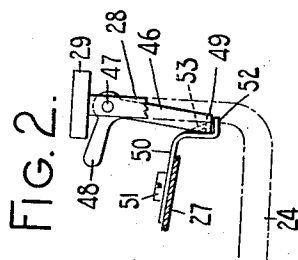
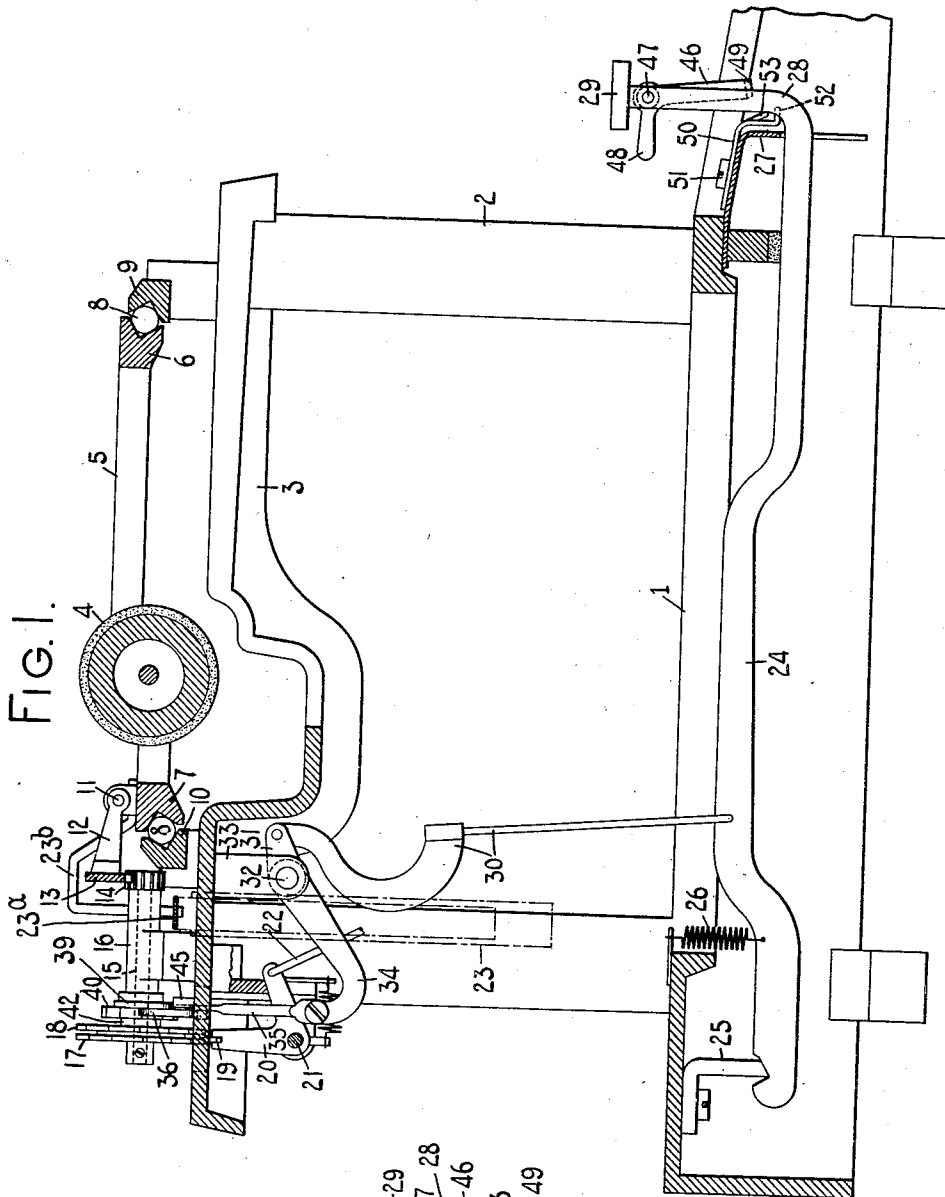


W. J. BARRON.
 TYPE WRITING MACHINE.
 APPLICATION FILED AUG. 30, 1910.

1,025,046.

Patented Apr. 30, 1912.
 2 SHEETS-SHEET 1.



