

M. B. SARGENT.
TYPE WRITER CARRIAGE STOP MECHANISM.
APPLICATION FILED APR. 20, 1909.

939,640.

Patented Nov. 9, 1909.
2 SHEETS—SHEET 1.

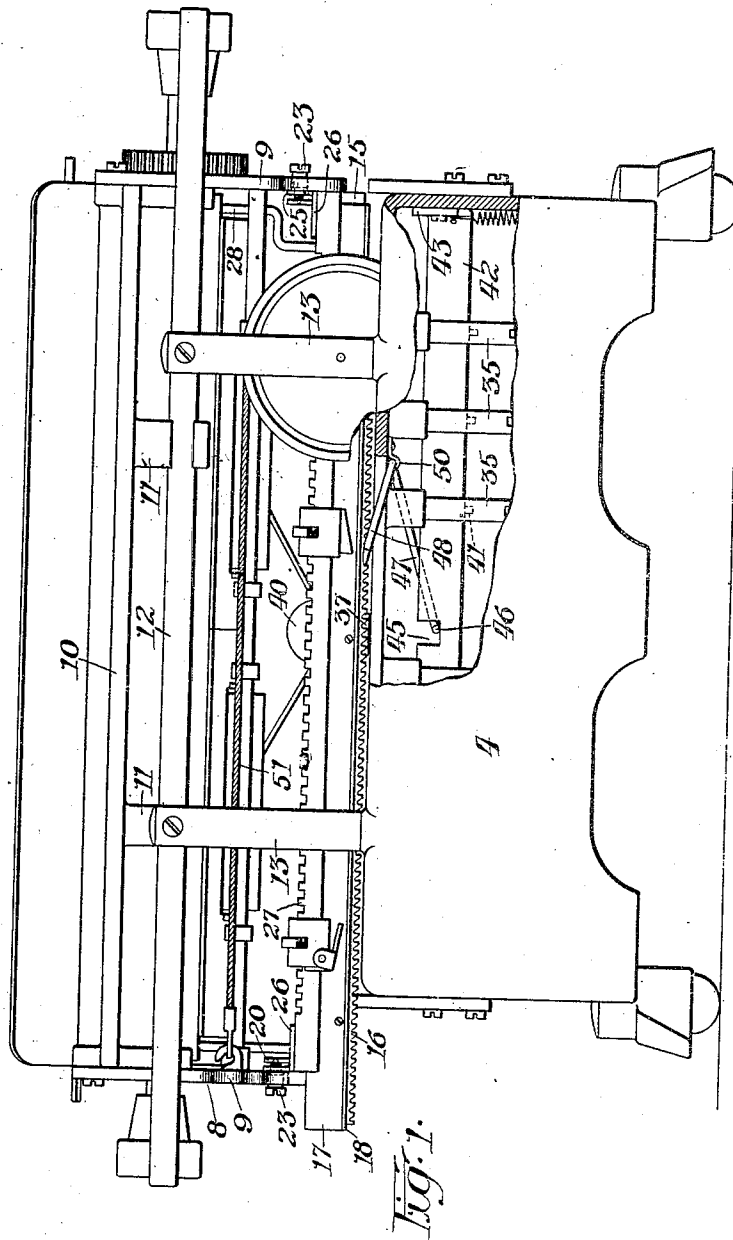


Fig. 1.

