

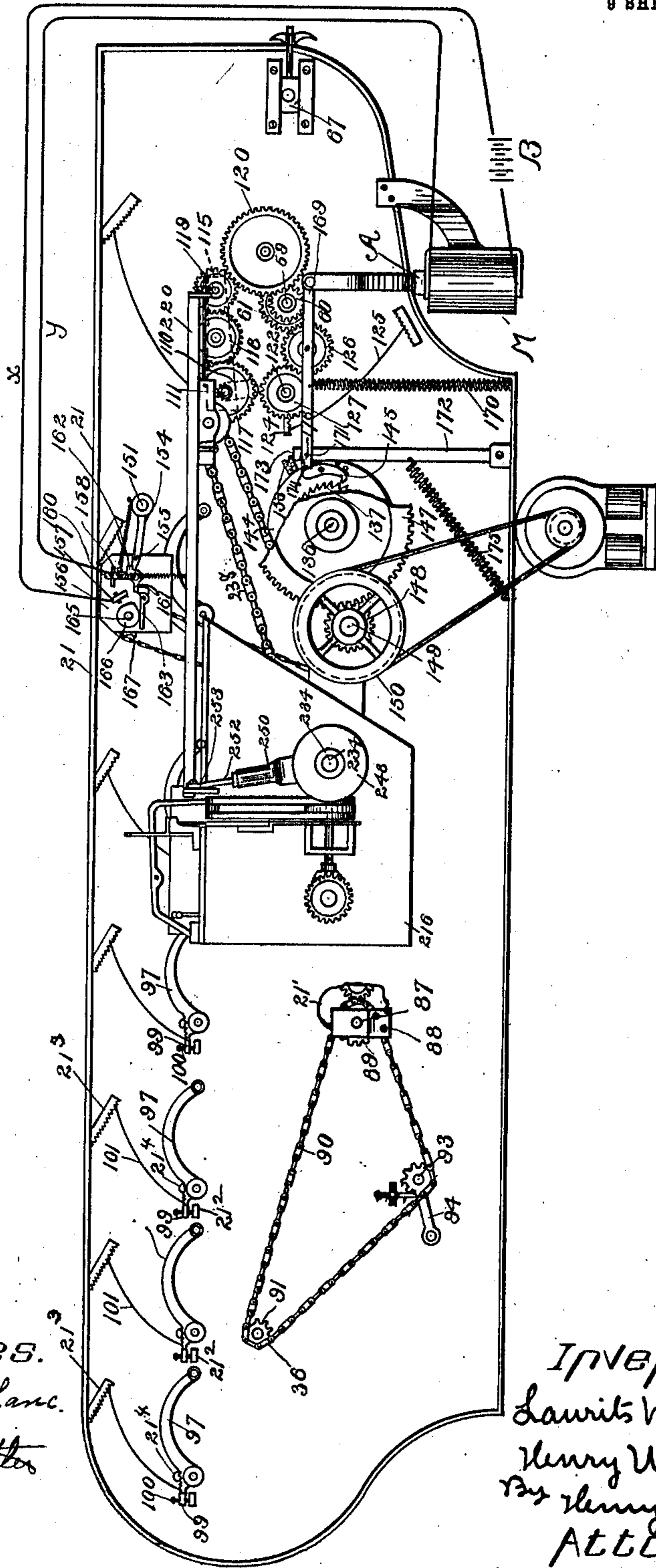
L. M. NIELSEN & H. WELLER.
MACHINE FOR STAMPING AND SEALING ENVELOPS.
APPLICATION FILED DEC. 26, 1906.

978,474.

Patented Dec. 13, 1910.

9 SHEETS-SHEET 1.

Fig. 1.



Witnesses.
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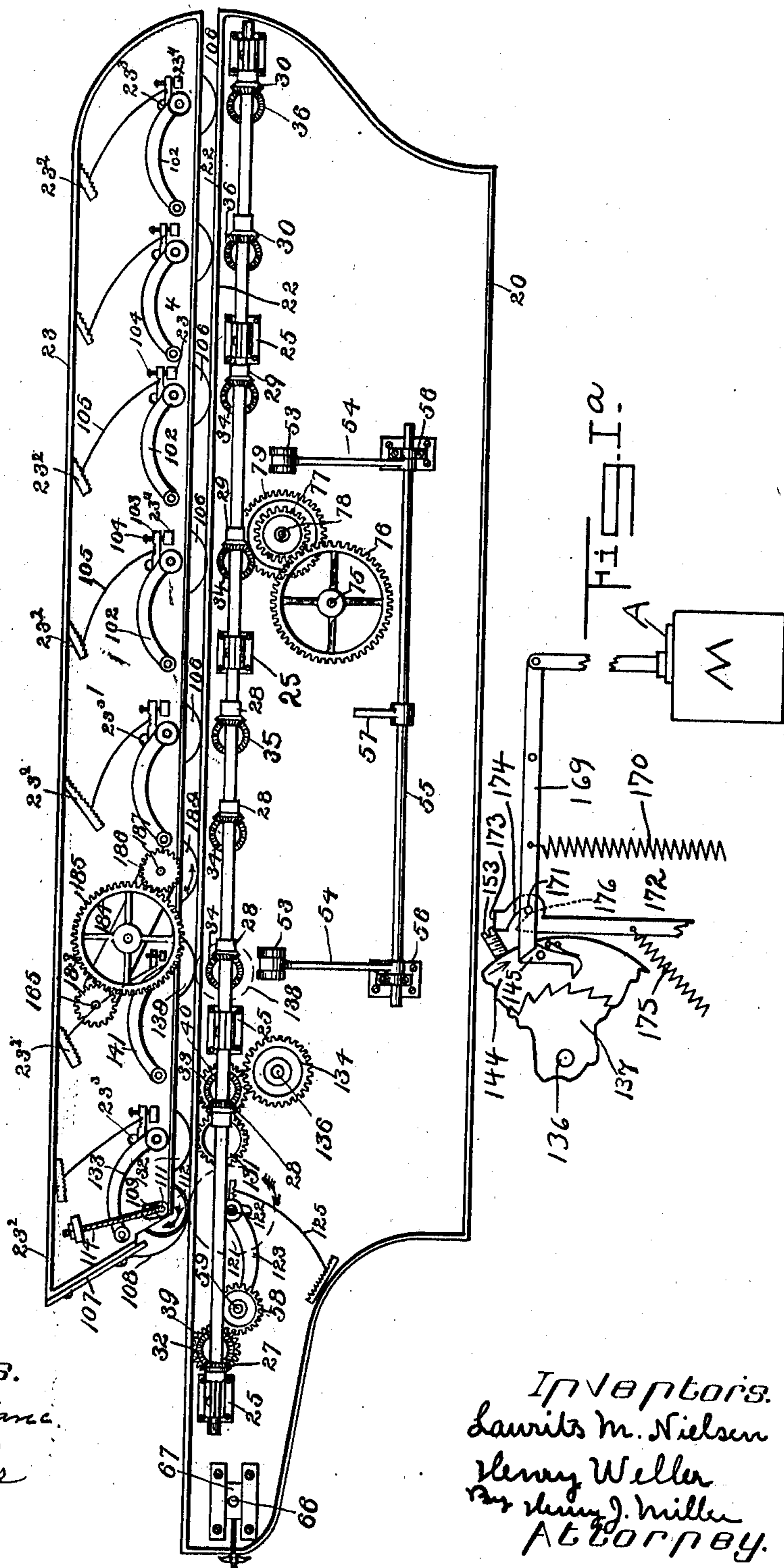
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Fig. 2.



