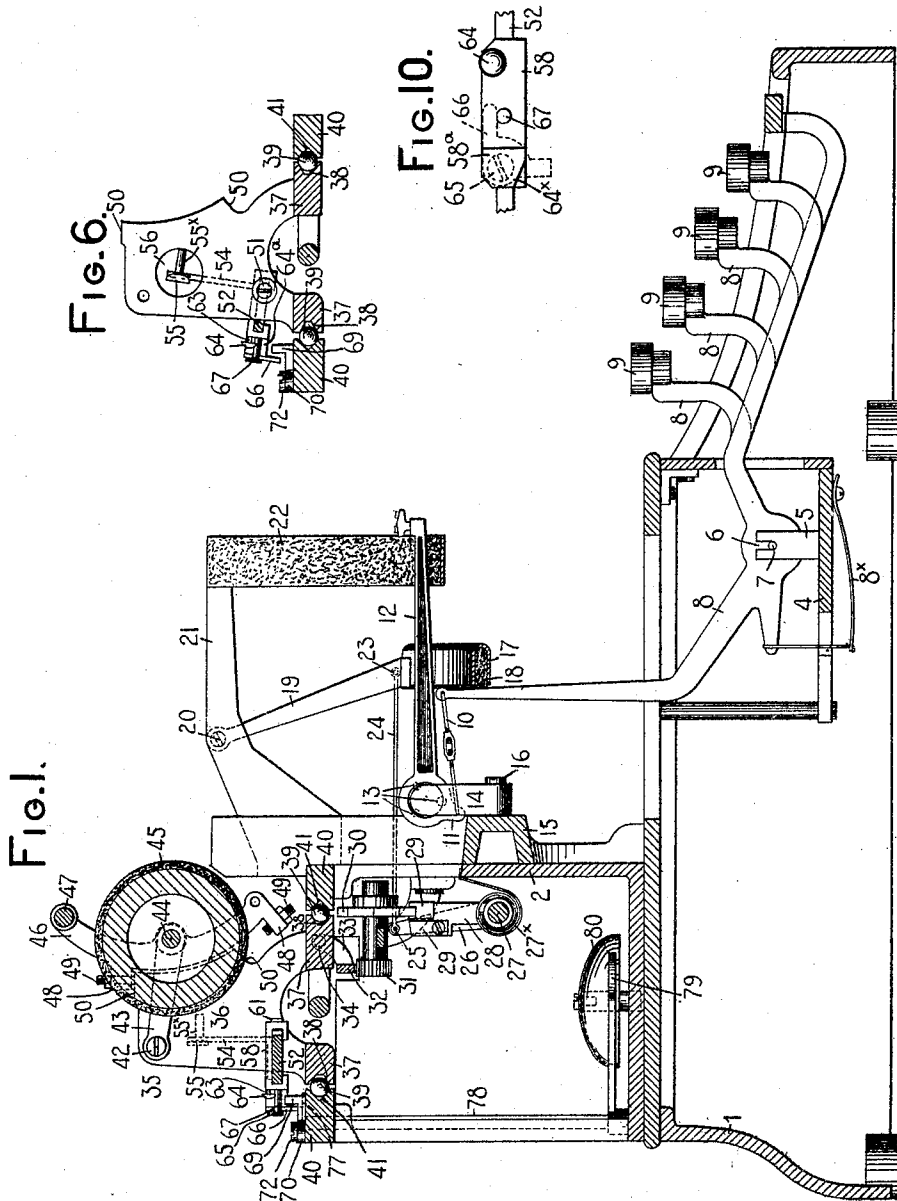


A. T. BROWN.
TYPE WRITING MACHINE.
APPLICATION FILED OCT. 16, 1902.

3 SHEETS—SHEET 1.



WITNESSES.

