

L. M. NIELSEN.
ADDRESSING MACHINE.
APPLICATION FILED MAY 29, 1908.

978,627.

Patented Dec. 13, 1910.

7 SHEETS—SHEET 1.

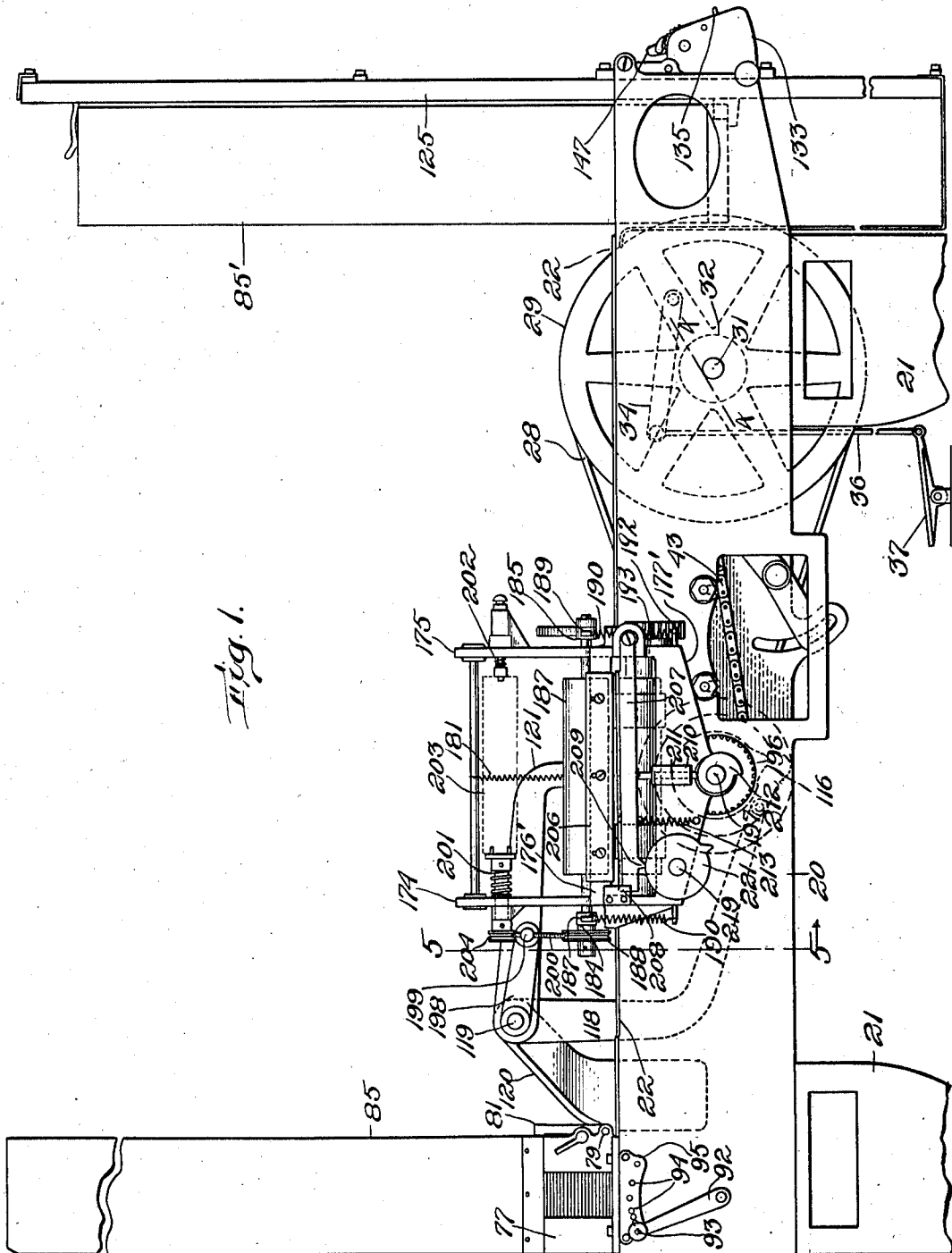


Fig. 1.

