

C. B. YAW.
TYPE WRITING MACHINE.
APPLICATION FILED JUNE 29, 1906.

1,044,116.

Patented Nov. 12, 1912.

5 SHEETS—SHEET 1.

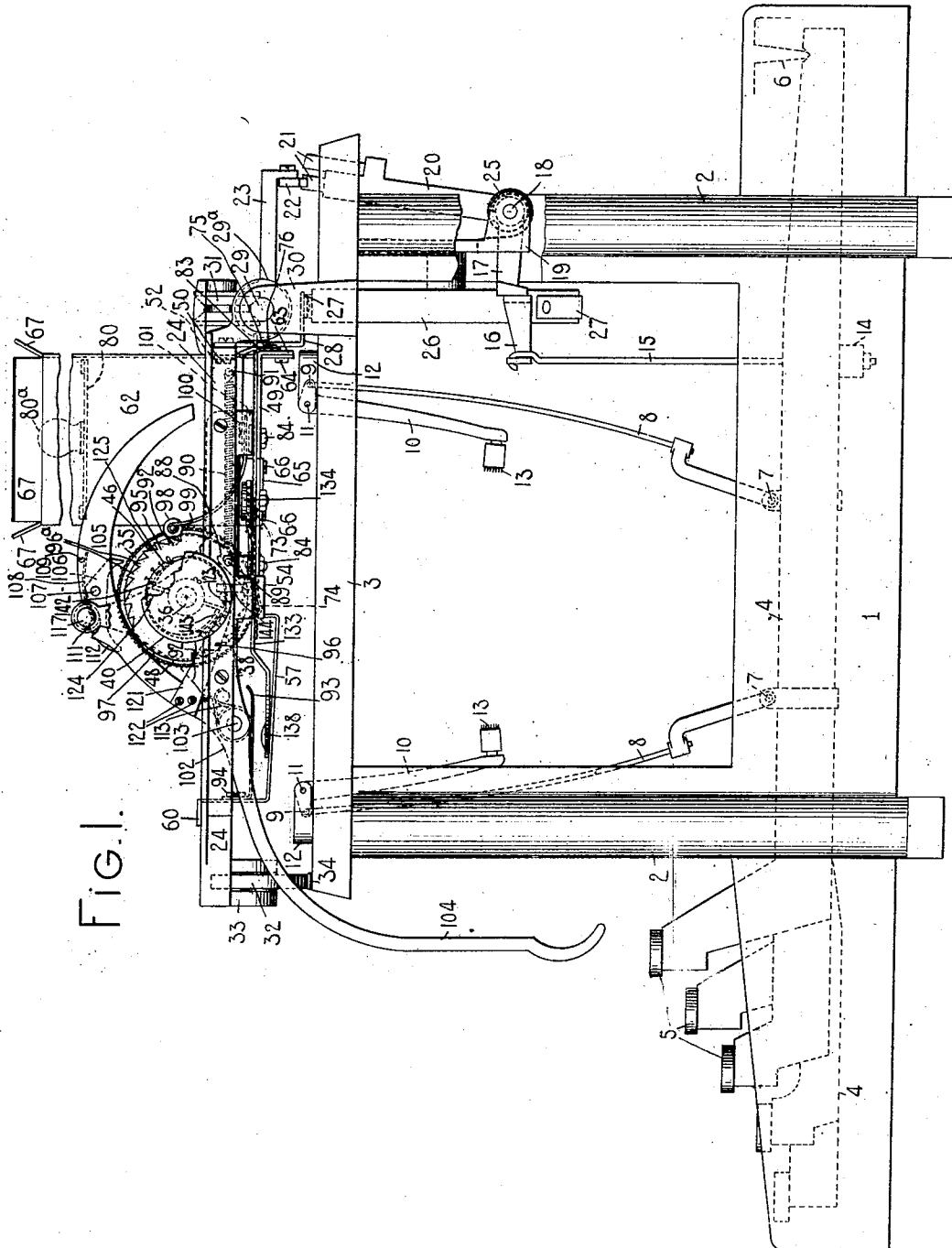


FIG. 1.

WITNESSES.

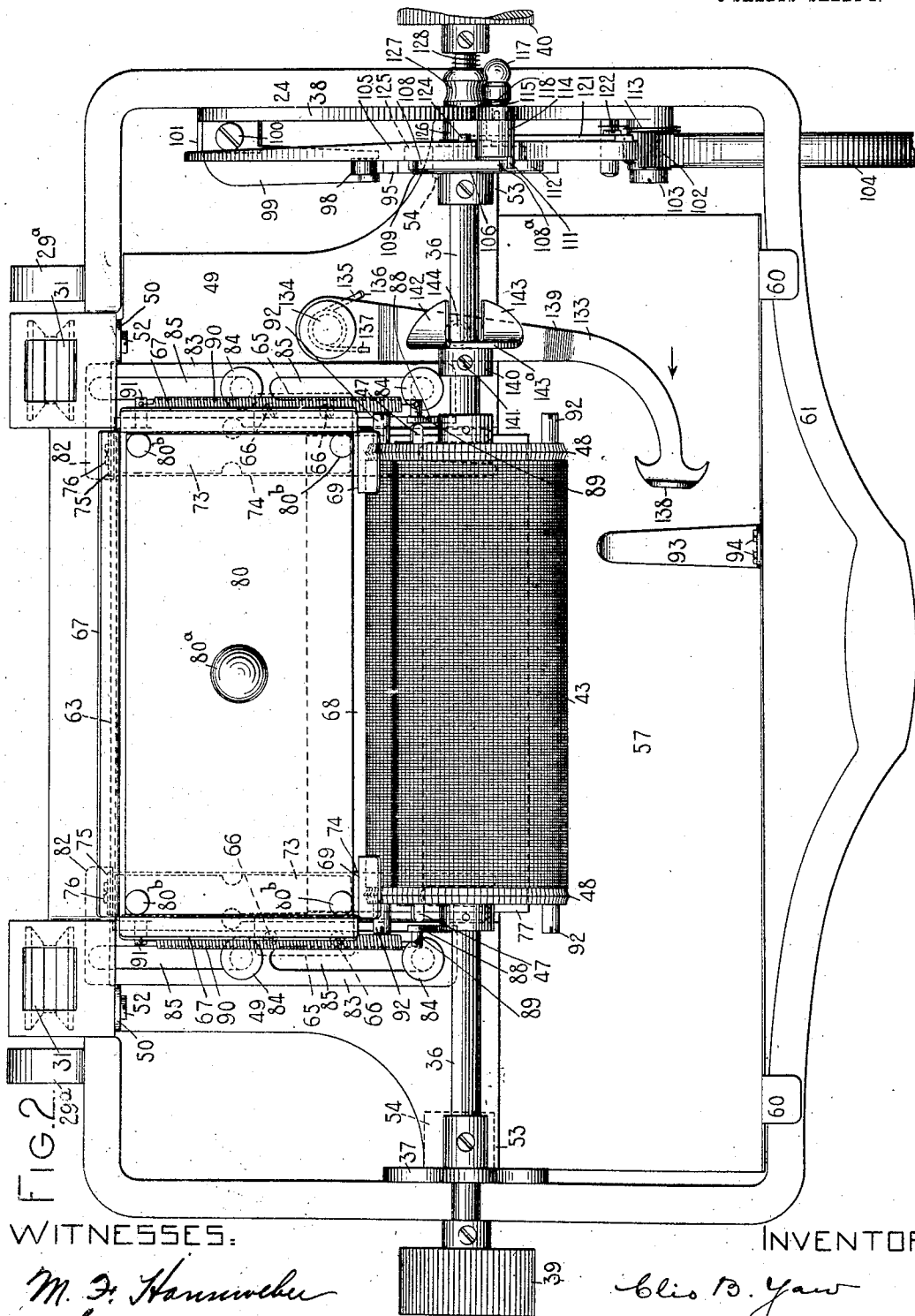
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5 SHEETS—SHEET 2.

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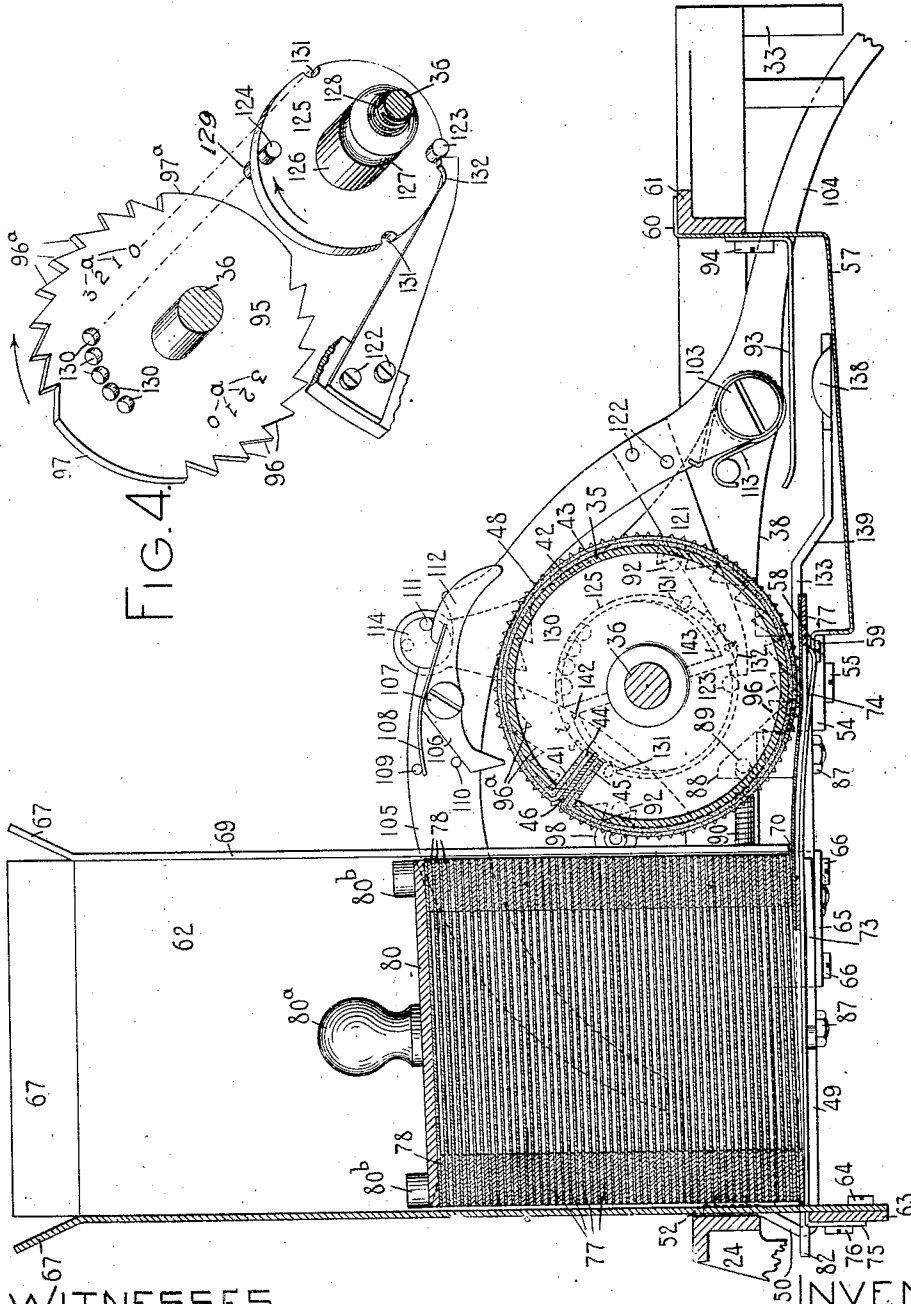
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FIG. 3.

