

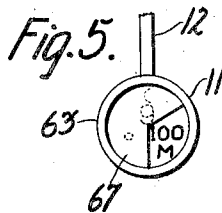
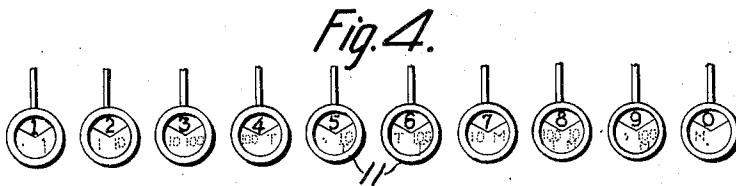
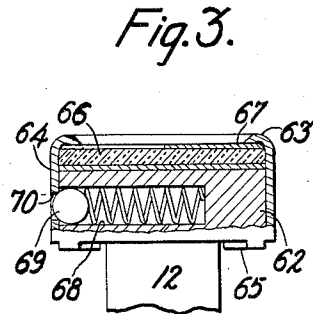
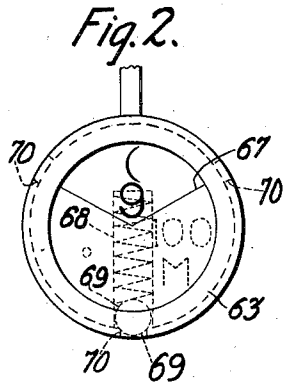
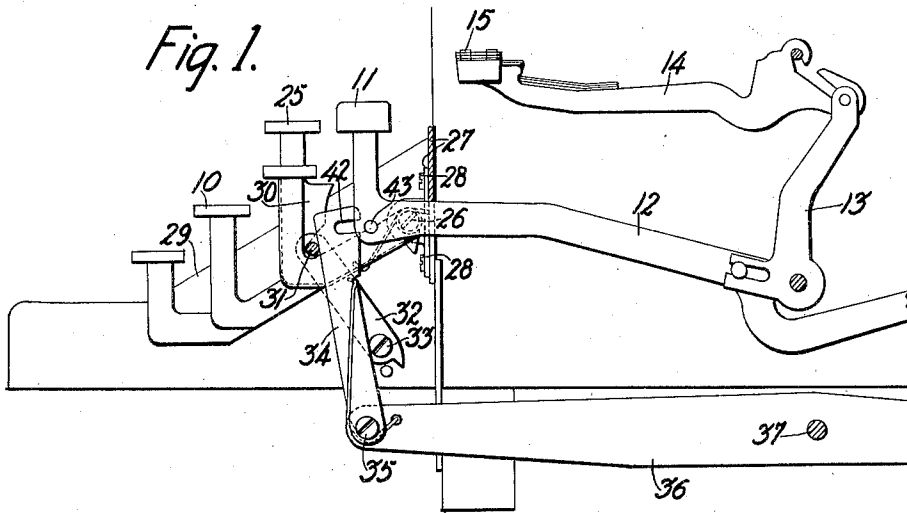
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1,557,076

C. T. MILLER, JR.

TYPEWRITING MACHINE

Original Filed Jan. 31, 1920



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UNITED STATES PATENT OFFICE.

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TYPEWRITING MACHINE.

Original application filed January 31, 1920, Serial No. 355,449. Divided and this application filed November 9, 1922. Serial No. 599,751.

To all whom it may concern:

Be it known that I, CHARLES T. MILLER, Jr., a citizen of the United States, residing in Brooklyn Borough, in the county of Kings, city and State of New York, have invented certain new and useful Improvements in Typewriting Machines, of which the following is a specification.

This invention relates to typewriting machines, and more particularly to tabulating keys for such machines. The invention is herein disclosed in connection with a decimal tabulating device which is adapted to be actuated by the numeral-keys of the typewriting machine, and is especially adapted to be incorporated in machines of the usual type, such as the Underwood machine, with the minimum amount of modification or special work. This is a division of my application No. 355,449, filed January 31, 1920, now Patent No. 1,441,237, granted January 9, 1923.

Other features and advantages will hereinafter appear.

In the accompanying drawings,

Figure 1 is a fragmentary sectional side view of an Underwood standard typewriting machine, showing the present invention as applied thereto, the parts being in normal condition for typewriting.

Figure 2 is a plan view of a numeral-key, showing the numeral legend displayed by the rotatable top, and showing the concealed tabulating legends through the top.

Figure 3 is a sectional side view of the key seen in Figure 2.

Figure 4 is a plan view of the bank of numeral-keys, showing the concealed tabulating legends on the keys.

Figure 5 is a view on a smaller scale, similar to Figure 2, but showing the key-top rotated to display one tabulating legend and conceal the numeral.