Witnesses:
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M. M. Harrington

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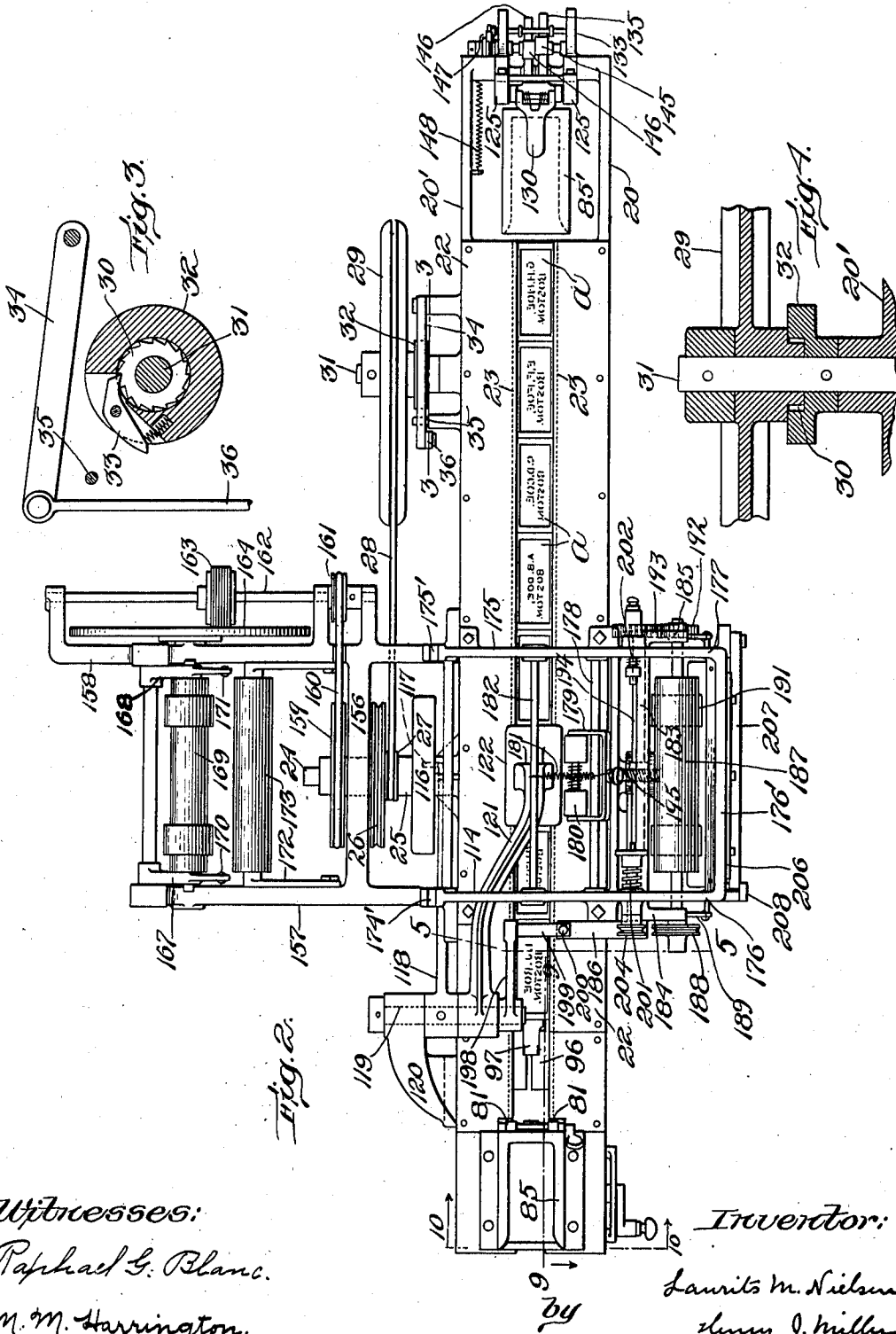
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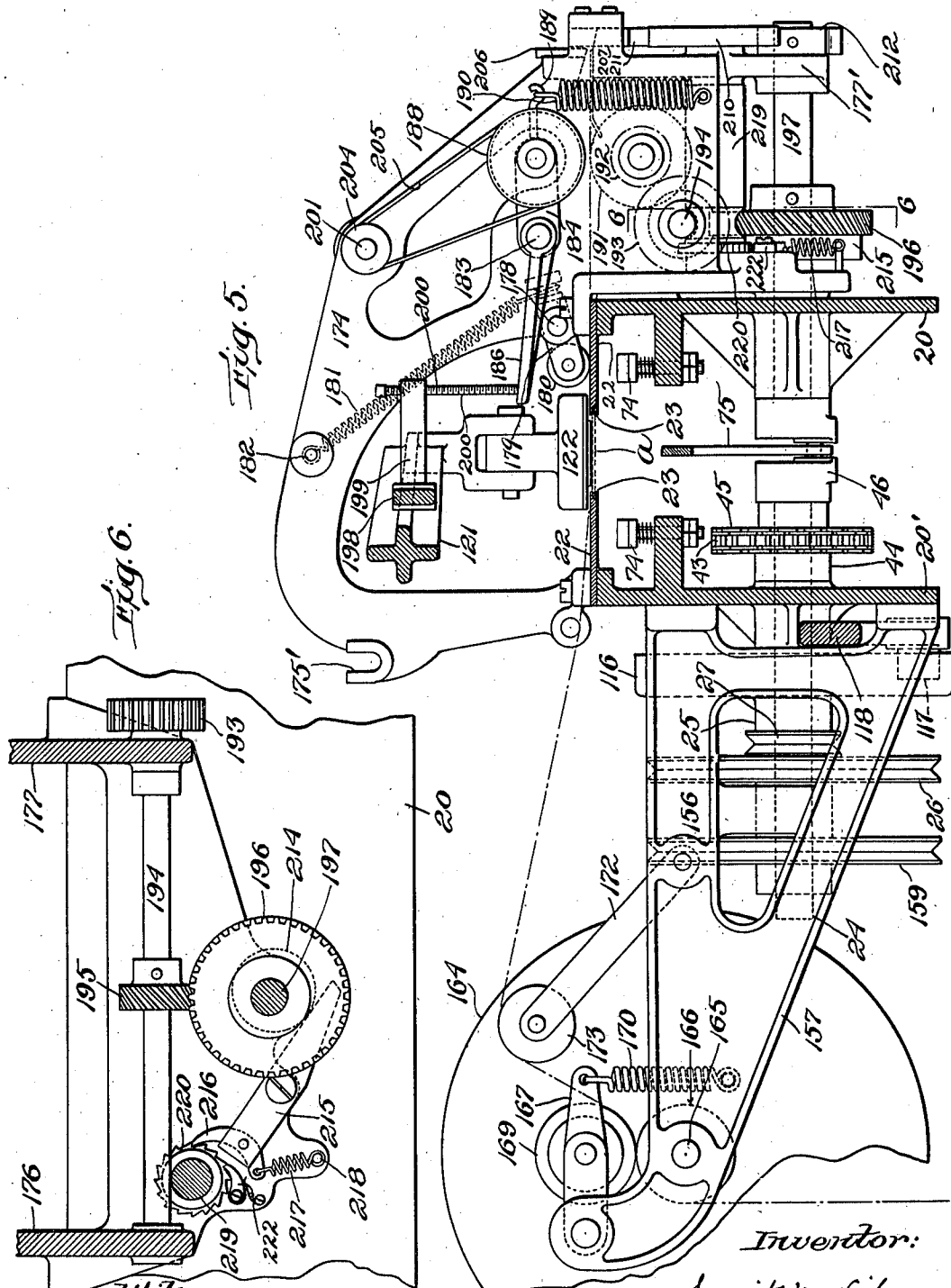
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Witnesses:
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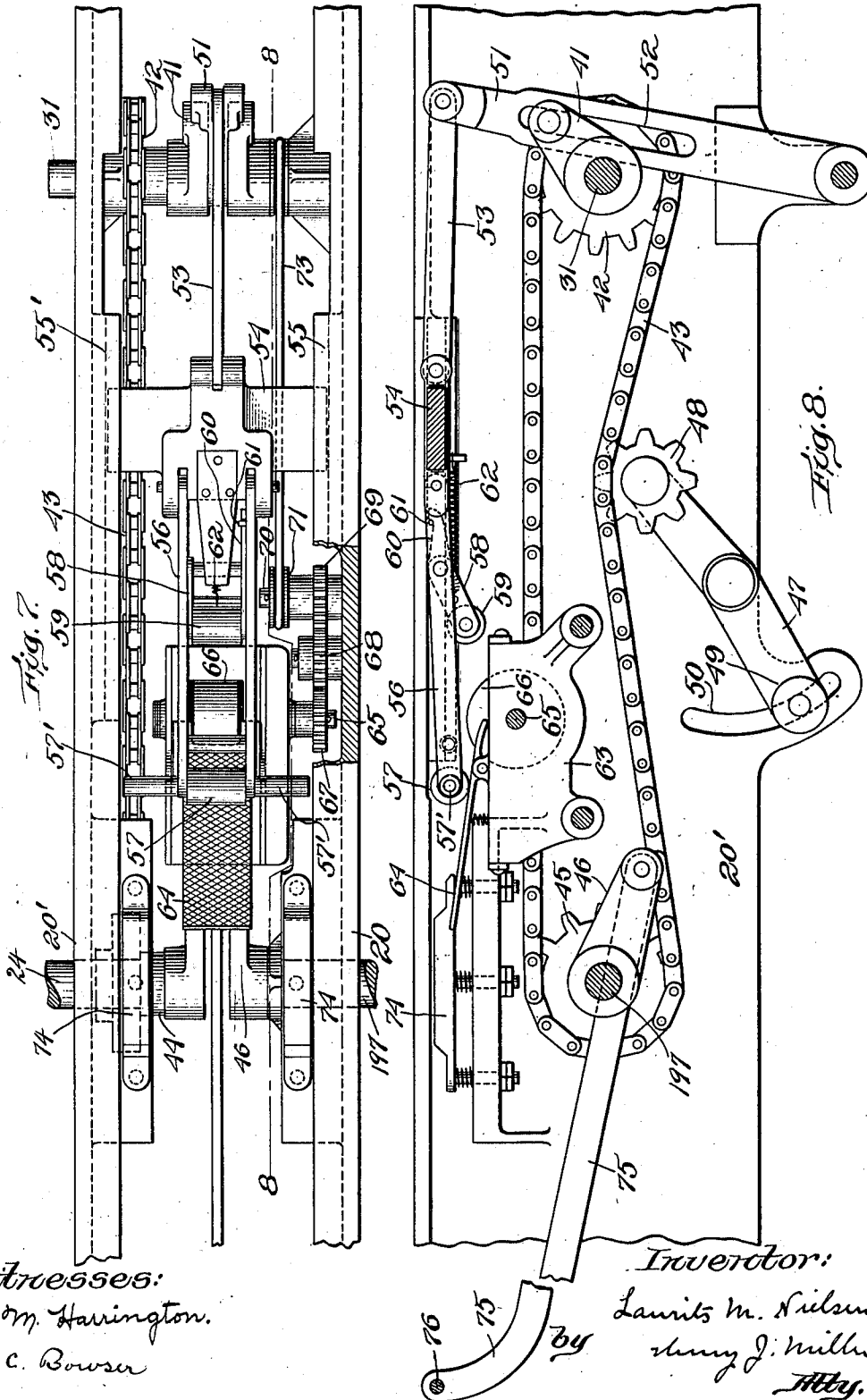
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7 SHEETS—SHEET 4.



