

Sept. 3, 1940.

H. P. ELLIOTT

2,213,490

ADDRESSING AND STATISTICAL PRINTING MACHINE

Filed May 21, 1938

5 Sheets-Sheet 1

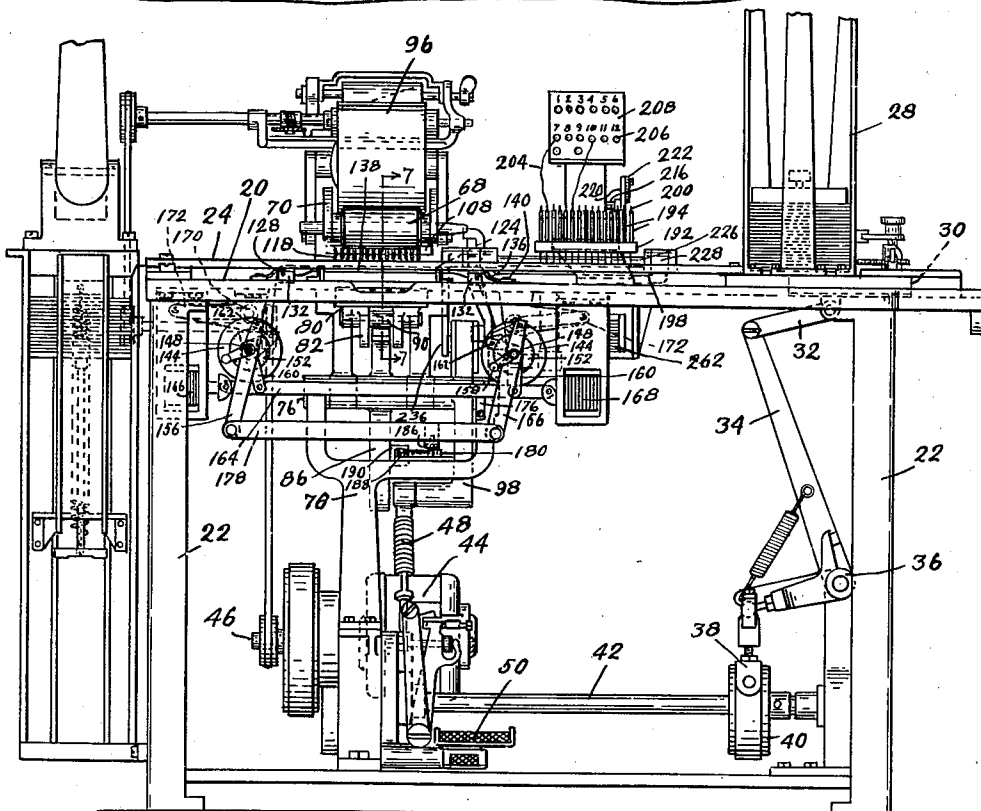
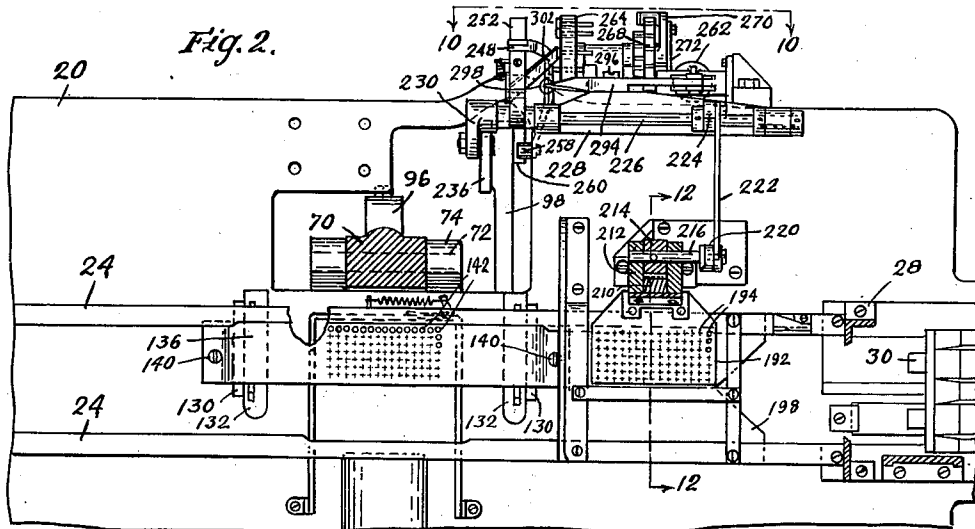


Fig. 1.

Inventor,

Harmon P. Elliott

W. J. Freeman
att'y

Sept. 3, 1940.

