

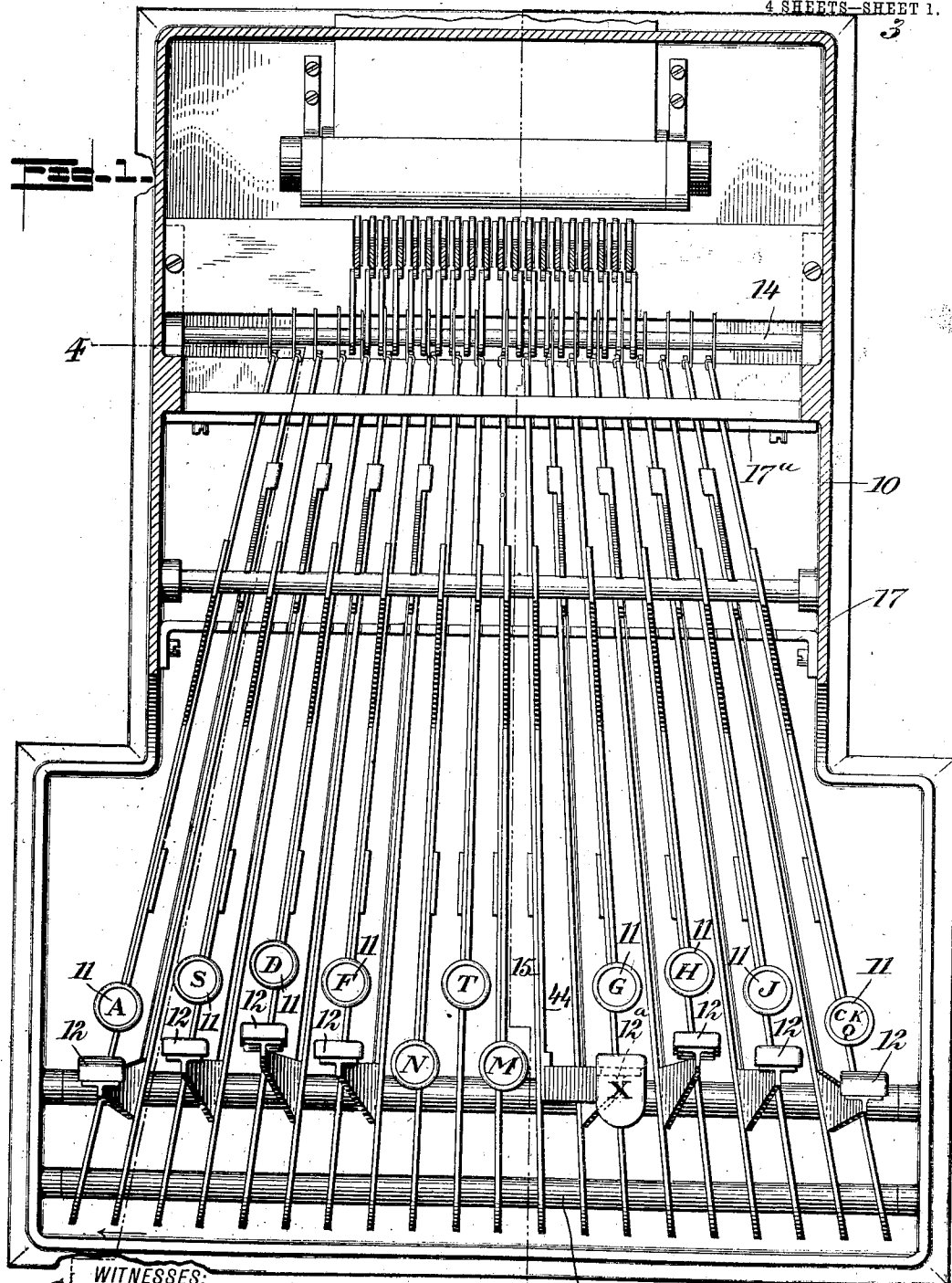
No. 827,584.

PATENTED JULY 31, 1906.

J. B. VIDAL.
WRITING MACHINE.

APPLICATION FILED JULY 30, 1904.

4 SHEETS—SHEET 1.



WITNESSES:
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A. E. Fay.

