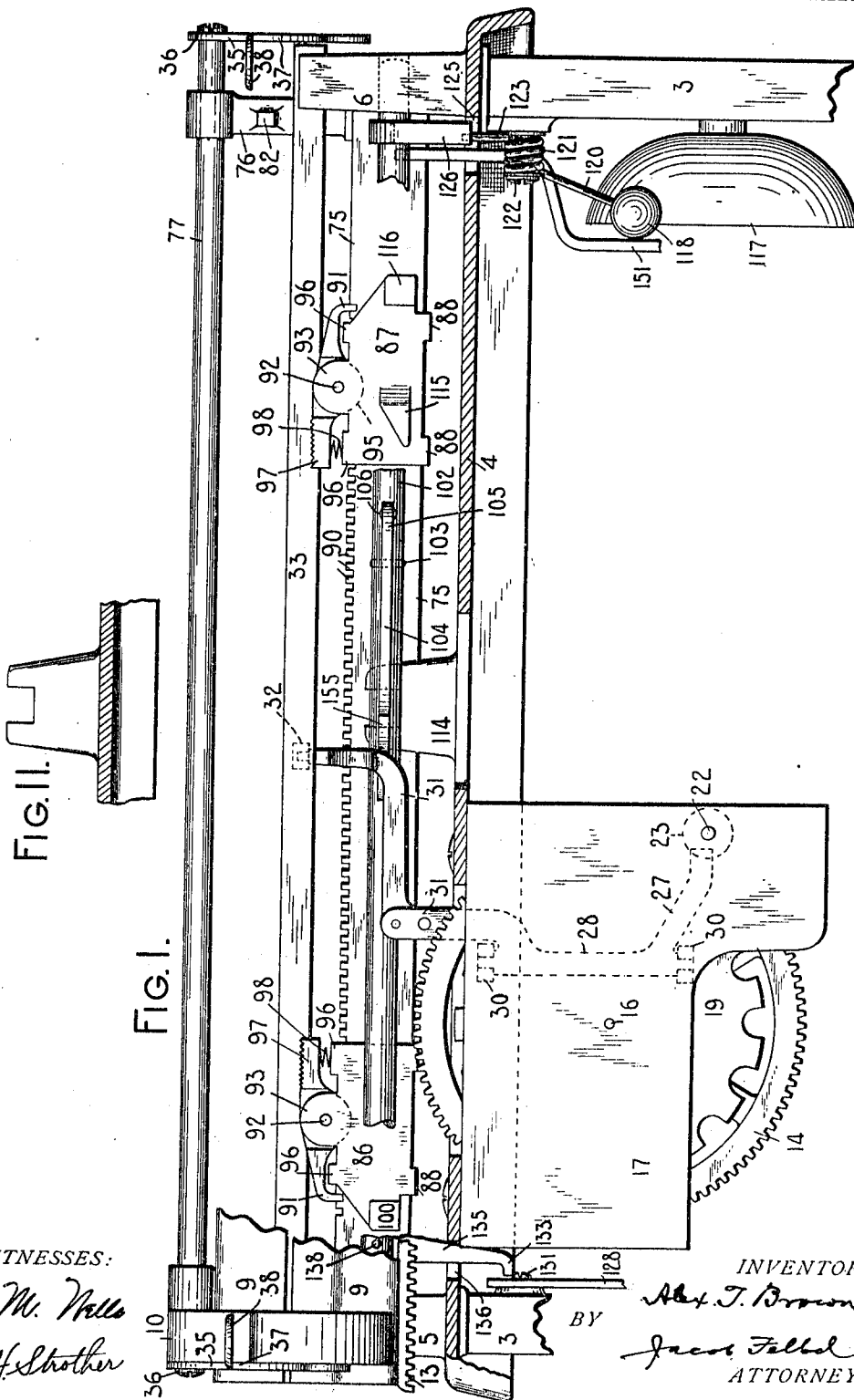


969,836.

A. T. BROWN.
TYPE WRITING MACHINE.
APPLICATION FILED JUNE 10, 1907.

Patented Sept. 13, 1910.

6 SHEETS—SHEET 1.



WITNESSES:

E. M. Wells
R. H. Shrother

INVENTOR.

BY *A. T. Brown*
James F. Felt
ATTORNEY.

A. T. BROWN.
TYPE WRITING MACHINE.
APPLICATION FILED JUNE 10, 1907.

6 SHEETS--SHEET 2.

E. M. Wells
R. H. Strother.

INVENTOR.
Alexander T. Brown
BY
Jacob Falbel
ATTORNEY.

