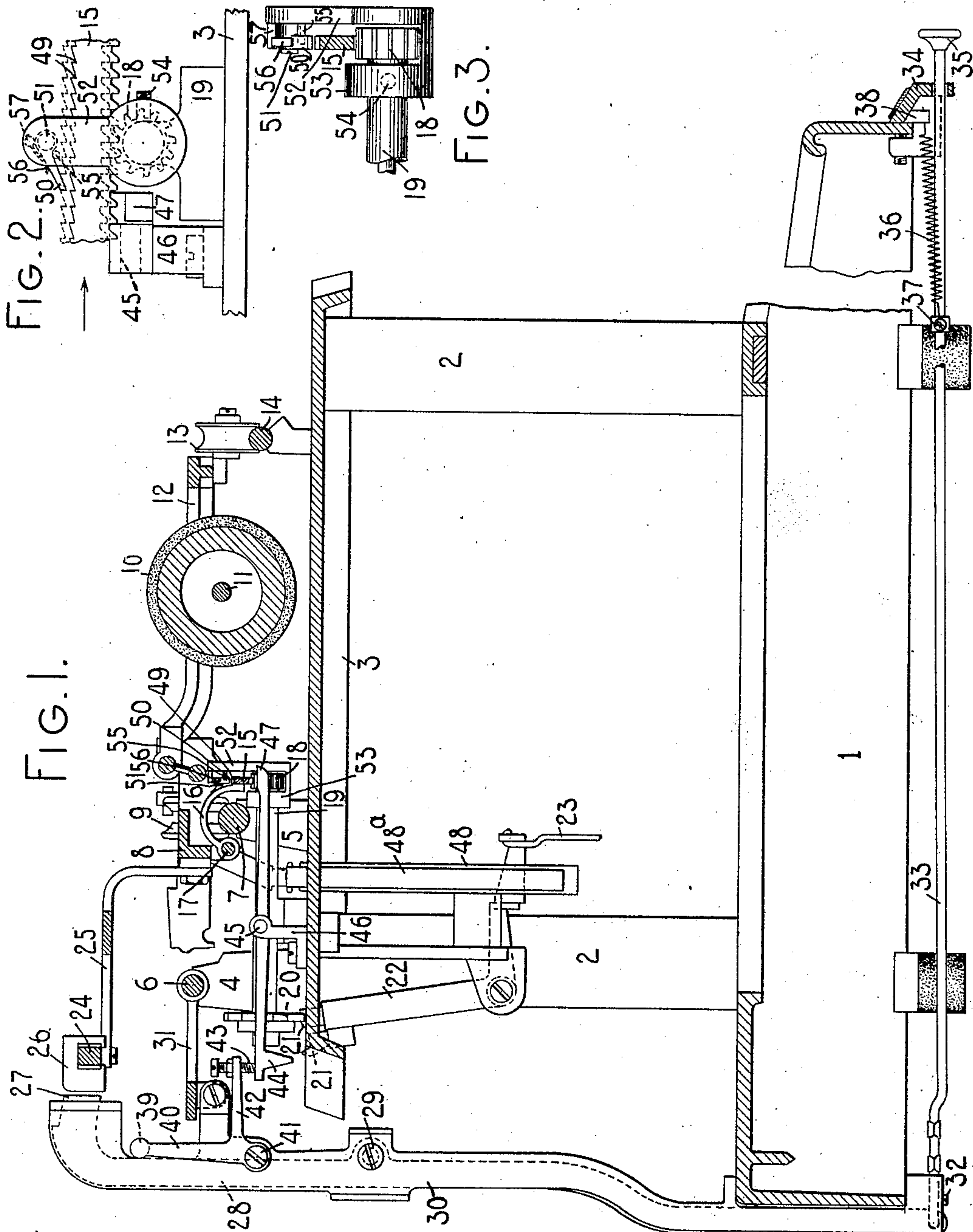


W. J. BARRON.  
TYPE WRITING MACHINE.

APPLICATION FILED NOV. 14, 1907. RENEWED JUNE 16, 1911.

998,946.

Patented July 25, 1911.



WITNESSES:

INVENTOR:

J. B. Reeves  
Wm. E. Smith

Walter J. Barron  
By Jacob F. Felt  
HIS ATTORNEY



# UNITED STATES PATENT OFFICE.

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

## TYPE-WRITING MACHINE.

998,946.

