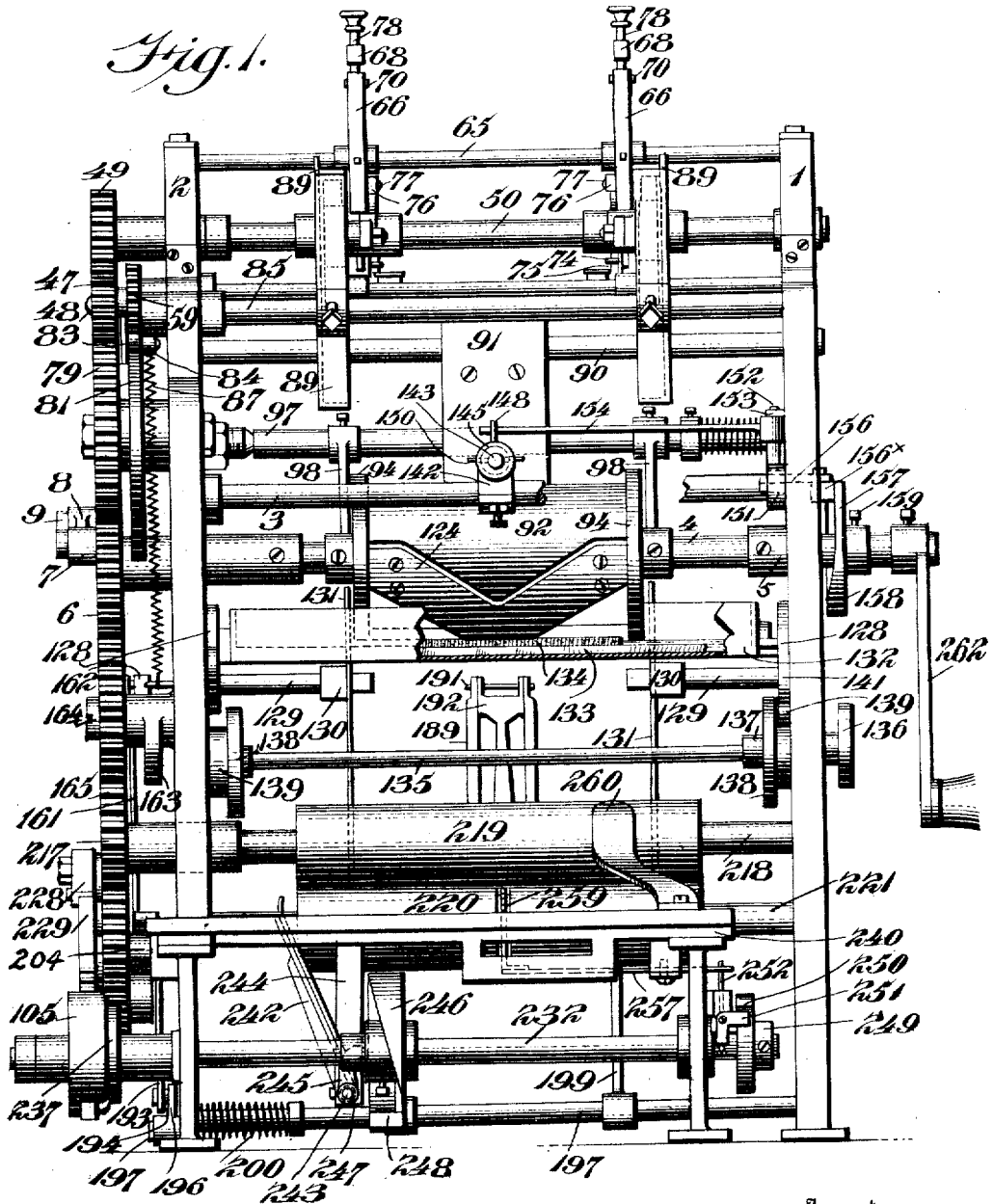


I. ROBBINS.
ENVELOP SEALING MACHINE.
APPLICATION FILED OCT. 9, 1907.

946,071.

Patented Jan. 11, 1910.

7 SHEETS—SHEET 1.



Witnesses
P. F. Nagle.
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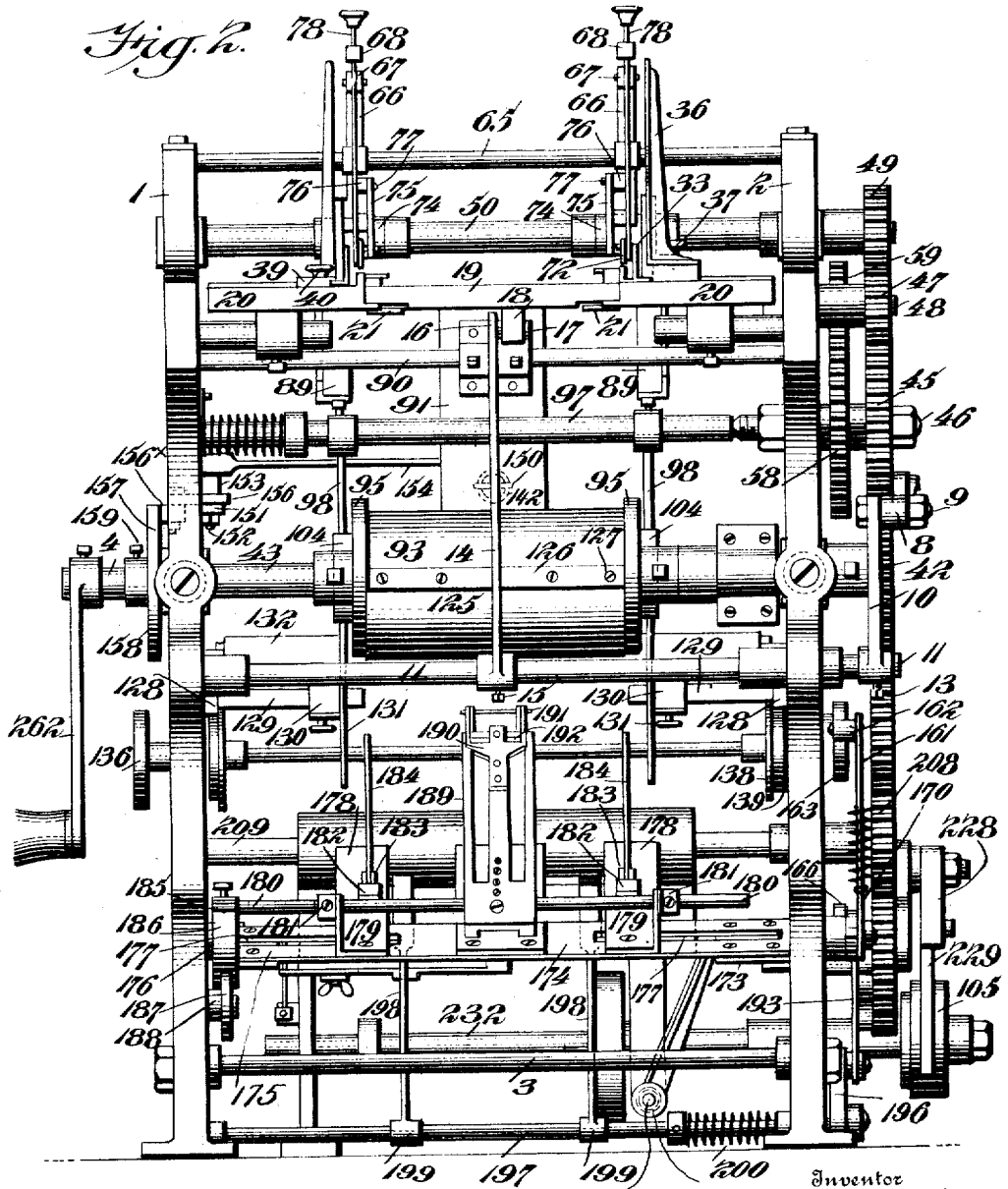
Fig. 18.
39
261

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 7 SHEETS—SHEET 2.



Witnesses:
 O. F. Nagle.
 L. Douville.