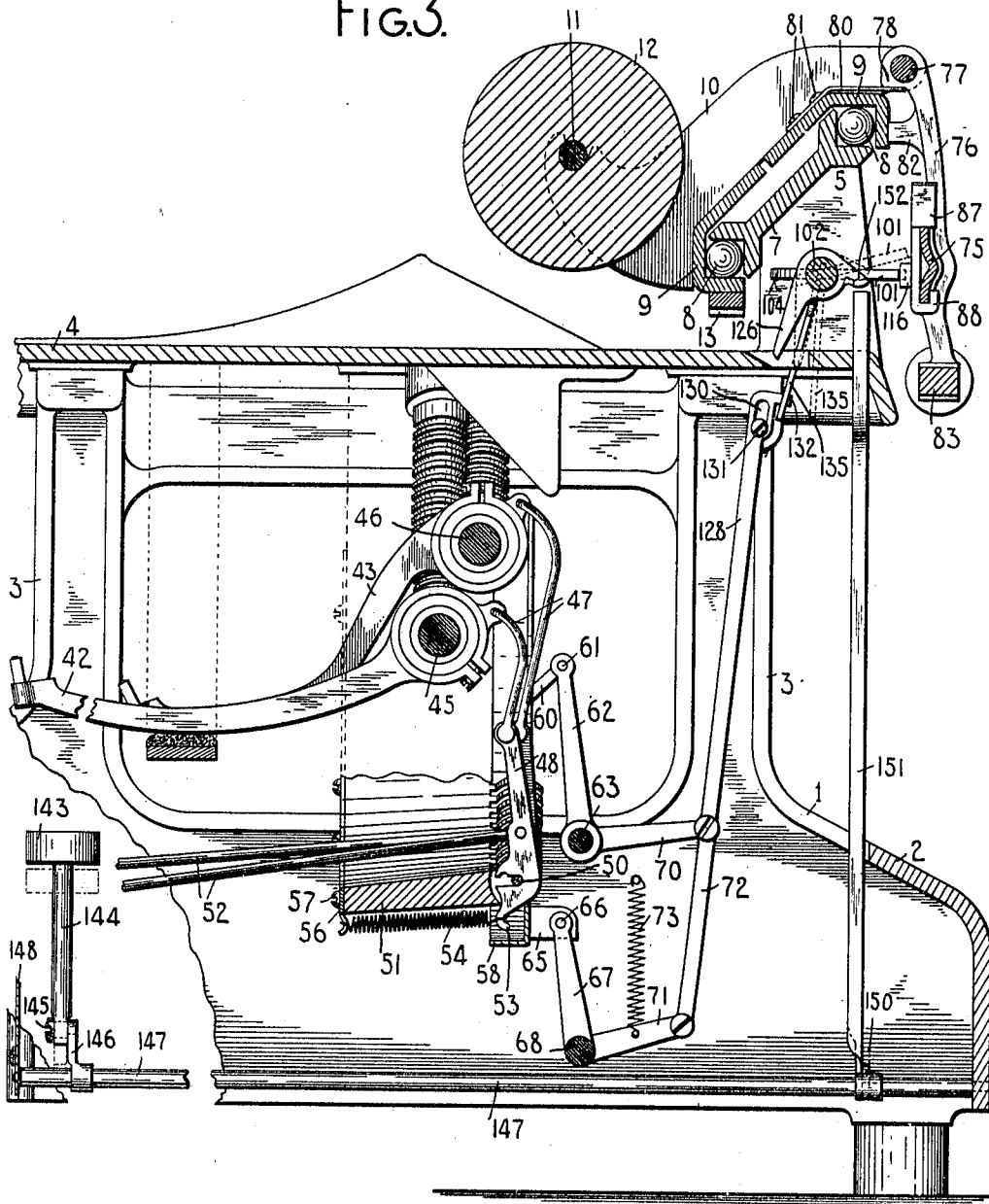
A. T. BROWN.
TYPE WRITING MACHINE.
APPLICATION FILED JUNE 10, 1907.

969,836.

Patented Sept. 13, 1910.

8 SHEETS—SHEET 3.

FIG. 3.



WITNESSES:

E. M. Wells.

R. H. Strother.

INVENTOR

Alexander T. Brown

BY

James F. Fabel

ATTORNEY

969,836.

A. T. BROWN.
TYPE WRITING MACHINE.
APPLICATION FILED JUNE 10, 1907.

Patented Sept. 13, 1910.

6 SHEETS—SHEET 4.

FIG. 4.

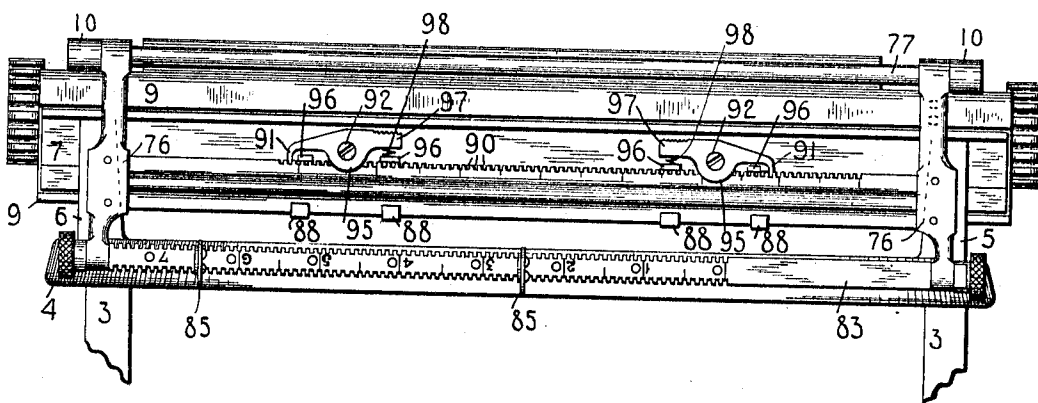
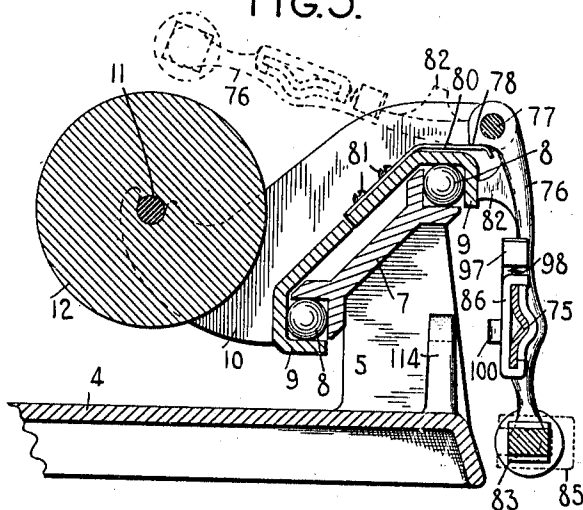


FIG. 5.



WITNESSES:

E. M. Wells.
R. H. Strother.

INVENTOR.
Alexander T. Brown
BY Jacob Felbel
ATTORNEY.

A. T. BROWN.
TYPE WRITING MACHINE.
APPLICATION FILED JUNE 10, 1907.

969,836.

Patented Sept. 13, 1910.

6 SHEETS—SHEET 5.

FIG. 6.