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Carson W. Panning

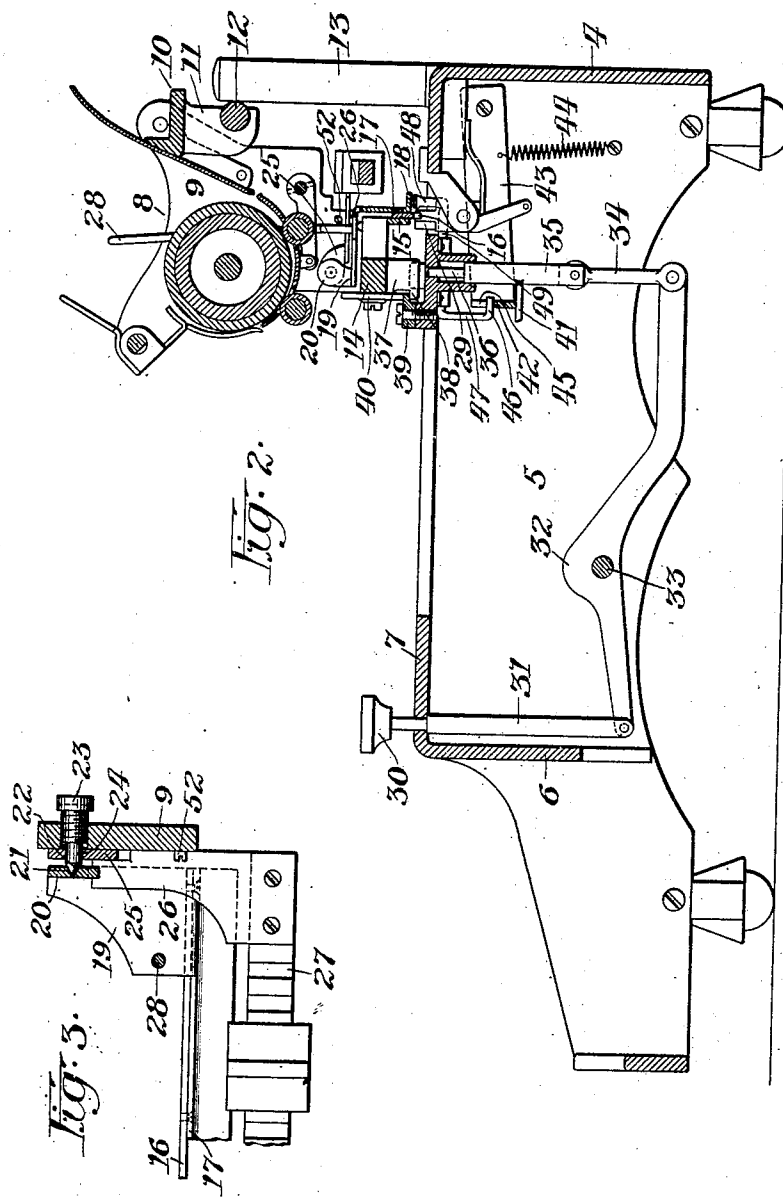
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

MARSHALL B. SARGENT, OF MOMENCE, ILLINOIS, ASSIGNOR TO EMERSON TYPEWRITER COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF MAINE.

TYPE-WRITER-CARRIAGE STOP MECHANISM.

939,640.

Specification of Letters Patent.

Patented Nov. 9, 1909.

Application filed April 20, 1909. Serial No. 491,027.

To all whom it may concern:

Be it known that I, MARSHALL B. SARGENT, a citizen of the United States, residing at Momence, in the county of Kankakee and State of Illinois, have invented certain new and useful Improvements in Type-Writer-Carriage Stop Mechanism, of which the following is a specification.

This invention relates particularly to the construction and arrangement of mechanism for releasing and stopping the carriage at various column positions, and also to the means whereby the movement of the carriage, when released, will be braked sufficiently to prevent sudden shocks or jars in the stoppage of the carriage.

The object of the invention is to so construct and arrange the various mechanisms above referred to that the braking and releasing of the carriage will be performed by the same piece of mechanism in such manner as to permit of the simplification of the escapement dog which controls the normal feeding movement of the carriage.

In certain prior constructions, in order to release the carriage when the column stopping keys are actuated, it has been the practice to mount and construct the escapement dogs in such a manner as to permit them to be moved away from the feed rack in order to release the latter. This arrangement is objectionable for the reason that it involves a complication of the escapement dog mechanism with the danger of maladjustment or injury. In the present invention, in place of moving the escapement dogs, a lifting movement is given to the rack at once when the release is effected, so that the construction of the escapement dogs is simplified and the certainty of its operation assured.

Further objects will appear from a detailed description of the invention, which consists in the features of construction and combination of parts hereinafter described and claimed.

In the drawings, Figure 1 is a rear elevation of a typewriter, showing the base frame partially broken away to reveal the interior mechanism; Fig. 2 a longitudinal sectional view, showing the column stop key and the associated stop and releasing mechanism; and Fig. 3 is an enlarged detail showing the method of hinging the rack bail.

It will be understood that in the drawings

only so much of a complete typewriter mechanism will be illustrated and described as pertains to the particular invention herein claimed.