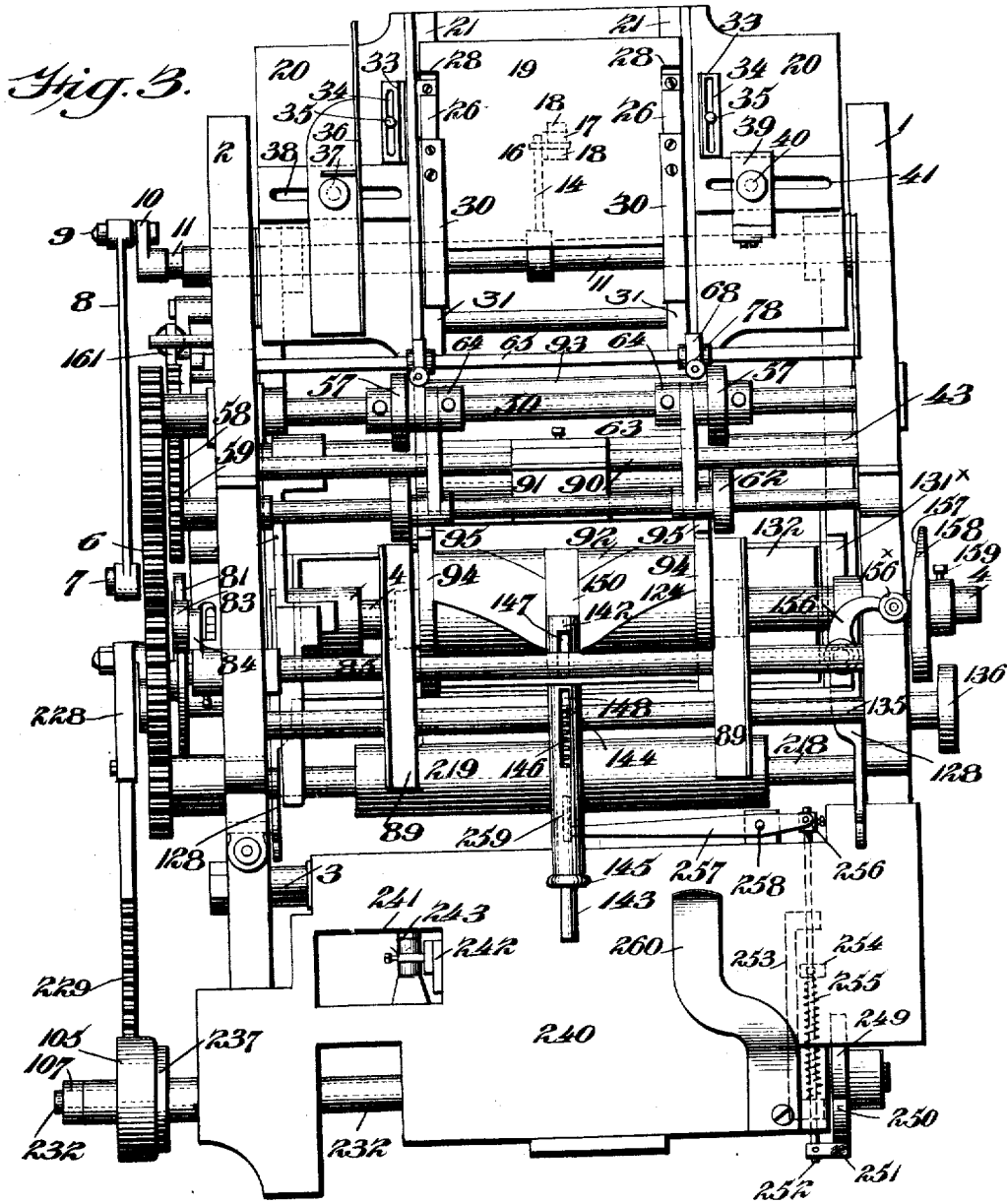
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Patented Jan. 11, 1910.

7 SHEETS—SHEET 3.



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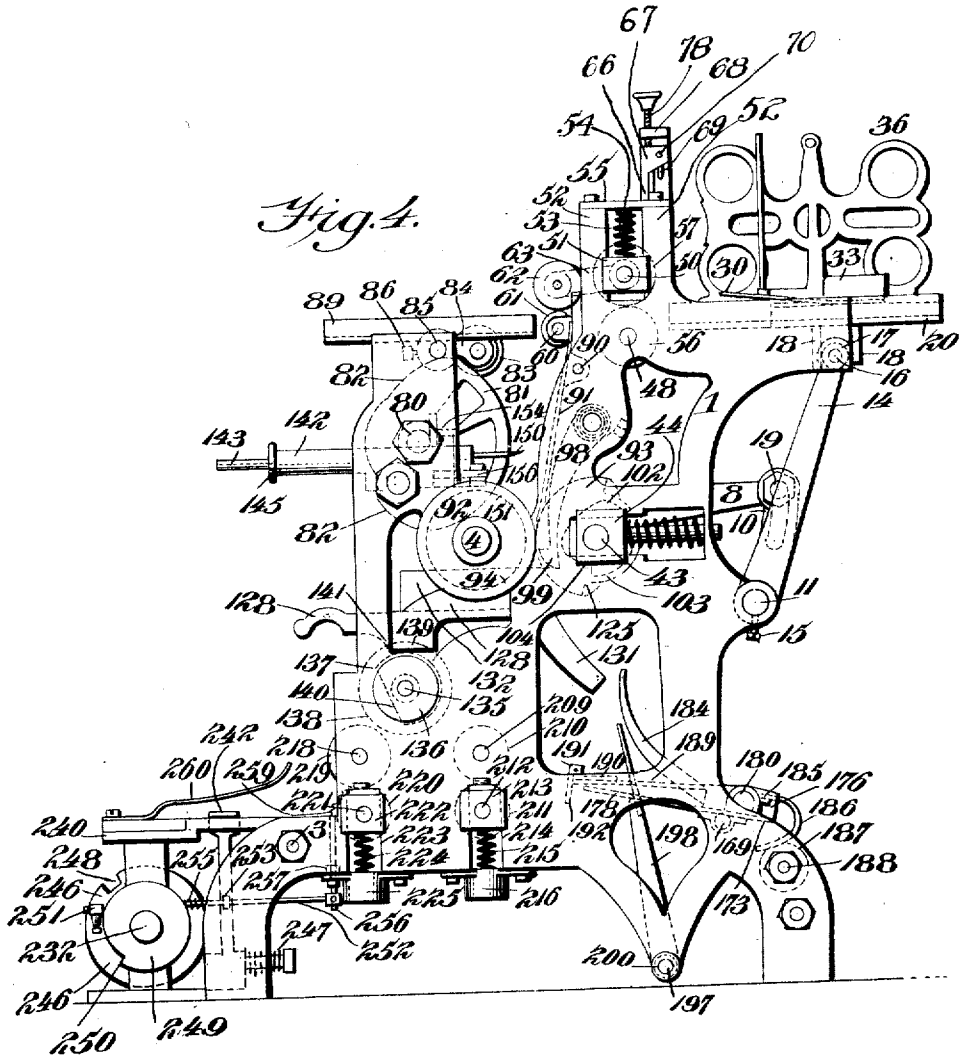
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 7 SHEETS—SHEET 4.

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946,071.

Patented Jan. 11, 1910.

7 SHEETS—SHEET 5.

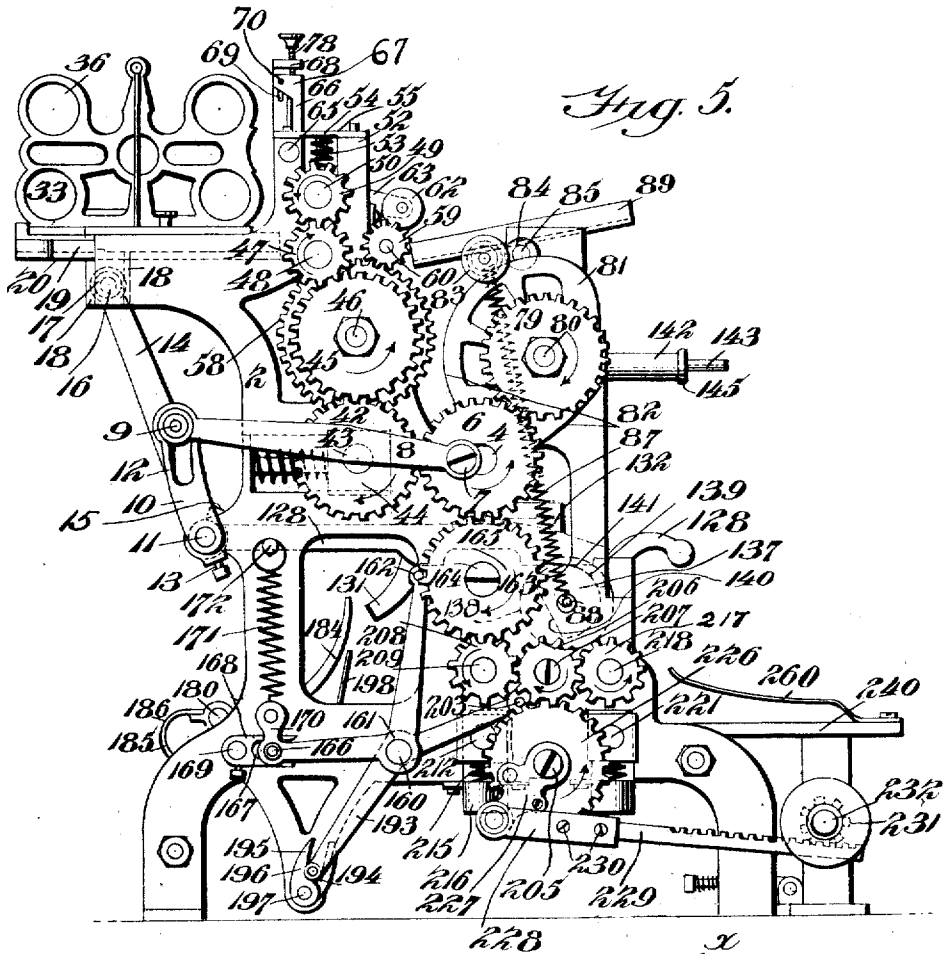


Fig. 5.

