

EXHIBIT 2002

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Dinn

U.S. Patent No.: 8,676,852

Issued: March 18, 2014

Application No.: 13/736,548

Filed: Jan. 8, 2013

Title: PROCESS AND APPARATUS
FOR SELECTING AN ITEM
FROM A DATABASE

Examiner: To Be Assigned

Art Unit: To Be Assigned

**REQUEST FOR *EX PARTE*
REEXAMINATION UNDER
37 C.F.R. § 1.510**

Mail Stop *Ex Parte* Reexam
Attn: Central Reexamination Unit
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Commissioner:

Pursuant to 35 U.S.C. § 302 and 37 C.F.R. §§ 1.510 et seq., the undersigned requests ex parte reexamination of claims 1-22 (the “Challenged Claims”) of U.S. Patent No. 8,676,852 (“the ’852 patent,” Exhibit A) on behalf of Samsung Electronics America, Inc. (“SEA” or “Requestor”).

The named inventor on the ’852 patent is Kevin W. Dinn. Through an assignment recorded with the PTO, the inventor transferred his interest in the ’852

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patent to Kannuu Pty Ltd. (“Kannuu” or “PO”) on June 30, 2008. *See* Reel/Frame
No. 030180/0921.

Pending Litigation

SEA is a named defendant in litigation concerning the ’852 patent. The
litigation is captioned *Kannuu Pty Ltd. v. Samsung Electronics Co., Ltd.*, No. 1:19-
cv-4297 (S.D.N.Y).

Because the ’852 patent is involved in concurrent litigation, the Patent
Office should accord the requested reexamination “priority over all other cases.”
MPEP § 2261.

Ex Parte Reexamination Filing Requirements

This request includes the following:

1. Pursuant to 37 C.F.R. § 1.510(a), the \$12,600 fee for requesting *ex parte* reexamination with 2 independent claims and 20 dependent claims as set forth in 37 C.F.R. § 1.20(c).
2. Pursuant to 37 C.F.R. § 1.510(b)(1), a statement pointing out each substantial new question of patentability based on prior patents and printed publications, as discussed in detail below.
3. Pursuant to 37 C.F.R. § 1.510(b)(2), an identification of every claim for which reexamination is requested, and a detailed explanation of the pertinence

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and manner of applying the cited prior art to every claim for which reexamination is requested.

4. Pursuant to 37 C.F.R. § 1.510(b)(3), a copy of every patent or printed publication relied upon as a basis of unpatentability. In addition, a Form PTO/SB/08a is attached hereto.

5. Pursuant to 37 C.F.R. § 1.510(b)(4), a copy of the '852 patent is attached hereto as Exhibit 1001. Pursuant to 37 C.F.R. § 1.510(b)(5), the signature on this request certifies that a copy of the request has been served in its entirety on PO's representative at the address provided for in 37 C.F.R. § 1.33(c). Specifically, PO's representative was served by first-class U.S. mail on May 28, 2021, addressed to:

**JONES DAY
250 Vesey St.
NEW YORK, NY 10281**

6. Pursuant to 37 C.F.R. § 1.510(b)(6), SEA certifies that the statutory estoppel provisions of 35 U.S.C. §§ 315(e)(1) and 325(e)(1) do not prohibit SEA from filing this *ex parte* reexamination request.

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TABLE OF EXHIBITS

Attachments

- (1) Certificate of Service to Patent Owner.
- (2) Form PTO/SB/08a (Information Disclosure Statement)

Exhibits

The '852 Patent, Declaration, and Prosecution History

- | | |
|----------|--|
| Ex. 1001 | U.S. Patent No. 8,676,852 (“’852 patent”) |
| Ex. 1002 | File History of the ’852 patent |
| Ex. 1003 | Expert Declaration of Dr. Clifton Forlines |
| Ex. 1004 | CV of Dr. Clifton Forlines |

Prior Art

- | | |
|-----------|---|
| Ex. 1005 | U.S. Patent Publication No. 2002/0113825 (“ <i>Perlman</i> ”) |
| Ex. 1006 | U.S. Patent Publication No. 2004/0021691 (“ <i>Dostie</i> ”) |
| Ex. 1007 | WO 2002-091160 (“ <i>Badarneh</i> ”) |
| Ex. 1008 | U.S. Patent Publication No. 2002/0078013 (“ <i>Josenhans</i> ”) |
| Ex. 1009 | U.S. Patent No. 5,797,098 (“ <i>Schroeder</i> ”) |
| Ex. 10010 | U.S. Patent No. 6,593,913 (“ <i>Krohn</i> ”) |

Other

- | | |
|----------|---|
| Ex. 1011 | IPR2020-00740, Petition |
| Ex. 1012 | IPR2020-00740, Decision Denying Institution |
| Ex. 1013 | IPR2020-0737 Secondary Consideration Discovery Pleading |

LIST OF CHALLENGED CLAIMS

CLAIM	LIMITATION
1a	A computer-implemented method of selecting an item from a plurality of items, the method comprising:
1b	generating, by at least one computer processor, a first display, the first display comprises:
1c	a part of an item identifier for at least a first set of items and
1d	a part of an item identifier for at least a second set of items in a database;
1e	enabling, by the at least one computer processor, selection of one of the two parts of the item identifiers by a user using a user interface;
1f	generating, by the at least one computer processor, in response to the selection of the one of the two parts, a further display; wherein the further display comprises:
1g	an additional part of an item identifier for at least a third set of items and an additional part of an item identifier for at least a fourth set of items; and
1h	the previously selected one of the two parts of the item identifiers;
1i	enabling, by the at least one computer processor, selection of one of the two additional parts of the item identifiers by the user using the user interface;
1j	combining, by the at least one computer processor, the selected one of the two parts of the item identifiers with the selected one of the two additional parts of the item identifiers to create a larger part of the item identifiers; and
1k	displaying, by the at least one computer processor, the larger part of the item identifiers; wherein
1l	the parts of the item identifiers and the additional parts of the item identifiers are text symbols and the additional parts of the item identifiers are shorter than complete item identifiers; and
1m	the first set of item identifiers and the second set of item identifiers are mutually exclusive of one another and the third set of item identifiers and the fourth set of item identifiers are mutually