INVENTOR
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ATTORNEYS

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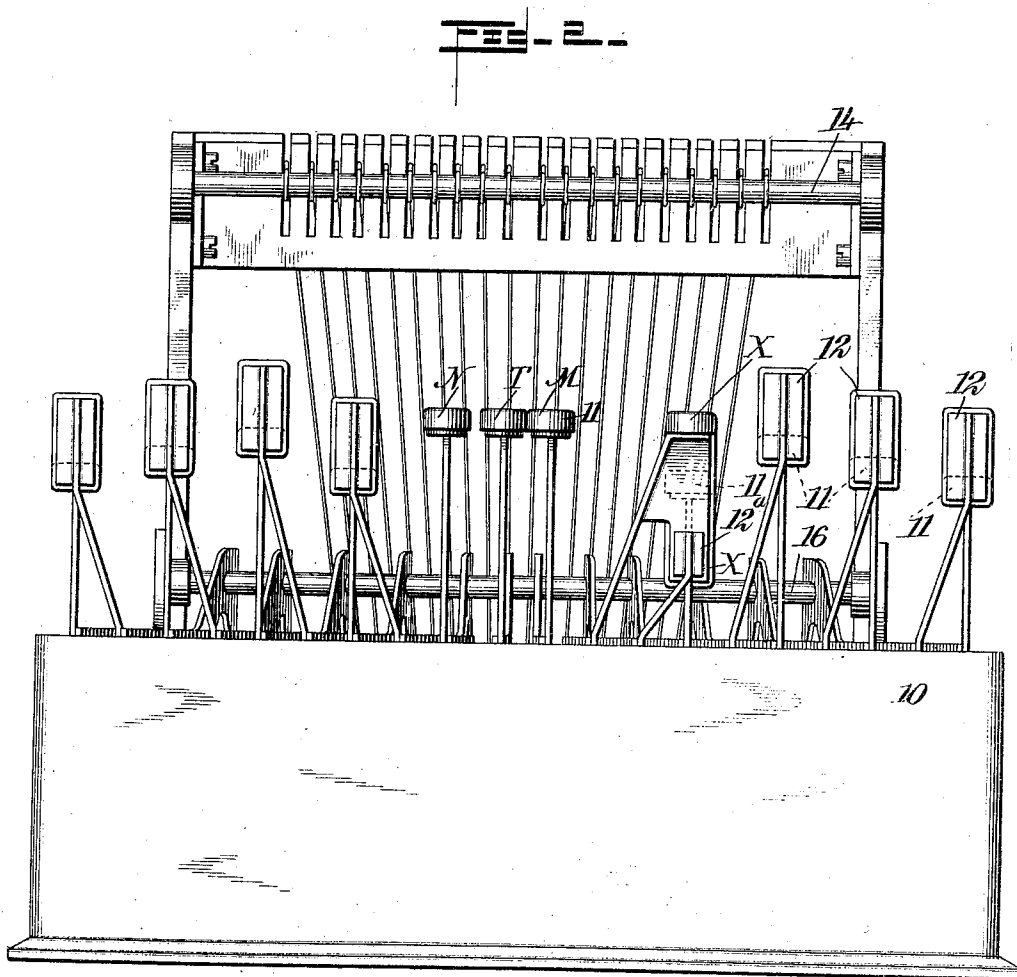
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