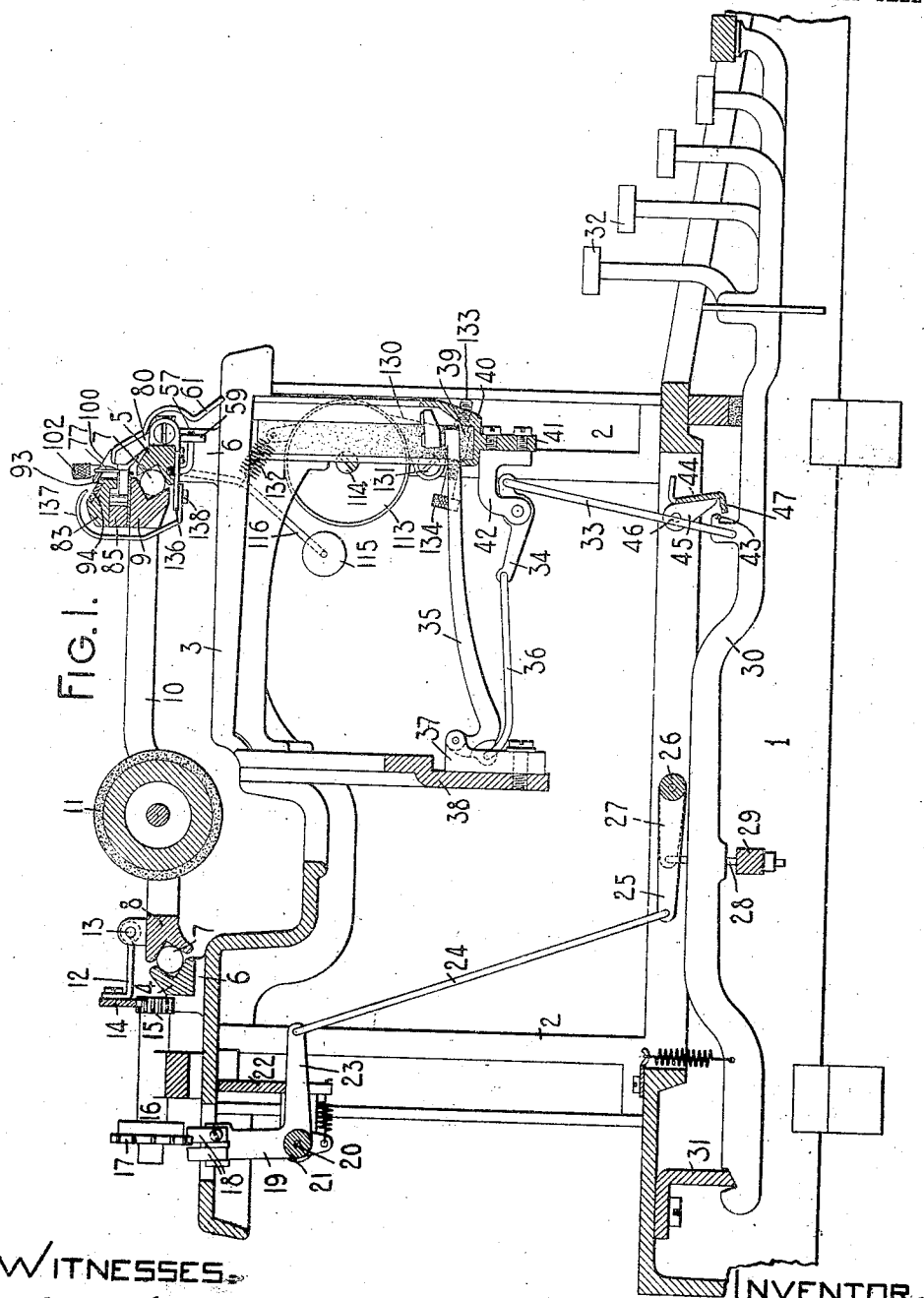


956,672.

E. H. BERRY.
TYPE WRITING MACHINE.
APPLICATION FILED FEB. 21, 1908.

Patented May 3, 1910.

5 SHEETS—SHEET 1.



WITNESSES.

E. M. Wells.

Charles E. Smith

INVENTOR.

