

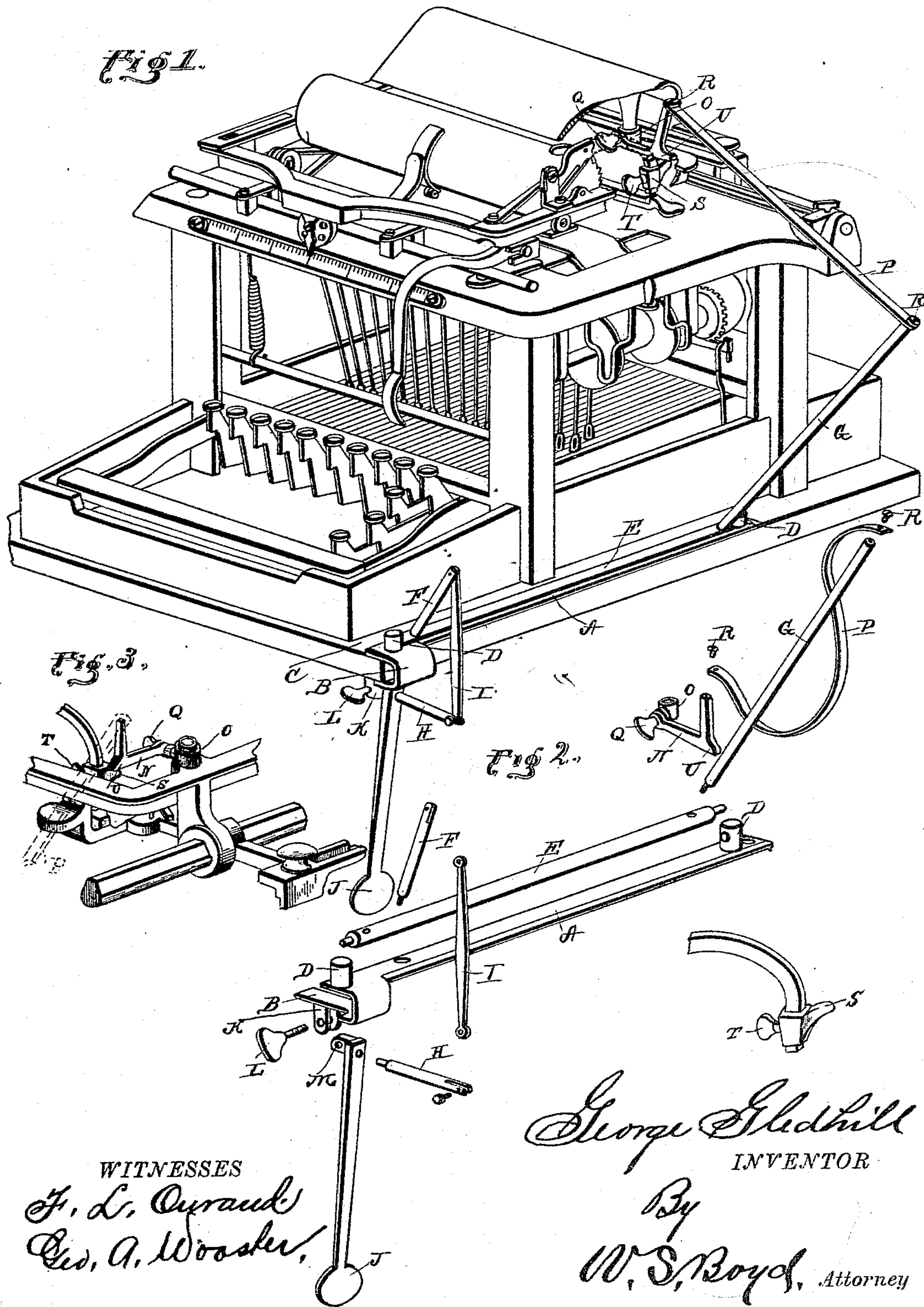
(No Model.)

G. GLEDHILL.

KNEE REVERSE MOVEMENT ATTACHMENT FOR TYPE WRITING
MACHINES.

No. 412,249.

Patented Oct. 8, 1889.



UNITED STATES PATENT OFFICE.

GEORGE GLEDHILL, OF OSWEGO, KANSAS.

KNEE REVERSE-MOVEMENT ATTACHMENT FOR TYPE-WRITING MACHINES.

SPECIFICATION forming part of Letters Patent No. 412,249, dated October 8, 1889.

Application filed June 19, 1888. Serial No. 277,563. (No model.)

To all whom it may concern:

Be it known that I, GEORGE GLEDHILL, a citizen of the United States, residing at Oswego, in the county of Labette and State of Kansas, have invented certain new and useful Improvements in Knee Reverse-Movement Attachments for Type-Writing Machines; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

Figure 1 is a perspective view of my attachment applied to a machine. Fig. 2 is a similar view of the same, the parts being separated from each other; and Fig. 3 is a detailed view, on a larger scale, showing that part of the upper end of the attachment connected with a machine.