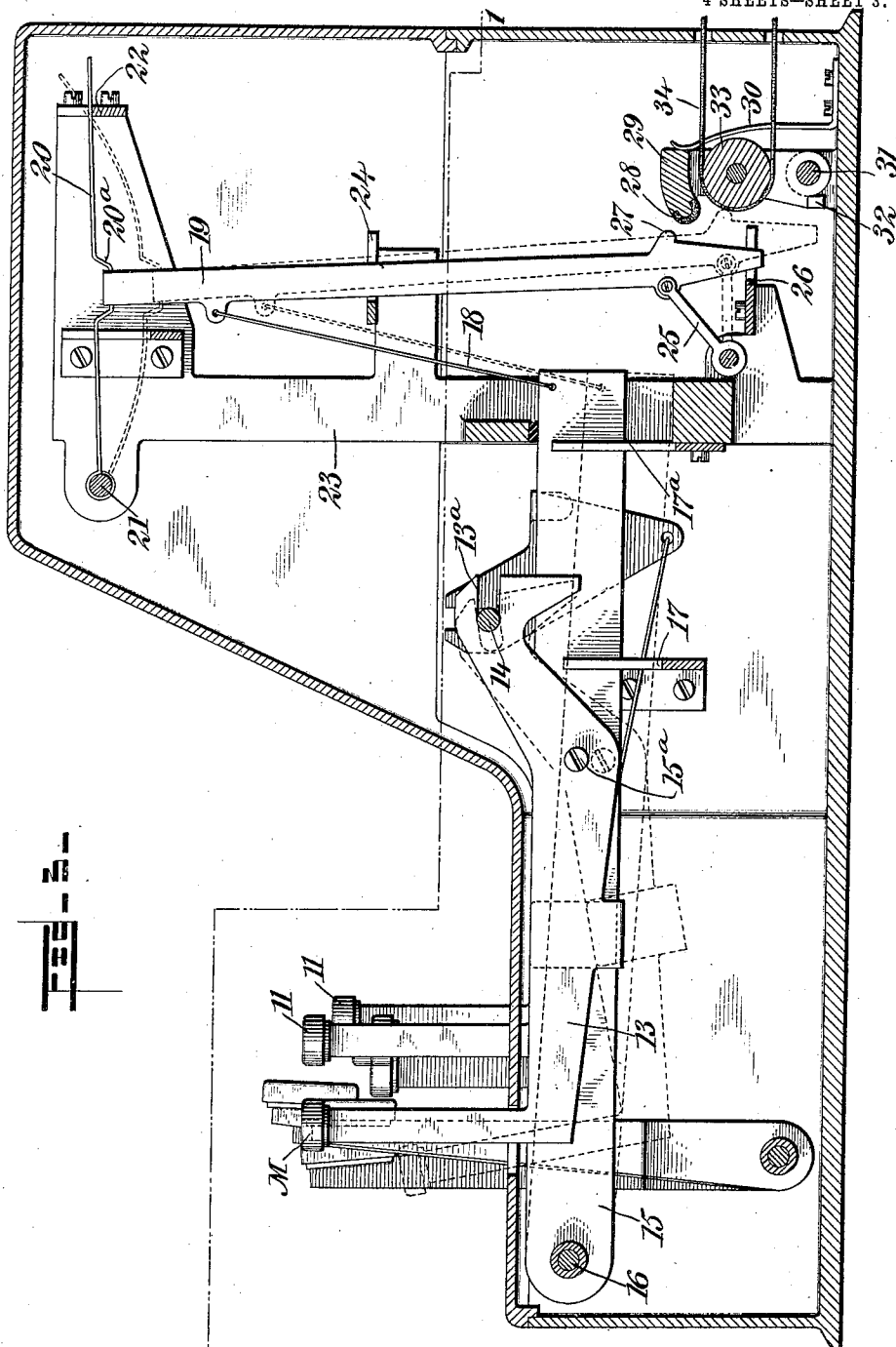
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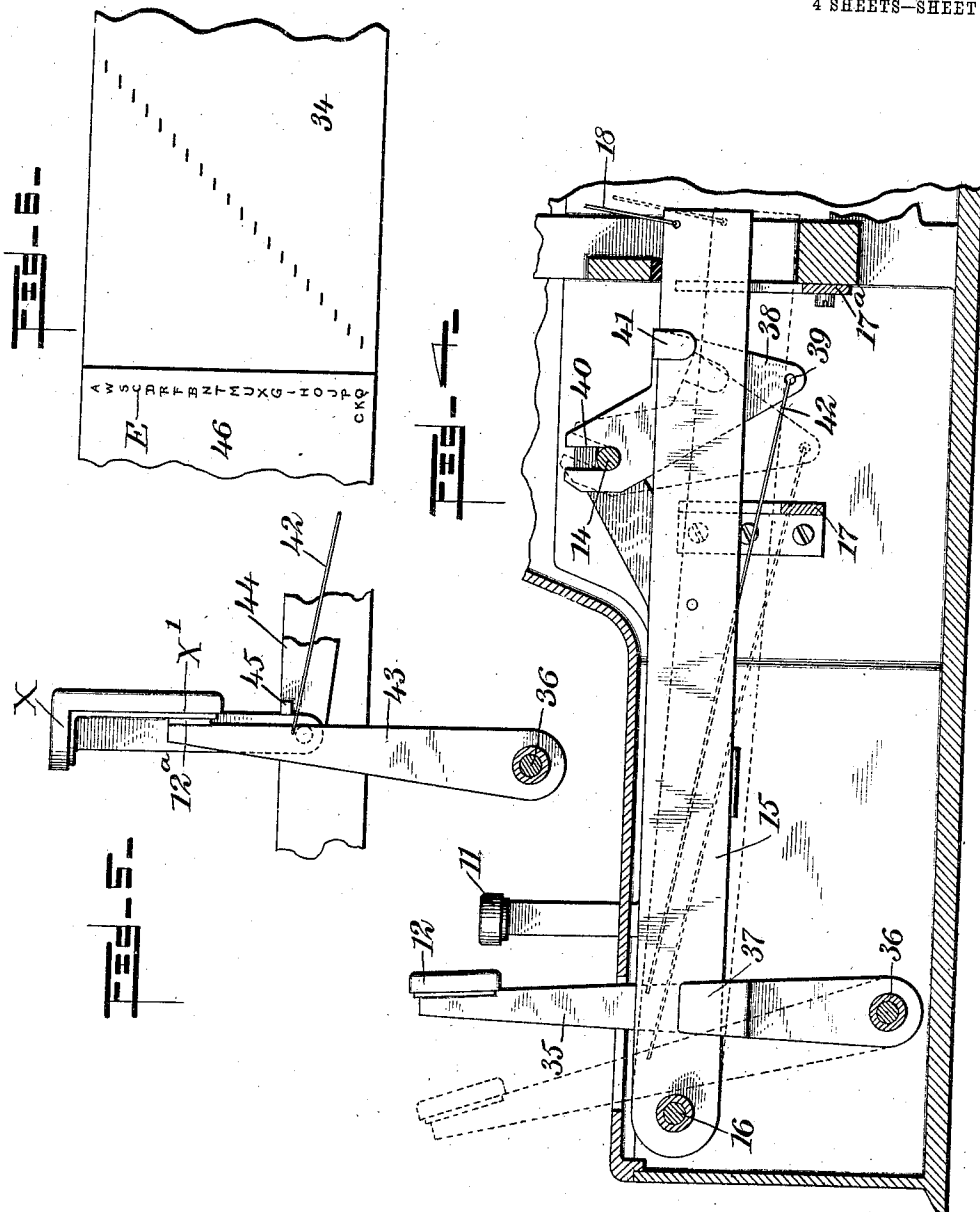
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4 SHEETS—SHEET 4.



