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(72) Inventor; and
(71) Applicant : **PAUL, Streitz** [US/US]; 8 William Street, Darien, CT 06820 (US).

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Declarations under Rule 4.17:

— *as to the identity of the inventor (Rule 4.17(i))*

— *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*

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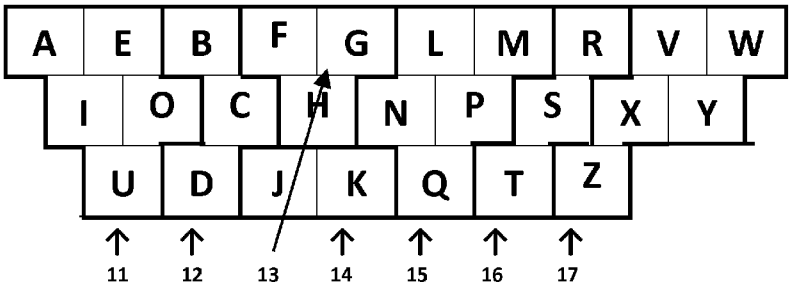
(54) **Title**: DATA ENTRY KEYBOARD

Fig 4 First Embodiment



(57) **Abstract**: An apparatus for entering alphabetic data into a computer or other electronic or mechanical devices with a keyboard wherein the alphabet is arranged in a logical order, a keyboard wherein the vowels are grouped together, a keyboard wherein the vowels are all placed on the left side of the keyboard, a keyboard wherein each vowel has the same color code, a keyboard wherein the consonants are arranged in groups, a keyboard wherein the consonant groups are arranged from left to right in alphabetic group order, and a keyboard wherein each consonant within a group has a specific color code; wherein two groups of consonants have the same color.

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TECHNICAL FIELD

This invention relates generally to the field of keyboards and more specifically to an apparatus for entering alphabetic data into a computer or other electronic or mechanical devices.

BACKGROUND

The invention of the typewriter is credited to C. Latham Sholes in 1867. Thereafter, Sholes designed the QWERTY keyboard to prevent typewriters from jamming. Sholes designed the QWERTY keyboard in about 1872. It was an unpatented universal design. Before this design each manufacturer had its own keyboard layout which made uniform learning of typing impossible. Sholes later filed for a patent U.S. Patent 558428 (1896) for a typewriter but the keyboard was not shown in the patent or part of its claims.

Hereafter, the term "keyboard" shall refer to all devices inputting alphabetic letters regardless whether the devices be typewriters, personal computers, laptop computers, smart phones or smart pads or any other type of mechanical or electronic entry of data.

Another of the first keyboards is shown in U.S. Patent 185714 (1876) had a layout of four rows of keys. The bottom row contained the vowels in order, A, E, I, O, U, Y. The next row up started with B, C, and D. The consonant keys were arranged in alphabetical order from left to right, bottom to top row. The keys were arranged in diagonal columns to allow each key to throw a lever. This was apparently the last attempt to arrange the letters in an order that was systemized and intuitive to English speakers. This keyboard was easier to learn. It was intuitive because it separated the letters into easily recognizable groups that one learns when first encountering the alphabet. The twenty-six letters of the alphabet are learned in a standard alphabetic order A, B, C, D, etc. The distinction is then made between vowels and consonants with the vowels being learned in the same order as they appear in the total alphabet, A, E, I, O, U. However, this design had the limitation that the keys were in five rows making a long keystroke for the top at bottom letters of the keyboard.

The success of the Remington No. 2 in 1878, which used the QWERTY keyboard, led to the universal adoption of QWERTY. It was an open design and is hailed as one of the successful examples open standards for an industry. This layout was designed to slow down the rate of the operator. The early mechanical system could not keep up with the rate the keys were being struck. The operator could press keys in sequence faster than the machine could return the previous key to its starting position. There was no consideration given to the ease of learning the keyboard.

The QWERTY keyboard was arranged to scatter the most struck keys to slow down the speed of the operator. For instance, a frequently pressed vowel "a" is pressed by the small finger of the left hand, which is a weak finger and the mechanical typewriters of the time required a forceful stroke to bring the key up to strike the ribbon and make an impression. The QWERTY keyboard was laid out in three rows with 10 keys in the top row, 9 in the second row and 7 in third row with the keys arranged in diagonal rows to allow the keys to depress a lever.

However, the QWERTY keyboard did have one significant design feature that has been kept because of its efficient. The design of the keyboard was of three rows with 10 letters in the first row, 9 in the second and 7 in the third. This creates a middle home row for the fingers to rest and then every key is then either in the home row, or one row up or down.