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7 SHEETS--SHEET 5.



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by

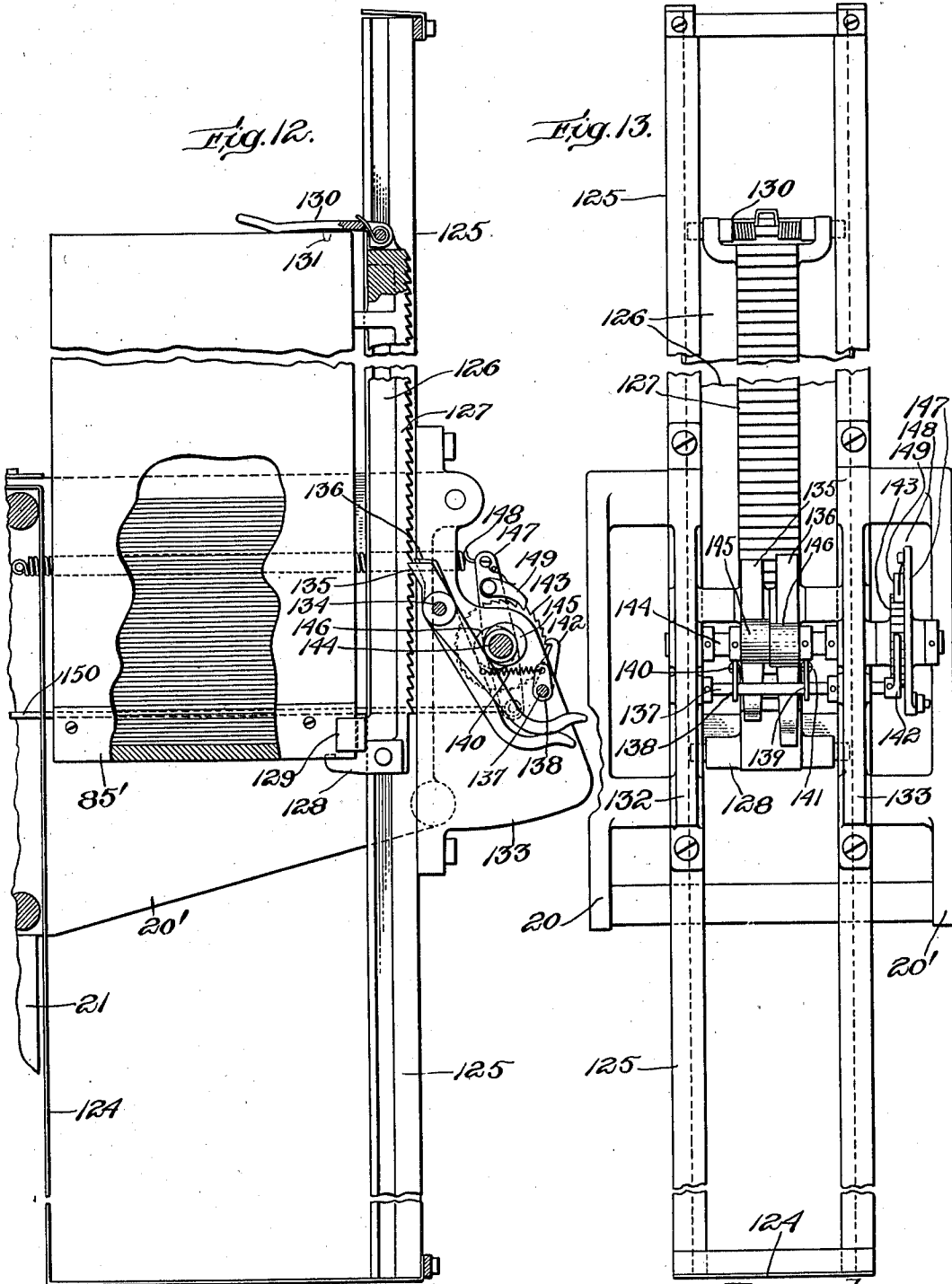
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7 SHEETS—SHEET 6.

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Witnesses:
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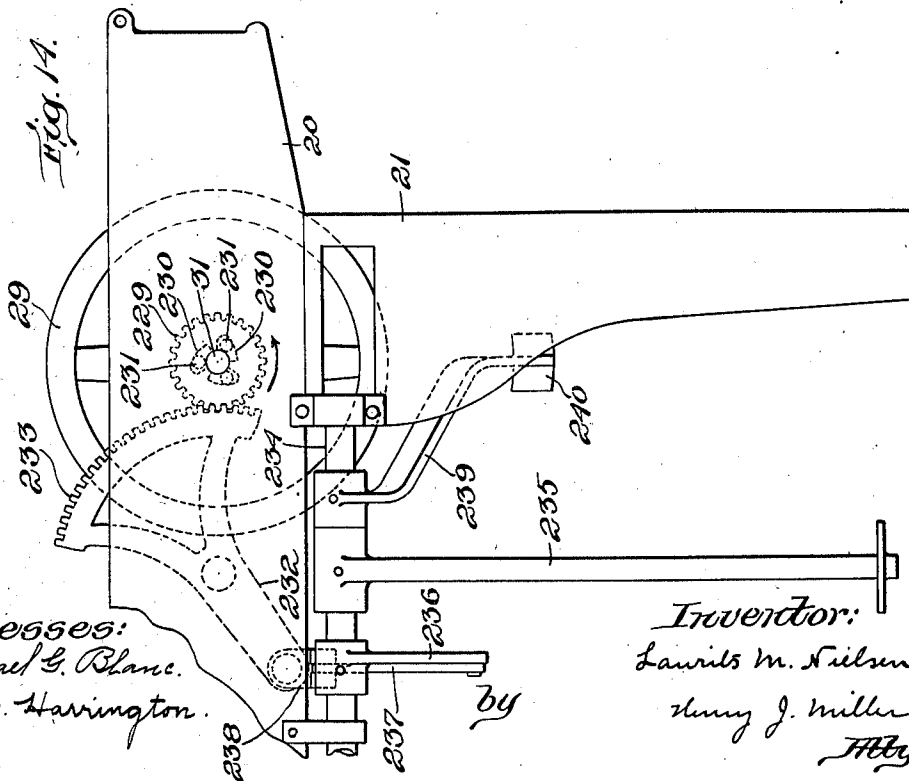
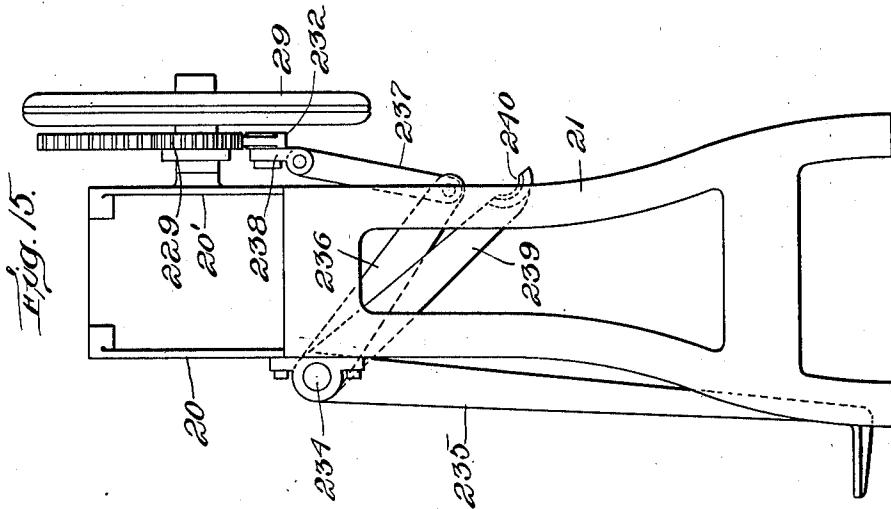
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7 SHEETS—SHEET 7.

