

No. 859,308.

PATENTED JULY 9, 1907.

J. R. MAUGUFFIE.
TYPE WRITING MACHINE.
APPLICATION FILED NOV. 28, 1905.

Fig. 1.

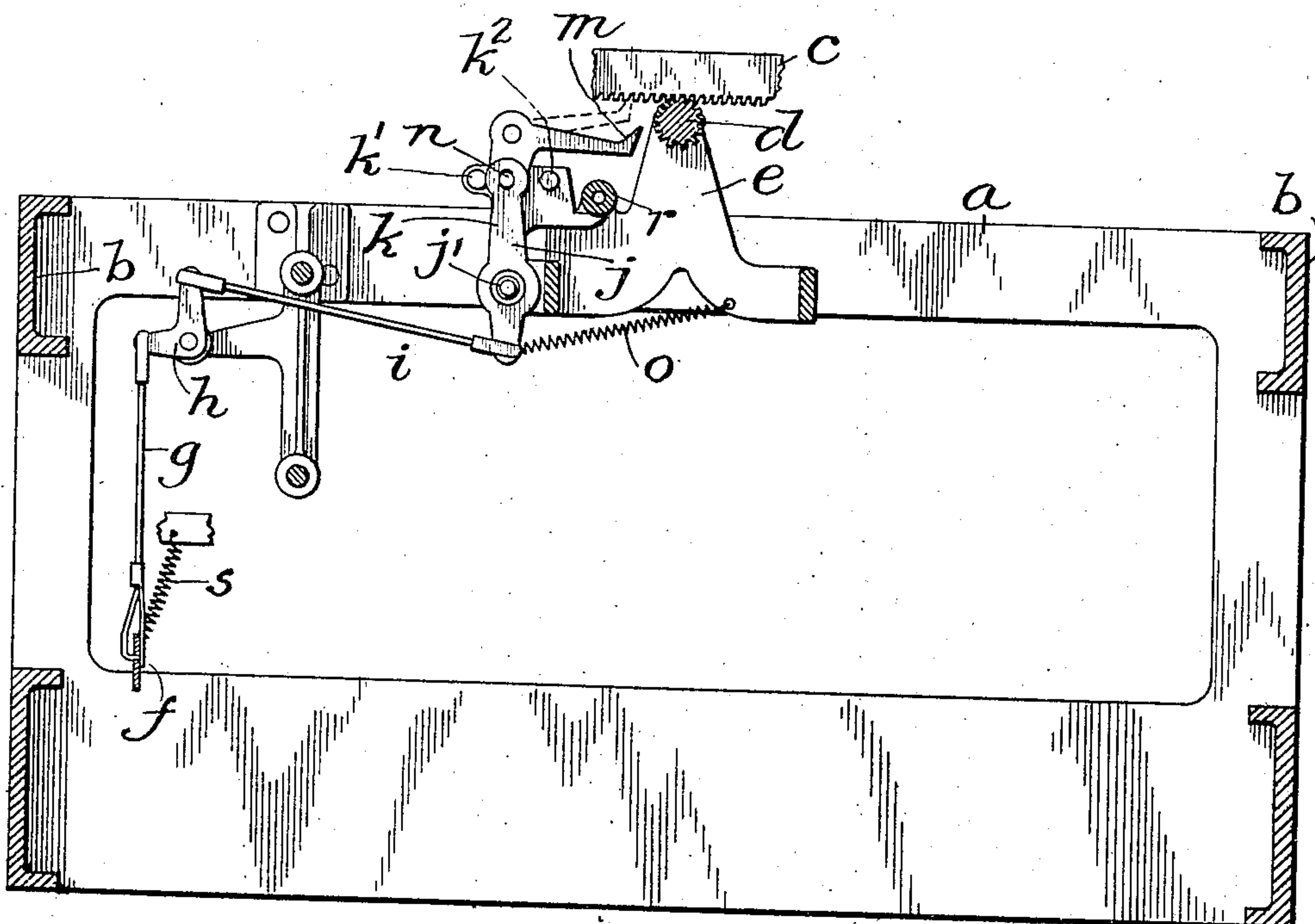
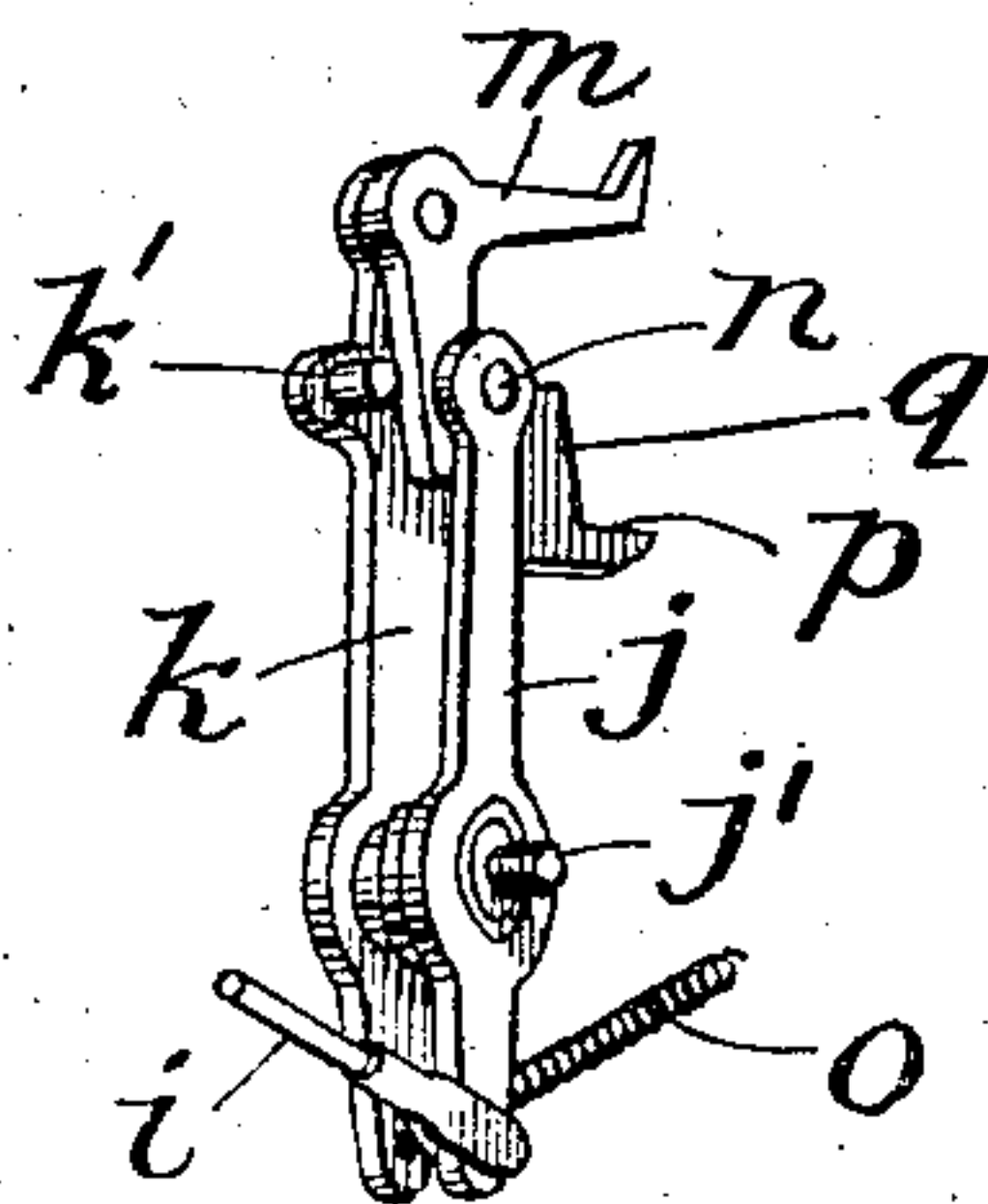


