

C. WOLCOTT.  
KEYBOARD.

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1,342,244.

Patented June 1, 1920.

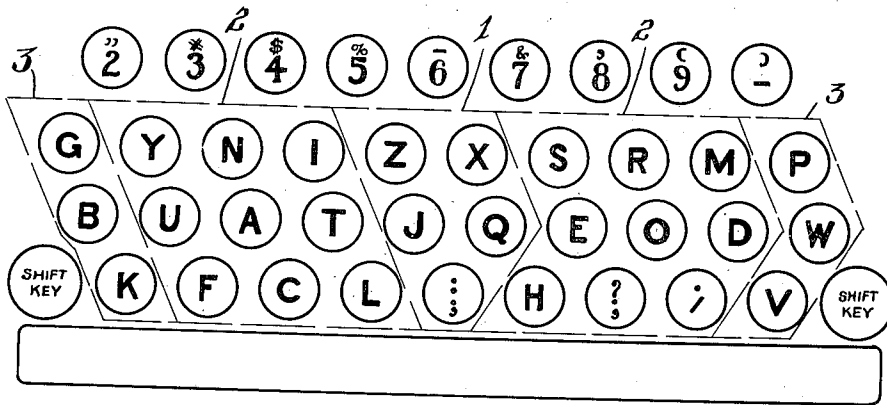


FIG. 1

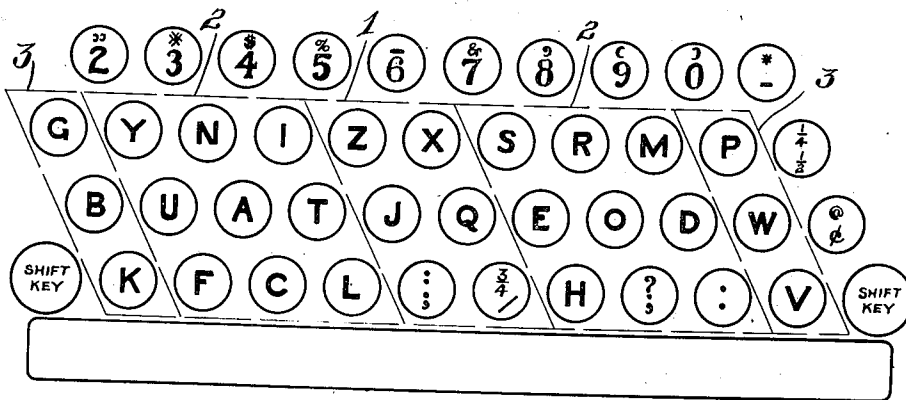


FIG. 2

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# UNITED STATES PATENT OFFICE.

CHANDLER WOLCOTT, OF ROCHESTER, NEW YORK.

## KEYBOARD.

1,342,244.

Specification of Letters Patent.

Patented June 1, 1920.

Application filed January 24, 1919. Serial No. 272,923.

*To all whom it may concern:*

Be it known that I, CHANDLER WOLCOTT, a citizen of the United States, and resident of Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Keyboards, of which the following is a specification.

The present invention relates to keyboards, and more particularly to the kind employed in typewriting machines and the like, an object of the invention being to provide such an arrangement of the characters or keys that the work of operating nearly all of the keys may be effected without any lateral shifting of the hands, thus conserving the energy of the operator.

To this and other ends, the invention consists of certain arrangements of parts which will be hereinafter described, the novel features being pointed out in the appended claims.

In the drawings:

Figures 1 and 2 show in plan two key arrangements embodying the present invention, Fig. 1 illustrating a seventy-six character keyboard and Fig. 2 illustrating an eighty-four character keyboard, but it will be understood that the invention is not limited to the specific arrangements here illustrated.

The invention comprises in its broadest aspects three features: one, the division of the most frequently used characters into two groups separated by a group of less frequently used characters: two, the arrangement of the least frequently used characters in a group at the center of the keyboard: and three, the arrangement of the letter keys so that those on each side of a median line through the keyboard represent approximately one-half of the total letter characters used.

In the illustrated forms the numeral characters and the sign characters are arranged, as in the usual keyboards, in a single line along the top of the keyboard. In Fig. 2 two keys having sign characters are arranged at one side of the letter characters as in the usual keyboard of forty-two keys now in use. By actual count, I have ascertained that the characters J, Q, Z, X will approximate 51/100 per cent. of the letters ordinarily used and can, therefore, be arranged in a group as the least frequently used characters. This group is placed at the center of

the keyboard within the dotted parallelogram indicated at 1 in both figures of the drawings.