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JUAN B. VIDAL, OF HAVANA, CUBA.

WRITING-MACHINE.

No. 827,584.

Specification of Letters Patent.

Patented July 31, 1906.

Application filed July 30, 1904. Serial No. 218,836.

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 a new and Improved Writing-Machine, of which the following is a full, clear, and exact description.

My invention relates to a writing-machine; and the object is to construct a writing-machine which will be capable of attaining a speed equal to that of an expert stenographer.

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 figures.

Figure 1 is a horizontal sectional view on the line 1 1 in Fig. 3, showing one embodiment of the invention. Fig. 2 is a front elevation. Figs. 3 and 4 are vertical sectional views on the lines 3 3 and 4 4, respectively, in Fig. 1. Fig. 5 is a fragmentary view showing in side elevation certain details of the device, and Fig. 6 shows a device for reading the characters produced by the machine.

The machine comprises two sets of keys 11 and 12. The keys of the first set are ten in number and arranged in the relative positions which the fingers and thumbs of the two hands would assume when the forearms are placed at right angles to the front of the machine. It will be understood that these keys are not only at different distances from the front of the machine, but at different elevations.

The keys for the two thumbs are marked M and N. At a point between these two keys and back of them is preferably placed an extra key, (marked T,) which may be operated by either one of the forefingers, if desired. The second series of keys are located immediately in front of the finger-keys of the first series, and consequently there are eight of them. The first series of keys and the key T are intended to be operated by pressing directly down upon their upper surfaces. The second series of keys, however, are intended to be operated by pulling forward upon their vertical surfaces, which are preferably provided with designating characters. It will be obvious that with this construction each finger will be adapted to operate upon one of the keys 11 by a downward pressure, and it will also, by a slight movement, be adapted to press against and operate one of the keys 12.

One of the keys in the series marked 12

is of special construction and is indicated at 12^a. This key is shorter than the other keys of the series, and an extra key (marked X) extends over it and at the back of it in such a manner that the operation of this key X by a forward pressure will operate the key 12^a in the same manner as the keys 12 are operated. Also downward pressure upon the top of the key X will operate said key without imparting any motion to the key 12^a. The forward movement of the key X has no effect upon the marking device, which is intended to be operated by said key when it is pressed down. The purpose of this arrangement of the keys is to so place the keys that they will conform to the anatomy of the hands, and the tips of the fingers will naturally rest on the keys 11 without effort upon the part of the operator, and it is intended that the fingers remain in this position during the operation of the machine except when they are moved slightly forward for the purpose of operating the keys 12. With this construction when a finger operates its key the other fingers will not be required to make any motion whatever. It will also be apparent that as each finger touches its key and does not have to be removed therefrom there will be no danger of a finger touching the wrong key, and mistakes are thereby avoided.

