

(No Model.)

J. W. RICH & R. H. ROSS.

DEVICE FOR SHIFTING ROLLERS OF TYPE WRITING MACHINES.

No. 566,536.

Patented Aug. 25, 1896.

Fig:1.

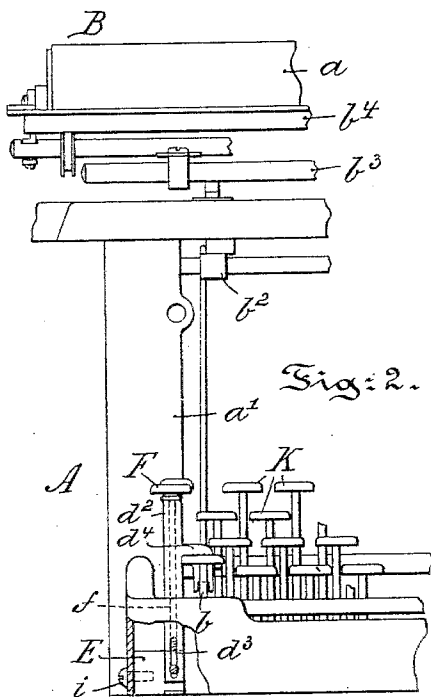
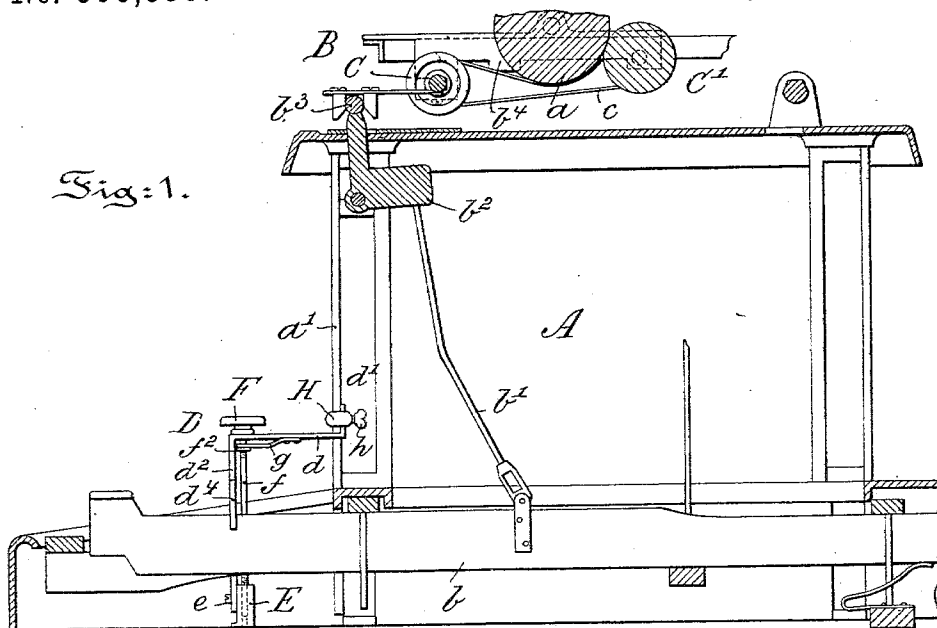


Fig:3.

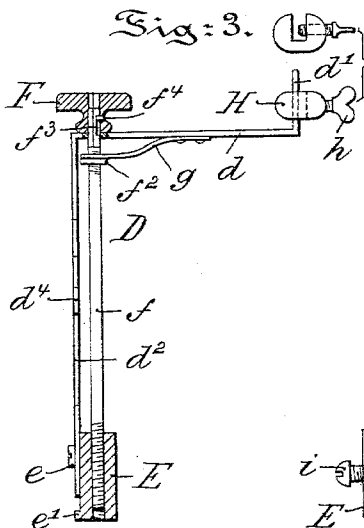
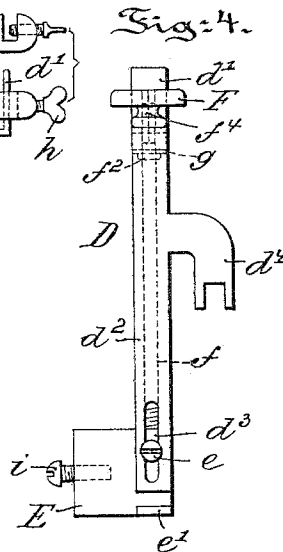


Fig:4.



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UNITED STATES PATENT OFFICE.

JOHN W. RICH AND ROBERT H. ROSS, OF PHILADELPHIA, PENNSYLVANIA.

DEVICE FOR SHIFTING ROLLERS OF TYPE-WRITING MACHINES.

SPECIFICATION forming part of Letters Patent No. 566,536, dated August 25, 1896.

Application filed December 13, 1895. Serial No. 572,040. (No model.)

To all whom it may concern:

Be it known that we, JOHN W. RICH and ROBERT H. ROSS, citizens of the United States, residing at the city of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Devices for Shifting the Rollers of Type-Writing Machines, of which the following is a specification.

Our invention has relation to a key or similar device designed to shift the platen or roller of a type-writer through more or less of the normal range of movement imparted thereto by the ordinary shift-key; and in such connection it relates to the particular construction and arrangement of such a device.

The principal objects of our invention are, first, to provide in a type-writer a simple device or additional key whereby the platen may be shifted through more or less of the normal distance through which it is shifted by the ordinary shift-key, so that certain characters or symbols may be placed above or below the normal line of printing, as is necessary in the printing of fractions, subscripts, superscripts, and the like; second, to provide in a type-writer an additional key removably secured to the front frame of the machine and adapted when depressed to engage and depress the bar of the ordinary shift-key a distance less than the movement ordinarily imparted thereto, whereby the platen is shifted more or less of its normal range of movement, and, third, to provide in such a key means for adjusting the movement thereof and means for returning the key to its normal position after the same has been depressed.