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5 SHEETS-SHEET 4.

FIG. 6.

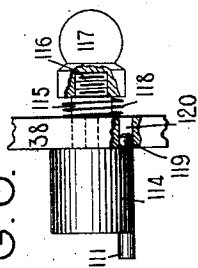
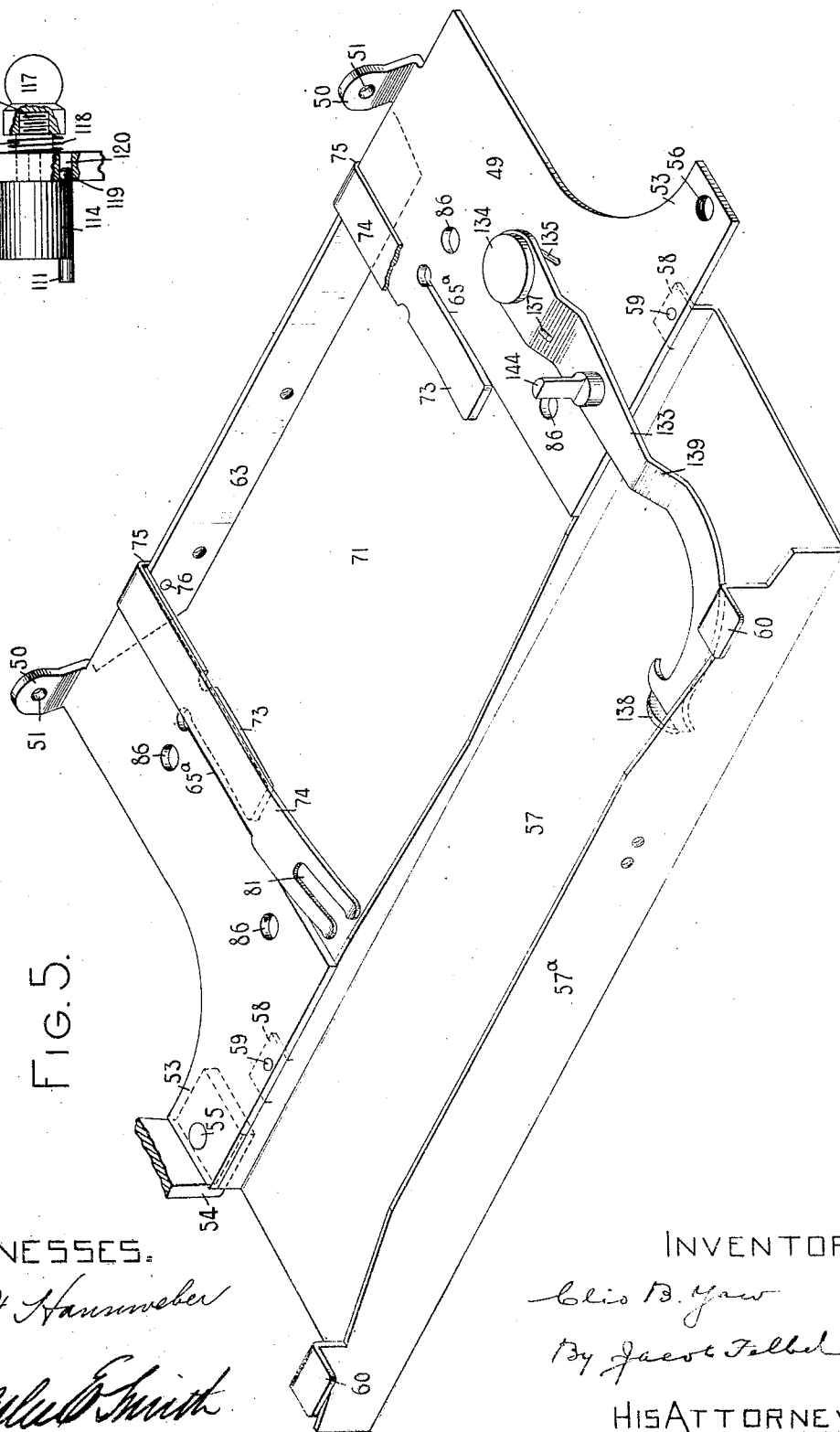


FIG. 5.



WITNESSES.

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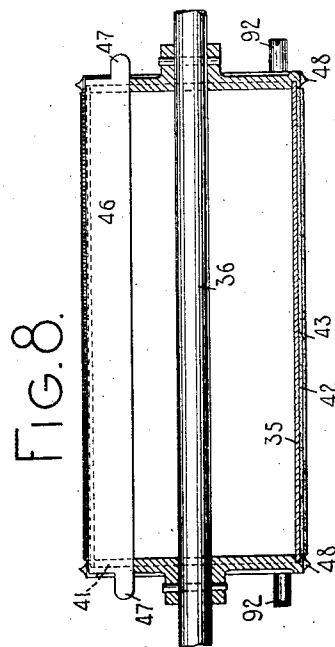
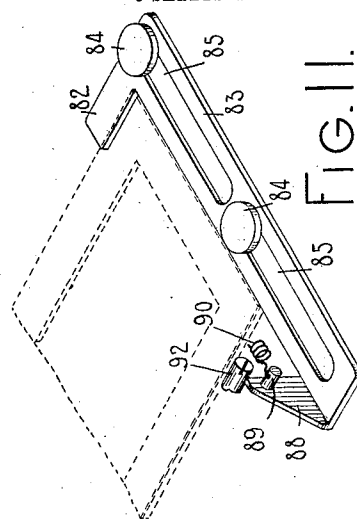
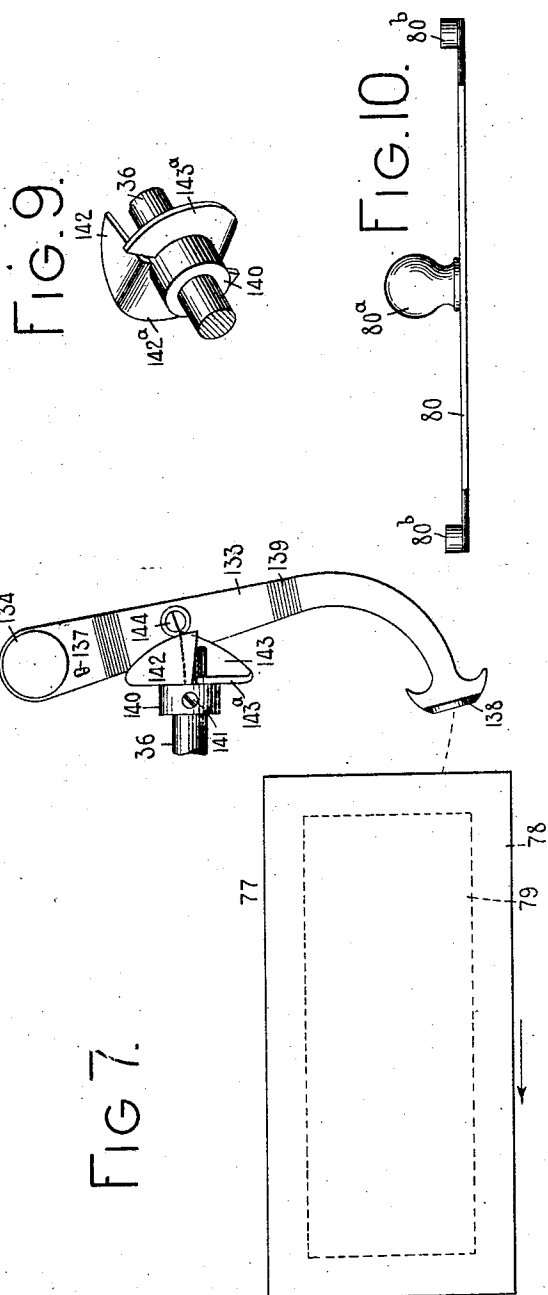
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5 SHEETS—SHEET 5.



WITNESSES.

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CLIO B. YAW, OF NEW YORK, N. Y., ASSIGNOR TO WYCKOFF, SEAMANS & BENEDICT, OF
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TYPE-WRITING MACHINE.

1,044,116.

Specification of Letters Patent.

Patented Nov. 12, 1912.

Application filed June 29, 1906. Serial No. 324,032.

To all whom it may concern:

Be it known that I, CLIO B. YAW, a citizen of the United States, and resident of the borough of Brooklyn, city of New York, in the county of Kings and State of New York, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification.

My invention relates to typewriting machines and more particularly to mechanism for effecting a feed of stencil plates, cards or like work sheets.

One object of my invention is to provide efficient mechanism for quickly and accurately feeding stencil plates, cards or the like to operative position in the machine.

Another object of my invention is to provide means for regulating the feed to suit different characters of work or work sheets employed.