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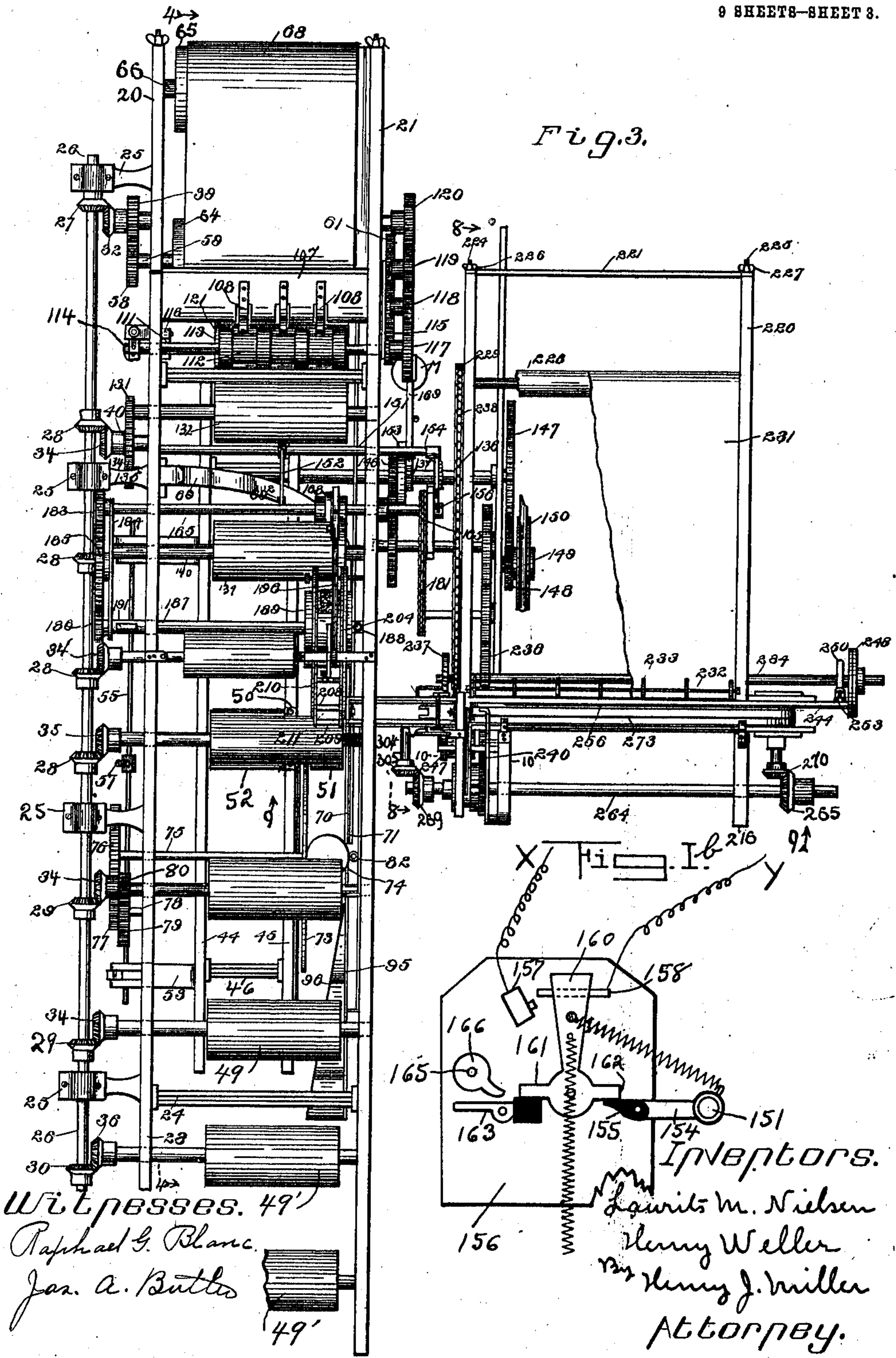
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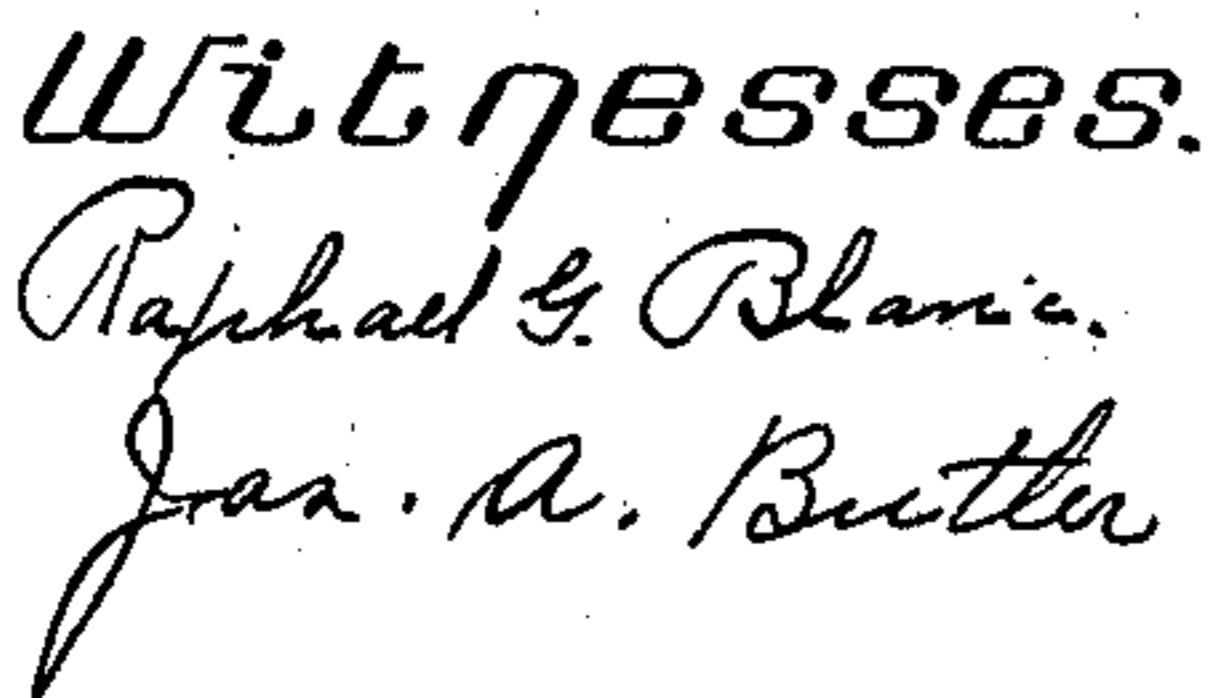
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9 SHEETS—SHEET 4.



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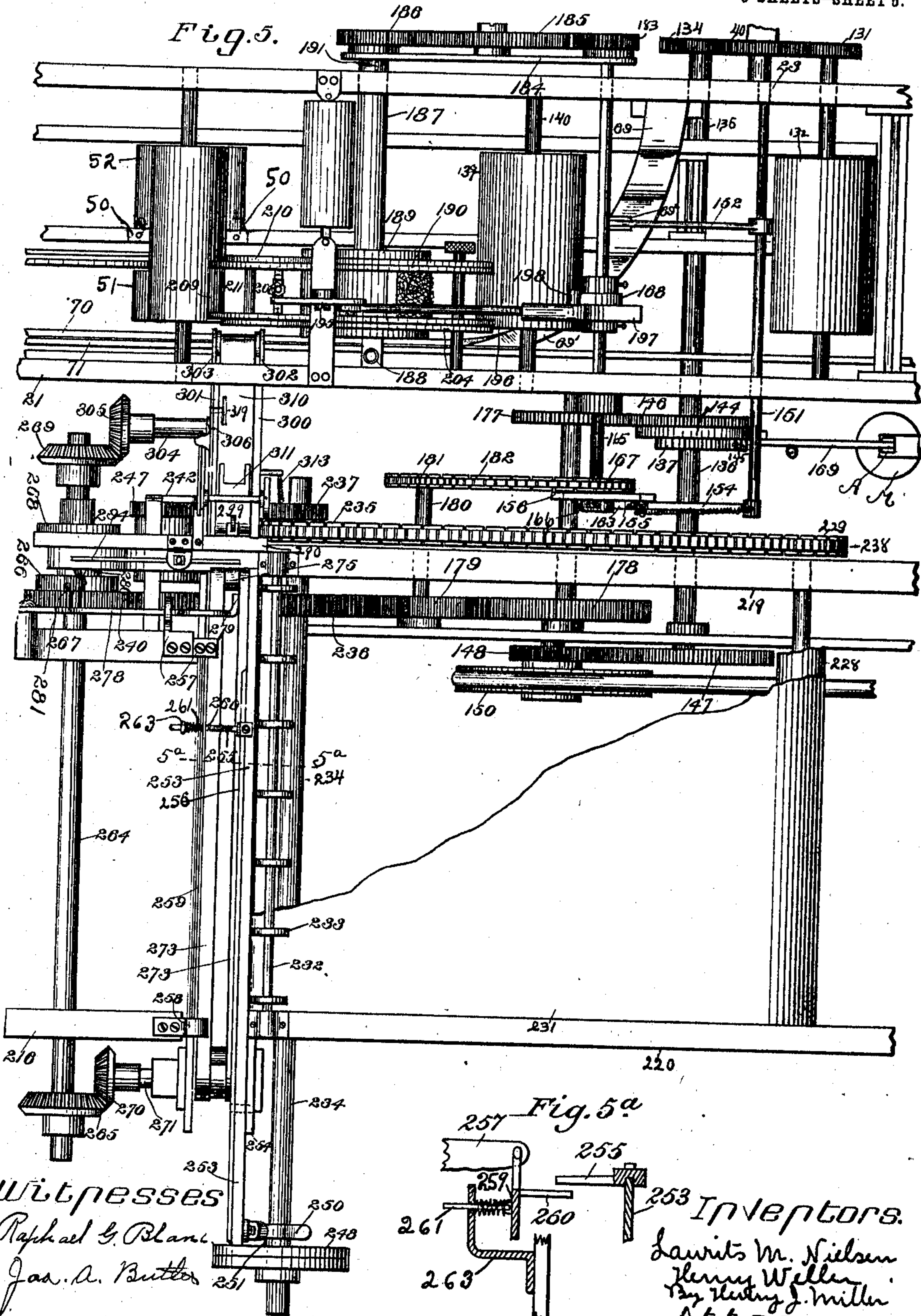
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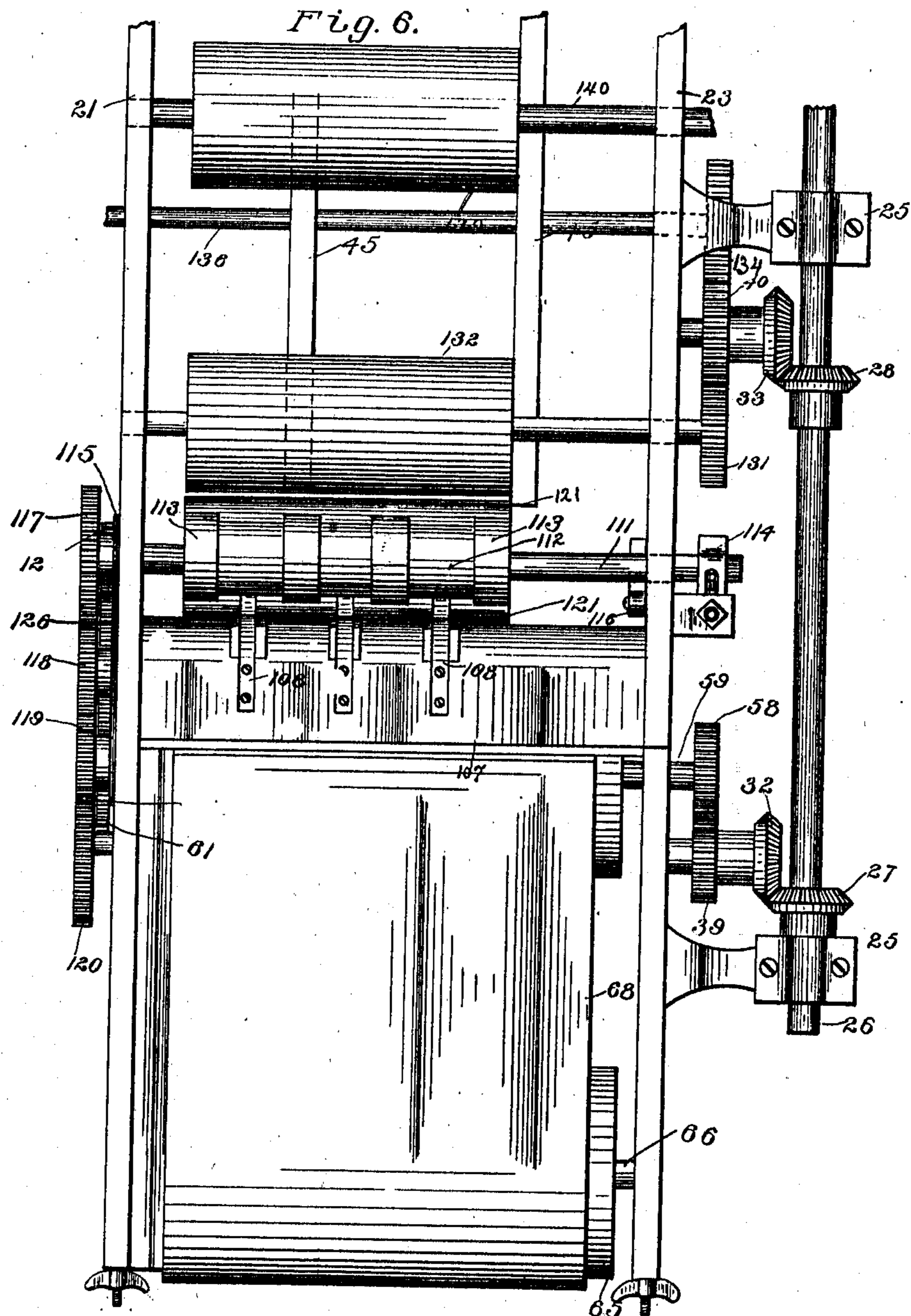