Edgar H. Berry

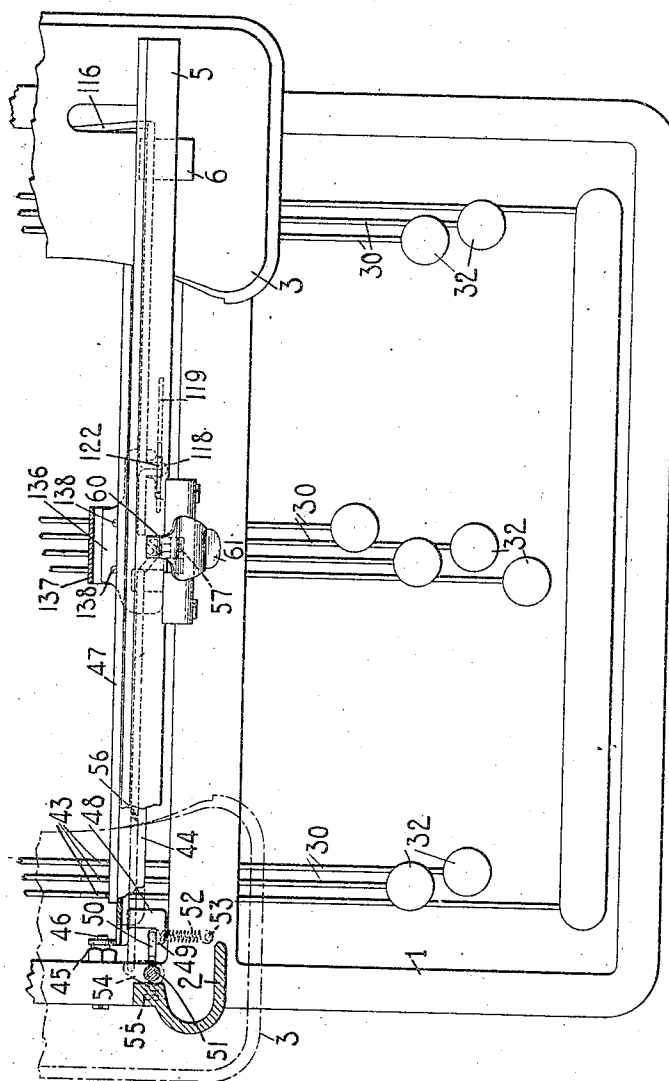
By Jacob Feltel

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E. H. BERRY.
TYPE WRITING MACHINE.
APPLICATION FILED FEB. 21, 1908.

5 SHEETS—SHEET 3.

FIG. 3.



E. M. Wells

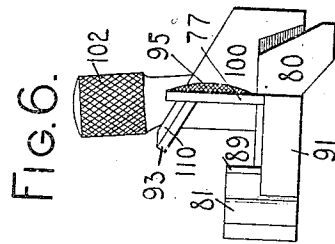
Charles Emuth

Edgar H. Berry

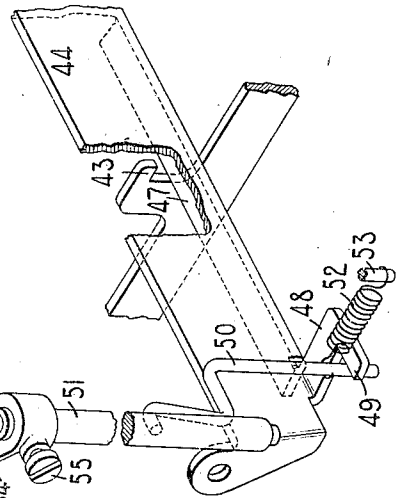
By Jacob Feld
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5 SHEETS—SHEET 4.



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501

FIG. 4.

