

No. 695,251.

Patented Mar. 11, 1902.

J. B. VIDAL.
TYPE WRITER.

(Application filed Apr. 18, 1901.)

(No Model.)

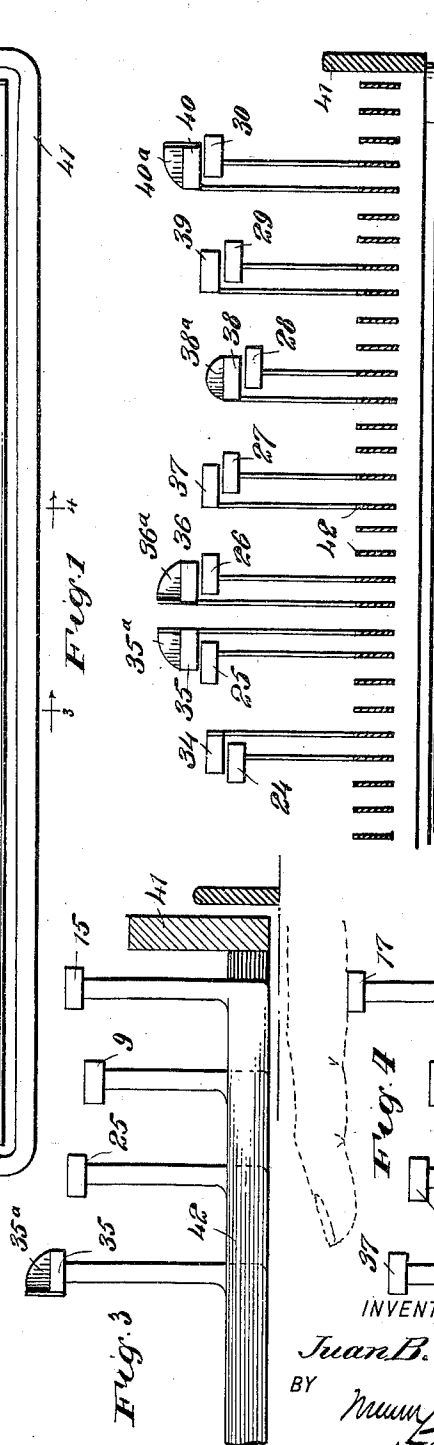
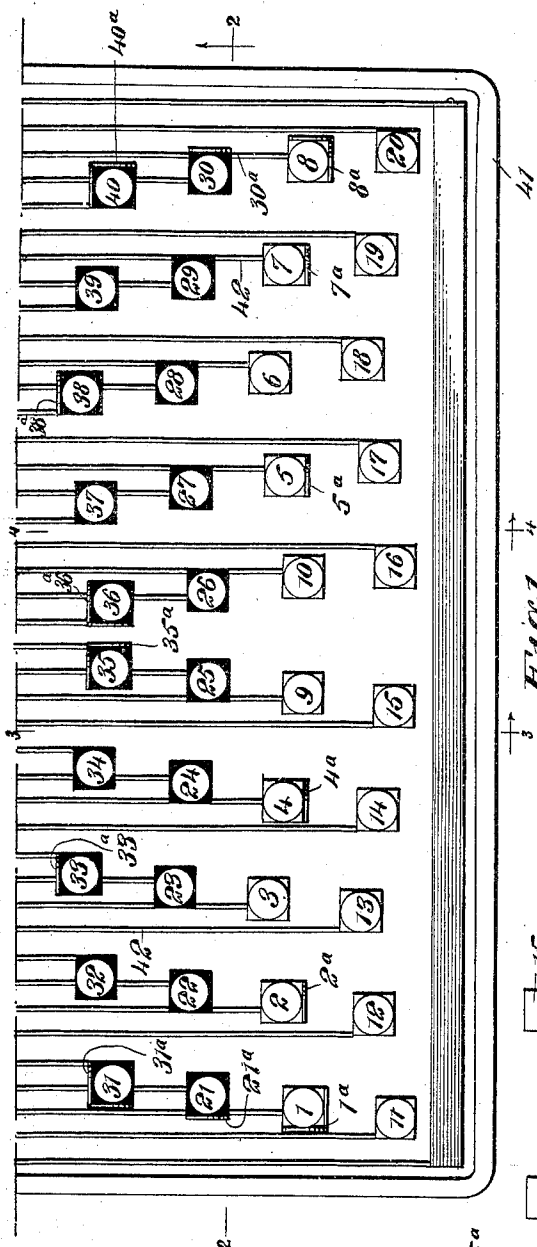


Fig. 2

WITNESSES:

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JUAN B. VIDAL, OF HAVANA, CUBA.

TYPE-WRITER.

SPECIFICATION forming part of Letters Patent No. 695,251, dated March 11, 1902.

Application filed April 18, 1901. Serial No. 56,444. (No model.)

To all whom it may concern:

Be it known that I, JUAN B. VIDAL, a citizen of Cuba, and a resident of Havana, Cuba, have invented new and useful Improvements in Type-Writers, of which the following is a full, clear, and exact description.

My invention relates to type-writers, and has for its object to improve the keyboard of such machines, so as to facilitate rapid writing.

To this end my invention consists of the particular arrangement and construction of parts hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a plan of the keyboard. Figs. 2, 3, 4 are sectional elevations thereof on the correspondingly-numbered lines of Fig. 1.

The keys are arranged substantially in rows, four rows being shown in the drawings, and the keys also form columns, and in each column the keys are located so as to decrease in height or level from the rearmost key to the one next to the front; but the front key is higher than the adjacent key of the same column.