Fig. 2.



WITNESSES:

WITNESSES:
James F. Duhamel
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James R. Macguffie INVENTOR
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UNITED STATES PATENT OFFICE.

JAMES R. MACGUFFIE, OF NEW YORK, N. Y., ASSIGNOR TO ROYAL TYPEWRITER COMPANY
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TYPE-WRITING MACHINE.

No. 859,308.

Specification of Letters Patent.

Patented July 9, 1907.

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To all whom it may concern:

Be it known that I, JAMES R. MACGUFFIE, a citizen of the United States of America, residing in the borough of Manhattan, city and State of New York, have invented certain new and useful Improvements in Type Writing Machines, of which the following is a specification.

This invention comprises carriage back feed mechanism adapted at will to move the carriage in reverse direction step by step one or more points, or printing spaces, to enable an operator to make corrections or insertions without recourse to the ordinary practice, of moving the platen back by hand.

The invention resides in certain structural features hereinafter described, many devices for this purpose having heretofore been proposed.

In the accompanying drawing, Figure 1 is a transverse section through a writing machine taken in front of and adjacent the back frame plate; and Fig. 2, a detail perspective view of the principal parts of the device.

a is the back plate of the machine and *b* side plates or bars appearing in transverse section.

c is the ordinary carriage rack bar meshing with the usual pinion *d* on the escapement-wheel shaft, the bearing of which is in a bracket *e* mounted upon the frame.

