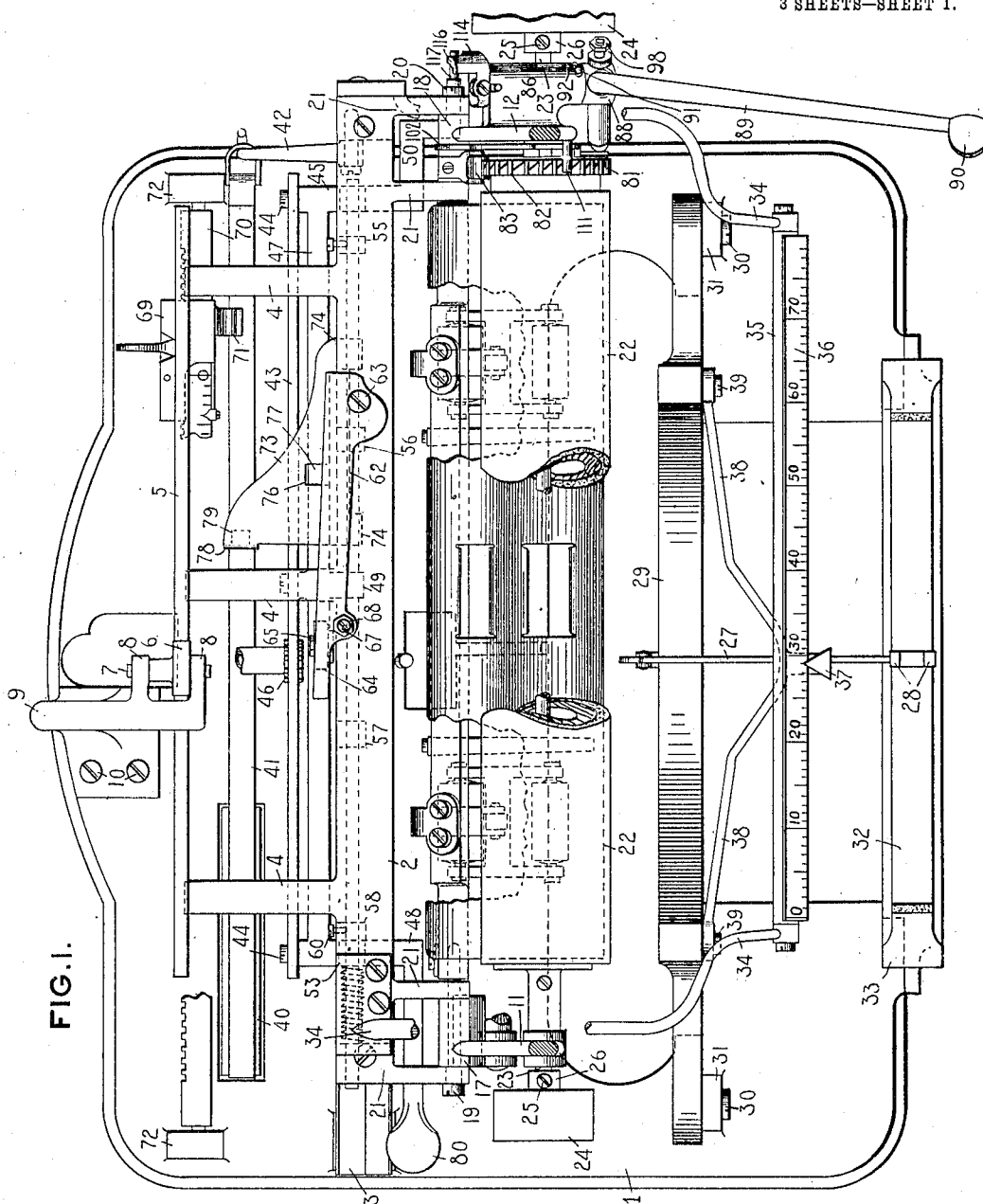


No. 852,014.

PATENTED APR. 30, 1907.

