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(54) **ORTHOGRAPHIC KEYBOARD** (57) **Abstract:**  
(54) **CLAVIER ORTHOGRAPHIQUE**

*This First Page has been artificially created and is not part of the CIPO Official Publication*

✓ William A. Gilbert.

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TO ALL WHOM IT MAY CONCERN:-

Be it known that I, William Allen Gilbert, a citizen of the United States of America, residing at Spokane, in the County of Spokane, and State of Washington, United States of America, Gentleman, having invented certain new and useful improvements in

ORTHOGRAPHIC KEYBOARD

does hereby declare that the following is a full, clear, and exact description of the same:-

My present invention relates to an improved ORTHOGRAPHIC KEYBOARD of the English language especially designed for use in connection with typewriting machines. The key board of my invention involves the use of the same board of keys as now in use for the standard keyboard and the keys are arranged in four rows with the lower space bar and the shifting keys for the upper and lower case as in the standard keyboard.

In the accompanying drawings, I have illustrated one complete example of the physical embodiment of my invention showing the combinations and arrangements of the keys as hereinafter set forth and claimed.

Figure 1 is a plan view of my keyboard showing four rows of keys with the usual shift keys, back spacing key and space bar; and

Figure 2 is a plan view of a key board showing the letters and symbols arranged both according to the standard keyboard and according to my invention.

After careful study, investigation and experiment, I have arranged the letters of the alphabet and symbols on the keyboard in established relations according to the physical structure of the two hands, with a progressive increase in frequency of use in symbols, from the sides toward the center of the keyboard corresponding to the ratio of the increase in strength of the fingers from the little fingers to the middle fingers of the hands.

As the nucleus of the English language is its vowels, the five vowels of the alphabet, A, E, I, O, and U, are placed in the middle row of the keyboard. By the term "middle row" I refer to the middle row of letters, the top row of the keyboard being employed for numerals and symbols. The vowels are thus placed in a central position with the letters E A at the left side of the keyboard, and the vowels U O and I at the right side of the keyboard, and in the same middle line.

The letter E is used as a guide or axis key for the left hand and the letter O is used as a guide or axis key for positioning the middle or second finger of the right hand. Thus the letter E for instance the most frequently used letter of the alphabet, is placed in the middle row of the keyboard under the second finger of the left hand of the typist, to give the consonants which surround it the benefit of the proximity of the vowels on the bottom and top rows of the keyboard, in the formation of words, and the letter O, also of high frequency in use, is similarly located at the right side of the keyboard.

Thus the vowel E forms the center of a permutation and is surrounded by a series or group of consonant letters S, T, F, B, M, V, R, with which it has intermittent relations in the English language and in the formation of words. The consonants Q, W, and X, as well as J, are also in close proximity to the letter E. The vowel A in its location next to the letter E is also used as the center of a permutation, and it will be apparent that the diphthong EA is the center of a permutation of consonants at the left side of the keyboard.

At the right side of the keyboard, a permutation is formed with the vowels U, O and I as a center and of course additional permutations are formed with each of the three individual vowels as a center. For instance, a permutation is formed about the three vowels by the use of the consonants C, L, Y, K, N, G, H. And the same consonants may be used with the respective vowels U, O, I as centers of permutations. The middle finger of the typist naturally assumes a position over the letter O which is the center of the three vowels as well as the center of the permutations formed about the vowels and these permutations at both the left and right hand sides of the keyboard insure a minimum movement of the respective hands and fingers with a maximum of speed in the formation of words fashioned from the letters of the permutations. As heretofore noted, the vowels are arranged to form diphthongs and these are in position of high frequency in use and arranged in position for use by the fingers best adapted for the purpose.

To insure increased accuracy, efficiency, and speed of the typist, I contemplate the use of the two little fingers as pivots in conjunction with the keyboard, which pivots or guide keys comprise two consonants of low frequency in use, as J at the left end of the middle row of letters and K at the right end of the middle row of letters of the keyboard, and both located in the same row of the keyboard. The little finger of the left hand naturally assumes a position over the letter J and the little finger of the right hand naturally assumes a position over the letter K, and then the remaining fingers of the hands assume natural positions over the keys of the middle row, preferably with the second finger of the

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left hand over E and the second finger of the right hand over O. Thus the little fingers may be used as guides or pivots for the other three fingers of the respective hands as the typist strikes the keys between the left and right sides of the keyboard in the formation of words.

The positions of the consonants at the sides of the keyboard are also determined by the relative frequency of their use, the letters of high frequency-use being located at the central portion of the keyboard. Thus the upper row of letters of the keyboard, from the left end reads Q, W, S, T, P, C, L, Y. The middle row of the keyboard reads from left to right as J, R, E, A, B, H, U, O, I, K. The lower row of letters of the keyboard reads X, V, D, M, Z, G, N.

The consonants at the sides of the central portion of the keyboard are positioned in the order of relative frequency of use diminishing from high frequency at the central portion of the keyboard to low frequency of use at the upper sides of the keyboard. The consonants are located in such manner as to form permutations, as for instance, the letter R is one of the few consonants which like L and S, form combinations with other letters than vowels. As placed in the new keyboard, the letter R may be combined with letters W, S, T, E and V D, of the top, middle and bottom rows, as a permutation, and this letter also combines with the more remote letters of high frequency as F, A, B, and M. The permutation of which II is the center provides for conveniently forming the six combinations as consonant relations, as WH, SH, TH, PH, OH and GH.