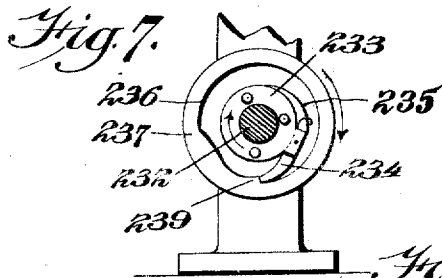


Fig. 7.

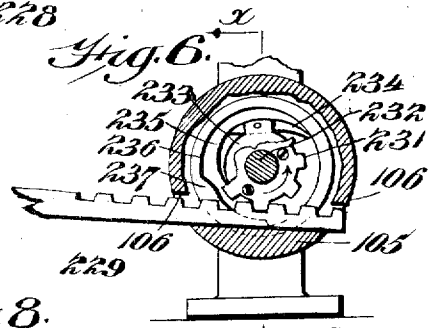


Fig. 6.

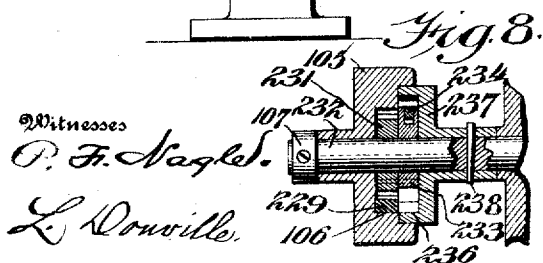


Fig. 8.

Witnesses
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946,071.

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 7 SHEETS—SHEET 6.

Fig. 9.

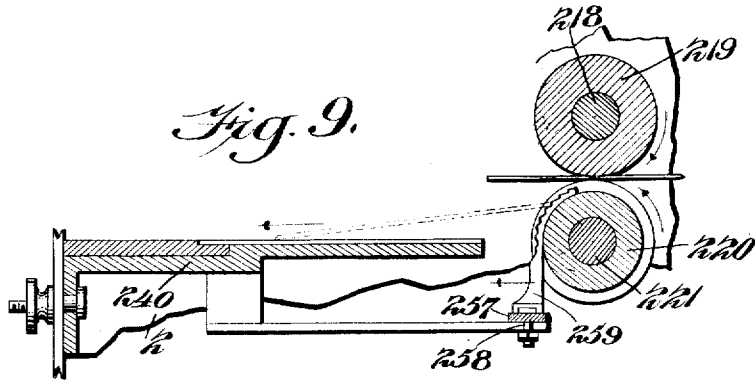


Fig. 17.

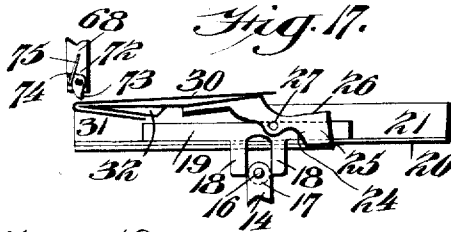
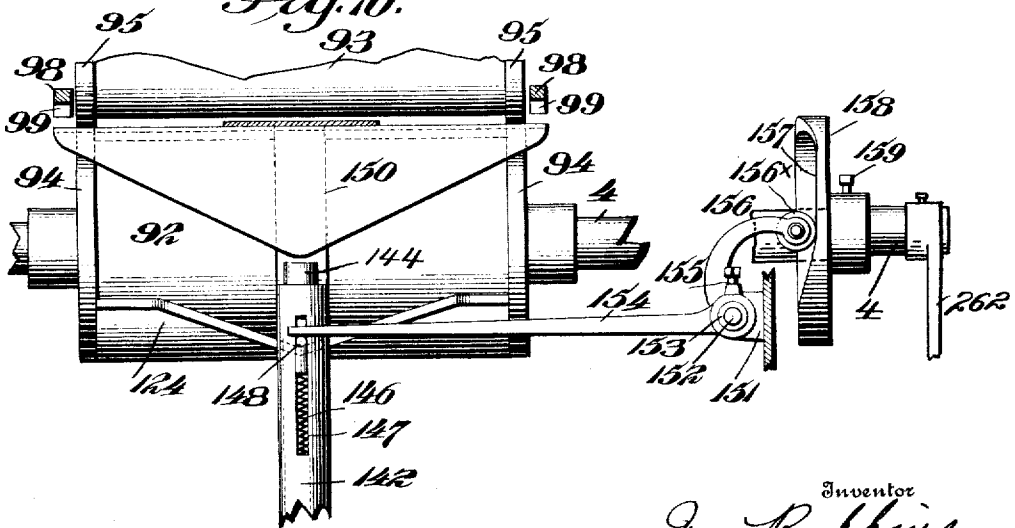


Fig. 10.



Witnesses
P. F. Nagle.
L. Douville.

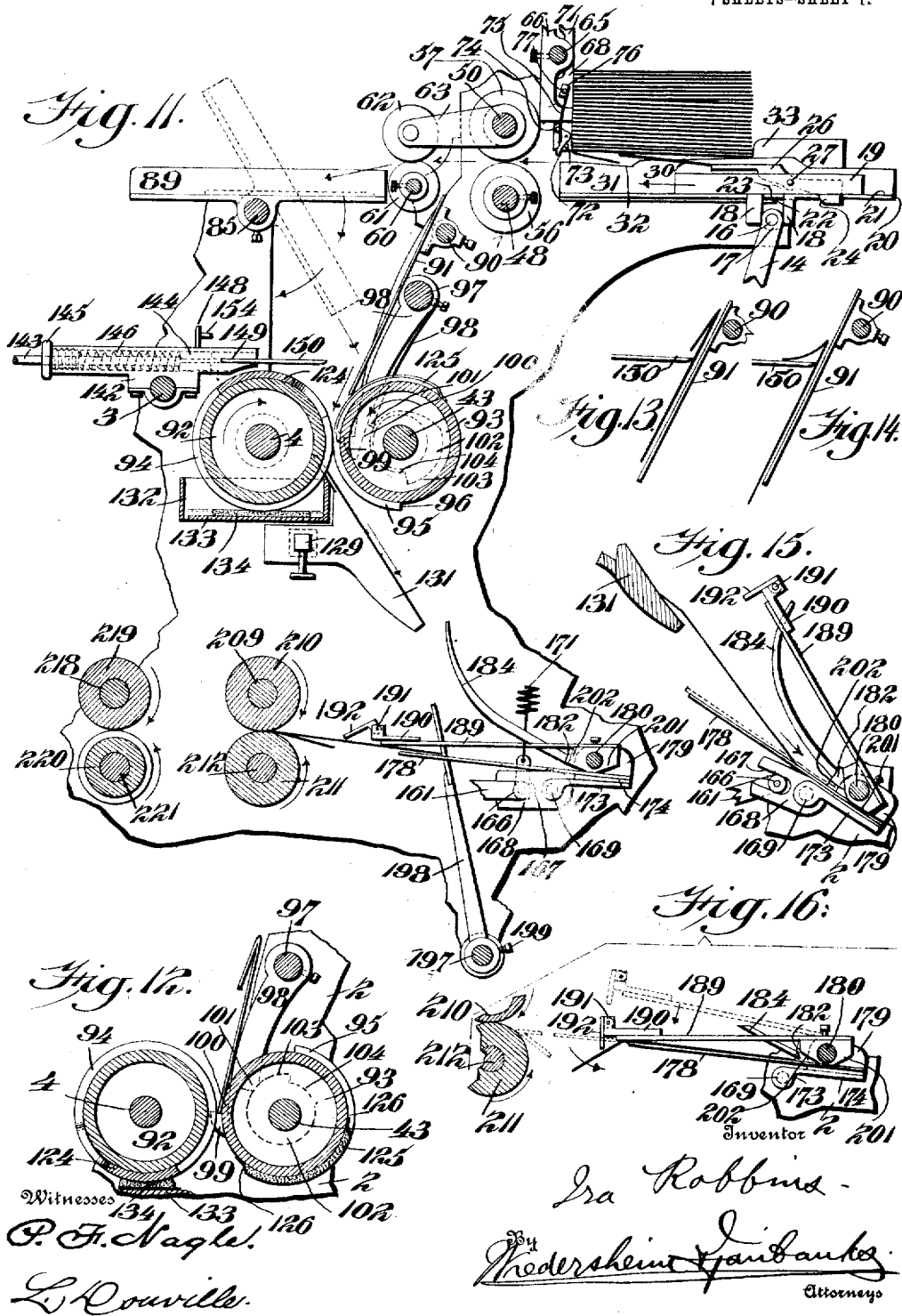
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 APPLICATION FILED OCT. 9, 1907.

