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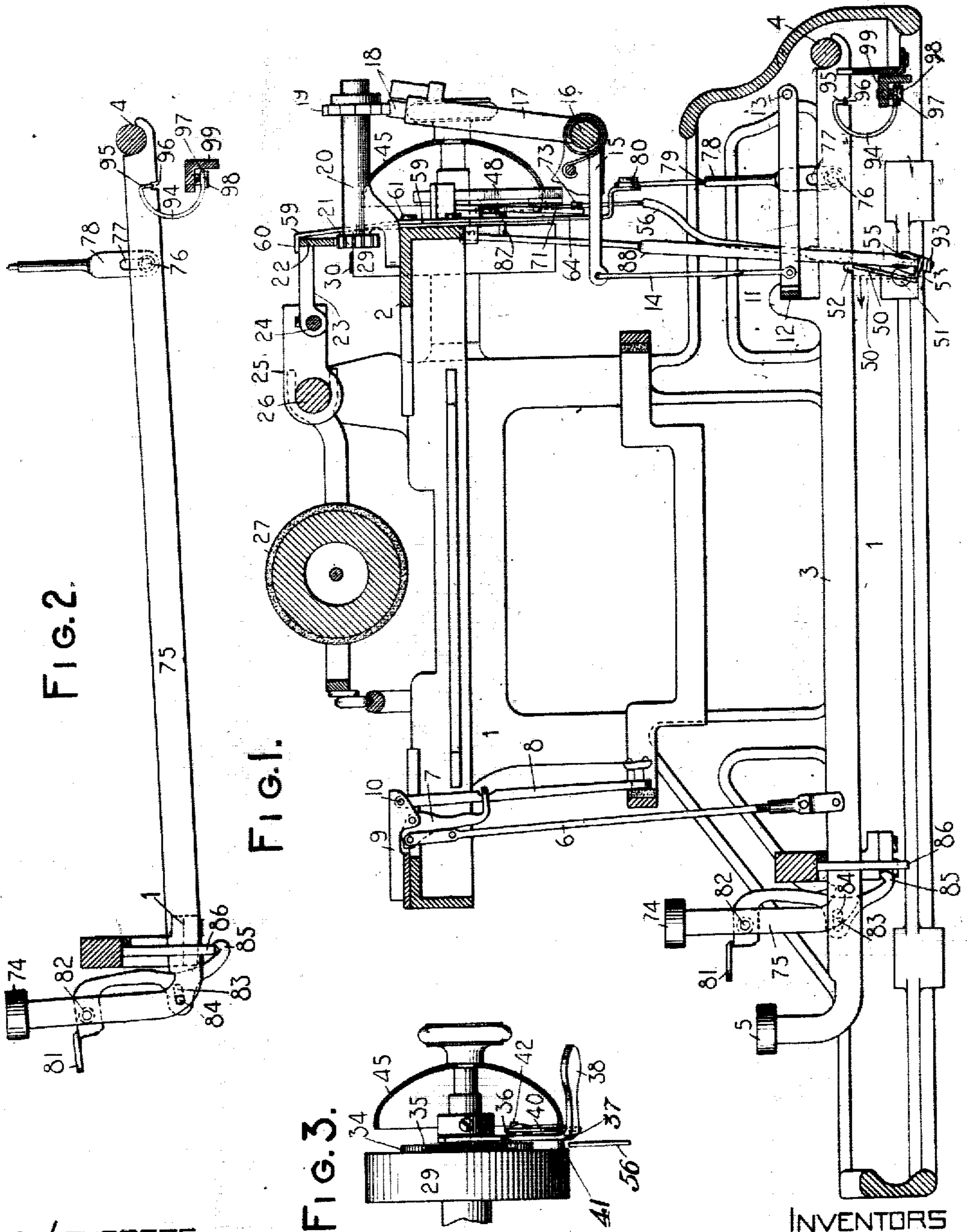
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H. W. MERRITT & W. J. BARRON.

TYPE WRITING MACHINE.

APPLICATION FILED NOV. 9, 1901.

2 SHEETS—SHEET 1.



WITNESSES:

K. V. Donovan.
Wm. C. Smith.

INVENTORS
Henry W. Merritt &
Walter J. Barron
by *James F. Felt*
THEIR ATTORNEY

UNITED STATES PATENT OFFICE

HENRY W. MERRITT, OF SPRINGFIELD, MASSACHUSETTS, AND WALTER J. BARRON, OF BROOKLYN, NEW YORK, ASSIGNORS TO DENSMORE TYPEWRITER COMPANY, OF SYRACUSE, NEW YORK, A CORPORATION OF NEW YORK.

TYPE-WRITING MACHINE.

No. 814,310.

Specification of Letters Patent.

Patented March 6, 1906.

