No. 663,405. Patented Dec. 11, 1900.

G. G. ALLEN.

KEYBOARD.

(Application filed Nov. 25, 1896.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

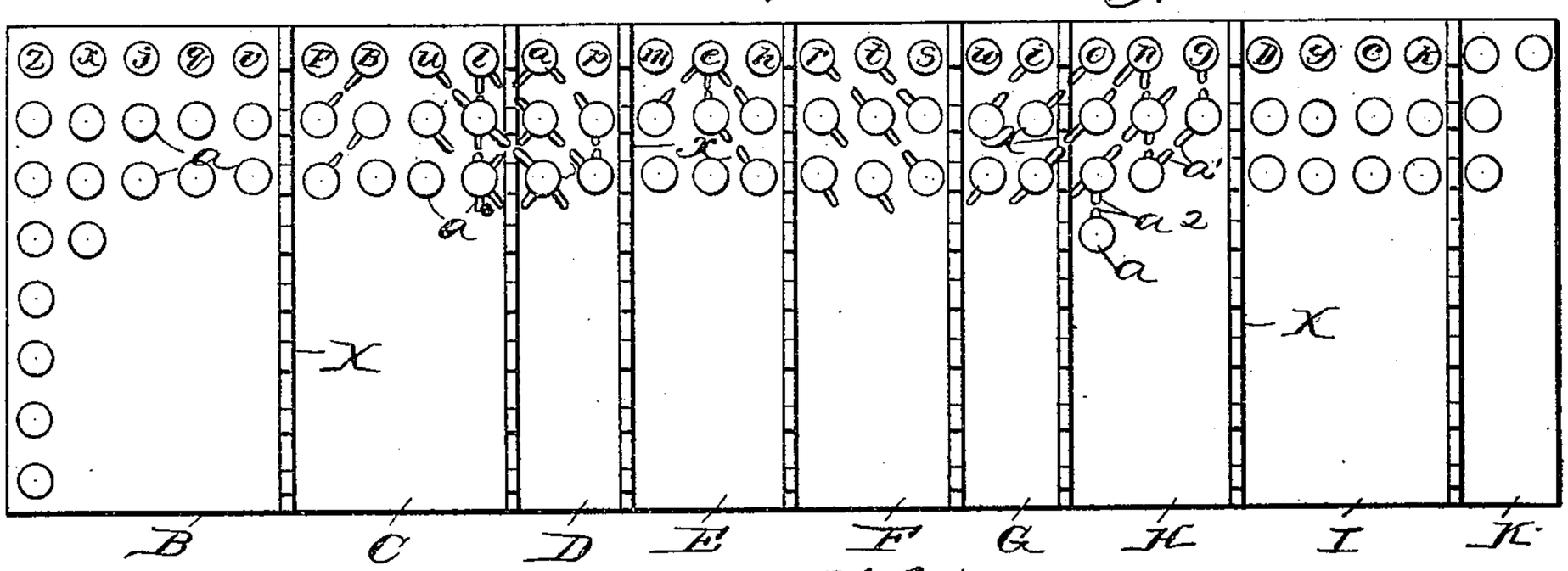


Fig. 2.

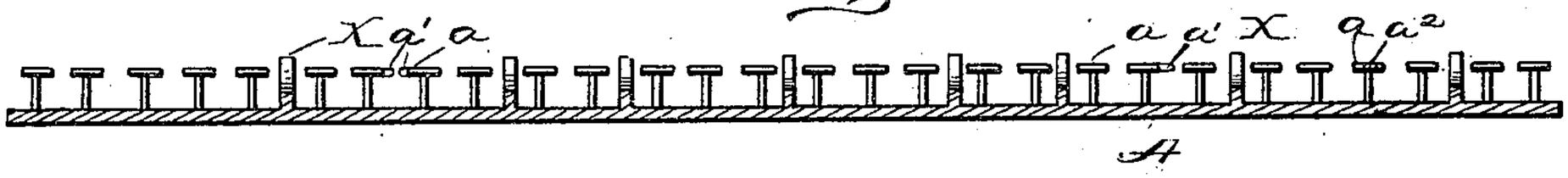


Fig. 3.