946,071.

Patented Jan. 11, 1910.

7 SHEETS—SHEET 7.



UNITED STATES PATENT OFFICE.

IRA ROBBINS, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO IRA ROBBINS COMPANY, A CORPORATION OF NEW JERSEY.

ENVELOP-SEALING MACHINE.

946,071.

Specification of Letters Patent.

Patented Jan. 11, 1910.

Application filed October 9, 1907. Serial No. 396,527.

To all whom it may concern:

Be it known that I, IRA ROBBINS, a citizen of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Envelop-Sealing Machine, of which the following is a specification.

My present invention in its entirety consists of a novel and useful construction of an envelop sealing machine by means of which the envelops passing through the machine are automatically sealed and pass out of the machine in an efficient and reliable manner.

15 It further consists of novel means for adjusting the envelops when they are initially placed in or on the machine.

It further consists of a novel construction of an envelop feeding device and novel means for actuating the same and accurately guiding the envelops to the feed rollers.

20 It further consists of a novel construction of feeding fingers or members carried by the envelop supporting table or slide, which engage the flap of an envelop to move the same into engagement with the feeding rollers.

25 It further consists of a novel construction of a moistening device by means of which only the flap of the envelop will be moistened and the envelop advanced to suitable flap bending and feeding members before the envelops pass between the sealing rollers provided therefor.

30 It further consists of novel means for maintaining each envelop in a stationary position during a predetermined interval before the same passes into engagement with the moistening rollers.

35 It further consists of a novel construction of a flap opening mechanism and novel means for actuating the same.

40 It further consists of a novel construction of a container adapted to hold a suitable liquid and a novel construction adapted to raise said container in order that the same will be in the path of the portion of one of

the moistening rollers which engage the flap of the envelop.

It further consists of a novel construction by means of which the flap of the envelop is deflected so that when the envelops pass 50 between the feeding rollers the flap will be in the proper position to be sealed.

It further consists of a novel construction of feeding mechanism by means of which the 55 envelops are fed to the sealing rolls.

It further consists of novel means for removing an envelop from the machine after the same has been sealed.

60 It further consists of novel means for arranging and correlating the envelop feeding mechanism, the flap opening mechanism, the moistening mechanism, the flap bending device, the sealing rollers, the envelop discharging mechanism and their adjuncts, 65 whereby when the machine is in operation, the different operations hereinbefore mentioned are simultaneously carried out with respect to different envelops.

70 It further consists of novel means for adjusting the different mechanisms whereby the different operations are carried out at a predetermined time with respect to each other.

75 It further consists of other novel features of construction, all as will be hereinafter fully set forth.

80 In order to illustrate my invention, I have shown one form thereof which has been found in practice to give satisfactory and reliable results, although, it is obvious that the various instrumentalities of which my invention consists may be variously arranged and organized and it is not limited to the arrangement and organization as herein 85 shown.

Figure 1 represents a front elevation of an envelop sealing device embodying my invention. Fig. 2 represents a rear elevation thereof. Fig. 3 represents a top plan view 90 thereof. Fig. 4 represents a side elevation thereof certain parts being omitted. Fig. 5

represents a side elevation thereof showing the side opposite to that seen in Fig. 4. Fig. 6 represents a sectional elevation partly broken away of a portion of Fig. 5. Fig. 7 represents a side elevation showing more clearly certain of the parts seen in Fig. 6. Fig. 8 represents a section on line $x-x$ Fig. 6. Fig. 9 represents a sectional view of a portion of the envelop discharging mechanism. Fig. 10 represents a plan view of a portion of the machine showing the manner in which the flap of the envelop is opened. Fig. 11 represents a sectional view of a portion of the machine showing more clearly the means for feeding an envelop to the moistening rollers. Fig. 12 represents a sectional view of the moistening rollers and showing in addition the means for holding an envelop so that only the flap thereof is moistened. Fig. 13 represents a sectional view of a portion of the machine showing the manner in which the flap of an envelop is opened before it passes to the moistening rollers. Fig. 14 represents a sectional view similar to Fig. 13 but showing the parts in a different relation to each other. Fig. 15 represents a sectional view of a portion of the machine showing the means for deflecting the flap of an envelop before the same passes to the sealing rollers. Fig. 16 represents a sectional view similar to Fig. 15 but showing the parts in the position they assume at a different point in the operation and showing also a portion of the sealing rollers. Fig. 17 represents, in side elevation, a portion of Fig. 11 showing the parts in different relation to each other. Fig. 18 represents a side elevation of one of the envelop guide members employed.

Similar numerals of reference indicate corresponding parts in the figures.

Referring to the drawings, in the detailed description of my novel sealing machine, it will be understood that I have shown but one embodiment of the broad principle of my invention, since it is apparent that the same may be carried out in various forms of mechanism or organizations without departing from the spirit of my invention.

The present invention in its entirety comprises several distinct sets of mechanism which cooperate and are dependent upon each other to produce the ultimate objects or results sought for and I will therefore describe each of the same in detail and in the natural or logical sequence in which they are thrown into operation.

The frame of the machine will vary in accordance with the size and weight of the machine and in the present instance comprises two side members 1 and 2 which are suitably secured with respect to each other by means of cross rods or bars 3.

4 designates the driving shaft, which is suitably journaled in the sides 1 and 2, the improper movement of said shaft being pre-

vented by means of a set collar 5 and other members to which reference will hereinafter be made.

The envelop feeding mechanism.—I will first describe the construction employed for feeding the envelop into the machine.

6 designates a gear mounted on the driving shaft 4 and having pivoted thereto at 7 one end of a connecting rod 8 which is connected at its opposite end by means of a pin, bolt or equivalent device 9 to an arm 10 carried by a shaft 11 suitably journaled in the sides 1 and 2. The arm 10 is provided with a slot or groove 12 in order that the connecting arm 8 may be adjustably secured to the arm 10.

13 designates a set screw by means of which the arm 10 is adjustably secured to the shaft 11.

14 designates an arm adjustably mounted on the shaft 11 by means of a set screw 15, the outer end of said arm or lever 14 having pivoted thereto at 16 a roller 17 which engages the arms or fork 18 depending from the sliding feed table or envelop support 19 which latter is movably mounted on plates 20 carried by the side members 1 and 2 in any suitable manner. The plates 20 are provided at their inner edges with grooves or ways 21 with which the feed member 19 engages. As most clearly seen in Fig. 11, the ways 21 are partly cut away at their rear, as seen at 22, and are provided with an inclined or cam face 23 with which is adapted to coact the cam face 24 of the under side of the block or weighted end of the lever 26 which is pivoted at 27 to the feed table 19, it being noted that two of these levers are employed and that the feed table 19 is recessed or apertured as at 28, so that said levers 26 may extend there-through.

30 designates supporting members secured at one end to the levers 26 and having their free ends deflected upwardly to a desired degree so that said ends are in a plane above the flanges 31 of the plates 20. The flanges 31 are cut away or recessed at their forward end as seen most clearly at 32 in Figs. 11 and 17.

The machine is regulated for envelops of different widths by adjusting the guide members 33 which are provided with slots 34, whereby said members may be adjustably secured to the plates 20 by means of bolts or equivalent devices 35 passing through the slots 34 and engaging said plates.

The machine is regulated for envelops of different lengths by means of a guide member 36 adjustably secured to a plate 20 on one side of the machine by means of a bolt 37 passing through a laterally extending slot 38 in the plate 20 and by means of a guide member 39 adjustably carried on the other plate 20 by means of a bolt 40 which

passes through a slot 41 in said latter plate, it being understood that the bolts 37 and 40 are provided with suitable nuts.

42 designates a gear mounted on a shaft 5. 43 journaled in boxes 44 movably mounted in the sides 1 and 2 of the frame, as will hereinafter more fully appear in connection with the envelop sealing mechanism. The gear 42 meshes with a gear 45 mounted on a shaft 46 suitably journaled in the side members 1 and 2. The gear 45 meshes with a gear 47 mounted on a shaft 48, and said gear 47 meshes with a gear 49 mounted on a shaft 50, which latter is journaled in boxes 15 51 as most clearly seen in Fig. 4. The boxes 51 are mounted in vertical guides or ways 52, said boxes being maintained in their lowermost position by means of springs 53, encircling the pins or rods 54 and interposed between said boxes and the caps or plates 55 which are removably secured in any suitable manner to the sides of the machine frame. In the present instance, I employ a feed roller 56 adjustably mounted 25 on the shaft 48 with which coacts a feed roller 57 adjustably mounted on the shaft 50 it being now apparent that owing to the provision of the springs 53, the feed roller 57 yieldingly engages the feed roller 56.