Specification of Letters Patent.

Patented July 25, 1911.

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*To all whom it may concern:*

Be it known that I, WALTER J. BARRON, 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.

The present invention relates to typewriting machines and more particularly to means for checking or preventing the carriage from rebounding when suddenly arrested in its travel and the invention is especially adapted for use in connection with tabulating mechanism to prevent the carriage from rebounding when it is arrested by the tabulating stops after having been released from control of its escapement mechanism and allowed to run free.

The object of the invention is to provide simple and efficient means of the character specified.

To the above and other ends which will hereinafter appear the invention consists of the features of construction, arrangements of parts and combinations of devices to be hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a vertical front to rear sectional view of a typewriting machine embodying my invention; the features of the machine unnecessary to an understanding of the present invention being omitted. Fig. 2 is an enlarged detail fragmentary front elevation showing a portion of the machine with the devices on my invention applied thereto. Fig. 3 is an enlarged detail fragmentary side elevation partly in section of some of the parts shown in Fig. 2.

This case is a division of my application Serial No. 68,385, filed July 15th, 1901.

In the present instance the invention is shown applied to a machine resembling the No. 6 Remington machine equipped with a tabulating mechanism similar to that known as the Gorin tabulator, though it should be understood that the invention may be employed in other styles of typewriting machines, whether of the cylindrical or flat platen variety and that various changes may be made in adapting the invention to different styles of machines.

As shown, the frame of the machine com-

prises a base 1, corner posts 2 and a top plate 3. Standards 4 and 5 project from the top plate and support guide rods 6 and 7 respectively for guiding a carriage truck 8 in its movement from side to side of the machine. The carriage truck carries rollers 9 which cooperate with the guide rod 7 in the usual manner. A cylindrical platen 10 is mounted on a platen shaft 11 which is journaled in bearings in a platen frame 12. The platen frame is pivotally connected to the truck and carries at the front side thereof a roller 13 which bears upon a shift rail 14, shifted in the usual manner to effect a change in the "case" position of the platen. A feed rack 15 is carried by arms 16 pivoted at 17 to the carriage truck. The feed rack cooperates with a feed pinion 18 secured to the forward end of a shaft which turns in a bearing 19 secured to the top plate of the machine and operatively connected by the usual pawl and ratchet mechanism to an escapement wheel 20. Feed dogs 21 cooperate with the escapement wheel to afford a step-by-step feed movement of the carriage in the usual manner, the feed dogs being carried by a dog rocker 22 actuated through a universal bar by the printing key levers (not shown), the universal bar being connected with the dog rocker by links 23. The carriage supports a column stop bar 24 by means of rearwardly extending bracket arms 25. Adjustable column stops 26 are mounted on the column stop bar 24 for cooperation with denominational stops 27 each formed as a forwardly projecting end of an upright lever 28. These levers are pivoted at 29 in a tabulator frame 30 which is secured to the frame of the typewriting machine by a yoke 31 and screws 32. The lower end of each of the levers 28 is pivotally connected to a push rod 33 which extends beneath the machine and projects through an opening in a detachable frame 34 secured to the base of the machine. Each push rod is provided with a push key 35 and a restoring spring 36 connected at one end, as at 37, to the associated push rod and at its opposite end to a pin 38 carried by the frame 34. A short universal bar 39 extends across the paths of all of the upright levers 28 and is connected at its ends to upright arms 40 pivoted at 41 to the tabulator frame



30. One of the upright arms 40 is provided with a forwardly extending arm 42 carrying a screw contact 43 which passes through a threaded opening in the arm and bears at its lower end against the rear end of a release lever 44 pivoted at 45 to a bracket 46 secured to the top plate of the machine. The forward end of the release lever 44 is formed so as to provide a shoe 47 situated beneath the feed rack and normally out of contact therewith, the weight of the forward end of the release lever being sufficient to move it to the normal position shown in Fig. 1.