In the use of type-writing machines, after the carriage and paper have passed over the basket or printing apparatus, it is necessary to return them to their original position, and also to partly rotate the platen in order to turn up the paper, so that the following line will be at the proper distance from the preceding or last line. To do this with many of the machines as now constructed, and more particularly with the machine known as the "Standard" or "Remington" machine, requires that the operator should take his hand from the key-board and catch hold of a handle upon the carriage and return the carriage, and also turn up the line-space, after which the hand must again be returned to the key-board before he can proceed with his work, all of which takes time. To avoid this waste of time, other means must be employed besides the hands of the operator, and as the operator's knee can be better utilized for this purpose than any other part of the body and still have the device compact and convenient, I have invented an attachment with which the carriage can be drawn back to its original position after a line has been written and the paper turned up for a new line simply by moving the end of an arm or lever to one side by a slight movement of the knee.

With this end in view my invention therefore relates to knee reverse-movement attachments for type-writers; and it consists in the improved construction and combinations of parts of the same, as will be hereinafter more particularly described, and pointed out in the claims.

Referring to the accompanying drawings, in which the same letters of reference indicate corresponding parts in each of the figures, A indicates the base-piece of the attachment, which can be secured to the type-writer direct or to the support or stand upon which the machine rests by means of a spring-clamp B at one end and ordinary screws in other places; or it can be secured in any other convenient manner. The base which I have shown consists of a thin flat piece of metal of about the length of the machine from front to rear, with the clamp B formed integral with it and curved in under the main part and of such a length as to firmly clasp the support C, on which the machine rests. At each end of the base-piece is formed or secured an upwardly-projecting post or pillar D. Between these pillars, and just above and parallel with the base-piece, is the rod or shaft E, the ends of which are journaled in the pillars, so that the rod can be rotated on its axis. At one end of the rod is secured a short arm F, which is connected with the operating mechanism, while at the opposite end is secured a longer arm G, which is suitably connected with the carriage of the machine. As the rod is rotated by power applied to the short arm at one end, it of course will cause the longer arm at the other end to move in the corresponding direction.

The mechanism for rotating the rod E consists of a bell-crank lever H, pivotally secured to the clamp B, and a link I, one end of which is connected with one arm of the bell-crank, and the other end is connected with the outer end of the short arm F at the front end of the shaft E. The end of the other arm of the bell-crank, which projects almost vertically downward from the bottom of the machine or from where it is pivoted to the clamp B, is formed into a handle by flattening it, as shown at J, and is controlled and operated by means of the knees of the operator. The lever can be permanently attached to the clamp

at its angle, or more preferably by securing it between jaws of a lug K upon the under side of the clamp by means of a thumb-screw L, the lever being provided with a small projection or ear M at the angle which is perforated, and fits between the jaws of the lug K.

The upper end of the rod or arm G is connected with the carriage of the machine by means of a bell-crank tripping-lever N, which is pivotally secured to the side of a collar O, that fits upon the support for the paper-table of the machine, at one end of one of the arms of the bell-crank, and a strap P, which is secured to the end of the other arm of the bell-crank at one end and to the end of the arm G at the other end. The collar O is secured upon the paper-table support of machine by means of a thumb set-screw Q, which also forms the pivot on which the end of the arm of the bell-crank is pivoted, and encircles said paper-table support or standard at the point just above the socket in which the same fits. The strap is secured at its ends by means of screws R R, which are passed through holes in the strap and screwed into holes in the ends of the arm of the bell-crank and of the rod or arm G.

By means of the above-described mechanism it will at once be seen that when the handle of the bell-crank below the machine is moved to one side, from right to left, by the knee of the operator the opposite arm of the lever will be drawn down, and with it, through the medium of the link I, the outer end of the short rod or arm F, which in turn will rotate the shaft E upon its axis. As the shaft is thus rotated from left to right the outer end of the rod or arm G will be moved or swung in the same direction—that is, from left to right—which in turn will draw the carriage after it, the cord or strap P permitting the end of the rod to move in the arc of a circle, while the carriage must necessarily move in a straight horizontal line.

In the Remington machine, to which I have shown my attachment applied, in addition to drawing back the carriage it is necessary to provide an additional means for turning up the paper for a line-space. For this purpose I have provided a small perforated lug or ear S, which is attached to the rear end of the line-space handle of the machine by means of a set-screw T, the point of which lug projects rearwardly from the end of the handle until it is in a vertical line below the tripping-lever N, which is preferably provided with a toe U at the angle of the lever, which engages with the top of the lug S whenever the tripping-lever is swung downward upon its pivot.

By making one arm of the tripping-lever project upward, and securing the end of the strap to the upper end of this arm, it is evident that as soon as power is applied to the strap the lever will be turned upon its pivot as much as possible in the direction in which

the power is applied, which in this instance is from left to right.