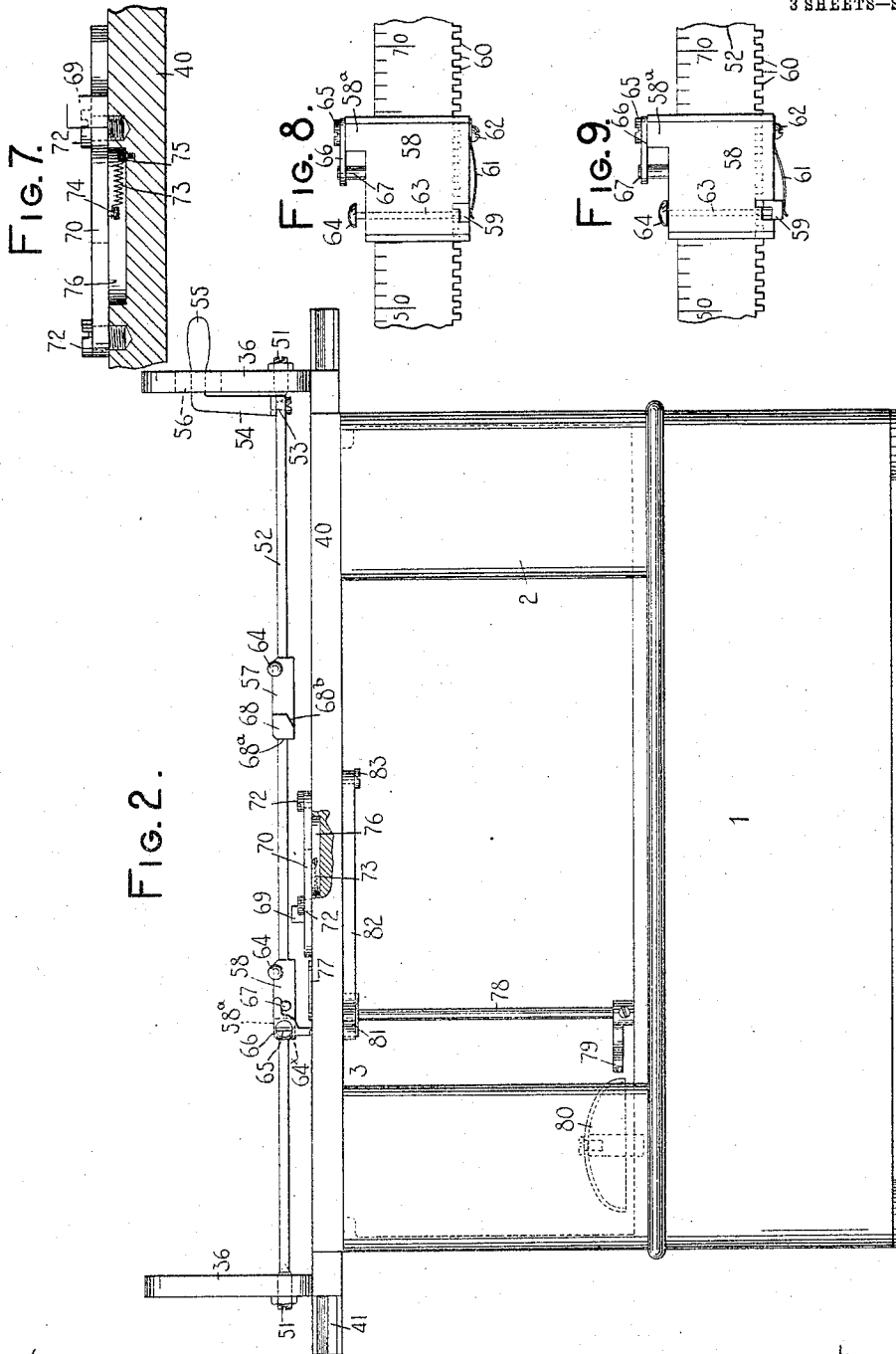
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3 SHEETS—SHEET 2.



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3 SHEETS—SHEET 3.

Fig. 3.