It will be understood that by pushing any of the denominational keys 35 the associated lever 28 may be rocked on its pivot, thereby projecting the end thereof which constitutes a denominational stop 27 into the path of the column stops 26. This same movement is effective to move the arms 40 through the contact of the actuated lever 28 with the universal bar 39. The rocking of the arms 40 effects a downward movement of the arm 42, thus rocking the release lever 44 on its pivot and thereby elevating the feed rack 15. The effect of these movements of the parts is to disengage the feed rack from its feed pinion 18, thereby releasing the carriage from its escapement mechanism and allowing it to run free and to be propelled toward the left by the spring drum 48 which is connected to the carriage through a strap or band 48<sup>a</sup>. When one of the column stops 26 strikes the projected denominational stop 27 the carriage will be arrested. The construction thus far described is essentially the same as that employed in the No. 6 Remington machine equipped with the Gorin tabulator.

Upon reference more particularly to Figs. 2 and 3 it will be seen that the feed rack 15 is also formed as a rack or ratchet bar. Thus it is provided with ratchet teeth 49 on the upper edge thereof, adjacent ratchet teeth being situated a letter space distance apart in accordance with the spacing of the teeth on the feed rack which engages the feed pinion. A pawl 50 is adapted to coact with the ratchet teeth 49 when the feed rack is elevated in the manner hereinbefore described to disconnect the carriage from its escapement mechanism and as indicated in dotted lines in Fig. 2. The pawl 50 is pivoted at 51 to a bracket arm 52 which extends up in front of the feed pinion and feed rack and is secured at its lower rearwardly extending end to the bearing 19. This bracket may be formed as a part of the bearing 19 or may be detachably secured thereto. In the present instance I have shown one end of the bracket as provided with a sleeve 53 which surrounds the bearing 19 and is held fixed thereon by a set screw 54. A stop pin 55 projects from the

rear face of the bracket 52 beneath the pawl 50 so that the pawl normally rests against the stop pin and is limited in its downward movement thereby. A leaf spring 56 is secured at one end to a pin 57 projecting from the rear of the bracket. The spring bears at its free end against the pawl to force it down into contact with the stop 55. Each ratchet tooth 49 of the anti-rebound rack in the present instance has its straight or abrupt face on the right-hand side thereof and the sloping or inclined face to the left-hand side and the pawl is inclined downwardly from right to left so as to engage the abrupt faces of the ratchet teeth and prevent a movement of the feed rack, and the carriage which carries it, from left to right or in the direction of the arrow in Fig. 2, when the ratchet teeth are engaged by the pawl.

It will be understood from the foregoing description that an elevation of the feed rack 15, effected by an actuation of the tabulating mechanism, will bring the ratchet teeth 49 into coöperation with the pawl 50. When the carriage is moving in the direction of its feed, so as to bring one of the column stops into contact with the projected denominational stop, the pawl will slide freely over the inclined faces of the ratchet teeth, and when the tabulating stops are brought into engagement the rebound of the carriage will be positively resisted, checked or prevented by the engagement of the pawl with the abrupt face of one of the ratchet teeth. The pawl is in position to effect this engagement with a tooth 49 at each letter-space position of the carriage, so that it is at once effective to prevent rebound no matter at what letter-space position in its travel the carriage is arrested.

From the foregoing description it will be understood that I have provided simple and efficient means for preventing the rebound of the carriage and a consequent displacement thereof when it is suddenly arrested in its travel, and that the pawl and ratchet mechanism positively prevents a backward movement or rebound of the carriage from the letter space position where it is desired to arrest it.

While the pawl 50 has been shown carried by a fixed portion of the machine and the ratchet or rack bar carried by the carriage, and this arrangement is preferred in the particular form of machine shown and described, it should be understood that these parts may be otherwise arranged and that various other changes may be made without departing from the spirit of the invention.

The claims in the present case are directed to a modified form of construction not specifically claimed in my application hereinbefore referred to, and no claim herein is to be construed as covering any of the several



forms of my invention disclosed in said patent application, excepting the rack and pawl construction shown in Fig. 4 in said application and made the subject matter of this divisional application.

While I have shown a carriage of that style of machine which carries a platen, it should be understood that the term "carriage" employed in the accompanying claims is intended to include all carriages of typewriting machines whether or not a platen is carried by such carriage, and that my invention contemplates broadly the use of pawl and rack mechanism for preventing or checking the rebound of the carriage.