30 58 designates a gear mounted on the shaft 46 and engaging a gear 59 mounted on a shaft 60 suitably journaled in or carried by the side members 1 and 2 of the machine frame.

35 61 designates a feed roller adjustably mounted on the shaft 60, as seen in Figs. 3 and 4, and engaging a feed roller 62 which is pivoted at the outer ends of the arms or brackets 63 whose opposite ends are loosely 40 mounted on the shaft 50 and owing to the provision of set collars 64 adjustably mounted on the shaft 50, any improper lateral movement of said brackets or the feed rollers 62 is positively prevented and owing 45 to the manner in which they are mounted their weight will cause them to engage with the coacting feed roller 61, as is apparent.

65 65 designates a rod or shaft carried by the side members of the frame and having adjustably secured thereon brackets or guide members 66 which are provided with heads 67 as shown in Fig. 4, through slots in which reduced portions of the bars 68 are movably mounted, said bars 68 having slots 69 see 55 Fig. 5 through which pass pins 70, which latter engage the members 66. The weight of the members 68 causes them to normally assume their lowermost position and since they are cut away or recessed, as seen at 71 60 in Fig. 11, provision is made for their vertical movement in the same vertical plane as said rod 65.

72 designates pawls pivoted to the members 68, the rearward movement of which 65 is limited by stops 73, as clearly seen in

Figs. 11 and 17. The pawls 72 have at their upper end pins or lugs 74 with which engage the free ends of springs 75 carried by blocks 76 which latter are adjustably secured to the plates 68 by means of set screws or equivalent devices 77. The pawls 72 are in alinement with the flanges 31 so that a space is left between the lower ends of said pawls and the upper face of said flanges. The height of the pawl above the flanges 31 is regulated by adjusting the set screws 78 carried by the plates or bars 68 and abutting against a suitable fixed portion of the machine and in the present instance they are shown as abutting against 80 the top of the brackets 66.

The mechanism for directing the envelops to the flap moistening device.—As seen most clearly in Fig. 5, 79 designates a gear meshing with the driving gear 6 and mounted on 85 a shaft 80 suitably journaled in the side members 1 and 2.

81 designates a cam member mounted on the shaft 80 and having two similar cam faces 82 thereon which coact with a roller 90 83 pivoted to an arm or bracket 84 which is adjustably mounted on a shaft 85 suitably journaled in the side members 1 and 2 by means of a set screw 86. The roller 83 is maintained in engagement with the cam 81 95 by means of a spring 87, one end of which is secured to the bracket 84 and the other end thereof to a pin, lug or suitable fixed point 88 on the side member 2 of the frame.

89 designates guide members preferably 100 grooved and adjustably mounted in any suitable manner on the rock shaft 85, it being noted that these guide members are so located with respect to the feed rollers 61 and 62 that they receive an envelop after it 105 leaves said feed rollers.

90 designates a rod or bar carried by the side members 1 and 2 and having adjustably secured thereon a guide plate or member 91 which guides the envelop which is now 110 passed to the moistening rollers 92 and 93. The roller 92 is mounted on the driving shaft 4 and is provided at each end with flanges 94. The roller 93 is mounted on the shaft 43 and is provided at each end with flanges 95 having 115 a portion of their circumference cut away, as seen at 96.

97 designates a rod or bar rotatably mounted in any suitable manner in the machine and having adjustably mounted in any suitable 120 manner thereon the arms 98 provided at their lower ends with the hooks or catches 99. One of the arms 98 has its rear face cut away, as seen at 100, thus forming a shoulder 101.

102 designates a cam block mounted on 125 the shaft 43 and having a top face 103 and release face 104 with which the said arm 98 having the cut away portion 100 and shoulder 101 coacts.

124 designates a preferably metallic plate 130

secured to the roller 92 in any suitable manner, as seen most clearly in Fig. 1. The opposite roller 93 which is mounted on the shaft 43 is provided with a pad 125 which is secured to the roller 93 in any suitable manner and in the present instance I have shown this as being accomplished by means of the bar 126 provided with screws 127 which pass through the bar 126 and the member 125 and engage the roller 93.

128 designates bars or members loosely mounted at one end on the shaft or bar 11 and provided at their opposite ends with suitable handles, as seen most clearly in Fig. 5. The bars 128 have extended laterally therefrom the arms 129 on which are adjustably mounted blocks 130 to which the guiding plate or members 131 are secured in any suitable manner. The bars 128 are recessed on their inner face, as seen at 131^x in Fig. 3, in order to support a liquid container 132 which is adapted to contain any suitable or moistening material therein.

133 designates a plate, as most clearly seen in Fig. 1, having secured on its upper face an absorbent pad 134 made of any suitable material with which the plate 124 engages when the side members 128 are in raised position. The vertical adjustment of said side members 128 and the liquid container 132 carried thereby is accomplished in the following manner:—The rod or shaft 135 is provided with an operating handle 136 and is suitably journaled in the sides 1 and 2 of the frame. Mounted on the shaft 135 are cam blocks 137 having differential diameters 138 and 139 and as seen most clearly in Fig. 5, the diameter 139 is cut away, as seen at 140 in said figure. The side bars 128 are provided with depending arms or lugs 141 which engage the diameter 139 of the cam blocks 137, so that when said handle 136 is actuated the shaft 135 will be rotated and the container raised or lowered as desired, as will be readily apparent from the drawings.

The mechanism for opening the flap of the envelop.—142 designates a casing adjustably carried on one of the cross rods 3 of the frame and having movably mounted therein a rod 143 provided with a block or enlargement 144 between which and the removable end or cap 145 is interposed a spring 146.

147 designates a slot in the upper face of the casing 142 through which passes a pin 148 which engages the enlargement or block 144.

149 designates lateral slots at the inner end of the casing 142 in which is movable a plate or bar 150 fixed to the block 144 or rod 143 in any suitable manner, it being apparent that owing to the provision of the slots 149 the plate or bar 150 is non-rotatably mounted.

151 designates a bracket carried by the

side member 1 of the machine casing as seen in Fig. 1, and provided with an upwardly extending pin or lug 152 on which is rotatably mounted a sleeve 153 on which latter is adjustably mounted an arm 154 by means of a set screw or equivalent device, it being seen as indicated most clearly in Fig. 1 that this arm is extended so as to engage the upwardly projecting pin 148 carried by the rod 143.

156 designates an arm also mounted on the sleeve 153 and provided at its outer end with a roller 156^x which coacts with the cam face 157 of the cam block 158 which is adjustably secured by means of a set screw or equivalent device 159 to the driving shaft 4.

Mechanism for bending the flap of the envelop.—As seen in Fig. 5, 160 designates a rod or pin carried by the side member 2 of the machine frame having mounted thereon an elbow lever 161 to one end of which is pivoted a roller 162 which is adapted to coact with a cam 163 on a shaft 164 carried by the side member 2 of the frame, said shaft having mounted thereon a gear 165 which meshes with the gear 6 carried by the driving shaft 4. The opposite end of the elbow lever 161 has pivoted thereto a roller 166 which engages the slot or groove 167 of an arm 168 adjustably mounted in any suitable manner on a rod or shaft 169, which latter is suitably journaled in the side members 1 and 2 of the frame.

170 designates a lug or projection extending from the outer end of the elbow lever 161, having secured thereto one end of a spring 171, the other end of which is secured to a suitable fixed point 172 so as to cause the roller 162 to always engage the operative cam surface of the cam member 163 as will be readily apparent from Fig. 5. The shaft 169 has secured thereto a bracket 173 to which is secured in any suitable manner a plate or bar 174, it being understood that a similar bracket 175 is mounted on a rod or pin 176 carried by the side member 1 of the frame and that one end of the plate or bar 174 is secured to said bracket 175.

177 designates laterally extending slots or apertures in the plate or bar 174, adapted to receive the forwardly extending plates or members 178 provided with upwardly extending flanges 179 in which is journaled a rod 180 which is prevented from improper lateral movement by means of set collars 181.

182 designates blocks adjustably secured in the longitudinally extending slots 183 in the plates 178. The blocks 182 have secured thereto and extending therefrom the guide rods or members 184, the outer ends of which are deflected upwardly in such a manner that the descending envelop owing to the provision of guide members 131 is directed to the members 178 as most clearly indicated in Fig. 15.

In order to rock the shaft 180, a block 185 is adjustably secured thereto, as indicated in Fig. 2, said block having a cam member 186 extending downwardly therefrom and adapted to engage a roller 187 mounted on a rod or pin 188 carried by the side member 1 of the frame. This cam member 186 is deflected at its lower end so that when the shaft 169 is rocked the engagement of this member 186 with the roller 187 will cause the shaft 180 to be rocked and actuated a plate or bracket 189 adjustably mounted on the shaft 180. The member 189 has secured at its outer end a bracket 190 in which is pivoted at 191 a depending plate or member 192 which serves as a flap or closing member.