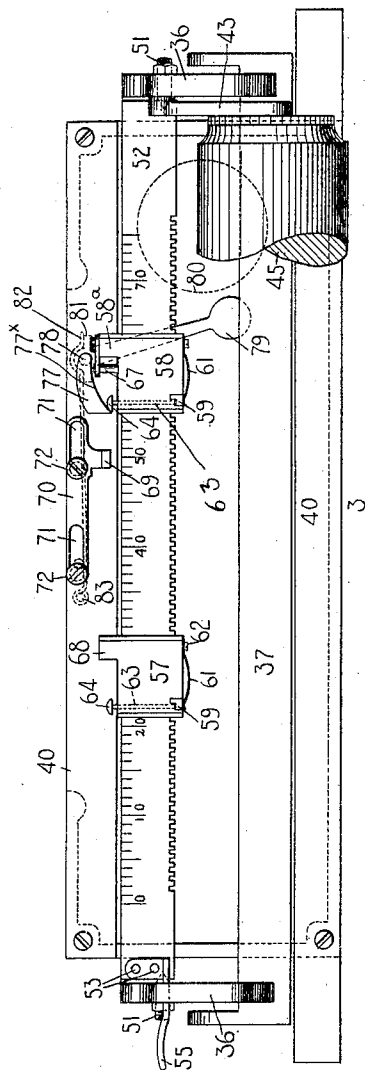


Fig. 5.

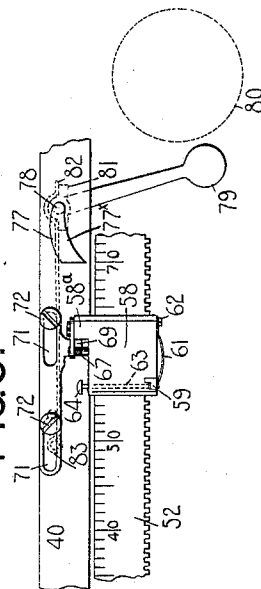
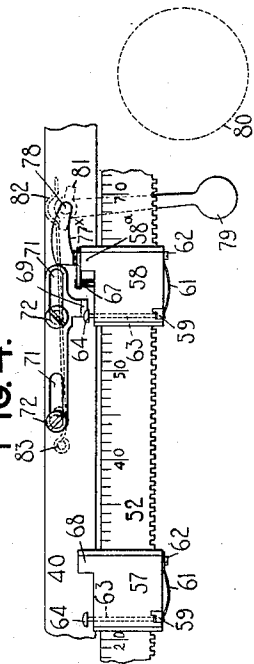


Fig. 4.



WITNESSES.

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UNITED STATES PATENT OFFICE.

ALEXANDER T. BROWN, OF SYRACUSE, NEW YORK.

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 783,415, dated February 28, 1905.

Application filed October 16, 1902. Serial No. 127,544.

To all whom it may concern:

Be it known that I, ALEXANDER T. BROWN, a citizen of the United States, and a 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 carriage-stops and alarm mechanism for type-writing machines; and the object of my invention is to provide a simple and efficient mechanism of the character specified.

To these ends my invention consists in the novel construction, arrangement, and combination of parts to be hereinafter described, and particularly pointed out in the appended claims.

In the accompanying drawings, wherein like reference characters indicate corresponding parts in the various views, Figure 1 is a vertical front-to-rear sectional view of one form of type-writing machine, showing the application of my invention thereto. Fig. 2 is a rear elevation of the same with parts omitted and parts broken away. Fig. 3 is a detail plan view of the rear portion of the machine with parts broken away. Fig. 4 is a detail plan view of a portion of the carriage-stop and alarm mechanism. Fig. 5 is a like view of the same, showing a different disposition of the parts. Fig. 6 is a detail vertical sectional view of the top plate of the machine and a portion of the carriage, together with the stop mechanism. Fig. 7 is an enlarged detail rear elevation, with parts in section, of the sliding stop which is carried by the frame of the machine. Fig. 8 is an enlarged detail plan view of the line-stop and a portion of the supporting-rack therefor. Fig. 9 is a like view of the same, showing the latch disengaged from the rack. Fig. 10 is a detail rear view of one of the stops with the bell-trip shown in dotted lines.

