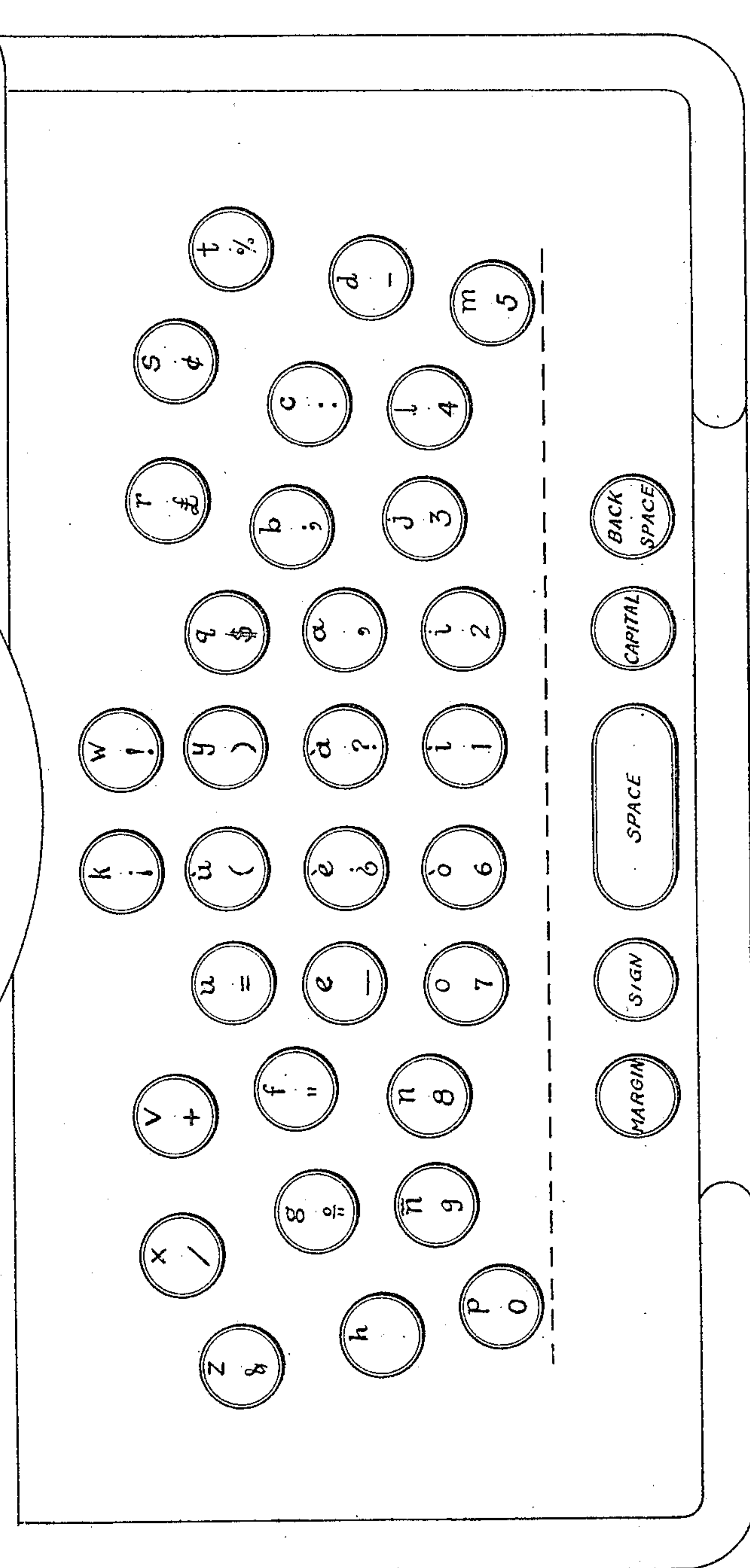


964,340.

Patented July 12, 1910.



WITNESSES

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MATIAS TREJOS, OF SAN JOSÉ, COSTA RICA.

TYPE-WRITER KEYBOARD.

964,340.

Specification of Letters Patent. Patented July 12, 1910.

Application filed November 27, 1909. Serial No. 530,085.

To all whom it may concern:

Be it known that I, MATIAS TREJOS, a citizen of the Republic of Costa Rica, and a resident of San José, Costa Rica, Central America, have invented a new and Improved Type-Writer Keyboard, of which the following is a full, clear, and exact description.

Among the principal objects which the present invention has in view are: to provide an arrangement of the keys for operating a typewriter conforming to the natural arrangement of the thumbs and fingers of the operator when resting in an extended position; to provide an arrangement of extra or special keys disposed between the double banks of the usual keys; and to provide spacing and shift keys disposed with reference to convenience for operation by the thumbs of the operator.

In the drawing is illustrated the arrangement of keys conforming to this invention.

In illustrating the invention I have used the characters of the alphabet as they occur in the Spanish language. Any characters may be adopted, preserving the key features of the arrangement, which may be stated as follows:

The alphabetical arrangement is preserved in its successive order, beginning with the letter *a* on the one side of the center, and placing the succeeding letters *b*, *c* and *d* on the same line and on the same side of the keyboard. These four letters will thus naturally fall beneath the four fingers of the right hand when any one of the letters in the line is being used. In the same line, on the opposite side of the center of the keyboard, are arranged in serial order the letters *e*, *f*, *g* and *h*. On the line immediately below are disposed, on the right, the letters *i*, *j*, *l* and *m*, and on the left the letters *o*, *n*, *ñ* and *p*. On the upper line, on the right, are disposed the letters *q*, *r*, *s* and *t*, and on the left are disposed the letters *u*, *v*, *x*, and *z*.

