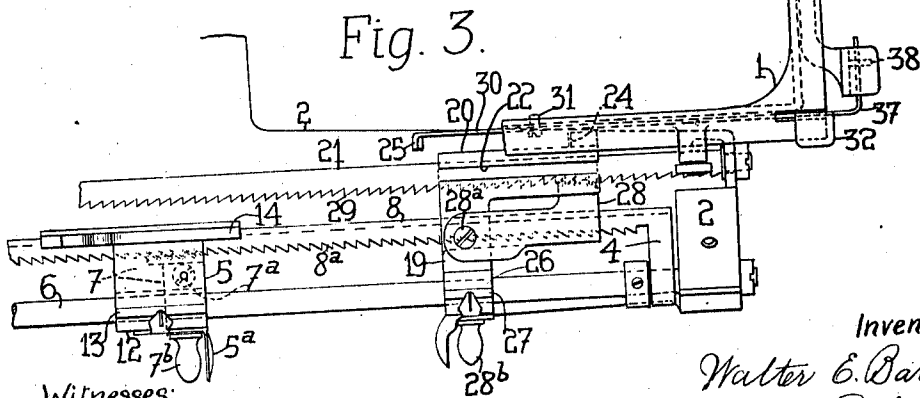
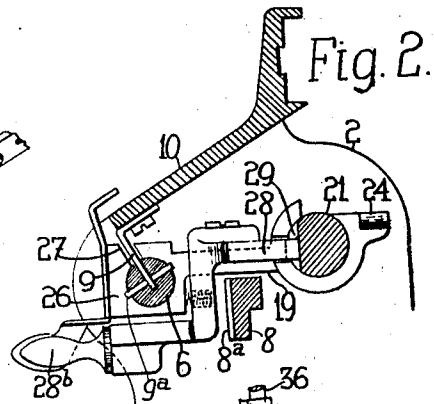
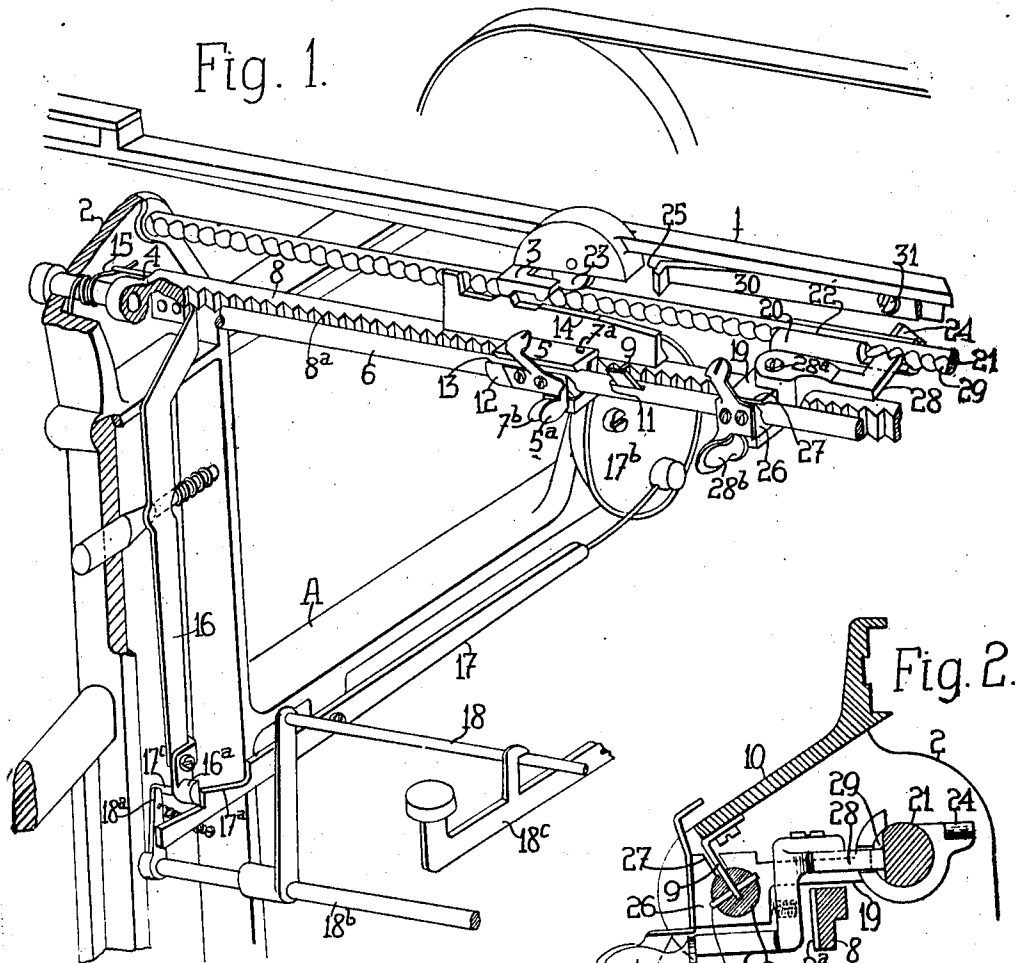


W. E. BARNARD.
TYPE WRITING MACHINE.
APPLICATION FILED JAN. 4, 1910.

Patented Jan. 24, 1911.