The frame of the machine is made up of a base 1, which supports a frame 2, that is surmounted by a top plate 3. The base supports a plate 4, which extends from side to side of the machine and carries upwardly-extending

pivot-posts 5, that are recessed at 6 for the reception of pivots 7, which extend laterally from opposite sides of each of the bell-crank key-levers 8, that terminate at their forward ends in finger-keys 9 and are restored to the normal positions by springs 8^x. The upwardly-extending arms of these bell-crank key-levers are alined, as indicated in Fig. 1, and each arm is connected by a link 10 to a projection 11 of a type-bar 12, that oscillates on antifriction-balls 13, which are supported by a suitable hanger 14, secured to the segment 15 by screws 16.

Extending forwardly of the upright arms of the bell-crank key-levers is a segmental universal bar 17, which contains a pad 18, with which the said arms are adapted to contact. This segmental bar 17 is rigidly connected at its ends to links 19, pivoted at 20 to the fixed bracket-arms 21, which are secured to the segment and likewise support a segmental pad 22 at their forward ends, the pad being adapted to support the outer ends of the type-bars 12 when they are in the normal position. Each of the links 19 is connected at 23 to a link 24, which has the rear end thereof connected at 25 to an upwardly-extending crank-arm 26, that projects from a rock-shaft 27, which extends from side to side of the machine and has projecting therefrom a dog-carrier 28, provided with the usual feed-dogs 29. This rock-shaft may be restored to the normal position by a spring 27^x, secured at one end to said rock-shaft and at its opposite end to the frame 2 of the machine. These feed-dogs coöperate with a feed-wheel 30, operatively connected with the feed-pinion 31, that meshes with a rack 32, which is secured to arms 33, that are pivoted at 34 to the carriage 35.

From the foregoing description it will be understood that a depression of any of the finger-keys will move its associated type-bar to the printing-point, and during this movement the upwardly-extending arm of the bell-crank key-lever will rock the universal bar on its pivoted links 19, thereby effecting a rocking movement of the rock-shaft 27, which will cause the feed-dogs to be vibrated later-

ally of the feed-wheel to permit the carriage to be propelled a letter-space distance by the usual spring-drum, (not shown,) which may be connected in the usual manner to the carriage.

The carriage 35 comprises end plates 36, which are united by cross-rails 37, that are grooved on their outer faces at 38 for the reception of antifriction-balls 39. The so-called "top" plate 3 is made up of rails or bars 40, which extend across the machine and are grooved in opposite directions, as indicated at 41, for coöperation with antifriction-balls 39, and thus the carriage is supported in place and adapted to travel from end to end of the machine. Pivoted to the end plates 36 at 42 are links 43, provided with bearings at their forward ends, which receive the shaft 44 of the platen 45. The platen-frame comprises segmental end plates 46, which are united by a cross-bar 47, and each end plate is provided with a laterally-extending lug 48, that has a threaded opening therein for the reception of a screw-stop 49. These screw-stops are adapted to coöperate with abutments 50 on the end plates of the carriage to limit the shifting movements of the platen-frame. The end plates 36 of the carriage have threaded openings therein for the reception of screw-bearings 51, which extend therethrough and constitute pivotal bearings for a rack-bar or stop-carrying rod 52, that is preferably angular in cross-section and is graduated on its upper side. This rack-bar has rigidly secured thereto at 53 an upwardly-projecting arm 54, that has an angular finger-piece 55, which projects through an opening 56 in the left-hand end plate 36 of the carriage and is provided with a pin 55^x, that is adapted to abut against a wall of the opening 56 to limit the movements of the part in one direction. Slides 57 and 58 partly surround the rack-bar and are each provided with a sliding locking-latch 59, that is forced between the teeth 60 of the rack-bar by a spring 61, which is secured to the slide at 62. Rigidly connected to each of these latches is a rod 63, which extends through an opening in the slide and is provided at its rear end with a finger-piece or button 64, by means of which the latch can be moved against the tension of its spring and disengaged from the teeth 60 on the rack-bar, when the slide may be moved along the rack-bar to the desired position. The rack-bar 52 extends substantially throughout the length of the carriage and in the direction of the travel thereof, and the graduations on the bar correspond to the usual carriage-scale. The slide 58 on the right-hand end portion of the bar 52 carries a lug 58^a, that projects from the rear side thereof and constitutes a line-stop. Pivoted at 65 to the rear face of this stop is a bell-crank lever 66, which constitutes a bell-trip and has a limited movement independently of the slide, this independent movement of the bell-trip being lim-