L. P. DISS.
TYPE WRITING MACHINE.
APPLICATION FILED JAN. 11, 1904.

3 SHEETS—SHEET 1.



WITNESSES:

K. V. Donovan.
E. M. Wells.

INVENTOR:

Louis P. Diss

by Jacob Feldt

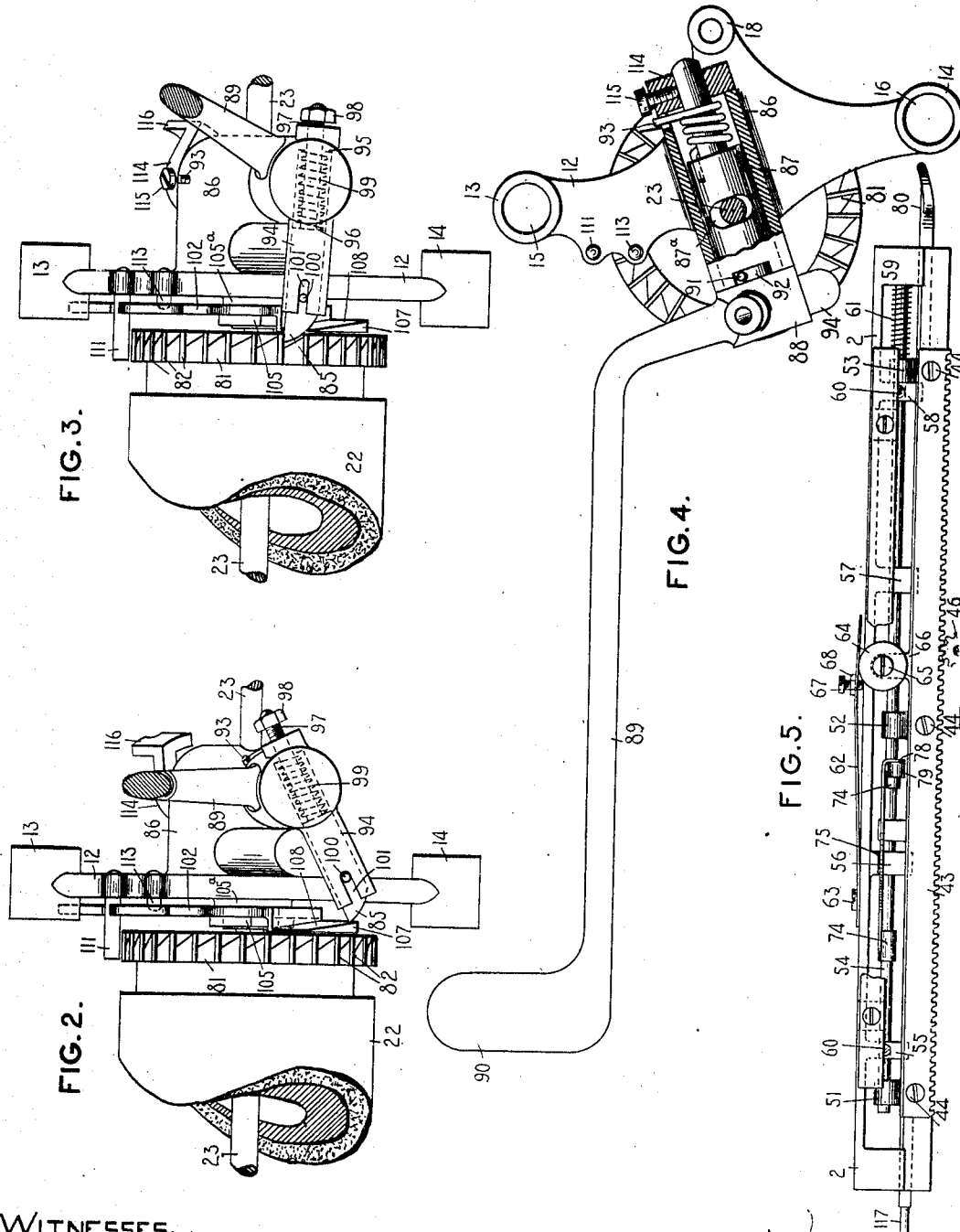
HIS ATTORNEY

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3 SHEETS—SHEET 2.



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3 SHEETS—SHEET 3.