When I refer in the accompanying claims to carriage anti-rebound devices that are thrown by the direct action of the key into coöperation to check a backward movement or rebound of the carriage I mean to distinguish from those anti-rebound devices which are brought into coöperation by the travel of the carriage as in the construction specifically claimed in my application hereinbefore referred to.

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

1. In a typewriting machine, the combination of a carriage, and pawl and rack mechanism for checking the rebound of the carriage, one member of the pawl and rack mechanism traveling in unison with the carriage and the other member being maintained fixed against such traveling movement, and the pawl co-acting directly with different teeth of said rack during the relative traveling movement between the rack and pawl to prevent rebound of the carriage at any letter space position where it may be arrested.

2. In a typewriting machine, the combination of a carriage, a pawl and a rack normally out of coöperation, and means for bringing said pawl and rack into coöperation when the carriage is released.

3. In a typewriting machine, the combination of a carriage, tabulating mechanism, and pawl and rack mechanism operative to prevent rebound of the carriage when the tabulating mechanism is actuated, one member of the pawl and rack mechanism traveling in unison with the carriage and the other member being maintained fixed against such traveling movement, and said pawl co-acting directly with different teeth of said rack during the relative traveling movement between the rack and pawl to prevent rebound of the carriage at any letter space position where it may be arrested.

4. In a typewriting machine, the combination of a carriage, and a rack and pawl, one carried by the carriage and the other by a fixed part of the machine, a relative movement of the rack and pawl toward and away from each other bringing about an engage-

ment and disengagement between the rack and pawl.

5. In a typewriting machine, the combination of a carriage, a feed rack therefor, an anti-rebound rack carried thereby, and a pawl coöperative with said anti-rebound rack, said pawl being fixed against traveling movement with the carriage.

6. In a typewriting machine, the combination of a carriage, a feed rack therefor, an anti-rebound rack carried thereby, and a pawl coöperative with said anti-rebound rack and normally out of coöperation therewith, the disengagement of the feed rack bringing about a coöperation between the anti-rebound rack and its pawl.

7. In a typewriting machine, the combination of a carriage, and pawl and rack mechanism for checking the rebound of the carriage, the spacing of the rack of said mechanism corresponding to the letter-space positions of the carriage, one member of the pawl and rack mechanism traveling in unison with the carriage and the other member being maintained fixed against such traveling movement and said members co-acting directly with each other to prevent rebound of the carriage.

8. In a typewriting machine, the combination of a carriage, and pawl and rack mechanism for checking the rebound of the carriage, the rack of said mechanism being in the nature of a ratchet with the straight or abrupt face of each tooth at the right hand side thereof and the inclined or sloping face at the left-hand side thereof, one member of the pawl and rack mechanism traveling in unison with the carriage and the other member being maintained fixed against such traveling movement and said members co-acting directly with each other to prevent rebound of the carriage.

9. In typewriting machines, the combination with the carriage, of means for arresting the run of the carriage comprising co-operating stop members, one of which is movable into and out of line with the other, and pawl and rack mechanism for checking the rebound of said carriage when said stop members are brought into engagement.

10. In a typewriting machine, the combination with the carriage, of means for arresting the run of the carriage comprising coöperating stop members, and means for preventing the rebound of the carriage when said stop members are brought into engagement comprising a rack and a coöperating pawl, said rack having teeth corresponding to the different letter space positions of the carriage.

11. In a typewriting machine, the combination with a carriage, of tabulating mechanism for arresting the run of the carriage, said tabulating mechanism comprising a series of column stops, and a coöperating



stop; and a pawl and rack shiftable relatively by an actuation of said tabulating mechanism into coöperative relation to prevent rebound of the carriage.

5 12. In a typewriting machine, the combination of a carriage, tabulating stops, one movable into the path of the other, a key for effecting such relative movement of the stops, and carriage anti-rebound devices that  
10 are thrown by the direct action of said key into coöperation to check a backward movement or rebound of the carriage.

13. In a typewriting machine, the combination of a carriage, tabulating stops, one  
15 movable into the path of the other, a key for effecting such relative movement of the stops, and carriage anti-rebound devices that are thrown by the direct action of said key into coöperation to check a backward move-  
20 ment or rebound of the carriage, said carriage anti-rebound devices comprising a pawl and a rack.