ited by a pin 67, that projects from the slide and constitutes an abutment with which the arms of the bell-crank lever coöperate in a manner which will hereinafter more clearly appear. The slide or carrier 57 carries a stop 68, which projects from the rear face thereof, and both of the stops 58^a and 68 are adapted to coöperate with a sliding stop 69, that projects upwardly from a slide or carrier 70, that is slotted at 71 to receive the stems of the headed screws 72, which are threaded into openings in the rear cross-rail 40, that constitutes a portion of the top plate of the machine. The arrangement of the slots 71 is such that the slide 70 and the stop carried thereby have a limited movement in the direction of the travel of the carriage, and a spring 73 (see Fig. 7) is connected at one end to a pin 74, which projects from the under side of the slide 70. The opposite end of this spring is connected to a screw 75, that is threaded into an opening in the rear rail 40, and the spring is contained within a recess 76, formed in the rail 40, and is located beneath the slide. The tension of the spring is exerted to normally maintain the stop and slide toward the right-hand side of the machine. A swinging or horizontally-vibrating bell-trip 77 extends above the rear rail 40 and into the path of the bell-trip 66. The bell-trip 77 is secured to a vertically-disposed rock-shaft 78, which projects through an opening in the rear rail 40 and has a bearing therein, as well as in the frame 2. Connected to this rock-shaft, near the lower end thereof, is a bell-hammer 79, which coöperates with a bell 80, secured to the frame 2. Projecting laterally from the rock-shaft 78 is an arm or piece 81, that extends to opposite sides thereof and against which a leaf-spring 82, that is secured at 83, is adapted to bear. The tension of this leaf-spring is exerted to restore the bell-hammer to the normal position (illustrated in Fig. 3) whether the bell-hammer be moved by the force of its spring toward the bell or away therefrom to the position shown in Fig. 4, so that the spring 82 is effective not only to force the bell-hammer toward the bell, but to prevent it from remaining in contact therewith after the hammer has struck the bell to sound the alarm. During the movement of the carriage from right to left the lower arm of the bell-trip 66 will first be brought into engagement with the cam-face 77^x of the bell-trip 77 and cause it to be moved against the tension of the spring 82, and after the lower arm of the trip 66 has passed the bell-trip 77 it will be released, and the spring 82 will force the hammer toward the bell, and the force of the spring thus applied will be sufficient to cause the overthrow of the hammer to strike the bell and sound the alarm, when the hammer will immediately be withdrawn from contact to permit a free vibration thereof. A further movement of the carriage will bring the stop