The mechanism is supported upon or built into a frame of general rectangular shape having a rear wall 4, side walls 5, and a front cross wall 6. The top of the frame is covered by a floor 7, which is cut away at suitable points to permit of the passage therethrough of the mechanism to be hereinafter described.

The carriage 8, of which the details form no part of the present invention, is provided with end plates 9, which are connected at the rear side by a rear cross bar 10 provided with depending guide lugs 11, which are recessed to receive a guide rod 12, which is carried by a pair of posts 13 located at the extreme rear edge of the machine frame. The end plates are connected at their lower side by a carriage frame 14 provided, on its rear edge, with a depending flange 15, which serves as a stop for positioning a rack 16, which is riveted or screwed to a swinging rack bar 17 of angle formation provided, at its lower edge, with a rearwardly extending flange or step 18, below which the teeth of the rack project. The rack bar 17 is provided at each end with an arm 19 which extends forward horizontally or at right angles to the rack bar, and terminates in a hanger 20, best shown in Fig. 3. Each of the hangers is provided with a tapered pivotal opening 21, which receives the conical end 22 of an adjustable screw 23, which arrangement serves as an adjustable cone bearing for the rack bar and the rack carried thereby, permitting longitudinal adjustment of the rack. As shown in Fig. 3, the adjusting screws are provided with smooth shanks 24, which furnish bearings for a pair of hangers 25, which are upturned from arms 26 carrying a line lock bar 27. The arms or bails 26 lie upon the arms or bails 19, but the line lock bar has nothing to do with the present invention, and further reference to it need not be made. The arm or bail 19 is provided with an upwardly extending lever 28, which permits the rack bar to be swung up to lift the rack out of engagement with the escapement dogs 29 when it is desired to make an adjustment of the carriage independently of the column stop keys.

The column stop keys 30 are located near the forward edge of the main frame of the machine above and to the rear of the space occupied by the writing keys, and each of the keys 30 is located on the end of a shank 31 the lower end of which is pivoted to the forward end of the key lever 32, which is pivoted somewhat forward of the center to the key lever rod 33. The rear end of the lever is pivoted to a vertical link 34, the upper end of which, in turn, is pivoted to a bar 35 which carries at its upper end a stop pin 36, which normally lies below the level of the floor of the machine frame and is adapted, when the key is depressed, to be lifted into position to engage a stop lug 37, which depends from the carriage frame 14. The stop lug, in addition to its function as a stop, is provided with a finger 38, which engages the inner edge of an undercut guide bar 39, which, in combination with the guide rod 12, and a roller 40, furnishes a firm and even support for the travel of the carriage. Each of the bars 35 is provided with a forwardly extending finger 41, all of which fingers engage the under edge of a lift bar 42 provided with arms 43 which are hinged or pivoted to the side walls of the machine frame, a spring 44 being provided to normally hold the lift bar in lowered position. The lift bar, at its center, is provided with a notch 45, which receives the intumed end of a brake lever, which comprises a front or actuating arm 47 and a rear or braking arm 48, which arms extend at divergent angles with respect to one another and are united by means of a connecting section 49 which is hinged within a look 50, the braking lever being substantially of a U formation. The end of the braking arm 48, when in normal position, lies very slightly below the flange or step 18, which is adapted to be engaged by the braking arm when the actuating arm is lifted. The carriage is fed in the usual manner by the tension of a spring actuated cable 51 the details of which need not be described.

In use, when it is desired to stop the carriage at a specified column, the proper column stop key is depressed, which serves to elevate the inner end of the key lever 32, thereby raising the stop pin 36 into position to engage the stop lug 37 when the carriage is released. Simultaneously with the raising of the stop pin, the lift bar 42 will be elevated, and this movement of the lift bar will throw up the actuating arm of the brake lever and lift the brake arm. The latter will engage with and swing up the rack bar to throw the teeth of the rack bar out of engagement with the escapement dogs, thereby releasing the carriage which will move to the designated position. This movement will, however, be smooth and easy by reason of the contacting of the brake

arm against the flange or step, and in order to limit the upward swing of the rack bar to render this braking action effective, it is desirable to provide stops 52, which inwardly extend from the end plates of the carriage frame in position to limit the upward swing of the bails. It will be understood that any number of column stops can be provided, and that each of the stop bars 35 is provided with a finger which engages the lift bar, so that the releasing and braking action previously described, will be uniform regardless of the identity of the key depressed.