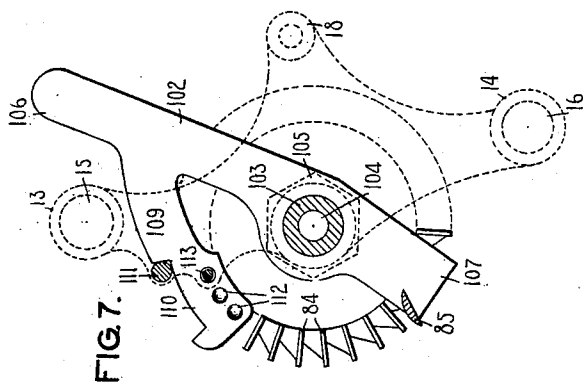


FIG. 7.

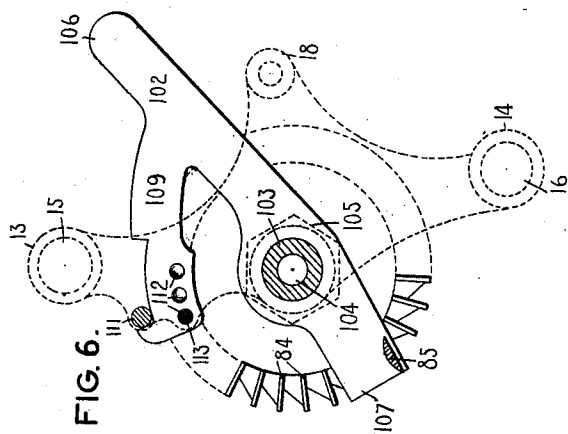


FIG. 6.

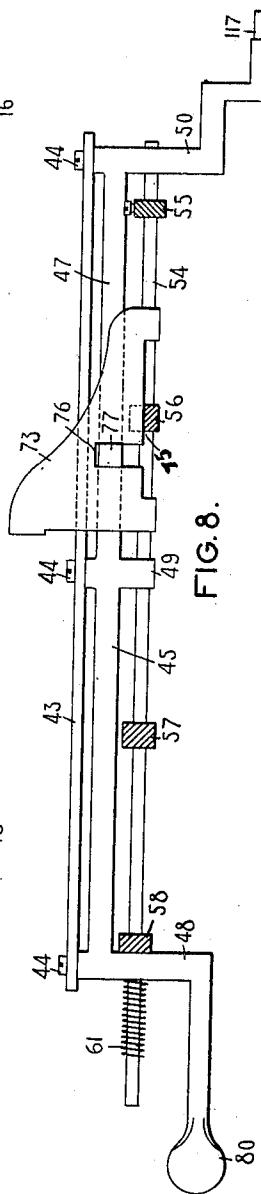


FIG. 8.

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UNITED STATES PATENT OFFICE.

LOUIS P. DISS, OF ILION, NEW YORK, ASSIGNOR TO WYCKOFF, SEAMANS & BENEDICT, OF ILION, NEW YORK, A CORPORATION OF NEW YORK.

TYPE-WRITING MACHINE.

No. 852,014.

Specification of Letters Patent.

Patented April 30, 1907.

Application filed January 11, 1904. Serial No. 188,505.

To all whom it may concern:

Be it known that I, LOUIS P. DISS, a citizen of the United States, and a resident of Ilion, in the county of Herkimer 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 especially to line spacing mechanism wherein the means for returning the carriage to its starting position imparts a line space feed to the platen.

My invention consists in certain features of construction and combinations of parts which will be fully set forth herein and particularly pointed out in the appended claims.

In the accompanying drawings, Figure 1 is a plan view of a typewriting machine embodying my invention; certain parts being broken away and others shown in section and parts of the mechanism being omitted. Fig. 2 is an elevation showing the right-hand end of the platen and platen frame and associated parts; the parts being shown in normal position. Fig. 3 is a view similar to Fig. 2 but with the line space mechanism shown in operated position. Fig. 4 is an end view of the parts shown in Figs. 2 and 3, some of said parts being shown in section. Fig. 5 is an elevation of the letter space feed rack and some of the associated parts, viewed from the rear. Fig. 6 is a sectional elevation, the section being taken immediately at the left of the right-hand end piece of the platen frame, the position of said platen frame being indicated by dotted lines. Fig. 7 is a view similar to Fig. 6 but showing the guard for the line space ratchet wheel in a different position. Fig. 8 is a plan view of the letter space feed rack and associated parts, the portions of the carriage truck supporting the same being shown in section.