The QWERTY keyboard to a beginning typist is completely random and each letter has to be painfully memorized by repetition. It takes weeks if not months to train a typist to a high level of skill. Despite this significant limitation, the ubiquitous presence of the QWERTY keyboard on all typewriters made changing to an easier to learn system commercially unfeasible.

Two patents U.S. Patents 433765 (1890) and 560572 (1896) have the QWERTY keyboard layout, but neither patent refers to the arrangement of the letters on the keyboard layout as a claim. As mentioned above, the QWERTY keyboard layout was an open design and not patented. U.S Patent 943466 (1909) offered a non-QWERTY keyboard wherein the most commonly used letters of the alphabet were arranged in the center. This was apparently the first keyboard arrangement designed to increase typing speed receiving a U.S. Patent.

Typists were regarded as high skill employees and typing speed and accuracy was considered a desirable feature of employees. Subsequently, there was a search for a faster keyboard. August Dvorak was granted U.S. Patent 2,040,248 (1936). The keyboard was designed for maximum speed by carefully measuring the distance the operator had to go to type each letter. Ease of learning the keyboard was not considered. Again, to a beginning typist the keyboard was a random arrangement of letters and the finger to type each one had to be learned by rote and extensive practice. The Dvorak keyboard was top to bottom, 7, 10 and 9 keys in each of three rows. This differentiated it from the QWERTY design of 10, 9, and 7. The Dvorak keyboard never made significant headway for typewriters because the marginal difference in speed was more than negated by the long period of training necessary to change from one random arrangement of letters to another random arrangement of letters.

Starting in the 1970's with the introduction of the personal computer the typing keyboard was separated from the physical computer. The QWERTY keyboard arrangement was adopted by manufacturers for the Computer Keyboards. Once again, the slight advantage in speed for the Dvorak keyboard did not make up for the long learning time. The Dvorak keyboard is available for computers but only occupies an insignificant share of the market.

Thus, the main keyboard layouts had as their central concern the speed of the typist and developed their systems in response to this concern, but they had opposite goals. The intention of the QWERTY system was to slow down typing speed while the Dvorak system was to speed up typing. The Dvorak and QWERTY designers never paid any consideration to the difficulty of learning the keyboard. To a new learner of the keyboard, both the QWERTY and Dvorak systems appear as random arrangements that must be painstakingly learned through repetition.

Other keyboard layouts have been proposed using a three row arrangement of letters, for example: U.S Patents 943466 (1909), 1336122 (1920), 1342244 (1920), 1506426 (1924), 2080457 (1937), 4519721 (1985), 4613247 (1986), 5352050 (1994), 5498088 (1996), 5836705 (1998), 5879089 (1999), 6830396 (2004), 6965372 (2005), 7008127 (2006), 7104711 (2006). These keyboards presented a typist with an

apparently random arrangement of letters because the purpose of the arrangement was typing speed with no consideration to ease or speed of learning.

U.S Patent 4927279 (1990) separates some of the vowels from the consonants and arranges the letters in alphabetical order. This patent has a plurality of keyboard designs some of which order the vowels separately from the consonants and have a different number of rows than the standard three for various designs. The purpose of these arrangements is speed, not ease of learning.

A foreign patent makes a colored keyboard by line using the QWERTY keyboard design AU 201201000915 (2012) but this does in anyway enable the typist to learn the keyboard faster. This is the only patent discovered that has any use of color connected to the keyboard.

In a study of computer users, the average was thirty-three words per minute to transcribe a document and the rate for composition was nineteen words per minute. This indicates that the overwhelming majority of computer users are not typing at any great rate of speed. Therefore, improving anyone's rate of typing from sixty-five to seventy words per minute for a skilled typist by having the typist learn a completely new keyboard arrangement is not a worthwhile endeavor that offsets the disability in quickly learning the keyboard. In contrast, providing a keyboard that is easier to learn and easier to use would provide a significant savings in learning times for beginning typists and aid slow typists.

Numerous keyboard layouts have been proposed that are physically different from the three row arrangement of the QWERTY keyboard. Along with the different arrangement of the physical keyboard is a different arrangement of the letters. The first of these was U.S. Patent 1260543 (1918) which employed some eighty-one keys of various combinations of numbers and letters. This was followed U.S. Patent 1292319 (1920) which employed keys arranged in a circular fashion. Each of these keyboards was designed to maximize speed of typing and did not consider ease of learning. Subsequently, a large number of designs have been patented that are different from the three-row 10-9-7, sequence of alphabetic keys. However, none of these designs appear to be less efficient than the three row design of the QWERTY keyboard.