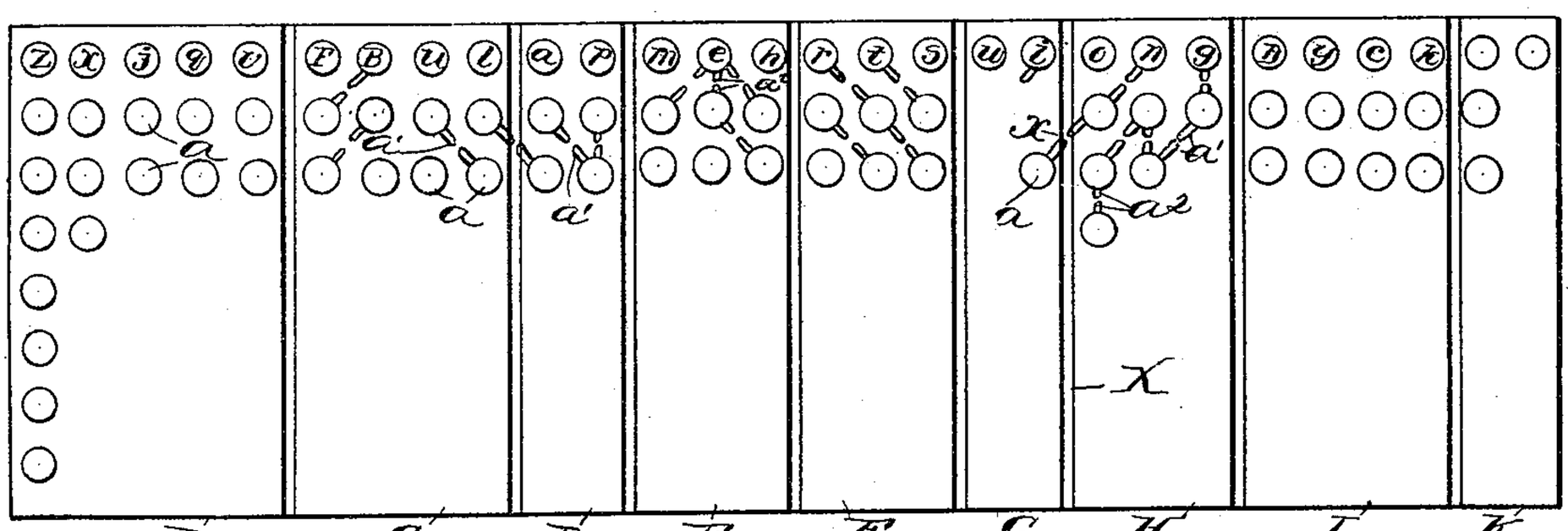


Fig. 4.

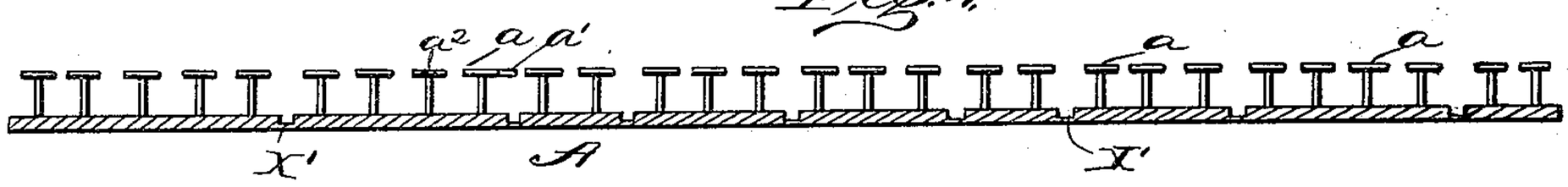
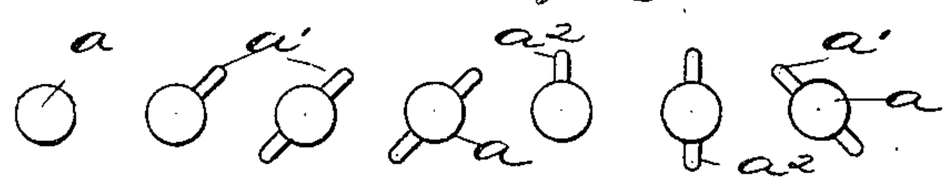


Fig. 5.