The front row of keys is adapted to be operated by the first or second phalanges of the thumbs or fingers, while the other keys are adapted to be operated by the finger-tips, as usual. The keys indicated by the numerals 1 2 3 4 5 6 7 8 are adapted to be operated by the corresponding fingers of the left and right hands, respectively. The keys 11, 12, 13, 14, 17, 18, 19, and 20 are adapted to be operated by the first or second phalanges of the fingers, as shown for the keys 17 in Fig. 4.

The keys of the same column are adapted to be operated by the same finger or thumb. Thus the keys 15, 9, 25, and 35 are all adapted to be operated by the thumb of the left hand. Sundry of the keys are provided with projections extending upwardly and adapted to form guides for the fingers in locating the keys, and such guides are located upon one side only of the key or sometimes on two sides thereof. Thus the keys 1 31 have L-shaped projections 1^a and 31^a on two sides, while the keys 21 33 have projections 21^a and 33^a on one side only. Projections of a similar character are

also formed on the keys 2, 4, 5, 7, 8, 30, 35, 36, 38, and 40. The arrangement of each five keys of the same row, which are adapted for operation by the same hand, will be understood best by reference to Fig. 2. The outermost keys of the row 36 and 40 are the highest, the central key 38 is the lowest, and the other keys 37 and 39 are located at an intermediate height. The same arrangement is observed for the five keys 26 27 28 29 30, also shown in Fig. 2.

The keys 2, 4, 5, and 7 are provided with the respective guides or projections 2^a, 4^a, 5^a, and 7^a, these guides being upon the side next to the operator only. Keys 1 8 35 36 are provided with L-shaped guides 1^a 8^a 35^a 36^a, oppositely disposed, as shown. The key 38 is provided with a guide 38^a, the shape and position of which correspond with those of guide 33^a upon key 33. Similarly the L-shaped guide 40^a on key 40 matches the guide 31^a on key 31. Keys 21 and 30 are provided with oppositely-disposed guides 21^a and 30^a, while keys 10, 16, 23, 24, and 34 are not provided with guides.

It will be observed that the arrangement of the keys and guides is quite symmetrical and true to the nature of the human hands. The two halves of the keyboard are alike, except that one is right-handed and the other is left-handed.

For the particular fingers that are most sensitive because used to a greater extent the keys matching them have no guides, while for the fingers that are not much used, and therefore clumsy to manipulate, the keys are provided on one or more sides with the guides. Where guides are employed, they are disposed where most needed.

In the extreme left-hand column, for instance, the key 11 being close to the operator and very conspicuous needs no guide. Key No. 1 being hidden to some extent by key No. 11 and being down where the operator has to grope for it is supplied with an L-shaped guide, by which it can be located by sweeping the finger in either of two directions. Key 21 being a little more prominent has a guide only at its outer edge, while key 31 being in a remote corner, comparatively inaccessible, has an L-shaped guide upon two sides. The next col-

umn, comprising keys 12 2 22 32, is more favorably situated and is actuated by a finger more easily controlled—to wit, the so-called “ring-finger.” For this entire column only two guides are necessary, and those are upon the key 2, which is below key 12 and partially hidden thereby, and key 32 at the extreme back part of the board. The third column of keys from the left being for the middle finger needs only one guide, as shown. It will be seen, therefore, that while the number, shape, and location of these guides is to some extent dependent upon individual needs and tastes, yet their purpose is beneficial, and that they should usually be arranged according to the general plan shown.

The reason for making the keys immediately adjacent to the operator higher than the others is shown in Fig. 4. When the operator is depressing key 17, as shown, and desires to release that key and depress key 5, he merely bends his finger naturally until it rests upon key 5, the natural bend of this finger just about compensating the greater height of key 17 over key 5. The same principle holds as between key 17 and 27, a partial bend of the finger serving to shift the pressure from key 27 to key 17, and vice versa.

The central fingers of each hand being longer than the other fingers owing to the general oval shape of the hand, each side of the key-surface is slightly concaved, so that the long fingers will strike the keys with the same ease and facility as the shorter ones—that is to say, the outer keys for each hand are slightly higher than the middle keys, so that the little finger, thumb, and other short digits can reach the keys with as little effort as the longer fingers.

The keys are all mounted upon a keyboard 41 and are each provided with an ordinary key-lever 42, my invention having no reference to the particular mounting of the keys

and the means for effecting the impression by their movement.

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

1. A keyboard for type-writers and other machines divided into two halves, each adapted for operation by one hand and having the keys arranged in rows and columns, the keys of one row in the same section or half of the keyboard being located at increasingly-higher levels from the center outward.

2. A keyboard for type-writers and other machines, provided with a series of depressible keys arranged to be operated by the fingertips, and another series of depressible keys arranged in front of the first-named series and projecting upwardly above the same in such proximity thereto as to be adapted to be operated by the first or second phalanges of the fingers.

3. A keyboard for type-writers and other machines, comprising a base, and a number of movable keys of differential accessibility, the less accessible keys each being provided with guides upon one of its sides or upon more than one of its sides according to the degree of difficulty in locating said keys by touch.

4. A keyboard for type-writers or other machines, comprising a base, and a plurality of movable keys provided with guides for locating said keys by touch, sundry of said guides being disposed upon the rears, others upon the sides and others upon the fronts of said keys, according to the relative position of said keys.

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

JUAN B. VIDAL.

Witnesses:

JOHN LOTKA,

EVERARD BOLTON MARSHALL.