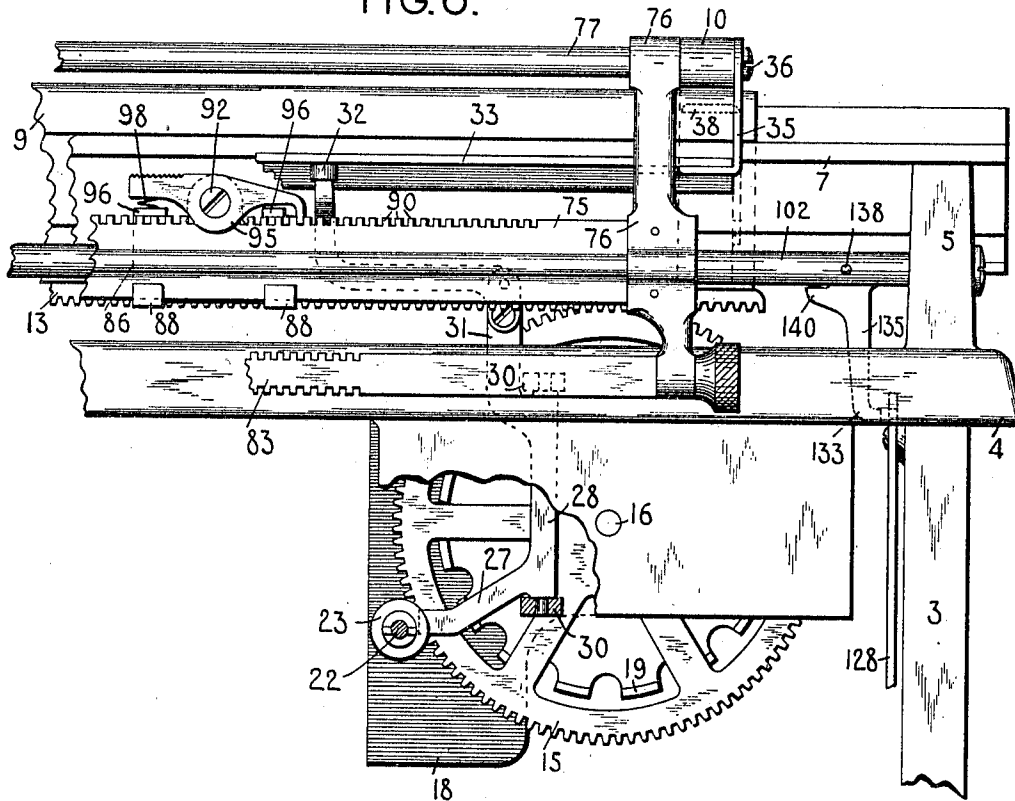
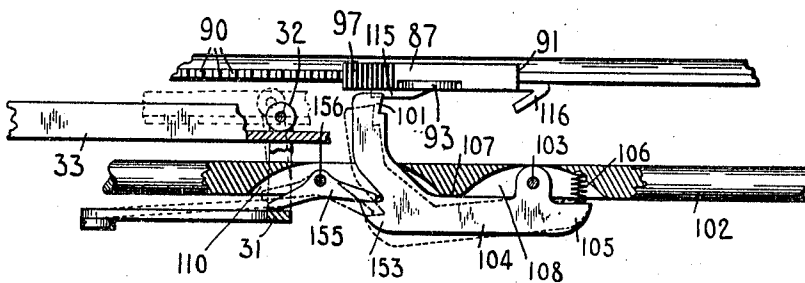


FIG. 7.



WITNESSES:

E. M. Wells.
R. H. Strother.

INVENTOR.

Alexander T. Brown
BY *James F. Felt*
ATTORNEY.

A. T. BROWN.
TYPE WRITING MACHINE.
APPLICATION FILED JUNE 10, 1907.

969,836.

Patented Sept. 13, 1910.

6 SHEETS—SHEET 6.

FIG. 8.

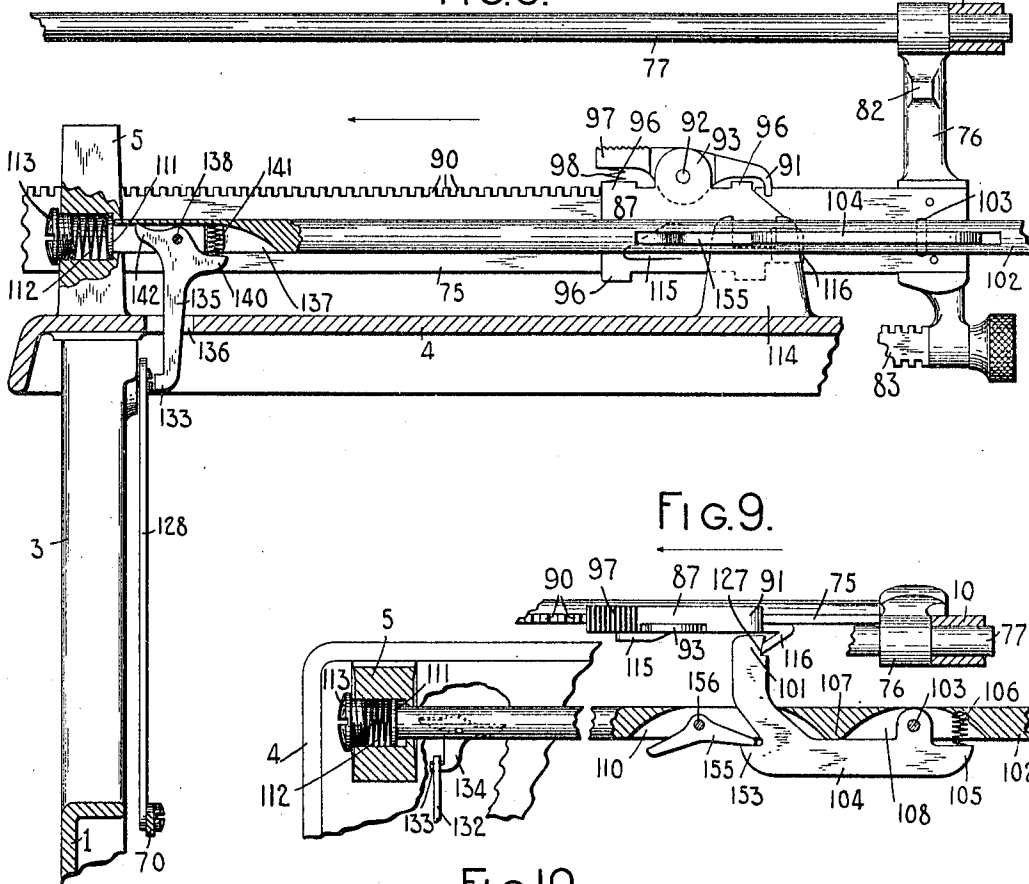


FIG. 9.