In operation the attachment is properly secured upon and adjusted to the machine, or the support on which the machine stands, and the end of the strap or other connecting means is secured to the carriage. The paper is placed in the machine in the ordinary manner, and the first line is written. When the carriage reaches the end of the line, or rather when the last character has been printed upon the line, the operator presses the end of the lever or handle below the machine from right to left, whereby the shaft upon the base-piece of the attachment is rotated and the carriage almost instantly returned to its original position. Of course the leverage of the tripping-lever is so great that before the carriage starts upon its return trip the roller or platen is turned up one or more spaces, as is desired, and which is regulated in the ordinary manner for a greater or less space between the lines. This always insures a correct line-space being given every return of the carriage, and with the Remington machine also causes the rack to be lifted out of engagement with the escapement or letter-spacing device, and prevents the latter from being thrown out of adjustment. As soon as the carriage is drawn back to its original position and the pressure of the knee is released, the tripping-lever is raised by the mechanism of the machine for retracting the line-space mechanism for a new line, which at the same time permits the rack to engage with the escapement, and the machine is ready for the next line, the hands of the operator having been kept over the key-board during the entire operation, and when the carriage is in position for a new line the operator is also ready without having to bring one hand from the handle upon one end of the carriage back to its position over the key-board. The time thus gained in a day's work will amount to enough to have written several additional lines over what could have been done without the use of the attachment. The carriage can be returned from any point—as, for instance, from the end of a paragraph, in which case it need not be drawn back its entire distance, thus indenting the first line of the succeeding paragraph. In this manner page after page can be written without the operator being compelled to touch the line-space handle of the machine, except to put in a fresh supply of paper as the succeeding pages are used up or written upon. By making the different parts separable, as shown in Fig. 2 of the drawings, the attachment can be taken apart and packed in a very compact manner; and if any part should happen to become broken or inoperative it can be very easily replaced with a new one.

As the entire attachment can be made separable

rate from the machine and be attached to machines already upon the market, its value and importance will at once be appreciated by those having machines in use, and also 5 by those dealing in such supplies.

Having thus described my invention, I claim—

1. In an attachment for writing-machines, the combination, with a longitudinal fixed 10 base-piece disposed to one side of the machine, each end of which is provided with an upright pillar or support, of a shaft journaled therein, a downwardly-projecting arm secured to the front end of the shaft and an upwardly-pro- 15 jecting arm secured to the rear end, and a flexible connecting-piece secured to the upper end of the rear arm for connecting the same with the carriage of the machine, whereby said carriage may be drawn back to its original po- 20 sition after completing a line.

2. In an attachment for writing-machines, the combination, with a base-piece, one end of which is provided with a spring-clamp and 25 having upright pillars or supports at its ends, of a shaft journaled in the pillars, an arm secured thereto at each end, a bell-crank lever pivotally secured to the clamp, one end of which projects down below the attachment and the other one projects laterally, a link 30 connected with the end of the laterally-projecting arm of the lever and with the outer end of the arm secured to the front of the shaft, and a flexible piece for connecting the upper end of the rear arm with the carriage of 35 the machine, substantially as and for the purpose set forth.

3. In an attachment for writing-machines, the combination, with a base-piece, of a shaft, 40 two arms secured thereto, a clamp at one end of the base-piece, a lug upon the clamp having jaws, a bell-crank lever which at its angle is provided with a lug to fit between the jaws of the lug upon the clamp, a link connecting one arm of the bell-crank lever with the outer 45 end of the arm upon the front end of the shaft, and a flexible piece connecting the other arm

with the carriage of the machine, substantially as set forth.

4. In an attachment for writing-machines, the combination, with an operating mechanism, of a collar to fit upon the paper-table 50 support of the machine, a bell-crank lever pivotally secured thereto at one end of one of its arms, a flexible piece secured at one end to the upper end of the other arm of the bell- 55 crank lever and at the other end to the operating mechanism, and a lug or ear secured to the rear portion of the line-space handle and adapted to be engaged by the bell-crank lever, substantially as and for the purpose set 60 forth.

5. In an attachment for writing-machines, the combination, with an operating mechanism, of a collar to fit upon the paper-table 65 support of the machine, a bell-crank tripping-lever which at its angle is provided with a toe, a set-screw through the end of one of the arms of the lever and through the side of the col- 70 lar, a lug to be secured upon the rear end of the line-space handle of the machine, the rear portion of which is in a line with and below the toe of the lever, and a flexible piece se- 75 cured at one end to the upper arm of the tripping-lever and at the other end to the operating mechanism, substantially as and for the purpose set forth.

6. In an attachment for writing-machines, the combination, with an operating mechanism, of a collar to fit upon the paper-table 80 support of the machine, a bell-crank lever pivotally secured thereto at one end of one of its arms, and a flexible piece secured at one end to the other arm of the bell-crank lever and at the other end to the operating mechanism, 85 said lever engaging with the rack-lifting mechanism, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE GLEDHILL.

Witnesses:

W. L. SIMONS,
ED BALDWIN.