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9 SHEETS—SHEET 6.



Witnesses.
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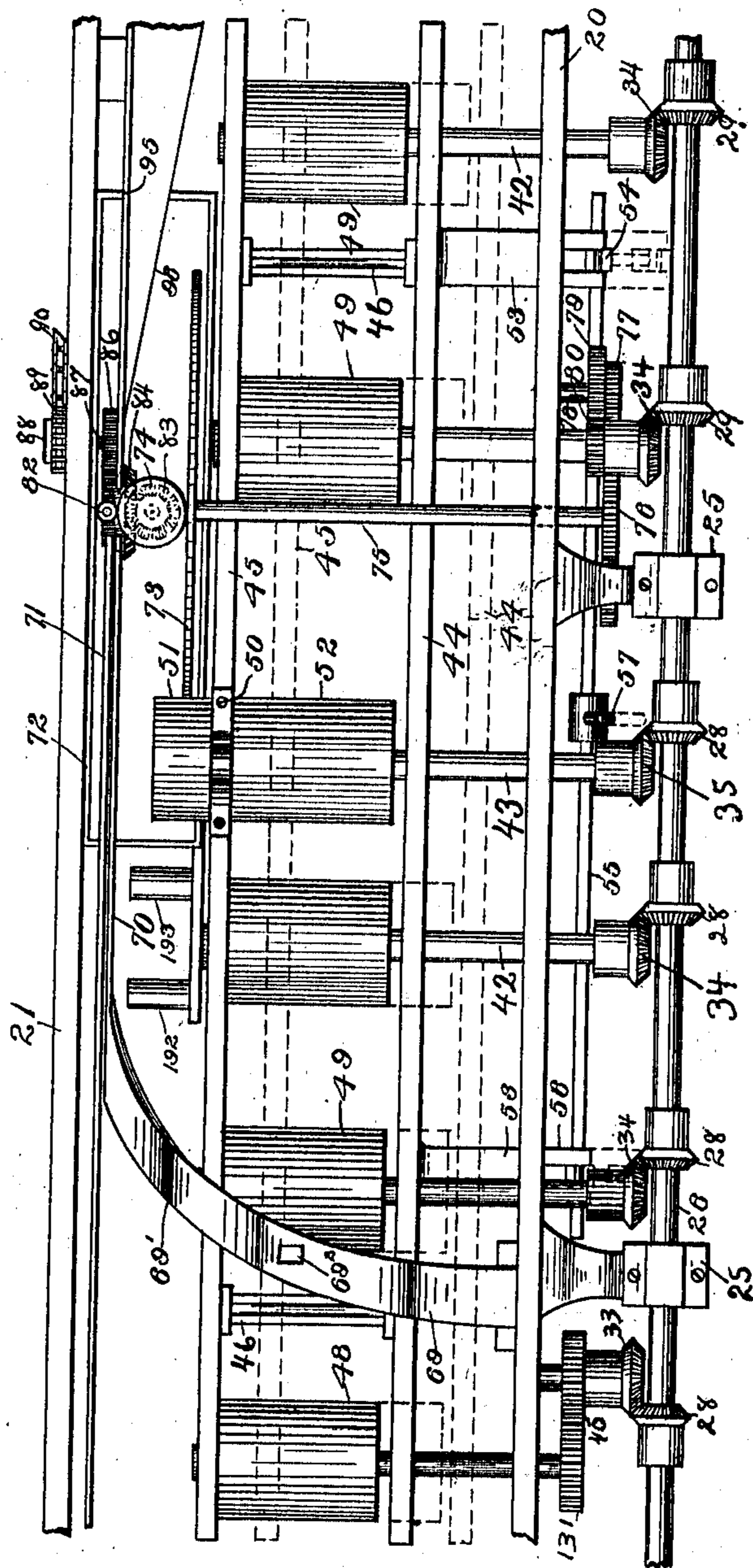
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Fig. 7.



Witnesses.
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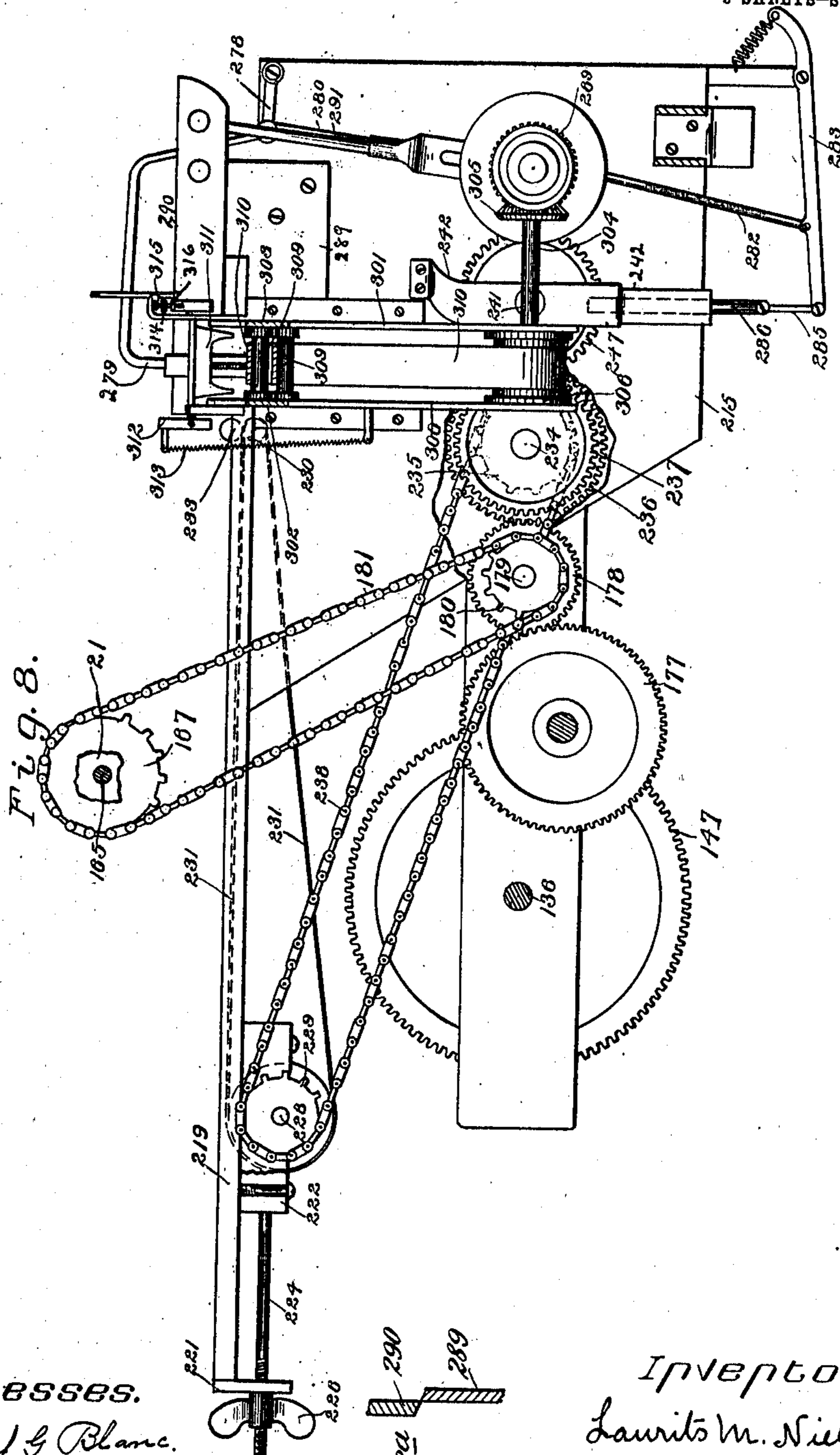


Fig. 8.