E. M. Wells.

Wm. E. Hunt

Edgar H. Berry

By Jacob Filbel

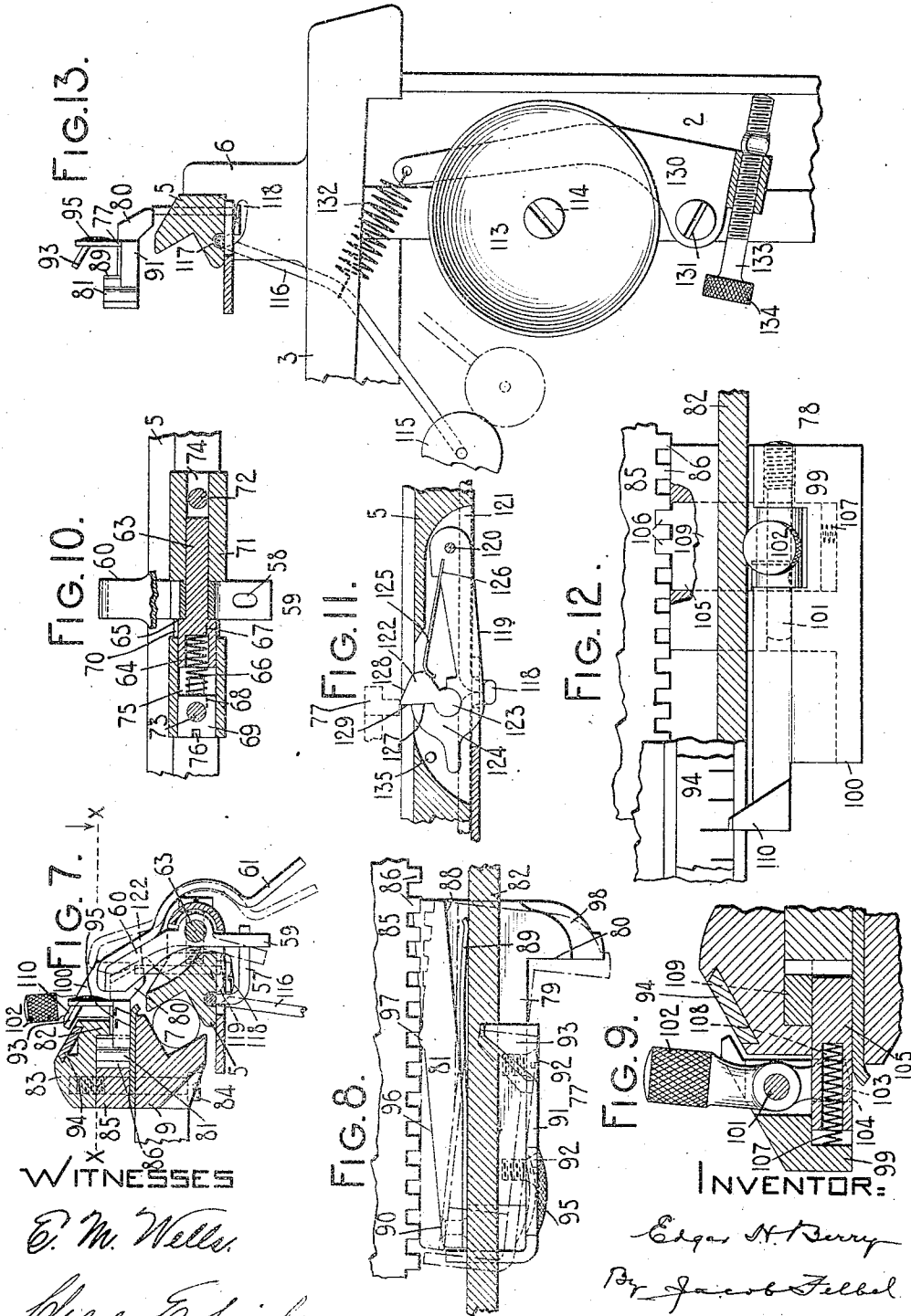
HIS ATTORNEY

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Patented May 3, 1910.

5 SHEETS—SHEET 5.



WITNESSES

E. M. Wells.

Wm. E. Smith

INVENTOR:

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By Jacob F. Fabel

HIS ATTORNEY

UNITED STATES PATENT OFFICE.

EDGAR H. BERRY, OF NEW YORK, N. Y., ASSIGNOR TO WYCKOFF, SEAMANS & BENEDICT,
OF ILION, NEW YORK, A CORPORATION OF NEW YORK.

TYPE-WRITING MACHINE.

956,672.

Specification of Letters Patent.

Patented May 3, 1910.

Application filed February 21, 1908. Serial No. 417,132.

To all whom it may concern:

Be it known that I, EDGAR H. BERRY, 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 line lock and alarm and margin stop mechanism and the main object of my invention is to provide improved mechanism of the character specified.

To the above and other ends which will hereinafter appear, my invention consists of the features of construction, arrangements of parts and combinations of devices to be hereinafter set forth and particularly pointed out in the appended claims.

In the accompanying drawings wherein like reference characters indicate corresponding parts in the various views, Figure 1 is a vertical front to rear sectional view of a typewriting machine embodying my invention. Fig. 2 is a front elevation of the same with parts in section. Fig. 3 is a fragmentary top plan view of the same with the parts sectioned away. Fig. 4 is an enlarged detail top view of the margin and final stops at the right-hand end of the carriage. Fig. 5 is an enlarged fragmentary detail perspective view showing portions of the line lock mechanism. Fig. 6 is an enlarged detail end view of the margin and final stop which is associated therewith. Fig. 7 is an enlarged detail transverse sectional view taken through the front bar of the carriage and the front supporting rail on the frame of the machine and showing portions of the line lock and stop mechanism. Fig. 8 is an enlarged detail plan view partly in section of the margin stop and some of the associated parts, the section being taken on the line *a-a* of Fig. 7 and looking in the direction of the arrow at said line. Fig. 9 is an enlarged detail transverse sectional view of one of the final stops and some of the associated parts. Fig. 10 is a front elevation partly in section of a central stop which coöperates with the line lock and margin stop and by which the line lock mechanism is actuated. Fig. 11 is a front view with parts in section showing a portion of the alarm mechanism. Fig. 12 is an

enlarged detail top view with parts in section showing the final stop associated with the margin stop and some of the parts that coöperate therewith. Fig. 13 is a side elevation partly in section showing the alarm mechanism.

I have shown my invention in the present instance applied to a front-strike typewriting machine similar to that disclosed in the application of Oscar Woodward, Serial No. 274,288, filed August 15th, 1905, but it should be understood that the invention may be embodied in various styles of typewriting machines.

The frame of the machine comprises a base 1, corner posts 2 and a top plate 3. Fixed rails 4 and 5 are supported on upwardly extending lugs 6 which project from the top plate. The rails 4 and 5 are grooved for coöperation with anti-friction balls or rollers 7 which are received in correspondingly grooved rails 8 and 9 which constitute the rear and forward cross bars respectively of a rectangular carriage or truck, said cross bars being united by end bars 10. A platen 11 is supported by the carriage in any suitable manner.