978,627.



Witnesses:
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Inventor:
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UNITED STATES PATENT OFFICE.

LAURITS M. NIELSEN, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO NIELSEN MAILING MACHINERY COMPANY, OF ERIE, PENNSYLVANIA, A CORPORATION OF MAINE.

ADDRESSING-MACHINE.

978,627.

Specification of Letters Patent. Patented Dec. 13, 1910.

Application filed May 29, 1908. Serial No. 435,821.

To all whom it may concern:

Be it known that I, LAURITS M. NIELSEN, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Addressing-Machines; and I hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification.

This invention has reference to improvements in that class of machines in which stencils or other suitable printing forms are fed forward in succession to and from the printing position and the articles which are to receive impressions from said forms are also fed forward either mechanically or by hand to such position.

One object of this invention is to so construct a printing machine of this nature that a series of printing forms contained in a suitable receptacle may be fed forward in succession to the printing point or position, there allowed to dwell during the printing impression or impressions, and subsequently fed onward in succession to a printing form receiver mounted on a movable mechanism actuated by the printing form feed to change the position of said receiver with relation to the path in which the printing forms are fed forward.

Another object of the invention is to so construct an addressing machine of this nature that the feeding forward of the printing forms is independent of the impression operating mechanism whereby such feeding means may dwell while the impression means continues to operate to print a series of impressions from a single form.

Another object of the invention is to so construct an addressing machine of this nature that the same may be set to print any desired number of impressions from each of the printing forms fed forward.

Another object of the invention is to provide a machine of this nature with an improved paper feeding device.

Another object of the invention is to improve the various parts and related combinations of parts as shall hereinafter be pointed out.

The invention consists in such peculiar features of construction and combinations of parts as shall hereinafter be more fully described and pointed out in the claims.

Figure 1, represents a front elevation of the improved addressing machine, parts of the same being broken away. Fig. 2, represents a plan view of the same. Fig. 3, represents details of parts of the starting mechanism shown in section as on line 3—3 Fig. 2, the parts being in position as when the machine is driven. Fig. 4, represents a cross sectional view of some of said parts taken on line 4—4 Fig. 1. Fig. 5, represents a cross sectional view taken on line 5—5 Fig. 1, looking in the direction indicated by the arrows. Fig. 6, represents a cross sectional view taken on line 6—6 Fig. 5. Fig. 7, represents an enlarged plan view of parts of the printing form feed driving means and of the inking means. Fig. 8, represents a vertical sectional view of these parts of the machine taken on line 8—8 Fig. 7. Fig. 9, represents a sectional view of parts of the feed controlling and operating means taken on line 9—9 Fig. 2. Fig. 10, represents a cross sectional view of the same taken on line 10—10 Fig. 2, looking in the direction indicated by the arrows. Fig. 11, represents details of the parts of the feed controlling means. Fig. 12, represents an enlarged side elevation of the printing form receiver and parts of its controlling mechanism. Fig. 13, represents an enlarged end view of said parts. Fig. 14, represents a front view of the end portion of the machine showing the foot operating means the printing form receiver being removed. Fig. 15, represents an end view of Fig. 14.

Similar numbers of reference designate corresponding parts throughout.

As shown in the drawings in its preferred form 20—20' represent the side frames of the improved addressing machine which are mounted on suitable standards 21—21 and are furnished on their upper portions with plates 22—22 having parallel edges furnished with guides 23—23 adapted to receive printing forms therebetween. Extending from the frame 20' is the shaft 24 on which is journaled the sleeve 25 having the pulley 26, adapted to be driven in any ordinary manner, and the belt pulley 27 carrying the belt 28 which drives the flywheel 29 having the ratchet 30 and rotatable on the shaft 31 which shaft is journaled in bearings in the frames 20—20' and said shaft has fixed thereon the clutch member 32 having the spring actuated pawl 33 designed to engage

the teeth of the ratchet 30. Pivotally mounted on a stud extending from the frame 20' is the lever 34 which when depressed is designed to engage the tail of the pawl 33, as said pawl is carried around by the rotation of its clutch member 32, to press inward this part of the pawl and to thereby disengage the pawl from the ratchet 30. This lever 34, when the machine is thus thrown out of connection rests on the pin 35 extending from the frame 20' and said lever is raised to the position shown in Fig. 3 by the lifter rod 36 connected with any suitable treadle 37.

The shaft 31, between the frames 20—20', is furnished with the crank 41 and this portion of said shaft has the sprocket 42 by which the chain 43 is driven to operate the sleeve 44, fixedly positioned on the shaft 24 between the frames 20—20' and having the sprocket 45, with which said chain 43 is engaged. The said shaft 24 is journaled in the frame 20' and is positioned in alinement with the shaft 197 journaled in the frame 20, and the crank 46 is rigidly secured to each of said shafts and connects the opposite slightly spaced apart ends thereof as shown in Figs. 5 and 7. It will thus be noted that the sleeve 44, sprocket 45, shafts 24 and 197 and the crank 46 connecting said shafts are all rigidly secured together and that the operating of the sprocket 45 by the chain 43 effects a like revolution of said other named parts so fixedly connected thereto. The slack of the chain 43 is taken up by a tightener comprising the lever 47 pivotally mounted on a stud carried by the frame 20' and having the rotatable sprocket 48, in engagement with said chain, and the clamping device 49, of ordinary construction adjustably mounted in the curved slot 50 of said member 20'.