CLAIM	LIMITATION
	exclusive subsets of the first set of item identifiers or the second set of item identifiers.
2	The method in accordance with claim 1, comprising a further step if iterating the selections until the item identifiers are completed.
3	The method in accordance with claim 1, wherein the step of generating the first display includes selecting the parts of the item identifiers for the first and second set of items to be displayed based on predetermined criteria.
4	The method in accordance with claim 3, wherein one of the predetermined criteria is a frequency of selection of database items associated within the item identifier parts for the first and second set of items.
5	The method in accordance with claim 3, wherein one of the predetermined criteria is a ranking of the parts of item identifiers for the first and second set of items in relation to a tree hierarchy classification of the parts of item identifiers for the first and second set of items.
6	The method in accordance with claim 1, wherein the item identifiers are text strings.
7	The method in accordance with claim 6, wherein the item identifiers are words.
8	The method in accordance with claim 1, wherein the database is stored in a memory of the computing device.
9	The method in accordance with claim 8, wherein the computing device is a mobile telephone.
10	The method in accordance with claim 8, wherein the computing device is a Personal Digital Assistant (PDA).
11	The method in accordance with claim 8, wherein the steps of enabling selections allow selections of the one of the two parts or the one of the two additional parts of the item identifiers by way of a joystick.
12a	An apparatus for selecting items, the apparatus comprising:
12b	an output display;
12c	an input; and

CLAIM	LIMITATION
12d	a computer processor configured to execute a method comprising:
12e	associating the items with a corresponding item identifiers;
12f	generating a first display on the output display, the first display comprises:
12g	a part of an item identifier for at least a first set of items and
12h	a part of an item identifier for at least a second set of items in a database;
12i	enabling selection of one of the two parts of the item identifiers by a user using the input;
12j	generating, in response to the selection of the one of the two parts of item identifiers, a further display on the output display, the further display comprises:
12k	an additional part of an item identifier for at least a fourth set of items; and
12l	the previously selected one of the two parts of the item identifiers;
12m	enabling selection of one of the two additional parts of the item identifiers by the user using the input;
12n	combining the selected one of the two parts of the item identifiers with the selected one of the two additional parts of the item identifiers to create a larger part of the item identifiers; and
12o	displaying the larger part of the item identifiers on the output display; wherein
12p	the parts of the item identifiers and the additional parts of the item identifiers and the additional parts of the item identifiers are text symbols and the additional parts of the item identifiers are shorter than complete item identifiers; and
12q	the first set of item identifiers and the second set of item identifiers are mutually exclusive of one another and the third set of item identifiers and the fourth set of item identifiers are mutually exclusive subsets of the first set of item identifiers or the second set of item identifiers.
13	The apparatus in accordance with claim 12, wherein the processor is arranged to select the parts of the item identifiers for the first and

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	second set of items to be displayed based on a predetermined criterion.
14	The apparatus in accordance with claim 13, wherein the predetermined criterion is a frequency of selection of database items associated with the item identifier parts for the first and second set of items.
15	The apparatus in accordance with claim 13, wherein the predetermined criterion is a ranking of the parts of the item identifiers for the first and second set of items in relation to a tree hierarchy classification of the parts of item identifiers for the first and second set of items.
16	The apparatus in accordance with claim 15, including a memory storing the tree hierarchy.
17	The apparatus in accordance with claim 12, wherein the item identifiers are text strings.
18	The apparatus in accordance with claim 17, wherein the item identifiers are words.
19	The apparatus in accordance with claim 12, including a memory storing the database.
20	The apparatus in accordance with claim 19, wherein the apparatus is a mobile telephone.
21	The apparatus in accordance with claim 18, wherein the apparatus is a Personal Digital Assistant (PDA).
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- (h) 1h wherein the parts of the item identifiers and the additional parts of the item identifiers are text symbols and the additional parts of the item identifiers are shorter than the complete item identifiers; and 172
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REMARKS

I. INTRODUCTION

The '852 Patent describes various techniques for more quickly selecting items from a database, such as names from an electronic telephone address book. Ex. 1001, Abstract; 4:61-5:12. The four most likely items in the database are presented on a display screen corresponding to the left, right, up, and down positions of a joystick, sometimes referred to as a 4-way direction-pad or d-pad. *Id.*, 4:38-45. The user can then select an item from one of the available displayed items using the joystick, and the item is appended to the “name thus far specified.” *Id.* at 4:46-53. If the selection is not complete, the user can repeat the process to append one of the next four most likely items to the previous selection. *Id.* Figures 5 and 6 show the first two selections corresponding to the name “John Smith” contained in the user’s address book. As seen in Figure 6, once the name “John” is selected, the most likely last names (including “Smith”) are then displayed for selection.

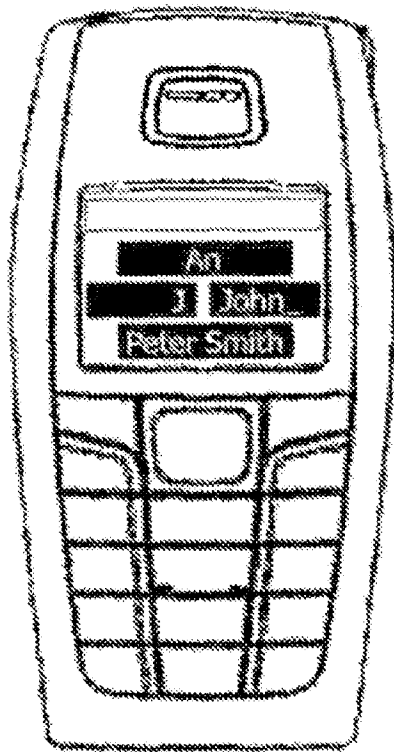


FIGURE 5

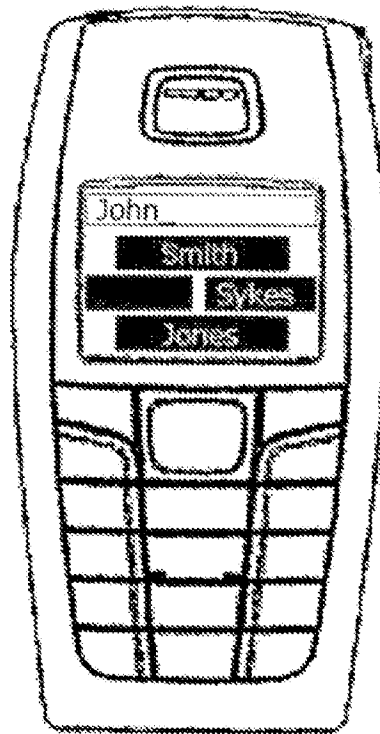


FIGURE 6

Id., Figs. 5 and 6. According to the '852 Patent, this selection method allows for fewer key presses or movements of the joystick because “the most likely letters are presented first” and the use of an on-screen labels (as opposed to printed on buttons) allows users to “maintain their gaze on the screen.” *Id.*, 5:1-19.