Fig. 8a

Witnesses.
Raphael G. Blane.
Jas. A. Butler

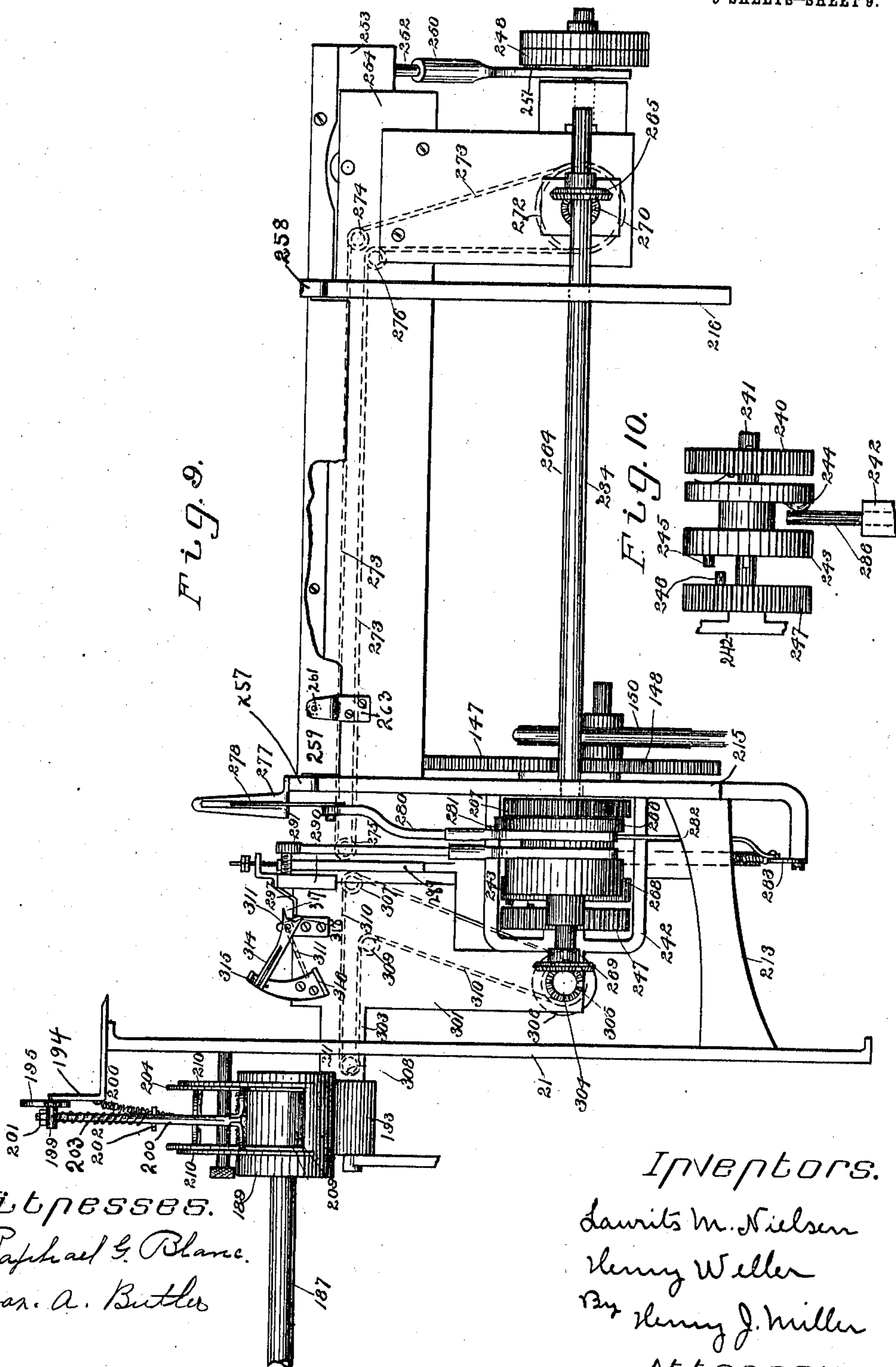
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L. M. NIELSEN & H. WELLER.
MACHINE FOR STAMPING AND SEALING ENVELOPS.
APPLICATION FILED DEC. 28, 1905.

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9 SHEETS—SHEET 9.



Witnesses.
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UNITED STATES PATENT OFFICE.

LAURITS M. NIELSEN AND HENRY WELLER, OF BOSTON, MASSACHUSETTS, ASSIGNORS,
BY MESNE ASSIGNMENTS, TO NIELSEN MAILING MACHINERY COMPANY, OF ERIE,
PENNSYLVANIA, A CORPORATION OF MAINE.

MACHINE FOR STAMPING AND SEALING ENVELOPS.

978,474.

Specification of Letters Patent.

Patented Dec. 13, 1910.

Application filed December 26, 1905. Serial No. 293,276.

To all whom it may concern:

Be it known that we, LAURITS M. NIELSEN and HENRY WELLER, both of Boston, county of Suffolk, and State of Massachusetts, have
5 invented certain new and useful Improvements in Machines for Stamping and Sealing Envelops; and we hereby declare that the following is a full, clear, and exact description of the same, reference being had to
10 the accompanying drawings, forming part of this specification.

This invention relates to improvements in machines for applying stamps to envelops and for sealing said envelops.

15 One object of this invention is to so construct a machine of this character that the envelops may have stamps applied thereto at the feeding in end of the machine and may thereafter be sealed.

20 Another object of the invention is to so construct a machine of this character that the operation of the stamping mechanism may be controlled by the presence of an envelop.

25 Another object of the invention is to so construct a stamp affixing machine that the stamp strip cutter shall be automatically controlled by the presence of a stamp in place to be fed to the stamp affixing mechanism.
30

Another object of the invention is to so construct a stamp affixing machine that the operation of the stamp sheet feed may be controlled by the presence of a stamp on the
35 strip feed.

Another object of the invention is to improve the construction of the stamp strip cutter whereby less delicacy of adjustment is required therein.

40 Another object of the invention is to so construct an envelop sealing machine that the same may operate on envelops varying considerably in size, and in the size and proportion of the envelop flaps.

45 Another object of the invention is to so construct a stamp affixing machine that stamps of various sizes may be used therein.

Other objects of the invention will appear from the following description of the machine and of its operation.
50

The invention consists in the means whereby the envelops are fed to the machine and in the mechanism for opening the flap, for moistening the gummed surface thereof

and for closing the flap against the body of 55 the envelop.

The invention also consists in an envelop sealing and stamping machine having means whereby a stamp may be applied to the envelop prior to the sealing of the envelop. 60

The invention also consists in the means whereby the envelop is fed through the machine and in the adjustable features of said means whereby envelops having flaps of various sizes may be fed therethrough and 65 sealed.

The invention also consists in the envelop sealing and stamping mechanism and in the means for controlling the stamping mechanism adapted to be actuated by the presence 70 of an envelop.

The invention also consists in the means for feeding forward the sheet of stamps.

The invention also consists in the improved stamp strip cutter. 75

The invention also consists in a stamp feed mechanism comprising a stamp sheet feed and a stamp strip feed so constructed that after the feeding of the last stamp in the strip to a predetermined position from which 80 it may be affixed to an envelop the stamp sheet feed and the stamp strip cutter are brought into action without reference to the number of stamps in the strip.

The invention also consists in the means 85 for detecting the presence of a stamp on the stamp strip feed.

The invention also consists in a stamp affixing machine having a stamp strip cutter and an adjustable gage whereby stamps 90 of different sizes may be cut in strips from the sheet.

The invention also consists in the peculiar stamp cutter and in the means for operating the same. 85

The invention also consists in the mechanism for positioning the stamp to be affixed to the envelop.

The invention also consists in the stamp position moistener. 100

The invention also consists in the clutch driving mechanism for the stamp affixing mechanism and the peculiar means for controlling the same.

The invention also consists in such other 105 novel features of construction and combination of parts as shall hereinafter be more fully described and pointed out in the claims.

Figure 1, represents a side elevation of the improved stamping and sealing machine taken from the driving side. Figs. 1^a and 1^b are enlarged diagrammatic views showing the clutch mechanism and the electrically-actuating mechanism therefor shown in assembled relation in Fig. 1. Fig. 2, represents an elevation of the machine taken from the opposite side. Fig. 3, represents a plan view of the machine, parts of the final pressing mechanism being broken away. Fig. 4, represents an enlarged vertical sectional view of parts of the machine taken on line 4—4 Fig. 3 looking in the direction indicated by the arrows. Fig. 5, represents an enlarged plan view of portions of the machine including the stamping mechanism and the stamp position moisteners. Fig. 5^a represents a cross sectional view of the stamp strip cutter and the strip gage plate taken on line 5^a—5^a Fig. 5. Fig. 6, represents an enlarged plan view of the envelop feeding and separating mechanism with some of the parts related thereto. Fig. 7, represents an enlarged plan view of portions of the machine illustrating the means whereby the lower envelop-carrying rolls may be moved to a position where they will not interfere with envelop flaps of large size. Fig. 8, represents an enlarged vertical sectional view taken on line 8—8 Fig. 3 looking in the direction indicated by the arrows. Fig. 8^a represents a sectional view of the cutting elements 289 and 290 taken at right angles to Fig. 8, the other parts of the machine being omitted. Fig. 9, represents a cross sectional view of the machine taken on line 9—9 Fig. 3 looking in the direction indicated by the arrows. Fig. 10, represents a detail view taken on line 10—10 Fig. 3 of the clutch mechanism for connecting the driving means with the stamp sheet feed and the stamp strip cutter.