H. P. ELLIOTT

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5 Sheets-Sheet 2

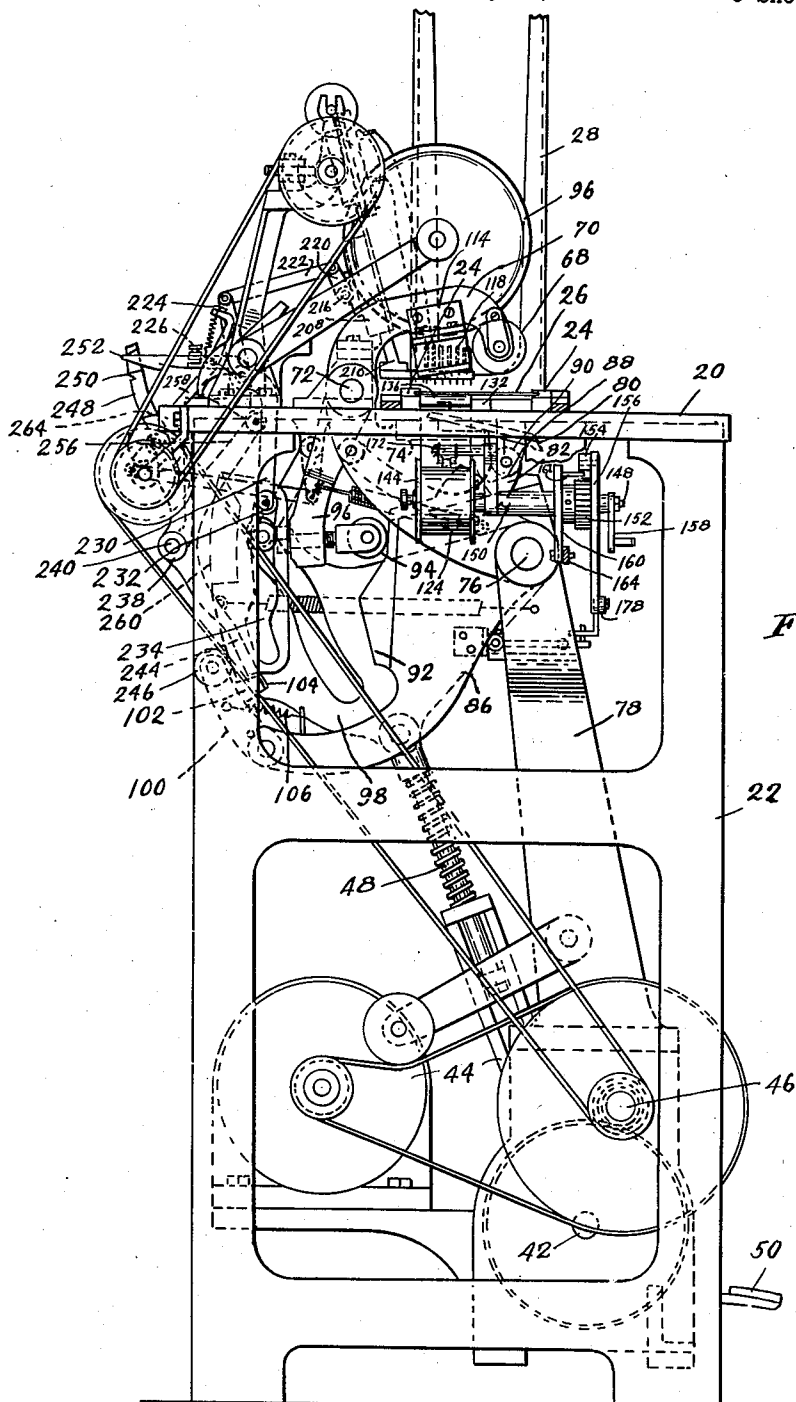


Fig. 3.

Inventor.
Harmon B. Elliott
J. Greenwood *att'y*

Sept. 3, 1940.

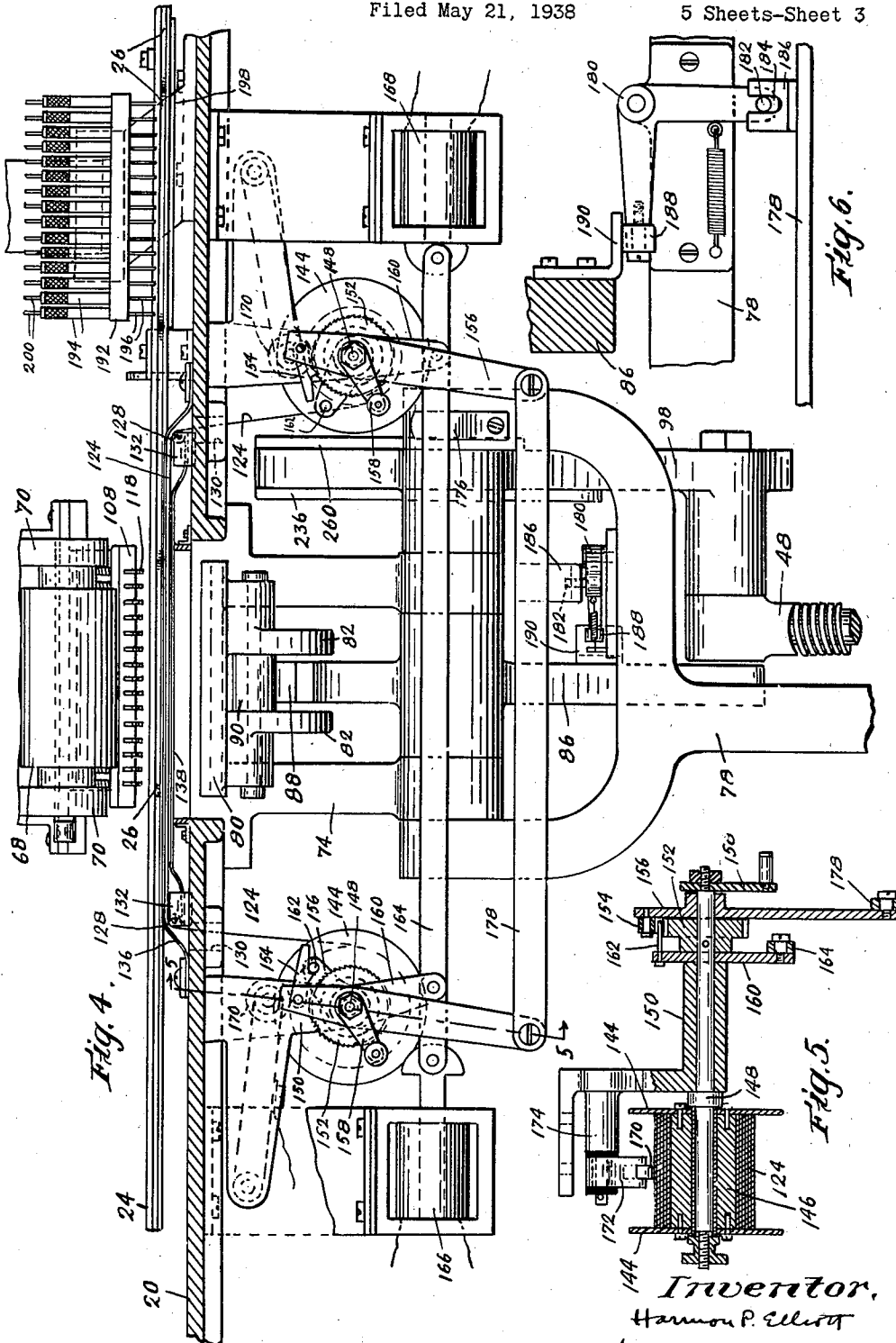
H. P. ELLIOTT

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ADDRESSING AND STATISTICAL PRINTING MACHINE

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5 Sheets-Sheet 3



Inventor,
Harmon P. Elliott
H. P. Elliott

Sept. 3, 1940.

