F. AITON.

UNDERSCORING ATTACHMENT FOR TYPE WRITERS.

APPLICATION FILED MAR. 8, 1917.

1,233,741. Patented July 17, 1917.

Fig. 4

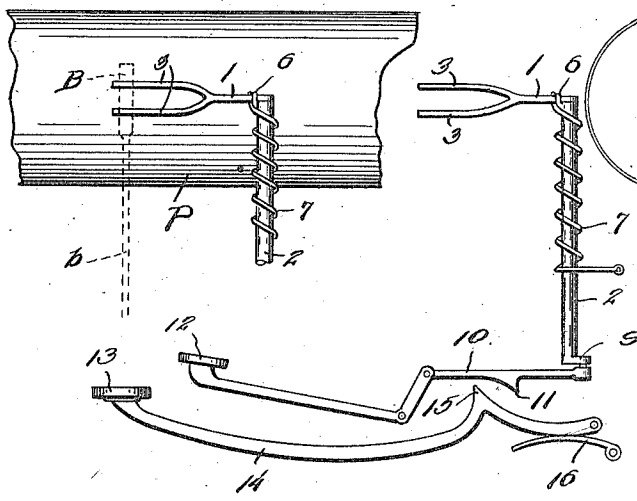


Fig. 1.

Fig. 2.

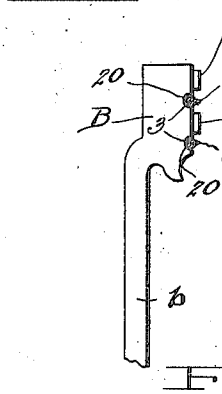
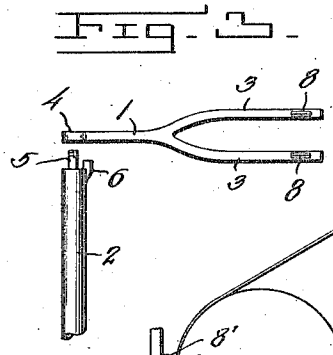


Fig. 3.



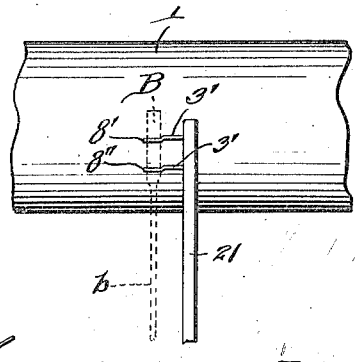
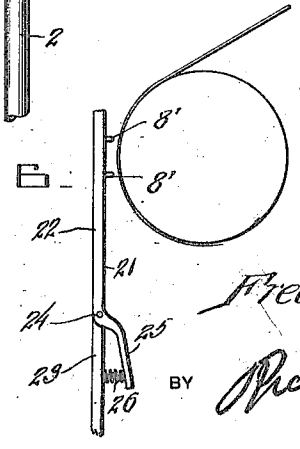


Fig. 5.

Fig. 6.



INVENTOR

Fred Aiton

WITNESSES

L. Armstrong

L. M. McColl.

BY Richard Owen.

ATTORNEY

UNITED STATES PATENT OFFICE.

FRED AITON, OF LAMPASAS, TEXAS.

UNDERSCORING ATTACHMENT FOR TYPE-WRITERS.

1,233,741. Specification of Letters Patent. Patented July 17, 1917.

Application filed March 8, 1917. Serial No. 153,384.

To all whom it may concern:

Be it known that I, FRED AITON, a citizen of the United States, residing at Lampasas, in the county of Lampasas and State of Texas, have invented certain new and useful Improvements in Underscoring Attachment for Type-Writers, of which the following is a specification.

This invention relates to improvements in typewriters, and more particularly to an underscoring attachment therefor.

The main object of the invention is to provide an auxiliary printing character which at the will of the operator may be placed in operative relation with the regular printing instrumentalities of the machine to print the auxiliary character in its proper position as the regular type characters are formed, thereby avoiding the necessity of the after manipulation of the work for the insertion or interlineation of the character.

Another object is to provide a simply constructed and efficient device of this character in which the letter or character to be underscored will be struck simultaneously with the underscore whereby the depression of a single key will perform the double function of printing the character and underscoring it.

With the foregoing and other objects in view, which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed may be made within the scope of what is claimed without departing from the spirit of the invention.

In the accompanying drawings:

Figure 1 represents a side elevation of this improved attachment shown in inoperative position,

Fig. 2 is a side elevation of the upper portion of the type bar of ordinary construction equipped with means to adapt it for use in connection with this attachment, the portion of the attachment with which it engages being shown in section,

Fig. 3 is a side elevation of the upper portion of this attachment showing the arm which carries the auxiliary printing characters detached and arranged in juxtaposition to the rod which supports it ready for assembling,

Fig. 4 is a front elevation of a portion of a platen showing this attachment in operative position ready for printing, the type bar being shown in dotted lines,

Fig. 5 is a view similar to Fig. 4 showing a slightly different form of the invention, and

Fig. 6 is a side view of the bar shown in Fig. 5, parts being broken off.