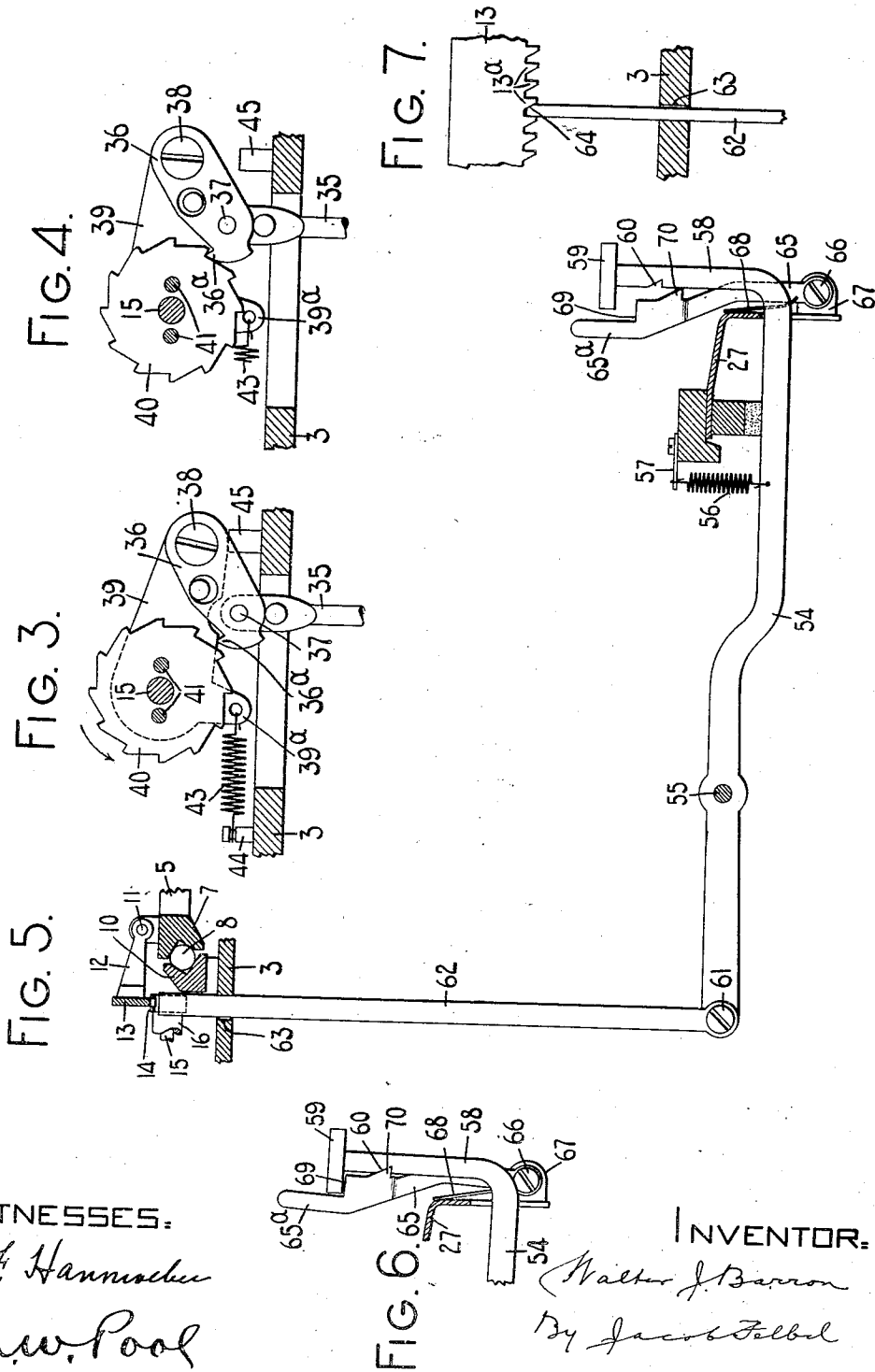
WITNESSES:
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M. W. Pool

INVENTOR:
Walter J. Barron
By Jacob Feld
 HIS ATTORNEY

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UNITED STATES PATENT OFFICE.

WALTER J. BARRON, OF NEW YORK, N. Y., ASSIGNOR, BY MESNE ASSIGNMENTS, TO
UNION TYPEWRITER COMPANY, OF JERSEY CITY, NEW JERSEY, A CORPORATION
OF NEW JERSEY.

TYPE-WRITING MACHINE.

1,025,046.

Specification of Letters Patent.

Patented Apr. 30, 1912.

Application filed August 30, 1910. Serial No. 579,623.