Pivotally mounted on a stud between the frame members 20—20' is the lever 51 having the slot 52, in which the pin of the crank 41 is engaged, and the upper end of said lever is pivotally connected by the rod 53 with the plate 54 slidably mounted in guides 55—55' of the frame members 20—20' and having pivoted thereon the roller frame 56 carrying at its forward end the rotatable inking roll 57 having a shaft furnished with the sleeves 57'—57'. Between the arms of this frame 56 is pivoted the frame 58 having the rotatable ink transfer roll 59 and arm 60 designed to be intercepted by the stop pin 61 on the frame 56 to limit the downward swing of this frame 58 under the strain of the spring 62 connected with said frame and with a pin extending from the plate 54. The ink reservoir 63 is mounted between the frames 20—20' and has the pivoted palette plate 64, adapted to receive ink from the rolls 57 and 59 or either of said rolls one end of which plate is yieldingly supported by a spring. In the walls

of the ink reservoir is journaled the shaft 65 having the ink mixing roll 66, within said reservoir, and the gear 67 which meshes with the gear 68 journaled on a stud extending from the frame 20 and driven by the gear 69 the sleeve of which is journaled on the stud 70 extending from the frame 20 and having the pulley 71 over which and the similar pulley 72 of the crank 41 the belt 73 works. When the lever 51 swings toward the ink reservoir 63 the plate 54 and the rolls 57 and 59 move with said plate, the roll 59 taking ink from the roll 66 and delivering said ink to the plate 64 while the roll 57 in rolling over said plate 64 takes ink therefrom and is then moved forward until its sleeves 57'—57' ride up onto the guides 74—74 yieldingly supported at the sides of the printing position, whereby the roll 57 is guided upward to supply ink to the printing form then located in such position.

Means are provided for feeding forward the printing forms, in succession, such means is actuated by the lever 75 pivotally mounted on the crank 46 and having the pivot 76.

In order to support the printing forms which preferably consist of stencils of suitable construction, the machine is furnished with the compartment 77 located on the frames 20—20' at one end of the machine and being open at its bottom to allow the printing forms *a—a* to rest on the plates 22—22. This compartment 77 has an opening at the lower portion of its wall 78 sufficiently large to permit the passage therethrough of a single printing form. On the side walls of this compartment 77 are ears 79 in which is mounted a shaft 80 pivotally supporting a frame having arms 81—81 furnished with studs as 83, Fig. 9, and a spring 84 is mounted to press said arms toward the compartment. On the upper open end of the compartment 77 is mounted the printing form file drawer 85 having an open end through which the printing forms may pass downward, by gravity, into said compartment and said file drawer has, at this open end, sockets into which the pins or studs 83 may engage to hold said file drawer in position.

At the end of the machine which has the compartment 77 the frames 20—20' are furnished with the guides 86—86 and the frame 20 is furnished with the guide 87 mounted on the bracket 88 which has the opening 89. In a bearing in said frame 20 is journaled a shaft having on its inner end the upwardly extending arm 90 having the stop pin 91, said arm being designed to swing in the opening 89 and the stop pin 91 extending inward over a portion of the guide 87. At the outer portion of the shaft, to which arm 90 is attached, is the lever 92 having at its upper end the spring pressed engaging pin

93 designed to engage in any of the perforations 94—94 of the plate 95 mounted at the outer portion of said frame 20.

In the guides 86—86 (see Figs. 9 and 11) is slidably mounted the carriage 96 which is pivotally connected with the pivot 76 of the lever 75. In the upper part of this carriage 96 is pivotally mounted the tongue 97 having the end 98, for engaging the printing forms, and the depending member 99. The end 98 of said tongue is pressed upward by the spring lifted pusher 100 movably mounted in the carriage 96 and having the stud 101 extending beyond the carriage which stud is adapted at times to actuate the lever of the controlling means for the stencil feeding means as will hereafter be described. Journaled in bearings in said carriage is the shaft 102 having freely mounted thereon the pinion 103 and the ratchet 104, and having fixedly mounted thereon the ratchet 105, the plate Z, and the cam 106 which latter is so positioned that the member 99 of the tongue 97 bears against its periphery and may, at times, be received in its depression 107. Pivotally mounted on said carriage is the pawl 108 as shown in Fig. 11, while the pawl 109 is pivoted on the plate as shown in Figs. 9 and 10, which pawls engage their respective ratchets 105 and 104 and prevent the reverse rotation of said ratchets and it is to be noticed, Fig. 10, that ratchet 105 is fixed on the shaft 102 and may rotate with said shaft in the direction indicated by the arrow in Fig. 11, while ratchet 104 and pinion 103 are secured to each other and are free to rotate together on said shaft 102 in the opposite direction and as indicated by the arrow in Fig. 9; but when this ratchet 104 is rotated, with said pinion 103 in the direction indicated by the arrow in Fig. 11, the pawl 109, pivotally mounted on a disk or plate rigid with the shaft 102, being engaged with said ratchet 104, the plate on which said pawl is pivoted will move with said ratchet and effect the rotation of the shaft 102.

Slidable in the guide 87 is the rack 110 engaged with the teeth of the pinion 103 and having the stop 111 and the arms 112 and 113 the latter of which is connected by the rack retracting spring 114 with some fixed part of the machine. When such spring is allowed to return the rack 110, by the retractive movement of the lever 75, the movement of said rack, in the backward direction is limited by the stop pin 91 of the lever 90 intercepting the stop 111 of said rack, hence the length of such movement depends upon the position of said arm 90 and the arm 92. It will therefore be seen that if the pin 93 of the arm 92 is engaged with the right hand perforation seen in Fig. 1 the reciprocation of the rack 110 will be proportionately limited. Under the positive

movement of the lever 75 the carriage 96 has been drawn to the position shown in Fig. 9 and it is evident that in the initial part of said movement, the rack 110 being retarded in its movement by the spring 114, the pinion 103 engaged with the teeth of said rack would be freely rotated upon the shaft 102 as the carriage 96 was drawn along until the pinion 103 contacted with the arm 113 and the rack was then drawn along against the stress of the spring 114; the backward return movement of the rack 110 under the influence of the spring 114 takes place with the teeth of the pinion 103 in mesh with those of the rack and said pinion not revolving contacting the arm 113, until the movement of the rack is arrested by the engagement of the stop 111 thereof with the stop pin 91, whereupon a continuation of the travel of the carriage causes the pinion 103 and ratchet 104 to revolve, which results in revolving therewith the plate Z and the shaft 102; hence the degree of rotation of the shaft 102 and its cam 106 depends upon the number of the teeth in the rack 110 which engage the teeth of the pinion 103 upon the backward movement of the carriage before the limit of backward movement of the carriage is reached or said pinion is intercepted by the arm 112 and the degree of rotation of said pinion determines the degree of rotation of the cam 106. If the teeth on the pinion 103 and the rack 110 are equal in number and the stop 91 is moved to its extreme limit toward the left the rack 110 will be allowed to move to that point but the distance through which the carriage 96 moves being always the same at the next forward movement of the carriage a less number of teeth of the rack will lie between the pinion 103 and the arm 113 so that a number of reciprocations of the carriage 96 will be required to eventually cause the complete rotation of the cam 106 to again permit the entrance of the member 99 of the tongue 97 into the depression 107 of the cam and the consequent lifting of the end 98 of said tongue by the spring pusher 100 to a position to engage and carry forward one of the printing forms or, by such engagement, to push forward the line of printing forms engaged in the guides 23—23. With the lifting of the end 98 of the tongue 97 by the pusher 100 the laterally extending bevel stop 101 also moves upward to an operative position for the purpose to be hereafter described. It will thus be seen that the location of the pin 91 determines the number of impressions to be made from each printing form, it being understood that the ink supplying means and the impression mechanism continue to operate in unison with the movement of the lever 75 as shall now be described.

