(51) International Patent Classification 5 :
B41J 19/62

(21) International Application Number: PCT/US90/01963
(22) International Filing Date: 10 April 1990 (10.04.90)
(30) Priority data:
359,075 14 April 1989 (14.04.89) US


(81) Designated States: AT (European patent), AU, BE (European patent), BR, CA, CH (European patent), DE (European patent), DK (European patent), ES (European patent), FR (European patent), GB (European patent), IT (European patent), JP, KR, LU (European patent), NL (European patent), SE (European patent), SU.

(54) Title: ERGONOMICALLY EFFECTIVE BACKSPACING METHOD

(57) Abstract

A method for backspacing and/or backspacing/erasing on a computer, electronic, or other keyboard is characterized by activation of the backspacing function via thumb movement. Such activation can be accomplished more easily, more efficiently, and more ergonomically effectively than prior art methods because it can be done without avertng the eyes from the text copy and does not entail moving or uncomfortable stretching of the hands.

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ERGONOMICALLY EFFECTIVE BACKSPACING METHOD

BACKGROUND OF THE INVENTION

Field of the Invention

This invention relates to a backspace/erase key for computer, electric typewriter, and other system keyboards, and more particularly, to an improved method for backspacing and erasing which is easier to use, more ergonomically effective, and permits a touch typist to erase mistakes without having to look at the keyboard.

Description of Prior Art

Modern day computer and electric typewriter keyboards have transformed the backspace key of the manual typewriter into a combined function of backspacing plus erasing. This has the advantage of automatically erasing mistakes as one backspaces and is generally considered by users to be an added convenience in typing.

Yet heretofore, with the standard computer or electric typewriter design, the backspace/erase key is located in the far upper right portion of the keyboard, and a touch typist who realizes he has made a mistake must avert his eyes from the copy to the keyboard in order to locate and use the key. Typically, the typist must

1) avert the eyes from the copy to the keyboard,
2) remove the hands from their accustomed location,
3) locate and depress the backspace/erase key,
4) return hands to original position, and then
5) search the copy to find the proper location to begin inputting again.

This is not only an inconvenience but a waste of valuable time as well. Further, it adds to typist fatigue which can lead directly to lower efficiency and poorer quality work.

Some more recent keyboard designs attempt to ameliorate this problem by enlarging the backspace/erase key and moving it somewhat closer to the right little finger's resting location. These attempts have been only a minor improvement since the large "return" key is located directly to the right of the right little finger and takes up
most of the space which that finger can reach. Even with such designs, most users must still stretch somewhat uncomfortably to reach the backspace/erase key and/or avert their eyes to locate it.

There is therefore, at present, no comfortable, easy means to backspace/erase mistakes made on computer or electronic typewriter keyboards without moving one’s eyes off of the copy and onto the keyboard.

OBJECTS AND ADVANTAGES OF THE INVENTION

Accordingly, several objects and advantages of my novel method for backspace/erase are to save the typist the need to avert the eyes from the copy and to avoid stretching uncomfortably, thereby improving ease of use, saving of wasted time, reducing fatigue, and increasing typing efficiency.

Further objects and advantages of the invention will become apparent from a consideration of the ensuing description of it.

SUMMARY OF THE INVENTION

This backspace/erase key invention solves all of the problems associated with such a key on prior art keyboards.

My invention takes advantage of the facts (1) that in present designs one or both thumbs are used solely to depress the space bar and (2) that the spacebar typically takes up by far the most space of any key on the keyboard. In my invention, in various embodiments, one or both thumbs are used to activate both spacebar and/or backspace/erase keys.

Any method whereby one thumb, either thumb, or both thumbs are used to backspace/erase comprises my invention. This may comprise, but is not limited to, splitting the standard spacebar into two or more sections with one or more of these sections used for backspace/erase and one or more of the sections used for spacebar. It may also comprise one or more additional keys placed conveniently near the thumbs so that one or two thumbs can be used for backspace/erasing without averting the eyes from the copy.

The invention, in its various embodiments, solves each of the problems associated with prior art in a superior and wholly satisfactory manner.

DETAILED DESCRIPTION OF THE INVENTION

Previous art keyboards have not provided touch typists with ergonomically effective means to backspace and erase mistakes without averting the eyes from the copy. The present invention, in different embodiments, involves alternative methodologies which
solve this and other problems associated with prior art. It does this by using one or both thumbs to activate the backspace/erase key, thereby removing the impediments of having to avert the eyes from the copy and/or having to stretch unnecessarily to backspace/erase.

Any method employing one or both thumbs in any combination to backspace/erase or, additionally, simply to backspace without erasing comprises my invention.

In one embodiment, the standard spacebar becomes divided into two separate bars, possibly, but not necessarily, of equal length. One of these is used by one of the thumbs to provide spaces and the other is used by the other thumb to backspace/erase. Alternatively, the user could use the same thumb to activate either the spacebar key or the backspace/erase key. Hence the user can readily correct mistakes simply, easily, and efficiently without taking the eyes off of the copy.

A second embodiment entails division of the standard spacebar into three or more sections with one of these sections, probably, but not necessarily, the middle one, used by either thumb the typist chooses to backspace/erase. The other sections could maintain the standard function of spacing. Alternatively, one or more of these other sections then might take on yet one or more other functions.