In the embodiment illustrated in Figs. 1 to 4 and in Figs. 5 and 6, in which preferred forms of the invention are shown, an underscoring character is employed as an auxiliary character to the use of which this invention is particularly adapted, although it is obvious that any other desired character may be substituted.

In the forms illustrated in the accompanying drawings, the attachment constituting this invention is shown for use in connection with a front strike machine of the "Underwood" type, but it is to be understood that its use is not restricted to this particular type of machine, since the structure may be readily modified for attachment to machines of other makes.

As is well known to those skilled in the art, the bringing of upper case and lower case characters into printing position although often controlled by shifting the platen is sometimes determined by shifting the type-carrying members and therefore this invention is not restricted to use upon a machine in which the printing point is shiftable relatively to the characters, neither is the invention restricted to a machine having both upper and lower case characters.

The form of the attachment shown in Figs. 1 to 4 comprises an auxiliary character carrying member in the form of an arm 1 projecting laterally from a rod 2 and detachably connected therewith. The arm 1 which is bifurcated at its free end as indicated at 3 has an eye 4 at its inner end which fits over and turns on a stud 5 extending upwardly from rod 2. A finger 6 also projects upwardly from rod 2 at one side of the stud 5 and is designed to engage arm 1 and swing it into operative posi-

tion as shown in full lines in Fig. 4 on the turning of rod 2 against the tension of a spring 7 coiled around said rod and engaging the arm 1 at one end and at its other end secured to the machine to which the device is attached. This spring 7 operates to hold arm 1 in the position shown in Fig. 1 when the attachment is not in use.

The furcations 3 of arm 1 each carry an auxiliary character 8, here shown as a dash-shaped projection extending beyond the face of each furcation and arranged longitudinally thereof.

As is well understood in typewriters in ordinary use, each type block B and its type bar *b* carry the regular printing type characters of the machine, one of which C is operative with the platen in upper case position and the other of which *c* is operative when the platen P is in its lower case position. It is for this reason that two auxiliary characters 8 are here shown, one for the upper case and the other for the lower case.

A foot 9 extends laterally from the lower end of rod 2 with the free end of which a lever 10 is pivotally connected. This lever 10 has a catch 11 on its lower face about midway its ends and at its front end is connected with an actuating key 12.

A locking and release key 13 carried by a bar 14 disposed below the bar of key 12 has a catch member 15 projecting upwardly therefrom for coöperation with catch 11 for locking the auxiliary character in operative position, said bar 14 being resiliently held in raised position by a spring 16.

When in normal inoperative position, as shown in Fig. 1, the foot 9 of the rod 2 extends toward the platen P and arm 1 away from it, the catches 11 and 15 being disengaged and spring 7 operating to hold these parts so disposed.

It is well known that all of the type carrying members of the printing instrumentalities move singly in converging paths to a common printing position and are each formed with the upper and lower case characters C and *c* above referred to and between which on machines to which this attachment is applied are formed notches 20 designed to engage the furcations 3 which carry the auxiliary printing characters 8. When these furcations or fingers 3 are engaged with the notches 20 in the type block B, the auxiliary characters 8 on said fingers will be flush with the type C and *c* carried by said block as is shown clearly in Fig. 3 so that when driven by the force of the type bar *b* against the paper carried by the platen P, the underscore is formed beneath the letter printed and simultaneously with the printing of said letter. This is accomplished by depressing key 12 which draws lever 10 and foot 9 connected therewith forward, thereby swinging rod 2 against the tension of spring 7 and positioning the auxiliary character carrying arm 1 toward the platen in the position shown in Fig. 2, with the fingers 3 of said arm disposed in the path of the type block B so that when said block is moved into printing position, the notches 20 thereof will fit over the fingers 3 and force the auxiliary characters 8 carried thereby against the paper on which the word is to be printed. This depression of key 12 also engages catch 11 with catch 15 and thereby locks arm 1 in position ready for use where it may remain for use in connection with any desired number of letters to be underscored.

It is understood that the auxiliary character carrying fingers 3 when locked adjacent the place where the type block strikes the paper will be positioned just far enough from said point as not to interfere with the movement of the carriage, the arm 1 being held firmly against finger 6 by the spring 7.

The parts of this attachment will remain in the position just described until the key 13 is depressed thereby disengaging catch 15 from catch 11 and permitting spring 7 to swing rod 2 and thereby move the arm 1 away from the platen into inoperative position as shown in Fig. 1 in full lines.