58^a thereon into the path of the sliding stop 69, and the latter, together with its slide, will be moved against the tension of its spring, with the carriage, until the ends of the slots 71 have been brought into contact with the screws 72, when further movement of the slide 70 and the stop 69 will be arrested and the carriage will be prevented from moving farther toward the left. Should, however, the operator desire to write one or more characters in order to complete a word or sentence or to insert a hyphen, it is merely necessary to move the finger-piece 55 toward the front of the machine, and this will result in swinging the bar 52 around its pivots 51, thus raising the stop 58^a out of the path of the stop 69. The tension of the spring 73, connected to the slide 70 will then be effective to move the stop 69 to the right, so that it will be carried to the right of the stop 58^a, and when the finger-piece 55 is released the stop-rod and stops thereon will drop by their own weight to the normal position, and, the stop 69 having been moved by its spring to a position where it is no longer effective to obstruct the feed movement of the carriage, the operator may continue to write until the full limit of the line is reached or until another auxiliary stop (which may be provided) arrests the further movement of the carriage. During the backward movement of the carriage or a movement thereof from left to right the bell-trip 66 will be vibrated freely around its pivot 65 when said trip reaches the bell-trip 77, and no movement will be transmitted to the last-mentioned trip and the alarm will not be sounded. During a further movement of the carriage the beveled portion 64^x of the stops 58^a will be brought into contact with the sliding stop 69, and the rack-bar 52 will be automatically moved on its pivots 51, so that the stop 58^a will not constitute an obstruction to the movement of the carriage in this direction. When, however, the straight face 68^a of the stop 68 reaches the sliding stop, the carriage will be arrested, and further movement toward the right is prevented. Should, however, the operator desire to pass this margin-stop in order to write within the margin, it is merely necessary to move the finger-piece 55 forward, when the bar 52 will be moved on its pivots to swing the stop 68 out of the path of the sliding stop 69. After the sliding stop has been passed in the manner stated the carriage may move freely in the opposite direction past it without it affording an obstruction to such movement. This is due to the fact that the beveled face 68^b on the stop 68 will be brought into contact with the stop 69 on the frame of the machine, and the stop 68 will ride freely over the stop 69, the stop or rack bar swinging on its pivotal center at this time.

While I have shown my invention in its application to a front-strike machine, it should

be understood that the invention may be applied to other characters of type-writing machines and that to this end various changes in the structure may be made without departing from the spirit of my invention.

Certain of the features herein shown and described are not claimed herein, but constitute the subject-matter of separate applications filed herewith.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination of a carriage, a stop-carrying bar carried by said carriage, a spring-pressed stop carried by the frame of the machine, and means carried by the carriage for swinging said bar to move the stop or stops thereon out of the path of the stop on the frame of the machine.

2. The combination of a carriage, a stop-carrying bar carried by said carriage, and extending in the direction of the travel thereof, a spring-pressed stop carried by the frame of the machine and which travels a limited distance with the carriage when a stop on the stop-carrying bar contacts therewith, and hand-operated means carried by the carriage for swinging said bar to move the stop or stops thereon out of the path of the stop on the frame of the machine.

3. The combination of a carriage, a stop-carrying bar pivoted to said carriage, and extending in the direction of the travel thereof, a stop carried by the frame of the machine and which travels a limited distance with the carriage in the travel thereof from right to left and when a stop on the stop-carrying bar contacts with said stop on the frame of the machine, a spring which normally maintains said last-mentioned stop toward the right-hand side of the machine, and hand-operated means carried by the carriage for swinging said bar to move the stop or stops thereon out of the path of the stop on the frame of the machine.

4. The combination of a carriage, a stop-carrying bar carried by said carriage, a spring-pressed stop carried by the frame of the machine, means carried by the carriage for swinging said bar to move the stop or stops thereon out of the path of the stop on the frame of the machine, and alarm mechanism which is adapted to be sounded by a stop on the stop-carrying bar during the movement of the carriage from right to left.

5. The combination of a carriage, a stop-carrying bar pivoted to said carriage, stops which are adjustable on said bar, a sliding stop which is carried by the frame of the machine, and adapted to move a limited distance thereon and with which a stop on the stop-carrying bar coöperates to arrest the carriage in its travel to right and left, a spring which normally maintains said sliding stop to the right, and hand-operated means carried by the

carriage for turning the stop-carrying bar on its pivots to move the stops thereon out of the path of the sliding stop.