Rearwardly extending arms 12 are pivoted at 13 and carry at their rear ends a feed rack 14 which coöperates with a feed pinion 15 on one end of a shaft which turns in a fixed bearing 16, the rear end of the shaft being operatively connected to an escapement wheel 17. Feed dogs 18 coöperate with the escapement wheel and are carried by a dog rocker 19 pivoted at 20 in bracket arms 21 which extend from the depending bracket 22 secured to the top plate. A forwardly extending arm 23 on the dog rocker is connected by a link 24 with a crank arm 25 which projects from a rock shaft 26 pivoted at its ends in the base of the machine. Crank arms 27 likewise extend from the rock shaft and are connected by depending links 28 to a universal bar 29 which extends transversely of the machine beneath the set of key levers 30 pivoted at their rear ends on a fulcrum plate 31 and provided at their forward ends with finger keys 32. Each key lever is connected by an upwardly extending link 33 with a sub-lever 34 which in turn is connected to an upwardly and rearwardly striking type bar 35 by a link 36. The type bars are pivoted on langers 37 segmentally arranged on type bar seg-

ments 38. The forward ends of the type bars are supported on a pad 39 which rests upon a segment 40 having a depending flange 41 which supports hanger 42 for the sub-levers 34. Each of the key levers is provided with an engaging portion or hook-like projection 43 near the forward end thereof. A locking bar 44 is provided at its ends with ears 45 by which it is pivoted at 46 to the base of the machine above the system of key levers and over the engaging projections 43 on the key levers. The lower portion of the locking bar extends rearwardly to form a flange 47 which is adapted to pass under the projections or engaging portions 43 on the key levers and to lock them against printing depression or against an extent of depression which will afford printing operations of the type bars. From an inspection of Fig. 5 it will be observed that the locking bar is provided with a forwardly extending arm 48 hook-shaped at its forward end as indicated at 49 for co-operation with a depending crank arm 50 on a vertical rock shaft 51. The crank arm 50 is preferably in the nature of a wire secured at one end to the rock shaft and engaged by a contractile spring 52 secured at one end to the crank arm and at its opposite end to a pin 53 projecting from the fixed portion of the machine. The rock shaft 50 extends through an opening in the top plate and is situated adjacent to the left-hand forward corner post of the machine. The lower end of the rock shaft is received in a bearing in the base of the machine, whereas the upper end of the rock shaft turns in the bearing in the forward fixed guide rail 5. The upper end of the rock shaft 51, where it extends above the top plate, has a crank arm 54 adjustably secured thereto by a set screw 55. The crank arm is pivotally connected to one end of a link 56 which extends transversely of the machine and has a longitudinal movement in a groove in the fixed rail 5. The link extends to about the center of the machine where it is bent forwardly at 57 and is received in an upright slot 58 in a stop member designated as a whole by the reference number 59. This stop member comprises an upwardly extending engaging or stop portion 60 located about centrally of the machine and at the forward portion thereof and is provided with a finger piece 61 by which it can be readily manipulated from the front of the machine by the operator. The stop member has a sleeve 62 driven with a drive fit on the contracted portion 63 of a cylindrical carrying member or trunnion-like pivot 64, the sleeve 62 abutting a shoulder 65 formed at the intersection of the enlarged and contracted portions of the carrying member 64. The carrying member 64 and the stop proper 60 together with the finger piece 61 thus consti-

tute in effect a single piece and if desired these parts may be formed as a single piece, though I prefer to form them in the manner described to facilitate manufacture and assembling. The left-hand end of the carrying member 64 of the stop may be recessed to receive a coiled expansion spring 66, one end of which is connected to the carrying member at 67, the other end of the spring being secured at 68 to a cylindrical block 69.

The stop 59 extends at its top and bottom through a slot 70 in a cylindrical housing 71 secured to the forward side of the fixed guide rail 5 by screws 72, 73. The slot 70 affords a movement of the stop in two directions at substantially right angles to each other, one direction being in the general direction of the travel of the carriage and the other at substantially right angles thereto. The reduced portion 63 of the stop carrier is received and has a bearing in an opening 74 in the cylindrical housing 71, whereas the enlarged portion of the carrier is received and has a bearing in an opening 75 in the housing.

The block 69 hereinbefore referred to has a screw-driver nick 76 at its outer end to enable the block to be turned in order to apply a torsional strain to the coiled spring 66. An opening extends transversely through the cylindrical block and the screw 73 passes freely through said opening to secure the block in place after torsional strain has been placed upon the spring 66. By this construction the spring 66 is employed for a two-fold purpose, *v. z.*, to turn the stop 59 around its pivotal center of its carrier in the housing 71 so as to bring the upper or top engaging portion 60 of the stop into the path of the cooperating stops on the carriage as shown in Fig. 7, and at the same time to normally maintain the stop toward the right as indicated in Fig. 10 and to restore it to this position after it has been moved to the left as will hereinafter more clearly appear.

