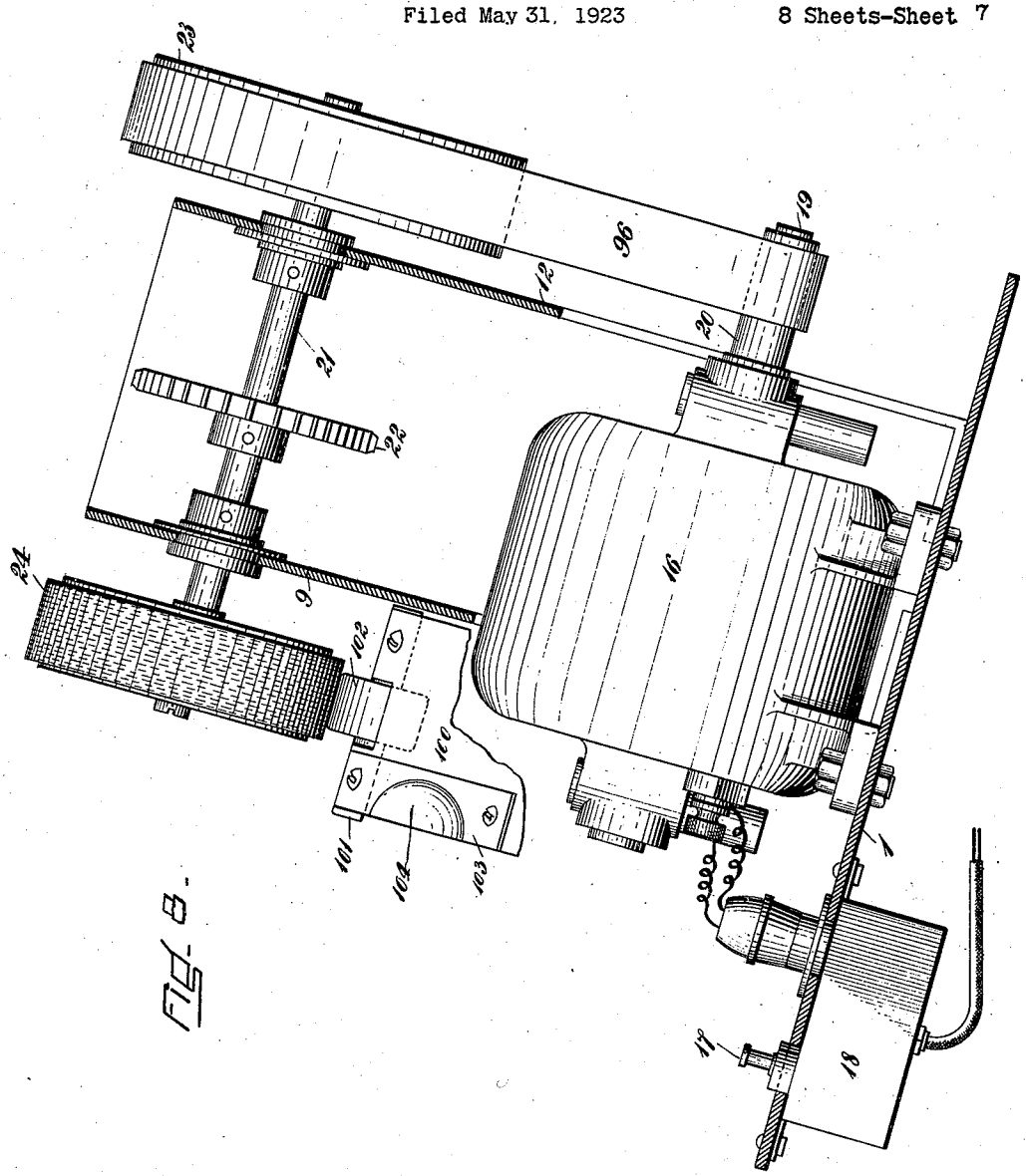


FIG. 8.