The most frequently used characters are arranged in two groups, one group on each side of the group of least frequently used characters. In the drawings these groups are confined within the dotted parallelograms indicated at 2. By actual count it has been found that the characters Y, N, I, U, A, T, F, C, L, S, R, M, E, O, D, and H represent approximately 90.66 per cent. of the total characters ordinarily used, and may therefore be called the most frequently used characters.

Two other groups are arranged, one on each side of the three groups heretofore described. These groups contain characters which, while not the least frequently used, are used less frequently than the most frequently used. I have found by actual count, that the characters G, B, K, P, W and V shown in the dotted parallelograms indicated at 3 represent approximately 8.83 per cent. of the total characters ordinarily used, so that the four groups indicated at 2 and 3 represent approximately 99.49 per cent. of the total letters used.

In order to make an approximately even division of the labor between the right and left hand, it is preferred to arrange the characters in the different groups in the manner shown in the drawings. With this arrangement those which will be operated by the left hand represent approximately 49.48 per cent. of the total keys operated, while those to be operated by the right hand represent approximately 50.52 per cent. of the total keys operated. The keys in the most frequently used groups are so arranged that most of the work or labor is performed by the first and second fingers which are naturally stronger and better adapted for such work than are the other two fingers, thus insuring maximum ease, accuracy and speed by the operator.

From the foregoing it will be seen that practically all of the writing will be accomplished upon the eight lines of keys shown in the four dotted parallelograms indicated at 2 and 3 where the characters or keys will be in position to be touched or struck by either or both hands and without movement of the hands other than that of the fingers in depressing the keys. This arrangement will facilitate the learning of the touch sys-

tem, as now generally taught in schools, this being due to the fact that lateral movement of the hands is required only to operate the least frequently used keys. This  
 5 gives an opportunity for the little fingers, upon each return of the hand to normal position by resting on or over the keys situated at the outer side of the keyboard, to adjust or re-locate with ease and certainty the four  
 10 fingers of the hands to positions originally occupied by them.

What I claim as my invention and desire to secure by Letters Patent is:—

1. A keyboard having a group of the least  
 15 frequently used letter keys at the center thereof, and letter keys of greater frequency of use arranged in two groups on opposite sides of the center group, there being in neither of the last two groups letter keys of  
 20 less frequency of use than those in the center group.

2. A keyboard having five groups of letter keys; namely, a center group, two outside  
 25 groups and two intermediate groups between the outside groups and the center group, the first or center group including only those keys whose frequency of use is less than any keys in the other four groups, the outside groups including only those keys  
 30 whose frequency of use is more than the keys of the center group and less than the keys of the intermediate groups, and the intermediate groups including only those keys whose frequency of use is more than the  
 35 keys of the outside groups.

3. A keyboard having its keys so arranged that a median line through the keyboard from the rear series of letter characters to the front series of letter characters will divide the keys into two groups in which the  
 40 total frequency of use of the keys on one side of the line will substantially equal the total frequency of use of the keys on the other side of the line so that the work on both  
 45 hands will be substantially equal.

4. A keyboard having its keys so arranged

that a median line through the keyboard from the rear series of letter characters to the front series of letter characters will divide the keys into two groups in which the  
 50 total frequency of use of the keys on one side of the line will substantially equal the total frequency of use of the keys on the other side of the line so that the work on both hands will be substantially equal, the  
 55 keys also being so arranged that those adjacent the median line have the least frequency of use, those at the sides of the keyboard a greater frequency of use, and those between the outside groups and the center  
 60 group a still greater frequency of use so that each hand utilizes its strongest fingers for operating on the keys of the greatest frequency and its weaker fingers for operating on the keys of the next greatest frequency,  
 65 and the hands are required to be shifted toward the center only to operate on the keys of the least frequency.

5. A keyboard in which the characters, Y, N, I, S, R, M, U, A, T, E, O, D, F, C, L and  
 70 H are arranged in two groups separated by a group of keys less frequently used than any of the mentioned characters in such two groups.

6. A keyboard in which the characters Z,  
 75 X, J, Q are arranged in a group at the center of the keyboard.

7. A keyboard in which the characters Z, X, J, Q are grouped at the center of the keyboard and the characters Y, N, I, S, R, M,  
 80 U, A, T, E, O, D, F, C, L, H are arranged in two groups, one on each side of the first named group of characters.

8. A keyboard in which the characters Y, N, I, S, R, M, U, A, T, E, O, D, F, C, L, H  
 85 are arranged in two separated groups; the characters Z, X, J, Q are arranged in a group between the adjacent two separated groups; and the characters G, B, K, P, W, V are arranged in two groups separated by  
 90 the before mentioned three groups.

CHANDLER WOLCOTT.