The same parts are designated by the same reference characters in the different figures of the drawing.

I have shown my invention applied to a front strike typewriting machine, but the features of said invention are applicable to machines of other types.

In the drawings, 1 represents the top plate of a typewriting machine and 2, the truck of

the carriage. The carriage may be mounted and fed across the machine in any suitable manner, as in the well known No. 8 Remington machine for instance. A grooved rail 3 is fixed to the top plate 1 of the machine and a similar rail forming part of the carriage truck is supported above it by means of anti-friction rollers. The truck has rearwardly extending arms 4 supporting a rail 5 which is engaged by an anti-friction roller 6 journaled on a rod 7 carried by ears 8 projecting from the side of a bracket 9 rising from the top plate 1 of the machine to which it is secured by screws 10. The platen frame comprises end pieces or plates 11 and 12 each formed with sleeves 13 and 14 forming openings 15 and 16 for the reception of rods or bars rigidly secured therein and connecting the two end pieces of the platen frame together. Said end pieces also have sleeves or hubs 17 and 18 and screws 19 and 20 are threaded into ears 21 projecting forward from the carriage truck, and have smooth portions upon which the sleeves or hubs 17 and 18 are journaled. Any suitable means may be employed for rocking the platen frame on the pivots 19 and 20 to provide for upper and lower case writing but it has not been thought necessary to show such means, as it constitutes no part of my present invention. The platen 22 has a shaft 23 journaled in the end pieces or plates of the platen frame and finger wheels 24 secured to said shaft by set screws 25 threaded into the hubs 26 of said finger wheels and engaging said shaft 23.

The type bars 27 have types 28 upon their free ends and are pivotally mounted on a type bar segment 29 fixed by means of screws 30 to ears 31 rising from the top plate 1 of the machine. When in their normal position, the type bars rest against a pad 32 supported by a segmental support 33 in a manner common in front strike typewriting machines. Arms 34 projecting in a forward direction from the truck are connected by a bar 35, which supports the letter space or carriage scale 36, the scale co-operating with an index 37 which is supported by arms 38 attached to the type bar segment 29 by means of screws 39.

The carriage is drawn across the machine by means of a spring coiled within a drum 40

around which is wound a strap 41 connected to the carriage by means of a hook 42 in the usual manner. A feed rack 43 is secured by means of screws 44 to a frame 45 carried by the truck 2. Any suitable co-operating letter space feed or escapement mechanism may be used in connection with this rack. Thus I have shown said rack engaging a pinion 46 fixed to one end of a shaft, on the other end of which is, or may be, the escapement wheel (not shown) controlled in the usual manner to afford a step-by-step movement of the carriage. I have not illustrated these parts, they being well known in the art and the particular construction and arrangement thereof being immaterial to the present invention.

The frame 45 comprises a yoke bar 47 connecting three arms 48, 49 and 50 having lugs 51, 52 and 53 respectively, through which passes loosely a rod 54 (see Fig. 5). Said rod 54 passes through and is supported by lugs 55, 56, 57, 58 and 59 depending from the truck 2. The rod 54 is rigidly secured to said truck by means of set screws 60 threaded into lugs 55 and 58 and engaging said rod 54. A spring 61 is coiled about the rod 54 and is compressed between the lug 59 depending from the truck 2 and the lug 53 rising from the frame 45, thus pressing the frame toward the right, as viewed in Fig. 1, and normally pressing the lug 53 into engagement with the lug 58. It will be seen that the frame 45 is so mounted as to be capable of oscillating about the rod 54 and that a limited independent movement between the platen frame and truck, against the tension of the spring 61, is afforded. A flat spring 62 is secured to the truck 2 by means of a headed screw 63 and presses downward upon a roller 64 journaled upon a shouldered screw 65 threaded into a lug 66 rising from the frame 45, thus yieldably holding the feed rack 43 into engagement with its pinion 46. The downward motion of the spring 62 is adjustably limited by a set screw 67 threaded through said spring and engaging the top of the truck 2 and the screw 67 is provided with a lock nut 68 to secure it in its adjusted position. At its free end the spring 62 is bent downwardly so that when the frame 45 is forced into its left-hand position relatively to the truck, the tension of the spring on the roller is greater than when the parts are in their normal position.