As described in more detail below, however, Patent Owner did not invent the claimed selection method. In the late 1990s and early 2000s—well before the earliest possible priority date of the '852 Patent—significant efforts were being undertaken to make textual input more efficient using input devices with reduced

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set keyboards, such as mobile telephones and television remote controls.

Numerous enhanced user interfaces with “dynamic” displays (that re-positioned letters, groups of letters, or words based on the likelihood of being inputted next) were developed to input textual data more efficiently and without the use of a standard keyboard. As shown below, each of these interfaces discloses or renders obvious all the elements of the Claims. The Claims are therefore invalidated by the prior art presented in this Petition. Accordingly, the PTO should grant this Request and find the Claims of the ’852 Patent invalid.

II. PROCEDURAL HISTORY

A. ’852 Patent IPR

Petitioner previously filed a petition for IPR against the 8,676,852 patent citing U.S. Patent Nos. 7,152,213 (Pu), 6,59,913(*Krohn*), and 5,797,098 (*Schroeder*) as well as U.S. Pat. Pub. No 2002/0113825 (*Perlman*) on March 17, 2020. On September 22, 2020, the Board denied institution. Ex. 1012.

The Board chiefly denied institution on their finding that neither *Perlman* nor Pu disclosed “*a part of an item identifier for at least a first set of items and a part of an item identifier for at least a second set of items in a database.*”

Although the Board did not formally adopt a construction for this limitation, it is clear the Board narrowly construed this claim to require each set of items be

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expressly found in separate databases. Ex. 1012 at 14-16, 21-23.. (finding *Perlman* and Pu failed to disclose “part of an item identifier . . . for at least a first set of items or entries in a particular database **and** a part of an item identifier . . . for at least a second set of items or entries in a different particular database.” (emphasis in original)); *compare* ‘852 Patent Claim 1 (“a part of an item identifier for at least a first set of items and a part of an item identifier for at least a second set of items in a database;” “the first set of items identifiers and the second set of item identifiers are mutually exclusive of one another”). This de facto construction was based on the “the first set of items identifiers and the second set of item identifiers are mutually exclusive of one another” limitation. Requester contests this construction as neither appropriate under *Phillips* or under the Broadest Reasonable Interpretation under MPEP §2240.

The Board similarly rejected petitioner’s arguments around *Krohn*, principally finding *Krohn* failed to disclose “the first set of items identifiers and the second set of item identifiers are mutually exclusive of one another.” *Id* at 28-29. The Board explained it did not understand “how the aforementioned predetermined correct answers and predetermined incorrect answers are mutually exclusive of one another.” *Id.*

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B. Related Patent IPRs

Requester also filed IPRs against four other related patents, featuring similar claims. *See* IPR2020-00736, IPR2020-00737, IPR2020-00738, and IPR2020-739. Two of these IPRs were instituted while the others were denied on similar grounds as the ‘852 IPR.

In instituting the -00737 and -00738 IPRs, the Board found a reasonable likelihood that all the limitations of challenged claims were disclosed by the same art cited in the ‘852 IPR. *See e.g.* IPR2020-00738, Paper 22 at 51. The 8,370,393 Patent, subject to the -00738 IPR, is a continuation of the same application as the ‘852 Patent. Naturally, claim 1 of both patent share the majority of their limitations. *Compare* ‘393 Patent Claim 1 with ‘852 Patent Claim 1. The only significant limitation contained in the ‘852 Patent Claim 1 and the ‘393 Patent Claim 1 is “the first set of items identifiers and the second set of item identifiers are mutually exclusive of one another.” As such the only limitation of the ‘852 Challenged claims the Board did not find disclosed by Pu, Krohn, Perlman, and Dostie was this mutually exclusive limitation. The same is true of the -00737 IPR and the 9,436,354 Patent.

Petitioner also challenged U.S. Patent No. 8,996,579 in IPR 2020-00739. The Board denied institution of this challenge on the same grounds it denied the

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‘852 IPR. Institution of IPR2020-00736 was denied on a similar finding but regarding a different term. Instead of focusing on the “mutually exclusive” term the Board found “at least one part of an item identifier corresponding to a first collection of items and at least one part of an item identifier corresponding to a second collection of items,” required two sets of items in separate databases and was not disclosed.

III. LEVEL OF SKILL IN THE ART

The ’852 Patent claims priority to Australian Prov. App. No. 2005904378, filed August 12, 2005. A person of ordinary skill in the art (“POSITA”) at that time would have had at least an undergraduate degree in electrical engineering, computer science, or physics (or a related field, such as computer engineering, human-computer interaction, or industrial design) and 2-3 years of work experience with input interfaces to electronic devices. Ex. 1003, ¶¶15-21. Each of the arguments below is made from the standpoint of a POSITA in the field of the ’852 Patent. Petitioner’s expert, Dr. Forlines, was at least a POSITA at the time of the alleged invention. *Id.*; Ex. 1004 (noting Master’s degree in Human-Computer Interaction from Carnegie Mellon University in 2001 and significant work and teaching experience in user input interfaces for a number of years prior to 2005).

IV. CLAIM CONSTRUCTION

Under MPEP §2240, patent claims are to be given their broadest reasonable interpretation consistent with the specifications during Ex Parte Reexaminations. *See In re Yamamoto*, 740 F.2d 1569 (Fed. Cir. 1984). Naturally, the Board's prior de facto construction is not the broadest reasonable interpretation, as that would have been the inappropriate standard in an IPR, and would be inappropriate in the current action.

Previously, the patent owner argued for an overly narrow construction of “the first set of items identifiers and the second set of item identifiers are mutually exclusive of one another and the third set of item identifiers and the fourth set of item identifiers are mutually exclusive subsets of the first set of item identifiers or the second set of item identifiers” as requiring the use of a hierarchical tree structure. IPR2020-00740, Paper 17 at 47-48. The Patent Owner inappropriately sought to read in limitations from the specification and the Board appropriately rejected this construction. However, the Board took an inappropriate midway position described above, that the mutually exclusive limitation required separate databases. *Supra* II.A.

The broadest reasonable interpretation of this claim includes neither the Patent Owner's hierarchical tree structure limitation nor the Boards prior separate

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databases limitation. Addressing the Board’s de facto construction first, the specification describes that in “a first aspect, the present invention provides a method of selecting database items from a database.” Ex. 1001, 2:34-36. The idea of selecting items from a single database is consistent throughout the specification. *See also, Id.*, 4:35-60 (describing an embodiment of the invention where options for selection come from “the database . . . based on an analysis of the frequency of words in the address book”); 5:20-30 (explaining the invention can be used on a list “of any size from a handful of entries to a large database of thousands or even millions of entries”). As such, the Board’s construction, requiring multiple databases, is not the broadest reasonable interpretation in light of the specification. Similarly, Patent Owner’s prior proposed construction, that the limitation must be implemented via a hierarchical tree, is too narrow. Considering the hierarchical tree limitation is included in dependent claims 5, 15, and 16, it would be inappropriate to construe the independent claims to include this limitation. *See RF De., Inc. v. Pac. Keystone Techs., Inc.*, 326 F.3d 1255, 1263 (Fed. Cir. 2003).