Our invention, stated in general terms, consists of an additional shifting-key, whereby the movements of the ordinary shift-key of the platen is limited when the additional shifting-key is depressed, all arranged, constructed, and adapted for operation in substantially the manner hereinafter described and claimed.

The nature and scope of our invention will be more fully understood from the following description, taken in connection with the ac-

companying drawings, forming part hereof, and in which—

Figure 1 is a side elevation, partly sectioned, of a type-writing machine, showing the platen, the ordinary shift-key therefor, and the additional shift-key embodying the main features of our invention and adapted to limit the range of movement of the ordinary shift-key and the platen. Fig. 2 is a front elevation of one end of the type-writing machine, showing the additional key of our invention and the manner in which the same controls the shift-key. Fig. 3 is a side elevation, enlarged and partly sectioned, of the additional key; and Fig. 4 is a front elevation of Fig. 3.

Referring to the drawings, A represents a type-writing machine of the Remington or similar type, wherein the platen *a* is shifted back and forth by a shift-key *b*, a connecting rod or link *b'*, a bell-crank lever *b²*, and a longitudinal bar *b³*. In this class of machines each printing-key carries two types, which are respectively upper and lower case, and by the shifting of the platen *a* either of these types is caused to imprint upon the paper on the platen *a*.

The object of our present improvement is to provide means whereby the range of movement thus given to the platen may be limited, so that the platen may occupy three positions with respect to the printing of characters on the paper carried thereby—viz., first, the normal position to receive the impression of either the upper-case or lower-case type; second, a position in which the print of the type is slightly below the normal line, and, third, the position in which the impression will appear slightly above the normal line of printing. To thus modify the position of the platen, use is made of the device D, which consists of an angular strip of spring metal *d*, the upper end of which is secured, by a clamp H and screw *h*, or in any other suitable manner, to the front standard *a'* of the machine immediately over the shift-key *b*. The lower end *d²* of the strip *d* is slotted, as at *d³*, and is brought into slotted engagement, by a pin *e*, with a socket-piece E, which piece is secured to the base of the machine by means of screws or bolts *i* alongside of the

shift-key *b*. This socket *E* is internally threaded to receive the threaded end of the stem *f*, the upper end of which passes through the strip *d*. Upon the upper end of the stem *f* is mounted a button *F*, adapted when depressed to bear upon the strip *d* to depress the same, and said button is perforated to permit of the button sliding vertically on the stem *f*.

The button *F* is provided with a pin *f*⁴, sliding in a vertical slot *f*³ in the stem *f*, and by means of this connection the stem *f* may be turned by the button *F* to advance or retract the stem in the socket. When the strip *d* is depressed by the button *F*, the lower end *d*² slides downward upon the socket *E* by reason of its slotted engagement therewith. The downward movement of the strip *d* is limited by a pin or projection *e*' on the socket *E*. The lower end *d*² of the strip *d* carries an arm *d*⁴, adapted when the device has assumed an operative position to fit over and upon the shift-key *b*, so that the depression of the strip *d* is thereby transferred to the shift-key *b* to a degree or extent corresponding to the range of depression of the said strip.

Upon the stem *f* is formed a collar *f*², which is engaged by one end of a leaf or similar spring *g*, the other end of which is secured to the strip *d*.

In operation the stem *f* is first adjusted in its socket to required length, so that when the strip *d* is depressed by the button *F* the arm *d*⁴ will depress the shift-key lever *b* slightly below its normal raised position and intermediate between the normal raised and lowered position thereof. This movement of the lever *b* is transferred to the platen, which is correspondingly shifted, so that a type or character will be printed out of the normal line of printing.

To print above the line, the shift-key *b* is permitted to remain in its elevated position until the character or letter to be located above the line is reached, when the button *F* and strip *d* are depressed to thereby slightly depress the shift-key lever *b*.

To print below the line, the shift-key *b* is slightly depressed by depressing the button *F* and strip *d* until the character or letter to be located below the line is reached, when

the button is released, thereby permitting the shift-key lever *b* to regain its normal elevated position.

By reason of the spring or elastic character of the strip *d* and of the leaf-spring *g* the strip *d* always returns to its upright position when the pressure upon the button *F* is released.

Having thus described the nature and objects of our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a type-writing machine provided with a shift-key for the platen, an additional key removably secured to the front frame of the machine and consisting of an elastic strip or metal adapted to be depressed and provided with an arm engaging the shift-key lever, and means for limiting the movement downward of said additional key to depress the shift-key a distance less than that of its ordinary movement, whereby the platen is shifted more or less of its normal movement, substantially as and for the purposes described.

2. In a type-writing machine provided with a shift-key for the platen, an additional key removably secured to the frame of the machine above the shift-key and consisting of an angular elastic strip of metal, a socket secured to the base-frame of the machine and provided with a stop, said strip being in slotted engagement with said socket and having a range of vertical movement limited by said stop, a stem threaded to said socket and passing through the upper portion of the elastic strip, a button sliding on said stem and adapted to depress said strip, and an arm carried by said strip and fitting on the lever of the shift-key, all arranged so that when the elastic strip is depressed the shift-key is lowered a distance less than its ordinary movement, whereby the platen is shifted more or less of its normal movement, substantially as and for the purposes described.

In testimony whereof we have hereunto set our signatures in the presence of two subscribing witnesses.

JOHN W. RICH.
ROBERT H. ROSS.

Witnesses:

J. WALTER DOUGLASS,
THOMAS M. SMITH.