The machine is provided with a margin stop of well-known construction comprising a stop piece 69 adjustably mounted on a transverse notched bar 70 and having a stop lug or projection 71 extending therefrom. The bar 70 is supported by lugs 72 rising from the top plate 1 of the machine. Co-operating with the stop 71 is a plate 73 preferably formed of sheet metal as shown. The plate 73 has parts thereof bent around the rod 54, thus forming sleeves 74 loosely sur-

rounding said rod. In order to prevent said plate 73 from turning upon the rod 54 and to support it in horizontal position, the lug 56 depending from the truck 2 is slotted as shown at 75 and the straight edge of the plate 73 is loosely seated in said slot. The plate 73 has a notch 76 which receives a lug 77 rising from the frame 45 to prevent relative endwise movements of said plate 73 and said frame 45. The plate 73 is bent downward as shown at 78 and has fixed thereto a stop piece 79 adapted to engage the stop piece 71 above described. It will be seen that the plate 73 and the frame 45 are so connected that they are constrained to move together across the machine, but that said plate 73 does not move up and down with the frame 45 when said frame rocks on its pivot. It is, of course, not essential that the plate 73 be made of sheet metal as described, but this is a convenient manner of forming the same.

The left-hand arm 48 of the frame 45 is extended and formed into a handle or thumb-piece 80 as shown. It will be understood that the frame 45 may be rocked upon its pivot to raise the rack bar 43 out of engagement with its pinion 46 by depressing said thumb-piece 80.

The line space mechanism comprises a ratchet wheel 81 connected to the platen at its right-hand end. The peripheral face of the wheel 81 is formed with ratchet teeth 82 which are engaged by a spring pressed detent roller 83 in the usual manner. The flat or end face of the wheel 81 has formed thereon ratchet teeth 84 adapted to be engaged by the line space pawl 85. The right-hand end-piece 12 of the platen frame has formed thereon a housing 86 having a cylindrical bore constituting a bearing for a rock shaft 87, to the front end of which is fixed the hub 88 of a lever 89 which extends toward the front of the machine and has its ends formed into a handle or finger piece 90. The rocking motion of the shaft 87 is limited in both directions by the engagement of a pin 91 fixed to said rock shaft with the ends of a segmental slot or notch 92 in said housing 86. The rearward end of the shaft 87 is reduced as shown and has coiled about it a spring 93, one end of which is fast to the shaft and the other end of which projects through an opening or notch in the housing as shown. The tension of the spring is such as to hold the rock shaft 87 normally at the limit of its motion in a left-hand direction. The line space pawl 85 consists of a rod slidably mounted in the bore of a housing 94 projecting from the hub 88. Said bore is reduced near its outer end to form an annular shoulder 95 and the pawl 85 is also reduced to form an annular shoulder 96; and the end of such reduced portion is threaded as shown at 97 for the reception of a nut 98 to limit the longitudinal movement of the pawl

85 in one direction in its housing. The pawl is pressed toward the ratchet wheel by a spring 99 coiled about the same and compressed between the shoulders 95 and 96. A pin 100 projecting from the side of the pawl 85 into a slot 101 formed in the housing 94 prevents rotation of said pawl in said housing. The end of the pawl is beveled as shown to insure proper engagement of said pawl with the teeth of the ratchet. The shaft 87 extends across the axis of the platen and has an opening 87^a therein through which the shaft 23 of the platen passes. The opening 87^a is elongated to permit of the oscillation of the shaft 87 without interfering with the shaft 23. Said shaft 23 extends entirely through the housing 86, and its right-hand finger wheel 24 is placed beyond said housing. A guard plate 102 is journaled on an annular lug 103 projecting inward from the end piece 12 and concentric with the opening 104 in which is journaled the shaft 23 of the platen. The plate 102 is held against axial displacement on its journal bearing by a nut 105 threaded onto the end of the projection 103 and by an annular shoulder 105^a projecting from the end piece 12. The plate 102 is extended at 106 to form a handle by which it may be oscillated on its bearing. The end 107 of the plate 102 lies close to and covers some of the ratchet teeth 84. Said end of the plate is formed substantially wedge-shaped as shown to provide a cam surface 108 which co-operates with the beveled end of the pawl 85 to cam the pawl out of engagement with the ratchet teeth 84 during the movement of the pawl back to normal position. The plate 102 has a segmental arm 109 in one edge of which is formed a notch 110 into which extends a pin 111 fixed to and projecting from the end piece 12 of the platen frame. The engagement of the pin 111 with the ends of the notch 110 limits the motion of the plate 102 about its bearing.