In any case, as discussed below, any of these constructions is disclosed by the prior art that forms the basis of this petition.

V. OVERVIEW OF THE '852 PATENT

The '852 Patent describes various techniques for more quickly selecting items from a database, such as names from an electronic telephone address book. Ex. 1001, Abstract; 4:61-5:12. The four most likely items in the database are presented on a display screen corresponding to the left, right, up, and down positions of a joystick, sometimes referred to as a 4-way direction-pad or d-pad. *Id.*, 4:38-45. The user can then select an item from one of the available displayed items using the joystick, and the item is appended to the “name thus far specified.” *Id.* at 4:46-53. If the selection is not complete, the user can repeat the process to append one of the next four most likely items to the previous selection. *Id.* Figures 5 and 6 show the first two selections corresponding to the name “John Smith” contained in the user’s address book. As seen in Figure 6, once the name “John” is selected, the most likely last names (including “Smith”) are then displayed for selection.

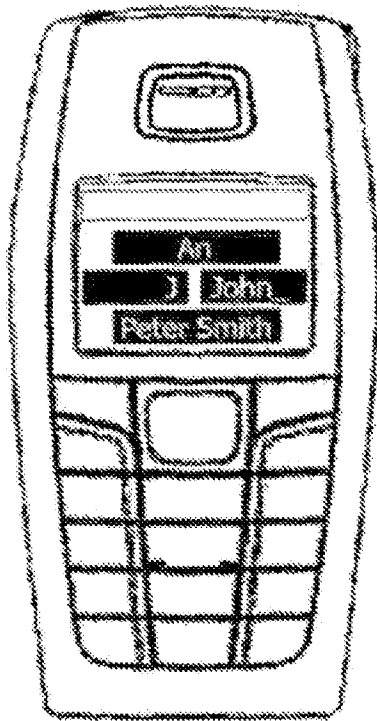


FIGURE 5

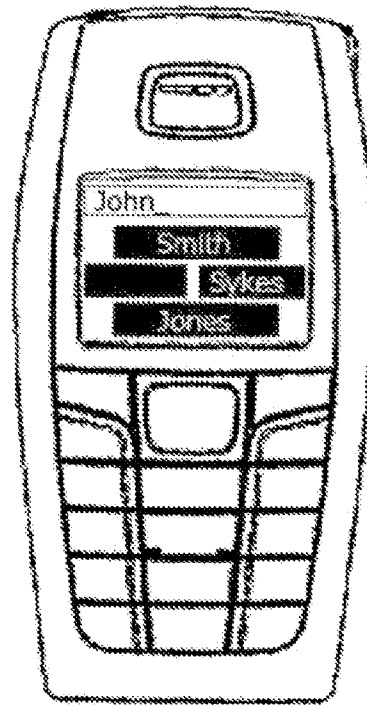


FIGURE 6

Id., Figs. 5 and 6.

According to the '852 Patent, this selection method allows for fewer key presses or movements of the joystick because “the most likely letters are presented first” and the use of an on-screen labels (as opposed to printed on buttons) allows users to “maintain their gaze on the screen.” *Id.*, 5:1-19. Claim 1 is demonstrative:

1. A computer-implemented method of selecting an item from a plurality of items, the method comprising:

generating, by at least one computer processor, a first display, the first

display comprises:

a part of an item identifier for at least a first set of items and

a part of an item identifier for at least a second set of items in a

database;

enabling, by the at least one computer processor, selection of one of the two

parts of the item identifiers by a user using a user interface;

generating, by the at least one computer processor, in response to the

selection of the one of the two parts, a further display; wherein the

further display comprises:

an additional part of an item identifier for at least a third set of items

and an additional part of an item identifier for at least a fourth set of

items; and

the previously selected one of the two parts of the item identifiers;

enabling, by the at least one computer processor, selection of one of the two

additional parts of the item identifiers by the user using the user

interface;

combining, by the at least one computer processor, the selected one of the

two parts of the item identifiers with the selected one of the two

additional parts of the item identifiers to create a larger part of the item identifiers; and

displaying, by the at least one computer processor, the larger part of the item identifiers; wherein

the parts of the item identifiers and the additional parts of the item

identifiers are text symbols and the additional parts of the item

identifiers are shorter complete item identifiers; and

the first set of items identifiers and the second set of item identifiers are

mutually exclusive of one another and the third set of item

identifiers and the fourth set of item identifiers are mutually

exclusive subsets of the first set of item identifiers or the second set

of item identifiers.

VI. OVERVIEW OF THE TECHNOLOGY

As described above, the alleged invention described the '852 Patent relates to techniques for more quickly selecting an item from a database, such as a name from an electronic telephone address book. The techniques aim to limit the number of keystrokes needed to traverse the database to the desired item. As acknowledged in the background of the '852 Patent itself, there was a well-known problem inputting textual data into on-screen user interfaces without a full keyboard. Ex.

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1001, 1:39- 2:34. Mobile phones, PDAs, television remote controls, and set-top boxes all shared this problem. Ex. 1003, ¶35.

1. Predictive Keyboards

The use of on-screen keyboards exploded in the 1990s, thanks to the proliferation of interactive televisions and smart phones. Almost immediately thereafter, user interface designers began working on ways to simplify and expedite textual input using the on-screen keyboards. Ex. 1003, ¶¶36-42. For example, U.S. Patent No. 5,797,098 to *Schroeder et al.* (Ex. 1009), filed in 1995, describes an improved mobile telephone user interface with both a predictive keyboard input method and automatic word completion. By using the predictive keyboard input method described in *Schroeder*, the most commonly used characters for selected words in a particular language can be associated with programmable keys, and then after accepting a user input of a character, a next set of characters is displayed that are “most likely to occur after the character previously input by the user.” Ex. 1009, 1:39-45, 4:20-6:15.