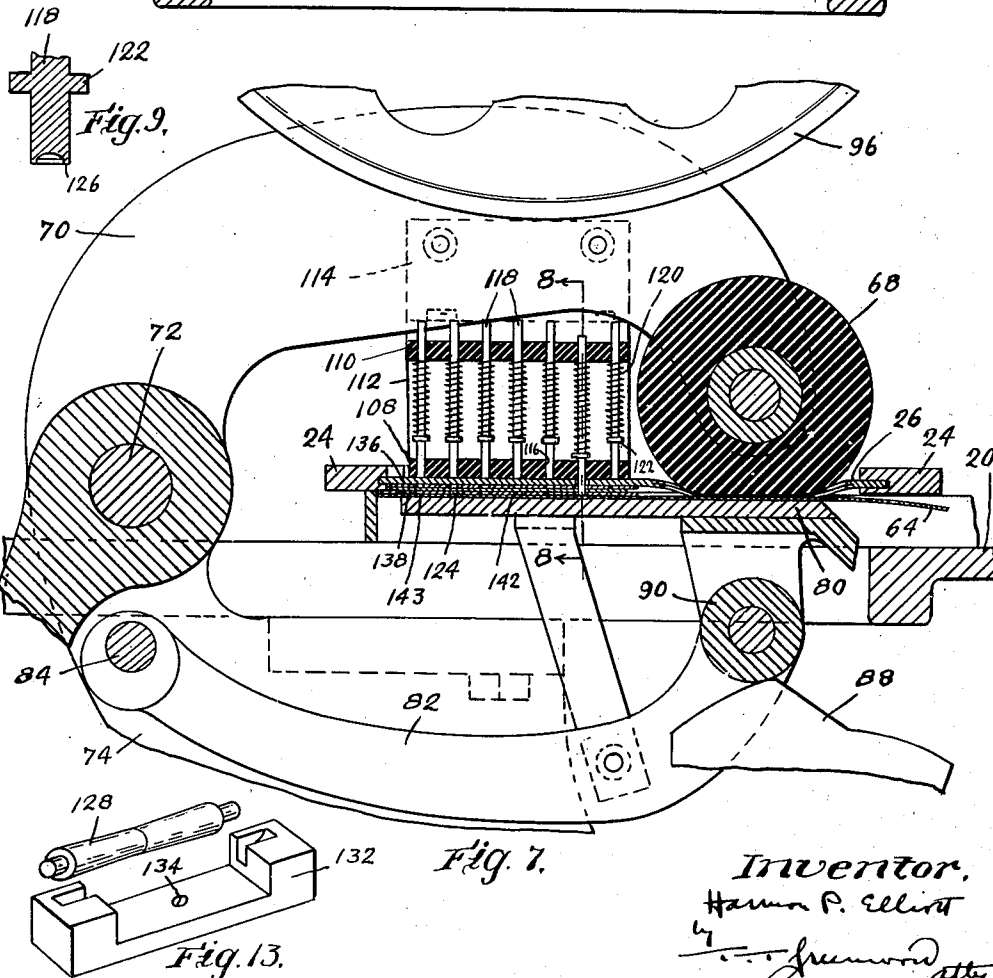
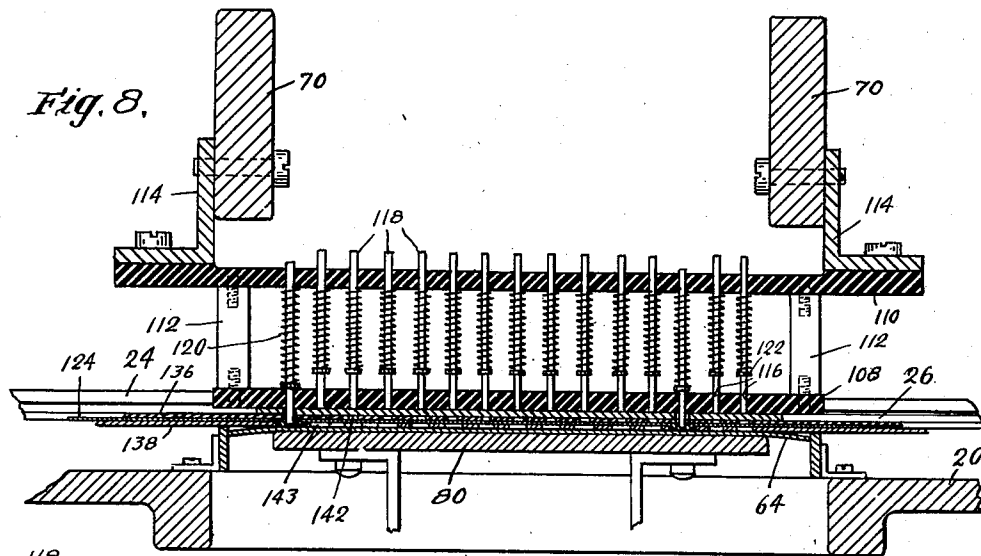
H. P. ELLIOTT

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ADDRESSING AND STATISTICAL PRINTING MACHINE

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5 Sheets-Sheet 4



Inventor.
Harmon P. Elliott
by J. J. Greenwood atty

Sept. 3, 1940.