It will be seen from the foregoing description that the construction is an extremely simple one in that the braking lever serves a double function in releasing the rack bar and braking it, and that the method of effecting the release is extremely simple as compared with one in which the escapement dogs are thrown to a nonengaging position. By hinging the rack bar in the manner described, it can be longitudinally adjusted so as to bring its teeth into perfect register with the escapement dogs in adjusting the machine at the factory after assembling the parts.

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

1. In typewriter carriage stop mechanism, in combination with a carriage and escapement devices, a rack bar carried by the carriage and adapted to be raised and lowered with respect to the escapement devices, and having a rack connected therewith, a plurality of column stop pins normally lying below the carriage, and devices for independently lifting such pins to assume a position in the path of travel of a portion of the carriage, a lift bar adapted to be raised by the upward movement of any one of the pin lifting devices, and a brake lever having one of its ends in position to be engaged by the lift bar and raised therewith, and having its other end in position to engage the rack bar and lift the same and exert a braking action thereon, substantially as described.

2. In typewriter carriage stop mechanism, in combination with a carriage and escapement devices, a rack bar carried by the carriage and adapted to be raised and lowered with respect to the escapement devices, and having a rack connected therewith, a plurality of column stop pins normally lying below the carriage, and devices for independently lifting such pins to assume a position in the path of travel of a portion of the carriage, a pivoted lift bar adapted to be raised by the upward movement of any one of the pin lifting devices, and a brake lever having one of its ends in position to be engaged by the lift bar and raised therewith, and having its other end in position to engage the rack bar and lift the same and exert

a braking action thereon, substantially as described.

3. In typewriter carriage stop mechanism, in combination with a carriage and escapement devices, a rack bar pivoted at its ends to the carriage, and adapted to be raised and lowered with respect to the escapement devices, and having a rack connected therewith, a plurality of column stop pins normally lying below the carriage, and devices for independently lifting such pins to assume a position in the path of travel of a portion of the carriage, a lift bar adapted to be raised by the upward movement of any one of the pin lifting devices, and a brake lever having one of its ends in position to be engaged by the lift bar and raised therewith, and having its other end in position to engage the rack bar and lift the same and exert a braking action thereon, substantially as described.

4. In typewriter carriage stop mechanism, in combination with a carriage and escapement devices, a lift bar pivoted at its ends to the carriage and adapted to be raised and lowered with respect to the escapement devices, and having a rack connected therewith, a plurality of column stop pins normally lying below the carriage, and devices for independently lifting such pins to assume a position in the path of travel of a portion of the carriage, a pivoted lift bar adapted to be raised by the upward movement of any one of the pin lifting devices, and a brake lever having one of its ends in position to be engaged by the lift bar and raised therewith, and having its other end in position to engage the rack bar and lift the same and exert a braking action thereon, substantially as described.

5. In typewriter carriage stop mechanism, in combination with a carriage and escape-

ment devices, a rack bar carried by the carriage and adapted to be moved toward and from the escapement devices and having a rack connected therewith, a plurality of column stop pins normally lying outside of the path of travel of the carriage, and devices for independently moving such pins to assume a position in the path of travel of a portion of the carriage, a bar adapted to be moved by the movement of any one of the pin actuating devices, and a brake lever having one of its ends in position to be engaged by said bar and moved therewith, and having its other end in position to engage the rack bar and move the same out of engagement with the escapement devices and exert a braking action thereon, substantially as described.

6. In typewriter carriage stop mechanism, in combination with a carriage and escapement devices, a rack bar pivoted at its ends to the carriage and adapted to be swung toward and from the escapement devices, and having a rack connected therewith, a plurality of column stop pins normally lying outside of the path of travel of the carriage, and devices for independently moving such pins to assume a position in the path of travel of a portion of the carriage, a bar adapted to be moved by the movement of any one of the pin actuating devices, and a brake lever having one of its ends in position to be engaged by said bar and moved therewith, and having its other end in position to engage the rack bar and move the same out of engagement with the escapement devices and exert a braking action thereon, substantially as described.

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Witnesses:

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