Witnesses:
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Inventor
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by:
F. T. Johnson
his Atty.

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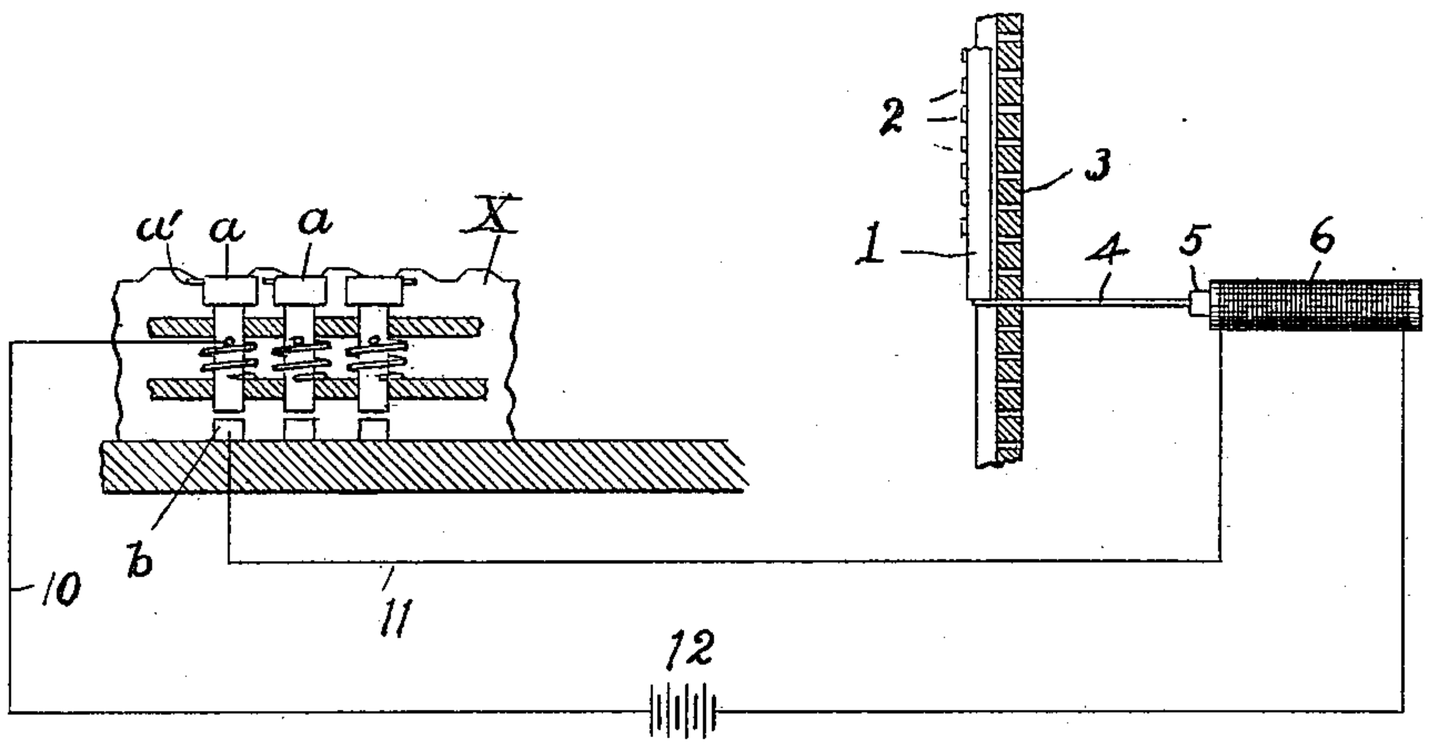

Fig. 6

Witnesses;
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UNITED STATES PATENT OFFICE.

GEORGE GILLESPIE ALLEN, OF MALDEN, MASSACHUSETTS, ASSIGNOR TO THE STENOTYPE COMPANY, OF PORTLAND, MAINE.

KEYBOARD.

SPECIFICATION forming part of Letters Patent No. 663,405, dated December 11, 1900.

Application filed November 25, 1896. Serial No. 613,399. (No model.)

To all whom it may concern:

Be it known that I, GEORGE GILLESPIE ALLEN, a citizen of the United States, residing at Malden, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Keyboards; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the characters of reference marked thereon, which form a part of this specification.