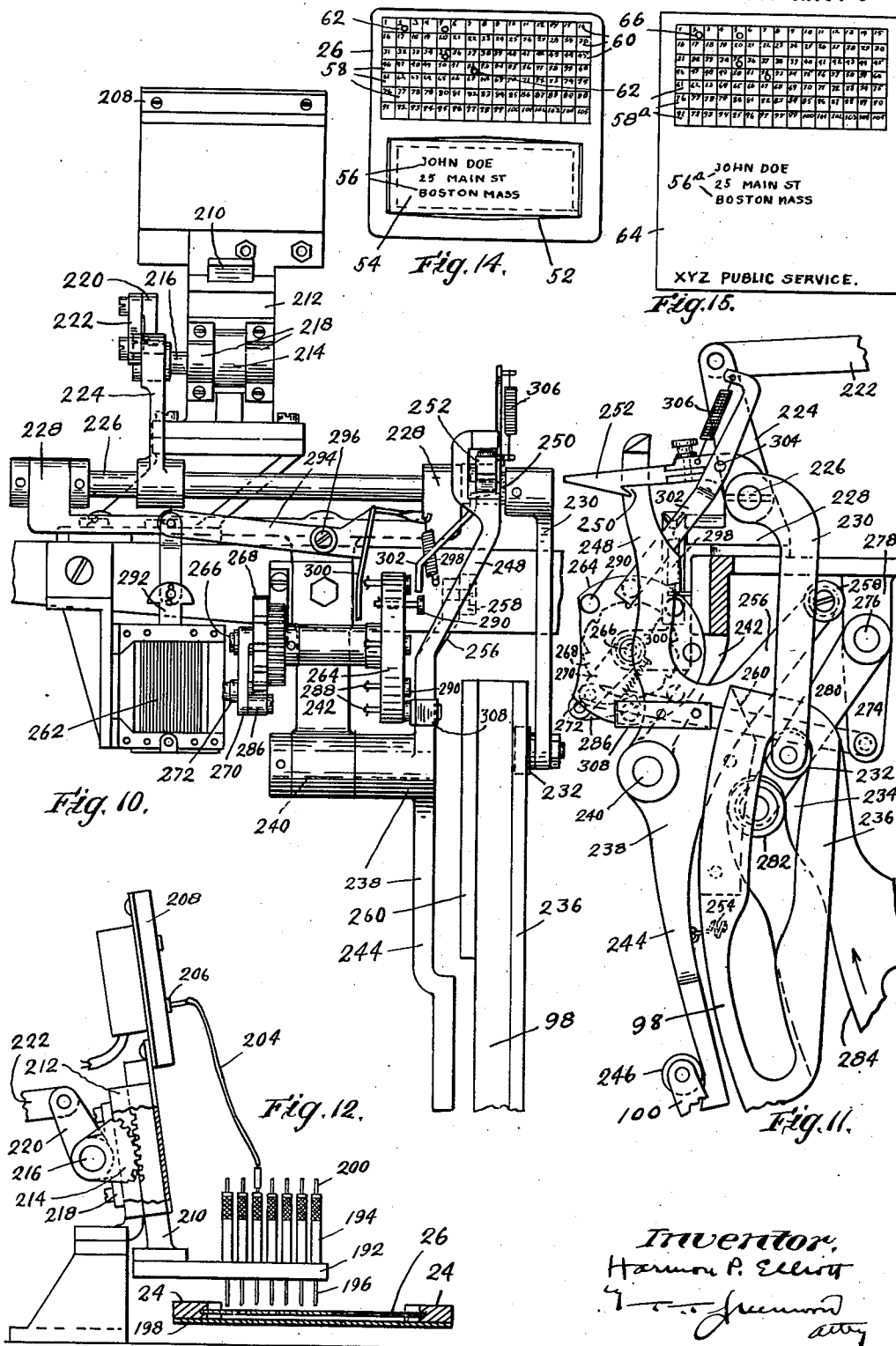
H. P. ELLIOTT

2,213,490

ADDRESSING AND STATISTICAL PRINTING MACHINE

Filed May 21, 1938

5 Sheets-Sheet 5



Inventor,
Harmon P. Elliott
J. C. Freeman
att'y

UNITED STATES PATENT OFFICE

2,213,490

ADDRESSING AND STATISTICAL PRINTING
MACHINE

Harmon P. Elliott, Watertown, Mass.

Application May 21, 1938, Serial No. 209,264

17 Claims. (Cl. 101—58)

This invention relates to addressing machines especially adapted for the recording of statistical items and addresses and employing printing devices, such as stencils, containing address printing characters and means controlling the recording of statistical items, the addressing machine being so arranged as to record the address directly by the use of the stencil and the statistical items under control of the stencil, a record of the address and the statistical items being preferably made on the same record sheet.

The machine of the present invention is of the same general type as that disclosed and claimed in my copending application Serial No. 69,803, filed March 20, 1936, now patented, Number 2,134,815, dated November 1, 1938.

In the machine of said application, however, the recording of the statistical items was accomplished by piercing the record sheet.

It is an object of the present invention to make a record of the statistical items by means such as ink marks on the record sheet under control of the printing device.

The machine of the present invention is to be distinguished from my copending application Serial No. 75,118, filed April 18, 1936, in that in the present machine the marking mechanism is separate from the printing device or stencil and is controlled by the printing device or stencil, whereas, in said application the marking members are a part of the printing device.

A further object of the invention is the provision of an addressing machine of the statistical type wherein the statistical printing mechanism comprises a series of members under control of the printing devices and operative to press an ink carrying ribbon or the like onto the record sheet.

The invention further contemplates means for supporting and shielding the ribbon from promiscuous contact with the printing devices and with the record sheets.

Another object of the invention is the provision of an improved form of ribbon take-up and reversing mechanism controlled and operated by parts essential to the addressing elements of the machine.

A yet further object of the invention is the provision of an addressing machine operative upon a series of printing devices having address printing characters and means controlling the recording of items of statistical information, wherein the last named means also controls the operation of the machine to make a record of the items, and also of the address of a printing

device or to pass the device without effecting an operation thereon, as may be determined by the setting of the machine.

A yet further object of the invention is the provision of an addressing machine of the type immediately above set forth wherein selector mechanism controlling the operation of the addressing and item marking elements is also controlled by the item controlling means of the printing devices to effect an operation of the machine, or to prevent an operation thereof as determined by the nature of the statistical items denoted by the controlling means of the printing devices.

Another object is generally to improve the construction and operation of addressing machines.

Fig. 1 is a front elevation of an addressing and statistical item printing machine embodying the present invention.

Fig. 2 is an enlarged plan detail of the table of the machine at the addressing and selecting positions, parts of the mechanism above the guideway for the printing devices being removed.

Fig. 3 is a vertical elevation of the left hand end of the machine of Fig. 1, the receiver for the used printing devices being removed.

Fig. 4 is a front detailed elevation of the selector and printing mechanism taken along the longitudinal line of the guideway for the printing devices.

Fig. 5 is a sectional detail taken along line 5—5 of Fig. 4 and illustrating particularly a take-up and reversing mechanism for the carbon ribbon.

Fig. 6 is a plan detail of the operating mechanism for the ribbon take-up.