A pivoted key lever *f*, preferably located at the left hand side of the machine, and intended to be extended to the key board in which it will have an appropriate finger piece, is connected toward its rear end and in front of its pivot, by a link *g* with the horizontal arm of a bell crank lever *h* pivoted in a bracket on the frame and having its vertical arm connected by a link *i* with the lower end of a vertically disposed lever *j* pivoted intermediate its ends. The lever *j* is pivoted concentrically with another lever *k* which is pivoted upon the frame. The upper end of the lever *k* extends beyond lever *j* and has pivoted in it a pawl *m* in the form of a bell crank lever, its toothed arm extending substantially horizontally beneath the rack and its other arm extending downwardly beyond the upper end of lever *j* with which it has pivoted connection at *n*. The axis *j'* of lever *k* is preferably vertically below the axis of the back feed pawl *m*, the intention being that as the lever moves to the right to set back the carriage no lifting action of the pawl upon the rack will occur.

A coiled spring *o* is attached to the lower end of lever *k* and to the frame and by its own reaction tends to hold the parts in normal position indicated by the full lines in Fig. 1. A stop *k'* on lever *k* limits the movement of the pawl in a direction away from the rack

while a similar stop *k''*, on this lever, on the opposite side of the downwardly extending part of the pawl, arrests upward movement of the pawl after it has properly engaged the rack. At the right hand edge of the upper part of lever *k*, it is cut away, forming a horizontal surface *p* and an upwardly extending surface *q*. The normal retracted position is determined by abutment of surface *p* against a stop *r* on the frame: and when actuated from normal position its movement to the right, as viewed in Fig. 1, is arrested by surface *q* abutting against stop *r*. The lever *j* and pawl *m* may be held in normal and inoperative position indicated in full lines in both Figs. 1 and 2 by a spring applied at any appropriate point, as at the key lever, which is common practice in machines of this class, or elsewhere as may be desired. I have shown such a spring *s* applied to the key lever. I prefer to use such a spring rather than to depend upon gravity of the various parts.

When the key lever is depressed, link *i* moving to the left, as viewed in Fig. 1, causes pawl *m* to be positively rocked (through the action of lever *j* and pivot connection *n*) its toothed end passing upwardly into proper engagement with the rack when it is arrested by the stop *k''*. Continued depression of the key lever overcomes the tension of spring *o* and since levers *j*, *k*, are now locked to move together at stop *k''*, the toothed end of the pawl is carried to the right moving the carriage back one letter space when the action is arrested by surface *q* abutting against stop *r*. When the key is released, the parts, of course, immediately return to normal position. Repeated actuation of the key results in successive reverse or back feed steps of the carriage.

I claim as my invention:

1. A back feed device for a typewriting machine, comprising the combination of an upright lever pivoted to the frame, a back feed pawl pivoted in the upper end of the lever and having a toothed part adapted to engage the rack and a downwardly extending part, a second upright lever pivoted concentrically to the first named lever, a pivotal connection between its upper end and the downwardly extending part of the pawl, operating means applied to the lower end of the second mentioned lever, stops on the pawl lever for limiting the movement of the pawl in both directions and stop devices for limiting the movement of the first mentioned lever in both directions.
2. In a back feed device for typewriting machines the combination of the carriage rack, a vertically disposed lever pivoted intermediate its ends, a pawl pivoted in the upper end thereof in proper relation to the rack and having a horizontally disposed toothed arm and a downwardly extending arm, limiting stops upon the lever on both sides of the downwardly extending portion of the pawl, a second lever pivoted concentrically to the first one, a pivotal connection between its upper end and the downwardly extending part of the pawl, an operating de-

vice applied to the lower end of such second lever and stop devices for limiting the movement of the first named lever in either direction.

5 3. In a back feed device for typewriting machines, the combination with the carriage rack, of a lever pivoted upon the frame, a back feed pawl pivoted upon the lever, a second lever, a pivoted connection between it and the back feed pawl, stops on the first named lever for limiting the movement of the second named lever relatively there-
10 to in either direction and operating means applied to the second mentioned lever.

4. In a back feed device for typewriting machines, the combination with the carriage rack, of a lever pivoted

upon the frame, a back feed pawl pivoted upon the lever, stops upon the lever for limiting the movement of the 15 pawl in either direction, a second lever, a pivotal connection between it and the back feed pawl, stop devices for limiting the movement of the first named lever in either direction and operating means applied to the second mentioned lever. 20

In testimony whereof I have hereunto subscribed my name.

JAMES R. MACGUFFIE.

Witnesses:

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