On the sleeve 25 is mounted the cam 116

Figs. 2 and 5, which is engaged by the bearing 117 of the lever 118, which lever is secured on the rock shaft 119, journaled in a bearing of the bracket arm 120 extending upward from the frame 20'. Mounted on said shaft 119 is the impression arm 121 carrying the pivoted presser block 122 located approximately above the position of the guides 74—74'. The downward swing of the free end of said impression arm 121 being timed with relation to the movement of the ink roll members 57'—57' over said guides whereby pressure is applied to the article or paper placed beneath said block 122 while ink is delivered from roll 57 through perforations of the printing form *a*, dwelling at this point, to such article or paper.

It is quite essential that the printing forms *a*—*a* fed forward in succession to and beyond the printing position should be received in regular order by some receptacle similar to the file drawer 85 and it is preferred to utilize such a drawer in order that the same may be removed from the compartment 77 when empty and so placed as to receive the forms as they are fed from the machine. It is also of importance that such receptacle be automatically adjusted with relation to the printing forms fed thereto so that the stack of printing forms in said receptacle may always be at or slightly below the path in which the printing forms are fed to such receptacle and it is of equal importance that said printing form receiver should not be actuated solely because of the operation of the printing form feeding mechanism but only when a printing form is fed forward thereby. If, for instance it is desired to print a series of impressions from each of the printing forms fed through the machine it will be seen that during the printing of the duplicate impressions the printing form feeding mechanism including the carriage 96 and its tongue 97 will continue to operate but the feeding forward of the printing form during such operations, is not effected as the end 98 of said tongue 97 is depressed by the member 99 bearing against the periphery of the cam 106; at such time the printing form receiver should not be actuated but, when the free end 98 of the tongue 97 is once more raised by the spring pusher 100, the actuating means for said receiver should assume an operative position.

At the receiving end of the machine the frames 20—20' extend beyond the standard 21 and between said frames is mounted the plate 124 having the vertical guides 125—125 on which is slidably mounted the carriage 126 having the rack 127, the supports 128 and the side clips 129 while at the upper end of said carriage is pivotally mounted the spring latch 130 having spurs as 131

adapted to engage the upper end of the receiving file drawer 85' which is similar to that marked 85 but is mounted in a reverse position so that its open end will be upward.

On the guides 125—125 are mounted the plates 132—133 carrying the shaft 134 on which the pawls 135—136 are pivoted in position to engage the teeth of the rack 127 at times. In said plates 132—133 is also journaled the shaft 137 having lever arms 138—139, connected by their springs 140—141 with the respective depending arms of the pawls 135—136, and, outside the plate 133 said shaft 137 has the pawl lever 142 which engages the teeth of the ratchet 143 which is mounted on the shaft 144 journaled in the plates 132—133 and having the alternately acting cams 145 and 146 bearing against the depending arms respectively of the pawls 135—136. On the shaft 144 is pivoted the lever 147 which is connected at its upper end by the retraction spring 148 with a fixed part of the machine and, at this upper portion has the pivoted spring pressed pawl 149 the free end of which is designed to engage the teeth of the ratchet wheel 143 to effect a rotation of said wheel upon a pivotal movement of the lever 147 in one direction. The lower end of this lever 147 is connected with the rod 150 which extends along beneath the top of the frame to a point beneath the delivery compartment 77 where said rod 150 is connected with the arm 151 of the sleeve 152 journaled on the stud 153 depending from the upper portion of the frame 20' and having the plate 154, the front edge of which is beveled, located in position to be engaged and swung by the beveled stud or actuator 101 of the spring pusher 100 when said pusher and its stud are in the raised position shown in Figs. 9, 10 and 11, that is when the free edge 98 of the printing form feeding tongue 97 is in the raised position. It is understood that in the backward movement of the carriage 96 the beveled edge of the actuator 101 rides under the similar edge of the plate 154 said plate being prevented from swinging backward by the pin 155, and that the swinging of said plate by said stud is effected on the forward movement of the carriage 96.

On the forward movement of the carriage 96 the stud 101 acts against the plate 154 and causes the partial rotation of the sleeve 152 and the swinging backward of the arm 151 thus acts through the medium of the rod 150 to draw the lower end of lever 147 in the same direction and the ratchet 143 is proportionately rotated, by the action of the pawl 149 engaged with the teeth of said ratchet, to rotate the shaft 144 and its cams 145—146 to press inward the depending end of one of the pawls 135—136 to disengage

said pawl from a tooth of the rack 127 while the depending end of the other of said pawls is allowed to swing outward under the action of its spring 140 or 141, as the case may be whereby the upper end of said pawl moves inward to engage the next succeeding tooth of said rack 127 as this rack and its carriage with the file drawer moves downward.

Provision is made for the feeding of paper to and from the printing point and for subsequently severing said paper in predetermined lengths. From the frame 20' extends the frame 156 through which the sleeve 25 extends, this frame has the side members 157 and 158 and on said sleeve 25 is the belt pulley 159 furnished with belt 160 which drives the pulley 161 of the paper feed drive shaft 162 journaled in arms extending from the member 158 and having the friction roll 163 which is frictionally engaged with the disk 164 of the shaft 165 journaled in the members 157 and 158 and having the feed roll 166. On said members 157 and 158 are pivotally mounted the levers 167 and 168 in which is journaled the presser roll 169 which presses the paper against the roll 166, the free ends of the levers 167 and 168 being connected to the members 157 158 by springs 170—171 which tend to draw downward said ends of the levers 167—168. The members 157—158 support the frame 172 furnished with the guide roll 173.

Mounted on the main frame member 20' is a frame comprising the side members 174—175 which, at their forward ends have the depending plates 176 and 177 extending downward in front of the frame 20, and having suitable braces. In the members 174 and 175 is journaled the shaft 178 carrying the frame 179 which has the rotatable presser roll 180 at its lower portion and is connected, at its upper portion, by the spring 181 with the rod 182 secured to said members 174 and 175. The shaft 183 is rotatably mounted in the plates 176 and 177 and has the arms 184 and 185 the former of which has the lever 186, in which arms is journaled the shaft of the feed roll 187 having the pulley 188. From the arm 184 extends the pin 189 which is connected by the retraction spring 190 with a pin fixed on the plate 176 whereby the spring 190 tends to draw downward the feed roll 187 toward the positively driven roll 191 the shaft of which is journaled in the plates 176 and 177 and has the gear 192 driven from the gear 193 mounted on the shaft 194 which is journaled in the plates 176 and 177 and has the small skew gear 195 meshing with the similar gear 196, of larger diameter on the shaft 197 journaled in bearings and extending to the crank 46 of which it forms part.

In order to release the paper from forward movement at the time the impression is made, under the frictional engagement

with said paper of the rolls 187 and 191 provision is made for lifting the roll 187 away from the roll 191; this consists of the arm 198 mounted on the shaft 119 and having the member 199 furnished with the screw 200 designed to be adjusted to bear on the free end of the lever 186 when the shaft 119 is rocked to swing downward the impression arm 121, the downward movement of said free end of the lever 186 effecting the swinging upward of the outer ends of the arms 184—185 and the roll 187 against the action of the spring 190.