A third embodiment entails introduction of one or more additional keys, possibly but not necessarily elongated, close to the location of the standard spacebar which could be used by one, either, or both thumbs to backspace/erase.

A fourth embodiment comprises a key which registers a space when one thumb activates it but registers a backspace/erase when both thumbs activate it. Alternatively, a space could be activated by both thumbs and a backspace/erase by only one.

A fifth embodiment comprises a single elongated key which registers a space when one region of it, such as but not limited to one side, is activated, and registers a backspace/erase when another region of it, such as but not limited to the other side, is activated.

Yet another embodiment comprises two keys either of which registers a space when activated individually but registers a backspace/erase when both are activated simultaneously.

Still another embodiment comprises using another key, such as but not limited to the shift key or the control key, in conjunction with a thumb activated key in order to backspace/erase. The user activates the other key then activates via movement of one or both thumbs a second key such as, but not limited to, the spacebar in order to backspace/erase. These two keys could be activated simultaneously or sequentially.

This invention can thus be seen to solve all of the problems delineated in the "Description of Prior Art" section presently associated with computer and electric typewriter keyboards in a simple and novel manner.
While the above description contains many specificities, the reader should not construe these as limitations on the scope of the invention, but merely as exemplifications of preferred embodiments thereof. Those skilled in the art will envision many other possibilities that are within its scope. For example any of the embodiments could use any shape, dimensions, or number of keys located in many different locations. The keys could be of any material and do not necessarily have to function by depression, but could respond simply to touch, thumb temperature, or other means. Further the invention is not restricted to computer and electric typewriter keyboards but can be used in any type of input typing system. It could also be used simply for backspacing without erasing. Additionally, the keyboard could be designed such that the configuration of which keys are used for space and which for backspace/erase could be set by the user according to his desire. Accordingly, the scope of the invention should be determined not by the embodiments described, but by the appended claims and their legal equivalents.
CLAIMS

1. That whereas previous methods for backspacing on a keyboard employ a backspace key which is depressed by a finger, typically on a typist's right hand, and said previous methods entail averting of the typist's eyes from copy material to the keyboard and movement of the typist's hands from a standard typing position thereby causing inconvenience, wastage of time, fatigue, inefficiency, and poorer quality work, the improvement is characterized by:
   employing at least one key which is used for backspacing and at least one key, that may be, but is not necessarily, the same said key which is used for backspacing, which is used for spacing, and
   activation of backspacing by thumb movement, whereby the backspacing can be done without looking at the keyboard and without movement of the typist's hands from the standard typing position.

2. The method for backspacing of claim 1 wherein activation of backspacing by thumb movement is characterized by:
   activation of a backspace key by movement of one thumb, and
   activation of a space key by movement of another thumb.

3. The method for backspacing of claim 1 wherein activation of backspacing by thumb movement is characterized by:
   activation of a backspace key by either thumb.

4. The method for backspacing of claim 1 wherein activation of backspacing by thumb movement is characterized by:
   using one same thumb for activating a backspace key and a space key.

5. The method for backspacing of claim 1 wherein activation of backspacing by thumb movement is characterized by:
   using both thumbs to activate a backspace key.

6. The method for backspacing of claim 1 wherein activation of backspacing by thumb movement is characterized by:
   using a key which registers a backspace when one region of said key is activated by a thumb and which registers a space when another region of said key is activated by a thumb which may be, but is not necessarily, the same thumb which activates the backspace.
7. The method for backspacing of claim 1 wherein activation of backspacing by thumb movement is characterized by:
   using two keys which register a backspace when activated simultaneously, wherein at least one of said two keys is activated by thumb movement.

8. The method for backspacing of claim 1 wherein activation of backspacing by thumb movement is characterized by:
   using two keys which register a backspace when activated sequentially, wherein at least one of said two keys is activated by thumb movement.

9. The method for backspacing of claim 1 wherein activation of backspacing by thumb movement is characterized by:
   using two keys, either of which registers a space when activated separately but which register a backspace when both said keys are activated simultaneously, wherein at least one of said two keys is activated by thumb movement.
## INTERNATIONAL SEARCH REPORT

### I. CLASSIFICATION OF SUBJECT MATTER

According to International Patent Classification (IPC) or to both National Classification and IPC:
- IPC (5) : B41J 19/62
- U.S. Cl : 400/308, 309, 310, 311, 312

### II. FIELDS SEARCHED

Minimum Documentation Searched:

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Documentation Searched other than Minimum Documentation to the Extent that such Documents are Included in the Fields Searched:

### III. DOCUMENTS CONSIDERED TO BE RELEVANT

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<td>US,A 3,236,352 (SCHACHT) 22 February 1966 See Figure 1.</td>
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  - "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.
  - "Z" document member of the same patent family

### IV. CERTIFICATION

Date of the Actual Completion of the International Search: 29 JUNE 1990

Date of Mailing of this International Search Report: 16 AUG 1990

International Searching Authority: ISA/US

Signature of Authorized Officer: N姑天明

Form PCT/ISA/210 (second sheet) (Rev.11-87)