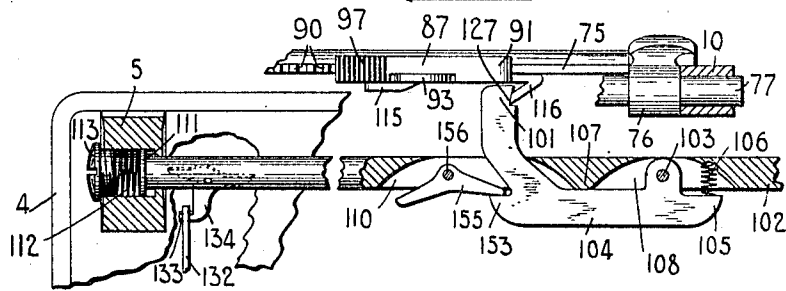
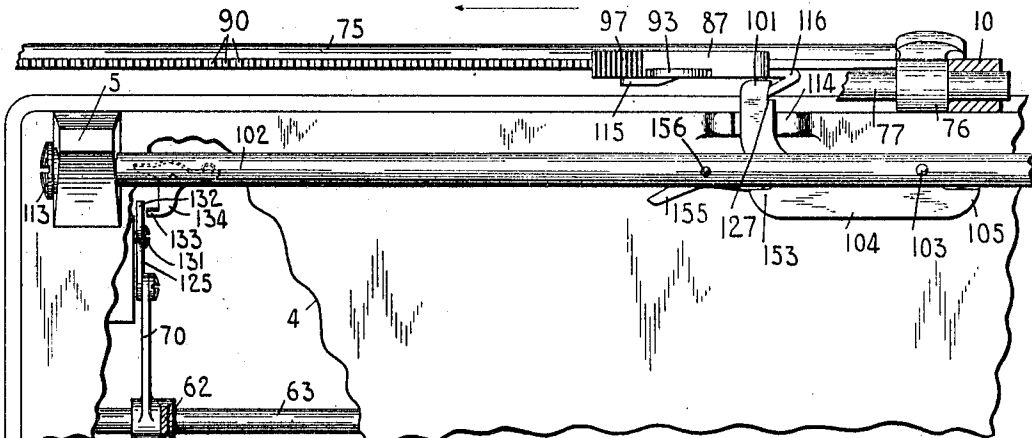


FIG. 10.



WITNESSES:

E. M. Mello.
R. H. Strother.

INVENTOR

Alexander T. Brown

BY

James Falld
ATTORNEY

UNITED STATES PATENT OFFICE.

ALEXANDER T. BROWN, OF SYRACUSE, NEW YORK.

TYPE-WRITING MACHINE.

969,836.

Specification of Letters Patent. Patented Sept. 13, 1910.

Application filed June 10, 1907. Serial No. 378,271.

To all whom it may concern:

Be it known that I, ALEXANDER T. BROWN, citizen of the United States, and resident of Syracuse, in the county of Onondaga 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 it has for its principal object to provide an improved margin stop, line lock, bell ringer and release mechanism for such machines.

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

In the accompanying drawings, Figure 1 is a front elevation of the upper part of a typewriting machine having my invention embodied therein, certain parts being shown in section and other parts omitted or broken away. Fig. 2 is a right-hand side elevation of the rear part of said typewriting machine, parts being broken away and parts omitted and the top plate and the parts above it being shown in vertical section on a plane just inside the right hand carriage rail standard. In this view the right hand margin stop appears in section. Fig. 3 is a view similar to Fig. 2 with the section of the top plate taken on substantially the same plane as in Fig. 2 but with said section extended to the lower part of the framework so that the right-hand side plate of the frame is sectioned away to display more of the mechanism of the machine. In this view the type bar and sub-lever segments appear in central vertical section and the right-hand margin stop in end elevation and some parts shown in Fig. 2 are omitted. Fig. 4 is a rear elevation of the upper part of the machine on a reduced scale. Fig. 5 is a front to rear vertical section of the upper part of the typewriting machine, parts being omitted. Fig. 6 is a rear elevation of the upper left-hand part of the machine, parts being broken away and parts shown in section. Fig. 7 is a fragmentary top view, partly in section, of a portion of the stop mechanism. Fig. 8 is a fragmentary front elevation, partly in vertical section, of part of the stop mechanism. Fig. 9 is a top view of the same, partly in section. Fig. 10 is a top view of the same with parts in section and

parts broken away. Fig. 11 is a fragmentary rear elevation showing a stop and a notched lug with which said stop coöperates.

Most of the features of my invention are applicable to typewriting machines generally but I have here shown them applied to a front-strike typewriter, which, however, has been illustrated in the drawings only so far as is necessary to make clear the manner in which my invention is applied to it. The main frame of this machine comprises side plates 1 which are connected together at their rear ends by a back plate 2. Corner posts 3 rising from or forming parts of said side plates 1, support a top plate 4 from the rear part of which there rise a left-hand standard 5 and a right-hand standard 6, which standards support a stationary carriage rail 7 at an inclination upward and toward the back of the machine as shown in the drawings. The rail 7 has in its lower front and upper rear edges grooves which serve as ball races for anti-friction balls 8 which coöperate with carriage rails 9 to support the carriage with freedom to move across the machine in the usual manner. The rails 9 are secured at their ends to carriage end pieces 10 each formed at its forward end with a notch in which rests the shaft 11 of a roller platen 12.

The mechanism for effecting a step-by-step feed of the carriage comprises a rack bar 13 secured to the under side of the forward carriage rail 9 and engaged by two gear wheels 14 and 15 which extend up through a suitable slot in the top plate and which are mounted on a shaft 16 (Fig. 1) that is journaled in frame plates 17 and 18 (Fig. 2) forming parts of a framework that depends from the top plate to which said framework is secured. The gear 14 is connected in any suitable way with a driving spring coiled within a spring drum 19 (Fig. 1). The gear wheel 15 meshes with a pinion 21 (Fig. 2) mounted on a shaft 22 that is journaled in the frame plates 17 and 18. The escapement mechanism is not shown herein but it may comprise an escapement wheel mounted on or geared to the shaft 22 and controlled by feed dogs which in turn may be controlled by the keys in any suitable manner. The pinion 21 is so mounted on the shaft 22 that it is held against endwise motion on said shaft but may turn on the shaft. The rear face of the pinion is formed with ratchet clutch teeth which en-

gage like teeth on a clutch member 23 that is slidably mounted on the shaft 22 but is held against turning relatively to said shaft by a pin and slot connection with a collar or flange 25 integral with or rigidly mounted on the shaft as shown in Fig. 2. The clutch member 23 is normally pressed toward the pinion 21 by a spring 22'. In order to move said clutch member toward the rear of the machine to release the carriage from its step-by-step feed mechanism, the clutch member 23 is formed with a peripheral groove or slot 26 (Fig. 2) into which there projects the end of an arm 27 projecting from a rocking member 28 that stands vertically and is pivoted at its upper and lower ends in brackets 30 that project toward the front of the machine from the frame plate 18. The member 28 has an arm 31 that projects upward through a suitable opening in the top plate and that has on its upper end a roller 32 which stands behind a yoke bar 33 that is mounted at its ends on the lower ends of arms 35 which are pivoted at their upper ends on screws 36 threaded into a part of the carriage. The arms 35 are in effect arms of bell crank levers having forwardly extending arms 37 on the forward ends of which are release keys 38. The motion of the arms 37 about their pivots is limited in both directions by a pin or screw 40 (Fig. 2) that is secured to one of the end pieces 10 of the carriage and projects through a slot 41 in one of said arms. The construction is such that if one of the release keys 38 be depressed the yoke bar 33 will be moved toward the back of the machine, carrying with it the arm 31 and rocking the member 28 about its pivot. In this motion the arm 27 will move the clutch member 23 toward the back of the machine, thus disengaging the clutch and leaving the pinion 21 free to turn without turning the shaft 22 and the escapement wheel connected therewith.