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To all whom it may concern:

Be it known that we, HENRY W. MERRITT, a resident of Springfield, county of Hampden, and State of Massachusetts, and WALTER J. BARRON, a resident of the borough of Brooklyn, county of Kings, city and State of New York, citizens of the United States, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification:

Our invention relates to type-writing machines, and more particularly to the line-lock mechanisms thereof.

The main object of our invention is to provide simple and efficient means whereby the type-carriers through their actuating mechanism may be automatically locked against printing movement at any predetermined point in the travel of the carriage and afterward released by hand-operated mechanism should the operator desire to write one or more additional characters to the line to complete a word or sentence.

A further object of the invention is to provide in addition to the mechanism above referred to a second device by which the line-lock is actuated to lock the type-carriers out of action at the extreme end of the line.

Another object of the invention is to provide mechanism whereby a movement of the carriage-release key is effective to automatically release the line-lock mechanism. Still another object of the invention is to provide means whereby the lock-line mechanism may be released or unlocked by the depression of a special finger-key at the keyboard.

A further object is to provide means for permanently maintaining the line-locking mechanism out of action should that be the desire of the operator.

To the ends above specified and others, which will appear in the following specification, the invention consists in the novel features of construction and arrangements and combinations of parts hereinafter described, and particularly pointed out in the appended claims.

In the accompanying drawings, wherein like reference characters represent corresponding parts in the various views, Figure 1 is a vertical sectional view of a type-writing machine embodying our invention, the sec-

tion being taken from front to rear of the machine. Fig. 2 is a detail sectional side view of a portion of the line-lock-releasing mechanism and of the means for maintaining the line-lock mechanism permanently out of action. Fig. 3 is a detail side view of the spring-drum and its cooperating adjustable trip mechanism. Fig. 4 is a rear view of the machine, partly in section. Figs. 5 and 6 are detail perspective views of parts of the mechanism to be hereinafter described.

In the various views parts are omitted and broken away to more clearly illustrate other features.

We have shown our invention in its application to a Densmore type-writing machine, though the drawings do not represent in detail certain features of said machine. Thus, for instance, the carriage is not that of a Densmore machine, but is a conventional carriage which may suffice to illustrate our invention.

The main frame of the machine is indicated at 1, and this frame is provided with the usual top plate 2, and key-levers 3 are pivoted to the framing of the machine, as indicated at 4. These key-levers are provided with the usual finger-keys 5 and are connected to links 6, which in turn are pivoted to intermediate links or levers 7, that are operatively connected to type bars or carriers 8, each of which is pivoted to a hanger 9, as indicated at 10. A single type-bar and its cooperating mechanism is shown in Fig. 1 of the drawings, that being sufficient to illustrate the invention. Each of the key-levers 3 is likewise provided with a hook 11, which is adapted to bear upon a universal bar 12, that is pivoted to the framing of the machine at 13 and is connected by a link 14 to a crank-arm 15, that projects from a rock-shaft 16 of a feed-dog carrier 17. The feed-dog carrier 17 may be provided with the usual feed-dogs, which cooperate with a feed-wheel 19, that is secured to one end of a rotary shaft that turns in a bearing 20, which is secured to the top plate 2 of the machine. The opposite end of this rock-shaft has secured thereto a feed-pinion 21, that meshes with the feed-rack 22, which is rigidly connected to arms 23, that are secured to a rock-shaft 24, which turns or rocks in a carriage 25, which moves

from end to end of the machine upon a traverse-rod 26 and carries a platen 27. One end of the rock-shaft 24, to which the feed-rack is connected, is provided with a carriage-release key 28, by means of which the rack can be elevated, thereby releasing it from engagement with the feed-pinion 21 and permitting the carriage to run freely from end to end of the machine. The carriage 25 is moved in the direction of its feed by a spring-drum 29, which is connected to the carriage by a band 30, said band being connected at one end 31 to the carriage and at its opposite end 32 to the drum, which under the tension of its spring rotates in the direction of the arrow in Fig. 4 when the carriage moves in the direction of its feed. The drum 29 has rigidly secured thereto at 33 a ratchet-wheel 34, and cooperating with this ratchet-wheel 34 are two pivoted spring-pressed pawls 35 and 36, which are pivoted to a plate 37, that is adapted to turn on the same axis that the drum revolves upon. The disposition of these pawls with relation to the teeth on the ratchet-wheel is such that the plate 37 may be turned with relation to the drum in the direction of the arrow in Fig. 4, but cannot turn with relation thereto in an opposite direction. The plate 37 is provided with a lateral projection 38, that constitutes a finger-piece by means of which the plate 37 may be turned relatively to the drum. Loosely pivoted to the plate 37, as indicated at 39, is a trip 40, which is provided with a laterally or forwardly projecting trip-pin 41, and the free movement of the trip 40 on its pivot in opposite directions is controlled by a stop or pin 42, which is carried upon the plate 37 and is adapted to cooperate with portions 43 and 44 on the trip in accordance with the different positions that said trip assumes in the rotation of the plate 37 with the spring-drum.