Machines of this general character are primarily designed for the sealing, stamping, or the sealing and stamping of envelops, or other objects which are adapted to be fed through the machine.

The particular machine forming the subject matter of the present application is adapted without material change or adjustment to seal and stamp other objects than envelops or to apply stamps or other labels to packages fed to the machine; the construction and operation of the machine will however hereinafter be considered more particularly with reference to the sealing and stamping of envelops without, however, thereby limiting its use.

In machines of this general character envelops have been first sealed and then delivered to stamp affixing mechanism by means of which stamps have been, more or less successfully, affixed to the envelops. Much difficulty has been experienced in so

feeding the envelops rapidly through this machine and sealing them and then accurately positioning the envelops to receive the stamps in the proper position. At each of the steps of flap moistening, flap sealing and stamp position moistening there is a tendency to divert the envelop from its path of travel toward the stamp affixing mechanism so that when the envelop reaches such mechanism it cannot be suitably placed to receive a stamp on the small moistened area on its face designed to receive the stamp. One of the purposes of the present invention is to obviate this difficulty by the application of the stamp to the envelop as an initial step in the operation of the machine and to, thereafter, seal the envelop if desired.

Machines of this character should be flexible in operation to receive and seal envelops of a large variety in size, and in the size and shape of their flaps, and the machine should, without adjustment, be adapted to received filled envelops of various thickness and to operate successfully thereon without strain to the machine. This is also one of the purposes of the present invention, whereby envelops varying in thickness from that of a thin empty envelop to that of a filled envelop may be successfully operated upon without adjustment of the machine.

Stamp affixing mechanisms for machines of this character have heretofore been constructed to operate without reference to the presence of an envelop in position to receive the stamp the result of which operation being either to waste the stamp or to render the same useless for further operation in the machine as the machines, as heretofore constructed have not been adapted to feed forward and affix a single stamp to an envelop sealed by the machine.

The number of stamps in a sheet, and consequently in the rows across the sheets, vary in different countries; sheets of stamps often become torn, and it is often desirable to use parts of a sheet of stamps and, in order to fully meet the requirements of the user, the machine should be so controlled in its operation of feeding stamps to a point adjacent the affixing position without reference to the number of stamps in a row, or in the sheet. One of the purposes of the present invention is to successfully accomplish this object.

The more general improvements in the construction of the machine and the functional characteristics thereof will hereinafter be more specifically set forth.

As shown in the drawings in its preferred form, 20—21 represent longitudinal frames set at a suitable distance apart and secured together in any suitable manner. The frame 20 has the upper edge 22 and, at a distance

above this edge is supported the frame 23, which is mounted on the braces 24—24 extending from the frame 21, the opening between the frames 20 and 23 forming a passage for parts of envelopes wider than the distance between the frames 20—21.

In the bearings 25—25 extending from the frame 20 is journaled the shaft 26 having the bevel gears 27, 28—28, 28, 28, 29, 29, and 30—30 which engage with the bevel gears 32, 33, 34, 34, 35, 34, 34, 36—36 on shafts journaled in the frame 20, in other parts of the machine as will hereafter be described, the shafts of the bevel gears 32 and 33 having respectively the spur gears 39 and 40. The shafts 42, 43—43 of the gears 34, 35 extend through bearings in the side bars 44 and 45 which are secured together by the braces 46—46 and are adapted to slide laterally between the frames 20 and 21. Between these side bars 44 and 45 are mounted on said shafts the rolls 48 and 49—49 which are free to slide on said shafts but are designed to rotate therewith. The shaft of the bevel gear 35 is journaled in the bracket 50 as well as in that, marked 20 and has the roll sections 51—52. The shafts of the bevel gears 36—36 are journaled in the frames 20 and 21 and are furnished between said frames with the rolls 49'—49' which form part of the final pressure mechanism.

To the side bar 44 are secured the extensions 53—53 which are free to move in openings in the frame 20 and, at the portions which extend beyond such frame, carry pivoted rods 54—54 which, at their lower ends, are fixed to the rod 55 rotatable in the bearings 56—56, which extend from the frame 20, and having the lever 57 by means of which the rod 55 is rocked in its bearings to effect the swinging of the rods 54—54 to draw the extensions 53—53 and the frame formed by the bars 44—45 toward the frame 20, thus also drawing the rolls 48 and 49—49 along their respective shafts when necessary to avoid an envelop flap of unusual size when such is passing through the machine. When operating on envelopes of ordinary size the bars 44 and 45 and the rolls 48 and 49—49 occupy the position shown in full lines in Fig. 7.

The gear 39 on the shaft of the bevel gear 32 meshes with the spur gear 58 on the shaft 59 which is journaled in the frames 20 and 21 and has the gear 60 and pinion 61. On the shaft 59 is the roll 64 and a similar roll 65 is mounted on the shaft 66 which is journaled in blocks as 67 of any usual form of take up mechanism mounted on the frames 20—21 whereby the distance between the rolls 64 and 65 may be adjusted to stretch the friction belt 68 carried by said rolls.

Mounted at the inner side of the frame 20 is the flap opening blade 69 which has a

horizontal extension 69' reaching nearly to the inner line of the frame 21 where it is curved downward to form the member 70, by means of which the envelop flap is held open, the flap being guided between said member 70 and the plate 71 while the envelop is passing beneath the stamp applying position on its way to the moistening roll, the fact that the flap is at this time approximately at a right angle with the body of the envelop preventing the swerving of the body of the envelop from its path during this movement.

The envelop flap moistening means comprises a water tank 72, located at the lower part of the machine, in which operates the vertically extending disk 73 having a surface of absorbent material adapted to receive moisture from the tank and deliver it at the upper part of the disk to the periphery of the vertically journaled moisture applying roll 74, as shown in Fig. 4; the disk 73 is mounted on the shaft 75 which is journaled in bearings in the frame 20 and is provided with the gear 76 which is driven from the gear 77, rotatable on the shaft 78, on the frame 20 to which gear is fixed the gear 79 meshing with the gear 80 on the shaft of the bevel roll-gear 34, see Fig. 7.

The shaft of the moisture applying roll 74 is journaled in a bracket 81 which extends from the side of the tank 72 and has the presser roll 82, said shaft being furnished with the bevel gear 83, which is engaged with the bevel gear 84 rotatably mounted on a stud shaft extending from the side of the tank and having the spur gear 85 which is engaged by and driven from the spur gear 86 on the shaft 87, this latter shaft being journaled in the bracket 88 removably secured to the outer portion of the frame 21, this shaft having the sprocket 89 which is driven by the chain 90 working on said sprocket and on the sprocket 91 on the shaft 36' of the first or inner of the pinions 36. The chain 90 is tightened by means of the tension device 93 mounted on the arm 94, pivoted to frame 21, and bearing on said chain.

In order to permit the removal of the tank 72, and the mechanism attached thereto, the frame 21 is furnished with the opening 21' Fig. 1, sufficiently large to permit the withdrawal of the gear 86 when the bracket 88 is detached from the frame 21.

Secured to and extending inward from the frame 21 is the flap closing blade 95 having the inclined edge 96 which engages the flap as the envelop is fed forward from the moistening mechanism and directs the flap toward the body of the envelop until the flap passes flatwise over the horizontal portion of this blade to be thereafter closed and sealed by passing between the pairs of final pressure rolls as will hereafter be described.

At the upper outer portion of the frame 21 are formed inclined toothed members 21³—21³ below each of which is a curved slot 21⁴—21⁴. Similarly on the outer surface of the frame member 23 is formed the series of inclined toothed members 23²—23² below which are the curved slots 23³—23³. Piv-
 otally mounted on the frame 21 are the curved arms 97—97 each of which has an extension 99 carrying a set screw 100 adapted, to rest against the projections 21²—21² extending from said frame when the free ends of said arms 97—97 are pressed downward by the springs 101—101 engaged with the toothed surfaces of the inclined members 21³—21³ and with the extensions 99 of the arms. Likewise, on the frame member 23 is pivoted a series of curved arms 102—102 having extensions 103—103 carrying the set screws 104—104 which limit the downward movement of said arms by meeting the projections 23⁴—23⁴ when the free ends of the arms 102—102 are pressed downward by the springs 105—105 engaged with the extensions 103—103 of the arms and with the toothed surfaces of the projections 23²—23² of this frame member 23. On shafts carried in the free ends of the pairs of arms 97—97 and 102—102 are the presser rolls 106—106 which bear against the complementary rolls carried by the frames 20 and 21. By this system of mounting the rolls 106—106 these rolls may move upward considerably to allow the passage of comparatively thick envelopes, between the rolls, while the springs 101 and 105 tend to depress the free ends of the arms 97 and 102 to press the rolls 106—106 toward the lower series of rolls.

At the feeding in end of the machine, at which end is the feed belt 68, is fixed to the frames 21 and 23 the inclined plate 107 from which depend the curved spring fingers 108—108. In the frames 21 and 23 respectively, adjacent the plate 107, are the openings 109—110 through which the shaft 111 of the separator roll 112 extends, this roll having the enlargements 113 of friction material between which the fingers 108 extend; the end portions of the shaft 111 are journaled in the free ends of the arms 114 and 115 movably mounted respectively on the frames 21 and 23, and means are provided for lifting said shaft 111, this means consisting of the lever 116 pivotally mounted on the inner side of the frame 23 having a finger which extends beneath the shaft 111.