This invention relates to improvements on keyboards for type-writing, type-setting, linotype, and matrix-making machines, &c.

The objects of the invention are to provide a keyboard that shall contain a number of alphabets or sets of characters for the purpose of simultaneously selecting and operating a key for a character in each alphabet or set of characters for the production of two or more letters, a word, or a phrase, to arrange the letters or characters in each alphabet or set of characters for the more convenient operation thereof, and to provide keys whereby two or more letters can be selected and operated by a single movement of the finger or fingers.

To these ends the invention consists in a keyboard having its surface divided into spaces or sections by beads, partitions, elevated lines, or other demarcations and having two or more alphabets or sets of characters arranged in parallel rows thereon and also having the letters or characters of each alphabet or set of characters arranged in groups, the said groups being placed in systematized spaces or sections of the keyboard, the groups containing the letters most in use in the English language being placed nearest the center of the board and the letters of each group being arranged for convenience in selection and manipulation, the said letters being located by means of the groups and their positions therein.

In the drawings, Figure 1 is a top view of my novel keyboard having the divisional lines thereof indicated by beads or raised lines of partition, the setting of the several prearranged groups on the keyboard and the arrangement of the letters therein being also shown. Fig. 2 is a vertical longitudinal sectional view of Fig. 1. Fig. 3 is a view similar to Fig. 1, having the lines of demarcation between the spaces represented by grooves or depressed lines instead of beads, partitions, or elevated lines. Fig. 4 is a vertical longitudinal section of Fig. 3. Fig. 5 shows details of my novel keys; and Fig. 6 is a sectional elevation of a part of my keyboard, showing a means whereby the depression of a key is enabled to actuate a type-writing machine.

Like parts in all the figures are indicated by similar characters.

The letter A indicates the body of the keyboard, and B, C, D, E, F, G, H, I, and K spaces or sections thereon formed by the beads or partitions or elevated lines X, as shown. These spaces or sections extend across the board and are of the same length and with a width depending upon the number of keys to be placed therein.

a are keys placed upon the keyboard in rows parallel both longitudinally and transversely, each longitudinal row containing a complete alphabet or set of characters or symbols. In the drawings I have shown seven rows of these keys; but it is evident that there may be either a greater or less number, as desired. The keys *a* have spurs or projections a' and a^2, for a purpose hereinafter stated. The keys are arranged in parallel rows on the keyboard, commencing at the left, in the following sequence: *z x j q v f b u l a p m e h r t s w i o n g d y c k*. Each transverse row on the keyboard is composed entirely of like letters, as is evident. Each alphabet or set of characters is divided into a number of groups, as shown. The first group consists of the letters *z x j q v*, and the letters thereof being but little used it is placed at one side of the keyboard. The next section has grouped therein the letters *a p*, the next *m e h*. Then comes *r t s*, then *w i*, then *o n g*, and, lastly, *d y c k*.

If desired, punctuation-points, numerals, and other characters and symbols may be added to the keyboard, as shown, or be omitted, at choice.

I place upon certain keys of the keyboard

spurs or projections a', which spurs or projections extend diagonally toward the next row either forward or backward, or both, as is found desirable or convenient for use. For instance, n and g being frequently used together spurs are placed on the keys n and g in adjacent lines extending diagonally, as shown, so that both letters, when desired, may be depressed at one stroke of the finger. I also place upon certain of the keys a spur a^2, extending in a direction transversely of the keyboard for the purpose of striking the same letter in adjacent lines, as is evident, at one stroke of a finger. I have shown a number of the keys arranged with spurs to facilitate the selection of a great number of combinations of letters that are the most frequently in use. It will be apparent that these spur-keys may be used in any arrangement of the keys upon the keyboard.

By dividing the board into spaces or sections the keys bearing letters, characters, or speech-sound symbols are divided into groups and can be thereby more quickly learned and more readily located than in case of the keyboards now in use. The letters or speech-sound symbols most frequently used are placed in groups nearest the center of the board and the letters or symbols arranged therein in the most convenient manner.