From the foregoing description it will be understood that the trip 40 is a gravity-trip and that the position thereof with relation to the plate 37 is altered as the plate 37 revolves with the drum. This is in order that the trip may be maintained in a position to engage its cooperating mechanism when the drum is revolved in one direction, but is free to be deflected to one side when the spring-drum is revolved in an opposite direction, as will hereinafter more clearly appear.

Upon reference to Figs. 1 and 3 of the drawings it will be observed that the spindle which constitutes a bearing for the spring-drum has secured thereto a bell 45, and cooperating with this bell is a bell-trip hammer 46, Fig. 4, so that when the carriage is moved in the direction of its feed the spring-drum will rotate in the direction of the arrow in Fig. 4, thereby bringing the face 47 of the trip into contact with the trip-hammer 46 of the bell, and the hammer will vibrate with its spring stem or support 48 after the trip

has released it, thus enabling the bell or alarm to be sounded. The spring-drum 29 is likewise provided with what we term a "fixed trip" 49, which is or may be rigidly secured to the drum.

From an examination of Figs. 1 and 4 of the drawings it will be observed that a locking-bar 50 is pivoted to the framing of the machine at 51 and extends beneath all of the key-levers 3. It will likewise be seen that the key-levers 3 are each notched at 52 and that the various notches in these key-levers are in alinement and when the parts are in the position indicated in Fig. 1 of the drawings the key-levers 3 are free to be depressed. When, however, the locking-bar 50 has been moved in the direction of the arrow in Fig. 1, it will be moved from a position opposite the notches 52 in the key-levers to a position where the upper edge of said locking-bar comes directly beneath the lower edge of each of the key-levers, thus locking them or preventing a depression thereof. The locking-bar 50 is normally maintained by its own weight and the weight of the parts connected thereto in the position represented in Fig. 1 where the key-levers are free to be operated or depressed. The locking-bar 50 may be moved to the locking position by any one of several means which will now be pointed out. The locking-bar is provided with an angular projection or flange 53, from which extends an ear 54, carrying a pivot 55, to which is connected an upwardly-extending rod 56, having at its upper end a hook 57, which is provided with an inclined face 58. This hook is normally maintained in the position shown in Fig. 4, wherein it is in the path of the trip-pin 41 on the trip 40 when the pin is rotated with the drum 29 in the direction of the arrow. The pivotal connection 55 between the rod 56, that carries the hook 57, and the locking-bar is such, however, that an inward or lateral movement of the hook in the direction of the arrow *z* is permitted for purposes which will presently appear. It will be understood that when the drum 29 with the trip 40 revolves in a direction opposite to that indicated by the arrow in Fig. 4 the pin 41 of the trip will contact with the inclined face or nose 58 on the hook and the trip will be deflected or turned slightly on its pivot without moving the hook and without obstructing the free movement of the drum, the pin riding down the inclined face of the hook and the trip-piece or plate falling back to normal position by gravity as soon as the pin passes off the hook. When, however, the carriage moves in the direction of its feed and the drum revolves in the direction of the arrow, the trip-pin 41 on the trip 40 will engage the hook 57 at a point in the feed of the carriage which is determined by the adjustment of the plate 37 with relation to the drum 29. After such engagement between the pin 41

and the hook 57 has taken place a further slight movement of the pin will suffice to lift the rod 56 and move the locking-bar 50 from beneath the notched portions of the key-levers to the locking position indicated in dotted lines at Fig. 2, so as to prevent a depression of any of the key-levers and a movement of its connected type-bar to the printing position. As soon as the carriage is moved back toward the right the pin 41 on the trip will be disengaged from the hook, thereby permitting the locking-bar to assume its normal position indicated in Fig. 1 of the drawings, when the key-levers are free to be depressed.

It is desirable that some means be provided for disengaging the line-locking mechanism in the event of the carriage-release key being depressed to move the carriage by hand after a locking engagement between the parts has been effected so as to prevent derangement or breakage of some of the parts. This releasing or disengagement of the locking mechanism is effected by the following means. The feed-rack 22 cooperates with an arm 59, which is bent so as to extend over the upper edge of the bar, as indicated at 60 in Fig. 1 of the drawings. This bar 59 is connected to the top plate 2 by pin-and-slot connections 61 and 62, so that the bar 59 will not move laterally, but may be elevated with the feed-rack when the carriage-release key 28 is depressed to release the rack from its cooperating pinion. The lower end of the bar 59 is pivotally connected at 63 to a bell-crank lever 64, which is pivoted at 65 to a depending arm 66, forming part of a bracket 67, which is secured to the top plate 2 by screws 68. This bell-crank lever 64 is provided with an arm 69, at the lower end thereof, which arm may be bent at an angle to the body of the lever 64 and is slotted at 70 for the free passage of the rod 56 therethrough. The bell-crank lever 64 and the parts connected thereto are normally maintained in the position illustrated in Fig. 4 of the drawings by a leaf-spring 71, which is connected at one end to a projection on the bracket 67, as shown at 72, and bears at its other or free end against a pin 73, carried by the bell-crank lever 64.