Fig. 7 is a detailed sectional elevation through the printing mechanism of the machine taken along line 7—7 of Fig. 1.

Fig. 8 is a detailed sectional elevation taken along line 8—8 of Fig. 7 and illustrating particularly the action of the item printing means.

Fig. 9 is an enlarged sectional detail of the lower end of an item printing pin.

Fig. 10 is a rear view of the selector controlled mechanism which controls the printing operation, the view being taken along line 10—10 of Fig. 2.

Fig. 11 is a side elevation of the mechanism of Fig. 10.

Fig. 12 is a sectional detail of the selector operating mechanism taken along line 12—12 of Fig. 2.

Fig. 13 is a perspective detail of a ribbon roller and its support.

Fig. 14 is a plan view of a printing device.

Fig. 15 is a plan view of a printed record sheet.

5 The machine embodying the present invention includes a table 20 mounted on uprights 22. A guideway for the printing devices is located above the table and extends from right to left thereof. Said guideway comprises a pair of
10 spaced rails 24 having confronting grooved edges in the grooves of which a succession of printing devices 26, herein shown as stencils, one of which is illustrated in Fig. 14, are advanced from a holder 28 located above the guideway at the right
15 hand end thereof.

The successive lowermost stencils are advanced from the holder into and along the guideway by mechanism including a pusher 30 connected through a link 32 with the upstanding long arm
20 34 of a bell crank lever 36. Said lever is reciprocated by means of an eccentric strap 38 operating on an eccentric 40 rotated by the shaft 42 from the power mechanism generally indicated by the numeral 44.

25 The power mechanism includes a continuously rotating shaft 46 and mechanism now well known in the art for reciprocating the connecting rod 48 that operates the printing mechanism in a manner hereinafter to be explained and also
30 the shaft 42 throughout a complete operative cycle following the depression and subsequent release of the control pedal 50. Thus in each operative cycle a stencil is advanced out of the holder and into and along the guideway. The
35 successive stencils pass along the guideway to the action of printing mechanism.

The stencil employed in connection with the invention and as illustrated in Fig. 14 comprises a stiff paper stock frame and having the rectangular window 52 in the lower part thereof
40 occupied by a stencil sheet 54 bearing the address 56. The face of the stencil above the window is provided with a plurality of zones 58 formed conveniently by horizontal and vertical
45 lines. Each zone preferably is individually marked by a different number 60 and denotes an individual statistical item that may be associated with the address. For instance, the address may be that of a customer of a public utility which
50 also sells various electrical consuming devices, each of which may be represented by the various code numerals of the zones 58 of the stencils. If the addressee owns some of the power consuming devices this fact is indicated on the stencil
55 by apertures or perforations 62 located in the zones corresponding to such devices. These perforations control printing mechanism of the machine to record on a record sheet, such as the sheet 64, Fig. 15, marks 66 which denote the same
60 items as those denoted by the perforations 62.

The record sheet preferably is formed with a plurality of zones 58a corresponding to those of the stencil and the marks 66 are formed in zones corresponding to the perforated zones of the
65 stencil. The address 56 of the stencil is recorded on the record sheet at 56a.

The successive stencils or printing devices are advanced along the guideway to printing mechanism which prints on a record sheet the address
70 56 of the stencil and also marks 66 corresponding to the perforations 62 of the stencil.

The printing mechanism includes an elastic printing roll 68 which overlies the address bearing part of the stencil and is journaled on and
75 located between the forward ends of a pair of

rearwardly extended arms 70. Said arms are integral and are journaled on a shaft 72 carried by a bracket 74 fixed to the underside of the table 20 and also supported through a shaft 76, see
5 Figs. 1 and 3, by an upright 78 rising from the power mechanism 44. A platen 80 which underlies both the address part of the stencil and the perforation receiving part thereof is reciprocable under the stencil and is carried by the forward
10 ends of arms 82 which are journaled at 84 to the bracket 74. The roll and platen supporting members or arms are reciprocated by a cam arm 86, see Figs. 1, 3 and 4, pivoted on and extended rearwardly of and also above the aforesaid shaft 76. Said arm 86 has on its upper part the cam face
15 88 which engages a cam roller 90 carried by the platen arms 82. Thus as the cam member 86 reciprocates the platen is also caused to reciprocate and to hold a record sheet 64 thereon under the stencil during the printing operation. 20
The cam member 86 also has a cam face portion 92 on the rear part thereof which engages a cam roller 94 carried by a depending arm 96 of the printing roll arm 70 so that as the cam member 86 reciprocates the printing roll is caused to be
25 reciprocated into and out of printing engagement with the address portion of the stencil. The surface of the printing roll 68 receives ink from the ink drum 96 of inking mechanism not important to the present invention. 30

The cam member 86 is reciprocated under control of the stencils by mechanism including an operating arm 98 fixed to the aforesaid shaft 76 and reciprocated by the connecting rod 48. The cam member 86 has a disengageable connection with the operating member 86 through a
35 latch 100. Said latch is pivoted to the cam member and has a detent 102 which is held releasably located in a notch 104 of the operating member 98 by a spring 106. Thus for each reciprocation
40 of the operating member 98 the platen and printing roll are caused to effect a printing operation upon the stencil therebetween. When, however, the latch 100 is disconnected from the operating member no printing operation takes place although a stencil is advanced out from position
45 between the inactive printing roll and platen. The control of the printing operation by the stencils will be described hereinafter.

The printing of the marks 66 on the record sheet 64 is effected during the printing of the address. The mark printing mechanism, see especially Figs. 3, 7, 8 and 9, includes a pair of vertically spaced plates 108 and 110, respectively, connected by spacers 112, the upper plate 110
55 being secured by bracket plates 114 to the supporting arms 70 of the print roller and behind said roller. Said plates 108 and 110 are provided with axially aligned apertures 116 therein, there being as many apertures as there are possible
60 apertures 62 in the stencil and the apertures being aligned with the locations for the stencil apertures. A marking or printing pin 118 is located in each pair of apertures in the plates 108, 110, a compression spring 120 encircling
65 each pin and bearing against the under face of the upper plate and a shoulder 122 of the pin, whereby to urge the pin for downward movement and to hold the pin yieldingly with its shoulder against the upper face of the lower
70 plate. The arrangement is such that when the pin frame is located above the stencil all pins are extended downwardly below the lower plate of the frame into position for cooperation with the stencil. When the printing frame is moved 75

downwardly such pins as find a perforation in the stencil thereunder pass through the perforation and mark upon the record sheet. The other pins engage unperforated sections of the stencil and are raised relatively to the pin frame and against the compression of their springs 120 and do not make a mark upon the record sheet.