Mechanism for feeding the envelopes to the sealing rollers.—193 designates an elbow lever as most clearly seen in Fig. 5, said lever being provided at one end with a roller 194 which engages a slot 195 in an arm 196 mounted in any suitable manner on a rock shaft 197 which is suitably journaled in the frame of the machine.

198 designates feeding arms or fingers adjustably secured by means of set screws 199 on the shaft 197.

200 designates a spring mounted on the shaft 197, as seen in Fig. 2, whereby the feeding members 198 carried thereby are normally maintained in their rearmost position at which time they engage the bar or plate 174 and the lever 193 is maintained in engagement with its actuating means. The bracket 189 is provided on its end face with the reversely inclined cam faces 201 and 202, which permit the member 189 to be readily rocked, it being understood as seen in Fig. 2 that the member 189 is located in the present instance directly above one of the plates or receiving members 178 so that as seen in Figs. 11, 15 and 16, the reversely inclined cam faces 201 and 202 will engage with said plate and serve as a stop to limit the movement of said bracket.

203 designates a roller carried at the outer end of the elbow lever 193 and adapted to coact with a cam member 204 mounted on a shaft 205 carried by the side member 2 of the frame. The shaft 205 has thereon a gear 226 which meshes with an idler 206 suitably journaled at 207. The idler 206 is driven by a gear 208 on a shaft 209, said gear 208 meshing with the gear 165 driven by the gear 6, as clearly indicated in Fig. 5. The shaft 209 has mounted thereon a feed roller 210 which co-acts with a feed roller 211 mounted on a shaft 212 which latter is suitably journaled in boxes 213 which are movably mounted in the ways or guides 214.

215 designates springs interposed between the boxes 213 and the caps or bars 216 suitably secured to the frame whereby the roller 211 normally engages the roller 210.

217 designates a gear driven by the idler

206 and mounted on a shaft 218 to which is secured a feed roller 219.

220 designates a feed roller adapted to co-act with the feed roller 219 and mounted on a shaft 221 which is journaled in boxes 222. The boxes 222 are mounted in the slots or grooves 223 and are maintained normally in raised position by means of springs 224 interposed between said boxes and the caps or plates 225 which are suitably secured to the machine frame, as seen most clearly in Fig. 4.

226 designates a gear mounted on the shaft 205, said gear having eccentrically secured thereto an arm 227 which is loosely mounted on the shaft 205, said arm having pivoted to its outer end a casing or slotted arm 228 in which is adjustably secured a rack arm 229 by means of set screws 230. This rack arm 229 meshes with a pinion 231 loosely mounted on a shaft 232 suitably journaled in the machine frame. The pinion 231 has fixed thereto a cam 233 to which is pivoted a pawl 234, the operative end of which is normally pressed downwardly by means of a spring 235 secured at one end to the cam 233 and having its other end engaging one end of the pawl 234 so that the operative end thereof tends to move outwardly and engage the inner periphery 236 of the collar or sleeve 237 fixed on a shaft 232 in any suitable manner, as is indicated in Fig. 8, in the present instance by means of a pin 238, as indicated in Fig. 8. The inner periphery 236 of the sleeve 237 is provided with a shoulder 239 with which the pawl 234 engages during the operation to cause said collar or sleeve 237 and also the shaft 232 to which said collar is loosely secured, to rotate in unison. The casing member 105 is loosely mounted on the shaft 232 and is provided with an aperture 106 through which the rack arm 229 passes and whereby the said arm is maintained in operative relation with respect to the pinion 231, it being noted that the casing member 105 is adapted to extend over a portion of the collar or sleeve 237 and is maintained in proper relation with respect thereto by means of a set collar 107.

240 designates a table or support to which the envelopes are passed from the rollers 219 and 220, as will be hereinafter more fully described. The support 240 is provided with an aperture 241 whereby the proper movement of the arm 242 is permitted during the operation of discharging an envelop from the support 240. The arm 242 is adjustably mounted on a shaft 243, which latter is journaled in a bracket 244 carried by any suitable portion of the machine frame.

245 designates a cam member fixed on the shaft 243, said cam being normally maintained in engagement with the cam mem-

ber 246 on the shaft 232 by means of a torsional spring 247. The cam member 245 co-acts with the side of the cam 246, which latter is cut away to form a release face 248, as is clearly seen in Fig. 1.

In order that the envelopes will be positively passed from the feed rollers into proper position on the envelop support 240, I mount on the shaft 232 a cam block 249 provided with the release face 250, which co-acts with a lever or cam member 251 adjustably mounted on a rod 252 journaled in a bracket 253 carried by the machine in any suitable manner, as most clearly indicated in Fig. 3.

254 designates a set collar adjustably mounted on the rod 252 between which and a fixed point on a bracket 253 is interposed a spring 255 whereby the lever or cam member 251 is always maintained in engagement with the cam block 249. The end of the rod 252 has adjustably secured thereto, a rod 256 which is secured at one end of a member 257, fulcrumed at 258 to a suitable fixed point of the machine frame. The member 257 has secured thereto, an upwardly extending arm 259, the upper end of which is serrated and deflected rearwardly as most clearly seen in Fig. 3 in dotted lines and also Fig. 9, so that the passage of the envelop from the feeding rollers 219 and 220 to the proper position on the support 240 is positively assured, it being noted that a guide member 260 is pivoted at one end to the bed 240, the outer or free end of said guide 260 being deflected upwardly, as clearly indicated in the drawings.

The operation of the machine will now be readily apparent to those skilled in this art.

I will first describe the manner in which the envelopes are fed into the machine. The envelopes which are to be sealed are placed in position upon the sliding table 19 between the guide members 36 and 39 and owing to the provision of the cam face 261 on the under side of the guide 39, said guide may be bent rearwardly toward the side of the machine, so that the envelopes may be the more readily placed in proper position for being fed into the machine, as most clearly indicated in Fig. 18, it being noted that the guides 36 and 39 serve for the lateral adjustment of the envelopes and the guide members 33 serve for the longitudinal adjustment of the envelopes. In the present instance, I have shown the driving shaft 4 as being provided with a handle 262, whereby the same may be manually actuated, although it is to be understood that in the broad scope of my invention, it is immaterial in what manner the driving shaft is driven and the same may be actuated either manually as shown or by means of any suitable or conventional type of motor or driving mechanism, as will

be readily apparent. On the rotation of the driving shaft 4, the gear 6 carried thereby, owing to the provision of the crank arm 8 and the manner in which it is secured to said gear, will cause the shaft 11 to be rocked forwardly, it being noted that the connecting arm 8 is adjustably secured in the slot 12 of the link 10 which latter is secured to the shaft 11. Since the shaft 11 has secured thereto the arm 14 which carries at its outer end the roller 17 engaging the arms or fork 18 depending from the envelop feed table or member 19, the latter will be carried forwardly as the shaft 11 is rocked. The envelopes normally rest on the flanges 31 of the table 19 and the feeding fingers or members 30, and owing to the manner in which the flanges 31 are cut away, as seen at 32 in Figs. 11 and 17, the flap of the lowermost envelop will assume the position as indicated in said Fig. 11, it being understood that the envelopes when placed in position are placed one above the other with the flap portion of the envelop underneath and with the flap of the envelopes nearest to the feeding rollers. As the table 19 moves forwardly, the lever arms 26 pivoted thereto owing to the cam face 24 on the weighted end 25 of said lever and inclined cam face 23 on the ways 21, the ends of the levers 26 to which the feeding members 30 are secured will cause the ends of said members to move downwardly, so that the envelop will pass between the lower ends of the pawl 72 and the top face of the flanges 31, it being noted that owing to the manner in which these pawls are pivoted and the tension devices therefor, that if an envelop is being fed which has a greater thickness than an ordinary envelop, these spring actuated pawls will turn on their pivot and permit the envelop to pass between the lower ends of the same and the top of said flanges 31, whereby the lower envelop, which is now being fed forwardly by the engagement of the members 30 with the flap thereof, will pass in an accurate manner to the feed rollers 56 and 57. As most clearly indicated in Fig. 5, the driving gear 6 actuates the gear 42, which in turn actuates the gear 45 which meshes with the gear 47 mounted on the shaft in which the lower feed roller is secured, said gear 47 meshing with the gear 49 mounted on the upper shaft 50 to which the upper feed roller 57 is secured, so that the advancing envelop passes between the feed rollers 61 and 62, as will be apparent from the drawings. The feed roller 61 is mounted on a shaft 59 on which latter is also mounted a gear 60 which meshes with a gear 58 carried by the shaft 46. The envelop after passing from the rollers 61 and 62 falls on the guide members 89 mounted on the rock shaft 85. The driving gear 6 meshes with the gear 79 mounted on the

shaft 80 on which is also mounted the cam member 81 with which coacts the roller 83 carried by the bracket 84 and secured to the shaft 85 on which the guide members 89 are mounted, so that as the shaft 80 rotates in unison with the rotation of the driving shaft 4, the guide members 89 will be rocked and the envelop supported thereon will slide from said guiding members and engaging the guide plate 91 will be deflected downwardly as indicated in Fig. 11 toward the moistening device for the flap of the envelop. At this time, owing to the provision of the cam member 102 and the construction of the arm 98 coacting therewith, the hooks or catches 99 will at this time be in the position indicated in Fig. 12 and the descending envelop will be received thereon as clearly indicated in said figure.