From the foregoing description it will be understood that a depression of the carriage-release key 28 will cause the feed-rack to be elevated to disengage the carriage from its feeding mechanism and that this same movement will cause the rod or bar 59 to be elevated, thereby swinging the lower end of the bell-crank lever 64 in the direction of the arrow *y* in Fig. 4 of the drawings, which movement will cause the hook 57 to be moved laterally out of the path of the pin 41 upon the trip 40, so that when said pin rotates with the drum 29 it is ineffective to contact and cooperate with the hook 57. It follows, therefore, that the locking mechanism will be thrown

out of operation upon the depression of the carriage-release key 28, so that the spring-drum may be freely rotated without obstruction. This is highly desirable, if not necessary, because if the pin engaged the hook the drum would be arrested, while the released carriage could move on to the end of its range of travel and the strap or band would uncoil from the drum and bulge out and be apt to become wedged or broken.

It is sometimes desirable to write one or more letters or words on the end of a line in order to complete a word or sentence after the line-locking mechanism has been automatically operated to prevent the movement of the finger-keys and type-carriers. This may be readily effected by what we term a "temporary release-key" 74, which is connected to a key-lever 75, that is likewise pivoted at 4 and has secured thereto by a pin-and-slot connection 76 77 a link 78, that may be made of two parts, which are united by a screw-threaded connection 79 to permit of an adjustment of said parts with relation to one another in order to regulate the throw transmitted by the release-key. The upper end of this two-part link 78 is pivotally connected at 80 to the arm 69 of the bell-crank lever 64. It will be understood, therefore, that a depression of the temporary release-key 74 will likewise bring about a movement of the bell-crank lever 64 on its pivot, so that the lower end thereof will be moved in the direction of the arrow *y* in Fig. 4, thus forcing the hook 57 out of engagement with its cooperating pin 41 on the trip 40. When this disengagement is effected, the locking-bar will resume its normal position (indicated in Fig. 1) and the key-levers 3 are free to be operated.

In order permanently to maintain this line-locking mechanism out of operation, we have provided what we term a "permanent release-key" 81, which is pivoted to the temporary-release-key lever 75 at 82. A lower depending arm of the key 81 is provided with a slot 83, through which projects a pin 84, carried by the lever 75. The lower end of this arm is provided with an engaging hook 85, which cooperates with a plate or projection 86, that is carried upon the framework and which is preferably a portion of the front key-lever comb which extends entirely across the machine. This permanent release-key 81 is so arranged that the weight of the lower end thereof will normally maintain the engaging hook 85 thereof out of engagement with its cooperating projection or plate 86. When the operator desires permanently to maintain the hook 57 out of the path of its cooperating lifting-pin 41, it is merely necessary to depress the permanent release-key 81, which depression will cause the key-lever 75 to be depressed and the hook 57 to be moved to one side and out of the path of the

lifting-pin 41, as hereinbefore described. This same pressure upon the permanent release-key 81 causes the hook 85 to engage the plate 86, as shown in Fig. 2, thus locking the lever 75 in the depressed position and the hook 57 out of the path of travel of the pin 41 and preventing a return movement thereof. While the parts are in these positions the machine may be operated indefinitely without using the line-locking mechanism at all, it being understood that some operators prefer not to use a line-locking mechanism. When the operator desires to release the permanent release-key 81 from this engagement, it is merely necessary to slightly depress the temporary release-key 74, when the hook 85 will be disengaged from the plate 86 and the key-lever 75 with key 81 is free to be elevated to the normal or disengaged position.

In addition to the line-locking mechanism hereinbefore referred to there is provided a second or permanent line-locking device, which is controlled by the trip or arm 49. The purpose of this permanent line-lock is to prevent the key-levers from being actuated when the extreme end of the line is reached, irrespective of all other conditions. If, for example, the adjustable device 37, carrying the actuating-pin 41, be set to lock the key-levers against movement when the carriage has arrived at the point 60 on the carriage-scale and the key-levers be unlocked by a depression of the temporary release-key 74, the operator may proceed to write additional characters upon the line; but when the carriage reaches the extreme end of the line, or the limit of movement of its travel, the permanent line-locking device will come into action and the key-levers will again be prevented from being depressed, thus obviating a "piling up" of the characters on the paper at the end of the line. It will be understood that the permanent trip 49 is secured to the drum 29 at a point which will bring it into engagement with its cooperating mechanism when the end of a line is reached, and hence when the trip 49 has moved with the drum 29 to the position indicated in dotted lines in Fig. 4 of the drawings it will contact with a pin 87 on a vertically-movable rod 88, which is guided in its movement by a pin-and-slot connection 89 90, the pin 89 being carried upon an arm 91, which extends from the bracket 67, while the slot 90 extends longitudinally in the rod. The lower end of this rod projects through an opening 92 in the flange 53 of the locking-bar 50, and said rod is provided with a suitable stop or enlargement 93. By this arrangement it will be seen that the flange 53 may move with the locking-bar 50 independently of the rod 88 when the locking-bar is actuated by the hook 57 and its cooperating adjustable trip. When, however, the fixed or permanent trip 49 actuates