INVENTOR=
Frederick W. Storck
By Franklin F. Phillips Jr
ATTORNEY=

May 17, 1927. 1,629,130

F. W. STORCK

ROTARY PRINTING DEVICE

Filed May 31, 1923 8 Sheets-Sheet 8

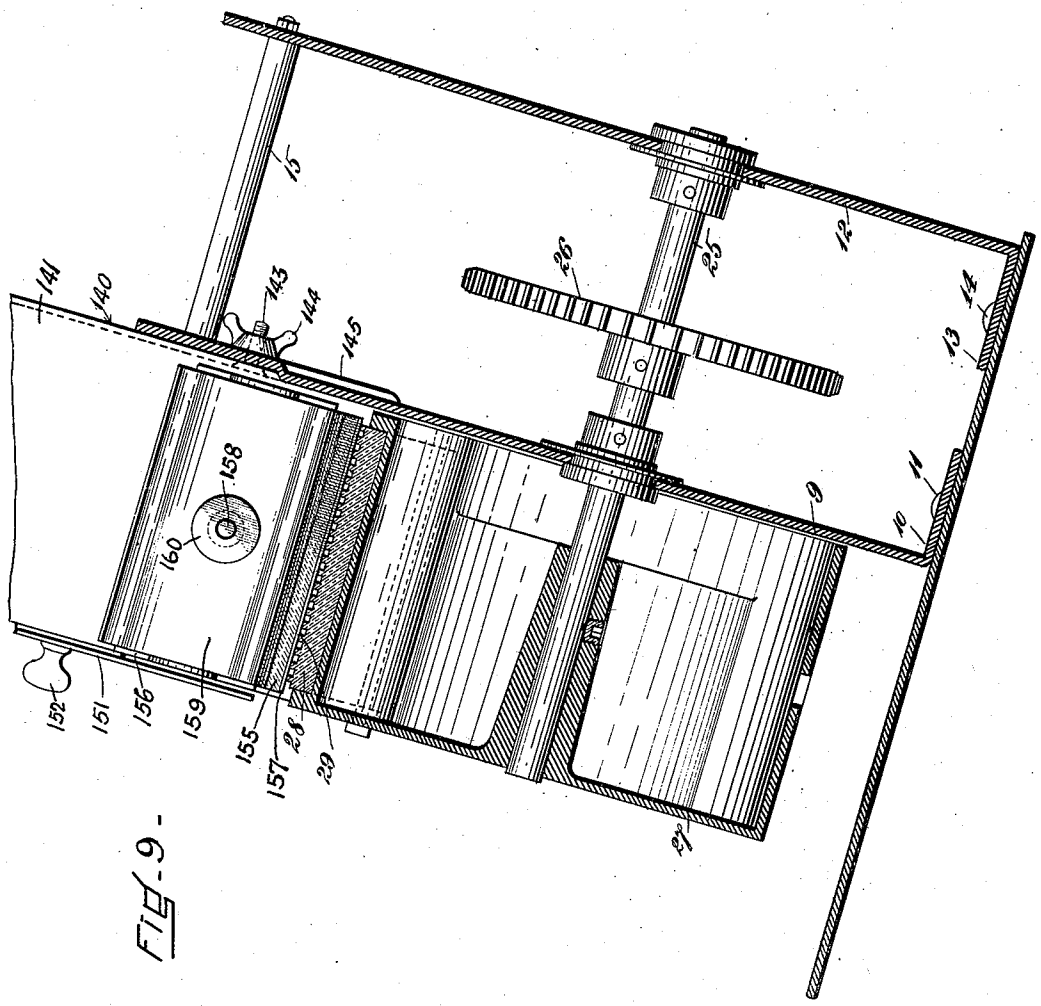


Fig. 9.

INVENTOR=
Frederick W. Storck
By Franklin F. Philips Jr.
ATTORNEY=

Patented May 17, 1927. 1,629,130

UNITED STATES PATENT OFFICE.

FREDERICK W. STORCK, OF SOMERVILLE, MASSACHUSETTS, ASSIGNOR TO STANDARD MAILING MACHINES COMPANY, OF EVERETT, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

ROTARY PRINTING DEVICE.

Application filed May 31, 1923. Serial No. 642,581.

My invention relates to that type of rotary printing machine designed especially to print upon envelopes, cards or sheets advanced successively by mechanical means to the printing position. Such a device is particularly useful in connection with machines now in use for imprinting upon envelopes the indicia prescribed by the Post Office regulations for mailing under the "permit system," so called, and incidentally to such operation for opening, moistening and sealing the flaps of the envelopes handled by the machine so that the envelopes, with their enclosed mail matter, fed through the machine may emerge ready for mailing. In such a device it is desirable that the imprint be accurately positioned upon the envelope and that a reliable count be obtained, by a mechanical counting mechanism, of each imprint placed upon the envelopes as they pass through the machine. This count is important as it is the basis of computation of the amount of money due for postage upon a lot of mail matter run through the machine. The simple expedient of counting by mechanical means the number of revolutions of the printing die cannot be resorted to as this would be unreliable in the event that ineffective revolutions occurred because no envelopes happened to be in the printing position when the revolving printing die was in that position—a situation which might arise not infrequently. My invention has, therefore, had for its special objects not only a printing mechanism designed accurately to position each of the passing envelopes with respect to the printing die but also to combine therewith a means for counting the actual imprints by counting the envelopes only when they are in the printing position. Hence the revolution of the printing die will have no effect as far as counting is concerned unless an envelope is in the printing position. This I have accomplished by providing means whereby my counting mechanism may co-act with the stop mechanism which positions the envelope with respect to the rotary printing die, and may operate only when said stop mechanism is out of operative position thereby permitting an envelope to pass to the printing position.

In order that my device may be more readily understood I shall show it as incorporated in a machine for printing the postal permit indicia upon envelopes containing mail matter and moistening and sealing the envelopes. Such machines commonly employ some sort of stack feeding means, and moistening and sealing means arranged with reference to the printing and counting apparatus in substantially the same general relationship as those particular stack feeding, moistening and sealing means which I here briefly describe and show. Although I claim or intend to claim in other applications for Letters Patent certain elements of invention relating to my particular stack feeding means, moistening means and stack sealing hopper, as herein described, nevertheless I describe them here in order that the invention here claimed, which relates to printing and counting mechanisms, may be shown in an environment needed for properly understanding it.