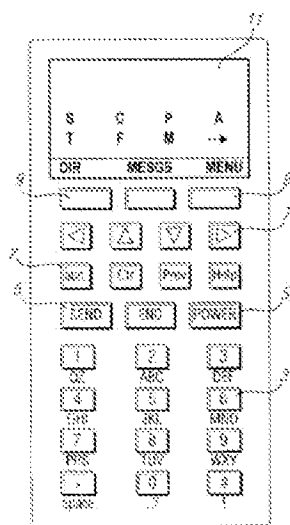


FIG. 1A

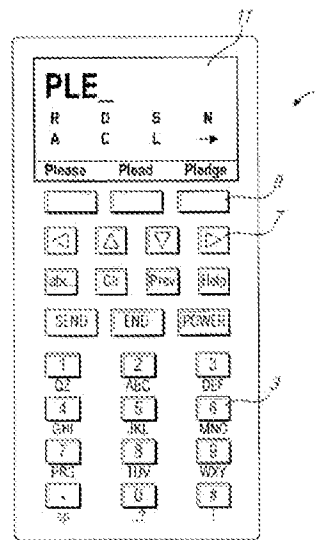


FIG. 4

2. Database Indexing, Searching, and Selection

Databases have been used to store information, such as names, addresses, and messages for decades prior to the '852 Patent. Ex. 1003, ¶¶53-58. Almost immediately after databases for storing vast amounts of information were developed, methods for automatically indexing and searching the information were also developed. *Id.*; see also U.S. Patent No. 3,309,677, filed January 2, 1964, entitled “Automatic Information Indexing” (indexing information in databases and searching based on indices).

As one example, U.S. Patent No. 5,223,924 to Strubbe, filed in 1992, discloses “program information databases” for television programs that are automatically correlated with the preferences of the user. The program information

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databases are indexed by start time, channel, and/or “liked” or “disliked” indications selected by the user. US 5,223,924, 4:17-5:32. A user browses the data in the databases by specifying one or more of these indices. *Id.* A “free text” search field also allows users to perform simply queries over the records in the program information databases and display the results. *Id.*, 5:48-6:24.

Database searches routinely used indices, lookup tables, and hierarchical search trees to carry out efficient database searches. For example, Figure 6 of *Schroeder* and Figures 4 and 14 of *Dostie* (described above) show a dictionary tree used for searching, auto-completion, and candidate character/word prediction. *Schroeder* even acknowledges that even by 1995, when *Schroeder* was filed, “[t]he implementation of such dictionary trees or lookup tables in the computer arts [was] well known.” Ex. 1009, 7:10-25.

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VII. PROSECUTION OF THE '852 PATENT

The '852 Patent was filed on January 8, 2013 and claims the benefit of Australian Prov. App. No. 2005904378, filed August 12, 2005.¹ Ex. 1002, .201- .238.

On September 11, 2013, the Examiner held a telephonic interview with the applicant, where minor amendments to the claims were suggested to the applicant. *Id.*, .122-.123.

On September 19, 2013, the Examinee issued a Notice of Allowance with Examiner's amendment correcting minor informalities in the claims. The application issued as U.S. Patent No. 8,676,852 on March 18, 2014. *Id.*, .01.

VIII. IDENTIFICATION OF PRIOR ART RAISING SUBSTANTIAL NEW QUESTIONS OF PATENTABILITY AS TO CLAIMS 1-22

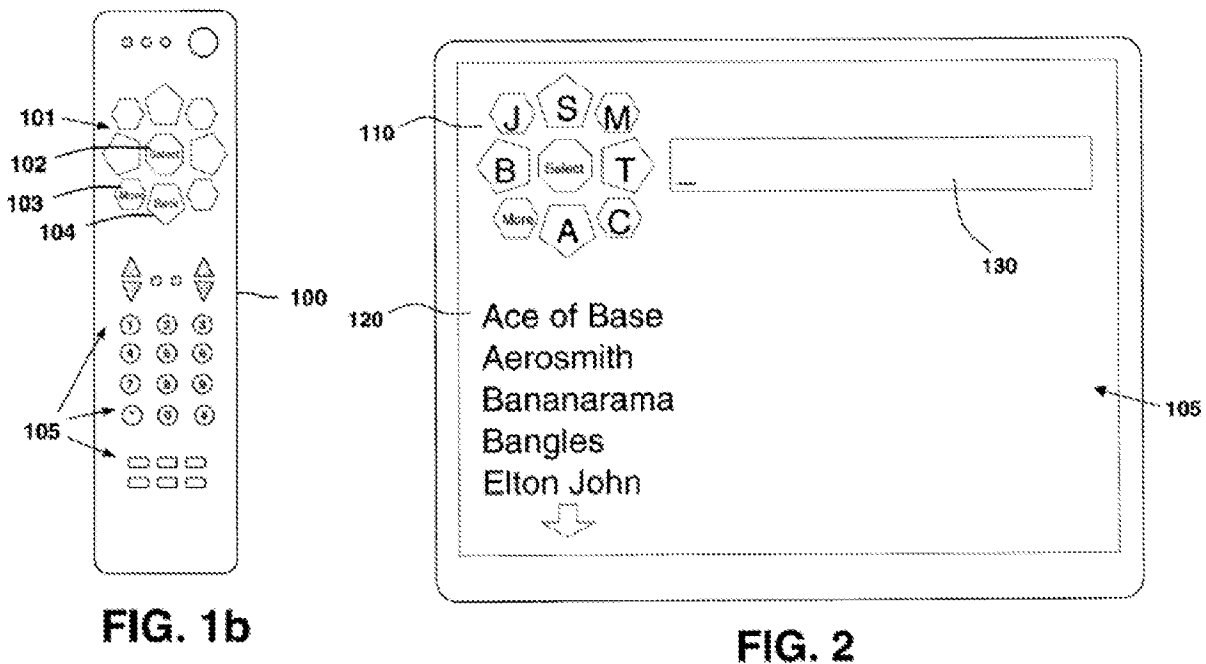
The following is a summary of the references cited in support of this request.

A. *Perlman*

Perlman (Ex. 1005) relates to an improved user input interface for a television remote control having functional buttons arranged in a “star” pattern. Ex.

¹ For the purposes of this request only, Requestor has assumed the '852 Patent is entitled to its August 12, 2005 provisional priority date but may take other positions in the underlying district court litigation.

1005, ¶[0014]; Ex. 1003, ¶59. A first group of characters to be mapped to a group of remote control buttons is selected based on how probable it is that individual characters within the first group correspond to a first character of a word representing information sought by a user in a database. Then, the first group of characters are mapped to the group of remote control buttons. *Id.*, Abstract. For example, the function buttons 101 on remote control 100 of Figure 1b could be mapped to the characters in buttons 110 displayed on television/computer display 105 in Figure 2.