It will be understood that the pin and slot connection 57-58 between the line lock stop 59 and the line lock mechanism affords a pivotal movement of the stop from the full to the dotted line position shown in Fig. 7 or vice versa without affecting the line lock mechanism. When, however, the stop 59 is moved to the left, a longitudinal movement of the link 56 is effected thereby turning the rock shaft 51 against the tension of the spring 52 to enable the locking bar 44 to move by gravity to the locking position where the flange 47 thereof will be situated beneath the engaging projections 43 on the key levers, thus locking the key levers against printing depression.

Near the right-hand end of the carriage and at the forward side thereof is carried a line lock stop designated as a whole by the reference numeral 77. To the right of

direction of the travel of the carriage but cannot be detached from the carriage. The left-hand end of the block 99 is formed with a pointer 110 for cooperation with the carriage scale 94 and said pointer is adapted to be brought into register with the pointer or indicator 93 on the line lock stop 77 so that both indicators may, if desired, be brought into register with the same index on the carriage scale as shown in Fig. 4. When the parts are in the positions shown in Fig. 4 not only are both of the pointers 93 and 110 brought into coincidence to register with the same index on the carriage scale but a portion of one stop is adapted to overlap the other, as shown in said figure and in Fig. 6, in order that both of the arresting faces 80 and 100 of the two stops may be brought into coincidence to effect co-operation with the line lock stop 59 at the same time. The construction of the line lock stop 78 is such that the stop 59 cannot be moved around its pivotal center to clear the final stop as will be understood from an inspection of Fig. 7. If, therefore, the two stops 77 and 78 be adjusted at the same index mark on the scale this will be a final point of arrest or the final point and only point at which the carriage can be locked out of operation and additional letters or a hyphen cannot be inserted unless the final stop is moved to the right. If, however, it is desired to enable the operator to set a predetermined number of characters after the initial line locking, this may be effected by first setting the final line lock stop 78 a predetermined distance from the stop 77. If, for instance, the stop 78 be located four letter space distances from the stop 77 on the carriage scale, then four additional characters may be inserted after the line lock stop 77 is reached and released and before the machine is finally locked out of operation by the final stop 78.

A marginal stop designated as a whole by the reference numeral 111 is provided near the left-hand end of the carriage and at the front thereof where it is readily accessible to the operator, and to the left of this margin stop is a final margin stop designated as a whole by the reference numeral 112. These stops 111 and 112 are constructed like the stops 77 and 78, respectively, except that they are reversed and a detail description of the stops 111 and 112 is deemed unnecessary. In the use of the stops 111 and 112 the margin stop 111 is first brought into contact with the stop 60 in the movement of the carriage from left to right but no movement of the stop 60 is effected at this time inasmuch as it is at this time pressed to the limit of its movement to the right by the spring 66 and an arrest of the carriage is therefore effected. Should the operator desire to write within the mar-

gin it is merely necessary to press the finger piece 61 rearwardly, thus moving the stop 59 out of the path of the engaging portion of the stop 111 and the operator may write beyond the normal margin determined by the stop 111; the distance beyond the normal margin within which writing can be produced being determined by the relative adjustment between the stops 111 and 112. When the stop 111 is to the right of the stop 59 and a movement of the carriage from right to left takes place a bevel on the stop 111, corresponding to the bevel 98 on the stop 77, will force the stop 59 around its pivotal center, thus enabling the stop 111 to pass to the left of the stop 59.

In order to warn the operator before the line lock mechanism is actuated I have provided alarm mechanism which is best shown in Figs. 1, 2, 3, 11 and 13 from which it will be seen that a bell 113 is secured to the forward right-hand corner post of the machine by a screw 114. A bell hammer 115 co-operates with the bell and is mounted on a carrier 116 formed at its upper end as a rock shaft 117 received in a groove in the bottom of the forward fixed rail 5 of the machine. This rock shaft is provided with a forwardly extending arm 118 which extends beneath an actuating lever or bell trip 119 pivoted at 120 in a cut-out 121 in the fixed rail 5 and extending through the cut-out and beyond the upper face of the rail as shown in Figs. 11 and 13. This lever 119 carries a pawl 122 having a rounded portion 123 received in a C-shaped bearing 124 of the lever 119 so as to afford a turning movement of the pawl 122 independently of the lever 119. A leaf spring 125 is secured at 126 to the lever and bears at its free end against the pawl 122 to hold it normally against a face 127 of the C-shaped bearing portion of the lever to normally retain the pawl and lever in fixed relation. The pawl 122 is beveled at 128 on the upper right-hand side thereof for purposes which will hereinafter appear. This pawl is in the path of the engaging portion 80 of the line lock stop 77. As the carriage moves to the left the engaging portion of the line lock stop will be brought into contact with the cam face 128 of the pawl 122 before the line lock stop reaches the stop 59. The effect of this contact is to move the left-hand end of the lever 119 downwardly, thus rocking the shaft 117 to move the bell hammer from the dotted to the full line position shown in Fig. 13. When the line lock stop passes the pawl 122 the parts of the bell trip and alarm mechanism will be restored to their normal positions and the bell hammer 115 will vibrate against the bell sounding an alarm, prior to the time the line lock stop actuates the line lock mechanism. In the movement of the carriage back to the right the line

this stop is what is termed a final line lock stop designated as a whole by the reference numeral 78. The line lock stop 77 in the present instance is formed as shown in Fig. 8 of a block 79 having an arresting face or portion 80 thereon which extends into the path of the coöperative stop 59 on the frame of the machine and is adapted to actuate it, as will hereinafter more clearly appear.