In the natural disposition of the hands of the operator upon the keyboard, it is intended that the thumbs should rest upon the auxiliary control keys marked on the right of the center "Capital" and on the left of the center "Sign". The supporting springs for the auxiliary control keys are preferably strengthened to form of the said keys rests for the hand whereby the same may be supported to some extent by the said keys. With the thumbs resting on the keys marked

"Capital" and "Sign" it will be seen that the four fingers of each hand rest naturally on one of the three lines of keys marked with the alphabetical characters, numerals and writing signs. Also, it will be seen that the arrangement of the key board is rapidly and readily understood, as the alphabetical arrangement is outward serially from the center. Further, by reason of the disposition, the vowels are all arranged in the two lines of the three banks adjacent to the center division.

The disposition of the numerals is also arranged with reference to serial order. For convenience, however, the numeral one and the numeral six are placed side by side within the center space above referred to as separating the banks of keys. By means of this arrangement, when the said center space is arranged, as shown, for two lines of keys, there are provided five keys to each side, constituting equal division of fives of the numerals employed.

The arrangement of the signs of punctuation marks, and other characters used in writing is more or less arbitrary.

In the center space are provided certain extra keys, provided for extra letters, accented letters or characters not frequently employed, but desirable for actual use.

On a line with the auxiliary control keys mentioned, there are provided a margin release key marked "Margin" and a back space key marked "Back space". These keys are employed in the typewriting machines of usual construction, and operate in the manner well known. In operating these keys, when using a key board designed as above stated, they are depressed by one or the other of the thumbs, according as the key to the right or left of the "space" key be used.

With a key board thus constructed, the operation is as follows: In starting a sentence, and desiring a capital letter, the thumb of the right hand is depressed upon the shift key marked "Capital". While thus depressed the letter desired is struck by the finger resting above the same on either the right or left of the key board. Immediately after having struck the capital, the shift key is permitted to resume its normal position, while the thumb rests more lightly upon the said shift key. The sentence is written, the fingers of the right and left hands being operated to select the proper

letters. Between each word the thumb of either the right or left hand is shifted to the key marked "Space", which is at the proper time depressed with the customary result of shifting the platen of the writing machine. If, during the course of writing, a letter is mis-struck, by placing the thumb of the right hand over the "back space" key and depressing the same, the carriage is shifted backward to present the space which has been formerly impressed with the wrong character. In this position the proper character may be heavily struck over the former character, thereby correcting the copy. If, at the end of the line, the margin lock interferes with the continuation of the spelling of a word, this may be removed by depressing the key marked "Margin", which operates to release the lock and permit the carriage to pass beyond.

With a machine operating on a key-board such as shown in the accompanying drawings, the auxiliary control keys marked "Sign" and "Capital" provide for two different shifts, one of which presents the capital letters corresponding to the letters shown on any of the keys, while the other shift presents in printing position the printing characters arranged to imprint the punctuation marks and other writing characters carried by the said keys.

Throughout the operation it will be observed that the keys at the lower edge of the key board are operated by the thumbs of the hands of the operator, and that the said thumbs may be shifted from one to the other of the keys with very little movement, not sufficient to disturb the arrangement of the fingers on the lines of keys of the key board.

The double row of keys centrally arranged, as illustrated in the drawing, may, if desired, be increased to three or more rows. These rows are devoted to the unusual characters, and they are generally depressed by the index fingers of the operator, thereby permitting the said arrangement of the fingers to remain unchanged.

Throughout the arrangement of the keys according to this invention, it will be noticed that the shift of the fingers from one or the other of the three lines of letters carries the shift of the four fingers of one hand, thus arranging for only three positions for each hand of the operator. All requirements for the depressing of keys outside of these arranged positions for the fingers are accomplished by means of the thumbs of the operator. It is by thus reducing the number of positions of the hands that the memorizing of the key board is facilitated.

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

1. A typewriter keyboard, comprising a plurality of superimposed lines of keys disposed in line groups of four upon opposite sides of the median line of the keyboard; two shift keys, one of which is disposed on each side of the said median line in position convenient to the thumbs of the operator; and a space key disposed between said shift keys.

2. A typewriter keyboard, comprising a plurality of three superimposed lines of keys disposed in line groups of four upon opposite sides of the median line of the keyboard; and a plurality of auxiliary control keys extended in opposite directions on each side of the said median line and in convenient arrangement to the thumbs of the operator.

3. A typewriter keyboard, comprising a plurality of superimposed lines of keys disposed in line groups of four upon opposite sides of the median line of the keyboard; a plurality of auxiliary control keys extended in opposite directions on each side of the said median line and in convenient arrangement to the thumbs of the operator; and a space key disposed on the said median line to divide the said shift keys.

4. A typewriter keyboard, comprising two groups of keys embodying a plurality of superimposed lines of keys disposed in line groups of four upon opposite sides of the median line of the keyboard; a group of keys disposed between the two first mentioned groups in vertical arrangement at the said median line to carry infrequently used printing characters; a plurality of auxiliary control keys extended in opposite directions on each side of the said median line and in convenient arrangement to the thumbs of the operator; and a space key disposed on the said median line to divide the said shift keys.

5. A typewriter keyboard, comprising two groups of twelve keys arranged in superimposed lines of four keys each upon opposite sides of the median line of the keyboard; a third group of keys disposed between the first two groups and in juxtaposition thereto, adapted to carry printing characters infrequently used; a plurality of auxiliary control keys extended in opposite directions on each side of the said median line and in convenient arrangement to the thumbs of the operator; and a space key disposed on the said median line to divide the said shift keys.

In testimony whereof I have signed my name to this specification in the presence of subscribing witnesses.

MATIAS TREJOS.

Witnesses:

SAMUEL T. LEE,
EMAND E. JIMINEZ,
FGO. BATILER GUNOZ.