To all whom it may concern:

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

My present invention relates to carriage feeding mechanism for typewriting machines.

The principal object of said invention is to provide means for at will preventing movement of the carriage when a spacing or character key is actuated so that the carriage may be held in fixed position while re-printing a defectively printed character or substituting another character in place of an erased one or so as to enable a number of characters to be printed vertically one under the other by merely turning the platen on its axis between each two impressions; or for any other desired purpose.

To the above and other ends my invention consists in the features of construction, arrangements of parts and combinations of devices to be hereinafter described and particularly pointed out in the claims.

In the present instance I have shown two forms of my invention both applied to the No. 10 Remington typewriter, but the nature of the invention is such that it may be readily adapted to other styles of writing machines irrespective of the form of escapement or carriage feeding mechanism employed in such machines.

In the first form of the invention as herein shown in Figures 1 to 4, inclusive, my novel devices are illustrated in connection with the back spacing mechanism of the No. 10 Remington machine, the back spacing means having an additional function in addition to its back spacing function but being operative at will for either back spacing or for locking the carriage against movement. In the second form of the invention (Figs. 5 to 7) a special key and connections are shown for locking the carriage against movement.

In the accompanying drawings, Fig. 1 is a vertical front to rear sectional view of a No. 10 Remington machine embodying my invention, so much only of the machine being shown as is necessary to a clear under-

standing of said invention. Fig. 2 is a fragmentary side view of the back spacing key and novel devices connected therewith, said key being shown locked in actuated position. Figs. 3 and 4 are rear elevations partly in section showing parts of the back spacing mechanism of the No. 10 Remington machine. Fig. 5 is a skeleton view of a modified form of my invention. Fig. 6 is a fragmentary view showing the key of the construction depressed and locked. Fig. 7 is a rear view of the locking bar of Fig. 5 in operated position.

As shown in Fig. 1, the main frame of the machine comprises a base 1 from which rise corner posts 2 supporting a top plate 3. The key levers and the type bar system connected therewith are omitted from the drawings but are or may be of the usual construction. The type bars when actuated operate with the front face of a rotary platen 4 which is supported on a platen frame (not shown), said frame being mounted for up and down movement on a truck comprising end bars 5 and connecting front and rear bars 6 and 7. These bars 6 and 7 are grooved to receive anti-friction balls 8 which also cooperate with grooved guide rails 9 and 10 fixed to the top plate at the front and rear respectively of the platen carriage which comprises the truck and platen frame. Pivoted to the truck at 11 is a frame 12 to which is secured a feed rack 13 which is normally maintained in spring-pressed engagement with the feed pinion 14 fixed at the front of a shaft 15 bearing in a bracket 16 secured to the top plate. Fixedly supported on the rear end of said shaft are two escapement wheels 17 and 18, said wheels being relatively adjustable to provide for a greater or less degree of drop between their corresponding teeth when the cooperating feed dog 19 is moved away from the normally engaged escapement wheel 17 to the other escapement wheel 18. Said feed dog is mounted at the top of a dog carrier or rocker 20 pivoted at 21 to a fixed support depending from the top plate and is connected by a link 22 with devices including a universal bar (not shown), which bar underlies the key levers and is operative thereby to actuate the escapement and permit the carriage to be drawn leftward a letter space distance at a time under the impulse communicated from a spring drum

23 which is or may be of the usual construction and is connected by a band 23^a and bracket 23^b to the carriage.

The back spacing mechanism of the No. 10 Remington machine as shown in Figs. 1 to 4 comprises a lever 24 arranged at the right-hand side of the keyboard and fulcrumed on the fulcrum bar 25. Said lever 24 is provided with a restoring spring 26 and extends forward through the usual comb plate 27, terminating at the front in an upright portion or stem 28 which is provided with a key or button 29. A link 30 connects the lever 24 with a forwardly extending crank arm 31 fixed to a rock shaft 32 supported on brackets 33 depending from the top plate. A rearwardly extending crank arm 34 fixed to said shaft 32 is connected by an upwardly extending link 35 with a pawl 36, said link and said pawl being pivotally connected at 37. Said pawl is pivotally supported at 38 on an arm 39 which bears on the shaft 15. The tooth 36^a of the pawl projects upward and leftward and is adapted to cooperate with the teeth of a back spacing wheel 40 which is mounted on the shaft 15 and secured in fixed relationship therewith by screws 41 which enter screw holes in a collar 42 fixed to the shaft 15. A coiled spring 43 is connected to an arm 39^a integral with the arm 39, the spring also being connected with a fixed pin 44. Said spring normally maintains the arm 39 in contact with a limiting pin 45, thus normally positioning the pawl 36 as shown in Fig. 3 from which it will be observed that the pawl tooth 36^a is normally out of the path of the tooth of the back spacing wheel 40. It will be understood that when the key 29 is depressed to its limit of movement the link 30, arm 31, rock shaft 32 and arm 34 are operated to thrust upward the link 35, causing the back spacing pawl to engage the back spacing wheel 40 and turn the same in the direction of the arrow in Fig. 3. This turning movement is communicated to the shaft 15 and through it to the rack 13 and pinion 14, the result being that the carriage is moved a letter space distance. The back spacing mechanism thus far described was not invented by me and is not claimed *per se* herein.

