

UNITED STATES PATENT OFFICE.

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TYPE-WRITING MACHINE.

998,861.

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To all whom it may concern:

Be it known that I, HERBERT H. STEELE, citizen of the United States, and resident of Marcellus, in the county of Onondaga and State of New York, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification.

My invention relates to typewriting machines and more particularly to attachments for facilitating the operation of the tabulator.

My invention has for its principal object to provide an improved attachment comprising an auxiliary key for operating the tabulator, said key being adapted to be operated by the palm or flat part of the hand without the necessity of removing the fingers from the printing key-board.

My invention is in the nature of an improvement upon one invented by Jacob Felbel, and it consists in the improved construction of attachment shown and herein-after described and claimed.

In the accompanying drawings, Figure 1 is a side elevation, partly in vertical section, of a typewriting machine having my improved attachment mounted thereon. Fig. 2 is a rear elevation, partly in section, of part of the tabulator mechanism. Fig. 3 is a front elevation, partly in section, and showing my attachment in position on the machine.

My invention is here shown applied to a Monarch typewriter, the main frame of which comprises a base 1 having a forward extension that incloses the key-board, said extension including a side bar 2. The posts 3, top plate 4, standards 5, stationary rails 6, carriage 7, feed rack 8, feed pinion 9 and escapement 10 are all of the ordinary Monarch construction, said feed rack being as usual capable of being lifted out of mesh with the pinion 9 in order to release the carriage for a free run under the impulse of the spring drum, which last is not shown. The tabulator is also of a well-known construction and comprises a column stop bar 11 mounted on arms 12 projecting from the carriage 7 and having column stops 13 adjustably mounted thereon. These column stops are adapted to be engaged by an "eagle-claw" stop 14 which is pivoted at 15 to a bracket 16 secured to the upper stationary rail 6 about the middle of the ma-

chine. This "eagle-claw" or stationary stop is normally held by a spring 17 in the position shown in Fig. 1 where it is out of the path of the column stops 13. The stop 14 is adapted to be moved into the path of the stops 13 by means of a push bar 18 projecting upward from a rack lifter 19, the stem of which is operated in the usual way by a lever 20 pivoted to the underside of the top plate 4. Said lever is operated by a vertical pull link 21 connected at its lower end to a bell crank 22 pivoted to the right-hand rear post 3, and said bell crank is in turn operated by a long push rod 23 extending toward the front of the machine where it carries a push key 24. The rack lifter 19 has ears that lie beneath the feed rack 8 and the construction is such that when the key 24 is pushed toward the rear of the machine, said rack lifter and the push bar 18 are moved upward, lifting the rack out of engagement with the pinion and moving the stop 14 into the path of the stops 13.

My attachment comprises a frame or supporting plate 25 which is mounted on the main frame of the machine in such a way that it can be secured to the frame of the typewriter without any modification of said frame. In mounting my attachment on the particular machine shown in the drawing, this plate is secured to the right-hand side bar 2 of the forward extension of the typewriter frame. The support 25 consists of a plate of metal stamped out in the form shown and having on its upper part an ear or projection 26 which is bent around so as to conform to the curvature of the upper edge of the bar 2. At its lower end the plate 25 projects slightly below the lower edge of the bar 2 and has threaded therethrough two screws 27, each of which is provided with a conical washer 28. These screws and washers are so disposed that the conical or beveled surface of each washer engages the lower edge of the bar 2 in such fashion as not only to clamp the lower part of the plate 25 tightly against the side of said bar 2 but also so as to draw the curved projection 26 down into tight, binding engagement with the upper edge of the bar 2. By tightening these screws 27 the plate 25 is firmly clamped to the typewriter frame. It will be seen that the attachment of this plate is the work of a very short time.

An angled key lever 30, preferably made

of sheet metal, is pivoted to the plate 25 on a pivot 31. At its forward end the lever 30 is bent off at the left to form a key 32, which key overlies the top of the frame bar 2.

5 This key has an upper surface considerably larger than that of an ordinary finger key and it is designed to be struck by the palm of the hand. Downward motion of the key 32 is limited by a buffer 33 adapted to strike

10 against the top of the bar 2 and preferably made of rubber or other cushioning material. The key lever 30 at its rear end extends substantially directly upward so that it may be said to be an angled lever with an upright arm 34. In said upright arm is

15 formed an open slot 35 into which a pin 36 projects from an upright lever 37 of the first order, pivoted at 38 to the plate 25 and having its upper end standing directly in

20 front of the tabulator key 24. The construction is such that when the key 32 is depressed the slot 35 therein moves to the front of the machine, thus moving the upper end of the lever 37 toward the rear of

25 the machine and operating the key 24. The upper end of said lever 37 is normally in contact with the key 24 and it is that fact that keeps the movable parts of the attachment in the normal position shown in Fig.