The block 79 is provided with a thickened or enlarged portion 81 received in the rear of a depending flange or retaining strip 82 on a bar 83 secured by screws 84 to the front cross bar 9 of the carriage. A rack 85 with square teeth 86 is interposed between the bar 83 and the cross bar 9 of the carriage and is secured in place by the screws 84 which secure the bar 83 in place. The teeth of the rack 85 extend forwardly for coöperation with teeth on the line lock stop, these teeth being situated at one end portion of the stop on the flange or enlarged portion 81 thereof. The forward wall of this enlarged portion is inclined as indicated at 88 to provide a space between the retaining strip 82 and the enlarged portion of the stop. A leaf spring 89 is secured at one end as at 90 to the line lock stop and bears at its opposite free end against the rear face of the retaining strip 82 and tends to press the right-hand or tooth-bearing portion of the stop toward the teeth of the rack 85. The forward face of the line lock stop has a sheet metal piece of plate 91 secured thereto by screws 92. An upwardly projecting pointer 93 extends from the piece 91 for coöperation with a carriage scale 94 carried by the carriage. The plate 91 near the left-hand end of the line lock stop is provided with a finger piece 95 by which the stop may be released from engagement with the rack 85 for adjustment in the direction of the travel of the carriage as will hereinafter appear.

From an inspection of Fig. 8 it will be seen that the rear side of the enlarged portion 81 of the line lock stop forms an inclined face 96 which between the teeth and the finger piece 95 has a rounded bearing portion or projection 97 that normally bears against the rack or the teeth thereon and constitutes a fulcrum on which the stop may be turned against the tension of the spring 89 from the full to the dotted line position, thus enabling the stop to be disengaged from the rack and adjusted longitudinally or in the direction of the travel of the carriage, the pointer 93 coöperating with the carriage scale to properly determine the position of adjustment of the line lock stop. It will be seen from an inspection of Fig. 8 that the engaging projection 80 of the line lock stop is beveled at 98 on the right-hand side thereof for purposes which will hereinafter appear.

As the carriage is moved from right to left the contact or engaging portion 80 of the line lock stop will be brought into engagement with the stop 59 on the frame of the machine, moving it in the direction of the axis of its trunnion-like pivot 63—64 to the left with the carriage against the tension of the spring 66. This movement is effective to transmit a longitudinal movement to the link 56 which turns the rock shaft 51, thereby moving the crank arm 50 rearwardly against the tension of its spring 52 to enable the locking bar 44 to drop by gravity to the locking position where the flange 47 on the bar is interposed in the path of the projections 43 on the key levers, thus preventing printing operations thereof and locking the machine out of operation. Should the operator desire to release the line lock mechanism in order to write one or more additional characters in order to complete a word or to insert a hyphen, the finger piece 61 may be pressed rearwardly, thus turning the stop 59 on its trunnion-like pivot 63—64 and moving the upper engaging portion of the stop 59 from the full to the dotted line position shown in Fig. 7, thereby carrying the stop 59 out of the path of the line lock stop 77 and the stop 59 will be returned to normal position by its spring 66. In the return movement of the carriage the beveled portion 98 of the line lock stop 77 will engage the arresting portion 60 of the stop 59, deflecting the arresting portion forwardly to the dotted line position shown in Fig. 7 to enable the line lock stop 77 to pass to the right of the stop 59.

The so-called final line lock stop 78 hereinbefore referred to is situated to the right of the line lock stop 77 and is shown in detail in Figs. 4, 6, 7, 9 and 12. From these figures it will be seen that the final stop designated as a whole by the reference numeral 78 comprises a block or stop carrying portion 99 having an arresting face 100 that extends into the path of the stop 59 as shown in Fig. 7. The body of the stop 78 is perforated to provide a bearing for a pivot 101 of a releasing device having a finger piece 102 fixed to the pivot 101 and having a depending end 103 received in a cut-out or opening 104 in a locking slide 105 provided at its rear end with teeth 106 which engage the teeth 86 on the rack 85. An expansion spring 107 is received at one end in an opening 108 in the locking slide and bears at its forward end against the block 99, thus tending to force the slide toward the rear of the machine and into engagement with the rack 85. The block 99 is formed as a flange or enlarged portion 109 received back of the depending retaining strip or flange 82 on the bar 83 hereinbefore referred to. When the finger piece 102 is moved rearwardly the locking slide is disengaged from the rack 85 and the stop 78 may be moved to right or left or in the

lock stop will be brought into contact with the left-hand straight face 129 on the pawl 122 and will turn it on its pivotal center 123 against the tension of its spring 125 without vibrating the lever 119, and the alarm will not be sounded. As the line lock stop passes to the right of the pawl 122 said pawl will be forced back to its normal position relatively to the lever 119 by the spring 125, and the parts will again be in position to sound the alarm when the carriage is moved to the left.