Over the decades typing has changed from a skilled trade of secretarial work to a mass skill such as driving a car. Today, children in grade skill learn keyboarding skills in the seventh grade, if not earlier. The mass use of cell phones and computers has made using a keyboard almost universal for all professions. Thus, the QWERTY keyboard system's random arrangement of letters now presents an even greater barrier and considerable waste of time, effort and money learning a keyboard layout meant for a mechanical keyboard of the 1900's.

Based on the above, there exists a need in the art for a keyboard arrangement of letters that enable the beginning learner and any user to quickly and efficiently identify the position of each letters on the keyboard. In order to accomplish this, the letters must be arranged in a manner that takes in to account the learned knowledge of the user, that is, the learned order of the alphabetic sequence of letters and the distinction between the vowels and the consonants.

SUMMARY OIF THE DISCLOSURE

The primary object of the invention is to provide a Computer Keyboard that is easier to learn.

Another object of the invention is to provide a Computer Keyboard that is laid out in an intuitive manner familiar to any reader of the English language.

Another object of the invention is to provide a Computer Keyboard that wherein the alphabetic letters are laid out in a logical fashion.

A further object of the invention is to provide a Computer Keyboard that the alphabetic letters are laid out in a non-random fashion.

Other objects and advantages of the present invention will become apparent from the following descriptions, taken in connection with the accompanying drawings, wherein, by way of illustration and example, an embodiment of the present invention is disclosed.

In accordance with a preferred embodiment of the invention, there is disclosed an apparatus for entering alphabetic data into a computer or other electronic or mechanical devices comprising: a keyboard wherein the alphabet is arranged in a logical order, a keyboard wherein the vowels are grouped together, a keyboard

wherein the vowels are all placed on the left side of the keyboard, a keyboard wherein each vowel has the same color code, a keyboard wherein the consonants are arranged in groups, a keyboard wherein the consonant groups are arranged from left to right in alphabetic group order, and a keyboard wherein the each consonant within a group has a specific color code.

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BRIEF DESCRIPTION OF THE DRAWINGS

The drawings constitute a part of this specification and include exemplary embodiments to the invention, which may be embodied in various forms. It is to be understood that in some instances various aspects of the invention may be shown exaggerated or enlarged to facilitate an understanding of the invention.

Fig 1 shows the prior art of the Allen keyboard;

Fig 2 shows the prior art of the QWERTY keyboard;

Fig 3 shows the prior art of the Dvorak keyboard;

Fig 4 shows the layout of the keys of the First Embodiment.

DRAWINGS REFERENCE NUMERALS

11. Shows the vowel letter group A, E, I, O, U;
12. Shows the consonant letter group B, C, D;
13. Shows the consonant letter group F, G, H;
14. Shows the consonant letter group J, K;
15. Shows the consonant letter group L, M, N, P, Q;
16. Shows the consonant letter group R, S, T;
17. Shows the consonant letter group V, W, X, Y, Z;

DETAILED DESCRIPTION OF THE DRAWINGS

Fig 1 depicts the Allen Keyboard U.S Patent 185714 (1876). The keyboard has five rows of letters. The English language vowels, plus the letter "Y" which is occasionally has a vowel pronunciation of "e" in certain words such as "city," are the bottom row of the key board. The first row up from the bottom starts with the letter

"B" and the consonants are thereafter in alphabetical order right to left and bottom to top.

Fig 2 depicts the QWERTY keyboard. The name of the keyboard is derived from the letters on the left hand side of the top row. The letters are arranged in a format that was designed to slow down the rate of typing on early mechanical typewriters. The placement of the keys has no logical sequence relating to the order of letters in the English alphabet.

Fig 3 depicts the Dvorak keyboard U.S Patent 204028 (1936) wherein the consonants are positioned; the arrangement of the letters shortens the length of stroke of the most frequently used letters in the English language to increase typing speed. The placement of the keys has no logical sequence relating to the order of letters in the English alphabet.

Fig 4 depicts the embodiment wherein the consonants are positioned; the keys are arranged in a logical sequence relating to the understanding and order of the letters in the English alphabet. The vowels are all grouped to the left on the keyboard and color-coded of the same color. Group **(11)** consists of the vowels A, E, I, O, U all of the same color. The consonants are then arranged in groups in alphabetical groups from left to right from the right of Group **(11).** Group **(12)** consists of the consonants B, C, D all of the same color; Group **(13)** consists of F, G, H all of the same color; Group **(14)** consists of J, K all of the same color; Group **(15)** consists of L, M, N, P, Q all of the same color; Group **(16)** consists of R, S, T all of the same color as Group **(12)**; Group **(17)** consists of V, W, X, Y all of the same color: each group of letters has a different color-code with the exception of Group **(12)** and Group **(16)** which share the same color.