The type action of this machine comprises front-strike type bars 42 and 43 mounted by ball bearings on grooved segments 45 and 46 respectively and having mounted on their free ends types adapted to strike against the front face of the platen 12. Each of the type bars has pivoted to the heel thereof a radially extending link 47, the outer end of which is pivoted to one of a series of sub-levers 48. The sub-levers 48 are pivoted on a pivot wire 50 laid in a groove in a sub-lever segment 51 which is mounted concentrically with the type bar segments 45 and 46. The segment 51 has its rear edge slotted as shown in Fig. 3 and each of the sub-levers 48 plays in one of said slots. Said sub-levers are connected by links 52 with key levers in the key-board of the machine, which key levers are not shown but which may be of any suitable construction.

Each of the sub-levers 48 has a downwardly extending arm 53 to which is connected one end of a returning spring 54, the other end of which is connected to a hook on a plate 56 secured to the forward edge of the segment 51 by screws 57. The type action just described is not of my invention but is the invention of John H. Barr. None of the features of the machine so far described is claimed in the present application but some of them are claimed in other applications of mine co-pending herewith.

A segmental universal bar 58 stands behind the depending arms 53 of the sub-levers in position to be moved toward the rear of the machine by any of said sub-levers when the latter is operated by the corresponding key acting through the link 52. This universal bar is here shown as made of angled metal, its upstanding flange being behind the arms 53. In order to cause said universal bar to have a substantially parallel motion it has projecting therefrom near either end an arm 60 which is pivoted at 61 to the upper end of an arm 62 that projects upward from a rock-shaft 63 pivoted at its ends to the side plates 1. Near its middle said universal bar has projecting therefrom toward the rear of the machine an arm 65 which is pivoted at 66 to an arm 67 rising from a rock shaft 68 which is also pivoted at its ends to the side plates 1. The shaft 63 has an arm 70 projecting therefrom toward the rear of the machine and the shaft 68 has an arm 71 also projecting from it toward the rear of the machine and these arms are connected by a link 72 so as to cause the two rock shafts to maintain a fixed relation with each other. It will thus be seen that the universal bar is supported at three points, all of which are constrained to move in unison so that said universal bar has a parallel motion. The peculiar mounting of this universal bar is not claimed herein but is claimed in another application of mine co-pending herewith. Said universal bar is held in its normal position by a spring 73 connected at one end to the arm 71 and at its opposite end to the fixed framework of the machine.

The margin stops are mounted on a stop bar 75 which in turn is mounted on the carriage in a novel manner. Said stop bar forms part of a pivoted frame which comprises arms 76 that hang down from the carriage behind the machine. Each of said arms at its upper end is mounted on and is preferably rigidly connected with a rock shaft 77 which passes through suitable openings in the end pieces 10 of the carriage, the arms 76 being mounted thereon just inside said end pieces. It is into this rod or shaft 77 that the pivot screws 36 of the carriage release yoke frame are threaded. One on

both of the arms 76 is provided at its hub with a pointed projection 78 which is engaged by a flat spring 80 secured to the upper carriage rail 9 by screws 81. As will be seen by reference to Fig. 3 the tension of this spring normally tends to hold the arms 76 in their normal depending position in which position they are arrested by lugs 82 formed thereon and engaging the rear face of the upper carriage rail 9. The construction is such that the margin stop frame may be swung up to an upright position or on over to a nearly horizontal position as shown by dotted lines in Fig. 5. It will be seen that this motion is at first resisted by the spring 80 but that after the point of the lug 78 passes the dead center this spring no longer offers any resistance to the turning of the parts except that due to friction.

As shown in the present instance the arms 76 are extended beyond the margin stop bar 75 and have mounted in their lower ends a tabulator stop bar 83 on which tabulator stops 85 (Fig. 4) may be mounted for co-operation with other tabulator stop devices which, however, are not shown in the present case. As here shown the stop bar 75 is formed of a strip of flat metal having a rib formed longitudinally therein for the sake of stiffness, and said bar is rigidly secured to the arms 76 by rivets.

There are two margin stops as usual, one for arresting the carriage when it is moving toward the left in letter space direction, and the other for arresting the carriage when it is moved toward the right to begin a new line. For convenience in distinguishing between these two stops I shall hereinafter refer to the latter as the margin stop and the former as the line lock stop, but in the claims I do not wish to be understood as limiting myself to one of these stops as distinguished from the other, except where such limitation is plainly expressed. In other words, in the claims the words "margin stop" are intended to be broad enough to cover either of these stops.

The margin stop comprises a stop piece 86 and the line lock stop a stop piece 87. Each of these stop pieces is formed of a piece of sheet metal that lies against the forward face of the stop bar 75 and the lower edge of which is bent back beneath said stop bar and up behind it as shown in Fig. 3 at 88. The stop bar 75 is formed along its upper edge with teeth 90 spaced a letter space distance apart and a latch 91 is pivoted at 92 to each of the stop pieces 86 and 87 and is adapted to engage the spaces between the teeth 90 to retain the stop pieces in any position to which they may be adjusted. The pivot 92 is secured in each instance to an ear 93 rising from the stop piece and each of the latches 91 is formed with a part 95 which extends down

behind the stop bar 75 as shown in Fig. 2. This part 95 of the latch and the upturned part 88 of the stop piece prevent said stop piece from becoming displaced from the stop bar but the stop piece is loose enough to be slid along the bar longitudinally. As shown in the present case, the pivot 92 consists of a shouldered and headed screw, threaded into the ear 93. By removing this screw, the latch 91 may be removed, and the part 95 thereof no longer preventing, the stop piece may be removed from the bar. Each of the stop pieces is formed with two ears 96 which are bent out over the top of the stop bar 75 and serve as guides for the stop pieces. Each of the latches 91 is extended beyond its pivot to form a finger piece 97 with a roughened upper surface for the engagement of the finger and a spring 98, seated in a hole in the finger piece 97, is compressed between this arm 97 and one of the ears 96, said spring serving to retain the latch in engagement with the stop bar. Either of the stop pieces may be adjusted at any time by pressing against the arm 97 of the latch and moving the stop piece to the desired position and releasing the pressure, when the spring 98 will cause the latch to engage the stop bar and retain the stop in its adjusted position.