The means for applying spring pressure to the bell hammer and the associated parts are best shown in Fig. 13 where it will be seen that a device or lever 130 is pivoted at 131 to the right-hand forward corner post of the machine and is connected to one end of a spring 132, the other end of which is connected to the arm 116 of the bell hammer. The device 130 carries, at the other side of the pivot 131, a screw stop 133 provided with a knurled head 134 by which the stop may be adjusted to regulate the normal position of the pivoted device 130, it being understood that the end of the screw bears against the right-hand forward corner post 2 of the machine to limit the movement of the pivoted device 130 in one direction. As the screw 133 is turned forward from the position shown in Fig. 13 the upper end of the pivoted device 130 will be moved to the right and an increased pressure will be applied to the parts by expanding the spring 132 so that greater force will be applied to the bell hammer to increase the force of its stroke on the bell. By these means the power of the alarm or the force of the stroke of the bell hammer on the bell may be increased or decreased at will. A fixed pin 135 extends in the path of the lever 119 to limit its upward movement and thus enable it to be properly interposed in the path of the line lock stop. From an inspection of Fig. 7 it will be observed that the engaging portion 100 of the final line lock stop is out of the path of the pawl on the bell trip and consequently does not co-act therewith so that the alarm mechanism is only actuated by the line lock stop 77.

From an inspection of Fig. 1 it will be seen that the cylindrical bearing piece or housing 71 for the stop 59 is extended rearwardly at 136 to form a supporting bracket for a pointer 137 secured to the projection or bracket by a screw 138. The pointer is bent upwardly and then forwardly around the front cross bar of the carriage and coöperates at its forward end with the carriage scale 94.

From the foregoing description it will be seen that all of the stops 77, 78, 111, 112 and 59 are located at the front of the machine where they are readily accessible to the operator for adjustment and manipulation and

where the stops 77, 78, 111 and 112 co-act with the carriage scale which is at all times in the view of the operator so that the stops may be readily set by said scale to determine the desired points of engagement between said stops and the stop 59 and that the stop 59 is so positioned that it may be readily actuated by the operator to release the line locking mechanism or to enable the carriage to move beyond the normal margin determined by the margin stop 111.

Various changes may be made without departing from the spirit and scope of my invention.

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

1. In a typewriting machine, the combination of a carriage, a margin stop, and a final stop, indicators carried by said stops, and a scale with which said indicators coöperate, said stops being adjustable and constructed so that the indicators of both stops may simultaneously coöperate with the same index on the scale.

2. In a typewriting machine, the combination of a carriage, a margin stop, and a final stop, indicators carried by said stops, and a scale with which said indicators coöperate, and stops being adjustable and constructed so that the indicators of both stops may simultaneously coöperate with the same index on the scale, and so that stops may overlap to bring their contact or arresting faces into coincidence.

3. In a typewriting machine, the combination of a carriage, a margin stop, a final stop, a coöperative stop operative to co-act with both the margin and final stops at different points in the travel of the carriage or at a single point, a scale, indicators on the margin and final stops which coöperate with said scale either at different index points thereon or at the same index, and means for moving the said coöperative stop out of coöperative relation with said margin stop.

4. In a typewriting machine, the combination of a carriage, a scale at the front of the machine, a margin stop, an indicator carried by said margin stop and coöperative with said scale, a final stop, an indicator carried by said final stop and coöperative with said scale, a coöperative stop operative to co-act with the margin and final stops at different points in the travel of the carriage or to co-act with both the margin and final stops at a single point, and means for moving the said coöperative stop out of coöperative relation with said margin stop, all of the stops being carried at the front of the machine where they are readily accessible to the operator for adjustment and manipulation.

5. In a typewriting machine, the combination of a carriage, a scale at the front of the machine, margin and final margin stops,

each of said stops being independently adjustable and each carrying an indicator cooperative with said scale, line lock and final stops, each of said line lock and final stops being independently adjustable, and a cooperative stop, all of said stops being carried at the front of the machine where they are readily accessible to the operator for adjustment and manipulation.

6. In a typewriting machine, the combination of a carriage, a scale at the front of the machine, relatively adjustable margin and final margin stops, each of said stops being independently adjustable and each carrying an indicator cooperating with said scale, line lock and final stops, each carrying an indicator cooperating with said scale, each of said line lock and final stops being independently adjustable, and a cooperative stop, all of said stops being carried at the front of the machine where they are readily accessible to the operator for adjustment and manipulation, said cooperative stop being mounted for relative movement so that the cooperative stop may clear the margin stop and the line lock stop but so that the cooperative stop and the final stops will always remain one in the path of the others.