In the form shown in Figs. 5 and 6, the auxiliary characters are carried by a regular type bar 21 which is designed to be placed at one side of the ordinary type bars out of the way and which is mounted to swing into position at one side of the point where the type strikes the paper. This provides for the auxiliary character carrying fingers 3′ to be so positioned as to be struck by the type bars in their printing operation. These fingers 3′ in this form of the invention are shown projecting laterally from the upper end of bar 21 in longitudinally spaced relation and carrying the auxiliary characters 8′ at their free ends. As these fingers 3′ must be positioned a short distance from the ribbon when brought into operative position, it is necessary that a spring of some kind be provided in bar 21. Hence this bar 21 is constructed in two sections 22 and 23, pivotally connected at 24, the upper section 22 having an offset finger 25 projecting longitudinally from its lower end beyond its pivotal connection with section 23 and between which and said section 23 is disposed a coiled spring 26.

To prevent the fingers 3′ from striking the guides which are employed for the type bar and which are not shown, these fingers are curved slightly, as is shown clearly in Fig. 5.

The operation of this form of the device is similar to that above described, the type bar *b* carrying the block B at its upper end operating in the same manner to engage the fingers 3′ when making its printing stroke and force the auxiliary characters 8′ into

printing engagement with the paper and when said type bar moves away from the paper back to normal inoperative position, the spring 26 will move the upper section 22 of the bar 21 which carries the auxiliary characters back away from the paper into position ready to be struck by the next type bar.

The provision of the notches 20 in the printing face of the type block B adapts the fingers 3 and 3′ to be made of comparatively heavy material, the notches receiving said fingers, as without them it would be necessary to make these fingers of a thickness corresponding to the thickness of the letters or characters C and *c* carried by the block. Hence these notches perform a double function, operating as guides for the fingers and to provide for their being made sufficiently heavy to resist breaking strains.

From the foregoing description, taken in connection with the accompanying drawings, the advantages of the construction and of the method of operation will be readily apparent to those skilled in the art to which the invention appertains and while I have described the principle of operation of the invention together with the device which I now consider to be the best embodiment thereof, I desire to have it understood that the device shown is merely illustrative and that such changes may be made as are within the scope of the claimed invention.

I claim:—

1. An auxiliarly character carrying attachment for typewriter machines comprising a rotatably disposed rod having an arm extending laterally from one end in one direction, an auxiliary character carried by said arm, a spring connected to turn said rod in one direction, and key controlled means for turning said rod in the opposite direction for positioning the character carrying arm in the path of the type carrying member on the machine with which the attachment is to be used.

2. In a typewriting machine, the combination of a type-carrying member, a movable member carrying an auxiliary character and comprising two sections, one provided with the auxiliary character and yieldable relatively to the other section, means between said sections for automatically returning said movable section to set position after it has been actuated, said movable section having means for engagement by said type-carrying member on its printing stroke whereby the auxiliary character is printed simultaneously with the type on the type-carrying member.

3. An auxiliary character carrying attachment for typewriter machines comprising a rotatably disposed upright rod having an arm extending laterally from one end in one direction and a foot extending laterally from the other end in the opposite direction, an auxiliary character carried by said arm, a spring connected to turn said rod in one direction, and key controlled means for turning said rod in the opposite direction for positioning the character carrying arm in the path of a type carrying member on the machine with which the attachment is to be used.

4. An auxiliary character carrying attachment for typewriter machines comprising a rotatably disposed rod having an arm extending laterally from one end, an auxiliary character carried by said arm, a spring connected to turn said rod in one direction, key controlled means for turning said rod in the opposite direction for positioning the character carrying arm in the path of a type carrying member on the machine with which the attachment is to be used, and means for locking said key controlled means in position to hold the character carrying arm in operative position.

5. An auxiliary character carrying attachment for typewriter machines comprising a rotatably disposed rod having an arm extending laterally from one end in one direction and a foot extending laterally from the other end in the opposite direction, an auxiliary character carried by said arm, a spring connected to turn said rod in one direction, key controlled means for turning said rod in the opposite direction for positioning the character carrying arm in the path of a type carrying member on the machine with which the attachment is to be used, and resilient means for locking said key controlled means in position to hold the character carrying arm in operative position.

6. In a typewriting machine, the combination of printing instrumentalities including an auxiliary character carrying device comprising a rotatably mounted rod having an arm extending laterally from one end and provided with vertically spaced fingers having auxiliary characters mounted thereon, a foot extending laterally from the lower end of said rod, a lever pivotally engaged with said foot and operable when moved in one direction to swing said fingers into operative position, and a combined locking and release lever, said levers having coöperating catches for locking the first mentioned lever in position to hold the character carrying fingers in operative position.

7. In a typewriting machine, the combination of printing instrumentalities including an auxiliary character carrying device comprising a rotatably mounted upright rod having an arm extending laterally from one end and provided with vertically spaced fingers having auxiliary characters mounted thereon, a foot extending laterally from the lower end of said rod, a lever pivotally en-

gaged with said foot and operable when moved in one direction to swing said fingers into operative position, a combined locking and release lever, said levers having coöperating catches for locking the first mentioned lever in position to hold the character carrying fingers in operative position, resilient means for holding said locking lever in locking position, and means for disengaging the catches of said levers.

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

FRED AITON.

Witnesses:
H. J. ABNEY,
W. M. LOVE.