My invention consists in brief of the printing and counting mechanisms hereinafter described and claimed.

My device may be best understood by reference to the accompanying drawings in which—

Fig. 1 is a front view of my postal permit printing and sealing machine embodying my improved rotary printing device.

Fig. 2 is a top view.

Fig. 3 is a side view on line 3—3 of Fig. 2 viewed in the direction of the arrow.

Fig. 4 is an enlarged front view, partly in section, showing the means for operating the counting mechanism, and parts adjacent thereto, with an envelope in position to be printed.

Fig. 5 is an enlarged front view, partly in section, showing the same elements as shown in Fig. 4, with an envelope about to pass out from under the printing roller while at the same time influencing the counting mechanism so that it will perform a counting operation.

Fig. 6 is a cross section on line 6—6 of Fig. 1, showing details of printing and adjacent feed rollers.

Fig. 7 is a cross section on line 7—7 of Fig. 1, showing details of feed rollers for delivering the envelope to the printing rollers.

Fig. 8 is a view on line 8—8 of Fig. 1,

showing the motor, switch, power connection, and adjacent parts.

Fig. 9 is a cross section on line 9—9 of Fig. 1.

Referring now more specifically to the drawings in which like reference numerals indicate like parts, 1 is a metallic base which is supported in a tilted position (see Fig. 7) by three legs 2, secured thereto by screws 3, along its front edge, and by rubber buttons 4 secured upon its rearward edge by bolts 5 retained by nuts 6. The legs 2 are provided with rubber feet 7 secured thereto by screws 8.

Extending upwardly from the base 1 and at a right angle thereto is a front wall 9 provided with a flange 10 which is secured by rivets 11 to the base 1. A back wall 12 provided with a flange 13 is secured to base 1 by rivets 14. The walls 9 and 12 are parallel and braced near their tops by brace rod 15, (Figs. 1 and 9).

Bolted to base 1 is an electric motor 16 which is controlled by switch button 17 in switch box 18 which is also fastened to base 1. The drive shaft 19 of motor 16 (see Fig. 8) has fast thereon a pulley 20. Suitably journaled in walls 9 and 12 is a shaft 21 which carries fixed thereto the sprocket 22, also the pulley 23 to the rear of back wall 12, and the rubber faced roller 24 in front of the front wall 9. A shaft 25 suitably journaled in walls 9 and 12 carries fixed thereto a sprocket 26 in alignment with sprocket 22. The shaft 25 projects beyond wall 9 and carries fixed thereto a metallic initial feed roller 27 which is provided on a quarter of its circumference with a slightly offset rubber pad 28 having a roughened surface 29 for a purpose to be hereinafter specified.

A shaft 30 fixed between walls 9 and 12 bears an idler sprocket 31 aligned with the sprockets before mentioned. On the other side of shaft 21 is a shaft 32 similarly mounted and bearing fixed thereto a sprocket 33 in alignment with the before mentioned sprockets. This shaft 32 projects through the front wall 9 and carries fixed thereto two like rubber faced rollers 34 and 35 which are spaced apart by a metallic cylinder 36 fixed eccentric to said shaft 32. Said eccentric cylinder 36 is freely embraced by an annular wood bushing 37. The annular wood bushing 37 is freely embraced by sleeve 38 which bears integral therewith an eccentric arm 39.

Mounted between front wall 9 and back wall 12 is a cylindrical rod 40. The end of rod 40 is adjustably supported on wall 12 by clamp bolts 41 which pass tightly through holes in wall 12 and freely through larger holes in a plate 42. This plate 42 may be secured in position by screwing up nuts 43 on bolts 41. The end of shaft 40 is securely retained in plate 42 by means of nut 44, the wall 12 being cut away sufficiently to allow the adjacent end of shaft 40 to be slightly elevated or lowered for a purpose to be later specified. Bracket arms 45 and 46, pivotally mounted on rod 40, bear an integral hub 47 in which is journaled a shaft 48 (see Fig. 6), which extends through opposite holes 49 and 50 in walls 9 and 12 respectively, which holes are large enough to permit free vertical movement of the shaft 48. A coil spring 51 attached to hub 47 at one end and at the opposite end to a rod 52, fixed between walls 9 and 12 tends to elevate shaft 47. The shaft 48 extends forward through front wall 9 and its end opposite that retained in hub 47 is supported by a ball-bearing hub 53 into the base of which is screwed a screw 54 which passes through a hole in base 1. The head 55 of screw 54 bears on a metal washer 56 and a fiber washer 57 which contacts with the under surface of base 1. This screw 54 adjustably limits the extent of elevation of hub 53 and the shaft 48. A set screw 58 retains screw 54 in the desired position of adjustment. A handle 59 attached to the end of shaft 48 by means of screw 60 affords a means by which the operator may depress shaft 48 against the lifting force of spring 51. Fixed on shaft 48 between hub 53 and front wall 9 are rubber faced rollers 61 and 62 of like size.