The parts are so proportioned that when the pawl 85 is operated by the lever 89 with the plate 102 in its extreme forward position shown in Fig. 7, said pawl 85 escapes from said plate 102, engages one of the ratchet teeth 84, and turns said ratchet wheel a distance equal to the width of three teeth; but when said plate 102 is in its extreme backward position shown in Fig. 6, after leaving the plate 102 the pawl 85 moves only far enough to operate the ratchet wheel a distance of one tooth. If said plate were set in an intermediate position, the pawl would obviously move the ratchet wheel a distance of two teeth. In order to hold the plate 102 in either of the three positions indicated, the arm 109 is provided with three depressions 112 and a pin 113 fixed to and projecting inward from the end piece 12 has its end rounded to engage one or the other of said depressions 112, according to the position in

which the plate 102 is set. When the plate 102 is moved from one position to another, the arm 109 yields sufficiently to permit the pin 113 to escape from one depression 112 and to become lodged in another; but this requires more force than is exerted by the friction of the pawl 85 upon the cam surface 108.

The reduced end of the shaft 87 projects beyond the housing 86 and carries a hub 114 secured to said shaft by a set screw 115 threaded into said hub and engaging said shaft. An eccentric lug or projection 116 extends from said hub 114 toward the rear of the machine. The arm 50 of the frame 45 extends forward past the rod 54 as shown and has a portion 117 projecting under the eccentric 116 in position to be depressed by said eccentric when the shaft 87 is rocked by its handle 90. The position of the part 117 on the frame 45 is such that when the part 117 is moved by the eccentric 116, the feed rack 43 will be elevated to free the carriage, so that a single movement of the hand lever toward the right is effective to produce a line spacing movement of the platen, lift the feed rack to disconnect the carriage and restore the carriage to the right. The eccentric 116 engages the portion 117 of the frame 45 at a point near the right-hand end of said frame portion and when the carriage is drawn to the right by the handle 90 and the frame 45 is arrested by the engagement of the stops 79 and 71, the carriage moves a little further, compressing the spring 61 until the lug 51 engages the lug 55. This slight additional motion is sufficient to carry the eccentric 116 past the frame portion 117 and to release the feed rack frame and thus permit the spring 62 to depress the same until the feed rack 43 engages the pinion 46.

In the operation of my device, the plate 102 is set by manipulation of the handle 106 to one or the other of its three positions according to the width of line spacing desired and the machine is operated in the usual manner. The carriage is returned to position to begin a new line by pressure on the handle 90 in the direction of motion of the carriage. This results first in oscillating the shaft 87 against the tension of its spring 93 until the pin 91 engages the right-hand end of the notch 92. The pawl 85 engages one of the ratchet teeth 84, turning the platen a distance of one, two or three ratchet teeth according to the position of the plate 102; and the eccentric 116 depresses the frame portion 117, lifting the feed rack 43 out of engagement with its pinion 46. Pressure upon the handle 90 in the same direction being continued, the carriage is returned toward the initial position until the stop 79 engages the stop 71, thus arresting the frame 45. Still further pressure on the handle 90 in the same direction gives a slight additional move-

ment to the carriage, freeing the frame portion 117 from the eccentric 116, thus releasing the frame 45 and permitting the rack bar 43 to re-engage its pinion 46. The entire operation of imparting a line space feed to the platen, releasing the rack 43 from its pinion, returning the carriage and re-engaging the rack 43 and its pinion, is thus effected by a single motion of the handle 90, and this motion is produced by simple pressure on said handle in one direction.