A still further object of my invention is to provide efficient means for automatically discharging the plates, work sheets or cards from the machine after they have been written or perforated.

To the above and other ends which will hereinafter appear my invention consists in the features of construction, arrangements of parts and combinations of devices to be hereinafter described and claimed.

In the accompanying drawings, wherein like reference characters indicate corresponding parts in the various views, Figure 1 is a side elevation with parts broken away of one form of machine embodying my invention. Fig. 2 is a detail plan view of a carriage and parts carried thereby, the parts being shown on a larger scale than in Fig. 1. Fig. 3 is a vertical front to rear sectional view of the parts shown in Fig. 2, the section being taken about centrally of the machine and the scale being larger than in Fig. 2. Fig. 4 is an enlarged detail fragmentary perspective view of a portion of the feeding and locking mechanism to be hereinafter fully described. Fig. 5 is an enlarged detail perspective view of the supporting plate for the hopper with certain of the associated parts. Fig. 6 is an enlarged detail top view with parts broken away of the means for regulating the extent of line spacing movement. Fig. 7 is a full-size detail plan view of the means for discharging the work sheets from the machine. Fig. 8 is a detail longitudinal sectional view of the platen.

Fig. 9 is a detail perspective view of the cam for actuating the stencil plate discharging device. Fig. 10 is a detail side elevation of the weight for the stencil plates. Fig. 11 is a detail perspective view of one of the followers or discharging devices which feed the stencil plates from the hopper.

The machine to which I have shown my invention applied in the present instance is a stencil making machine which employs a plurality of stencil cutting type bars or bars provided with points or needles arranged on each bar in accordance with the character of perforations to be formed in the stencil plate by the individual type bar and the feed mechanism is intended to feed the stencil plates successively to the printing or stencil cutting position, to properly feed the plates from line to line after they have arrived in such position and to feed each stencil plate out of the machine after it has been completed. It should be understood, however, that my improved feed mechanism may be employed in connection with ordinary cards, envelopes or the like in various forms of typewriting machines and for convenience I will refer herein to the stencil plates as "cards" or "work sheets", though it should be understood that these terms are intended to apply generally to different characters of work sheets, whether they be ordinary cards, envelopes, stencil plates or other forms of work sheets, and whether they are to be printed upon in the usual manner or perforated to make stencil plates as in the present construction.

The machine shown in the drawings has a main frame, key levers, type bars and escapement resembling the corresponding parts of the Remington typewriter; indeed, these parts of a typewriting machine may be used without change in carrying out my invention.

The frame of the machine comprises a base 1, corner posts 2 and a top plate 3. Key levers 4, provided with the usual finger keys 5, are fulcrumed on a fulcrum bar 6 secured to the base of the machine. Each key lever is pivotally connected at 7 to a link 8, the upper end of which is pivoted at 9 to a type bar 10 pivoted at 11 to a type bar hanger 12. Each type bar carries perforating needles or points 13 arranged to form the character for the individual bar which carries them. Each key when de-

pressed is operative to swing the associated so-called type bar 10 to the printing or perforating position so that the points 13 will impact against the stencil plate or work sheet and the platen by which it is fed, as will hereinafter more clearly appear. Extending beneath the key levers 4 is a universal bar 14 connected at its ends to upwardly extending links 15 which in turn are connected to the ends of a transverse bar 16 carried by the forwardly extending arm 17 of a dog rocker pivoted at 18 to a depending bracket 19 which is secured to the top plate. The upwardly extending arm 20 of the dog rocker carries the usual feed dogs 21 which cooperate with a feed rack 22 carried by rearwardly extending arms 23 connected with a carriage 24. Said carriage comprises a substantially rectangular frame having front, rear and side bars, as shown in Fig. 2. A restoring spring 25 is connected at one end to the dog rocker and at its opposite end to the depending bracket 19 to restore the dog rocker and the universal bar to the normal position when pressure is released on the finger key 5.

A spring drum 26 has one end of a band 27 connected thereto, the other end of said band being connected to a bracket arm 28 secured to the carriage. A supporting and guide rod 29 is mounted in upwardly extending lugs 30 which project from the top plate and this rod passes loosely through ears 29^a (Fig. 1) projecting from the carriage. Said ears prevent accidental displacement of the carriage, but the weight of the latter at the rear is carried by grooved rollers 31 mounted on the carriage and cooperating with the guide rod 29. The forward side of the carriage has a roller 32 journaled in a depending block 33, the roller bearing on a fixed track 34, thus supporting the forward side of the carriage. The forward side of the carriage may be raised to inspect the work or for any other purpose, the connection with the rod 29 serving as a pivot.

The carriage is adapted to move from side to side of the machine, the extent of such movement depending on the length of the work sheets or stencil plates employed. A depression of a finger key will effect a step-by-step letter space feed movement of the carriage in the manner usual in typewriting machines. A cylindrical, rotary platen 35 is mounted upon a shaft 36 supported in bearing plates 37 and 38 which project upwardly from the side bars of the carriage 24 and the outer ends of said shaft are provided with finger wheels 39 and 40 by which the platen may be turned. A longitudinally extending groove or slot 41 is formed within the platen throughout the length thereof. A textile covering of two or more layers 42, 43 surrounds the platen and the ends 44, 45

are adapted to be received within the longitudinal groove or slot 41 in the platen as shown in Fig. 3. A clamping piece or strip 46 is adapted to be received between the adjacent ends 44, 45 of the textile covering, as shown in Figs. 3 and 8, to clamp or secure the covering in place on the platen. Outwardly projecting fingers 47 are provided on the locking strip in order to remove it to afford a removal of the textile platen-covering. The textile coverings of the platen permit the perforating needles to pass through the stencil sheet. As will appear more clearly hereinafter, the part of the platen having the slot 41 therein is never at the bottom next to the work sheet at the time when the perforating of said sheet is taking place.

A serrated or toothed feed wheel 48 is formed on the platen head at each end of the platen in order to engage the stencil plates and feed them forward as the platen is rotated, as will hereinafter more clearly appear. A supporting plate 49 (shown in detail in Fig. 5) has upwardly projecting ears 50 perforated at 51 to receive headed screws 52 by which the rear portion of the supporting plate is secured to the rear cross-bar of the carriage. Outwardly extending portions 53 on the supporting plate 49 rest upon inwardly extending bracket arms 54 which are formed integral with the plates 37 and 38. Screws 55 are received in perforations in the brackets 54 and take into threaded openings 56 in the projections 53 to secure the forward portion of the supporting plate to the carriage. A trough or chute 57 has rearwardly extending ears 58 by which it is secured by screws 59 to the forward edge of the supporting plate 49. The forward portion of the chute is provided with an upwardly extending portion 57^a formed with forwardly extending lugs 60 which project over and are adapted to bear upon the front rail or cross-bar 61 of the carriage. The construction of the chute 57 is such that it extends longitudinally of the platen and is adapted to receive the work sheets or stencil plates as they are fed forward from the platen. A stencil-plate or work-sheet holder or hopper 62 which is adapted to receive and maintain the work sheets in a flat state is vertically disposed in the rear of the platen and the rear wall of the hopper is secured to a depending flange 63 on the supporting plate by screws 64, whereas each side wall of the hopper is provided with a downwardly and outwardly extending ear 65 which is formed integral therewith and extends down through a slit 65^a in the supporting plate 49 and is secured to the bottom thereof by screws 66.

The upper edges of the hopper are bent outwardly, as indicated at 67 to provide a flaring mouth for the hopper to readily re-

ceive and guide the stencil plates or work sheets into the hopper. The hopper is closed on three sides and is open or cut away at the front side thereof next to the platen as indicated at 68 (see Fig. 2) so as to provide two short walls or flanges 69 which extend from the top of the hopper to a point just short of the bottom thereof; terminating just above the supporting plate 49 so as to provide a horizontal slit or opening 70 (Fig. 3), through which the stencil plates may be discharged one at a time. The central portion of the supporting plate 49 is cut away to form an opening 71 (Fig. 5) over which the hopper is mounted. Between the opening 71 and the slits 65^a, there are fingers 73 (Figs. 3 and 5) formed from the metal of the supporting plate 49. As the side walls of the hopper rise perpendicularly from said slits, these fingers lie under the right and left hand ends of the stencil plates or work sheets. The front of the hopper extends just forward of the free ends of the fingers 73, whereas the rear wall of the hopper is adjacent to the flange 63.

Spring fingers 74 are bent downwardly at the rear ends 75 thereof and are secured at their bent ends to the depending flange 63 by screws 76, the fingers extending forwardly above the fingers 73 and on past the ends of said fingers, beneath the extreme ends of the platen roller, terminating near the rear edge of the chute 57. These fingers 74 extend beneath the hopper at each side thereof and constitute supports for the column of stencil plates 77 when said stencil plates are resting in the hopper and also when they are being fed forward to the platen.