In order to adapt the back spacing mechanism to serve as a carriage lock, I provide means applied to the lever 24 for arresting the back spacing pawl after it has entered the back spacing wheel but before it has moved said wheel, and for locking the pawl in arrested position so that it cooperates with the back spacing wheel to hold the shaft 15 from turning, thus fixing the pinion 14 and holding the carriage against movement in printing direction.

Referring more specifically to the pawl 36 arresting and locking means aforesaid they

include an arresting and locking member which comprises an arm 46 pivoted to the side of the key stem 28 at 47 below the key 29 and provided with a rearwardly extending key or finger piece 48. At its lower end the arm 46 terminates in a horizontal extension or lip 49 extending laterally away from the face of the key stem 28. The arresting and locking member is normally maintained by gravity in the position shown in Fig. 1. Said member is adapted to cooperate with a fixed arresting and locking member which fixed member is in the form of a plate 50 secured by a screw 51 to the top of the comb plate 27. The member 50 extends forward and downward at the front of the comb plate and terminates in a horizontal forwardly extending lip or ledge 52. A strip of the metal plate 50 is cut and bent outward to form a locking finger 53 which terminates above the ledge 52.

When it is desired to lock the carriage from movement the operator, as he depresses the key 29, lifts or pulls upward against the key 48, thereby swinging the arm 46 rearward and bringing the lip 49 against the outer face of the inclined finger 53. As soon as the lip 49 passes below the finger 53 the upward pressure against the finger piece 48 will swing the lip 49 beneath the finger 53. At the same instant the bottom of the lip 49 will contact with the top of the stationary ledge or lip 52, thus arresting downward movement of the key lever 24. If, now, the operator releases the finger piece 48 the restoring spring 26 will hold the lip 49 frictionally against the bottom of the finger 53, thereby maintaining the parts locked in the position shown in Fig. 2. This partial depression and locking of the lever 24 operates through the described connections including the link 35 to swing the pawl 36 upward into engagement with the escapement wheel 40 as shown in Fig. 4 and to hold the pawl and the wheel locked in the engaged position. The upward movement of the pawl is not sufficient to cause any turning movement of the back spacing wheel 40. It will be seen from Fig. 4 that the pawl 36 when held in depressed position will effectively prevent turning movement of the wheel 40 in printing direction. The wheel 40 being fixed to the shaft 15, said shaft is locked against movement and the feed pinion 14 fixed to the forward end of said shaft is held from turning, thus locking the feed rack 13 and the platen carriage from movement in printing direction. By pressing down on the key or finger piece 48 the locking and arresting members may be disconnected and the parts will be restored to normal position by the springs 26 and 43.

In the form of the invention shown in Figs. 5 to 7 I provide a special lever and connections to the feed rack 13 for locking

the carriage against movement in the direction of letter spacing or oppositely thereto. Said special key lever 54 has a fixed fulcrum 55 and is provided with a restoring spring 56 which is connected with said key lever and also with a fixed support 57. The key lever 54 passes through a space in the comb plate 27 and terminates forwardly in a vertically disposed key stem 58 which is provided with a key 59, the rear edge of said key stem being formed with a notch 60 having a horizontal lower edge, the other edge of said notch being inclined upward and rearward. The rear end of the key lever 54 is pivotally connected at 61 with an upright arm 62 which passes through an opening 63 in the top plate 3, the sides of said opening serving as a guide for the upper portion of the arm 62. As indicated at 64 (Fig. 7) the upper end of the arm 62 is beveled at one side so as to fit into the opening between any two of the teeth 13^a of the feed rack 13. Normally, however, the upper or locking end of the arm 62 is below the rack teeth as shown in Fig. 5 and will not interfere with longitudinal movements of the rack. When, however, the key 59 is depressed the arm 62 is moved longitudinally upward and its upper or locking end engages with the rack as shown in Fig. 7.