The marking of the record sheet is effected by an ink bearing ribbon 124 and the bottom end of each marking pin is cup-shaped as illustrated in Fig. 9 and has the annular face 126 which engages the ribbon and thus marks a clear cut circular mark 66 on the record sheet. The ribbon 124 is extended longitudinally of the stencil guideway under the stencils therein and under the pins 118 and over the platen 80 and thence at both sides of the printing position passes over supporting rollers 128, see Figs. 4 and 13, and thence downwardly under the table through slots or openings 130 in the table. The supporting rolls 128 are journaled in blocks 132 located in grooves of the table and thus are held in alignment cross-wise of the stencil guideway. Said blocks are secured to the table each by a single screw 134 so that they are readily removable when the machine is intended for ordinary addressing purposes.

The ribbon 124 is disposed between thin and preferably flexible upper and lower plates 136 and 138, respectively, the plates preferably being sheet metal plates a few thousandths of an inch thick. The upper plate 136 has downwardly reflexed end portions which are secured to the table beyond the roller support 132 by screws 140. The lower plate 138 is disposed between the roller supports 132 and has downwardly reflexed ends which are secured to said supports by the aforesaid screws 134. The arrangement is such that the plates can be readily removed when desired.

Said upper and lower plates 136, 138 are provided with aligned perforations 142, 143, see Fig. 8, which are also aligned with the pins 118 and are adapted to be aligned with possible perforations 62 of the stencil when the stencil is in printing position. The openings or perforations 143 in the lower shield plate are preferably larger than the stencil perforations 62 and are sufficiently large, and at least the lower plate is sufficiently thin, so that the ribbon interposed between the plates can be pressed by a pin 118 through a perforation of the lower plate and into printing contact with a record sheet held thereunder by the platen 80. The holes 142 in the upper plate are smaller so that the ribbon will not be drawn into the hole if it should adhere to a pin when the pin is withdrawn. Thus the pins 118 are caused to print marks on the record sheet under control of the perforations of the stencil and in positions on the record sheet corresponding to the positions of the perforations of the stencil.

The ends of the ribbons are wound upon spools 144 having metal hubs 146, each of which is fixed to a separate shaft 148, see Fig. 5, journaled in a bracket 150 fixed to and depending below the table 28. The shaft 148 on the side of the bracket opposite the roll has a ratchet wheel 152 fixed thereto which is adapted to be engaged and rotated intermittently by a pawl 154 pivoted to a reciprocating arm 156 journaled on said shaft and depending therebelow. The shaft 143 in front of said arm 156 also has a crank handle 158 fixed thereto by which the shaft and ribbon spool can be rotated manually.

The engagement of the pawl 154 with the ratchet wheel 152 is under control of a bell crank lever 160 journaled loosely on the shaft 148 behind the ratchet wheel and having a pin 162 which underlies the pawl and can raise it away from the ratchet wheel or allow it to descend into engagement therewith. The bell crank levers of each spool are interconnected by the link 164 and the arrangement is such that when the link 164 is in one position, as say a right hand position, the right hand pawl is in engagement with its associated ratchet so that the ribbon is advanced intermittently from the left to the right and the left hand ratchet is disengaged from its associated ratchet. When the link 164 is in the opposite or left hand position the arrangement is such that the ribbon is wound in a step by step manner upon the left hand spool and unwinds from the right hand spool.

Movement of the link and the associated bell crank levers into the two extreme positions is under control of a pair of electromagnets 166 and 168. Energization of the left hand electromagnet 166 moves the link 164 and associated bell cranks to the left and energization of the magnet 168 moves the link 164 and associated parts to the right. Each one of the two magnets is under control of a roller 170 journaled on an arm 172 pivoted on but electrically insulated from a stud 174 of the bracket 150. The arm by its weight is adapted to press the roller 170 upon the ribbon of its associated spool and to come into electrical engagement with the grounded hub 146 of the spool when the ribbon is almost wound therefrom. The rollers of the two ribbons control the energization of the electromagnets associated with the opposite rolls. That is to say, the left hand roller 170 controls the electromagnet 168 and the right hand roller controls the electromagnet 166. Thus when, for instance, the ribbon is practically unwound from the left hand spool the circuit of the electromagnet 168 is energized to cause the link 164 to move to the right and thereby cause the left hand spool to become the winding spool and the full right hand spool to become the idler spool. Accidental shifting of the link 164 is prevented by the spring finger 176 which is in frictional engagement with the link 164.

The spool rotating levers 156 are interconnected by the link 178. Said link is reciprocated by means of a bell crank lever 180, see Fig. 6, pivoted upon the upper part of the brace member 78 and having an upstanding pin 182 in the forwardly projecting arm of the lever which is located loosely in a slot 184 of a projection 186 of the link 178. The right angularly related arm of the bell crank lever is provided with a roller 188 which is adapted to be engaged by a forwardly reciprocating projection 190 of the platen arm and printing roll reciprocating arm 86 so that the ribbon is advanced a step at each printing operation of the machine but is not advanced when the printing mechanism is disabled.

Control of the printing operation is effected by selector mechanism under control of the data denoting perforations of the stencils or printing devices. The selector mechanism, see Figs. 1, 2, 4 and 12, includes an insulating plate 192 disposed over the stencil guideway between the stencil holder 28 and the printing mechanism and so arranged that when there is a stencil in printing position there is another stencil in selector position under the plates 192 and under stencil interposed between these two stencils. The insulating

plate 192 carries a plurality of feeler or selector pin housings 194 in which selector pins 196 are vertically movable and are held in a normal low position by springs not shown in said housings. There are as many pins 196 as there are possible perforations in the stencil and a spacing between the pins is the same as the spacing between the possible perforations of the stencils. The plate 192 is reciprocable to move the pins into and out of contact with the underlying stencil. Such pins as find stencil apertures aligned therewith pass through the apertures and make electrical engagement with an underlying contact plate 198 and thereby complete an electric circuit for the control of the printing mechanism.