The stencil plates are each preferably formed with a cardboard frame 78 having a rectangular central portion 79 which is covered by the sheet or paper that is pasted to the frame 78 as indicated in Fig. 7. The stencil plates are arranged one on top of another, as shown in Fig. 3, and a weight 80 which corresponds in shape to the inside opening of the hopper is arranged on top of the pile of stencil plates so as to force them down as the stencil plates successively feed from the hopper, a finger piece 80^a being provided on the weight to facilitate its removal when desired. Said weight is also shown provided with corner posts 80^b to prevent its being fed out through the slit 70 when the pile of stencil plates is exhausted. The forward ends of the fingers 74 are bifurcated as indicated at 81, the slots in the bifurcated ends of the fingers extending beneath the serrated or toothed feeding wheels 48 at the ends of the platen and the fingers exerting an upward spring pressure toward the platen. By bending the fingers 73 with a suitable tool the width of the slot 70 may be regulated to permit

one and only one stencil plate to be fed out at a time. The tension of the spring fingers 74 may be varied by bending them in the same way in order to regulate the pressure exerted by the fingers and cause them to properly cooperate with the feed wheels 48 to effect a forward feed of the stencil plates. It will thus be understood that the bottom of the hopper is entirely open except at each side thereof where the spring fingers 74 extend beneath the hopper and constitute a support for the column of stencil plates and that said fingers act with the side walls of the hopper as a guide to direct the stencil plates in their forward movements through the slot 70 at the bottom of the hopper. Each side wall of the hopper has a horizontal slot near the bottom thereof which receives an inwardly projecting finger or follower 82 (Fig. 11) formed as a part of a reciprocating slide 83 that moves fore and aft of the machine on the supporting plate 49 and is guided in such movement by shouldered and headed guide screws 84, the stems of said screws passing through slots 85 in the slides and being received in openings 86 (Fig. 5) in the supporting plate 49 and cooperating with nuts 87 (Fig. 3) beneath the supporting plate. Each of the slides 83 is provided with an upwardly extending ear or lug 88, at the forward end thereof (see Fig. 11). An outwardly extending pin 89 projects from the ear 88 for the attachment of one end of a coiled contractile spring 90, the opposite end of said spring being connected to a pin 91 (Fig. 2) which projects outward from the hopper at the lower end thereof. The tension of the springs 90 is thus exerted to normally maintain the reciprocating discharging devices or slides 83 in their rearmost positions, as shown in Figs. 2 and 11, where the inwardly projecting fingers 82 thereof are just in the rear of the lowermost stencil plate and where they will engage the rear edge of said stencil plate when the slides are moved forwardly. A forward movement of the slides 83 will, therefore, bring the fingers 82 into engagement with the rear edge of the lowermost stencil plate and will force this lowermost stencil plate forward in a flat state along the fingers 74 and through the slit or opening 70, the side edges of the stencil plate being brought into cooperation with the serrated feed wheels 48. Each end of the platen carries two fixed actuating devices or pins 92 which are located diametrically opposite each other, as shown in Fig. 2. The relation of the parts is such that during each half rotation of the platen one of the pins at each end thereof will be brought into cooperation with the lug 88 on its associated carrier 83 and both carriers will be simultaneously forced forward to effect a forward feed of the lowermost stencil plate. A

continued forward feed movement of the platen will cause the pins 92 which are in engagement with the lugs 88 to be disengaged from said lugs, when the springs 90 will restore the slides to normal position, as shown in Fig. 3, ready to engage the next or lowermost stencil plate in the hopper. A forward feed of a stencil plate in the manner just described forces it to a position where the forward portion of each side edge thereof is brought into engagement with the serrated feed wheels 48 on the platen as heretofore stated, and a further rotation of the platen produces a forward feed of the stencil plate in a flat state through the actuation of the serrated feed wheels and the cooperation therewith of the spring fingers 74 which force the sides of the stencil plates into engagement with the serrated feed wheels. A continued forward feed movement of the platen will eventually discharge the engaged stencil plate into the chute 57 and it will be directed in such movement under a guide finger 93 that projects at its free end toward the platen and is secured at its forward end to the chute by a screw 94.

As heretofore pointed out it requires but a half rotation of the platen to effect a forward movement of the slides 83 to bring one of the stencil plates to position to cooperate with the platen. During the forward feed movements of a stencil plate with the platen the other set of oppositely disposed pins 92 are being rotated to a position where they will cooperate with the lugs 88 on the slides 83, when said slides have effected a forward movement of the preceding stencil plate and are released from the pins 92 which actuated them.

The platen shaft 36 has a line spacing wheel 95 secured thereto near the right-hand end of the shaft. This line spacing wheel, as shown in detail in Fig. 4, is provided with two series of ratchet teeth 96, 96^a and intervening plain or untoothed portions 97, 97^a on which the line spacing pawl is adapted to ride freely without transmitting motion to the line spacing wheel as will hereinafter more clearly appear. A detent roller 98 is carried by a spring 99 secured by a screw 100 to a downwardly and inwardly projecting lug 101 formed on the plate 38. The detent roller bears against the periphery of the line spacing wheel in the usual manner. A line spacing lever 102 is pivoted at 103 to the plate 38 and has a forwardly and downwardly extending arm or handle 104 by which it may be actuated. An upwardly extending arm 105 on the line spacing lever projects above and to one side of the line spacing wheel 95 and carries a line spacing pawl 106 pivoted on the inner side of the lever at 107. The pawl has a leaf spring 108 secured thereto at 108^a and the

free rearwardly projecting end of the leaf spring is received under a pin 109 which projects inwardly from the line spacing lever, the tension of the spring being exerted to force the nose of the pawl toward the line spacing wheel. A stop pin 110 projects inwardly from the line spacing lever and constitutes a stop for the pawl 106 to limit the upward movement of the engaging nose thereof relatively to the lever. An adjustable device or stop 111 coacts with the tail 112 of the pawl and determines the extent of line spacing movement that may be given the platen at each actuation of the lever 104-105. In the normal position of the parts the upward pressure of the arm 104 brings the tail of the pawl against the stop 111 and forces the pawl against the tension of its spring 108 into contact with its stop 110 as shown in Fig. 3. When the line spacing lever is actuated by turning it on its pivot 103 and against the tension of its spring 113, the tail of the pawl will be moved away from the stop 111 and the pressure of the spring 108 will be effective to force the nose of the pawl into engagement with one of the teeth of the line spacing ratchet wheel and a further movement of the line spacing lever will effect a rotation of the platen. The adjustable device for determining the extent of line spacing movement is shown in detail in Fig. 6 and comprises the stop 111 and a rotating carrier 114 therefor, the pin being off-set from the center of the carrier. This carrier is provided with a stem or pivot 115 which is received in a bearing in the plate 38 and projects through the same to the outer side thereof where it is threaded at 116 for cooperation with a finger piece 117 by which the device may be moved longitudinally and rotated in its bearing to set the stop 111 in different positions. A coiled expansion spring 118 surrounds the pivot 115 and bears at one end against the finger piece 117 and at its other end against the plate 38 to exert an outward pressure on the device. The carrier or member 114 is provided with an outwardly projecting pin 119 which is adapted to be seated in any one of several openings 120 in the plate 38. By exerting an inward pressure on the piece 117 the member 114 may be moved to the left in Fig. 6, thereby withdrawing the pin 119 from the opening 120 in which it is seated. The finger piece 117 may then be turned to bring the stop 111 in the desired position to determine the extent of line spacing movement which is to be effected at each actuation of a line spacing lever, and when pressure is released on the finger piece the pin 119 will be seated in an opening 120 to secure the device against rotation in its adjusted position. It will be understood that by adjusting the device in the manner point

ed out the initial position of the line spacing pawl will be changed and a greater or less line spacing movement will be effected at each operation of the line spacing lever; it requiring a greater or less extent of movement of the hand lever to bring the pawl into engagement with the ratchet wheel, depending on the adjustment of said device. While I have shown one means for accomplishing this purpose it should be understood that any suitable means for determining the extent of line spacing movement may be employed.

The stencil plates have room for four or five lines of writing, and said plates are fed from line to line by the line space mechanism just described. When one stencil plate has been perforated, it is fed out of the machine and another is fed up to the first writing line by turning one of the finger wheels 39, 40. In order to arrest the platen when the first writing line is beneath the platen in position to be struck by the perforating types 13, I have provided a stop device which positively arrests the platen shaft at this position and prevents further turning of said shaft by the finger wheel until after the line space lever is operated. This stop device is adjustable to vary the position on the stencil plate of the first writing line.

Projecting rearwardly and downwardly from the line spacing lever is a stop or arm 121 secured to the line spacing lever at 122. In the normal position of the line spacing lever this stop or locking arm or abutment 121 is so positioned that it will extend into the path of stop or locking pins or abutments 123, 124 which are carried by a disk 125 which is locked to rotate with the platen. It will be understood, therefore, that a forward rotation of the platen by the finger wheel will bring one of the stop pins into contact with the rear end of the stop arm 121 and a further movement of the platen in this direction by this means is prevented by such contact; the line spacing lever normally bearing against the member 114, as shown in Fig. 3, to prevent further upward movement of the rear arm of said lever. The disk 125 is rigidly connected to a sleeve 126 which surrounds the platen shaft and extends through a bearing opening in the plate 38; the outer end of the sleeve being provided with a finger piece 127 by which the sleeve and the disk 125 connected thereto may be moved longitudinally along the shaft. A coiled spring 128 surrounds the platen shaft and bears at one end against the hub of the finger wheel 40 and at its opposite end against the finger piece 127 so as to force the sleeve and disk to the left. The pin 124 extends through the disk so as to provide a locking pin 129 which is adapted to be received in any one of a number of openings 130 in the line spacing

wheel so as to rigidly connect the disk and pins 123 and 124 carried thereby with the line spacing wheel. Sight apertures or openings 131 are provided on diametrically opposite sides of the disk 125 in the periphery thereof and these sight openings are adapted to register with the indices or index numerals α on the outer face of the line spacing wheel. The means just described affords an adjustment of the locking pins 123 and 124 relatively to the line spacing wheel and determines at what period in the rotation of the platen the pins 123 and 124 will be brought into contact with the stop arm 121 and determines at what period in the forward rotation of the platen it will be arrested.

It will be seen that the index numerals α are arranged as follows:—"0, 1, 2, 3". An adjustment of the disk 125 so that a sight aperture 131 will register with one of these index numerals positions the stops 123 and 124 and indicates at how many line space distances from the top of each stencil plate the first line of writing will appear, and, indirectly, how many line spaces may be written on each stencil plate before the line spacing mechanism will be rendered inoperative to turn the platen farther, as will hereinafter more clearly appear.

When the line spacing lever is in the normal position the stop arm 121 is in the path of the stops 123 and 124 and will arrest the platen in its forward rotation when such forward rotation is effected by either of the finger wheels 39 or 40. Although the platen can no longer be given a forward rotation by the finger wheels when one of the stop pins 123 or 124 contacts with the end stop arm 121, the line spacing lever is nevertheless free to be actuated at this time. Thus an actuation of the line spacing lever at this time lowers the stop arm 121 away from the engaged stop 123 or 124 before motion is communicated to the platen and the further movement of said line spacing lever effects a line spacing movement or forward feed of the platen.