The characters mapped to the functions buttons (and displayed on the display) correspond to “the most common first letters of words in the database list 120.” *Id.*,

¶[0017]. In the depicted embodiments, the database list corresponds to “a list of available multimedia content.” *Id.* The operation of the improved user input interface is described below:

As the user selects letters via the displayed character-mapped buttons 110, the user’s letter selections will appear in a text box 130, and the database list 120 will change to reflect the user’s selections. Initially (i.e., before the user has selected a character), the alphanumeric characters mapped to the character-mapped buttons 101, 110 correspond to the most common first letters of words in the database list 120. Once the user selects a first character, a new set of characters are mapped to the character-mapped buttons 101, 110 which correspond to the most common second letters of words in the database list 120 which begin with the first-selected character. As the user continues to select characters, only those multimedia programs/files with titles which begin with the selected characters will be displayed in the list 120.

Id.

Individual characters (i.e., letters) or groups of characters (i.e., multiple letters) may be displayed within each button 110 (*id.*, ¶[0029]), and the letter/letter groups may be selected based on “commonality,” “user’s preferences,” or a

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weighted combination of the two (“e.g., 50% character incidence/50% user preferences; 75% character incidence/25% user preferences”) (*id.*, ¶[0019]).

Various types of built-in dictionaries and “pre-trained” word sequences may also be used to prioritize the linking operation between function buttons and letter/letter groups. *Id.*, ¶[0035].

As can be seen from the above description and according to Dr. Forlines, the invention described in *Perlman* is “virtually indistinguishable” from the invention recited in the Challenged Claims. Ex. 1003, ¶62. They both address the same problem and reach the same solution—namely, a dynamic keyboard that repositions the next most likely characters for input around directional input buttons.

B. *Dostie*

Dostie (Ex. 1006) describes a personal computing device that supports the “rapid search for data, such as text,” on digital devices, such as PDAs and cell phones, by having the user input one or more characters and then using the inputted character sequence to search a dictionary for a set of completion candidates that begin with the typed sequence. Ex. 1006 at Abstract; ¶[0073]; Ex. 1003, ¶63. Those completion candidates are chosen so that they are “more likely to be the ones that the user is attempting to type.” Ex. 1006, ¶[0073]. Figures 4, 14, 19, and 22 of *Dostie* show the tree-based representation of the

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database and the relationship between characters in the tree. For example, in Figure 14, the keys ‘a’ ‘n’ and ‘y’ have already been typed by the user, and the system suggests the characters ‘o’ ‘h’ and ‘w’ based on the current location in the tree. *Id.*, ¶¶[0088]-[0090]. Furthermore, *Dostie* discloses that full sequences of characters (“completion candidates”) be presented based on the current location in the tree. *Id.* In the example of Figure 14, having typed the word “any,” the system would then return the candidates “any” “anyone” “anyhow” and “anyway” and order them based on their “preference values” (which could be based on their frequency of prior selection or frequency in an English language or personal dictionary). *Id.*, ¶¶[0085], [0209]-[0215]

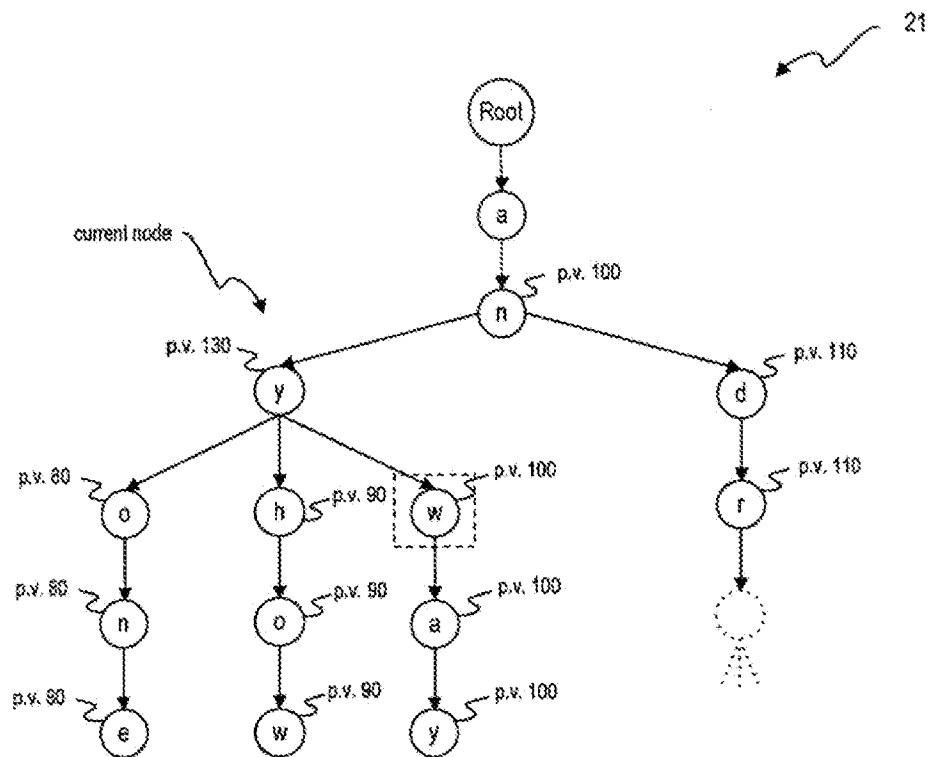
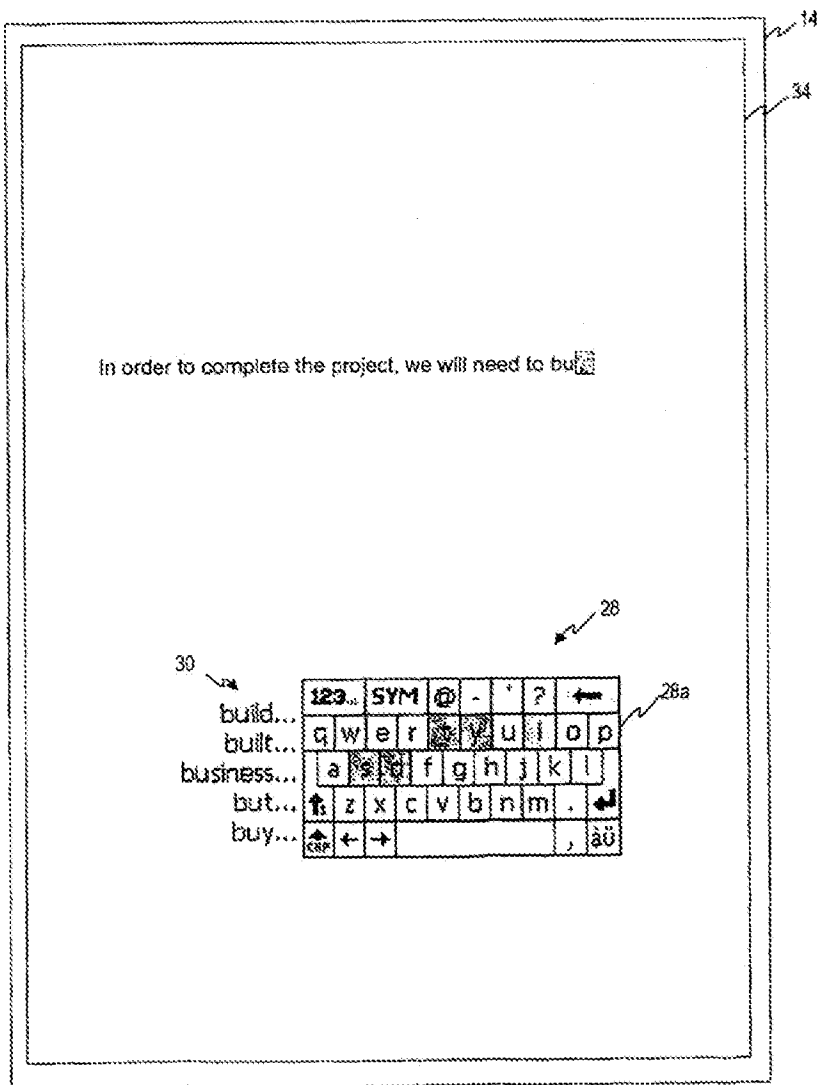