The means for causing the operation of the keys to produce the desired characters or writing will now be described, reference being had especially to Fig. 3. 13 represents a lever which is provided with a slot 13^a in its outer end, by means of which the lever is pivoted upon a rod 14, which extends across the machine. A second lever 15 is pivoted at the front of the machine upon a rod 16, which also extends across the machine. These two levers are pivoted together at the point 15^a, and combs 17 and 17^a are provided for guiding the lever 15. The rear end of the lever 15 is attached, by means of a connection 18, to a bar 19, which is supported by means of a rod 20, having a depression 20^a for the reception of the bar 19. The rod 20 is made of flexible material, so as to constitute a spring for keeping the bar 19 in an elevated position. It is mounted upon the frame by means of a bar 21 at one end and a comb 22 at the other, both secured upon a pair of standards 23. The end of the spring-bar 20 passes freely through the slits in the comb 22, so that when the lever 15 is depressed the spring-bar may assume the posi-

tion shown in dotted lines in Fig. 3. It will be obvious that downward pressure upon the key M, as shown in Fig. 3, will force the lever 13 downward about its pivot 14, which will cause a downward motion of the lever 15 about its pivot 16, so that the parts will assume the position shown in dotted lines in this figure. 24 is a comb attached to the standards 23, provided with slits for the guidance of the several bars 19. The bars 19 are also provided with additional guiding means (represented at 25) and a comb 26 at the bottom. 27 is a marking device located at the lower part of the bar 19. 28 is an inking device attached to a movable base 29, which is pressed forwardly into position to be acted upon by the marker 27 by means of a spring 30. This base 29 is pivotally mounted at 31 and is provided with a stop 32. 33 is a roller over which passes a continuous strip of paper 34. This strip may be fed in any desired manner and may be of any width; but by locating the various levers as indicated in Fig. 1, so that they converge toward a point at the rear of the machine, the bars 19 may be brought very closely together and the paper 34 need not be wider than that ordinarily used in a Morse telegraph instrument.

The form of connections for transmitting motion from the keys to the marking devices, which has been described, is not necessarily used for all the keys of the machine and, in fact, is intended only for use with those which are operated by downward pressure—as, for instance, the series 11. The series of keys marked 12 are operated by means of connections such as those shown in Fig. 4, in which 35 is a lever to the upper part of which a key-12 is attached. All of these levers are pivoted to a rod 36, which extends from side to side of the machine, and they are provided with guides 37, which keep the key in its proper position relative to the levers 15, which are the same as the levers 15 shown in Fig. 3. Each of the levers 15 to which one of the levers 35 is connected is provided with a piece of metal 38, which has a slot 40, through which the rod 14 passes and which acts as a guide for the piece of metal. An additional guide and support is provided in the overlapping ear 41, which is intended to rest upon the top of the lever 15. A downwardly-extending end of this piece of metal is provided with an opening 39, by means of which a wire or similar connection 42 is joined to the lever 35. The other parts of the connections are similar to those shown in Fig. 3.

Upon the operation of the key 12 from the position shown in full lines in Fig. 4 to that shown in dotted lines about its pivot 36 the connection 42 will be caused to pull the metallic piece 38 into the position shown in dotted lines, swinging it about the rod 14 as a

pivot and forcing the lever 15 downwardly, so as to operate the connection 18. The operation of the other connections will be the same as that previously described.

The key T may, if desired, be provided with connections such as those shown in Fig. 3, or a simpler arrangement may be made by mounting it directly upon one of the bars 15 and having the rear end of the bars supported by means of one of the connections 18 directly from the rod 19. In order to provide for an additional key, the arrangement shown in Fig. 5 may be adopted. Here the key X is connected by means of a lever 44 with one of the levers 15 in the manner similar to that shown in Fig. 3; but said key X is pivoted to the lever 44 instead of being integrally mounted thereon, and consequently a stop 45 may be provided for preventing the key from swinging backward.

The key 12^a is designed to be contained below and in front of the key X and is mounted upon the rod 36 in the same manner as the keys 12. The key X has a projection X', which extends to the rear of the key 12 and is normally in contact with it. Now it will be observed that by pressing the key X down the lever 44 will be operated in the same manner as the levers 13, and the proper marker will be actuated. This result will be accomplished without any movement of the key 12^a. When, however, the key X is pressed forward in the same manner as the keys 12, it will swing upon its pivot without moving the lever 44 and will cause the key 12^a to be moved forward in the usual manner, and thus actuate the proper marker.