A rotation of the platen for a single toothed space distance moves the stop 123 or 124, which was engaged by the stop arm, forwardly a corresponding distance and when the line spacing lever is released it will be restored to the normal position; a cut-out portion or recess 132 in the stop arm registering with the formerly engaged pin 123 or 124, so that the pin and stop arm will not interfere with the line spacing lever being restored to normal position. The line spacing lever may be employed to effect a forward feed of the platen until one of the blank portions 97, 97^a is brought into the path of the line spacing pawl when the line spacing mechanism is rendered inoperative and a further forward feed of the platen

cannot be effected by this means. The operator will therefore understand that further writing on the stencil plate cannot be effected, or that the last line on the stencil plate has been reached. While the line spacing mechanism is inoperative to effect a further forward feed of the platen the finger wheels 39 and 40 may at this time be employed to turn the platen forwardly in order to discharge the last written stencil plate to the chute and to automatically feed the next stencil plate forward into cooperation with the platen and into position to receive the first line of writing. In other words, the operator may rotate either of the finger wheels 39 or 40 to produce a forward movement of the platen until the next succeeding stop pin 123 or 124 is brought into engagement with the end of the stop arm 121 to arrest further forward movement of the platen through the finger wheels. This movement is sufficient to discharge the stencil plate which has been written and to automatically feed the next succeeding plate forward to proper position to receive the first line of writing.

It will be observed that one stencil plate is fed out of the machine at each half rotation of the platen, and that only a few lines are written on each stencil plate, so that the types 13 never strike the platen except along a few lines on each half thereof. The slot 41 is situated between these two areas in a part of the platen that is never struck by the types.

When a stencil plate has been fed free of the platen, it falls into the chute 57, and I have provided means for discharging it from the left hand end of said chute. The discharging device comprises a vibratory or oscillating arm 133 pivoted at 134 and pressed in the direction of the arrow in Fig. 2 by a spring 135, one end of which is secured at 136 in an opening in the supporting plate 49, the other end of the spring being secured at 137 to the vibratory arm 133. The forward free end of the vibratory arm has an upturned portion 138 to assure contact with the stencil plate. From an examination of Fig. 3 it will be seen that the arm 133 is bent at 139 so that the free end of the arm may extend down in and adjacent to the bottom of the chute 57. A hub 140 is secured by a screw 141 to the platen shaft 36 and this hub carries two oppositely disposed cams 142, 143. The cam 142 is formed as an extension of a plate-like portion 142^a (Fig. 9) that is located in a plane at right angles to the shaft 36 and in a like manner the cam 143 is provided with a plate-like member 143^a which is likewise in a plane at right angles to the shaft 36. An upwardly projecting half cylindrical pin 144 is carried by the discharging device 133 and co-operates with the cams 142 and 143 as they

are rotated with the shaft 36 to move the vibratory discharging device against the tension of the spring 135. The parts are so timed that while the stencil plate is being fed forward by the serrated feed wheels 48 one of the cams 142 or 143 will engage the pin 144 and will positively move the vibratory arm 133 against the tension of the spring 135. After the stencil plate engaged by the feed wheels 48 has been discharged into the chute and under the guide finger 93, the cam which engages the pin 144 will be moved to a position where the abrupt drop or straight edge thereof will clear the pin, thus releasing it. The arm 133 will be forced by its spring in the direction of the arrow in Fig. 2, thus bring the upturned end 138 into engagement with the right-hand edge of the stencil plate and the force of the arm 133 striking against the stencil plate will force it along the chute 57 and discharge it from the machine at the left-hand end of said chute. The movement of the arm 133 just described is arrested by the pin 144 engaging the plate-like portion 142^a or 143^a of the next succeeding cam so that it is in a position to coöperate with the next succeeding cam during a further rotation of the platen in order to place the spring 135 under tension and then automatically release the arm to discharge the next stencil plate that has been fed forward into the chute by the serrated feed wheels 48.

Having described the construction I will now proceed to describe in detail the operation of the machine.

The operator first determines how many line spaces are to be written on each stencil plate or work sheet 77 and where the first line of writing is to appear by adjusting the disk, carrying the stops 123 and 124, on the line spacing wheel. Thus if the operator desires to produce the first line of writing at, say, two line space distances or the distance of two teeth of the line space wheel from the top writing edge of the stencil plate, the disk 125 will be set so that the index numeral "2" will be exposed at the sight openings 131 in the disk and when the platen has been rotated forwardly until it is arrested by one of the stop pins 123, 124 coming into contact with the stop arm 121 the stencil plate will be properly positioned to receive the impact of the puncturing points at the line indicated. After this line has been completed the operator may actuate the line spacing mechanism to feed the stencil plate to write or perforate other lines. After three line space distances or the distance of three teeth of the line spacing ratchet wheel, one of the blank portions 97 or 97^a of the ratchet wheel will be brought into coöperation with the line spacing pawl and a further movement of the platen cannot be effected by the line spacing mechanism. The forward

feed of the platen thus produced by the line spacing mechanism will bring the stencil plate to a position where the last line of writing may be produced near the lowermost portion thereof or that portion of the stencil plate which is near the lower edge of the frame 78. No matter what adjustment is given to the stops 123, 124 the line feed mechanism will always be rendered inoperative before the lower edge of a stencil plate is brought to the printing line by one of the blank or untoothed portions 97 or 97^a being brought into coöperation with the line spacing pawl. The operator may effect a further forward feed of the platen by the finger wheels 39 or 40 after the last line of writing has been produced on the stencil plate in order to discharge the completed stencil plate into the chute and to automatically effect a forward feed of the next succeeding stencil plate. After the mechanism has been set in the manner described the operator may fill the hopper with stencil plates or work sheets and place the weight in position thereon. The first stencil plate is fed to operative position to receive the first line of writing by the combined operation of the line spacing mechanism and the finger wheels 39 or 40; the line spacing mechanism being actuated first and the final movement of the stencil plate being effected by either of the finger wheels. When a further rotation of the finger wheels is prevented by one of the locking members or stop pins 123, 124 coming into contact with the stop arm 121 the stencil plate will be in position to receive the first line of writing and the slides 83 which moved said stencil plate forward will have been released from the pins 92 which actuated them and will be restored by their springs to the normal position shown in Fig. 2 where they are ready to effect a forward feed of the next stencil plate which is the lowermost stencil plate supported on the spring guide fingers 74. The operator may now proceed with the writing and as the successive lines are written and the line spacing produced by the line spacing mechanism, one of the blank portions 97 or 97^a on the line spacing ratchet wheel will be brought to a position where the line spacing pawl will coöperate therewith before the bottom of the stencil plate has been reached. This will render the line spacing mechanism inoperative to produce a further forward feed movement of the platen, thus notifying the operator that the last line on the stencil plate has been reached. After this line has been completed the operator will turn the platen forwardly through the finger wheels 39 or 40 until further movement is arrested by one of the stop pins 123, 124 coming into contact with the stop arm 121. This last mentioned movement of the platen through the finger wheels 39 or

40 is effective to bring the other set of pins 92 into contact with the upwardly projecting lugs or ears 88 on the slides to simultaneously move them forward in order to automatically effect a forward feed of the next stencil plate as the completed plate is being fed forward into the chute by the rotation of the platen. The same movement is also effective to move the discharging device 123 against the tension of its spring and the parts are so timed that when the completed stencil plate is discharged into the chute and the next succeeding stencil plate is in operative position to receive the first line of writing the discharging device 133 will be automatically released and will strike the stencil plate in the chute and drive it along the chute and out of the machine. After this operation has been completed further forward rotation of the platen by the actuation of the finger wheels is prevented through the engagement of one of the stop pins 123 and 124 engaging the stop arm 121. It is necessary, therefore, to proceed with the writing and to effect a further forward movement of the platen through the line spacing mechanism. These operations are continued until the stencil plates are exhausted and the front of the hopper being open enables the operator to observe when it is necessary to refill the hopper.

It will be observed from the foregoing description that the finger wheels 39 and 40 and the line spacing mechanism are alternately operated to effect a forward feed movement of the platen; that after a predetermined extent of movement by either of the devices in question said device is rendered inoperative to effect a further forward movement of the platen until the other device is actuated; that in this manner the stencil plates are successively brought to proper position to receive the first line of writing and as the writing proceeds the stencil plate in operative position is arrested from further movement before the bottom thereof is presented to the printing line; that after the stencil plate is completed the other device, or either of the finger wheels 39 and 40 may be employed to effect a further forward feed of the completed stencil plate to discharge it from the platen into the chute; that the plate in the chute will be automatically discharged from the machine and the next succeeding stencil plate will be automatically brought into operative position; that the predetermined extent of forward movement of the platen effected by said finger wheels is determined by the coöperation of the locking devices 121, 123 and 124 and positively regulates the positioning of the stencil plates in the machine to receive the first and last lines of writing and that the adjustment of the disk 125 is effective to vary the

positioning of the stencil plate corresponding to the character of the work to be produced.

It will also be seen that the feed of the work sheets or cards from the hopper to the platen is positively effected by the positive engagement of the positively actuated fingers 82 with the cards and that the cards or stencil plates are maintained in a flat state from the time they are received in the hopper until they are discharged from the machine as completed stencil plates.

Various changes may be made without departing from my invention.

What I claim as new and desire to secure by Letters Patent, is:—

1. In a typewriting machine, the combination of a holder for containing cards or the like, a reciprocating device for discharging the cards or the like from the holder in a flat state, a rotary platen, means controlled by the rotation of the platen for automatically and intermittently actuating said reciprocating device, means for receiving the cards as they are fed forward by said reciprocating device and for maintaining them in a flat state in coöperation with the platen and for feeding them forward in a flat state with the platen as it is rotated.

2. In a typewriting machine, the combination of a carriage, a holder for containing cards or the like carried by said carriage, a rotary platen carried by the carriage, a reciprocating device for successively engaging and pushing the cards from said holder and into coöperation with the platen, a spring for moving said reciprocating device in one direction, and means controlled by the rotation of the platen for automatically moving said reciprocating device in an opposite direction.

3. In a typewriting machine, the combination of a holder for containing cards or the like, a rotary platen, a reciprocating device for successively feeding the cards from said holder and into coöperation with the platen, a spring for moving said reciprocating device in one direction, means controlled by the rotation of the platen for automatically moving said reciprocating device in an opposite direction, and means coöperating with the platen for receiving the cards successively from said reciprocating device and for feeding them forward as the platen is rotated.

4. In a typewriting machine, the combination of a holder for containing cards or the like, a rotary platen, a reciprocating device for successively feeding the cards from said holder and into coöperation with the platen, a spring for moving said reciprocating device in one direction, and means controlled by the rotation of the platen for automatically and positively moving said reciprocating device in an opposite direction and for

automatically freeing said device from its positively moving means after said device has received a predetermined extent of movement.