Rotatably mounted in suitable bearings fixed in walls 9 and 12 is a shaft 63 which bears, fixed thereon, between said walls a sprocket 64 in alignment with the sprockets before mentioned. The shaft 63 also bears, fixed thereto, a rubber faced roller 65 in alignment with roller 61 and a metallic roller 66 in alignment with roller 62. The metallic roller 66 is of slightly less diameter than the roller 65 and bears on a part of its periphery a die-plate 67 designed to print the postal indicia prescribed by the postal authorities. The rubber face of the roller 65 is slightly cut away so as to be of reduced radius in that portion opposite the die-plate 67 on the adjacent roller 66, and the die-plate 67 is elevated sufficiently above the rest of the periphery of the roller 66 to make its surface lie on an arc which has approximately, but slightly less than, the same radius as that of the periphery of roller 65 in that portion thereof which is not cut away. In assembling the machine the position of shaft 48 is so adjusted by proper location of plate 42 and by turning of screw 54 that the shaft 48 is brought into parallel alignment with shaft 63 and roller 61 is bearing firmly and evenly against the adjacent periphery of roller 65 on that portion thereof which is not of slightly reduced radius. Such is the position shown in Fig. 6, but when the rollers have been rotated so as to

bring that part of the periphery of roller 65 which is slightly cut away opposite the die-plate, in juxtaposition to roller 61 there will be about one-sixteenth of an inch of clearance between rollers 65 and 61. A clearance is always maintained between rollers 62 and 66 but this clearance will be very slight when the die-plate 67 is revolved into a position adjacent the rollers 62.

Fixed between rollers 65 and 66 is a rubber cam roller 68 for a purpose to be later specified.

Mounted above the roller 66 carrying the die-plate 67 is a felt ink roller 69 carried by bracket 70 which is attached to the front of wall 9 by means of the pivot screw 71. The ink roller 69 is actuated toward and against roller 66 by the coil-spring 72 which embraces at one end a stud 73 on the back of bracket 70, and at the other end a threaded post 74 which passes through a threaded hole in the stud 75 which is fixed in the wall 9. One end of the coil spring 72 butts against the back of bracket 70 and the opposite end butts against a knurled thumb nut 76 fixed on post 74. By turning thumb nut 76 the tension on the spring 72 may be varied. To lift the ink roller 69 out of contact with the roller 66 there is provided a threaded post 77 passing through a threaded hole in the stud 78 which is secured to wall 9. This post 77 has fast thereon a knurled thumb nut 79 provided with a rubber face 80 which may contact with the back of the bracket 70 below the pivot screw 71. Turning thumb nut 79 so as to move it toward bracket 70 will cause it to lift the bracket and elevate the ink roller 69 out of contact with roller 66.

Mounted between walls 9 and 12 and extending beyond wall 9 is a rotatable shaft 81 (see Figs. 1 and 2) upon which is fixed a gear 82. That part of the shaft 81 which extends beyond wall 9 bears a roller 83, (see Fig. 4). A part of the periphery of roller 83 is encircled by a rubber tread 84 which makes the rubber faced part of the roller of greater diameter than that part of the roller adjacent to wall 9. Superimposed upon the roller 83 is a metallic roller 85 the periphery of which is slightly grooved at 86 where it overlies that portion of the roller 83 which is of reduced diameter so that there is a considerable space between these rollers at this point, as shown by the dotted circles Fig. 4. The roller 85 is fixed to shaft 87 which is movably mounted in the following manner: A cylindrical rod 88 is mounted between walls 9 and 12. Pivotally mounted on rod 88 are bracket arms 89 and 90 which have integral therewith a hub 91 in which is journaled the shaft 87. The walls 9 and 12 are provided with enlarged holes through which shaft 87 passes freely so that the roller 85 may rise as an envelope passes between it and roller 83. A coil spring 92 attached at one end to the hub 91 and at the other end to base 1 urges shaft 87 downwardly and holds roller 85 in yielding contact with roller 83.

The gear 82 meshes with a gear 93 which is fast on a rotatable shaft 94 mounted between walls 9 and 12. The shaft 94 has also fixed thereon a sprocket 95.

A belt 96 between the motor drive pulley 20 and the pulley 23 on shaft 21 rotates sprocket 22 in an anti-clockwise direction, which, through chain 97 (see Fig. 3) carries rotative power to sprockets 31, 26, 33, 64, and 95 thereby imparting a clockwise rotation to rollers 27, 34, 35, 61, 62, and 83 and an anti-clockwise rotation to rollers 34, 65, and 66.

A screw post 98 attached to wall 9 has fixed thereto a bracket 99 which carries a spring arm 100 which bears at one end a shaft 101 on which is mounted a roller 102 which normally contacts with the roller 24 (see Figs. 1 and 8). On this end of the spring arm 100 there is mounted a plate 103 provided with a curved boss 104. The opposite end of spring arm 100 bears a rigid member 105 on the outer extremity of which is mounted a roller 106 adapted to ride on the cam roller 68. The member 105 is provided on its upper side with a stop surface 107, and on its under side with a rubber stop block 108. The spring arm 100 passes between rollers 34 and 35 and the member 105 passes freely between rollers 61 and 62 so that it may be elevated or depressed by the action of the cam roller 68 upon the roller 106.