The partitions or elevated lines X between the longitudinal lines or rows of characters or alphabets are cut away, as shown at x, Fig. 1, for the purpose of permitting the operator to select and operate simultaneously keys in adjoining groups or sections by means of my novel spur-keys, as will be seen by reference to i in the sixth and o in the seventh sections. Instead of having the spaces or sections divided by partitions or elevated lines, as indicated in Fig. 1, the division may be indicated by a groove between the spaces or sections, as indicated at X', Fig. 3.

By the arrangement of a number of rows of alphabets or sets of characters or speech-sound symbols it is evident that as many letters can be simultaneously selected for a word or a phrase as there are alphabets or sets of characters on the keyboard.

By this invention the necessity for lettering the keys of the keyboard is obviated, it having been discovered that the best results—*i. e.*, the most rapid selection and operation of the board—are attained without the lettering on the keys, the markings thereon serving to confuse and annoy the operator when writing rapidly. If, however, it is desired, the first row of the keyboard may be lettered or characterized by different marks for the convenience of the beginner; but the operator at the outset will memorize the different groups and their positions on the keyboard or identify them by their characteristic colors when colors are used, as shown in my application dated November 11, 1896, Serial No. 611,760, and locate the letters or characters therein by their arrangement in the groups, irrespective of any lettering or other distinguishing mark on the said keys, and is soon enabled to operate the keyboard without being compelled to search out the desired letters and almost immediately acquires such knowledge of and familiarity with the keyboard that with the keyboards now in use would require months of study and practice. It is apparent, however, that every key on the keyboard may have a distinguishing mark, if so desired. By not having the keys lettered, &c., I am enabled to arrange the keys very close without at all being confusing to the operator by decreasing the size of the keys, and thereby diminishing the dimensions of the keyboard, making it more manageable. It is also apparent that this keyboard may be provided with word or phrase keys, whereby a phrase or word may be selected by one thrust or impulse. It is evident that this invention may be applied either to a mechanical or electrical keyboard without departing in the least from the spirit of my invention.

This invention is intended for use in connection with electrically-controlled keyboards and is designed for use with the machine shown in the patent to Charles Elmer Allen, dated June 23, 1896, No. 562,563, and is connected up in the same manner (by wires connecting each key of the keyboard with apparatus controlling each letter in the machine) as therein shown. Instead of being connected electrically it may be supplied with levers in the well-known manner and applied to any machine wherein it is desired to set up a complete word, phrase, or line before taking an impression therefrom.

In Fig. 6 is shown the means by which my keyboard is enabled to actuate the typewriter of the form set forth in patent to C. E. Allen, No. 562,563, dated June 23, 1896. In said patent the printing is performed by a series of vertically-slidable bars, each carrying a complete alphabet and adapted to present the desired character by dropping upon the proper pin, which is magnetically brought into its path by pressing a key and thereby completing the circuit between a battery and a solenoid controlling said pin. In Fig. 6, 1 is a portion of such a bar carrying thereon the type characters 2, 3 being the guide-support therefor. 4 is the pin or rod, longitudinally moved into the path of said bar by a solenoid 5 6. The keys a are each depressible into contact with the terminal b, wires 11 10 joining said terminal and key with a battery 12 and said solenoid. When the key is depressed, the circuit is completed and the solenoid caused to throw the pin 4 into the path of the bar 1.

Having thus described my invention, what I claim is—

1. A keyboard consisting of a series of characters divided into groups, in combination

with partitions separating said groups and rising slightly above the surfaces of the keys, and cut away at suitable intervals, whereby said partitions can perform their function of indicating to the touch the locations of the various groups and keys without interfering with the simultaneous depression of two adjoining but partition-separated keys substantially as set forth.

2. In a keyboard, the combination of a plurality of complete alphabets arranged in parallel rows, the keys being provided with spurs or projections, and partitions extending at right angles to said rows and separating the keys into groups, said partitions being cut away to permit the simultaneous depression of keys located at opposite sides thereof, substantially as and for the purpose set forth.

3. In a keyboard, the combination of keys formed with heads and arranged in rows extending both longitudinally and transversely, and pins projecting radially from said heads in predetermined directions, whereby certain of said keys can be depressed by a single impulse, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE GILLESPIE ALLEN.

Witnesses:
F. T. F. JOHNSON,
L. L. JOHNSON.