5. In a typewriting machine, the combination of a carriage, a vertically disposed hopper for containing cards or the like, said hopper being carried by the carriage and having a discharging slit at the lower portion thereof through which the cards may be discharged one at a time, means for forcing the cards down in the hopper, and an automatically actuated reciprocating discharging device in the bottom of the hopper, said device being operative to positively engage the lowermost card in the hopper and force it out through said slit.

6. In a typewriting machine, the combination of a vertically disposed hopper for containing cards or the like, said hopper having a discharging slit at the lower portion thereof through which the cards may be discharged one at a time, a weight within the hopper for forcing the cards down in the hopper, a reciprocating device in the bottom of the hopper, said device being operative to engage the lowermost card in the hopper and force it out through said slit, a rotative platen, and means operable during the rotation of the platen for actuating said reciprocating device.

7. In a typewriting machine, the combination of a vertically disposed hopper for containing cards or the like, said hopper having a discharging slit at the lower portion thereof through which the cards may be discharged one at a time, a weight for forcing the cards down in the hopper, a reciprocating device in the bottom of the hopper, said reciprocating device being operative to engage the lowermost card in the hopper and force it out through said slit, a rotary platen, a device carried by and rotating with the platen and coöperating with said reciprocating device to move it positively in one direction, and a spring for moving the reciprocating device in an opposite direction.

8. In a typewriting machine, the combination of a vertically disposed hopper for containing cards or the like, said hopper having a discharging slit at the lower portion thereof through which the cards may be discharged one at a time, a weight within the hopper for forcing the cards down in the hopper, a reciprocating device in the bottom of the hopper, said device being operative to engage the lowermost card in the hopper and force it out through said slit, a rotary platen, and means operable during the rotation of the platen for intermittently actuating said reciprocating device.

9. In a typewriting machine, the combination of a vertically disposed hopper for containing cards or the like, said hopper having a discharging slit at the lower por-

tion thereof through which the cards may be discharged one at a time, a weight within the hopper for forcing the cards down in the hopper, a reciprocating device in the bottom of the hopper, said device being operative to engage the lowermost card in the hopper and force it out through said slit, a rotary platen, an actuating device carried by and rotating with the platen and co-operating with said reciprocating device to move it a predetermined distance and then release it, and a spring for moving said reciprocating device in an opposite direction.

10. In a typewriting machine, the combination of a vertically disposed hopper for containing cards or the like, said hopper having a discharging slit at the lower portion thereof through which the cards may be discharged one at a time, a reciprocating device in the bottom of the hopper, said reciprocating device being operative to engage the lowermost card in the hopper and force it out through said slit, a rotary platen, and feeding means carried in part by the platen and which receive the cards as they are fed forward by said reciprocating device and feed them forward as the platen is rotated.

11. In a typewriting machine, the combination of a vertically disposed hopper for containing cards or the like, said hopper having a discharging slit at the lower portion thereof through which the cards may be discharged one at a time, a weight within the hopper for forcing the cards down in the hopper, a reciprocating device in the bottom of the hopper, said reciprocating device being operative to engage the lowermost card in the hopper and force it out through said slit, a rotary platen, means operable during the rotation of the platen for intermittently actuating said reciprocating device, and feeding devices carried in part by the platen and which receive the cards as they are fed forward by said reciprocating device and feed them forward as the platen is rotated.

12. In a typewriting machine, the combination of a vertically disposed hopper for containing cards or the like, said hopper having a discharging slit at the lower portion thereof through which the cards may be discharged one at a time, a weight within the hopper for forcing the cards down in the hopper, a reciprocating device in the bottom of the hopper, said device being operative to engage the lowermost card in the hopper and force it out through said slit, a rotary platen, an actuating device carried by and rotating with the platen and co-operating with said reciprocating device to move it a predetermined distance and then release it, a spring for moving said reciprocating device in an opposite direction, and feeding devices carried in part by the platen

and which receive the cards as they are fed forward by said reciprocating device and feed them forward as the platen is rotated.

13. In a typewriting machine, the combination of a holder for containing cards or the like, a rotary platen, means operative by the rotation of the platen for positively feeding the cards or the like from the holder to said platen, and feeding wheels carried by the platen and into engagement with which the cards are forced by said positive feeding means.

14. In a typewriting machine, the combination of a holder for containing cards or the like, a rotary platen, automatically actuated reciprocating means for engaging the cards or the like and forcing them successively to the platen from said holder, and feeding wheels carried by the platen and into engagement with which the cards are forced by said reciprocating means.

15. In a typewriting machine, the combination of a holder for containing cards or the like, a rotary platen, a reciprocating follower co-operating successively with the cards or the like to discharge them from the holder and to feed them to the platen, intermittently and automatically actuated means operable during the feed movement of the platen for operating said reciprocating follower, and serrated feeding wheels connected with said platen and rotated thereby and into engagement with which said cards are forced by said follower.

16. In a typewriting machine, the combination of a holder for containing cards or the like, a rotary platen, a reciprocating device for successively feeding the cards from said holder and into co-operation with the platen, a spring for moving said reciprocating device in one direction, means controlled by the rotation of the platen for automatically and positively moving said reciprocating device in an opposite direction and for automatically freeing said device from its positively moving means after said device has received a predetermined extent of movement, and serrated feeding wheels carried by the platen at the ends thereof and into engagement with which the cards are forced by said reciprocating means during the positive movement thereof.

17. In a typewriting machine, the combination of a vertically disposed hopper for containing cards or the like, said hopper having a discharging slit at the lower portion thereof through which the cards may be discharged one at a time, a reciprocating device in the bottom of the hopper, said device being operative to engage the lowermost card in the hopper and force it out through said slit, a rotary platen, an actuating device carried by and rotating with the platen and co-operating with said reciprocating device to move it a predetermined dis-

tance and then release it, a spring for moving said reciprocating device in an opposite direction, and automatically actuated feeding devices into coöperation with which the cards are automatically and successively fed by said reciprocating device as the platen is rotated.

18. In a typewriting machine, the combination of a holder for containing cards or the like, a platen, automatically actuated means for feeding the cards or the like from the holder to said platen, and automatically actuated means separate from the platen for discharging the cards or the like from the machine as they are written.

19. In a typewriting machine, the combination of a holder for containing cards or the like, a platen, automatically actuated reciprocating means for engaging the cards or the like and forcing them successively to the platen from said holder, and separate automatically actuated means for successively discharging the cards from the machine as they are written.

20. In a typewriting machine, the combination of a holder for containing cards or the like, a platen, a reciprocating follower coöperating successively with the cards or the like to discharge them from the holder and to feed them to the platen, intermittently and automatically actuated means operable during the feed movement of the platen for operating said reciprocating follower, and automatically and intermittently actuated means which are coöperative with the cards as they are received from the platen and discharge them from the machine.

21. In a typewriting machine, the combination of a holder for containing cards or the like, a rotative platen, a reciprocating follower coöperating successively with the cards or the like to discharge them from the holder and to feed them to the platen, means controlled by said platen for actuating said reciprocating follower, and automatically and intermittently actuated means which are coöperative with the cards as they are received from the platen and discharge them from the machine, said means for discharging the cards from the machine being controlled by the rotation of the platen.

22. In a typewriting machine, the combination of a holder for containing cards or the like, a rotative platen, a reciprocating device for discharging the cards or the like from the holder, means controlled by the rotation of the platen for automatically and intermittently actuating said reciprocating device, and automatically actuated means for discharging cards from the machine as they are discharged from the platen.

23. In a typewriting machine, the combination of a holder for containing cards or the like, a rotary platen, a reciprocating de-

vice for discharging the cards or the like from the holder in a flat state, means controlled by the rotation of the platen for automatically and intermittently actuating said reciprocating device, means for receiving the cards as they are fed forward by said reciprocating device and for maintaining them in a flat state in coöperation with the platen, and for feeding them forward with the platen as it is rotated, and means for automatically discharging the cards in a flat state from the machine as they are discharged from the platen.

24. In a typewriting machine, the combination of a holder for containing cards or the like in a flat state, a rotative platen, a reciprocating device for successively feeding the cards in a flat state from said holder and into coöperation with the platen, a spring for moving said reciprocating device in one direction, means controlled by the rotation of the platen for automatically and positively moving said reciprocating device in an opposite direction and for automatically freeing said device from its positively moving means after said device has received a predetermined extent of movement, and means for automatically discharging the cards in a flat state from the machine as they are discharged from the platen.

25. In a typewriting machine, the combination of a vertically disposed hopper for containing cards or the like, said hopper having a discharging slit at the lower portion thereof through which the cards may be discharged one at a time, a reciprocating device in the bottom of the hopper, said device being operative to engage the lowermost card in the hopper and force it out through said slit, a platen which receives the cards from said reciprocating device, and separate means for automatically discharging the cards from the machine as they are discharged from the platen.

26. In a typewriting machine, the combination of a vertically disposed hopper for containing cards or the like, said hopper having a discharging slit at the lower portion thereof through which the cards may be discharged one at a time, a reciprocating device in the bottom of the hopper, said device being operative to engage the lowermost card in the hopper and force it out through said slit, a rotary platen, feeding devices carried in part by the platen and which receive the cards as they are fed forward by said reciprocating device and feed them forward as the platen is rotated, and automatically actuated means for discharging the cards from the machine as they are discharged from the platen.

27. In a typewriting machine, the combination of a holder for containing cards or the like, a platen, means operable with the platen for positively feeding the cards or

the like from the holder to said platen, feeding wheels carried by the platen and into engagement with which the cards are forced by said positive feeding means, and automatically actuated means for discharging the cards from the machine as they are discharged from the platen.

28. In a typewriting machine, the combination of a holder for containing cards or the like, a rotary platen, a reciprocating follower cooperating successively with the cards or the like to discharge them from the holder and to feed them to the platen, intermittently and automatically actuated means operable during the feed movement of the platen for operating said reciprocating follower, serrated feeding wheels connected with said platen and rotated thereby and into engagement with which said cards are forced by said follower, and automatically actuated means for discharging the cards from the machine as they are discharged from the platen.