2 SHEETS—SHEET 1.

982,701.



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2 SHEETS—SHEET 2.

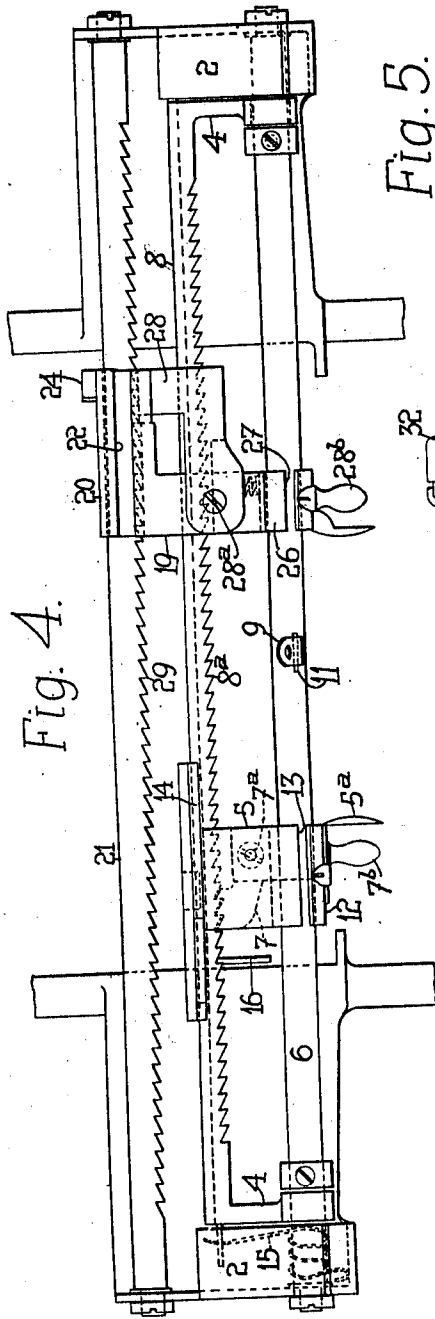


Fig. 4.

Fig. 5.

Fig. 6.

Fig. 7.

Fig. 8.

Fig. 9.

Fig. 10.

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Fig. 89.

Fig. 90.

Fig. 91.

Fig. 92.

Fig. 93.

Fig. 94.

Fig. 95.

Fig. 96.

Fig. 97.

Fig. 98.

Fig. 99.

Fig. 100.

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UNITED STATES PATENT OFFICE.

WALTER E. BARNARD, OF HARTFORD, CONNECTICUT, ASSIGNOR TO UNDERWOOD TYPE-WRITER COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW JERSEY.

TYPE-WRITING MACHINE.

982,701.

Specification of Letters Patent.

Patented Jan. 24, 1911.

Application filed January 4, 1910. Serial No. 536,282.

To all whom it may concern:

Be it known that I, WALTER E. BARNARD, a citizen of the United States, residing in Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification.

This invention relates to margin regulating means for typewriting machines, and more especially to the margin controlling devices on the so-called wide carriage machines.

In writing machines of the Underwood type, it is customary to provide a rack having arms journaled on the gage-supporting rod extending parallel with the rack, the latter also having an arm for actuating the usual signal and key-locking mechanisms when the rack is rocked. To rock said rack, one of a pair of margin gages sliding on the gage-supporting rod is provided with a cam riding upon the rack, which cam is pressed down when engaged by a tappet on the carriage, to turn with the gage around the rod to rock the rack.

The margin gages operate to control the widths of the right and left hand margins of the sheet, in a well known manner. The inner arm of the rack, however, being journaled on the rod midway of its ends and of the run of the carriage, limits the range of adjustment of the gages sliding on the rod, the left hand gage cooperating with, and being adjustable only between the arms of, the rack, and the right hand gage being limited in its adjustment toward the left by its engagement with the inner arm of the rack. One reason for using such a short rack is that the rack must be level at all times, as sagging or springing would disarrange the adjustment whereby the tappet is caused to operate the signaling and key locking mechanisms.

