(No Model.)

G. C. BLICKENSDERFER.

ATTACHMENT FOR TYPE WRITING MACHINES.

No. 472,695. Patented Apr. 12, 1892.

Fig 1

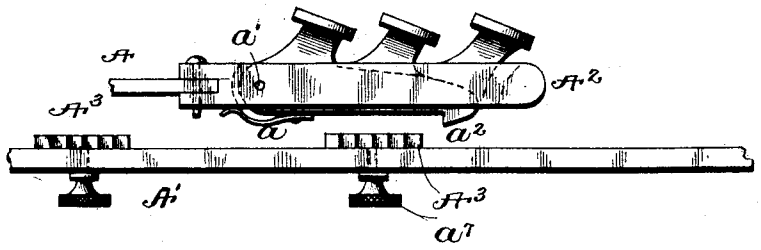


Fig 2

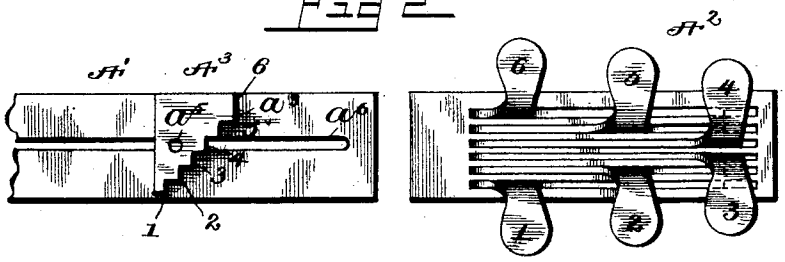


Fig 3

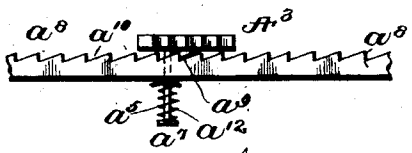
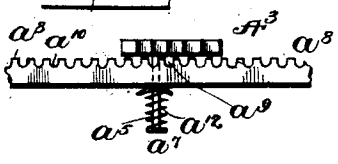


Fig 4



Witnesses

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UNITED STATES PATENT OFFICE.

GEORGE C. BLICKENSDERFER, OF STAMFORD, CONNECTICUT, ASSIGNOR TO THE BLICKENSDERFER MANUFACTURING COMPANY, OF NEW YORK, N. Y.

ATTACHMENT FOR TYPE-WRITING MACHINES.

SPECIFICATION forming part of Letters Patent No. 472,695, dated April 12, 1892.

Application filed December 1, 1891. Serial No. 413,674. (No model.)

To all whom it may concern:

Be it known that I, GEORGE C. BLICKENSDERFER, a citizen of the United States, residing at Stamford, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Attachments for Type-Writing Machines; and I do hereby 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.

My invention relates generally to devices for stopping the traverse of a paper-carriage at any desired position in the line, such as are shown in my pending applications, Serial No. 399,117, filed July 11, 1891; Serial Nos. 410,230, 410,231, and 410,232, filed October 30, 1891, and Serial No. 410,893, filed November 4, 1891, and particularly to means for accurately setting the adjustable lug or stop.

In application Serial No. 410,232 the adjustable lug or stop is secured to a bar or frame by means of a set-screw. No means are provided for accurately setting this stop so that when set the edge that receives the impact of the part controlled by the key mechanism will be in such position that when the carriage is stopped the point on the paper will be in exactly the position necessary to receive the proper impression. In other words, if it be desired to shift the stop one or more letter-spaces the operator would have to use a scale, which may be marked upon or applied to the bar or frame to which the stop is secured. To remedy this objection, I propose to dentate some part of the bar or frame and arrange the adjustable stop in such manner that a part of itself will fit into the spaces between the teeth, which may be of any desired form. The necessity of setting the nut to fix the stop in place is also objectionable when compared with a retaining device that will prevent the stop from jumping between the teeth and at the same time permit the operator to set the lug or stop without having to unscrew any part. While I prefer such a construction, I do not desire to limit myself to it, as it is obvious that many means could be provided for holding the stop in place without departing from my invention, which consists of constructions and combinations, as well as details of constructions, all as will be set forth in the accompanying specification and pointed out in the claims, reference being had to the accompanying drawings, which show several applications of my devices, and in which—

Figure 1 represents a side elevation of part of a frame and paper-carriage having the stop mechanism attached thereto; Fig. 2, a top plan showing the arrangement of the key mechanism and one of the stops; Fig. 3, a detail showing means for setting the adjustable stop; Fig. 4, a detail showing a modification of the teeth and means for holding the stop in the spaces between the teeth.