The marks on the paper 34 will, as is obvious, indicate words or any desired characters by means of their relative locations upon the paper. For example, the mark corresponding to the key marked A will represent "A," and the next one—that is, the first one to the left of Fig. 1—marked 12, may conveniently represent the letter "W," and so on. In order to read the writing produced on the strip of paper, a gage, such as that represented in Fig. 6, may be used. This is merely a guide 46 for the paper, having upon an edge the letters or characters in the order in which they appear on the keyboard. By drawing the paper through the guide it will be obvious that the words produced may be read by observing the order in which the dashes appear on the paper. It will be apparent that the markers 27 may, if desired, be provided with the characters which it is desired for them to print, in which case the reading-gage will not have to be employed.

Although I have illustrated and described a particular embodiment of my invention, it will be obvious that it is capable of construction in many other forms and is not strictly limited to the one shown and described.

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

1. A writing-machine having two series of 5 keys, one series being adapted to be operated by vertical pressure and the other series being adapted to be operated by pressure in another direction, and an additional key located in line with said second keys and adapted to be operated by vertical pressure. 10

2. A writing-machine having two series of keys, one being located at the rear of the other and adapted to be operated by downward pressure, and the other being adapted to be operated by horizontal pressure, and an additional key located adjacent to said second series. 15

3. A writing-machine having two series of keys arranged at different heights and at different distances from the front of the machine, one series being at the rear of the other and adapted to be operated by downward pressure, and the other series being adapted to be operated by forward pressure, and an additional key located in line with said second series and adapted to be operated by downward pressure. 20

4. A writing-machine having two series of keys arranged at different heights and at different distances from the front of the machine, one series being at the rear of the other and adapted to be operated by downward pressure, and the other series being adapted to be operated by forward pressure, and an additional key located in line with said second series and adapted to be operated by downward pressure, and having a projection adapted to engage with and operate one of the keys of said second-mentioned series. 25

5. A writing-machine having a series of keys, one series being operable by vertical pressure and the other by pressure in another direction, and an additional key located adjacent to the second series and having a projection adapted to engage with and operate one of the keys of the second series. 30

6. A writing-machine having a series of keys adapted to be operated by horizontal pressure, and a key adapted to be operated by pressure in another direction, said last-mentioned key having a projection for engaging with one of the keys of said series to operate it. 35

7. A writing-machine having a plurality of keys, one key being adapted to be operated by downward pressure, and provided with means for engaging and operating another key in a horizontal direction. 40

8. A writing-machine having a key adapted to be operated by pressure in two directions, and means operable by the key for printing two characters. 45

9. The combination of a series of keys, a series of levers, means connected with said keys for operating the levers, a series of springs for suspending the free ends of the levers, and a marker dependently supported by each of said springs. 50

10. A writing-machine, comprising a series of keys, a series of converging levers, means connected to each of the keys for operating said levers, a series of springs for suspending the free ends of said levers, a series of bars each connected to one of said springs and depending therefrom, and a marker on each of said bars. 55

11. A writing-machine, comprising a keyboard having two series of keys, a series of pivoted levers, connections from said keys to said levers for operating the latter, a series of springs for suspending the free ends of said levers, a series of bars each depending from one of said springs, a marking device on each bar, an inking-pad in the path of travel of said marking devices, and a roller around which a continuous strip of paper is adapted to pass. 60

12. The combination of a keyboard, a series of levers connected with the keys thereof, a spring for each lever, a bar suspended by each spring, means for suspending the free ends of the levers from said bars, and a marking device on each bar. 65

13. The combination of a keyboard, a series of levers connected with the keys thereof, a frame extending upwardly adjacent to the free ends of said levers, a bar on said frame, a comb also mounted on the frame, a series of springs mounted at one end on said bar and projecting freely through the spaces of said comb, and means connected with said springs for supporting the free ends of the levers. 70

14. The combination of a keyboard, a series of levers connected with the keys thereof, a frame extending upwardly adjacent to the free ends of said levers, a bar on said frame, a comb also mounted on the frame, a series of springs mounted at one end on said bar and projecting freely through the spaces of said comb, and means connected with said springs for supporting the free ends of the levers; said means comprising a series of bars and a series of connections between the bars and the levers, each bar being provided with a marking device. 75

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

JUAN B. VIDAL.

Witnesses:

ROY H. NEELY,

JAMES H. SPRINGER.