Thus there are certain iteratives, or constant relations among the letters of the alphabet which can be presented upon

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the typewriter in conjunction, that is by arranging permutations, or predetermined combinations, groups, or spaced relations of letters about another letter or group of letters. In addition to the permutations above set forth, there are others on the keyboard that may be readily ascertained by study, but the arrangement of the letters is such that the keys fall naturally in position with relation to the fingers of the hands so that the letters of high frequency in use are in predetermined relation to the fingers best adapted for operating the key.

The numerals and symbols are also arranged in predetermined relations, the top row of the keyboard reading from left to right having the numerals 2, 3, 4, 5, 6, 7, 8, 9 and  $\frac{1}{2}$ , and the small 1 and capital O being used for one and naught, respectively. The symbols are also used on the keys with the numerals and reading from left to right they comprise ", #, ', %, \_, -, &, \$, (, ), \*. At the right end of the upper line of letters, a key is used bearing the symbols /? and the upper key bears the symbols ! $\frac{1}{2}$ . At the end of the middle row of letters, the last key bears the following symbols @/. The bottom row of letters at its right end has keys bearing ; : ;.

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Having thus fully described my invention, what I claim as new and desire to secure by Letters Patent is-

1. A keyboard comprising a central row with the five vowels located in said row in positions corresponding to the fingers of the hands having the highest frequency in use.
2. A keyboard comprising a central row with the vowels E A at one side of the center, the vowels O I at the other side of the center of the keyboard, and said groups of vowels corresponding in position to the fingers of the hands having the highest frequency in use.
3. In a keyboard a permutation comprising a letter or diphthong surrounded by letters having intimate relations therewith.
4. In a keyboard a permutation comprising a vowel surrounded by consonants.
5. In a keyboard a permutation comprising a vowel as E surrounded by a group of letters as S T F B M D V R.
6. In a keyboard a permutation comprising an outer letter of low frequency in use adapted for use as a pivot, and an inner group of letters of higher frequency in use.
7. In a keyboard a middle row of letters having at its respective ends a letter of low frequency in use and letters of high frequency in use located between these pivot letters.

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FIG. 1

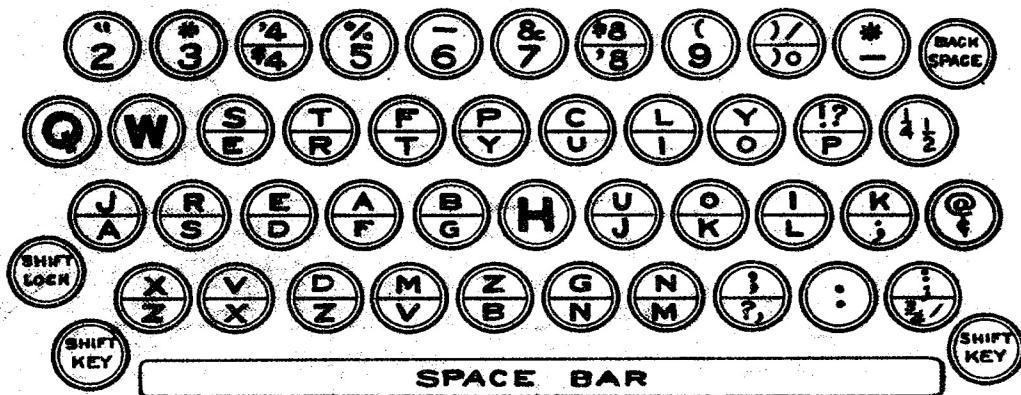
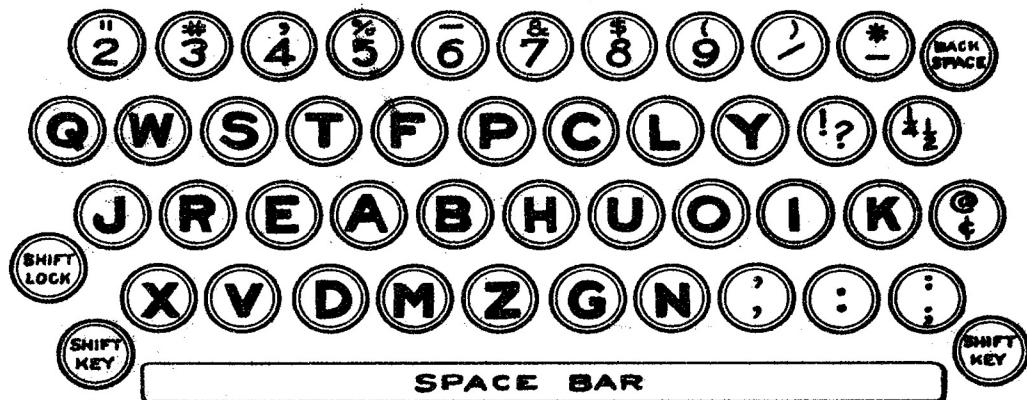


FIG. 2

WILLIAM ALLEN GILBERT

Certified to be the drawing referred to  
in the specification hereunto annexed.

INVENTOR

Spokane, Washington, May 3rd, 1928.

*Herbert E. Smith*

ATTORNEY