the rod 88 by lifting it, the locking-bar 50 will be rocked on its pivots so as to convey it away from the notches 52 in the key-levers, and thus maintain it in the locking position until the carriage is moved by hand from the extreme left-hand position, where this last-mentioned locking action has taken place. When the carriage is moved back toward the starting-point by hand, the permanent locking-trip 49 will be moved by the drum in a direction opposite to that indicated by the arrow in Fig. 4, thereby releasing the rod 88 and permitting the locking-bar 50 to resume its normal position, when the key-levers are free to be depressed.

It will be understood that by employing an adjustable device, such as the trip 40, for actuating the locking mechanism at any desired point in the travel of the carriage and embodying in combination therewith a fixed or permanent trip 49, which will always actuate the locking mechanism at the end of a line or the extreme limit of travel of the carriage in the direction of its feed, means are provided for locking the line first at any predetermined point and then again at the extreme limit of travel of the carriage in case the first line-locking means should be unlocked and the carriage fed down as far as it is possible for it to go, and thus insuring against printing one letter over another when the carriage has been arrested by the stoppage of its driving-drum at either of the two points referred to. With the aid of this mechanism it is unnecessary to provide a carriage-stop for limiting the movement of the carriage in the direction of its feed, the pin 41 and hook 57 and arm 49 and pin 87 with their associated devices serving to arrest the carriage-feed drum as well as to lock the key-levers and type-carriers out of action and prevent a further feed movement of the carriage.

The various key-levers may be normally maintained in the elevated positions by wire C-springs 94, each of which is operatively connected at one end to a key-lever. This connection may be made by bending one end of the spring in the form of a fork 95, which is adapted to engage in a notch 96 in each key-lever. The opposite lower end of the C-spring may be bent to form an eye 97, through which is passed the shank of a headed screw 98, that engages the threaded hole in a flange or other fixed portion 99 of the machine. It will be observed that by this construction a simple spring is provided for each key-lever and that the tension of such spring may be varied by its adjusting-screw 98, which at the same time constitutes a support for the lower end of the spring.

While the improvements have been shown as applied to a Densmore type-writing machine, it should be understood that they are

in no sense limited to such a machine and that certain features may be used without others.

It is preferred to lock the type-carriers out of action by locking the key-levers, because any force exerted upon the finger-keys in an attempt to operate them will be directly borne by the locking-bar and the key-levers without straining any of the other parts. Nevertheless, as far as certain features of the invention are concerned it is immaterial what devices the line-locking mechanism co-operates with to maintain the type-carriers against operation.

While we have described the trip 49 as being fixed to the drum 29, it is obvious that said trip may be made adjustable, so that the operator may change the extreme length of the lines, it being understood that the trip 49 is intended to operate at the end of a line whatever the length of the line may be.

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

1. In a type-writing machine, the combination of a carriage, type-carriers, key-levers therefor, means for automatically locking the key-levers against movement, adjustable means for determining at what point in the travel of the carriage said key-levers shall be locked and a second set of locking means which operate independently of the adjustable means to automatically lock the key-levers against movement at the end of a line.

2. In a type-writing machine, the combination of a carriage, type-carriers, key-levers therefor, a locking-bar, means for automatically moving said locking-bar to lock the key-levers against movement, adjustable means for determining at what point in the travel of the carriage said key-levers shall be locked, and independent means which coöperate with the locking-bar and which operate independently of the adjustable means and after the operation of the adjustable means has taken place to automatically lock the key-levers against movement at the end of a line.

3. In a type-writing machine, the combination of a carriage, type-carriers, key-levers therefor, a locking-bar which extends beneath said key-levers and is adapted to lock them against movement, means for automatically moving said locking-bar to directly lock the key-levers against movement, adjustable means which are operable to bring about the locking of the key-levers at any point in the travel of the carriage as determined by the adjustment of said adjustable means, and separate means which coöperate with said locking-bar and which are only operable when the carriage has reached the end of a line to bring about a locking of the key-levers.

4. In a type-writing machine, the combination of a carriage, type-carriers, key-levers

therefor, a swinging locking-bar which extends beneath said key-levers and is adapted to lock them against movement, means for automatically swinging said locking-bar to lock the key-levers against movement, adjustable means which are operable to bring about the locking of the key-levers at any point in the travel of the carriage as determined by the adjustment of said adjustable means, hand-operated means for swinging said locking-bar to release the key-levers after they have been automatically locked by the adjustable means, and a second set of independent means which coöperate with the locking-bar and are only operable when the carriage has reached the end of a line to bring about a locking of the key-levers.