For some purposes it is desirable to print addresses on a continuous strip and, in such case, it is preferred to rewind the strip after such printing. This is accomplished by the spring pressed shafts 201 and 202 journaled in bearings in the frame members 174—175 and adapted to engage a suitable roll 203. The shaft 201 has the belt pulley 204 which is driven by the belt 205 from the pulley 188, indicated in Fig. 5 of the drawing. When such rewinder is used the shaft of the paper supply roll is preferably placed in the bearings 174' and 175' of the frame members 174 and 175. This rewinder mechanism may be disconnected by removing the belt 205.

Provision is made for cutting the paper, after printing, into various lengths. The cutting means comprises the upper cutting blade 206 adjustably mounted on the cross bar 176' of the plates 176 and 177 and the movable cutter 207 pivotally mounted on an ear extending from the plate 177 and guided, at its free end, by the member 208 extending from the plate 176, the lower edge of this cutter 207 having the cam tooth 209. On the cross member 177', extending between the plates 176 and 177 is the vertical guide 210 in which the rod 211 is slidable. The upper end of this rod 211 bears against the cutter 207 and the lower end of said rod bears on the face of the cam 212 mounted on the shaft 197. In order to assist in the retraction of the cutter 207 the spring 213 is connected with said cutter and with a pin on the plate 177'. This cutting device operates at each rotation of the shaft 197 as at each rotation thereof the cam 212 acts to lift the rod 211 and, through said rod, the cutter 207 and the paper is severed between the cutters 206 and 207.

When it is desired to cut the printed paper in lengths greater than will normally feed forward at each rotation of the shaft 197, the cam 212 is preferably removed and the cutter 207 is actuated through the medium of the cam 214 on said shaft 197 and acting on the lever 215 which is pivotally mounted on one of the cross members of the plates 176 and 177 and has the pivoted pawl 216 which is connected by the spring 217 with the pin 218 on said cross

member. In said cross member is journaled the shaft 219 having the ratchet 220 and the cam 221 which latter is positioned to act on the cam tooth 209 of the cutter 207 at each rotation of said shaft 219. On the cross member having the pin 218 is pivotally mounted the spring pressed pawl 222 which engages the ratchet 220 and prevents the reverse rotation of said ratchet and its shaft 219. It will thus be evident that at each rotation of the shaft 197 the shaft 219 will be rotatively actuated a distance corresponding to one tooth of the ratchet 220, and then a complete rotation of said shaft 219 will be effected by such number of rotations of the shaft 197 as equal the number of teeth on said ratchet and the actuation of the cutter 207 by the cam 221 will be effected by such series of rotations of the shaft 197. The operation of the shaft 219 may be prevented by disconnecting the spring 217 from its pin 218.

In Figs. 14 and 15 of the drawing I have shown modifications of the machine to adapt it for foot power driving. In this modification the hub of the fly wheel 29 is furnished with the pinion 229 having a bore journaled on the shaft 31 and furnished with ways 230—230 which are inclined to the periphery of said shaft whereby the rolls 231—231 in said ways are designed to form engaging means between said ways 230—230 and the shaft 31 when the pinion is rotated in the direction indicated by the arrow in Fig. 14, while if said pinion is rotated in the opposite direction the inclination of said ways releases said connection. As a means for effecting the rotation of the pinion 229 the lever 232 of the quadrant rack 233 is pivotally mounted on the frame member 20' and the teeth of said rack engage the teeth of the pinion 229. At the front of the machine the frame member 20 is furnished with depending bearings in which is journaled the rack shaft 234 having operating treadle 235 and the rearwardly extending lever 236 connected by the links 237—238 with the end of the rack lever 232. On the shaft 234 is also mounted the brake arm 239 having the brake shoe 240, this arm 239 being so positioned with relation to the lever 236 that, after the lever 236 has swung upward sufficiently to effect a complete stroke of the rack lever 232 and its rack, the shoe 240 is brought to bear against the periphery of the fly wheel 29 to retard and, finally, to stop the rotation of such wheel, the rotation of the shaft 31 continuing under the impulse and effecting a single operation of the mechanism, connected with said shaft, as above described.

When cards, envelopes or other separate articles are to be addressed on this machine the frame comprising the members 174—175 and the plates 176—177 with their cross members and braces, is removed from the

machine and said separate articles are fed to the printing position by hand or in any suitable manner.

When the machine is driven by power applied to the pulley 26 such power is transmitted by the belt 28 to continuously drive the fly wheel 29. If the stack of stencils *a—a* be present in compartment 77 and the receiver 85' be in position on carriage 126 the machine is ready for operation. The pedal 37 is now depressed to effect the upward movement of the rod 36 and the lever 34 whereby the spring of the pawl 33 (Fig. 3) is permitted to act and effect the engagement of said pawl with the ratchet 30 whereby the clutch member 32, carrying said pawl, is connected with the ratchet 30 of the fly wheel 29 and said clutch member and its shaft 31 is driven, to operate the mechanism connected directly and indirectly therewith. If the pedal 37 be released, after such starting, the lever 34 will swing downward to a position to bear against the tail of the pawl 33 after a single rotation of the clutch member 32 and thus effect the swinging off said pawl and the disconnection of the clutch member 32 from the ratchet 30 of said fly wheel 29. It will therefore be apparent that the mechanism, considered as a whole, may be driven intermittently or continuously.

When the shaft 31 is rotated the lever 51 is vibrated by the action of the crank 41 to operate the inking mechanism including the rolls 57 and 59, as above described, and motion is transmitted from the shaft 31, by means of the sprocket 42 and chain 43, to sprocket 45 on sleeve 44, journaled on shaft 24, to effect the rotation of said sleeve and its crank 46 whereby the arm 75 is operated to effect the reciprocation of the form feed carriage 96 whereby such carriage is moved backward to a point at which the tongue 97 may engage the rear end of the lowermost of the printing forms or stencils *a—a* in the compartment 77 and, on the next forward movement of said carriage, carry said form *a* forward in the guides 23—23. The degree of movement of the carriage 96 is largely determined by the throw of the crank 46 but, preferably, such movement is not sufficient to carry the printing form *a* from the compartment 77 to the printing position beneath the impression block 122, unless it is desired to shorten the machine between such points. When therefore the carriage 96 reaches the forward limit of its movement, and is retracted, the form *a* fed forward to or beyond such point remains stationary while the carriage moves backward and its tongue 97 moves under the next lowest printing form *a* in compartment 77, engages the rear end of said form and carries it forward until the forward end of said second form engages the rear end of

the preceding form and pushes said preceding form forward until, ultimately, the forms are carried forward to the printing position where ink is applied to the under surface thereof by the roll 57 simultaneously with the application of pressure by the arm 121 and block 122 to the article to be printed which, at such time, is positioned between said block 122 and the form *a*, and, after such printing, the forms *a-a* are moved in succession toward the end of the machine on which the file drawer 85' is mounted.

When the machine is set, as above described, for the making of a single impression from each printing form at each forward movement of the carriage 96, with the tongue 97 in position to engage a printing form the stud 101 engages the arm 154 of the journaled sleeve 152 and actuates or swings said arm, its sleeve and the arm 151 of said sleeve to actuate the rod 150 and swing the lever 147 against the action of spring 148, whereby the ratchet 143 is intermittently rotated by the pawl 149 of said lever 147, the members 151, 152, and 154 constituting a controlling means for this portion of the device; shaft 144 rotates with said ratchet and cams 145 and 146 act on the depending ends of the pawls 135 and 136 whereby as the cam 145 effects the disengagement of its associated pawl 135 from the rack 127 the cam 146 swings away from the pawl 136 and the depending end of this pawl is drawn outward by its spring 141 to effect the engagement of the upper end of said pawl 136 with the tooth of the rack 127 next above that approximately simultaneously disengaged by pawl 135. Thus at each forward feed of a printing form the carriage 126 and the file drawer carried thereby moves downward a distance equal to one tooth of the rack 127 and is consequently always in position to receive the printing forms in succession. When the tongue 97 is depressed to a point where it does not engage a printing form the stud 101 is depressed to a point where it clears the arm 154 and therefore the ratchet mechanism for permitting downward movement of the carriage 126 is not actuated. This will be understood from the above description of the means for controlling the movement of the tongue 96.