As indicated most clearly in Fig. 5, the shaft 43 is rotated by means of the gear 42 meshing with the drive gear 6 and owing to the provision of the cam member 102 and the manner in which its operative surface is cut away, as this shaft rotates, the arm 98 coacting with said cam will be moved quickly rearwardly so that the envelop may descend and be engaged by the flanges 94 and 95 of the moistening and feed rollers 92 and 93 and fed downwardly thereby.

Means for opening the flap of the envelop.—The flap of the envelop is now opened in the following manner:—As seen most clearly in Figs. 1, 10, and 3, the cam block 158 is mounted on the driving shaft 4 and rotates in unison therewith. The operative cam surface 157 on the side of said cam block coacts with the roller 156* carried by the arm 156 which is secured to the sleeve 153, mounted on rod 152. As clearly indicated in the drawings, the arm 154 engages the pin 148 and normally maintains the plate 150 in its rearmost position. As the shaft 4 rotates the cam member 158 will permit said arm 154 to turn on its pivot and owing to the provision of the spring 146 the plate 150 will be moved forwardly and engage the envelop, as most clearly indicated in Fig. 13. The envelop is now being fed downwardly between the moistening rollers and owing to the position of the plate or blade 150 the flap of the envelop will be opened, as most clearly indicated in Fig. 14. It is, of course, to be understood that before the machine is set in operation the handle 136 is actuated to rotate the shaft 135 and owing to the provision of the cam blocks 140 which coact with the depending members 129 carried by the arms 128, said arms will be raised, as indicated most clearly in Fig. 1. This will bring the pad of absorbent material 134 located within the container 133 in the path of the plate 124 so that said plate 124 will be suitably moistened thereby. Owing to the provision of the pad 125 the flap of the

envelop will be pressed against the plate 124 and be moistened thereby as the envelop is being fed downwardly by the engagement of the flanges of the rollers 92 and 93 therewith. As the envelop passes from the moistening rollers 92 and 93, it is guided by the members 131 so that the same passes between the arms 184 and the plates 178, as most clearly indicated in Fig. 15, it being understood that the parts are now in the position as indicated in said figure.

Means for bending the flap of the envelop before it passes to the sealing rollers.—The gear 6 mounted on the driving shaft 4 coacts with the gear 165 mounted on the shaft 164 on which is also mounted the cam member 163 with which the roller 162 is maintained in engagement by means of the spring 171 secured at the outer end of the elbow lever 161 on which said roller is mounted. The roller 166 carried by the elbow lever 161 and engaging the groove 167 in the arm 168 will cause the shaft 169 on which it is mounted to be rocked forwardly. As the shaft 169 is rocked, the shaft 180 will also be rocked owing to the provision of the cam member 186 adjustably carried by the block 185 and since this member is deflected downwardly as the same moves on the roller 187 journaled at 188 it will cause the said shaft 180 to be rocked forwardly and the bracket 189 carried thereby will be moved downwardly, as indicated most clearly in Fig. 16, it being noted that owing to the provision of the cam faces 201 and 202 this movement is permitted and the cam face 201 will limit the rearward movement of the bracket 189. The plate 192 which is pivoted at 191 on the bracket 190 will be carried downwardly by the arm or bracket 189 and owing to the location of this pivoted member it will engage the flap of the envelop, as clearly indicated in Fig. 16 and cause the same to be deflected downwardly.

Means for feeding the envelops to the sealing rollers.—The envelop is now fed between the sealing rollers. Referring to Figs. 1 and 5, it will be seen that owing to the provision of the roller 203 coacting with the cam 204 carried by the shaft 205 and the roller 194 carried by said lever 193 and engaging the slot 195 in the arm 196, the shaft 197 will be rocked forwardly and thus cause the arms 198 to turn on their fulcrum 197 and the envelop will be moved forwardly into engagement with the sealing rollers 210 and 211, as most clearly indicated in Fig. 11, it being noted that owing to the manner in which the plate 192 is pivoted that this does not prevent in any manner the passage of the envelop to the sealing rollers. The envelop passes from the sealing rollers 210 and 211 to the second set of sealing rollers 219 and 220 which latter are driven by means of the idler 206 which meshes with

the gear 208 mounted on the shaft 209, said gear 208 meshing with the gear 165 driven by the gear 6, as may be clearly understood from Fig. 5.

5 *Means for advancing an envelop from the scaling rollers to the envelop support.*—Referring now first to Fig. 5, it will be seen that the driving gear 6 meshes with the gear 165, which in turn meshes with the gear 208
10 which drives the idler 206, which latter meshes with the gear 226 to which the bracket or casing 227 is eccentrically secured, so that the rack arm 229 is reciprocated. The rack arm 229 co-acts with the
15 pinion 231, to which latter is secured the member 233 which carries the pawl 234 and owing to the provision of the shoulder 239 on the inner periphery of the collar or sleeve 237, it will be understood that as the rack
20 arm travels forwardly, the shaft 232 does not rotate, since the pawl 234 moves freely within the collar or sleeve 237. On the further rotation of the gear 226, it will be apparent that the arm 229 will begin to
25 move rearwardly and as this arm moves rearwardly and rotates the pinion 231, the pawl 234 will engage the shoulder 239 of the collar or sleeve 237 and since this sleeve is fixed to the shaft 232, said shaft will be
30 caused to rotate. As the shaft 232 is rotated, the release face 250 of the cam block 249 mounted on the shaft 232 will advance beyond the arm or cam member 251, whereupon said member will be permitted to move
35 rearwardly, together with the rod 252 to which it is secured owing to the provision of the spring 255 interposed between the collar 254 and the bracket 253, as is most clearly indicated in Fig. 3. This will cause
40 the lever 257 to turn on its fulcrum 258 and cause the serrated arm 259 to be rocked forwardly and thus advance the envelop on to the table or support 240, it being noted that the guide 260 will limit the movement of the
45 envelop.

Means for discharging the envelops from the machine.—The shaft 232 has also mounted thereon, a cam block 246 which is provided with a release face 248 with which the
50 member 245 co-acts, so that as the shaft 232 is rotated, the shaft 243 on which said cam member 245 is mounted will be rocked and the upper deflected end of the arm 242 will
55 contact with the envelop on the support 240 and cause the same to be passed or thrown out of the machine in a very positive and effective manner, it being noted that the cam member 245 is always maintained in operative
60 relation with respect to the cam member 246 owing to the provision of the torsional spring 247.

I wish to call special attention to the manner in which different parts of the machine may be adjusted. The machine may be
65 adapted for envelops of different widths

owing to the provision of the adjusting screws 78, as clearly indicated in Figs. 1 and 5. The amount of travel which is given to the table 19 may be adjusted as desired by adjusting the lever 8 in the slot 12 of the
70 link 10. The moistening device for the roller 92 may be rendered inoperative by actuating the handle 136 mounted on the shaft 135.

It will now be apparent that the different
75 operations hereinbefore described will be simultaneously carried out and that the envelop is automatically fed and directed from one mechanism to the next in order, without requiring any attention of the operator, so
80 that a number of envelops are being operated upon at the same time. It will also be apparent that by varying the gearing of the machine and employing gears having a
85 greater or lesser number of teeth that the time at which the respective operations are carried out may be varied accordingly.

It will now be apparent from the foregoing that I have devised a novel and useful
90 construction of an envelop sealing machine which embodies the features of advantage enumerated as desirable in the statement of
95 invention and the above description and while I have in the present instance shown and described the preferred embodiment thereof which has been found in practice to
100 give satisfactory and reliable results, it will be obvious that various changes may be made therein without departing from the spirit and scope of my invention or sacrificing any of its advantages.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is:—

1. In an envelop sealing machine, a driving shaft, a rock shaft actuated thereby, an envelop feeding mechanism actuated by said rock shaft, a second rock shaft actuated by said driving shaft, guiding members mounted on said second rock shaft, and to which
110 the envelops pass from said envelop feeding mechanism, a flap opening mechanism actuated by said driving shaft, a flap moistening device, and means for automatically sealing the envelops after their discharge from
115 said moistening device.

2. In an envelop sealing machine, a driving shaft, an envelop feeding mechanism actuated thereby, a guiding mechanism actuated by said driving shaft, means for maintaining an envelop stationary during a predetermined interval and alining said envelop, and a flap opening mechanism actuated by said driving shaft and co-acting with the envelop after said means have been released.
125

3. In an envelop sealing machine, a frame, a driving shaft, an envelop feeding mechanism actuated thereby, a rod movably mounted on said frame, a roller having flanges at each end mounted on said driving shaft, a
130

spring actuated roller having flanges thereon engaging the flanges of said first roller, the flanges of said second roller having a portion of their peripheries cut away forming a plurality of shoulders, a second shaft on which said second roller is mounted, a cam member mounted on said second shaft, a rod rotatably mounted, lever arms having hooks at their lower ends carried by said rod, one of said arms having a cam face thereon co-acting with the cam mounted on said second shaft, and a liquid container located in the path of said moistening member.