Any selected feeler pins can be utilized to control the printing mechanism. The housings 194 have unwardly projecting terminals 200 which can be removably engaged with terminals 202 of flexible cords 204, the other terminals of which can be plugged in sockets 206 of a plug board 208. The arrangement herein shown permits the use of any number of selector pins up to twelve, although there is no restriction as to the number of selector pins that may be utilized. The plug sockets 206 of the plug board can be directly electrically connected or can be associated with well known control mechanism not shown so that various combinations of selector control can be made.

The use of a selector having all of its possible pins permanently carried by it with provision for selectively connecting the pins in circuit is a considerable advantage over the prior arrangements where the selector carried only the pins desired for one particular kind or class of printing and the pins had to be removed and applied to form the combination desired with the result that the pins would become misplaced or bent and a change from one operation to another could not be made as conveniently or quickly as with the present arrangement.

The supporting plate 192 is fixed to the lower end of an upwardly extended rack bar 210 which is inclined somewhat away from the vertical and is vertically slidable in a support 212. The rack is reciprocated by means of a gear segment 214 which has teeth meshing with the teeth of the rack and is fixed to a shaft 216 journaled in brackets 218 of the support. Said shaft has an arm 220 fixed thereto which is pivotally connected to the forward end of a link 222, the rear end of which is pivotally connected to an upstanding arm 224 fixed to a shaft 226 journaled in ears of a bracket plate 228 which is secured to the rear edge of the table and supports the mechanism controlled by the selector pins. The selector makes a feeling operation on each stencil.

The shaft 226 is reciprocated by a roller arm 230, see Figs. 2, 3, 10 and 11, which is fixed on the end of the shaft and depends below the table and has a roller 232 on the end thereof which operates within a cam slot 234 of a plate 236 fixed to one side of the operating arm 98 and reciprocating therewith. The arrangement is such that the arm 230 and consequently the selector is reciprocated with each reciprocation of the operating arm 98.

As before stated the reciprocation of the operating arm 98 reciprocates the print controlling arm 86 through the latch 100. If the latch 100 is not engaged with the operating arm 98 no reciprocation of the arm 86 takes place. The control of the latch connection is effected by means of a tri-furcated member 238, see especially Figs. 3,

10 and 11. Said member has a laterally projecting stud shaft 240 fixed thereto which is journaled in a depending arm 242 of the bracket plate 228. Said tri-furcated member has a depending arm or furcation 244 which overlies a roller 246 of the latch 100 and when said furcation is moved in a clockwise direction and held in an operated position serves to disconnect the latch 100 from the operating member 98 and hold it in disconnected position. The tri-furcated member 238 is provided with an upstanding arm or furcation 248 which has a detent 250 engaging a latch 252 pivoted loosely on the aforesaid shaft 226 and engageable with the detent to hold the tri-furcated member releasably in a position in which the controlling latch 100 is disengaged. Release of the gravity operated latch 252 causes the tri-furcated member to be swung in a counter-clockwise direction under urge of a spring 254 to effect the connection of the print controlling latch 100 with the reciprocating operating member 98. The tri-furcated member is restored to latch condition by a third cam or furcation 256 having a cam roller 258 which is engageable with a cam member 260 of the operating arm 98, the arrangement being such that said tri-furcated member is rotated in a clockwise direction by the cam member 260 in the upper part of the stroke of the operating arm 98 to effect the re-engagement of the tri-furcated member and the latch 252.

The control of the latch 252 to effect its release of the tri-furcated member is accomplished by means of an electromagnet 262 carried by the bracket 228 and adapted to be energized when the selected feeler pins find perforations in the underlying stencil and pass therethrough and make electrical engagement with the underlying contact plate 198 and effect either directly or indirectly energization of said electromagnet.

Since the selector is two stencils, and hence two operating cycles removed from the printing position, the operation of the electromagnet 262 cannot be passed directly to the latch 252 but must be passed indirectly thereto, or through an accumulator mechanism which delays the operation of the electromagnet for one printing operation or operating cycle.

The accumulator mechanism includes a pin carrying disc 264 fixed to a shaft 266 journaled in a part of the aforesaid bracket 242 and having a ratchet wheel 268 fixed to the other end of the shaft. A pawl carrying arm 270 is loosely journaled on said shaft 266 and is pivotally connected through a link 272 with a depending arm 274 fixed to a shaft 276 journaled in a bracket 278 depending from the underside of the table. An arm 280 is fixed to said shaft 276 and carries a cam roller 282 operating in a cam slot 284 of the operating member 98. The arrangement is such that each reciprocation of the operating member 98 causes a reciprocation of the pawl carrying arm 270 of the accumulator mechanism. Said arm 270 has a pawl 286 which engages the teeth of the ratchet 268 and effects the intermittent advance of the ratchet and hence of the pin carrying disc 260 by the pitch of the ratchet teeth. The disc 260 carries a plurality of pins 288 which are slidable in the disc co-axially thereof and have outstanding heads 290.

The operation of the electromagnet is such as to move a pin toward the right. To this end the armature 292 of the electromagnet is connected to one end of a lever 294 pivoted on a screw 296 of the supporting frame 228 and normally held

with the armature end of the lever in an elevated position by a spring 298. Said lever is provided with an extension 309 which is disposed in the path of travel of the left hand ends of the pins and in line with a pin in the rest position of the disc. When the electromagnet is energized the armature is moved in a counter-clockwise direction and the projection 300 is caused to displace a pin towards the left and into position behind a depending finger 302 pivoted at 304 for restricted movement on the latch and connected therewith by a tension spring 305. Thus as the disc with the shifted pin is rotated the pin is caused to bear against the finger 302 and move it and hence to elevate the latch 252 to release the tri-furcated member 238 and effect the connection of the print operating arm 96 with the operating arm 98 and thereby effect a printing operation. Since, however, the pin controlling disc is operated in an intermittent manner and one printing operation takes place between the displacement of a pin by the electromagnet and the release of the tri-furcated member from the latch 252 by the displaced pin the printing operation effected by the connection of the print controlling arm 86 with the operating arm 98 is made on that stencil that caused the previous energization of the electromagnet 262. The pins are moved toward the left or restored to their initial position by wiping over a wiping finger 308 carried conveniently by the tri-furcated member 238. The time of resetting the pins is not important except that they should be reset before they arrive in confronting relation with the magnet operating member 300.