29. In a typewriting machine, the combination of a holder for containing cards or the like, a rotary platen, a reciprocating device for successively feeding the cards from said holder and into cooperation with the platen, a spring for moving said reciprocating device in one direction, means controlled by the rotation of the platen for automatically and positively moving said reciprocating device in an opposite direction and for automatically freeing said device from its positively moving means after said device has received a predetermined extent of movement, serrated feeding wheels carried by the platen at the ends thereof and into engagement with which the cards are forced by said reciprocating means during the positive movement thereof, and automatically actuated means for discharging the cards from the machine as they are discharged from the platen.

30. In a typewriting machine, the combination of a vertically disposed hopper for containing cards or the like, said hopper having a discharging slit at the lower portion thereof through which the cards may be discharged one at a time, a weight within the hopper for forcing the cards down in the hopper, a reciprocating device in the bottom of the hopper, said device being operative to engage the lowermost card in the hopper and force it out through said slit, a rotary platen, a device carried by and rotating with the platen and cooperating with said reciprocating device to move it positively in one direction, a spring for moving the reciprocating device in an opposite direction, positively actuated feeding wheels which are turned by the platen and into cooperation with which the cards are fed by said reciprocating device, and automatically actuated means for discharging the cards

from the machine as they are discharged from the platen.

31. In a typewriting machine, the combination of a platen, card feeding means, and automatically actuated means which are cooperative with the cards as they are received from the platen and after they are out of the control of the card feeding means to discharge the cards from the machine.

32. In a typewriting machine, the combination of a rotative platen, and intermittently actuated means which are cooperative with the cards as they are received from the rotative platen to discharge them from the machine.

33. In a typewriting machine, the combination of a rotary platen, and intermittently actuated means controlled by the rotation of the platen and which are cooperative with the cards as they are received from the platen and automatically discharge them from the machine.

34. In a typewriting machine, the combination of a platen, and an automatically and intermittently actuated reciprocating discharging device which cooperates with the cards as they are discharged from the platen and which is operative to discharge said cards from the machine.

35. In a typewriting machine, the combination of a rotary platen, and an automatically actuated discharging device which cooperates with the cards as they are discharged from the platen and which is operative to discharge said cards from the machine in the general direction of the axis of the platen.

36. In a typewriting machine, the combination of a platen, a discharging device which cooperates with the cards as they are discharged from the platen and which is operative to discharge said cards from the machine, automatically actuated means for positively moving said discharging device in one direction, and a spring for moving said discharging device in the opposite direction.

37. In a typewriting machine, the combination of a platen, a reciprocating discharging device which moves in the general direction of the axis of the platen and cooperates with the cards as they are discharged from the platen and which is operative to discharge said cards from the machine in the general direction of the axis of the platen, automatically actuated means for positively moving said discharging device in one direction, and a spring for moving said discharging device in the opposite direction.

38. In a typewriting machine, the combination of a platen, a discharging device which cooperates with the cards as they are discharged from the platen and which is operative to discharge said cards from the machine, a spring for propelling said dis-

charging device against a card after it is discharged from the platen, to discharge said card from the machine, and automatically actuated means for placing said spring under tension and for releasing the discharging device after the spring has been placed under tension.

39. In a typewriting machine, the combination of a platen, a discharging device which coöperates with the cards as they are discharged from the platen and which is operative to discharge said cards from the machine, a spring for propelling said discharging device against a card after it is discharged from the platen, to discharge said card from the machine, and a cam that moves in unison with the platen for placing said spring under tension and for releasing the discharging device after the spring has been placed under tension.

40. In a typewriting machine, the combination of a rotative platen, a chute at the delivery side of the platen and which receives cards as they are delivered from the platen, and automatically actuated means for moving the cards along said chute.

41. In a typewriting machine, the combination of a platen, a chute at the delivery side of the platen and which receives cards as they are delivered from the platen, and an automatically actuated spring propelled discharging device for moving the cards along said chute.

42. In a typewriting machine, the combination of a rotary platen, a chute at the delivery side of the platen and which receives cards as they are delivered from the platen, and automatically actuated reciprocatory means for moving the cards along said chute.

43. In a typewriting machine, the combination of a rotary platen, a chute at the delivery side of the platen and which extends in the general direction of the axis of the platen and receives cards as they are delivered from the platen, and automatically actuated means for moving the cards along said chute.

44. In a typewriting machine, the combination of a platen, a chute at the delivery side of the platen and which extends in the general direction of the axis of the platen and receives cards as they are delivered from the platen, and an automatically actuated spring propelled reciprocatory discharging device in said chute for striking the cards and moving them along said chute.

45. In a typewriting machine, the combination of a rotary platen, a chute at the delivery side of the platen and which receives cards as they are delivered from the platen, a discharging device which works in said chute and coöperates with said cards as they are discharged from the platen and which is operative to move the cards along said

chute, means for positively moving said discharging device in one direction, and a spring for moving said discharging device in the opposite direction.

46. In a typewriting machine, the combination of a rotary platen, a chute at the delivery side of the platen and which extends in the general direction of the axis of said platen and receives cards as they are successively delivered from the platen, a discharging device which works in said chute and coöperates with said cards as they are successively discharged from the platen, a spring for propelling said discharging device against a card after it is delivered from the platen to said chute, and an automatically actuated cam that moves in unison with the platen for placing said spring under tension and for releasing the discharging device after the spring has been placed under tension.

47. In a typewriting machine, the combination of a platen, two controlling devices for moving said platen, and means operating automatically to render said controlling devices alternately inoperative to move the platen.

48. In a typewriting machine, the combination of a platen, two controlling devices for moving said platen, and means operating automatically to render said controlling devices alternately inoperative to move the platen, each of said devices being rendered inoperative after it has been actuated to move the platen a given extent.

49. In a typewriting machine, the combination of a rotative platen, two independently operable controlling devices for rotating said platen, and means operating automatically to render either one of said controlling devices inoperative to turn the platen.

50. In a typewriting machine, the combination of a rotary platen, a finger wheel for turning the platen, a line spacing device, and means operating automatically to render either one of said finger wheel and line spacing device parts inoperative to rotate the platen.

51. In a typewriting machine, the combination of a rotary platen, a finger piece for turning the platen, a hand actuated device, line spacing mechanism controlled by said hand actuated device, and means operating automatically to alternately render said finger piece and hand actuated line spacing device inoperative to turn the platen.

52. In a typewriting machine, the combination of a rotary platen, a finger piece for turning the platen, a hand actuated device, line spacing mechanism controlled by said hand actuated device, means operating automatically to render said hand actuated device inoperative to turn the platen, and means for automatically locking said finger

piece against movement, either the finger piece or the hand actuated device being operable to turn the platen when the other is rendered inoperative.

53. In a typewriting machine, the combination of a rotary platen, a finger piece for turning the platen, a hand actuated device, line spacing mechanism controlled by said hand actuated device, a locking device that rotates with the platen, and a cooperating disengageable locking device to automatically lock the platen against turning movement in at least one direction by said finger piece.

54. In a typewriting machine, the combination of a rotary platen intermittently rotative to any desired extent, a finger piece for turning the platen, a hand actuated line spacing device, step-by-step line spacing mechanism controlled by said line spacing device, a locking abutment or stop that rotates with the platen to different positions to render the locking abutment effective or ineffective, and a cooperating locking abutment or stop controlled by said hand actuated line spacing device.

55. In a typewriting machine, the combination of a rotary platen, a finger piece for turning the platen, a hand actuated device line spacing mechanism controlled by said hand actuated device, a locking abutment or stop that rotates with the platen, and a cooperating locking abutment or stop controlled by said hand actuated device, the cooperation of the locking stops preventing a rotation of the platen through said finger piece in at least one direction, the stops being inoperative however to prevent an actuation of the hand actuated device.

56. In a typewriting machine, the combination of a rotary platen, a finger piece for turning the platen, a hand actuated device, line spacing mechanism controlled by said hand actuated device, means operating automatically to render said hand actuated device inoperative to turn the platen, a locking abutment that rotates with the platen, and a cooperating locking abutment controlled by said line spacing device, the construction being operative to prevent a rotation of the platen through said finger piece in at least one direction when the locking abutments are brought into cooperation but inoperative to prevent an actuation of the hand actuated device.

57. In a typewriting machine, the combination of a rotary platen, a finger wheel for turning the platen, a hand actuated line spacing lever, line spacing mechanism controlled by said line spacing lever, means operating automatically to render said line spacing lever inoperative to turn the platen, a locking abutment that rotates with the platen, and a cooperating locking abutment

controlled by said line spacing lever, the construction being operative to prevent a rotation of the platen through said finger wheel in at least one direction when the locking abutments are brought into cooperation but inoperative to prevent an actuation of the line spacing lever, so that the line spacing lever is operative to turn the platen when the finger wheel is inoperative for that purpose.

58. In a typewriting machine, the combination of a platen, line spacing mechanism comprising a line spacing pawl and a line spacing wheel with teeth for affording a step-by-step line feed of the platen and blank portions on which the pawl is adapted to ride for a full line spacing movement without transmitting movement to the line spacing wheel, and means independent of said line spacing mechanism for turning said platen.

59. In a typewriting machine, the combination of a platen, line spacing mechanism comprising a line spacing pawl and a line spacing wheel having teeth for affording a step-by-step line feed of the platen and blank portions on which the pawl is adapted to ride without transmitting movement to the line spacing wheel, means independent of said line spacing mechanism for turning said platen, and means for automatically locking the platen against rotation by said independent means in at least one direction.

60. In a typewriting machine, the combination of a platen, line spacing mechanism comprising a line spacing pawl and a line spacing wheel having teeth for affording a step-by-step line feed of the platen and blank portions on which the pawl is adapted to ride without transmitting movement to the line spacing wheel, means independent of said line spacing mechanism for turning said platen, and means for automatically locking the platen against rotation by said independent means in at least one direction, the construction and arrangement of the parts being such that the line spacing pawl and the said independent means are automatically rendered alternately operable to rotate the platen.

61. In a typewriting machine, the combination of a platen, line spacing mechanism comprising a line spacing pawl, a line spacing lever, and a line spacing wheel having teeth for affording a step-by-step line feed of the platen and blank portions on which the pawl is adapted to ride without transmitting movement to the line spacing wheel, means independent of said line spacing mechanism for turning said platen, and means for automatically locking the platen against rotation by said independent means in at least one direction, said locking means

comprising a stop on the line spacing lever and a cooperating stop that is rotative with the platen.