The shaft 111 has the large gear 117 which is driven through the gear 118 journaled on a stud shaft extending from said arm 115 which in turn is driven by the gear 119 journaled on the pivot of the arm 115 and meshing with the gear 120 rotatable on a stud of frame 21 which is driven by the pinion 60 on the shaft 59.

Below the roll 112 is the larger friction

roll 121 the shaft 122 of which is free to move vertically in openings in the frames 20 and 21 the end portions of this shaft being journaled in the ends of the arms 123—124 pivotally mounted at the outer sides of the frames 20—21 and supported by the springs as 125 bearing against fixed parts of said frames and against the free ends of said arms. The arm 124 is pivoted on the shaft 59 and has the rotatable idle gear 126 which engages with the pinion 61, on the shaft 59 and with the gear 127 on the shaft 122. Thus the shafts 111 and 122 are free to move toward and from each other to a certain degree, under strain, and are driven in opposite directions as indicated by the arrows in Fig. 2. By this means when a number of envelopes are present on the belt 68 the lowermost envelop is fed forward by the roll 121 while the enlargements 113 of the roll 112 drive the uppermost envelopes back, whereby the envelopes are fed between said rolls separately; the spring fingers 108—108 also tending to resist the passage of more than one envelop at a time.

The shaft of the gear 33 is journaled in the frame 20 and has the gear 40, see Fig. 2, which meshes with the gear 131 the shaft of which is journaled in bearings of the frames 20 and 21 and carries a feed roll which is complementary to the roll 132 which latter roll is journaled in arms as 133 pivoted to the frames 23 and 21 and spring pressed at their free ends by springs acting against said end and against fixed parts of the machine.

The gear 131 is driven through the gear 40 by the gear 134 on the shaft 136 which is journaled in bearings in the frames 20 and 21 and has, at the end beyond the frame 21, the ratchet 137 adapted to be engaged by a pawl, hereafter described, of the driving mechanism.

Complementary to the roll 138, on one of the first gears 34, is the roll 139 mounted on the shaft 140 which is journaled in the free ends of arms 141 pivoted to the frames 21 and 23 and pressed downward by springs.

On the shaft 136 is mounted for independent rotation a sleeve having the pawl plate 144, carrying the pivoted pawl 145, and the gear 146, while the gear 147, fixed to the shaft 136, is driven by the pinion 148 on the shaft 149 which shaft is journaled in a bracket and has the belt pulley 150 driven by a belt from a motor of any well known construction. When, therefore, the pulley 150 is operated, motion is transmitted therefrom to the shaft 136 and thence by means of the gear 134 to the gear 40, driving the bevel gears 33 and 28 whereby the shaft 26 and the mechanism connected therewith is driven.

The shaft 151 is mounted to rock in the frames 21 and 23 and has the detector finger 152 which extends downward through the

opening 69² in the flap opener plate 69 being sustained by one edge of said opening, the end portion of the shaft 151 outside the frames 21 (see Fig. 1) being furnished with the arm 154, with the insulated finger 155 at its free end. The arm 154 swings adjacent to the electric insulation block 156 which is supported from the frame 21 and has the terminals 157 and 158. Between the terminals 157 and 158 is mounted to swing the metallic circuit closer 160 having the projections 161 and 162 and pivoted on the block 156 is the lever 163 having an end of insulating material which engages the projection 161. Journalled in the frames 21 and 23 is the shaft 165 which is furnished, at this point, with the cam 166; between the block 156 and the frame 21 is the sprocket 167 which is secured to this shaft while on said shaft between the frames 21 and 23 is mounted the cam 168 the purpose of which will hereafter be described.

The electric circuit X—Y connected with the terminals 157 and 158 includes a battery B, or any other source of electric current, and also the coils of the magnet M, mounted at the outer side of the frame 21; the armature A of said magnet is pivotally connected with the arm 169 which is pivotally mounted on an extension from the frame 21, the free end of this arm being in position to engage the notched end of the pawl 145 on the plate 144 when drawn downward at its free end by the spring 170, secured to said arm 169 and to some fixed part of the machine, the downward movement of the arm 169 being limited by the bottom of the slot 171 of the vertically swinging lever 172 having the stop 173 and the cam edge 174 at its upper end; the spring 175 tending to draw this end of said lever 172 toward the plate and hold the cam edge 174 against the pin 176 of the lever 169.

While the arm 169 is in the normal position it bears against the notched end of the pawl 145 and holds the toothed end thereof out of engagement with the ratchet 137, so that the plate 144 with its gear 146 and the mechanism in driving connection therewith is normally inoperative. When, however, the free end of the arm 169 is drawn upward by the drawing action of the magnet M on its armature A, the toothed end of the pawl 145 is swung into engagement with one of the teeth of the ratchet 137 and is held in such engagement so long as the arm 169 is held out of the path of the pawl. The upper end of the lever 172, when the arm 169 swings upward, is moved away from the periphery of the plate 144 but, when the arm 169 is allowed to drop back into place, the upper end of this lever is drawn toward the periphery of said plate and engages the stop 153 extending from said periphery, whereby the rotation of this plate and the

further operation of the mechanism connected therewith is prevented.

Motion is transmitted from the gear 146, when its plate 144 is connected by the engagement of the pawl 145 with the ratchet 137, through the gears 177 and 178 and their shaft, which is journaled in the frame 21 and in the frame of the stamping machine (see Fig. 5), to the gear 179 the shaft 180 of which is journaled in the frame of the stamping machine and is furnished with the sprocket 181, connected by the chain 182 with the sprocket 167 on the shaft 165; the stamp sheet feed the stamp strip cutter and feed and the single stamp cutter and feed being driven by mechanism operated by the gear 179 as shall hereafter be described.

On the end of the shaft 165 outside the frame 23 is the gear 183 and on this shaft is mounted to swing the arm 184 carrying the rotatable gear 185 which meshes with the gear 183 and with the gear 186 on the hollow shaft 187 which is journaled in the free end of said arm and also in a yielding bearing 188 mounted on the inner part of the frame 21. This hollow shaft has the enlarged water reservoir 189 an opening in the peripheral wall of which is furnished with the fibrous pad 190 through which water may work, this pad being located in line with the path in which stamps are to be applied to the envelopes. Water is supplied to this hollow shaft 187 through the opening 191 which is adapted to be closed in any well known manner.

Below the reservoir 189 is the envelop supporting roll 192 which is rotatably mounted in bearings supported from the frame 21, and adjacent to this roll is the roll 193 similarly mounted.

On the bracket 194 mounted on the frame 21 is pivoted the lever 195 to one end of which is pivoted the rod 196 having at its lower end the fork 197, which engages the shaft 165, and the bearing 198 which is in the path of the cam 168. On the other end of said lever 195 is pivotally mounted the transversely perforated stud 199 in which the rod 200 is slidably mounted, this rod having the adjusting nut 201, working on a screw thread of the rod, and the pin 202 between which and the stud 199 is the expansion spring 203.

The lower end of the rod 200 is pivoted to an extension from the curved frame 204, pivotally mounted on the stud 205 extending from the main frame member 21, and having at its free end the tangentially extending arms 206—206 carrying the stud 207 on which the tube 208 is free to rotate this tube having a bore considerably larger in diameter than the diameter of said stud; at the outer end of said arms 206 is journaled the friction roll 209 free to rotate when brought to bear against a moving surface

On the pivot 205 is also pivotally and yieldingly mounted the arms 210 having at their free end the stamp receiving plate 211. This plate 211 is normally located at the inside 5 of the opening, in the frame 21 through which the single stamp is fed and approximately in the path in which the stamp is fed, see Fig. 4, as this plate is designed to receive the stamp and support the same immediately prior to its application to the previously moistened stamp receiving surface. To permit of the peculiar application of the stamp to the envelop hereinafter described the plate 211 is preferably narrower, in the 10 direction in which the envelop moves, than the stamp.

Mounted at a distance from the frame 21, to accommodate the mechanism located therebetween, and connected to said frame 20 by braces 213 is the frame plate 215, of the stamp feeding and cutting mechanism, this plate 215 being in turn connected with the frame plate 216. On the upper portions of these frames 215 and 216 are the side bars 25 219 and 220 of the stamp sheet feed. These bars are connected at their rear ends by the cross member 221 and are furnished with the blocks as 222 slidably mounted on said bars and being adjustable thereon by means 30 of the threaded rods 224—225 secured to said blocks and extending through perforations in ears depending from the cross member 221, the rods having adjusting nuts 226 and 227.

In the blocks 222—223 is journaled the shaft 228 having the sprocket 229 and in bearings at the front ends of the side bars 219 and 220 is journaled the shaft 230 and on these shafts 228 and 230 is mounted the 40 flexible belt 231, preferably of elastic material. Above the shaft 230 is mounted in vertical slots, in the bars 219 and 220, the rod 232 having circular disks 233 which ride on the belt 231 or on a sheet of stamps on said belt. By means of the bearing of these disks the sheet of stamps is held flat as it passes over the front end of the belt, and is prevented from lifting with the upward movement of the stamp strip cutter.

In the frames 215 and 216 is journaled the shaft 234 having the sprocket 235, the loose gear 236 and the fixed gear 237; on the sprocket 235 is engaged the chain 238 which works over the sprocket 229.

The loose gear 236 meshes with the gear 240 which is fixed on the shaft 241, journaled in bearings of the frame 215 and the bracket 242 extending from said frame. On this shaft 241 is slidably mounted the clutch 60 member 243 fixed against independent rotation, spring pressed from the gear 240, and having the cam 244 and furnished with the pins 245 adapted to engage between corresponding pins 246 of the gear 247 which 35 is normally loose on the shaft 241 and

meshes with the gear 237 of the shaft 234, the engagement of the pins 245 of the clutch member 243 with the pins 246 of the gear 247 effecting the connection of said gear 247 with the shaft 241 to drive the same and 70 the gear 237.