The principal object of my invention is to provide an improved and simplified means to increase the range of adjustment of the margin gages, thereby giving the operator greater control of the widths of the margins, so that both gages may be slid to one extreme or the other of the run of the carriage, while preserving the advantages of the present construction. To effect this end in an efficient manner, and to provide a device easily applicable to existing machines,

without altering the other features of the machine, I extend the rocking rack clear across the machine, and journal its arms on the rod at points beyond the opposite limits of the range of movement of the carriage, both gages being adjustable between the arms of the rack from end to end of the range of movement of the carriage.

In the accompanying drawings, Figure 1 is a perspective view, illustrating my invention applied to an Underwood type of front strike writing machine. Fig. 2 is a cross sectional view, showing the manner of sustaining the gage-supporting rod intermediate its ends, and showing the right hand gage clearing the rack. Fig. 3 is a detail plan view, showing the right hand gage and carriage stop, and the connection between the stop-controlling lever and the lever for releasing the letter-spacing rack. Fig. 4 is a plan view, showing the margin gages adjustable to either extreme of movement of the carriage, parts being omitted to better disclose the construction. Fig. 5 is a cross-sectional side elevation, showing the letter-spacing rack released through the operation of the stop controlling lever. Fig. 6 is a similar view showing the parts in normal position.

The usual carriage 1 of said Underwood writing machine runs upon a rail 21 supported at its ends in the standard 2 of a frame A. The carriage has a roll 23 to run upon said rail. Upon the carriage is fixed the usual tappet 3 to engage a signal-operating and key-locking cam 14 mounted upon a margin gage 5 having a handle 5^a for convenience in adjusting the margin gage back and forth on a gage-supporting rod 6, to control the point in the letter-spacing travel of the carriage at which the signal shall be operated and the keys locked, to terminate the line of writing. The gage-supporting rod is fixed at its ends in the standards 2 of the frame and lies parallel with the rail 21.

The function of the tappet 3, as usual, is to press the cam 14 down and thereby rock forwardly the pendent lever 16, said arm having at its lower end a head 16^a to engage a cam 17^a on a hammer 17 which rings a bell 17^b. The head also carries a pin 17^c to engage a spring actuated arm 18^a on a rock shaft 18^b, which carries a locking bar 18, normally idle, but swung forwardly by

the lever 16 to lock the keys 18^c after the bell 17^b has been sounded.

The lever 16 is secured to a bar 8 parallel with and having arms 4 journaled on the gage-supporting rod 6; but instead of employing the usual short bar with an inner arm journaled midway of the rod and thereby limiting the adjustment of the margin gage 5, I extend said bar clear across the machine and journal its arms on the rod near its opposite ends, preferably beyond the range of movement of the carriage 1. The bar 8 and operating lever 16 may be readily applied to the usual gage-supporting rod commonly employed in machines of the Underwood type, without alteration of the other parts of the machine. It will be noticed that the bar is angular in cross-section, to add strength and resist sagging or springing; such bar reaching across the machine without intermediate support. When the cam 14 is pressed down by the tappet 3 the margin gage 5 and the bar 8 turn around the rod 6, to swing the lever 16 forwardly. A spring 15 may be employed for returning the parts.

Upon the bar 8 I form teeth 8^a so that said bar constitutes a rack, the range of which is about equal to the length of run of the carriage 1, a dog 7 pivoted at 7^a upon the margin gage 5, engaging the rack and having a finger-piece 7^b whereby the margin gage may be adjusted along the rack and rod. It will be noticed that by extending the rack bar 8 clear across the machine, the arm 4 thereof, usually journaled on the rod midway of its ends, is set over out of the way, so that the travel of the gage 5 is no longer limited thereby, and an ample range of adjustment of the gage is permitted.

To support the gage-rod 6 without limiting the range of adjustment of the gage, said rod is rigidly supported about midway of its ends, as by a hanger 9 depending from the cross-bar 10 of the frame 2, and secured at its lower end to the rod. Preferably, the rod is recessed at 11 to form a socket for the lower end of the hanger, which may be fastened to the gage-supporting rod by a pin 9^a. The sleeve 12 of the gage, sliding on the rod, is slitted, as at 13, to permit the gage to clear the brace or strut 9 when adjusting the gage from end to end of the rod. The rocking of the cam 14 to operate the signaling and key-locking mechanisms also rocks the margin gage 5 on the gage-supporting rod 6, and the slit 13 is made of sufficient width to permit such rocking movement when the hanger 9 is embraced by the gage.