30 1, said key 24 being normally pressed toward the front of the machine by the spring 17 of the tabulator. However, an additional returning spring may be connected with one of the levers 30 or 37 of the attachment if needed or desired.

35 A pin 39 projects from the plate 25 into position to arrest the return motion of the key lever 30. The plate 25 is also formed with a finger 40 which is offset, as shown in

40 Fig. 3, so as to constitute a guide for said key lever 30 to resist any tendency of the forward end of said lever to be moved toward the right when the key is operated.

45 An attachment of this character has been found to expedite considerably the execution of work involving a frequent operation of the tabulator. For example, some railroad

50 billing work consists of sheets of paper that are rather wide in a right and left-hand direction and on said sheets many short items are written in a number of columns. In doing this work the tabulator is in constant

55 demand. With an attachment of this character on the machine the operator can write an item and with the palm or edge of his hand can depress the key 32 to operate the

60 tabulator without removing his fingers from the printing key-board. Even while holding the auxiliary tabulator key depressed the fingers of the right-hand are poised over

65 the printing keys 41 ready for activity the instant the carriage is arrested by the tabulator stop. It has been found in practice that the attachment adds considerably to the speed of this and other similar work.

A device of this same general character is shown in the application of Jacob Felbel above referred to but the present device is an improvement on that shown in said application. In that form of the Felbel invention in which a depressible auxiliary key is employed, the detachable frame extends around and back of the downward prolongation 42 of the forward post 3, and in

70 securing it to the frame it interferes with the use of the base-board clamp. It will be noted that when the screws 27 are loose the present device can be adjusted in a front and back direction, with the clamp in adjusted position, by tightening the screws. 80

This could not be accomplished by the Felbel device referred to. Moreover, the present device employs fewer moving parts and has a neater and more compact organization.

85 The key 32 is situated forward of the pivot 31 and above said pivot but it is considerably more forward of the pivot than it is above it, and said key is operated by depressing it. It seems not improper therefore to refer to the key-bearing arm of said lever as an approximately horizontal lever arm.

The key 24 has a tubular stem 43 that is threaded onto the rod 23, and a check nut 44 is tightened up against the end of said stem. The auxiliary key 32 can be timed to the motion of the tabulator key, by screwing the stem 43 in or out on the rod 23.

90 What I claim as new and desire to secure by Letters Patent, is:—

100 1. An attachment for a typewriter provided with a tabulator mechanism, said attachment comprising an angle key lever having an upright arm and an upright sub-lever connected to said upright arm and adapted to actuate said tabulator mechanism.

105 2. An attachment for a typewriting machine provided with a tabulator mechanism, said attachment comprising a bracket or support, means for securing said bracket or support to a side bar of the framework of the typewriter, an angle lever pivoted to said bracket or support and having a substantially horizontal key-bearing arm and an upright arm, and a sub-lever of the first order pivoted to said plate or bracket and connected to said upright arm of the angle lever by a pin and slot connection, the upper end of the sub-lever being adapted to actuate the tabulator.

110 3. In a typewriting machine, the combination with a tabulator mechanism having a part actuated by a finger of the operator, of a main angle lever having a substantially horizontal key-bearing arm and an upright arm, and an upright sub-lever of the first order having its lower arm coupled to the angle lever by a pin and slot connection.

4. In a typewriting machine, the combination with a tabulator mechanism having a main actuating device, of an auxiliary actuating mechanism therefor comprising a key bearing angle lever and a sub-lever coupled to the angle lever at one end and adapted at its other end to actuate said tabulator mechanism.

5. In a typewriting machine, the combination with a tabulator mechanism, of a plate or bracket detachably secured to a side bar of the base frame of the machine, a key bearing angle lever pivoted to said plate, and an upright sub-lever of the first order also pivoted to said plate and coupled to the angle lever by a pin and slot connection.

6. An attachment for a typewriter having printing keys and a tabulator with a push key, said attachment comprising in combination a support consisting of a plate curved to fit over the top of the frame bar of the typewriter and having two screws provided

with beveled washers to engage the under edge of said frame bar to clamp the plate in place, an angled key lever pivoted to said plate and having an upstanding arm and an approximately horizontal arm, the latter carrying a key with a large surface adapted to be operated by the palm of the hand, an upright lever of the first order pivoted to said plate and having at its lower end a pin-and-slot connection with the upright arm of said key lever and having its upper end adapted to operate said tabulator push key, a guide finger formed on said supporting plate, and a stop on said supporting plate for said key lever.

Signed at Syracuse, in the county of Onondaga, and State of New York, this 3rd day of October A. D. 1910.

HERBERT H. STEELE.

Witnesses:

ELLEN M. LONG,

FRANCIS B. SAMMONS.