At the outer end of the shaft 234 is fixed the cam 248 having a suitable cam path and on this portion of said shaft works the slotted plate 250 having the bearing 251 working in the cam path. On the upper end of the plate 250 is the rod 252 which is pivoted to the corresponding end of the upper cutter member 253 of the stamp strip cutter, this member 253 being pivoted to the lower 80 cutter member 254 fixed at this end of the frames 215 and 216. The upper cutter member is furnished near its free end with the stamp strip guide plate 256 which prevents the curling upward of the strip of stamps 85 passing thereunder.

Pivotally mounted on brackets 257—258 at the upper portions of the frames 215 and 216 is the gage plate 259 having the projection 260 against which the block 255 may 90 bear in the downward movement of the upper cutter member 253 to swing the gage plate 259 slightly away from the stamp strip as it is finally severed from the sheet. The outward movement of the gage plate 95 259 on its pivots is lightly resisted by the spring presser 261 which comprises a rod pivotally connected to the gage plate and having a spring which tends to press the gage plate toward the upper cutter member, 100 said rod projecting through an opening provided in a bracket 263 which is mounted upon a fixed part of the machine as shown in Figs. 5, 5^a and 9; it is further noted that the bracket 263 acts as a stop to limit the 105 swinging of the gage plate 259 upon its pivots.

Journaled in the frames 215 and 216 is the shaft 264 having the bevel gear 265, the cam 266, the gear 267, the cam 268 and the 110 bevel gear 269 fast thereon. Meshing with the gear 265 is the bevel gear 270 of the shaft 271 journaled in bearings at right angles to the shaft 264 and having the band pulley 272 by which the stamp strip feed 115 bands 273—273 are driven, these bands working over the pulleys 274, 275 and 276, the upper reach of these bands being somewhat below the upper edge of the lower fixed cutter member 254. 120

Pivotally mounted on the frame 277 is the stamp strip detector 278 having the feeler finger 279 which is adapted to pass down between the bands 273—273 at times. To this detector 278 is pivoted the rod 280 125 forked at its lower end to work on the shaft 264 and having the bearing 281 against which the cam 266 works; from this rod 280 depends the member 282 connected to the pivotally mounted and spring retracted le- 130

ver 283, this lever 283 being in turn connected by the rod 285 with the cam actuating pin 286 slidably mounted in a guide with which the bracket 242 is supplied, said pin 286 being adapted when in the elevated position to hold the cam 243 out of engagement with the loose gear 247 to prevent the operation of the shaft 234 and the operation of the stamp strip cutter. When however the pin 286 is drawn downward by the downward movement of the member 282, or when the finger 279 is not sustained by a stamp on the stamp strip feed at the point of delivery to the single stamp cutter, the spring will press the clutch member into engagement with the pins of the gear 247, and said gear will be driven, the motion thereof being transmitted by the gear 237 to the shaft 234 whereby the upper cutter member 253 and the stamp sheet feed belt 231 is operated by its chain 238 to feed forward the sheet, or part of a sheet of stamps thereon until the edge of the sheet contacts with the gage plate 259 when the cutter 253 is brought down and severs a strip of stamps from said sheet.

In the frame 215, in the path of the stamp strip feed bands, is formed an opening and at the outer side of this frame 215, toward the frame 21, below said opening, is fixed the lower member 289 of the single stamp cutter, the upper member 290 of which is pivotally mounted at the corresponding side of the frame 215, this upper pivoted member 290 having the rod 291 pivoted thereto, the lower end of this rod being forked, to embrace the shaft 264, and having a bearing which rides in the path of the cam 268. At the side of the cutter member 290 is the presser 294 carried on said cutter member, this presser being adapted to yieldingly bear on the stamp strip adjacent to the cutter member 290 from which extends the finger 297 and to the outer surface of the free end of the cutter member 290 is fixed a frame having a shaft on which the presser disk 299 is mounted, the bore of this disk being considerably larger in diameter than the shaft on which it is mounted. Secured to the said outer surface of the frame 215 are the plates 300 and 301 which have the arms 302—303 extending through an opening in the frame 21 opposite the location of the stamp receiving plate. In the lower portions of these plates 300 and 301 is journaled the shaft 304 having the bevel gear 305, meshing with the bevel gear 269 of the shaft 264, and the band pulley 306. Between the plates 300 and 301 are rotatably mounted the band guide rolls 307, 308, and 309 on which is mounted the single-stamp feed belt 310 the upper reach of which is approximately on the level of the upper reach of the stamp strip feed bands.

Pivotally mounted at the upper portions

of the plates 300 and 301 is the stamp gage plate and gate 311 which swings downward between said plates 300—301 approximately to the surface of the feed belt 310; the pivoted portion of this gage plate has the bent arm 312 at one side which is connected by the spring 313 with some fixed part of the machine, whereby when the free end of said arm is swung slightly past the axis on which it is pivoted the spring 313 acts to complete the movement in the particular direction, this movement being limited by the arm 314, on said pivoted portion of the gage plate 311, working between the stops 315 and 316 extending from the plate 300, see Fig. 9, and the initial movement of said gage plate being effected by the finger 297 of the cutter member 290 striking the lips 317 or 318 of the arm 314 to swing the gage plate 311 open on the downward stroke of the cutter member 290, to permit the forward movement of the stamp cut thereby from the stamp strip, and to close the gage plate on the initial portion of the upward movement of said cutter member to thereby intercept the next approaching stamp. On the plate 301 is secured the wire 319 which extends downward toward the single stamp feed band 310 and has an extension which prevents the undue raising upward of a single stamp so fed forward.

A sheet of stamps, or any portion of such sheet is placed on the stamp sheet feed belt with its gummed surface downward, no particular nicety of adjustment of the stamp sheet being necessary if the forward edge of said sheet is parallel with the rows of stamps. The forward edge of the stamp sheet is preferably inserted beneath the disks of the presser, but this is not essential to the operation of the machine and such presser may be omitted if desired.

Envelops to be sealed, stamped, or sealed and stamped are placed on the belt 68 in piles with their flaps closed and are fed forward endwise against the springs 108, which incline inward and permit the lowermost of the envelops to contact with the friction enlargements of the separator roll 112 which rotating in a direction reverse to that in which the envelops are moving prevents the further forward movement of all of such envelops except the lowest of the pile which, being engaged by the roll 121 is carried forward to and between the rolls 48 and 132, the envelops being thus successively fed forward as they come into contact with said roll 121. In passing from between the rolls 48 and 132 to the rolls 49 and 139 the horizontal edge of the flap opener 69 enters beneath the envelop flap and, as the envelop flap moves along, the bent portion 69' of this opener effects the turning of the flap away from the body of the envelop until the flap is substantially at right angles with the

body when the flap enters between the plates 70 and 71 and, because of the length of its connection with the envelop, prevents the swerving of the envelop while passing the stamp applying position, in which movement it passes beneath the reservoir 189 and receives moisture on its stamp receiving face from the moisture pad of said reservoir.

In passing from the rolls 48—132 to the rolls 49—139 the front end of the envelop encounters the lever 152 and lifts, and sustains, the same while passing thereunder thus effecting the rocking of the shaft 151 and the swinging of the circuit closer 154 thereon to complete the electric circuit X—Y through the magnet M whereby the armature A is attracted by said magnet and the levers 169 and 172 are drawn out of contact respectively with the pawls 145 and with the stop 153. The pawl 145 is thereby permitted to engage with the ratchet 137 and the pawl plate 144 with its gear 146 is free to rotate with the shaft 136.

The rotation of the gear 146 effects the rotation of the gears 177—178 and 179, and the sprocket 181, on the shaft of the gear 179, from which sprocket motion is transmitted to the sprocket 167 on the shaft 165 to rotate said shaft and its cams 166 and 168; the cam 166 acts on the lever 163 to retract the circuit closer 160 and to open the circuit X—Y whereby the arm 169 and the lever 172 are released, with the armature M, and may be drawn back by their springs to positions where they may respectively engage the pawl 145, to disengage the same from its ratchet, and the stop 153 to prevent the further rotation of the pawl plate 144 and the mechanism connected to be driven by its rotation.

As the shaft 165 rotates its cam 168 works against the bearing 198 on the rod 196 to effect the swinging of the lever 195 and the depression of the frame 204 and the arms 210, to bring the stamp plate 211 of the arms 210 to the path of the envelop, after a stamp has been received by such plate, and to bring the tube roller 208 and the corrugated roll 209 to bear on the surface of the stamp.

From the gear 179 motion is transmitted by the idle gear 236, on the shaft 234, to the gear 240 on the shaft 241 which latter gear meshes with the gear 267 of the shaft 264 whereby this shaft, its cams 266 and 268, and the gears 265 and 269 are driven as are also the stamp strip feed belts 273—273. The single stamp cutter 290, and the detector 278 having the feeler 279 are vibrated toward and from the opening between the stamp strip feed belts 273—273. The movement of this feeler 279 is necessarily limited by a stamp sustained in its path by the stamp strip feed belts 273—273 and hence the reciprocation of the pin 286 in its guide is similarly limited. When no stamp is pres-

ent beneath the feeler 279, said feeler is free to pass down between the belts 273—273 and to effect the drawing of the pin 286 wholly out of the path of the cam 243 whereupon said cam and its clutch member are moved by their spring into engagement with the clutch member of the gear 247 to drive this gear 247 and the gear 237 of the shaft 234 which meshes therewith. By the rotation of the shaft 234 this upper stamp strip cutter 253 is caused to swing upward and, subsequently, downward through the action of the cam 248, and the mechanism operated thereby, while the stamp sheet feed belt 231 is operated by its chain and sprockets to feed forward a sheet of stamps on said belt, beneath the upper cutter member, until the forward edge of the stamp sheet is intercepted by the gage plate 259, the frictional engagement of the stamp sheet with, its feed belt permitting said sheet to adjust itself to bring the forward edge of said sheet accurately against the side of the gage plate whereby the descending stamp strip cutter will make a cut parallel with said forward edge of the stamp sheet.