4. In an envelop sealing machine, a frame, a driving shaft journaled therein, an envelop arresting mechanism rotatably mounted in said frame whereby the envelop is accurately positioned, a roller having flanges thereon carried by said driving shaft, a second shaft, spring actuated journals in which said second shaft is mounted, a roller having flanges carried by said second shaft, said flanges engaging an envelop to feed the same between said rollers, and a flap opening mechanism actuated by said driving shaft and co-acting with an envelop as the same passes between said rollers.

5. In an envelop sealing machine, a frame, a guide carried thereby, a flap opening member mounted in said frame and adapted to engage the flap of the envelop passing along said guide, a lever operatively connected with said member, a roller carried by said lever, a driving shaft, and a cam co-acting with said roller to actuate said flap opening member.

6. In an envelop sealing machine, a frame, a stationary guide member for the envelop carried thereby, a casing carried by said frame, a rod mounted within said casing, a flap opening member secured to said rod, a spring adapted to move said flap opening member toward said guide member, means for preventing the rotation of said flap opening member, a lever operatively connected with said flap opening member, a roller carried by said lever, a driving shaft, and a cam member mounted thereon and co-acting with said roller to cause said lever to bring said flap opening member to tension and to effect its release therefrom.

7. In an envelop sealing machine, a driving shaft, an envelop feeding mechanism actuated thereby, moistening mechanism between which the envelops are fed, means for opening the flap of the envelop before the latter passes between said moistening mechanism, sealing rollers actuated by said driving shaft, means for bending the flap of the envelop before the latter passes to the sealing rollers, and means actuated by the driving shaft for feeding the envelop to the sealing rollers.

8. In an envelop sealing machine, a driving shaft, a rock shaft actuated thereby, an

envelop feeding mechanism adapted to be actuated by said rock shaft, moistening rollers to which the envelops are fed, arms journaled on said rock shaft, a container carried by said arms, and cam members rotatably mounted and co-acting with said arms to raise and lower said container.

9. In an envelop sealing machine, a driving shaft, a rock shaft actuated thereby, an envelop feeding mechanism adapted to be actuated by said rock shaft, moistening rollers to which the envelops are fed, arms journaled on said rock shaft, a container carried by said arms, cam members rotatably mounted and co-acting with said arms to raise and lower said container, and an actuating handle for said rod.

10. In an envelop sealing machine, a driving shaft, a rock shaft actuated thereby, an envelop feeding mechanism adapted to be actuated by said rock shaft, moistening rollers to which the envelops are fed from said feeding mechanism, a rod suitably supported, cam members on said rod, arms journaled on said cam members carried by said rod and co-acting with said arms to raise and lower said container, an actuating handle for said rod, and guiding members adjustably carried by said arms with which the envelops engage after passing from the moistening mechanism.

11. In an envelop sealing machine, a driving shaft, an envelop feeding mechanism actuated thereby, a flap moistening mechanism actuated by said driving shaft, flap opening mechanism actuated by said driving shaft, means for maintaining the envelop stationary for a predetermined period in order to accurately position the same, a directing mechanism with which the envelops engage after leaving the flap moistening mechanism, means for bending the flap of the envelops, sealing rollers actuated by said driving shaft, means actuated by said driving shaft to feed the envelops to said rollers, and a discharge mechanism for removing the sealed envelop from the machine.

12. In an envelop sealing machine, a driving shaft, envelop feeding mechanism actuated thereby, moistening mechanism actuated by said driving shaft, flap opening mechanism actuated by said driving shaft, an envelop receiving mechanism operated by said driving shaft, a second shaft journaled in said mechanism, a bracket carried by said second shaft, a plate pivoted at the outer end of said bracket, a cam member carried by said second shaft, a roller loosely mounted with which said cam member coacts to rock said second shaft and cause said pivoted plate to bend the flap of the envelop sealing rollers operatively mounted with the driving shaft, and means actuated by said driving shaft, for feeding the envelops to said roller.

13. In an envelop sealing machine, an envelop feeding mechanism, flap opening mechanism, flap moistening mechanism, a sealing device for the envelop, a driving shaft adapted to actuate said mechanisms and said device, a rock shaft intermittently actuated by said driving shaft, and a discharge arm actuated by said rock shaft.
14. In an envelop sealing machine, a driving shaft, a second shaft intermittently rotated thereby, a cam member carried by said second shaft and having a release face, a lever engaging said cam, and means actuated thereby for discharging the envelops from the machine.
15. In an envelop sealing machine, a driving shaft, a second shaft intermittently rotated thereby, a cam member provided with a release face mounted on said second shaft, a lever coacting with said cam member, a rod on which said lever is mounted, a discharge lever mounted on said rod, and yielding means for maintaining said first named lever in engagement with said cam member.
16. In an envelop sealing machine, a driving shaft, a second shaft intermittently rotated thereby, a cam member provided with a release face mounted on said second shaft, a lever engaging said cam member, a rod on which said lever is mounted, yielding means on said rod for maintaining said lever in engagement with said cam member, and a discharge arm, the upper end of which is deflected, mounted on said rod.
17. In an envelop sealing machine, a driving shaft, a second shaft intermittently rotated thereby, a cam member mounted on said second shaft, a rock shaft, a lever mounted thereon adapted to co-act with said cam, and a discharge arm adjustably mounted on said rock shaft.
18. In an envelop sealing machine, envelop feeding means, automatic means for opening the flap of the envelop, means for moistening said flap, means for sealing an envelop, a shaft intermittently rotated, and means actuated by said shaft for discharging an envelop from the machine.
19. In an envelop sealing machine, a driving shaft, a reciprocating envelop support actuated by said shaft, flap opening mechanism actuated by said shaft, moistening rollers, a moistening device located in proximity to the moistening rollers, means for moving said device into operative relation with said rollers, means for partially closing the moistened flap, mechanism for sealing said flap, and devices for discharging the envelop from the machine.
20. In an envelop sealing machine, a driving shaft, a reciprocating envelop support actuated by said shaft, flap opening mechanism actuated by said shaft, moistening rollers, a moistening device located in proximity to the moistening rollers, means for moving said device into operative relation with said rollers, means for partially closing the moistened flap and mechanism for sealing said flap.
21. In an envelop sealing machine, a driving shaft, a reciprocating envelop support actuated thereby, feeding rollers, means for guiding an envelop to said rollers, spring actuated flap opening mechanism controlled by said driving shaft, moistening mechanism for the flap of the envelop, means for partially closing the flap of the envelop, and devices for sealing said flap.
22. In an envelop sealing machine, an envelop support, means for feeding one envelop at a time therefrom, flap opening mechanism, flap moistening mechanism, means for deflecting the moistened flap, sealing rollers to which the envelop is then fed, a shaft intermittently rotated, and means actuated thereby for positively moving the envelop out of engagement with said sealing rollers.
23. In an envelop sealing machine, an envelop support, means for feeding one envelop at a time therefrom, flap opening mechanism, flap moistening mechanism, means for deflecting the moistened flap, sealing rollers to which the envelop is then fed, a shaft intermittently rotated, means actuated thereby for positively moving the envelop out of engagement with said sealing rollers, and means also actuated by said intermittently rotated shaft for discharging a sealed envelop from the machine.
24. In an envelop sealing machine, an envelop support, means for feeding one envelop at a time from said support, flap opening mechanism, flap moistening mechanism, means for deflecting the moistened flap of the envelop, means for sealing the flap of the envelop, a shaft intermittently rotated, a cam thereon, an arm located in proximity to said flap sealing mechanism and actuated by said cam, a bed on which the envelops are passed by said arm, and means actuated by said shaft for discharging a sealed envelop from said bed.
25. In an envelop sealing machine, an envelop support, means for feeding one envelop at a time from said support, flap opening mechanism, flap moistening mechanism, means for deflecting the moistened flap of the envelop, means for sealing the flap of the envelop, a shaft intermittently rotated, a cam thereon, an arm located in proximity to said flap sealing mechanism and actuated by said cam, a bed on which the envelops are passed by said arm, a guide on said bed, and means actuated by said shaft for discharging a sealed envelop from said bed.
26. In an envelop sealing machine, means for feeding one envelop at a time, flap opening mechanism, flap moistening mechanism,

sealing rollers, a driving shaft, a gear driven thereby, a rack eccentrically connected with said gear, an intermittently driven shaft, a pinion loosely mounted thereon and co-acting with said rack, means fixed on said shaft adapted to interlock said pinion whereby said shaft is intermittently rotated in one direction only, and means actuated by said intermittently rotated shaft for discharging a sealed envelop from the machine.

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Witnesses:

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