The eccentric arm 39 (see Fig. 4) is connected by means of link 109 to the crank 110 of a counter 111 of conventional construction designed to register each throw of the crank 110. A stop arm 112 arranged to contact with a fibre plate 113 mounted across a hole in the base 1 limits the rearward movement of the crank 110. The link 109 is provided with an extension 114 which terminates in a striking head 115. A coil spring 116 attached at one end to the link 109 and at the other end to a post 117 fixed in base 1 tends normally to hold the crank 110 in the position shown in Fig. 4. The extension 114 of link 109 is short enough to permit the striking head 115 to pass under the rubber stop block 108 when the member 105 is in an elevated position, but when the member 105 is depressed the striking head 115 will contact with the stop block 108 (see Fig. 5) so as to check the forward movement of the head 115 thereby causing the outward throw of the eccentric arm 39 to rock the link 109 and oscillate the crank 110 of the counter 111 against the yielding resistance of the spring 116.

A post 118 fixed in wall 9 has attached thereto a spring plate 119 (see Figs. 1 and 7). Across the end of this spring plate 119

is a bar 120 on the opposite ends of which are fixed cylindrical contact members 121 and 122 which bear yieldably upon the peripheries of rollers 34 and 35. An upper guide-plate 123 is fastened by means of its flange 124 to the wall 9. Beneath this guide-plate is a lower guide plate 125 likewise attached to the wall 9 by its flange 126. A rocking arm 127 is mounted on pivot pin 128 fixed in the wall 9. A threaded post 129 mounted in stud 130 projecting from wall 9 passes freely through a hole in the upper end of arm 127, the elevation of which is limited by the nut 130^a screwed upon the end of post 129. A knurled nut 131 screwed upon the post 129 supports the lower end of a coil spring 132, the upper end of which bears against the under face of the arm 127. The lower extremity of arm 127 is provided with a guide-tip 133 which lies slightly to one side of the adjacent edge of the flap opening fin 134 of the felt moistening device 135 and is slightly elevated above it. The degree of normal elevation of said tip 133 above said fin 134 is determined by the adjustment of the nut 130^a and the tension of spring 132 as determined by the adjustment of the position of the knurled nut 131 regulates the upward yieldability of the tip 133.

The moistening device 135 extends from a reservoir 136 having the plate 137 depending therefrom and supported on a bracket 138 fastened to base 1. A spring pressed guide rod 139 is supported at one end by moistening device 135 and extends along one edge of the moistener, the rod pressing upwardly in a position close to the moistener.

An open sided receiving hopper for a stack of envelopes to be operated upon is formed by the side wall 140, the front wall 141, and the base 142. The side wall 140 is provided with a threaded stud 143 which passes through a hole in the wall 9 and bears a wing-nut 144 (see Fig. 9) which clamps the hopper thus formed to the wall 9 which has a slightly off-set portion 145 which forms a support against which bears a curved edge 146 (see Fig. 1) of the side wall 140. The base 142 has on its upper side in-turned edges forming flanges 147 which form guides under which plate 148 slides, a knob 149 being provided for sliding plate 148 to the right or left (see Figs. 1 and 2). Attached to the upper face of slidable plate 148 is a slanting plate 150 which forms a prop to support the back of a stack of envelopes.

Slanting plate 150 is provided with a movable flange 151 adjustable in position by knob 152, toward or away from side wall 140, and locked in the desired position by means of thumb nut 153 threaded on stud 154 fast to slanting plate 150, a slot being provided in flange member 151 to allow of suitable movement of the flange relatively to plate 150 with stud 154 passing therethrough.

It will be noted from Fig. 1 of the drawings that the front wall 141 of the feed hopper is located over the roller 27 and slightly in advance of the center thereof, there being a gap between the front wall 141 and the roller 27 forming a feed outlet. This outlet is controlled by a flexible rubber stripper 155 mounted on the front of the front wall 141 between the wings of a bracket 156. The rubber stripper 155 is backed by a piece of leather 157 which bears against the surface of the roller 27 and is flexed thereby. The stripper 155 and its leather backing 157 are provided with a hole through which passes a threaded stud 158 projecting from the front wall 141. A spring clamp 159 is mounted on stud 158 which passes through a hole therein. This clamp is retained in position by a thumb nut 160 screwed upon the stud 158 which thus brings the spring clamp into firm bearing against the rubber stripper 155.

On the end of the machine opposite to that on which the feed hopper is mounted is an open sided receiving hopper formed by a side wall 161, a back wall 162, and a hinged bottom 163. The side wall 161 has a flange 164 which is attached to the wall 165, connecting the walls 9 and 12, by means of a screw stud 166 projecting from wall 165 and provided with a wing-nut 167. The bottom 163 is adjustably supported by a chain 168 which is fastened at its upper end to base 1, the lower part of said chain entering a notch in the outer edge of said bottom 163, which notch will embrace any desired link of the chain so that the bottom 163 may be held in a more or less tilted position. The bottom 163 has a cut-away portion 169 for convenience in inserting the hand of the operator beneath the pile of envelopes accumulated thereon. Suspended from studs 170 and 171 near the top of back wall 162 is a flexible stop 172 preferably made of rubber.