To regulate the width of the left hand margin of the sheet, the carriage is equipped with a stop 25 to engage a shoulder 24 provided upon a margin gage 19 which is adjustable along the rail 21 to arrest the car-

riage when returning to begin a new line. The margin gage 19 is supported jointly upon the rail 21 and the rod 6 by bearing sleeve 20 and 26, respectively, and hence the rocking of the rack has no effect on the margin gage 19, because of its double support on the stationary rod and rail. The sleeve 20 on the rail 21 is slotted, as at 22, to permit the wheel 23 on the carriage to run past the sleeve, as when shifting the carriage past the margin gage. The body of said margin gage is well above the rack 8 so as not to interfere therewith, and the sleeve 26 on the rod is slitted, as at 27, to permit the gage 19 to be slid past the brace 9. Hence there is nothing to obstruct the adjustment of the gage to any position between the left and right hand portions of the rod 6 and rail 21, the range of adjustment of both gages being no longer obstructed by the inner arm of the rocking rack. By dropping the brace from the cross bar 10 instead of projecting it from the rail 21, the brace lies out of the plane of the body portions of the gages, which need only be arranged to clear the brace at its point of engagement with the rod 6. Accordingly the rack 29 usually formed on the front side of the rail 21 to be engaged by a dog 28 pivoted at 28^a on the gage 19 is extended nearly to the end of the rail 21, as shown. A finger piece 28^b on the dog enables the dog to be released from its rack.

To permit the operator to write in the left hand margin, or in a column lying behind the right hand margin gage, the carriage stop 25 is usually mounted on a lever 30 pivoted at 31, to the carriage 1 and having a key 32, the depression of which rocks the lever to throw the stop to inoperative position, so that it will clear the shoulder 24 on the return of the carriage to the beginning of a line. In thus returning the carriage past the gage, the operator may overrun the point in the margin at which he wished to stop the carriage, especially in machines having wide carriages, which require the application of greater force to return them than do the usual short carriages. In such event, the carriage cannot be moved in letter-spacing direction back to such point, (because of the engagement of the usual letter-spacing rack 33 hinged to the carriage at 34, with the escapement-controlled wheel 35), except by the manipulation of the rack-releasing lever 36, or by operating the usual space bar, which delays the operator.

To enable the operator to more speedily locate the carriage at the desired stopping point behind the margin gage, I provide a single switch for effecting the release of the letter-spacing rack 33 simultaneously with the shifting of the stop 25 to inoperative position, thereby permitting the carriage to

be moved freely back and forth past the margin gage. The stop-shifting lever 30, constituting a part of the switch, is equipped with a rack-shifting member, in the form of a finger 37, for engagement with the rack-releasing lever 36. Preferably, the finger 37 lies adjacent a stud 38 carried by the rack-releasing lever, so that the latter lever may be operated to release the rack from the escapement, against the tension of a returning spring 39, without operating the stop-shifting lever. Depression of the stop-shifting lever, therefore, will operate the releasing lever 36 controlling the letter-spacing rack 33, to release the carriage 1 from the escapement and throw the stop 25 to ineffective position.

It will be understood that the invention herein disclosed is not restricted to wide carriage machines. Variations may be resorted to within the scope of the invention, and portions of the improvements may be used without others.

Having thus described my invention, I claim:

1. In a typewriting machine, the combination with a carriage and a frame, of a gage-supporting rod extending across the machine, a pair of gages, both slidable on the rod to either extreme of movement of the carriage, a rocking rack journaled on the rod near the opposite ends thereof and outside the range of movement of the carriage, the gages both being adjustable between the ends of the rack, one of the gages having a cam cooperating with the rack, and engaged by the carriage to rock the rack, and a signal mechanism operated by the rocking of the rack.

2. In a typewriting machine, the combination with a frame, a carriage thereon and a

gage-supporting rod, of a plurality of gages both adjustable on the rod from end to end thereof, and a support for the rod intermediate its ends; the gages being slitted to pass by the support in their adjustment to opposite sides of the machine.

3. In a typewriting machine, the combination of a carriage, a signaling mechanism, a gage-supporting rod, a support for the rod intermediate its ends, a gage slidable on the rod and engaged by the carriage, the gage slidable past the point of engagement of the rod and its support, and a rocking rack connected with the signaling and key-locking mechanisms and operated by the gage when engaged by the carriage, the rack extending substantially from end to end of the range of movement of the carriage and cooperating with the rod to afford the gage a wide range of adjustment.

4. In a typewriting machine, the combination with a carriage and a frame, of a gage-supporting rod extending across the machine, a pair of gages, both slidable on the rod to either extreme of movement of the carriage, a rocking rack journaled on the rod near the opposite ends thereof and outside the range of movement of the carriage, the gages both being adjustable between the ends of the rack, one of the gages having a cam cooperating with the rack, and engaged by the carriage to rock the rack, a signal mechanism operated by the rocking of the rack, and a rod or rail, said rod having a rack extending along the first rack, and the other of said gages having means to engage said rod and the rack thereon.

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