FIG. 14

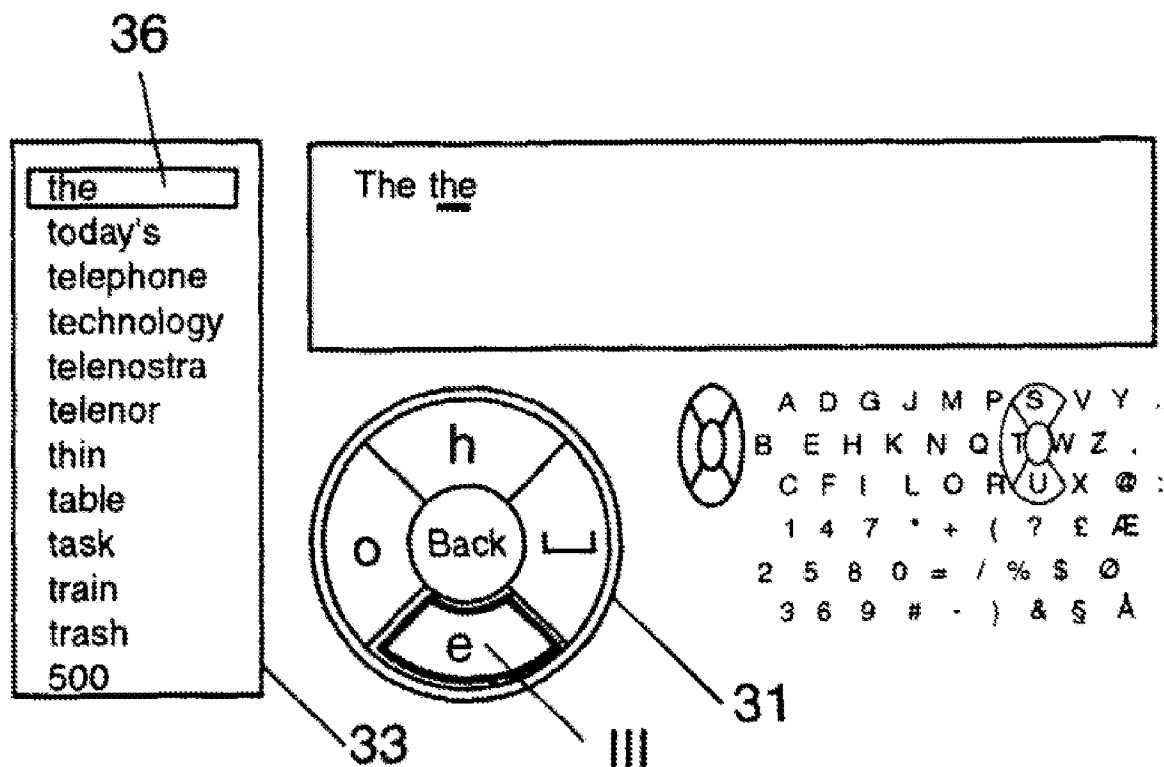
Figure 3 from *Dostie* shows one method of presenting these completion candidates (either whole words or partial words). In this example, having typed “bu”, the completion candidates presented are partial completion candidates (called “chunks” by *Dostie*), which include “build...” “built...” “business...” “but...” and “buy...”. *Id.*, ¶¶[0079], [0087]. The ellipses indicates that the dictionary contains

one or more further completion candidates that begin with this chunk (for example, “buy” “buying” “buyback” “buyoff” for “buy...”). *Id.*



C. *Badarneh*

Badarneh (Ex. 1007) discloses a system for input of data elements (such as letters) in an electronic device, where entering characters suggests the next character or characters in a word. *Badarneh* discloses a user interface:



Badarneh discloses a list of words and a text entry system in the form of a left-right-up-down mechanism. After selecting a character, the dial 31 presents additional letters based on the frequency of those letters after the selected letter. The text entry system can continue until the word is formed.

D. *Josenhans*

Josenhans (Ex. 1008) discloses a method for searching at least two databases. Specifically, it relates to searching multiple, but independent databases that store different information such as an address book or appointment diary. The search terms entered by a user are used to search all of the different databases, without any knowledge to the user. Therefore, the user can search universally without knowing they are searching multiple databases, eliminating the need to conduct multiple searches.

E. *Schroeder*

Schroeder (Ex. 1009) discloses a user interface for a cellular telephone with several functions, including (1) predictive text; (2) word completion; and (3) a global search method.

