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— *with international search report (Art. 21(3))*

— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*

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19 February 2015

(54) Title: CHARACTER ACTUATOR DEVICE FOR FORMING WORDS

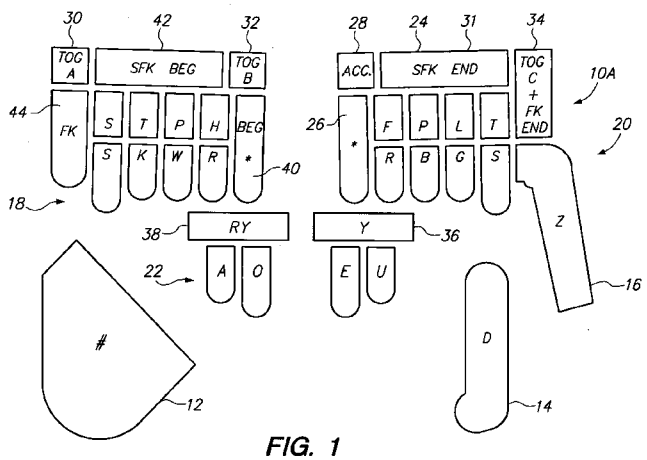

FIG. 1

(57) Abstract: A character actuating device for forming words utilizing a plurality of actuators that form the beginnings, endings, and vowel structures in words found in multiple languages. Certain actuators may also be employed to alter the words formed by the first, second, and third actuators, as wells as to shorten the number of strokes needed to form the words used by first, second, and third actuators.

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2014/041401

A. CLASSIFICATION OF SUBJECT MATTER
IPC(8) - G06F 3/02 (2014.01)
CPC - G06F 17/276 (2014.09)
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 3/02, 17/28 (2014.01)
USPC - 345/169, 171, 172; 704/3

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
CPC - G06F 1/1626, 1/1662, 3/0235, 17/276, 17/289 (2014.09) (keyword delimited)

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

PatBase, Orbit, Google Patents, Google
Search terms used: character actuator, left, right, vowel, consonant, phrases

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X ---- Y	US 2008/0091410 A1 (BENSON) 17 April 2008 (17.04.2008) entire document	10 ---------- 1-9, 11-12
Y	US 4,804,279 A (BERKELMANS et al) 14 February 1989 (14.02.1989) entire document	1-9
Y	US 2011/0201387 A1 (PAEK et al) 18 August 2011 (18.08.2011) entire document	11-12
A	US 2003/0184452 A1 (GOODGOLL) 02 October 2003 (02.10.2003) entire document	1-9
A	US 6,041,292 A (JOCHIM) 21 March 2000 (21.03.2000) entire document	1-9
A	US 2008/0304892 A1 (BAKER) 11 December 2008 (11.12.2008) entire document	1-9
A	US 3,945,482 A (EINBINDER) 23 March 1976 (23.03.1976) entire document	1-9
A	US 6,084,576 A (LEU et al) 04 July 2000 (04.07.2000) entire document	1-9

☐ 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
03 December 2014	15 DEC 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

Form PCT/ISA/210 (second sheet) (July 2009)

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2014/041401

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

See last page.

1. ☒ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.

2. ☐ As all searchable claims could be searched without effort justifying additional fees, this Authority did not invite payment of additional fees.

3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.

☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.

☒ No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2014/041401

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1. In order for all inventions to be examined, the appropriate additional examination fees must be paid.

Group I, claims 1-9, drawn to a character actuator device for forming a polysyllabic word employing two hands of a user.
Group II, claims 10-12, drawn to a method and character actuator device used for texting language employing a single hand of a user.

The inventions listed as Groups I-II do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: the special technical feature of the Group I invention: a character actuator device for forming a polysyllabic word employing two hands of a user comprising: b. a second plurality of actuators, each actuator of said second plurality of actuators representing a character of a second plurality of characters, and a third plurality of actuators, each actuator of said third plurality of actuators representing a character of a third plurality of characters, said second and third characters representing an ending of the polysyllabic word; said beginning and ending of the polysyllabic word being independent of the syllabic content of the polysyllabic word; and c. a fourth category of actuators, each actuator of said fourth category of actuators representing a particular character representing an alteration of the polysyllabic word being formed by said first, second, and third character actuators
as claimed therein is not present in the invention of Group II. The special technical feature of the Group II invention: a method and character actuator device used for texting language employing a single hand of a user comprising: b. at least one palm activated character actuators, at least one of said plurality of finger activated character actuators being adapted for activation with said palm activated character actuator to produce an output representing a word, a series of words, or a portion a word as claimed therein is not present in the invention of Group I.

Groups I and II lack unity of invention because even though the inventions of these groups require the technical feature of character actuator device for forming a polysyllabic word comprising: a. a first plurality of actuators, said actuators being adapted for simultaneous activation, this technical feature is not a special technical feature as it does not make a contribution over the prior art. Specifically, US 2008/0091410 A1 (BENSON) 17 April 2008 (17.04.2008) teaches a character actuator device for forming a polysyllabic word (character actuators segregated into categories to from and modify words in any languages, [abstract]), comprising:
a. a first plurality of actuators, each actuator of said first plurality of actuators representing a character of a first plurality of characters useable to form a beginning of the polysyllabic word (the keys STPHSKWR to the left of the asterisk keys 14 and 16 represent a first category of character actuators 18, [0034]; The first category of actuators 18 represents the beginnings of words while the second and/or third category of actuators, 20, 22, represents the endings of words, [0034]);
b. a second plurality of actuators, each actuator of said second plurality of actuators representing a character of a second plurality of characters (to the right of asterisk actuators 14 and 16, actuators FPLTDRBGS and Z constitute a second category of actuators 20, [0034]), and a third plurality of actuators, each actuator of said third plurality of actuators representing a character of a third plurality of characters (a third category 22 of actuators are represented by vowel keys AOE and U, [0034]), said second and third characters representing an ending of the polysyllabic word (The first category of actuators 18 represents the beginnings of words while the second and/or third category of actuators, 20, 22, represents the endings of words, [0034]); said beginning and ending of the polysyllabic word being independent of the syllabic content of the polysyllabic word (see table representing beginning and ends of words containing one or two syllables, [0051]); and
c. a fourth category of actuators, each actuator of said fourth category of actuators representing a particular character representing an alteration of the polysyllabic word being formed by said first (in fourth category of actuators 26, all modifier keys used in some cases to modify first and second/third 18, 20, and 22 which comprise word endings, [0040]), second, and third character actuators (the number/# actuator 24 and the asterisk keys 14 and other keys 16 represent a fourth category of actuators 26, [0034]; the asterisk keys for actuators 14 and 16, as well as number key 24, are able to modify the second and third categories of actuators 20 and 22, but do not affect the output of the first category of actuators 18, [0034]), any one of each of said first second, third and fourth plurality of actuators being adapted for simultaneous activation (actuators of the first, second, and/or third category of actuators are activated simultaneously to produce signals representing the beginnings and ends of words, i.e. in a single stroke, [0013]).

Since none of the special technical features of the Group I or II inventions are found in more than one of the inventions, unity of invention is lacking.