7. In a typewriting machine, the combination of a carriage, a scale at the front of the machine, margin and final margin stops, each of said stops being independently adjustable and each carrying an indicator cooperative with said scale, line lock and final line lock stops, each of said line lock and final stops being independently adjustable and each carrying an indicator cooperative with said scale, a cooperative stop, all of said stops being carried at the front of the machine where they are readily accessible to the operator for adjustment and manipulation, said cooperative stop having a movement in two directions at substantially right angles to each other, the movement of said cooperative stop in one direction positioning it to clear the margin and line lock stops but not the final stops, and line lock mechanism actuated by the movement of said cooperative stop in the other direction.

8. In a typewriting machine, the combination of a carriage, a carriage scale, an indicator cooperative therewith to indicate the position of the carriage, margin and final margin stops, each of said stops being independently adjustable and each carrying an indicator cooperative with said scale, line lock and final line lock stops, each of said line lock and final stops being independently adjustable and each carrying an indicator cooperative with said scale, a cooperative stop, all of said stops being carried at the front of the machine where they are readily accessible to the operator for adjustment and manipulation, said cooperative stop having a movement in two directions at sub-

stantially right angles to each other, the movement of said cooperative stop in one direction positioning it to clear the margin and line lock but not the final stops, line lock mechanism actuated by the movement of said cooperative stop in the other direction, and a finger piece connected directly to and carried by said cooperative stop.

9. In a typewriting machine, the combination of a carriage, a line lock stop on the carriage, a cooperative stop on the frame of the machine, said cooperative stop being mounted for movement in two directions at substantially right angles to each other, the movement of the cooperative stop in one direction carrying it out of the path of said line lock stop, an upright rock shaft, a link between said rock shaft and cooperative stop and united to the cooperative stop by a pin and slot connection to afford a movement of the cooperative stop in one direction without affecting said link, and line lock devices controlled by said rock shaft.

10. In a typewriting machine, the combination of a bell hammer, a spring connected therewith, and a pivoted adjusting device connected to the other end of said spring, said pivoted adjusting device carrying an adjustable stop.

11. In a typewriting machine, the combination of a bell hammer, a spring connected thereto, and a lever pivoted intermediate of its ends and connected at one side of the pivot to said spring and carrying a screw stop at the other end.

12. In a typewriting machine, the combination of a carriage, relatively adjustable margin and final margin stops, each of said stops being independently adjustable, line lock and final line lock stops, each of said line lock and final line lock stops being independently adjustable, and a cooperative stop, all of said stops being carried at the front of the machine where they are readily accessible to the operator for adjustment and manipulation, said cooperative stop being fixed on a trunnion-like pivot mounted for movement longitudinally of its axis as well as for turning movement, line lock mechanism actuated by a movement of the cooperative stop in the direction of the axis of its pivot, and means for turning said cooperative stop on its pivot to clear the line lock stop and the margin stop but not the final stops.

13. In a typewriting machine, the combination of a carriage, relatively adjustable margin and final margin stops, each of said stops being independently adjustable, line lock and final line lock stops, each of said line lock and final line lock stops being independently adjustable, and a cooperative stop, all of said stops being carried at the front of the machine where they are readily accessible to the operator for adjustment

and manipulation, said coöperative stop being fixed on a trunnion-like pivot mounted for movement longitudinally of its axis as well as for turning movement, key levers, a locking bar coöperative with said key levers, intermediate operative connections between said coöperative stop and said locking bar, the locking bar being moved to the locking position by a movement of said coöperative stop in the direction of the axis of its pivot, and hand actuated means for turning said coöperative stop on its pivot to clear the line lock stop and the margin stop but not the final stops.

14. In a typewriting machine, the combination of a carriage, relatively adjustable margin and final margin stops, each of said stops being independently adjustable, line lock and final line lock stops, each of said line lock and final line lock stops being independently adjustable, and a coöperative stop, all of said stops being carried at the front of the machine where they are readily accessible to the operator for adjustment and manipulation, said coöperative stop being fixed on a trunnion-like pivot mounted for movement longitudinally of its axis as well as for turning movement, key levers, a locking bar coöperative with said key levers, intermediate operative con-

nections between said coöperative stop and said locking bar, said intermediate connections including means which afford a turning movement of said coöperative stop without affecting said line lock mechanism, the locking bar being moved to the locking position by a movement of said coöperative stop in the direction of the axis of its pivot, and a finger piece connected directly with said coöperative stop for turning it on its pivot to clear the line lock stop and the margin stop but not the final stops.

15. In a typewriting machine, the combination of a carriage, a line lock stop carried thereby, line lock mechanism actuated by said line lock stop, a bell hammer which is likewise actuated by said line lock stop, a spring connected to said bell hammer, and a lever pivoted intermediate its ends and connected at one side of its pivot to said spring and carrying a screw stop at the other end.

Signed at the borough of Manhattan, city of New York, in the county of New York, and State of New York, this 20th day of February A. D. 1908.

EDGAR H. BERRY.

Witnesses:

FRANCIS E. VAN BUSKIRK,
CHARLES E. SMITH.