A represents a part of the paper-carriage; A′, part of the frame of a machine or an attachment to the frame; A^2, the key mechanism, and A^3 stops. These stops are provided on one of their edges with a series of steps or gradations a^3, corresponding in number to the number of keys of the key mechanism A^2. These keys, which may be of any desired number, are pivoted, preferably, upon a common fulcrum a', and each have a catch a^2 on the same traverse line. These catches are also on the same longitudinal line as the gradations on the stops—that is, the catch a^2 on key-lever 1 is on the same longitudinal line as gradation 1 on the stops, the catch a^2 on the key-lever 2 is on the same longitudinal line as gradation 2, and so on to the end. If the carriage be moved toward the stops and one of the keys be depressed, the catch a^2 on the key will strike its corresponding gradation on the stop and arrest further movement of the carriage until the catch is raised, which is accomplished by the spring a acting upon the key when the pressure of the finger is removed. The carriage can then be moved in the usual way.

The graded stop is secured to the frame or bar in any desired manner, and is preferably made movable, so that it can be adjusted to any position thereon. The manner of securing the stop to the plate can be varied in so many different ways that I have shown only one specific mechanism producing that effect, which consists of a pin a^5 on the stop and a slot a^6 in the frame or bar, and through which

the pin is passed and secured in any desired way. In Fig. 1 the stop is clamped in place by a nut or cap a^7.

When a dentated plate or bar is used, the graded stop is provided with parts that fit into the notches between the teeth. In the device shown in the drawings the teeth a^8 are shown on the upper side of the frame, and the stop is provided with lugs a^9, which fit into the notches a^{10} between the teeth, and are held therein by any suitable retaining device. My preferred form of teeth are those shown in Fig. 3, and known as "ratchet-teeth." Their points project toward the catch upon the carriage, so that when said catch strikes the stop the teeth will prevent the stop from moving. This form of device is very useful where the stop is held in place by a yielding retaining device. One form of such a construction is shown in Figs. 3 and 4. The pin a^5 is elongated and the nut or cap a^7 is placed on the lower end and a spring a^{12} interposed between the frame or bar and the nut or cap a^7. The spring a^{12} holds the lugs a^9 in the notches a^{10}, and at the same time permits of the operator drawing the stop in one direction without lifting the stop from contact with the teeth. If, however, he desires to move the stop in the opposite direction—*i. e.*, toward the point of the teeth—the stop must be lifted above the teeth.

In Fig. 4 the dentations are of a slightly-different character from those shown in Fig. 3, the ends being flattened and the notches of a U shape. It is obvious that the form of the teeth may be varied at will and the lugs or projections on the stop changed accordingly. In practice I prefer to place the notches a letter-space distance apart, so that when it is desired to move the stop any number of letter-spaces the notches can be counted and the stop moved to the proper one to make the required change. By such a construction an operator can always locate the exact point that he desires to reach and the carriage can be stopped at that point, and any desired impression can be made upon the paper on the platen with the certainty that the impression has been properly made relative to the impressions in the same and other lines.

What I claim as new is—

1. In a type-writing machine, the combination of a paper-carriage, a key mechanism having catches on the same horizontal line, and a graded stop having its gradations on the same longitudinal lines as the catches, all of which have a separate gradation.

2. In a type-writing machine, the combination of a paper-carriage, a key mechanism having catches on the same horizontal line, and an adjustable graded stop having its gradations on the same longitudinal lines as the catches, all of which have a separate gradation.

3. In a type-writing machine, the combination of a key mechanism having catches, a slotted bar or frame having teeth pointing toward said catches, and a stop held against said teeth by a yielding retaining device.

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

G. C. BLICKENSDERFER.

Witnesses:
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