The operation of my device is as follows:

A stack of envelopes to be operated upon, arranged with the flap sides down, is placed in the receiving hopper with the flap folds adjacent the side wall 140. The forward part of the lowermost envelope rests upon roller 27 and the slanting plate 150 is so positioned by its base 148 by means of knob 149 that the back of the stack of envelopes rests upon the slanting plate 150 and is slightly elevated thereby. Before placing the stack of envelopes in the hopper the operator pulls out the flange 151 by means of knob 152 so that there is abundant space between the flange 151 and the side wall 140 to accommodate the stack.

The knob 152 is then pushed inward so

that the flange 151 thrusts the stack closely against the side wall 140. This is important as the envelopes must be projected from the stack in the subsequent operation of the machine so as to travel closely along the wall 9 in order that the imprint from the printing die may be correctly placed thereon. The flange 151 is then moved very slightly away from the adjacent side of the stack of envelopes for a distance of about one-eighth of an inch, thus freeing the stack from any binding influence which might tend to retard free feeding from the stack.

In order to conveniently slide flange 151 away from the stack, thumb nut 153 may be slightly unscrewed from a firm bearing against flange plate 151. It is indeed desirable to screw the nut 153 down into complete locking position only when a great many envelopes of the same width are to be run through the machine so that the position of the flange 151 need not be varied.

The motor is now started by pressing the switch button 17 thus causing the several rollers to revolve. As the rubber pad 29 on roller 27 comes into contact with the lowermost envelope of the stack it will cause it to be fed forward under the stripper 155 which retains the envelopes above the lowermost. Envelopes are thus fed forward from the stack successively and enter successively between rollers 24 and 102, being moved further forward by the driving force of roller 24. When emerging from roller 24 the edge of each envelope farthest from wall 9 is slightly elevated by the curved boss 104 on plate 100, which elevation tends to throw the envelope in against the wall 9 thus counteracting any tendency of the envelope to get out of alignment. As envelope further advances it is guided by plate 119 between rollers 34 and 35 on one side and roller 121 and 122 on the other side, being further actuated forward by the driving force of rollers 34 and 35.

Envelopes are thus successively advanced between guide plates 123 and 125 so as to be projected between rollers 61 and 62 on one side and rollers 65 and 66 on the other side. It is to be noted that the envelopes are fed forward in spaced relation, being projected from the receiving hopper intermittently by the contact of the rubber pad 28 on roller 27. The distance between the top of roller 27 and the bottom of roller 24 is such, when compared with the length of the rubber pad 28, that an envelope will be projected with certainty into feeding engagement with the roller 24 which will move it forward so as to leave an appreciable space between it and the next succeeding envelope to be advanced by the roller 27. The spacing between the several sets of feeding rollers is such that the forward edge of an envelope advancing under the rollers 65 and 66 will always encounter the stop member, or arm 105, in an elevated position, the cam 68 being so set as to bring about this result. The stop surface 107 will thus momentarily arrest the progress of the envelope which is meanwhile held in position against the stop member by the rollers 34 and 35. As the printing die 67 approaches closely to the printing position the rise of cam 68 will so depress the arm 105 that the envelope will pass by the stop surface and enter between rollers 61 and 62 on one side and rollers 65 and 66 on the other side and receive the imprint from the printing die 67 as it is fed further forward.

While the envelope is retarded the gap between it and the next following envelope is, of course, somewhat reduced, but it is still sufficiently maintained to allow the stop member, or arm 105, time to return to its elevated position so as to retard said next following envelope.

As the envelope passes by the stop surface 107 in the manner above described, and proceeds forward the arm 105 will become depressed by the bulk of the envelope passing above it, which envelope in its passage holds the arm 105 temporarily in a fixed position so low that the stop block 108 carried thereby will be struck by the head 115 of the extension 114 of the link 109 as this link is being reciprocated by the eccentric arm 39. This contact will rock the link 109 and oscillate the crank 110 of the counter 111 thus causing a registering action to take place in the counter.

It will be readily understood that while the envelope is held back by the stop surface 107 no counting operation can take place as the striking head 115 cannot come into contact with the stop block 108 so as to rock the link 109. I thus ensure that there shall be no counting operation excepting as it is incidental to the printing operation, or to the passage of the envelope through the printing position. By the means described an envelope is counted with certainty and counted but once, and this counting is in effect a counting of the imprint as an envelope must receive the imprint while it is being counted provided the inking roller 69 is set so as to contact with the printing die.

Because of the slight variation of the peripheries of rollers 65 and 66, as above described, the die plate 67 will get a firm printing and feeding bearing on the envelope as it passes beneath plate 67 and the yieldable mounting of rollers 61 and 62 will permit the envelope to pass over these rollers and under rollers 65 and 66 regardless of whatever may be the bulk of the envelope.