6. The combination of a carriage, a bar which is pivoted to said carriage and extends in the direction of the travel thereof, a margin and a line-stop which are carried by and adjustable on said bar, a sliding stop carried by the frame of the machine, and with which the stops on the bar cooperate, a spring for normally maintaining the stop toward the right-hand side of the machine, hand-operated means carried by the carriage for swinging said bar on its pivots to move the stops thereon out of the path of the stop on the frame of the machine, a bell-trip which extends into the path of a trip on the line-stop, and alarm mechanism which is operatively connected to one of said bell-trips.

7. The combination of a carriage, a stop carried by said carriage, a trip carried thereby, a swinging trip which extends into the path of said trip on the stop, a vertically-disposed rock-shaft to which said swinging trip is connected, a bell-hammer connected to said rock-shaft, a laterally-extending projection on the rock-shaft and a spring which bears on said projection and tends to maintain the bell-hammer and trip in the normal position.

8. The combination of a carriage, a rack-bar carried by and adapted to swing on the carriage, a stop which is adapted to slide on said rack-bar and to swing therewith, a spring-pressed latch which is carried by said stop and is adapted to engage the teeth of said rack-bar and to prevent the stop from sliding thereon, a cooperating sliding stop on the frame of the machine, a spring which normally maintains said sliding stop at the limit of its movement in one direction, and hand-operated means for swinging said rack-bar to move the stop thereon out of the path of the stop on the frame of the machine.

9. The combination of a carriage, a rack-bar carried by and adapted to swing on the carriage and which is angular in cross-section and extends in the direction of the travel of the carriage, stops which are adapted to slide on said rack-bar, and to swing therewith, a spring-pressed latch which is carried by each of said stops and adapted to engage the teeth of said rack-bar, and to prevent the stops from sliding in either direction, hand-operated means for releasing said latches from engagement with the teeth of the rack-bar, a cooperating sliding stop that is adapted to slide on the frame of the machine and in the direction of the travel of the carriage, a spring which normally maintains said sliding stop at

the limit of its movement toward the right, and hand-operated means carried by the carriage for swinging said rack-bar to move the stops thereon out of the path of the stop on the frame of the machine.

10. The combination of a carriage, a stop on the frame of the machine, a swinging stop-bar carried by said carriage, stops adjustable thereon and each adapted to cooperate with the stop on the frame of the machine to arrest the carriage when it is moving in one direction and to ride free past the stop on the frame of the machine when the carriage is moving in an opposite direction, and hand-operated means carried by the carriage for swinging the stop-bar so as to move the stops thereon out of the path of the stop on the frame of the machine.

11. The combination of a carriage, a stop on the frame of the machine which is adapted to slide in the direction of the travel of the carriage, a spring for normally maintaining the sliding stop at the limit of its movement in one direction, a swinging stop-bar carried by said carriage, stops adjustable thereon and each adapted to cooperate with the stop on the frame of the machine to arrest the carriage when it is moving in one direction and to ride free past the stop on the frame of the machine when the carriage is moving in an opposite direction, and hand-operated means carried by the carriage for swinging the stop-bar so as to move the stops thereon out of the path of the stop on the frame of the machine.

12. The combination of a carriage, a sliding stop on the frame of the machine which is adapted to move with the carriage for a limited distance from right to left, a spring for normally maintaining the sliding stop at the limit of its movement toward the right, a swinging stop-bar carried by said carriage and extending in the direction of the travel thereof, stops adjustable thereon and each adapted to cooperate with the stop on the frame of the machine to arrest the carriage when it is moving in one direction and to ride free past the stop on the frame of the machine when the carriage is moving in an opposite direction, and hand-operated means carried by the carriage for swinging the stop-bar so as to move the stops thereon out of the path of the stop on the frame of the machine.

Signed at Syracuse, in the county of Onondaga and State of New York, this 2d day of October, A. D. 1902.

ALEXANDER T. BROWN.

Witnesses:

CHARLES J. TONER,
F. G. BODELL.