It is to be understood that the connection and operation of the driving mechanism and of the stamp strip cutting mechanism is, preferably, extremely rapid and, when the strip of stamps drops on to the feed bands 273—273 said strip is fed rapidly laterally toward the single stamp cutter 290 and, when said cutter is in the elevated position, on to the single stamp feed band 310 where its forward end is intercepted by the gage plate 311 which prevents the forward movement of the stamp strip while the single stamp cutter 290 descends and severs the stamp on the single stamp feed band from the strip of stamps and also effects the swinging of the gage plate 311 to permit the single stamp to pass to the stamp supporting plate 211 of the arms 210. At this time an envelop is timed to pass beneath the plate 211 having previously received moisture from the stamp position moistener as above described, the moistened area passing beneath the stamp supported by the plate 211, one edge of the stamp extending beyond the forward edge of said plate so that, as the frame 204 and the arms 210 are moved downward, this edge of the stamp is pressed down on to the moistened area of the envelop by the friction roll 209 and as this edge portion of the stamp adheres to the moistened area the stamp is drawn along by the envelop under the roll 209 which presses the stamp down on to the envelop.

After the stamp has been applied the envelop is carried forward by the feeding rolls and moisture is applied to the gummed surface of the envelop flap by the flap moistening roll 74 after which the flap comes into contact with the edge 96 of the flap closing

blade 95 and is turned up against the body of the envelop being then pressed against the body of the envelop by the final pressure rolls which feed the envelop from the machine.

By the provision of means for moving the lower envelop feed rolls away from the path in which the envelop flap is turned toward and from the body of the envelop the flaps may vary considerably in size and shape without being interfered with in their passage through the machine, while envelops of any size may be operated upon owing to the fact that the path of the envelops is not limited by the dimensions of the machine.

While we have herein described specific means for carrying our invention into practice we do not desire or intend to limit ourselves thereby to the specific features described.

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

1. An envelop stamping and sealing machine comprising means for feeding forward an envelop, means for opening the flap thereof at an angle with the body, means for positively guiding the flap in the lengthwise direction to guide the envelop, and means for applying a stamp to the envelop while so guided.

2. An envelop stamping and sealing machine comprising means for feeding forward an envelop endwise in the horizontal position, means for turning the flap to a vertical position, means for guiding said flap in said position, a stamp position moistener, and means for applying a stamp to the moistened stamp position.

3. An envelop stamping and sealing machine comprising means for feeding forward an envelop, means for turning the flap thereof to an angle with the body, means for positively guiding the envelop flap in said position to guide the envelop, means for moistening the face of the envelop, means for applying a stamp thereto, means for subsequently moistening the flap, and means for turning the flap against the body of the envelop.

4. An envelop sealing and stamping machine comprising series of rolls between which envelops may be fed lengthwise, means extending into the path of the envelops for engaging the flaps of the envelops and turning said flaps approximately at right angles with the bodies, guides for said opened flap, a stamp position moistener, and means for applying stamps to the moistened portions of the envelops.

5. An envelop sealing and stamping machine comprising series of rolls between which envelops may be fed forward, a flap opener plate extending into the path of the

envelops and having a curved member adapted to turn the envelop flaps away from their bodies, a guide adapted to receive the flaps when so turned, a stamp position moistener, means for supporting the envelop close to the guide, and a stamp applying mechanism adapted to deliver a stamp to an envelop above said guide.

6. Envelop sealing and stamping means comprising an envelop feed, driving means therefor including a clutch member, stamp applying means having driving means including a clutch member, an electrically controlled release for such connection including a normally open electric circuit having terminals a circuit closer, a pivoted detector, extending into the path of the envelop, and connected with said circuit closer.

7. Envelop sealing and stamping mechanism comprising stamp applying means, driving mechanism therefor including a clutch member, envelop feeding means, driving means therefor including a clutch member, means for connecting said clutch members and electrically actuated means for releasing said clutch connection.

8. Envelop sealing and stamping means comprising envelop feed driving mechanism including a clutch member, stamp applying mechanism driving means also including a clutch member, means for connecting said clutch members, electrically actuated means for releasing said clutch connection including an electric circuit having two fixed terminals, a circuit closer means controlled by the presence of an envelop adjacent the stamping position for actuating the circuit closer to close the circuit, and means for subsequently retracting said circuit closer to open the circuit.

9. Envelop sealing and stamping means comprising envelop feed driving mechanism including a clutch member, stamp applying mechanism driving means including a clutch member, means for connecting the clutch members, electrically controlled means for normally holding the clutch connection disengaged and preventing the rotation of the stamp applying means clutch member, a movable circuit closer included in said electrical means, detector controlled means for moving said circuit closer to close the circuit, and mechanical means actuated through connection with the stamp applying driving means for returning said circuit closer to open the circuit.

10. Envelop sealing and stamping mechanism comprising driving mechanism therefor including clutch members, means for connecting the clutch members, means for releasing said connection, electrical means for actuating said releasing means, including an electric circuit having terminals, a pivoted circuit closer, means actuated by the

presence of an envelop for moving said circuit closer to close the circuit, a lever pivotally mounted and in engagement with said circuit closer, a cam rotatably mounted adjacent to said lever, and means for driving said cam.

11. Envelop sealing and stamping mechanism comprising driving mechanism therefor comprising rotatable clutch members one of which has a stop and a means for engaging the other of said members, means normally bearing against said engaging means to hold the clutch members in the released position, movable means normally engaging said stop for preventing rotation of the clutch member having said stop and electrically controlled means for moving said bearing means and said movable means from their normal positions.

12. Envelop sealing and stamping means comprising means for feeding forward envelops endwise in horizontal position, means for opening the envelop flap, moistening means operable against said opened flap, and stamp position moistening means adapted to supply moisture to the face of the envelop before the flap is moistened.

13. Envelop sealing and stamping means comprising means for feeding forward an envelop, means for moistening the stamp receiving face thereof, means for moistening the flap and stamp applying means located between said moisteners.

14. Envelop sealing and stamping mechanism comprising means for feeding forward envelops, means for moistening the stamp receiving face thereof, means for moving a stamp toward said moistened area while the envelop is moving forward, and a presser under which the stamp is drawn by the moving envelop prior to the adhesion of the entire stamp.

15. Envelop sealing and stamping mechanism comprising means for feeding forward envelops in succession, means for moistening the stamp receiving faces thereof, means for sustaining a single stamp above the path of the envelop, with a portion of its gummed surface unsupported, and means for depressing such stamp sustaining means to move the unsupported portion of said gummed surface into contact with the moistened area of an envelop.

16. Envelop sealing and stamping mechanism comprising means for feeding envelops forward, means for moistening the stamp receiving faces thereof, stamp sustaining means movably mounted above the path of the envelops, driving means therefor, a clutch connection between said driving means and feeding mechanism, and a detector located in the path of the envelop by the movement of which the clutch is connected to operate said driving means to move

the stamp sustaining means toward the path of the envelop.

17. Envelop sealing and stamping means comprising means for feeding envelops forward, means for moistening the stamp receiving faces thereof, movable means for successively receiving and sustaining single stamps above the path of the envelops, means for operating said sustaining means to move the same toward the path of the envelops, and detector controlled means for bringing said operating means into action as an envelop approaches the stamping position.

18. Envelop sealing and stamping mechanism comprising a movable stamp supporting and applying plate narrower than the stamp, means for moving the same, means for moistening the stamp receiving face of the envelop, and means for moving forward the envelop during the application of the stamp.

19. Envelop sealing and stamping mechanism comprising means for feeding forward envelops, means for moistening the stamp receiving faces thereof, a stamp sustaining plate movably mounted beyond one edge of which the stamp may extend, stamp pressing means mounted to move with the stamp sustaining means, and means for moving said stamp sustaining means and stamp pressing means toward the path of the envelop.

20. Envelop sealing and stamping means comprising means for feeding forward envelops, means for moistening the stamp receiving faces thereof, a stamp receiving plate narrower than a stamp movably mounted above the path of the envelop, means adapted to slightly press a stamp on said plate without retarding its forward movement, stamp pressing means movably mounted beyond the edge of said plate, to act on the stamp in its progress from said plate, and means for moving said plate and said presser devices toward the path of the envelops.

21. Envelop sealing and stamping means comprising envelop feeding means, driving means therefor including a clutch member, a stamp sheet feed, driving means therefor including a clutch member complementary to that of the envelop feed driving means, and detector controlled means for effecting the engagement of said clutch members.

22. Envelop sealing and stamping means comprising a stamp sheet feed, driving means therefor including a clutch member, a stamp strip cutter connected with said driving means, a detector adapted to be supported in the inoperative position by a stamp, a clutch member complementary to that of the sheet feed driving means, and connections between said clutch member and said detector.

23. Envelop stamping means comprising

a stamp strip feed consisting of a pair of
belts, rolls and said belts mounted thereon,
and having an opening between said rolls, a
detector movably mounted in line with said
5 opening, and stamp sheet feed driving mech-
anism therefor adapted to be brought into
operation by the movement of said detector.

In testimony whereof we affix our signa-
tures in presence of two witnesses.

LAURITS M. NIELSEN.
HENRY WELLER.

Witnesses:

LOUISE C. CLEARY,
H. J. MILLER.