In the Underwood standard typewriting machine, alphabet-keys 10 and numeral-keys 11, when depressed, carry down key-levers 12, rocking sub-levers 13 to carry type-bars 14 upwardly and rearwardly, so that types 15 thereon print against the front side of the platen (not shown). Whenever a numeral-key 11 or alphabet-key 10 is depressed, it feeds a carriage (not shown) along the distance of one letter-space.

When it is desired to bring the carriage rapidly to a more or less distant letter-space in its travel, the tabulating mechanism may be made effective by depressing a finger-piece or connecting key 25 which is pivoted by a shouldered screw 26 on a bracket 27, held by screws 28 to the frame of the typewriter inside of a side member 29 at the end of the keyboard. When the key 25 is depressed, a cam 30 on it rides down upon a universal bar or bail 31 which is mounted in arms 32, pivoted to shouldered screws 33 each fast in one of the sides 29.

As the cam 30 descends it rocks the bar 31 rearwardly, swinging the connecting hooks 34 rearwardly, because it bears against the front sides of said hooks. Each hook 34 is pivoted by a shouldered screw 35 upon the front end of a decimal-key-lever 36 pivoted intermediate its ends at 37, and adapted to lift its one of an array of counter-stops (not shown) into the path of the usual column-stop (not shown), adjustably mounted on the carriage. To enable any hook 34 to carry down its key-lever 36 in the manner described, each hook is provided with jaws 42, which, at the depression of the connecting key 25, are adapted to extend over and embrace a stud 43 on its numeral key-lever 12, so that the depression of the numeral-key will carry down the tabulating lever 36 to make its associated stop effective; the carriage being released and arrested in the usual well-known manner.

Each numeral-key 11, above referred to, is preferably provided with a special body 62 and a top 63, so that the top may be rotated to display the numeral printed by the key, or the decimal place at which the key will arrest the carriage when operated in either of two systems of pointing off numbers. For this purpose, the bodies 62 are made fast to the key-levers 12, in any suitable manner, and the rotatable tops 63 include annular rings 64 having lugs 65 which are adapted to be turned under the bodies. The numerals and tabulating data forming the legends for the keys may be printed upon the tops of the bodies 62 and show beneath the glass 66. Above the glass, and fast to the ring 64, may be a shield or shutter 67, which covers two-thirds of the top 63 of the body, leaving a segmental opening large

enough to display the character printed by the key (as shown in Figure 2), or to display either one of the tabulating device legends (as shown in Figure 5).

5 In order to detain the shield 67 in position to display any desired legend or designation, the body 62 is provided with an opening 68 containing a spring-pressed ball detent 69, adapted to seat itself in any one of three
10 depressions 70, so disposed as to hold the shield 67 to display any desired one of the three legends.

The numeral type-bars may include the usual upper and lower-case types, and the
15 key-heads may bear corresponding upper and lower-case designations.

It will be seen by inspection of Figures 2 and 4 that each tabulator key has three
20 designations thereon, one designation corresponding with the type of the associated type-bar, and two decimal tabulator designations. The designations of each key are spaced equi-distant from each other, and the shield or shutter 67 has a one-third segmental
25 cut-out of about 120 degrees, so as to expose only one of the designations at a time, the key-cap comprising the top 63, and the shutter 67 being engaged by the detent 69 to hold the shutter 67 in any one of its positions.

30 Variations may be resorted to within the scope of the invention, and portions of the improvements may be used without others.

Having thus described my invention, I claim:

35 1. In combination, a typewriter-key having a fixed head bearing a plurality of different characters, a transparent disk, a shutter having an aperture to disclose one character

and obscure the others, a flanged shutter-rotating key-cap rotatable about the head
40 and formed of a single piece and having ears to retain the cap on the head without interfering with the rotation thereof, and detent means for the cap including perforations through the side wall of the cap and
45 co-operative with a spring-pressed detent carried by the head and timed to the separate disclosure of each character, and too large to protrude through the perforations.

2. In combination, a key having three
50 symbols printed on its face, a shield constructed to conceal two of said symbols and to reveal the third, the shield being rotatable on the key to select the symbols to be concealed, and consisting entirely of a shutter
55 upon the face of the key, and a hollow cylindrical member having an inturned upper flange secured to the shutter and inturned lower projections holding the shield rotatably on the key, the hollow cylindrical portion having spaced openings, and a detent
60 to co-operate with any one of said openings to detain the shield in its different effective rotated positions.

3. In combination, a typewriter-key having a fixed head bearing a plurality of characters, a transparent disk, a shutter having
65 an aperture to disclose one character and obscure the others, a flanged shutter-rotating key-cap rotatable about the head and formed with ears to retain the cap on the head, detent-holes through the side wall of the cap, and a spring-pressed spherical detent carried by the head to interlock with any
70 hole in the cap.

CHARLES T. MILLER, JR.