I claim:

1. In an addressing machine operative upon a printing device having address forming characters and item indicating means located in predetermined positions, means for directly printing the address from the device, and means under direct control of said item indicating means for printing marks on a record sheet in positions corresponding to the predetermined positions of said item indicating means, said last named means including an ink applying member movable into pressure-applying relation with the record sheet, and means to support the sheet unyieldingly against such pressure.

2. In an addressing machine operative upon a printing device having address forming characters and item indicating perforations, means for directly recording the address from the device, and printing means having ink-applying members registerable with the perforations and movable therethrough into pressure-applying relation with a record sheet for printing item denoting marks on the sheet, and means to support a record sheet unyieldingly against said pressures.

3. In an addressing machine operative upon a printing device having address forming characters and item denoting perforations, means for directly printing the address from the device, an ink ribbon under the printing device, and means movable through the perforations into engagement with said ribbon for pressing the ribbon against a record sheet to print marks thereon indicative of the items denoted by the perforations.

4. In an addressing machine, a guideway for printing devices having address forming characters and item denoting perforations, means for supporting a record sheet in register with a printing device, means for printing the address di-

rectly from the device, an ink ribbon interposed between the perforations of the printing device and the record sheet, printing means movable through the perforations to press the ribbon upon the record sheet, and means to support the record sheet unyieldingly against the pressure of said printing means.

5. In an addressing machine, a guideway for a succession of stencils having address forming characters and item indicating perforations, means for forcing ink through the address forming characters upon a record sheet to form the address thereon, an ink ribbon associated with the perforations, and printing means controlled by and operating through the perforations for forcing ink from said ribbon onto a record sheet in the localities underlying the perforations.

6. In an addressing machine, a guideway for a succession of printing devices having address forming characters and item indicating perforations, a record sheet support registering with the guideway, a ribbon shield interposed between said support and said guideway having perforations adapted to be aligned with the perforations of a printing device, an ink ribbon in said shield, printing means movable in the perforations of a printing device and said shield to press said ribbon against a record sheet, and means for directly recording the address from a printing device.

7. In an addressing machine, a guideway for a succession of printing devices having address forming characters and items indicating perforations, an ink ribbon underlying said guideway, shield plates overlying and underlying said ribbon having aligned perforations therethrough adapted to be aligned with perforations of a printing device, printing means movable in said perforations to press said ink ribbon against a record sheet, and means for directly recording an address from a printing device.

8. In an addressing machine, a guideway for a succession of printing devices having address forming characters and item indicating perforations, an ink ribbon underlying said guideway, shield plates overlying and underlying said ribbon having aligned perforations therethrough adapted to be aligned with perforations of a printing device, printing means movable in said perforations to press said ink ribbon against a record sheet, and means for directly recording an address from a printing device, said shield plates being thin and flexible.

9. In an addressing machine, a guideway for a succession of printing devices having address forming characters and item indicating perforations, an ink ribbon underlying said guideway, shield plates overlying and underlying said ribbon having aligned perforations therethrough adapted to be aligned with perforations of a printing device, printing means movable in said perforations to press said ink ribbon against a record sheet, and means for directly recording an address from a printing device, the perforations in said upper shield plate being smaller than the perforations in said lower shield plate.

10. In an addressing machine, a guideway for a succession of stencils having address forming characters and item indicating perforations, printing means for directly printing an address from the stencil, an ink ribbon, printing means movable through the perforations of a device for pressing said ribbon against a record sheet, an oscillating actuating member for operating both printing means concurrently, and ribbon advanc-

ing means having an operative connection with and operative by said oscillating member.

11. In an addressing machine, printing mechanism operative upon a succession of printing devices and including an ink ribbon for recording marks under control of the devices, means for advancing said ink ribbon, and electro-responsive means operative in response to a predetermined length of advance in one direction of the ribbon for reversing the direction of advance.

12. In an addressing machine, address printing mechanism, item printing mechanism, a guideway along which are advanced to said mechanisms a succession of printing devices having address forming characters and control means for said item printing mechanism, selector mechanism responsive to the presence of selected control means of said printing devices, and means governed by said selector mechanism in control of the operation of said address printing and item printing mechanisms.

13. In an addressing machine, a guideway along which are advanced a succession of printing devices having address forming characters and item denoting means, printing means for recording an address directly from said printing devices, an item recording means under control of an item denoting means, selector mechanism responsive to selected item denoting means, and means controlled by said selector mechanism for controlling the operation of said printing means.

14. In an addressing machine, a guideway along which are advanced a succession of printing devices having address forming characters and item denoting perforations, printing means operative upon the devices for printing an impression of the address directly from the device, item recording means controlled by the perforations for recording marks indicative of the position of the perforations, selector mechanism controlled by the perforations, and means controlled by said selector mechanism for controlling the operation of said printing and item recording means.

15. In an addressing machine, a guideway

along which are advanced a succession of printing devices having address forming characters and item denoting perforations, address printing means for printing the addresses directly from the devices, item printing means directly controlled by the perforations for printing marks denoting items indicated by the perforations, selector mechanism controlled by the perforations, and means controlled by said selector mechanism for controlling said address and item printing means.

16. In an addressing machine, a guideway along which are advanced a succession of printing devices having address forming characters and item indicating perforations, address printing mechanism for directly printing addresses from the devices, item printing means under control of the perforations, selector printing mechanism controlled by the perforations and located remote from said address and item printing means, and means controlled by said selector mechanism for controlling the operation of said address and item printing means including accumulator mechanism for delaying the control of said address and item printing means by said selector mechanism.

17. In an addressing machine having a guideway along which is advanced a succession of printing devices having print controlling means, and printing mechanism operative on said devices, the combination therewith of selector mechanism responsive to said print controlling means for controlling the operation of said printing mechanism, said selector mechanism including a support associated with said guideway, a plurality of mutually electrically insulated selector pins permanently carried by said support adapted for control by selected print controlling means to control an electric circuit including said pins, a plug board having a plurality of electric plugs, and flexible conductors having detachable and changeable connections with said pins and means having disengageable and changeable connections with selected plugs.

HARMON P. ELLIOTT.