The adjustable guard 107, covering a portion of the line space ratchet wheel, constitutes a means for regulating the line space feed which has peculiar advantages in the present combination. If the line space feed were regulated by varying the extent of oscillation of the shaft 87, it would be necessary to place the eccentric 116 at a much greater distance from the axis of the shaft 87 in order that said eccentric should have an extent of motion sufficient to properly rock the frame 45 when the parts were adjusted to give the pawl its least oscillation. By the present construction, in which the shaft 87 oscillates to its full extent at every operation thereof, the eccentric 116 is placed close to the axis of the shaft, which makes a very compact arrangement.

It will be observed that the entire construction of my line spacing and carriage returning mechanism is extremely simple, the thumb-piece 80 being an integral part of the frame 45 and the eccentric 116, which is in effect a part of the shaft 87, engaging another portion of the frame 45 directly, without any intermediate levers or mechanism whatever. It will also be observed that one operation of the handle 90, consisting only in pressing said handle to the right; results in imparting the line space movement to the platen, lifting the letter space feed rack out of engagement with its pinion, returning the carriage to normal position, and automatically restoring the feed rack to its normal position, and that these operations are performed by a very small number of moving parts.

The frame portion 117 lies directly beneath the pivotal axis of the platen frame, and quite close to said axis, with the result that the engagement of the eccentric 116 with said frame portion 117 is almost identically the same whether the platen is in lower case or upper case position.

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

1. In a typewriting machine, the combination of a platen frame; a platen having a shaft journaled in said frame; and a line space feed device comprising a rock shaft journaled in said frame and having an enlarged opening for the platen shaft.

2. The combination with a platen and a carriage, of a letter space mechanism com-

prising a feed rack carried by a frame pivoted to said carriage and also movable endwise thereon; an oscillating member comprising a carriage-returning handle and having a line space pawl connected thereto; said oscillating member adapted to engage a portion of said feed rack frame and to be disengaged therefrom by relative endwise movement of said carriage and said feed rack frame; and a stop for arresting said feed rack frame.

3. The combination with a carriage, of a letter space mechanism comprising a feed rack carried by a frame pivoted to said carriage and also movable endwise thereon; an oscillating member comprising a carriage-returning handle; said oscillating member adapted to engage a portion of said feed rack frame and to be disengaged therefrom by relative endwise movement of said carriage and said feed rack frame; and a stop for arresting said feed rack frame.

4. The combination with a platen and a carriage, of a letter space mechanism comprising a feed rack carried by a frame pivoted to said carriage; a member which oscillates about an axis that lies fore-and-aft of the machine, said member engaging a portion of said pivoted frame and carrying a line space pawl; a line space wheel operated by said pawl; and an adjustable guard interposed between said wheel and pawl for controlling the engagement of said pawl with said ratchet wheel.

5. The combination with a movable carriage and a platen journaled therein, of a letter space feed mechanism comprising a feed rack carried by a frame pivoted to said carriage; a line space wheel connected to said platen and having ratchet teeth on the side thereof; an oscillating member having its axis arranged transversely of the axis of the platen and carrying a pawl co-operating with said line space ratchet wheel; said oscillating member also directly engaging a portion of said feed rack frame; and a handle connected to said oscillating member, whereby a single movement of the handle in the general direction of the travel of the carriage is effective to disengage the rack, produce a line spacing movement of the platen and return the carriage.

6. The combination with a platen and a carriage therefor, of a letter space rack pivotally mounted on said carriage; and a carriage returning handle; and connections operated by a pressure upon said handle in the direction of the travel of the carriage for imparting a line-space movement to said platen, raising said letter space rack, returning said carriage and then releasing said letter space rack.

7. In a typewriting machine having a movable carriage, the combination of a platen journaled in a platen frame; a rock shaft journaled in said platen frame trans-

versely of said platen; a carriage-returning
handle and a line space pawl that slides in a
bearing connected to said rock shaft; a let-
ter space feed rack carried by a frame pivoted
5 to said carriage; and an eccentric carried by
said rock shaft and directly engaging a por-
tion of said feed rack frame.

Signed at Ilion, in the county of Herkimer,
and State of New York, this 7th day of Janu-
ary, A. D. 1904.

LOUIS P. DISS.

Witnesses:

M. K. JENNE,
A. B. RUSSELL.