62. In a typewriting machine, the combination of a platen, line spacing mechanism comprising a line spacing pawl, a line spacing lever, and a line spacing wheel having teeth for affording a step-by-step line feed of the platen and blank portions on which the pawl is adapted to ride without transmitting movement to the line spacing wheel, means independent of said line spacing mechanism for turning said platen, and means for automatically locking the platen against rotation by said independent means in at least one direction, said locking means comprising a stop controlled by the line spacing lever and a cooperating stop that is rotative with the platen, the construction and arrangement of the parts being such that the line spacing lever is operative to turn the platen when stops are brought into cooperation to lock the platen against rotation by said independent means, and the said independent means being operative to turn the platen when the line spacing lever is inoperative to turn the platen.

63. In a typewriting machine, the combination of a rotative platen, two separate means for rotating said platen, one of said means being operable independently of the other, said rotating means being alternately operable to rotate the platen, and adjustable means for determining when said rotating means may be rendered inoperative.

64. In a typewriting machine, the combination of a rotative platen, two controlling devices for rotating said platen, means operating automatically to render said controlling devices alternately inoperative to rotate the platen, and adjustable means for determining when one of said controlling devices may be rendered inoperative.

65. In a typewriting machine, the combination of a rotative platen, two controlling devices for rotating said platen, means operating automatically to render said controlling devices alternately inoperative to rotate the platen, each of said devices being rendered inoperative at a predetermined point after it has been actuated to rotate the platen a given extent, and adjustable means for determining the extent of rotation that may be given the platen by one of said controlling devices and for determining when it may be rendered inoperative.

66. In a typewriting machine, the combination of a rotary platen, a finger wheel for turning the platen, a line spacing device, means for automatically rendering one of said finger wheel and line spacing device parts inoperative to rotate the platen, and adjustable means for determining the extent of rotation that may be given the platen by said finger wheel.

67. In a typewriting machine, the combination of a rotary platen, a finger piece for turning the platen, a hand actuated device, line spacing mechanism controlled by said hand actuated device, means operating automatically to render said hand actuated device inoperative to turn the platen, means for automatically locking said finger piece against movement, either the finger piece or hand actuated device being operable to turn the platen when the other is rendered inoperative, and adjustable means for determining when said finger piece may be rendered inoperative to turn the platen.

68. In a typewriting machine, the combination of a platen rotative intermittently to any desired extent, a finger piece for turning the platen, a hand actuated device, step-by-step line spacing mechanism controlled by said hand actuated device, a locking device that rotates with the platen, a cooperating disengageable locking device to automatically lock the platen against turning movement in at least one direction by said finger piece, and means for effecting an adjustment of one of said locking devices.

69. In a typewriting machine, the combination of a platen rotative intermittently to any desired extent, a finger piece for turning the platen, a hand actuated device, step-by-step line spacing mechanism controlled by said hand actuated device, a locking abutment that rotates with the platen, a cooperating locking abutment controlled by said hand actuated device, and means for adjusting one of said locking abutments.

70. In a typewriting machine, the combination of a platen rotative intermittently to any desired extent, a finger wheel for turning the platen, a hand actuated line spacing lever, step-by-step line spacing mechanism controlled by said line spacing lever, means operating automatically to render said line spacing lever inoperative to turn the platen, a locking abutment that rotates with the platen, a cooperating locking abutment controlled by said line spacing lever, and means for adjusting said locking abutment that rotates with the platen.

71. In a typewriting machine, the combination of a platen, line spacing mechanism comprising a line spacing pawl, and a line spacing wheel having teeth for affording a step-by-step line feed of the platen and blank portions on which the pawl is adapted to ride without transmitting movement to the line spacing wheel, means independent of said line spacing mechanism for turning said platen, means for automatically locking the platen against rotation by said independent means in at least one direction, and adjustable means for determining when said locking means shall lock the platen.

72. In a typewriting machine, the combination of a platen, line spacing mechanism

comprising a line spacing pawl, a line spacing lever, and a line spacing wheel having teeth for affording a step-by-step line feed of the platen and blank portions on which the pawl is adapted to ride without transmitting movement to the line spacing wheel, means independent of said line spacing mechanism for turning said platen, means for automatically locking the platen against rotation by said independent means in at least one direction, said locking means comprising a stop on the line spacing lever, and a cooperating stop that is rotative with the platen, and means for effecting a relative adjustment between said stops.

73. In a typewriting machine, the combination of a platen, line spacing mechanism comprising a line spacing pawl, a line spacing lever and a line spacing wheel having teeth for affording a step-by-step line feed of the platen and blank portions on which the pawl is adapted to ride without transmitting movement to the line spacing wheel, means independent of said line spacing mechanism for turning said platen, means for automatically locking the platen against rotation by said independent means in at least one direction, said locking means comprising a stop on the line spacing lever and a cooperating stop that is rotative with the platen, the construction and arrangement of the parts of the locking means being such that the line spacing lever is operative to turn the platen when stops are brought into cooperation to lock the platen against rotation by said independent means, the said independent means being operative to turn the platen when the line spacing lever is inoperative to turn the platen, and means for effecting a relative adjustment between said stops to determine when said independent means shall be rendered inoperative to turn the platen.

74. In a typewriting machine, the combination of a platen, a line spacing ratchet wheel, a stop movable with and adjustable relatively thereto, a cooperating stop normally in the path of said adjustable stop, a line spacing pawl, and a line spacing lever that carries said cooperating stop.

75. In a typewriting machine, the combination of a platen, a line spacing ratchet wheel, a stop carried by and adjustable relatively thereto, a cooperating stop normally in the path of said adjustable stop, a line spacing pawl, and a line spacing lever which moves said cooperating stop out of the path of the adjustable stop when the line spacing lever is actuated.

76. In a typewriting machine, the combination of a platen, a line spacing pawl, a line spacing lever, a line spacing wheel that has regularly spaced ratchet teeth and blank portions on which the pawl is adapted to ride without transmitting motion to the

line spacing wheel, a stop that rotates with the platen, a cooperating stop that is normally in the path of said first mentioned stop but is automatically moved out of its path by the line spacing lever, and means for effecting a relative adjustment between said stops.

77. In a typewriting machine, the combination of a cylindrical platen having a groove in the face thereof, a detachable covering that surrounds the platen and the ends of which are adapted to be received in said groove in the platen, said covering being independent of the work sheet and free from pigment, and a clamping piece that holds the ends of the covering in the groove.

78. In a typewriting machine, the combination of a cylindrical platen having a groove that extends longitudinally of the platen in the face thereof, a detachable covering that surrounds the platen and the ends of which are adapted to be received in said groove, said covering being independent of the work sheet and free from pigment, and a clamping piece that may be seated in said groove to hold the ends of the covering in the groove and thus connect the covering to the platen.

79. In a typewriting machine, the combination of a card receiving hopper, a rotative platen, a rectilinearly moving slide on each side of the hopper, a card discharging device connected with each slide and operative to engage and force cards from the hopper to said platen, and means controlled by the platen for intermittently actuating said slides.

80. In a typewriting machine, the combination of a card receiving hopper, a rotative platen, a spring restored slide on each side of the hopper, a card discharging device carried by each slide and operative to engage and push the lowermost card from the hopper to said platen, and means controlled by the platen for positively actuating said slides against the tension of their springs.

81. In a typewriting machine, the combination of a card receiving hopper having a card discharging opening in the lower portion thereof, a weight on top of the cards in said hopper, a rotary platen, slides on each side of the hopper, discharging fingers carried by said slides and operative on the lowermost card in the hopper, and means controlled by the rotation of said platen for intermittently actuating said slides.

82. In a typewriting machine, the combination of a card receiving hopper having a card discharging opening in the lower portion thereof, a rotary platen, spring returned slides on each side of the hopper, discharging fingers carried by said slides and operative on the lowermost card in the hop-

per, actuating devices which rotate with the platen, and co-acting devices on said slides for automatically and intermittently actuating said slides through a rotation of said platen.

83. In a typewriting machine, the combination of a rotary platen, a card holder, engaging means for engaging a card at the edge only thereof and for pushing the card from said holder, and means for actuating said engaging means at each half rotation of said platen to feed a card from said card holder to the platen.

84. The combination of a rotary platen, a card holder, and intermittently actuated means for positively engaging the cards in said holder and positively feeding a predetermined plurality of cards from said holder to a definite position relatively to said platen during each rotation of said platen.

85. The combination of a carriage, a card holder, instrumentalities for impressing characters on the cards, means operable at will at any point in the travel of the carriage for feeding the cards from said holder into position to be operated on by said instrumentalities, said means including a platen intermittently rotative to any desired extent and automatically operating means for arresting said feeding means when a card is positioned to receive the first line.

86. The combination of a carriage, a card holder, instrumentalities for impressing characters on the cards, means operable at will at any point in the travel of the carriage for feeding the cards from said holder into position to be operated on by said instrumentalities, said means including a platen intermittently rotative to any desired extent, means for arresting said feed-

ing means at the first writing line, and a line space device for feeding the cards from line to line.

87. The combination of a carriage, instrumentalities for impressing characters on cards, means operable at will at any point in the line of travel of the carriage for feeding the cards, said means including a device rotative intermittently to any desired extent, means for arresting said feeding means at the first writing line, a line spacing device for feeding the cards from line to line, and means operating to render said line spacing device inoperative when the last writing line is reached.

88. The combination of instrumentalities for impressing characters on cards, means for feeding the cards, said means including a device intermittently rotative to any desired extent, means for arresting said feeding means at the first writing line, a line spacing device for feeding the cards from line to line, means operating to render said line spacing device inoperative when the last writing line is reached, and means for effecting a relative adjustment of the last recited means and said arresting means.

89. In a typewriting machine, the combination of a rotative platen, two independently operable means for rotating said platen, and automatically actuated means whereby said rotating means are rendered alternately operable to rotate the platen.

Signed at the borough of Manhattan, city of New York, in the county of New York, and State of New York, this 28th day of June, A. D. 1906.

CLIO B. YAW.

Witnesses:

E. M. WELLS,
M. F. HANNWEBER.