The part of the margin stop piece 86 that contacts with the stationary stop to arrest the carriage when the latter is drawn toward the right, consists of a lug 100 that is struck out from the sheet metal of the stop piece as shown in Figs. 1 and 5. This lug or stop is adapted to strike against a stationary stop 101 which is constructed and mounted in a manner which will now be described. This stop, as best shown in Figs. 7, 9 and 10, consists of the free end of an arm or lever that is pivoted in a longitudinal slot formed in a stop carrier or rod 102 which is loosely mounted at its ends in the standards 5 and 6. The stop arm or lever 101 is pivoted on a pin 103 that passes through the rod 102 and said lever normally stands in a substantially horizontal position and is adapted to swing about the pivot 103 in a horizontal plane. Said lever comprises a part 104 which lies in front of the rod 102 and which has an extension or lever arm 105 between which and the rod 102 is compressed a spring 106 which normally presses the arm 105 toward the front of the machine and the arm 101 toward the rear of the machine, this motion being limited by the engagement of the part 104 with the rod 102 at the point marked in Fig. 9, 107. This point 107 is formed by cutting two segmental slots 108 and 110 in the bar 102, said slots not quite meeting and the pivot 103 being in one of said slots and the arm 101 projecting through the rod through the other.

The rod 102 has its left-hand end projecting into a hole through the standard 5, as shown in Fig. 8, the left-hand end of the hole being of greater diameter than the right-hand end. A disk 111 is loosely seated in the larger part of said hole, and a spring 112 is compressed between said disk and a screw plug 113 which is threaded into the outer end of the hole and which presses said disk against the annular shoulder formed by the enlargement of the hole. This spring normally holds the rod in its extreme right-hand position but allows of its being moved a short distance to the left. The right-hand end of the rod is received loosely in a hole in the standard 6. The rod is therefore free to turn and is free to be moved a short distance to the left against the tension of the spring 112. When the carriage is drawn to the right the stop lug 100 engages the left-hand side of the arm 101 which arrests the motion of the carriage in that direction. The stop 101 rests in a notch formed in the upper edge of a lug 114 rising from the top plate. Said notch is a little wider than the stop 101 so as to give said stop and the rod 102 freedom to move a letter-space distance transversely of the machine, the stop being normally held by the spring 112 at the right-hand side of the notch. The line lock stop piece 87 has two lugs 115 and 116 struck out from its face as shown in Fig. 1. The lug 115 is made at an inclination so that as the carriage moves to the left, said lug passing under the arm 101, cams said arm upward, turning the rod 102 in its bearing and bringing the parts to the position shown in dotted lines in Fig. 3 until the lug 115 passes from under the arm 101 when said arm is permitted to drop, thus ringing the bell 117 by means which will now be described. Said bell is secured to the inner face of the right-hand rear post 3 by a screw or other suitable means. A clapper or hammer 118 is mounted on the free end of an arm 120 which, as shown in the present instance, consists of a prolongation of a stiff coiled spring 121 coiled about a headed screw 122 that is threaded into the post 3. The other end of the spring 121 extends upward forming an arm 123 which extends into a slot or opening 125 in the top plate 4. Into this same opening there projects from the rod 102, a depending arm 126, the end of which contacts with the end of the arm 123. The construction is such that when the rod 102 is rocked by the inclined lug 115 the arm 126 moves the arm 123 toward the back of the machine, thus raising the bell hammer 118, and when the arm 101 escapes from the lug 115 the hammer is permitted to drop by its own weight and strike the bell, turning about the screw 122 as a pivot. It is the weight of the bell hammer 118 acting on the arm 126 that holds the rod 102 in its nor-

mal position as far as rotation is concerned, although other means may be provided for this purpose if desired.

The carriage in its motion toward the left is arrested and the line lock is operated by the lug or stop 116 engaging the arm 101 in the manner shown in Fig. 9. The relative positions of the lug 116 when it engages the arm 101 and the pivot 103 of said arm, are such that unless some provision was made to prevent it, the lug, instead of being arrested by the arm 101, might simply turn said arm about its pivot, moving the free end of the arm toward the front of the machine out of the path of the lug. To prevent this the right-hand edge of the free end of the arm 101 is formed with a notch 127 (Fig. 10) with which the lug 116 engages so that such disengagement of the arm 101 is prevented. When in the letter space movement of the carriage the lug 116 engages the arm 101, it moves said arm and the rod 102 a short distance to the left which has the effect of locking the universal bar 58 by the following means: The arm 70 connected with said universal bar has pivoted to its free end a link or bar 128 that extends upward therefrom and is formed near its upper end with an elongated slot 130 through which passes a headed screw 131 so that said screw holds the upper end of the bar against displacement and guides it in its down and up motion when the universal bar is operated by the keys. At its upper end the bar 128 has projecting therefrom toward the rear of the machine a short arm 132 which is adapted to be engaged by the hook end 133 of an arm 135 that depends from the rod 102 through a suitable opening 136 (Fig. 8) of the top plate. The arm 135 and hook 133 normally stand in the positions shown in Fig. 8, the hook a little to the right of and out of the path of the arm 132; but when the rod 102 is moved toward the left by the lug 116 as shown in Fig. 9, the hook 133 passes under the arm 132 and locks said arm and the link 128 against motion downward, thus locking the universal bar 58 and preventing a full depression of any character key. The arm 135 is not rigidly mounted on the rod 102 but, as shown in Fig. 8, is seated in a slot 137 in which it is pivoted on a pin 138. Said arm is provided with an arm or lug 140 between which and the bottom of a suitable hole in which it is seated, there is compressed a coiled spring 141, the tension of which tends to move the arm 135 toward the left. The motion of said arm toward the left about the pivot 138 is limited by an arm 142 contacting with the bottom of the slot 137. The construction is such that in case the link 128 happens to be in its lower position at the time when the rod 102 is moved toward the left the end of the hook 133 will en-

gage the arm 132; but this will not prevent the motion of the rod 102 but will merely rock the arm 135 about its pivot against the tension of the spring 141. As soon as the link 128 returns to its upper position the hook 133 will snap in under the arm 132 and lock the parts against further operation. As shown in the present instance, it is the arm 135, contacting with the walls of the opening 136, that limits the rocking motion of the rod 102; though it will, of course, be understood that any other suitable means may be provided for this purpose.