Having thus described my invention, I claim as new and desire to secure by Letters Patent.

1. An addressing machine comprising an element adapted to be continuously driven, an impression mechanism driven thereby, power transmitting means continuously driven from said element, inking means, printing form feeding means, driving means for operating said inking means and form feeding means in unison, and means for con-

necting said driving means with said power transmitting means at times.

2. An addressing machine comprising a fly wheel, a rotatable crank shaft on which said fly wheel is journaled, a clutch for connecting said fly wheel and shaft, inking means operatively connected with said shaft, a crank rotatably mounted in the machine, printing form feeding means operatively connected with said second crank, and means for transmitting motion from the crank shaft to said second crank.

3. An addressing machine comprising a pair of cranks rotatably mounted and furnished with sprockets, a chain connecting said sprockets, means for rotating one of said cranks, a pivoted lever in operative connection with one of said cranks, a carriage slidably mounted and connected with said lever, an inking roll frame pivotally mounted on said carriage, means for guiding the ink roll, a lever pivotally connected with the second crank, and a printing form feed carriage slidably mounted and pivotally connected with said second lever.

4. An addressing machine comprising longitudinal guides, means for feeding forward printing forms in said guides an intermittently operated impression means above said guides, ways yieldingly mounted below such guides, an ink reservoir having an ink roll, an inclined plate located between said ways, a carriage slidably mounted and having an ink transfer roll, for transferring ink from the roll of the ink reservoir to such inclined plate, a frame pivoted to said carriage and furnished with an inking roll adapted to take ink from said inclined plate and having means adapted to ride upward onto said ways, and means for operating said slidable carriage.

5. An addressing machine comprising a carriage slidably mounted, means for moving said carriage, a spring lifted tongue pivotally mounted on said carriage, a cam, for controlling the lifting of said tongue, rotatably mounted on the carriage, means for effecting the intermittent rotation of said cam, and means for controlling said cam rotating means.

6. An addressing machine comprising a carriage slidably mounted, means for moving said carriage, a spring lifted tongue pivoted on said carriage and having a cam bearing member, a cam rotatably mounted on said carriage and bearing against said member, a ratchet mechanism for effecting the intermittent rotation of said cam, a pinion on said ratchet mechanism, and a rack with which said pinion is engaged.

7. An addressing machine comprising a carriage slidably mounted and having a pivoted spring lifted tongue, means for moving said carriage, a shaft journaled in said carriage and having a cam adapted to con-

trol the lifting of said tongue, a ratchet mechanism on said shaft, for effecting the intermittent rotation thereof, and including a pinion, a rack slidably mounted with which said pinion is engaged, and means for controlling the movement of said rack.

8. An addressing machine comprising a feed carriage slidably mounted and having a pivoted spring lifted tongue, means for moving said carriage, a shaft journaled in said carriage and having a cam acting to control the lifting of said tongue, a pinion rotatable on said shaft, a ratchet mechanism in operative relation with said pinion for effecting the rotation of said shaft, a rack slidably mounted with which said pinion engages, and adjustable means for controlling the movement of said rack.

9. An addressing machine comprising a feed carriage slidably mounted and having a pivoted spring lifted tongue furnished with a depending member, a shaft journaled in said carriage and having a cam acting against said member, a pinion rotatable on said shaft, ratchet mechanism for connecting said pinion and shaft, a rack slidably mounted with which said pinion engages, a post on said rack for intercepting said pinion, and spring means for moving said rack in one direction, and adjustable means for limiting the movement of said rack under action of said spring.

10. An addressing machine comprising stencil receiving means movably mounted, means operatively connected therewith for controlling the movement of said receiving means, and stencil feeding means having a movable stencil engaging device and an actuator for effecting the operation of the controlling means when said engaging device is in the operative position.

11. An addressing machine comprising stencil receiving means movably mounted, means operatively connected therewith for controlling the movement of said receiving means, stencil feeding means, an actuator for said controlling means movable with said feeding means, a stencil engaging device movably mounted on said feeding means, and mechanism for effecting the movement of said actuator and engaging device to an inoperative position during a predetermined series of feeding movements of said feeding means.

12. An addressing machine comprising stencil receiving means movably mounted at one end of the stencil feed path, means for controlling the movement of said receiving means including a rod extending toward the other end of the machine, a pivoted lever connected with said rod, a movable stencil feed carriage having a movable actuator for said rod, and means for moving said actuator to an inoperative position.

13. An addressing machine comprising stencil receiving means movably mounted, controlling means therefor, connecting means between said receiving and controlling means, a stencil feed carriage movably mounted and having a movable stencil engaging device and a movable actuator for said engaging device, and means for moving said engaging device and actuator to an inoperative position.

14. An addressing machine comprising stencil receiving means movably mounted, controlling means therefor, a lever pivoted at a distance from said receiver and a connection between said lever and said controlling means, a stencil feed carriage movably mounted and having a pivoted stencil engaging device and a movable actuator for said lever adapted to be moved to an inoperative position by the corresponding movement of said engaging device and means carried by said carriage for moving said engaging device.

15. An addressing machine comprising stencil receiving means movably mounted, controlling means therefor, a lever pivotally mounted at a distance from such receiving means, a rod connecting said lever and said controlling means, a stencil feed carriage slidably mounted, a tongue pivotally mounted on said carriage, an actuator for said controlling means movable in unison with said tongue and mounted on said carriage, rotative means on said carriage for swinging said tongue and means for intermittently rotating said rotative means.

16. An addressing machine comprising stencil receiving means movably mounted, controlling means therefor, a rod extending from said controlling means, a pivoted lever to which said rod is connected, a stencil feed carriage slidably mounted, a stencil engaging device pivoted on said carriage and having a depending member, a spring operated lifter for one end of said stencil engaging device having a laterally extending actuator for said controlling means, a cam rotatably mounted on said carriage and bearing against the depending member of said stencil engaging device, and ratchet means for intermittently effecting rotative movement of said cam.

17. An addressing machine comprising impression means having a lever arm, stencil feeding means, inking means, paper feeding means consisting of a positively driven roll and a presser roll journaled in pivoted arms one of which has a lever extension and means carried by the impression lever arm for acting against said lever to lift said presser roll.

18. An addressing machine comprising impression means, stencil feeding means, inking means, paper feeding means including a rotatable shaft, a cam on said shaft

a spring retracted lever pivotally mounted adjacent said shaft and adapted to be vibrated by said cam, a pawl pivotally mounted on said lever, a second shaft rotatably
5 mounted and having a ratchet adapted to be intermittently rotated by said pawl, a cam on said second shaft, and a pivotally mount-

ed cutter adapted to be operated by said latter cam at each rotation thereof, as described.

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Witnesses:

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