Advantages

In accordance with the foregoing descriptions of the difficulty of learning the QWERTY keyboard several advantages of one or more aspects are as follows: the letters of the keyboard are laid out in an arrangement that is apparent to all readers of

the English language. This makes learning to type a more intuitive matter based on the foregoing knowledge of the typist, rather than a rote memorization of the position of each letter keystroke through repetition. The beginning typist or a typist familiar with QWERTY keyboard will immediately recognize the logical arrangement of the letters in the embodiment of the new design. The typist will easily determine the general location and then the specific location of any letter. Thereafter, the typist will progress from easily indentifying individual letters, to familiarity with the location of all keys, to touch typing. The advantage of the new keyboard is that it significantly reduces the problem of the lengthy period any person must train to learn the ubiquitous QWERTY keyboard.

Accordingly, it will be seen that the Computer Keyboard can be applied to a variety of applications, including but not limited to, standard typewriters, electric typewriters, stand-alone electronic keyboards for use with personal computers, computers using a screen for touch entry of data, electronic smart phones and smart pads and any other device now existing or invented in the future that will enter alphabetic data.

Further, the Computer Keyboard can be employed in dual character keyboards that also use written symbols such Chinese/Japanese/Arabic. The Computer Keyboard would also provide these users with a logical arrangement of the letters consistent with their learning of the English language.

While the invention has been described in connection with a preferred embodiment, it is not intended to limit the scope of the invention to the particular form set forth, but on the contrary, it is intended to cover such alternatives, modifications, and equivalents as may be included within the spirit and scope of the invention as defined by the appended claims.

What is claimed is:

CLAIMS

1. An apparatus for entering alphabetic data into a computer or other electronic or mechanical devices comprising:

a keyboard wherein the alphabet is arranged in a logical order;

a keyboard wherein the vowels are grouped together;

a keyboard wherein the vowels are all placed on the left side of the keyboard;

a keyboard wherein each vowel has the same color code;

a keyboard wherein the consonants are arranged in groups;

a keyboard wherein the consonant groups are arranged from left to right in alphabetic group order;

a keyboard wherein the each consonant within a group has a specific color code;

a keyboard wherein two consonant groups have the same specific color code.

Fig 1 Prior Art, the Allen Keyboard

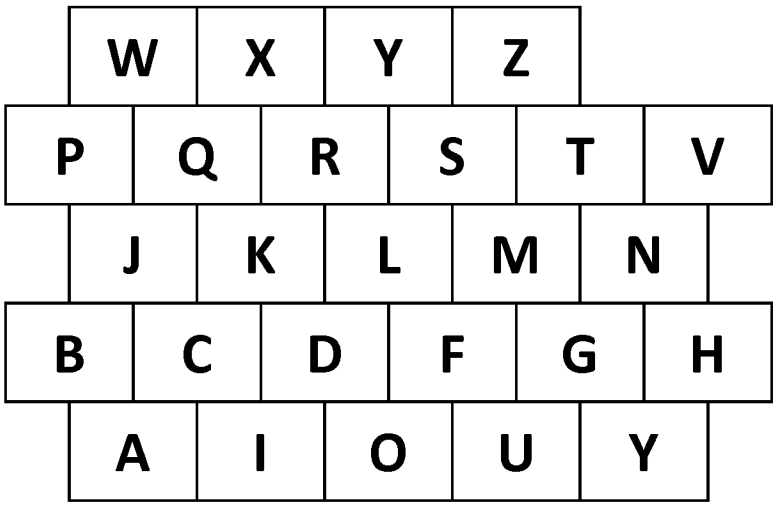


Fig 2 Prior Art, the QWERTY keyboard.

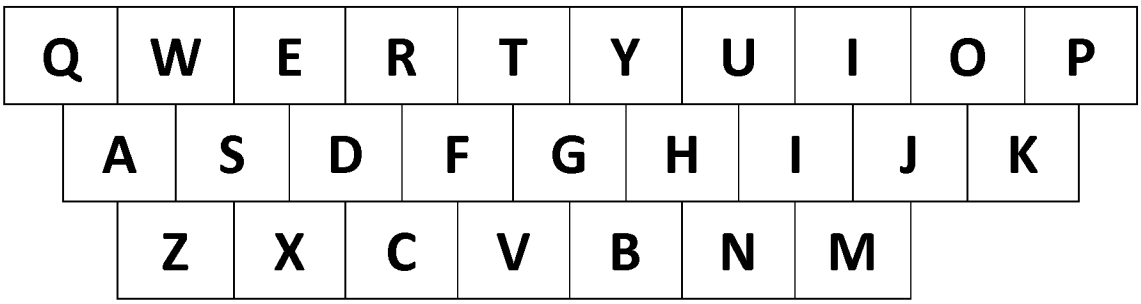


Fig 3 Prior Art, the Dvorak keyboard.