5. In a type-writing machine, the combination of a carriage, type-carriers, key-levers therefor, a locking-bar which extends beneath the key-levers for automatically locking them against movement, adjustable means which are operable to bring about the locking movement of the locking-bar at any point in the travel of the carriage as determined by the adjustment of said adjustable means, separate independently-operable permanent means which coöperate with the locking-bar and which are only operable when the carriage has reached the end of a line to bring about a locking of the key-levers, and hand-operated means for temporarily releasing the key-levers after they have been automatically locked by the adjustable means, a single movement of said hand-operated means being sufficient to effect the release of the type-carrier-actuating mechanism and the maintenance thereof released during the further movement of the carriage or until it is locked by the permanent means.

6. In a type-writing machine, the combination of a carriage, type-carriers, adjustable means for automatically locking the type-carriers against movement at any point in the travel of the carriage as determined by the adjustment of said means, means for permanently throwing said locking means out of operation and a key at the keyboard of the machine for temporarily releasing said locking means from engagement after they have been locked.

7. In a type-writing machine, the combination of a carriage, type-carriers, means for automatically locking said type-carriers against movement, an adjustable device for effecting a locking movement of the locking means, permanent means which are likewise operable to effect a locking movement of the locking means, and mechanism for rendering said adjustable device ineffective to lock the carriers.

8. In a type-writing machine, the combination of a carriage, type-carriers, means for automatically locking said type-carriers

against movement, an adjustable device for effecting a locking movement of the locking means, hand-operated means for releasing the locking means when they are locked by the adjustable device, permanent means which are likewise operable to effect a locking movement of the locking means, and mechanism for rendering said adjustable device ineffective to lock the carriers.

9. In a type-writing machine, the combination of a carriage, a carriage-release key, type-carriers, means for automatically locking said type-carriers against movement, an adjustable device for effecting a locking movement of the locking means, hand-operated means for releasing the locking means when they are locked by the adjustable device, operative connections between said carriage-release key and the locking means for releasing the locking means when the carriage-release key is operated, permanent means which are likewise operable to effect a locking movement of the locking means, and mechanism for rendering said adjustable device ineffective to lock the carriers.

10. In a type-writing machine, the combination of a carriage, type-carriers, means for automatically locking said type-carriers against movement, an adjustable device for effecting a lockout movement of the locking means, hand-operated means for releasing the locking means when they are locked by the adjustable device, a carriage-release key, operative connections between said carriage-release key and the locking means for releasing the locking means when the carriage-release key is operated, permanent means which are likewise operable to effect a locking movement of the locking means, mechanism for rendering said adjustable device ineffective to lock the carriers and means controlled by the carriage-release key for releasing the locking means when the same are operated by the adjustable device, said carriage-release key and hand-operated releasing means being ineffective to release the locking means when they are locked by the permanent means.

11. In a type-writing machine, the combination of a carriage, type-carriers, key-levers therefor, a locking-bar adapted to cooperate with said levers to lock them against movement, an adjustable device for effecting a locking movement of said bar at any point in the travel of the carriage as determined by the adjustment of said adjustable device, permanent releasing means for permanently rendering said adjustable device ineffective to operate the locking-bar, and independent means for moving the locking-bar to the locking position when the carriage has reached the end of a line.

12. In a type-writing machine, the combination of a carriage, type-carriers, key-levers therefor, a locking-bar adapted to cooperate

with said levers to lock them against movement, an adjustable device for effecting a locking movement of said bar at any point in the travel of the carriage as determined by the adjustment of said adjustable device, hand-operated temporary releasing means for moving the locking-bar to the unlocking position, permanent releasing means for permanently rendering said adjustable device ineffective to operate the locking-bar, and independent means for moving the locking-bar to the locking position when the carriage has reached the end of a line.

13. In a type-writing machine, the combination of a carriage, a spring-drum operatively connected to said carriage, type-carriers, key-levers therefor, a locking-bar adapted to cooperate with said key-levers to lock them against movement, a trip carried by and adjustable upon said spring-drum, means cooperating with said adjustable trip to move the locking-bar to the locking position, a permanent trip carried by said drum, and means cooperating with the permanent trip to move the locking-bar to the locking position when the carriage has reached the end of a line.

14. In a type-writing machine, the combination of a carriage, a spring-drum operatively connected to said carriage, type-carriers, key-levers therefor, a locking-bar adapted to cooperate with said key-levers to lock them against movement, a trip carried by and adjustable upon said spring-drum, means cooperating with said adjustable trip to move the locking-bar to the locking position, a permanent trip carried by said drum, means cooperating with the permanent trip to move the locking-bar to the locking position when the carriage has reached the end of a line, and mechanism for disconnecting the adjustable trip from its cooperating means, to effect a movement of the locking-bar to the unlocking position.