I have provided in the keyboard of the machine a line lock release key 143 (Fig. 3) and connections whereby when said key is depressed the arm 101 is moved out of the path of the line lock stop lug 116 so that the carriage may be moved beyond the position determined by the stop for writing a few additional letters at the end of a line. The key 143 is mounted on the upper end of a stem 144, the lower end of which is pivoted at 145 to an arm 146 projecting toward the right from a rock shaft 147 that extends fore and aft of the machine, being journaled at its rear end in the back plate 2 and at its forward end in a front-plate 148. Near its rear end the rock shaft 147 has extending toward the left therefrom an arm 150 to which is pivoted the lower end of a push rod or link 151, the upper part of which is bent toward the right as shown in Fig. 1 and the upper end of which projects vertically through an opening in the top plate 4 in the position shown in Figs. 1 and 3, a little back of the rod 102. Said rod 102 has projecting therefrom toward the back of the machine an arm 152 which, as shown in the present instance, is made of the same piece of metal as the arm 126 of the bell ringer. When the parts are in their normal position the arm 152 stands a little above and a little to the right of the upper end of the push rod 151; but when the rod 102 has been moved toward the left by the lug 116, the arm 152 moves directly over the upper end of the rod 151. If, now, the key 143 be depressed, the push rod 151 will be elevated and the rod 102 will be tilted, bringing the parts connected therewith to the positions shown in dotted lines in Fig. 3, with the arm 101 above and out of the path of the lug 116 and the hook end 133 of the arm 135 out from under the arm 132 of the link 128. The rod 102 being thus freed from the lug 116, is moved toward the right by its spring 112, thus moving the arm 101 to the right of the lug 116 and moving the arm 152 off of the end of the push rod 151. The rod 102 then rocks back to its normal position shown in full lines in Fig. 3. The construction is such that the release key 143 may be struck and allowed to return to nor-

mal position, without the line lock being restored to locking position.

Means are provided whereby when the carriage release is operated the arm 101 is rocked about its pivot 103 toward the front of the machine, thus withdrawing it from the paths of the lugs 100, 115 and 116 so that the carriage release device also acts as a margin release. The part 104 of the arm 101 is formed with a lug or projection 153 behind which rests one end of a small lever 155 which is pivoted in the slot 110 on a pin 156 as shown in Figs. 6 and 7. The other end of the lever 155 normally stands out in front of the rod 102 and just back of a vertically disposed part of the arm 31 of the carriage release device. The parts are shown in Fig. 7 in their normal positions by full lines and in the positions which they assume when the carriage release key is depressed by dotted lines. The construction is such that when the carriage release key is depressed and the arm 31 is moved toward the rear of the machine, the lever 155 is rocked on its pivot, thus withdrawing the arm 101 toward the front of the machine and out of the paths of the stop lugs. Said stop lugs are beveled on their reverse faces, so that, if the carriage has been drawn toward the right into the margin, or toward the left beyond the line locking position, when, in returning, one of the stop lugs encounters the arm 101, the latter is cammed toward the front of the machine about its pivot 103, and the movement of the carriage is not interfered with. Moreover, any of the stops may be released by swinging the stop frame toward the rear of the machine about its pivots, and the entire carriage stop, bell ringer and line lock mechanism may be thrown out of operation in this way if desired.

In operation the carriage stop frame carrying the two margin stops and tabulator stops normally hangs in its depending position in which said stops are in operative position; but when it is desired to inspect the stops or to adjust them or to gain access to them for any other reason, said frame is swung up to a substantially vertical position or toward the front of the machine as indicated by dotted lines in Fig. 5 where the parts are more readily accessible than when in their normal position. It will be noted that the stop arm 101 is substantially in the middle of the machine so that the graduations on the stop bar correspond substantially with those on the regular carriage scale (not shown). The construction is such that the paper may be placed in the machine and the stop frame may be swung up to its accessible position and the stops may then be adjusted along the stop bar by direct reference to the paper itself without the necessity for referring to

any scale. The margin stop-pieces are of such length that it is necessary, in order to set said stops by direct reference to the paper, to have some particular part of said stop-piece to serve as an index by which to set the stops. As shown in the present instance, the toothed ends of the latches 91 serve this purpose; that is to say, if, when the frame is swung forward, the tooth of the latch 91 be set to correspond with a given point on the paper, then when the frame is swung back to its normal position, the margin stop will be set to arrest the carriage with said given point of the paper at the printing point. I have, however, provided graduations on the rear face of the stop bar 75 and it will be observed that the numerals of these graduations are inverted when the stop frame is in its normal position so that said numerals are right side up when the stop frame is moved to its more accessible position.

In another application Serial No. 377,082, filed June 3, 1907, I have shown and described a tabulator having its column stop bar mounted similarly to the column stop bar 83 shown in the present case and this construction of tabulator stop bar is claimed in said pending application. It will be perceived that the column stop bar is also swung up to an accessible position at the same time that the margin stop bar shown in the present case is so swung up and in the pending application referred to I have claimed this feature more broadly than in the present case, the claims of said pending application being broad enough to read not only on the tabulator stop bar shown in the present case but also on the margin stop mechanism shown herein. The claims directed to this feature in the present case are limited to the margin stops and to the combination in which the margin stops and tabulator stops are mounted on the same frame.

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

1. In a typewriting machine, the combination with a carriage and printing mechanism, of a line-lock stop carried by the carriage; a cooperating stop; a movable carrier for said cooperating stop, said stop and its carrier being moved by said line lock stop; means whereby such motion by said carrier locks said printing mechanism; and means for affording a motion of said cooperating stop with relation to its carrier into and out of the path of said line-lock stop on the carriage.

2. In a typewriting machine, the combination with a carriage and printing mechanism, of a line-lock stop carried by said carriage; a cooperating stop; a movable carrier on which said cooperating stop is pivotally mounted, said cooperating stop and

its carrier being moved together by said line-lock stop on the carriage; and means for turning said cooperating stop on its pivot into and out of the path of said line-lock stop.

3. In a typewriting machine, the combination with a carriage and printing mechanism, of one or more margin stops on said carriage; a cooperating stop; a movable carrier on which said cooperating stop is movably mounted; a lever mounted on said carrier and engaging said cooperating stop; and a carriage release device operative on said lever to move said cooperating stop out of the path of said margin stop or stops.