As the envelopes pass successively past the printing position they are projected against the guide-tip 133, the position of which has been so adjusted, by turning thumb nut 131, that each envelope encounters the flap open-

ing fin 134 in such manner that the body of the envelope passes over the fin while the fin becomes inserted between the flap and the body of the envelope. If the envelope is somewhat flexible, as is the common case, the guide-tip 133 will slightly bend down the edge adjacent to the flap fold crease thereby opening the flap so as to assist the flap opening fin 134 to become inserted between the flap and the body of the envelope. It is to be noted that the flap opening fin is shaped and functions much like that shown in my Patent No. 1,194,568 dated August 15, 1916, although in this earlier patent the envelope is fed with the flap side uppermost whereas here the envelope is fed with the flap side down. Hence the guide tip 133 performs a supporting and edge bending function which was performed by the flexible feed belt in this earlier patent although relative positions are reversed. If the envelope is of very stiff material or if its contents are bulky and unyielding the spring mounting of the arm bearing the guide-tip will permit it to yield upwardly so that the envelope may proceed in proper alignment. As the envelope advances the gummed surface of its flap is wiped across the felt moistening pad 135. The envelope flap is held in firm contact with the moistening pad by the spring actuated guide rod 139.

The moistening pad 135 has sufficient wick action to supply water, derived from reservoir 136, in suitable quantity to moisten the envelope flaps as they pass across the pad. The rate at which the moisture should be delivered to the moistening pad depends much upon the particular type of envelope being operated upon, the kind of paper of which it is made, and the condition and amount of glue thereon, and is often a matter of experiment. The supply of moisture should be carefully regulated so that the proper amount of moisture is delivered to the gummed surface of the envelope flaps.

It is particularly desirable in a device of the character specified that there shall be no superfluous moisture deposited on the backs of envelopes when they reach the receiving stack as the fresh ink of the permit indicia will readily become smeared if it is allowed to come into contact with the back of an adjacent envelope which has been improperly moistened so that excess water flows out from beneath the moistened flap. The occurrence of such excess moisture is readily prevented by the moistening means above described.

As each envelope passes beyond the moistening means and while still actuated by the rollers 65 and 66 it encounters another set of rollers, namely, the rollers 83 and 85, between which it passes before being deposited in the receiving hopper. The envelope is here subject to the actuating force of the roller 83 against the rubber periphery 84 of which it is pressed by the spring mounted roller 85. It is to be noted that these rollers bear upon the body of the envelope and not upon the flap which passes freely between those parts of the rollers which are of less diameter and which lie adjacent the wall 9. This absence of pressure upon the flap ensures that the moisture which has been deposited thereon by the moistener shall not be expressed from beneath the flap on to the adjacent portion of the back of the envelope, which would be very objectionable for the reasons stated. The moisture on the flap is thus given time to permeate the gummed portion thereof and dissolve the glue. The cut away portion 86 of the roller 85 prevents the contact of this roller with the freshly inked printed portion of the envelope so that smearing of the ink may be prevented. The flaps are closed and sealed by the weight of superimposed envelopes in the stack formed in the receiving hopper in the manner and by the means set forth in my Patent Number 1,365,803 of January 18, 1921.

As the envelopes are projected into the receiving hopper at considerable speed, the advance edge of each will strike the flexible back wall 172 of the receiving hopper. This flexible back wall will yield sufficiently upon the impact of the envelope to reduce the tendency of the envelope to rebound and lose its proper stacking alignment, or fall out of the hopper. As soon as a stack of envelopes has been accumulated in the receiving hopper it may be conveniently grasped for removal by the operator by reason of a part of the bottom 163 of the hopper being cut away at 169.

It is desirable that the bottom 163 of the receiving hopper be supported in a more or less tilted position as shown in Fig. 1 in order that the stack of envelopes thereon be slightly inclined toward the side wall 161. Such tilting of the bottom of the hopper is further made necessary by the fact that the added thickness of the envelopes on the side of which lies the flaps, which is the side adjacent the side wall 161, tends to tip the stack away from the side wall 161. To adjust the tilted position of the bottom 163 to meet varying requirements I have provided the chain 168 any link of which may be brought into engagement with the notch in the bottom of the hopper.

In any machine of this character occasional clogging is apt to result because of the presence of a crumpled envelope or one the flap of which has been torn or disarranged. It is of course desirable to remove such a clogged envelope quickly, particularly for the reason that it may occasion repeated operation of the counting mechanism. The general design and construction of my machine is such that any envelope becoming

clogged may be instantly removed from between any set of opposed rollers as the front of the machine is entirely open to permit the lateral withdrawal of an envelope from between the rollers. A frequent cause of clogging is that occasioned by the presence of an envelope which will not pass the moistener because the flap has become prematurely sealed before the envelope is placed in the machine. Such an envelope will be arrested by the flap opening fin and as its rear portion may still be under the printing roller it may cause repeat counting. Such an envelope can be quickly snatched out of the machine by one hand of the operator as he depresses, with the other hand, the handle 60, thereby separating the rollers which retain the envelope. This may be done without stopping the machine.

I have described the operation of my device when assembled to perform all of its functions of printing, counting, and sealing the envelopes, but it will be readily apparent that either or both of the printing and sealing functions may be eliminated. The printing function is eliminated in a simple and easy manner by turning the thumb nut 79 so as to swing the bracket 70 and elevate the inking roller 69 to a position where it no longer may contact with the printing die. To eliminate the sealing function the moistening tank is readily removed from the machine by removing the thumb screw 145 from the post 144 and lifting the tank off its supporting studs 142 and 143.