15. In a type-writing machine, the combination of a carriage, a spring-drum operatively connected to said carriage, type-carriers, key-levers therefor, a locking-bar adapted to cooperate with said key-levers to lock them against movement, a trip carried by and adjustable upon said spring-drum, means cooperating with said adjustable trip to move the locking-bar to the locking position, a permanent trip carried by said drum, means cooperating with the permanent trip to move the locking-bar to the locking position when the carriage has reached the end of a line, and mechanism for permanently rendering the adjustable trip ineffective to cooperate with its cooperating means, so that the locking-bar cannot be moved to the locking position by said adjustable trip.

16. In a type-writing machine, the combination of a carriage, a spring-drum opera-

tively connected to said carriage, type-carriers, key-levers therefor, a locking-bar adapted to cooperate with said key-levers to lock them against movement, a trip carried by and adjustable upon said spring-drum, means cooperating with said adjustable trip to move the locking-bar to the locking position, a permanent trip carried by said drum, means cooperating with the permanent trip to move the locking-bar to the locking position when the carriage has reached the end of a line, hand-operated mechanism for temporarily disconnecting the adjustable trip from its cooperating means, to effect a movement of the locking-bar to the unlocking position, and mechanism for permanently rendering the adjustable trip ineffective to cooperate with its cooperating means, so that the locking-bar cannot be moved to the locking position by said adjustable trip.

17. In a type-writing machine, the combination of a carriage, a spring-drum operatively connected to said carriage, a carriage-release key, type-carriers, key-levers therefor, a locking-bar adapted to cooperate with said key-levers to lock them against movement, a trip carried by and adjustable upon said spring-drum, means cooperating with said adjustable trip to move the locking-bar to the locking position, a permanent trip carried by said drum, means cooperating with the permanent trip to move the locking-bar to the locking position when the carriage has reached the end of a line, and means controlled by the carriage-release key for disconnecting the adjustable trip and its cooperating means so that said means are disconnected or rendered ineffective to be engaged by the adjustable trip when the carriage-release key is operated.

18. In a type-writing machine, the combination of a carriage, a spring-drum operatively connected to said carriage, type-carriers, key-levers therefor, a locking-bar adapted to cooperate with said key-levers to lock them against movement, a trip carried by and adjustable upon said spring-drum, a hook which is connected to said locking-bar and which is normally interposed in the path of said trip, and means that extend to the keyboard of the machine for permanently maintaining the hook out of the path of the trip.

19. In a type-writing machine, the combination of a carriage, a spring-drum operatively connected to said carriage, type-carriers, key-levers therefor, a locking-bar adapted to cooperate with said key-levers to lock them against movement, a trip carried by and adjustable upon said spring-drum, a hook which is connected to said locking-bar and which is normally interposed in the path of said trip, a key-lever at the keyboard of the machine for moving the hook to one side to disconnect it from the trip, and means for

permanently maintaining the key-lever depressed and the hook out of the path of the trip.

20. In a type-writing machine, the combination of a carriage, a spring-drum operatively connected to rotate as the carriage is moved, type-carriers, key-levers therefor, a locking-bar adapted to cooperate with said key-levers to lock them against movement, a trip carried by and adjustable upon said spring-drum, a hook which is connected to said locking-bar and which is normally interposed in the path of said adjustable trip, a permanent trip carried by said drum and means controlled by the permanent trip for moving the locking-bar to the locking position.

21. In a type-writing machine, the combination of a carriage, a carriage-release key, a spring-drum operatively connected to rotate as the carriage is moved, type-carriers, key-levers therefor, a locking-bar adapted to cooperate with said key-levers to lock them against movement, a trip carried by and adjustable upon said spring-drum, a hook which is connected to said locking-bar and which is normally interposed in the path of said adjustable trip, intermediate connections between the carriage-release key and the hook so as to move the hook out of the path of the adjustable trip when the carriage-release key is operated.

22. In a type-writing machine, the combination of a carriage, a spring-drum operatively connected to rotate as the carriage is moved, type-carriers, key-levers therefor, a locking-bar adapted to cooperate with said key-levers to lock them against movement, a trip carried by and adjustable upon said spring-drum, a hook which is connected to said locking-bar and which is normally interposed in the path of said adjustable trip, a temporary release-key, intermediate connections between said temporary release-key and hook for moving the hook out of the path of the adjustable trip, a permanent trip carried by said drum, and means controlled by the permanent trip for moving the locking-bar to the locking position.