4. In a typewriting machine, the combination with a carriage, carriage feeding devices and printing mechanism, of one or more margin stops carried by said carriage; a cooperating stop; a movable carrier on which said cooperating stop is movably mounted; a carriage release device; and means whereby said carriage release device moves said cooperating stop with relation to its carrier out of the path of said margin stop or stops.

5. In a typewriting machine, the combination with a carriage, of one or more margin stops mounted on said carriage; a cooperating stop normally in the path of said margin stop or stops; means for moving said cooperating stop into and out of the path of said margin stop or stops; and a support for said margin stop or stops movable with relation to the carriage to bring said margin stop or stops into or out of position to engage said cooperating stop.

6. In a typewriting machine, the combination of a carriage, a margin stop carried by said carriage, a cooperating stop, a carrier on which said cooperating stop is pivotally mounted, and means for turning said cooperating stop about its pivot to withdraw it from the path of said margin stop.

7. In a typewriting machine, the combination of a carriage, a carriage release device, a margin stop carried by said carriage, a cooperating stop, a carrier on which said cooperating stop is pivotally mounted, and means whereby said carriage release device turns said cooperating stop about its pivot to withdraw it from the path of said margin stop.

8. In a typewriting machine, the combination of a carriage, a margin stop carried by said carriage, a cooperating stop, a movably mounted carrier for said cooperating stop, said cooperating stop being movable with relation to said carrier to allow said margin stop to pass it freely in one direction, and means for moving said carrier to move said cooperating stop out of the path of said margin stop.

9. In a typewriting machine, the combination of a carriage, a margin stop carried by

said carriage, a cooperating stop, a pivoted carrier on which said cooperating stop is movably mounted, means for moving said cooperating stop relatively to its carrier to withdraw it from the path of said margin stop, and means for rocking said carrier to move said cooperating stop out of the path of said margin stop.

10. In a typewriting machine, the combination of a carriage, a stop bar mounted on said carriage, a margin stop and a line lock stop adjustably mounted on said bar, a single stop cooperating with said margin and line lock stop to arrest the carriage, a carrier on which said single stop is mounted, a line lock device operated by an endwise movement of said carrier, a key, and means operated by said key for tilting said carrier to move said single stop out of the path of said line lock stop.

11. In a typewriting machine, the combination of a carriage, a carriage stop carried by said carriage, a cooperating stop normally in the path of the carriage and stop adapted to be moved a limited distance by said carriage stop, and means operative only when said cooperating stop has been so moved for moving one of said stops out of the way of the other.

12. In a typewriting machine, the combination of a carriage, two stops which come into contact at a predetermined point in the travel of said carriage, one of said stops adapted to be moved by the other, and a key and connections, normally disconnected, but arranged to be connected up when said stop has been so moved, for moving one of said stops out of the way of the other.

13. In a typewriting machine, the combination of a carriage, two stops which come into contact at a predetermined point in the travel of said carriage, one of said stops adapted to be moved by the other, a line lock device operated by such motion of said stop, and means operative only when said stop has been so moved, for moving one of said stops out of the way of the other.

14. In a typewriting machine, the combination of a carriage, a stop mounted on said carriage, a cooperating stop, a tiltable carrier for said cooperating stop, said carrier being movable endwise by said carriage stop, a key, a part operated by said key, and an arm on said carrier normally out of the path of said key operated part but in position to be operated by said part to tilt the carrier when said carrier is moved endwise by said carriage stop.

15. In a typewriting machine, the combination with a carriage and printing devices, of a carriage stop mounted on the stationary frame of the machine and movable in three directions, an alarm, means on the carriage for moving said stop in one direction to sound said alarm, a line-lock stop on the

carriage for moving said stop in a second direction, and means for locking said printing devices out of operation when said stop is moved in said second direction, said stop being movable in a third direction to permit said line-lock stop to pass it freely in one direction.

16. In a typewriting machine, the combination of a carriage, one or more margin stops, a frame pivotally mounted on said carriage and normally occupying a relatively inaccessible position and having said margin stops adjustably mounted thereon, the pivotal mounting of said frame being of such a character that said frame can be swung from its normal position to a more accessible position to give access to said stop or stops, and a cooperating stop mounted in the framework of the machine beneath said carriage and normally in the path of said margin stop or stops.

17. In a typewriting machine having a top plate, the combination of a carriage, a stop for said carriage mounted on the framework of the machine between said carriage and said top plate, a frame depending from said carriage and having one or more margin stops adjustably mounted thereon for cooperation with the first mentioned stop, said frame being movably mounted so that it may be moved to bring said margin stop or stops to a more accessible position.

18. In a typewriting machine, the combination with a carriage, of a frame movably mounted on said carriage and normally occupying a relatively inaccessible position, margin stops and tabulator stops mounted on said frame, and supporting means for said frame arranged to permit of said frame being moved to an abnormal position to give access to said stops.

19. In a typewriting machine, the combination with a carriage, of a frame mounted on said carriage, one or more margin stops and one or more tabulator stops mounted on said frame, and a pivotal mounting for said frame arranged to allow said frame to be swung from its normal position to a position more accessible from the front of the machine for the purpose of adjusting said stops.

20. In a typewriting machine, the combination with a carriage, of a frame pivoted to and depending from the rear part of said carriage, one or more margin stops and one or more tabulator stops mounted on said frame, said frame being capable of turning on its pivots to a position above the body of the carriage to give access to said stops, and a stop mounted in front of the normal position of said frame and cooperating with said margin stop or stops.

21. In a typewriting machine, the combination with a carriage, of a frame pivotally mounted on said carriage and comprising

two arms and two cross bars, one or more margin stops mounted on one of said cross bars and one or more tabulator stops mounted on the other of said cross bars.

- 5 . 22. In a typewriting machine, the combination of a paper carriage, a margin stop adjustably mounted on said carriage, and means for affording a relative motion between said margin stop and the paper in
10 the machine to bring said paper and said margin stop into juxtaposition so that the margin stop may be adjusted by direct reference to the paper, the construction and

arrangement being such that when a certain part of the margin stop is set to correspond to a given point on the paper said margin stop will be in position to arrest the carriage with said given point at the printing point. 15

Signed at Syracuse, in the county of Onondaga, and State of New York, this 20 day of May A. D. 1907.

ALEXANDER T. BROWN.

Witnesses:

CHARLES E. TOMLINSON,
JOHN A. PROSS.