Means are provided for limiting the upward movement of the arm so that while said arm will engage with the rack as shown in Fig. 7 it will be arrested before it begins to lift the rack from the feed pinion. The limiting means aforesaid comprises an upright arm 65 pivoted at its lower end at 66 to a stationary bracket 67 secured to the comb plate 27. The arm 65 is provided with a leaf spring 68, the free end whereof reacts against the comb plate and tends constantly to press the arm 65 forward. Said arm extends upward and is off-set rearward so that the upper end 65^a is in rear of the key 59. The part 65^a is fashioned to provide a finger piece. Below the finger piece and at the forward edge of the arm is a horizontal stop edge 69 which underlies the key 59 and is adapted to co-act therewith. Below the stop edge 69 the forward edge of the arm 65 is shaped to provide a pointed lug 70. The arm 65 is slightly off-set laterally so that the point of said lug 70 engages with the rear edge of the key stem 58 and normally limits the forward movement of the arm 55 under the pressure of the spring 68. Downward pressure on the key 59 is limited by the stop 69 with which said key co-acts. At the moment of co-action the notch 60 is opposite the lug 70 and said lug will be forced into said notch by the spring 68 as shown in Fig. 6. If pressure now be removed from the key 59 the lever 54 and arm 62 will not be returned to normal position but will be held locked in operative po-

sition by the co-action between the lug 70 and the notch 60. When the key 59 is arrested and locked as shown in Fig. 6 the arm 62 will be in the Fig. 7 position, thereby locking the feed rack and the carriage on which said feed rack is mounted from longitudinal movement. By pressing rearward against the finger piece 65^a the key lever is released and the parts will be restored to normal position by the spring 56.

The typewriting machine to which my invention is shown as applied and many other makes of typewriting machines are equipped with a "drop" feed escapement which operates to permit a partial letter space movement of the carriage during the key depression, the letter space movement being completed during the return movement of the key. The extent of drop during the key depression may be varied to suit different conditions. With a so-called drop feed escapement a slow and hesitating actuation of the printing keys causes unequal spacing between characters and the line of print and the type impressions are blurred, owing to the ribbon being held in contact with the paper while the carriage is in motion. If for this or any other reason the type impressions are defective and it is desired to reprint them, or any of them, with a drop feed escapement, it would probably happen that the re-written character would not be in exact register with the original, because, owing to the varying speed with which the printing keys are operated, the printing of the characters takes place at different moments during the drop. By using a carriage locking key as provided by me herein and operating the same prior to the printing operation the platen and carriage will, however, be held immovable during the printing operation irrespective of the style of escapement employed. Moreover, my present invention enables any desired character or characters to be given prominence by impressing it or them several times, the carriage being held locked during the repetition of the type impressions. Moreover, it is sometimes desired to print in vertical lines on the page and by employing my invention such printing may be facilitated, it being only necessary to operate the carriage lock and key once and then to rotate the platen by hand between the type impressions.

Various other uses of my improvements will suggest themselves to those skilled in the art.

It will be observed that by my present invention I combine with a traveling carriage, key controlled means operative at will to lock said carriage against movement in printing direction or otherwise expressed against traveling movement; that in the present instance the key controlled mecha-

nism coöperates with the carriage feeding devices which include a toothed member (*i. e.*, specifically in the first form the wheel 40 and in the second form the rack 13); that
 5 the key controlled devices or mechanism move a detent or device into engagement with said toothed member, thus locking the toothed member and thereby locking the carriage against movement by preventing the
 10 co-acting rack and pinion members 13 and 14 from acting one on the other; that the key controlled means comprises a key lever; that means are provided which coöperate with said key lever to limit its movement and
 15 also to lock or set it in operated position; that the means last referred to comprises in both forms of the invention a member on the machine frame which is provided with a stop and with a detent; that in the first form
 20 of the invention the member is the element 50 and in the second form of the invention the element 65; and that when the key lever is released from the detent it is restored to normal position by restoring means which
 25 in the present instance comprise a coiled spring.