23. In a type-writing machine, the combination of a carriage, a carriage-release key, a spring-drum operatively connected to rotate as the carriage is moved, type-carriers, key-levers therefor, a locking-bar adapted to cooperate with said key-levers to lock them against movement, a trip carried by and adjustable upon said spring-drum, a hook which is connected to said locking-bar and which is normally interposed in the path of said adjustable trip, intermediate connections between the carriage-release key and the hook so as to move the hook out of the path of the adjustable trip when the carriage-release key is operated, a permanent trip carried by said

drum, means controlled by the permanent trip for moving the locking-bar to the locking position, a temporary release-key, intermediate connections between said temporary release-key and the hook for moving the hook out of the path of the adjustable trip, and means for automatically locking the release-key against its return movement to permanently prevent the hook from being engaged by the adjustable trip.

24. In a type-writing machine, the combination of a carriage, a carriage-release key, a spring-drum operatively connected to rotate as the carriage is moved, type-carriers, key-levers therefor, a locking-bar adapted to cooperate with said key-levers to lock them against movement, a trip carried by and adjustable upon said spring-drum, a hook which is connected to said locking-bar and which is normally interposed in the path of said adjustable trip, intermediate connections between the carriage-release key and the hook so as to move the hook out of the path of the adjustable trip when the carriage-release key is operated, a temporary release-key, intermediate connections between said temporary release-key and hook for moving the hook out of the path of the adjustable trip, a permanent trip carried by said drum, means controlled by the permanent trip for moving the locking-bar to the locking position and means for automatically locking the temporary release-key against its return movement to permanently prevent the hook from being engaged by the adjustable trip.

25. In a type-writing machine, the combination of line-locking mechanism, a line-lock-release finger-key and key-lever for releasing said line-lock mechanism, a finger-key carried by said release-key lever and having a movement independent thereof, and means cooperating with the independently-movable key to lock the release-key against return movement, so that the line-lock mechanism will be retained out of action.

26. In a type-writing machine, the combination of line-lock mechanism, a temporary release-key and key-lever, intermediate connections between said key-lever and the line-lock mechanism for releasing the latter, a permanent release-key pivoted to said temporary-release-key lever and having a movement independently thereof, a hook carried by the permanent key, and means cooperating with the said hook to lock the temporary release-key against return movement, so that the line-lock mechanism will be retained out of action.

27. In a type-writing machine, the combination of line-lock mechanism, a temporary release-key and key-lever, intermediate connections between said key-lever and line-lock mechanism for releasing the latter, a permanent release-key which is pivoted to said

temporary-release-key lever, a hook carried by the permanent release-key, and a fixed engaging device with which said hook cooperates when the permanent release-key is depressed to operate the temporary release-key lever and from which the hook is automatically released or disengaged when the temporary release-key is depressed, whereby a depression of the temporary release-key will temporarily release the line-lock mechanism, whereas a depression of the permanent release-key will throw and permanently maintain the line-lock mechanism out of operation until the temporary release-key is again depressed.

28. In a type-writing machine, and in a line-locking mechanism, the combination with the key-levers and type-bars of a locking-bar, two separate devices connected thereto for independently operating said bar, a trip for actuating one of said separate devices, and an independent trip for actuating the other of said separate devices.

29. In a type-writing machine and in a line-locking mechanism, the combination with the key-levers and type-carriers, of a locking-bar, a hooked rod connected thereto, a spring-drum carrying an adjustable trip cooperating with said hooked rod to move the locking-bar into cooperative relation with the key-levers, a second rod having a projection and also connected with said locking-bar, and a second trip on said spring-drum for actuating said second rod and again moving the locking-bar into cooperative relation with the key-levers.

30. In a type-writing machine and in a line-locking mechanism, the combination with the key-levers and type-carriers, of a locking-bar, a hooked rod connected thereto, a spring-drum carrying a trip for actuating said hooked rod, a lever connected with said hooked rod and a key connected with said lever for holding said hooked rod out of the path of rotation of the trip on the spring-drum.

31. In a type-writing machine, the combination of a carriage, a feed-rack thereon, a release-key connected to said feed-rack, a series of key-levers, a series of type-bars, a locking-bar, a hooked rod connected with said locking-bar, a carriage spring-drum carrying a trip adapted normally to engage the said hooked rod, a lever connected to said hooked rod, and a connection between said lever and said feed-rack whereby when the carriage-release key is operated the said hooked rod is moved out of the path of rotation of the trip on the spring-drum.

32. In a type-writing machine, the combination of a key-lever, a C-spring operatively connected at one end to the key-lever to normally maintain it in the elevated position and provided at its other end with a loop, and

a headed screw the stem of which passes through said loop and is screwed into a fixed portion of the machine, whereby a single screw may be employed to connect the spring to a fixed portion of the machine and to regulate the tension of the spring.

Signed in the borough of Manhattan, city of New York, in the county of New York and

State of New York, this 4th day of November, A. D. 1901.

HENRY W. MERRITT.
WALTER J. BARRON.

Witnesses:

K. V. DONOVAN,
E. M. WELLS.