14. In a typewriting machine, the combination with a carriage; of means for ar-  
25 resting the run of the carriage comprising stop members, one of which is shiftable into and out of line with the other; and means for preventing rebound of said carriage when said stop members are brought into  
30 engagement comprising a rack and spring-held pawl mounted for relative movement one into engagement with the other; and a tabulating key for effecting relative shifting movements between said stop members  
35 and between the rack and pawl.

15. In a typewriting machine, the combination with a carriage, of a series of column stops mounted thereon, a coöperating stop  
40 movable into and out of line with the column stops, a rack on the carriage, and a spring-held pawl, said rack and pawl being mounted for relative movement into and out of co-  
operation to prevent rebound of the carriage when one of said column stops engages the  
45 coöperating stop.

16. In a typewriting machine, the combination with the carriage; of means for ar-  
resting the run of the carriage comprising coöperating stop members, one of which is  
50 shiftable into and out of line with the other of said members; and means for preventing the rebound of the carriage when said stop members are brought into engagement comprising a rack having a series of teeth cor-  
55 responding with the different letter space positions of the carriage and a pawl for engaging said rack, one of said pawl and rack members being shiftable into and out of en-  
60 gagement with the other; and a tabulating key for operating said shiftable stop member and for bringing said pawl and rack members into engagement.

17. In a typewriting machine, the combination with the carriage; of mechanism for  
65 arresting the run of the carriage comprising

coöperating stop members, one of said stop members being shiftable into and out of line with the other; and means for preventing rebound of the carriage comprising two co-  
operating parts separate from said stop 70 members, one of which parts is shiftable into and out of engagement with the other, said shiftable part being operatively connected to said shiftable stop member and moved into engagement with the other of 75 said parts when said shiftable stop member is moved into line with the other stop members.

18. In a typewriting machine, the combination with the carriage; of means for ar- 80 resting the run of the carriage comprising coöperating stops, one of which is shiftable into and out of line with the other, a tabulating key for operating said shiftable stop; and means for preventing rebound of the 85 carriage when said stops are brought into engagement comprising a rack and a co-operating pawl for engaging the teeth of said rack, said pawl and rack members be-  
ing normally disengaged, and one of said 90 members being operatively connected to said tabulating key and arranged to be shifted thereby into engagement with the other of said members.

19. In a typewriting machine, the combi- 95 nation of a carriage; means for preventing rebound of the carriage, said means comprising a pawl and a rack mounted for relative movement; and a key for effecting such rela-  
tive movement between the rack and pawl. 100

20. In a typewriting machine, the combination of a carriage; and means for prevent-  
ing rebound of the carriage, said means 105 comprising a part that moves with the carriage and a part that is carried by the frame of the machine, one of said parts riding over the other throughout the movement of the carriage in the direction of its feed and said parts coöperating to positively prevent  
a movement of the carriage in the opposite 110 direction.

21. In a typewriting machine, the combination of a carriage; and means for prevent-  
ing rebound of the carriage, said means com- 115 prising a pawl and a rack the pawl riding over the teeth of the rack during the travel of the carriage in the direction of its feed and positively engaging the rack in the op-  
posite direction.

22. In a typewriting machine, the combi- 120 nation of a carriage; and means for preventing rebound of the carriage, said means comprising a pawl and a rack, the pawl riding over the teeth of the rack during the travel of the carriage in the direction of its  
feed and positively engaging the rack in the 125 opposite direction; and means operable at will for throwing said pawl and rack into and out of operation.

23. In a typewriting machine, the combi- 130



5 nation of a carriage; and means for checking the rebound of the carriage, said means comprising a pawl and a ratchet operative to move freely one over the other when the carriage moves in the direction of its feed but to interlock and check the movement of the carriage in the opposite direction.

10 24. In a typewriting machine, the combination of a carriage; and means for checking the rebound of the carriage, said means comprising a pawl and a ratchet operative to move freely one over the other when the carriage moves in the direction of its feed but

to interlock and check the movement of the carriage in the opposite direction; and hand 15 actuated means operable at will for throwing said pawl and ratchet into and out of coöperation.

Signed at the borough of Manhattan, city of New York, in the county of New York 20 and State of New York, this 12th day of November A. D. 1907.

WALTER J. BARRON.

Witnesses:

CHARLES E. SMITH,  
J. B. DEWES.

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."

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