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

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

1. In a typewriting machine, the combination of a traveling carriage, carriage feeding devices, and key controlled means operative at will independently of movement
 35 of said carriage feeding devices to lock certain of said devices.

2. In a typewriting machine, the combination of a traveling carriage, carriage feeding devices, and key controlled means operative at will independently of movement
 40 of said carriage feeding devices to lock certain of said devices and thereby to prevent movement of said carriage in printing direction.

3. In a typewriting machine, the combination of a traveling carriage, carriage feeding devices including a toothed member, and key controlled means coöperative at will
 50 with the teeth of said member to lock said carriage against movement in printing direction, the position of said member being the same after the locking operation as prior thereto.

4. In a typewriting machine, the combination of a traveling carriage, carriage feeding devices including a toothed member, a coöperating locking member independently
 60 of said carriage feeding devices and normally separated from said toothed member, and key controlled mechanism for moving at will said locking member into engagement with said toothed member to lock said carriage against movement in printing direction.

5. In a typewriting machine, the combination of a traveling carriage, carriage feeding mechanism including a dog, and key controlled means operative at will independently of said dog element to lock said carriage
 70 against movement in printing direction, said means comprising a key lever, devices for limiting the movement of said key lever, and locking devices for holding said key lever in operated position.

6. In a typewriting machine, the combination of a traveling carriage, carriage feeding elements including a dog, and means operative at will independently of movement of
 80 said dog element to lock said carriage against traveling movement, said means comprising a key lever, a stop device thereon, and a coöperating frame stop.

7. In a typewriting machine, the combination of a traveling carriage, carriage feeding elements including a dog, and means operative at will independently of movement
 85 of said dog element to lock said carriage against traveling movement, said means comprising a key lever, a restoring spring therefor, a stop on said key lever, a coöperative frame stop, and devices for retaining
 90 said key lever in operated position.

8. In a typewriting machine, the combination of a traveling carriage, carriage feeding
 95 elements including a dog, and means operative at will independently of movement of said dog element to lock said carriage against traveling movement, said means comprising a key lever, locking devices for
 100 holding said key lever in operated position, and means for restoring said key lever to normal position when released from said locking devices.

9. In a typewriting machine, the combination of a traveling carriage, means operative at will to lock said carriage against
 105 traveling movement, said means comprising a combined stop and detent member supported on the frame of the machine, and a key lever coöperative with said member.

10. In a typewriting machine, the combination of a traveling carriage, means operative at will to lock said carriage against
 110 traveling movement, said means comprising a combined stop and detent member supported on the frame of the machine, a key lever coöperative with said member, and a detent movable into operation by said key lever.

11. In a typewriting machine, the combination of a traveling carriage, and means operative at will to lock said carriage
 120 against traveling movement, said means comprising a key lever, an arm pivoted thereon, and a device on the frame coöperative with said arm to limit the movement of said key lever and retain it in operative position, said device comprising a
 125 stop engageable with one part of said arm, 130

and a detent engageable with another part of said arm.

12. In a typewriting machine, the combination of a traveling carriage, and means operative at will to lock said carriage against traveling movement, said means comprising key controlled back spacing mechanism, and means for limiting the movement of parts of said back spacing mechanism.

13. In a typewriting machine, the combination of a traveling carriage, and means operative at will to lock said carriage against traveling movement, said means comprising a toothed wheel, a co-acting pawl, and key controlled means for moving said pawl into engagement with said wheel and arresting it prior to the beginning of movement by said wheel.

14. In a typewriting machine, the combination of a traveling carriage, and means operative at will to lock said carriage against traveling movement, said means

comprising a back spacing wheel, a co-acting key controlled pawl, and means for moving said pawl into engagement with said wheel and arresting said pawl prior to the beginning of back spacing movement.

15. In a typewriting machine, the combination of a traveling carriage, escape- ment mechanism therefor comprising a co- operating rack and pinion, a back spacing wheel rigid with said pinion, an arm co- axial with said wheel, a pawl pivoted on said arm, a key lever, connections between said key lever and said pawl, a device on the machine frame, and devices co-active with said key lever for limiting its movement and retaining it in operated position.

Signed at Hingham in the county of Plymouth and State of Massachusetts this 24th day of August, A. D. 1910.

WALTER J. BARRON.

Witnesses:

ERNEST E. LINCOLN,
CARRIE V. WHITE.