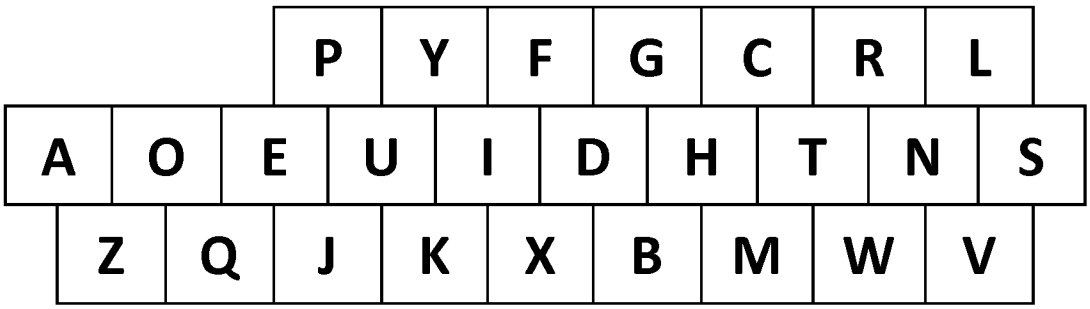
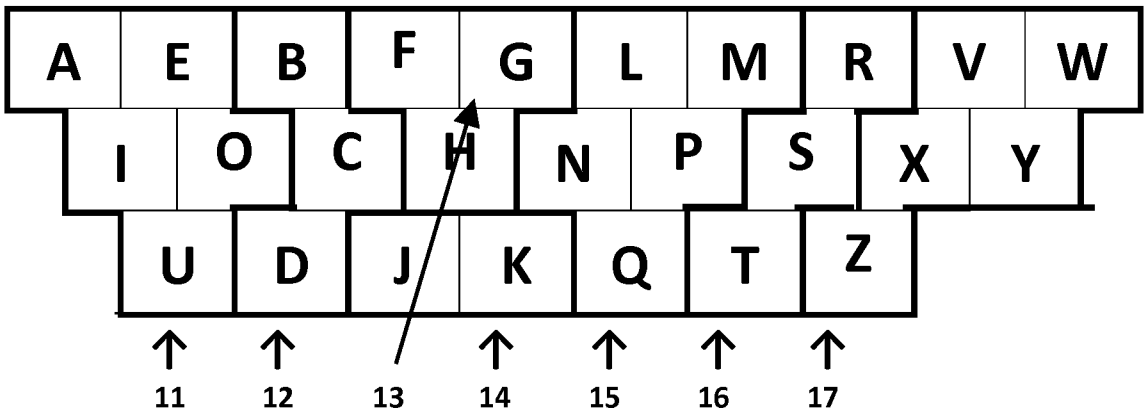


Fig 4 First Embodiment



INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2013/070482

A. CLASSIFICATION OF SUBJECT MATTER
IPC(8) - G06F 3/02 (2014.01)
USPC - 345/168
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC(8) - G06F 1/16, 3/00, 3/02, 3/023, 3/033, 3/041, 3/048; G09G 5/00 (2014.01)
USPC - 341/20, 22; 345/156, 157, 158, 168, 169, 172, 173; 400/472

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
CPC - B41J 5/10; G06F 1/1626, 3/0202, 3/0219, 3/0237 (2013.01)

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
PatBase, Google Patents, Google

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 6,084,576 A (LEU et al) 04 July 2000 (04.07.2000) entire document	1
Y	US 2,040,248 A (DEVORAK et al) 12 May 1936 (12.05.1936) entire document	1
A	US 6,943,776 B2 (EHRENBURG) 13 September 2005 (13.09.2005) entire document	1
A	US 2007/0147932 A1 (GILES) 28 June 2007 (28.06.2007) entire document	1

☐ Further documents are listed in the continuation of Box C. ☐

* Special categories of cited documents:
"A" document defining the general state of the art which is not considered to be of particular relevance
"E" earlier application or patent but published on or after the international filing date
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
"O" document referring to an oral disclosure, use, exhibition or other means
"P" document published prior to the international filing date but later than the priority date claimed
"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
24 March 2014	14 APR 2014
Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US, Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201	Authorized officer: Blaine R. Copenheaver PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774

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