Having thus fully described my invention what I claim is:

1. In a device of the character specified the combination of means for feeding an envelope, a movable stop member arranged to engage the forward edge of said envelope and to arrest the movement thereof, means whereby said stop member may be moved out of operative engagement with said envelope thereby permitting said envelope to pass by said stop member and retain said stop member in a fixed position during its passage, a counter and means for operating said counter, said means being arranged to operate only upon contact with said stop member when the position of said stop member is influenced by a passing envelope.

2. In a device of the character specified the combination of a roller, a movable stop member arranged to contact with the forward edge of an envelope approaching said roller, means for moving said stop member out of operative engagement with said envelope thereby permitting said envelope to pass by said stop member and retain said stop member in a fixed position during its passage, a counter and means for actuating said counter, said means being arranged to operate only upon contact with said stop member when the position of said stop member is influenced by a passing envelope.

3. In a device of the character specified the combination of a roller, means for feeding an envelope beneath said roller, a cam, a movable, spring mounted stop member arranged to engage the forward edge of an envelope as it is advanced beneath said roller thereby arresting the movement of said envelope and also arranged to bear on said cam, said cam being arranged to move said stop member out of operative engagement with said envelope in a manner whereby said envelope may pass over and retain said stop member in a fixed position during its passage, a counter and means for actuating said counter, said means being arranged to operate only upon contact with said stop member when the position of said stop member is influenced by a passing envelope.

4. In a device of the character specified the combination of means for feeding an envelope, a movable stop member arranged to engage the forward edge of said envelope and to arrest the movement thereof, means whereby said stop member may be moved out of operative engagement with said envelope thereby permitting said envelope to pass by said stop member and retain said stop member in a fixed position during its passage, a counter, a crank on said counter, an eccentric arm, means whereby said eccentric arm is actuated, a link connecting said crank and said eccentric arm, a spring arranged yieldably to retain said crank in one position and an extension of said link arranged to contact with said stop member when the position of said stop member is influenced by a passing envelope and to cause said eccentric to rock said link against the restraining force of said spring and actuate the crank of said counter.

5. In a device of the character specified the combination of a roller, means for feeding an envelope beneath said roller, a cam, a movable, spring mounted stop member arranged to engage the forward end of an envelope as it is advanced beneath said roller thereby arresting the movement of said envelope and also arranged to bear on said cam, said cam being arranged to move said stop member out of operative engagement with said envelope in a manner whereby said envelope may pass over and retain said stop member in a fixed position during its passage, a counter, a crank on said counter, an eccentric arm, means whereby said eccentric arm is actuated, a link connecting said crank and said eccentric arm, a spring arranged yieldably to retain said crank in one position and an extension of said link arranged to contact with said stop member when the position of said stop member is influenced by a passing envelope and to

cause said eccentric to rock said link against the restraining force of said spring and actuate the crank of said counter.

6. In a device of the character specified the combination of a roller, a printing die mounted upon a part of the periphery of said roller, means for feeding an envelope beneath said roller, a movable stop member arranged to engage the forward edge of an envelope as it is advanced beneath said roller and to arrest the movement thereof, and means whereby said stop member may be moved out of operative engagement with said envelope as said printing die is revolved into contact with said envelope, and retained in a fixed position by the envelope during its passage, a counter and means for actuating said counter, said means being operative only when an envelope is passing beneath said roller bearing said printing die.

7. In a device of the character specified the combination of a roller, a printing die mounted upon a part of the periphery of said roller, means for feeding an envelope beneath said roller, a movable stop member arranged to engage the forward edge of an envelope as it is advanced beneath said roller and to arrest the movement thereof, and means whereby said stop member may be moved out of operative engagement with said envelope as said printing die is revolved into contact with said envelope, and retained in a fixed position by the envelope during its passage, a counter and means cooperating with said stop member for actuating said counter, said means being operative only upon contact with said stop member when the position of said stop member is influenced by a passing envelope.

8. In a device of the character specified the combination of a roller, a printing die mounted upon a part of the periphery of said roller, means for feeding an envelope beneath said roller, a movable stop member arranged to engage the forward edge of an envelope as it is advanced beneath said roller and to arrest the movement thereof, and means whereby said stop member may be moved out of operative engagement with said envelope as said printing die is revolved into contact with said envelope, and retained in a fixed position by the envelope during its passage, a counter, a crank on said counter, an eccentric arm, means whereby said eccentric arm is actuated, a link connecting said crank with said eccentric arm, a spring arranged yieldably to retain said crank in one position and an extension of said link arranged to contact with said stop member when the position of said stop member is influenced by a passing envelope thereby causing said eccentric to rock said link against the restraining force of said spring and actuate the crank of said counter.

9. In a device of the character specified the combination of a shaft, a roller fixed to said shaft, a printing die mounted in a portion of the periphery of said roller, a second roller fixed on said shaft beside said roller bearing said printing die and being of slightly greater diameter than said roller, the periphery of said second roller being slightly cut away in that portion which lies opposite said printing die, a second shaft and a pair of like rollers fixed thereto one of which bears normally against said second roller, except where its periphery is cut away, and the other of which is opposite but does not contact with said roller bearing said printing die or said printing die.

In witness whereof I have hereunto affixed my signature.

FREDERICK W. STORCK.