The search uses a dictionary to predict the most likely used letters based on different criteria, such as the most used letters, or the most used words. The predicted letters are shown on the display and assigned to keys:

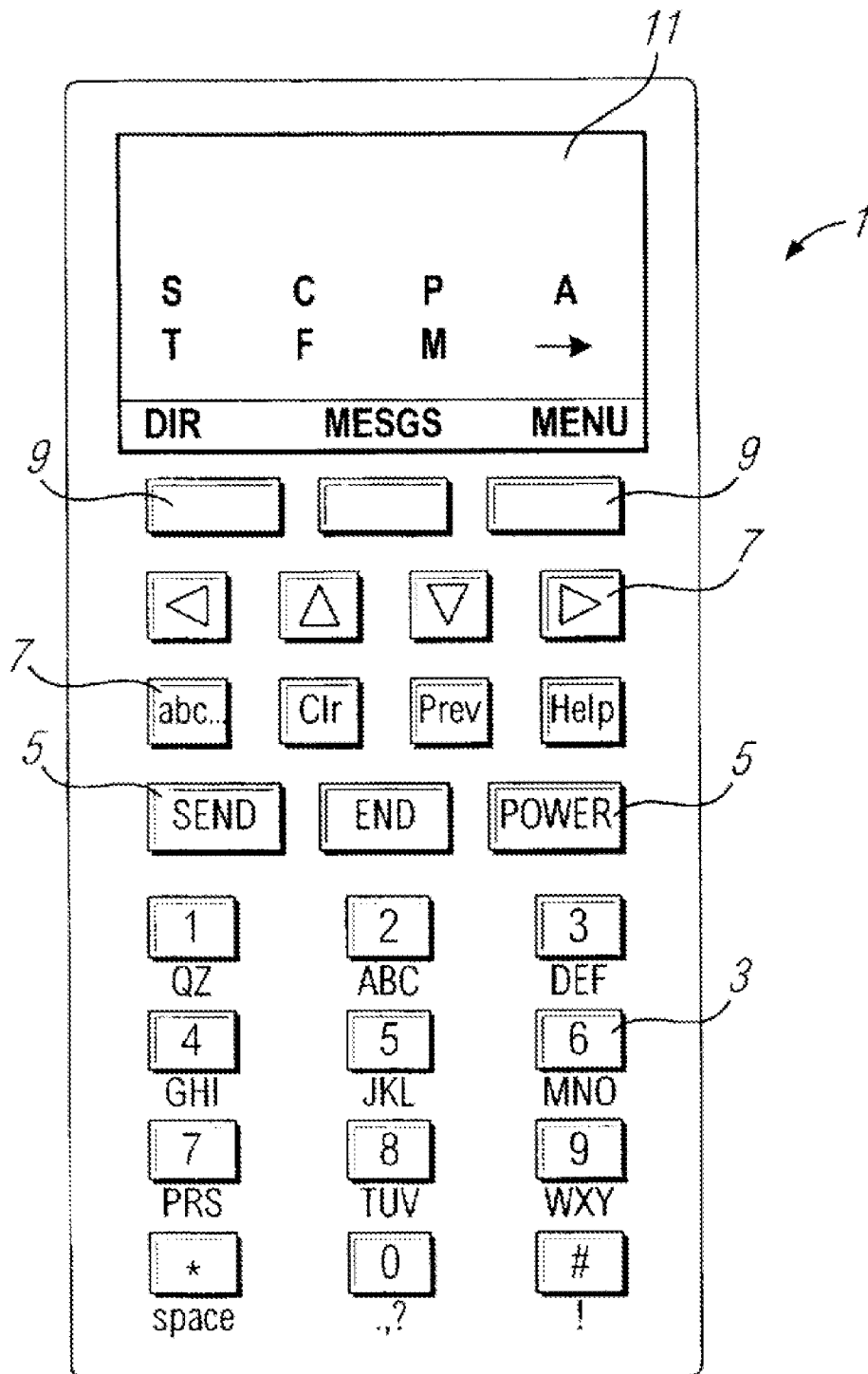


FIG. 1A

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Once a user selects a letter, the system will then predict the next letter based on the most used letters next to that letter, or the most used words. This continues until the word is spelled, or the system predicts the word.

a	<start>	S T	C F	P M	A →
b	P	R L	E P	O I	A →
c	L	E Y	A O	L D	I →
d	E	R A	D C	S L	N →
e	A	R C	L S	T I	N →
f	S	T O	E U	I H	S →
g	E	R A	D C	S L	N →
h	<sp>	S T	C F	P M	A →
i	C	E H	O I	T L	A →
j	A	R C	L S	T I	N →
k	L	E Y	A O	L D	I →
l	L	E Y	A O	L D	I →
m	<sp>	S T	C F	P M	A →
n	→	R E	D L	B H	W →
o	H	E T	O U	A R	I →
p	O	N W	R L	U O	M →
q	M	E P	A S	O B	I →
r	E	R A	D C	S L	N →

FIG. 3

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Based on that procedure, Figure 3 demonstrates the letters that would be accordingly chosen after each selection by the user.

IX. SAMSUNG IS NOT ESTOPPED

Samsung certifies that the statutory estoppel provisions of both inter partes review (35 U.S.C. § 315(e)(1)) and post grant review (35 U.S.C. § 325(e)(1)) do not bar or prohibit Samsung from requesting *ex parte* reexamination of the '852 patent.

As discussed above, some of the SNQs presented here are based in part on grounds that were originally presented in the '852 IPR, but which were not instituted. Other grounds were not presented in the '852 IPR. Because *no* grounds were instituted or considered substantively in the '852 IPR, there has been no determination with respect to any grounds and therefore estoppel does not apply.

X. REQUIRED NOTICES UNDER 37 C.F.R. § 1.510

A. Statement Identifying Each Substantial New Question of Patentability Under 37 C.F.R. 1.510(B)(1)

- SNQ 1: *Perlman* raises a substantial new question of patentability as to claims 1-7, 12-15, and 17-18 ;
- SNQ 2: *Perlman*, *Dostie*, and *Josenhans* raise a substantial new question of patentability as to claims 1-10, and 12-21;
- SNQ 3: *Badarneh* raises a substantial new question of patentability as to claims 1-4, 6-14, and 17-22; and

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- SNQ 4: *Badarneh* and *Josenhans* raise a substantial new question of patentability as to claims 1-4, 6-14, and 17-22; and
- SNQ 5: *Schroeder* raises a substantial new question of patentability as to claims 1-10, and 12-21.
- SNQ 6: *Schroeder* and *Josenhans* raise a substantial new question of patentability as to claims 1-10, and 12-21.

B. Proposed Rejections for the Challenged Claims Under 37 C.F.R. § 1.510(b)(2)

Pursuant to 35 U.S.C. §§ 301-307 and 37 C.F.R. § 1.510 et seq., Samsung, LLC respectfully requests reexamination of claims 1-21 of U.S. Patent No.

8,676,852 based on the following proposed rejections:

- Ground 1: *Perlman* anticipates claims 1-7, 12-15, and 17-18 under 35 U.S.C. § 102(a);
- Ground 2: *Perlman*, *Dostie*, and *Josenhans* render obvious claims 1-10 and 12-21 under 35 U.S.C. § 103(a);
- Ground 3: *Badarneh* anticipates claims 1-4, 6-14, and 17-22 under 35 U.S.C. § 102(a);
- Ground 4: *Badarneh* and *Josenhans* render obvious claims 1-4, 6-14, and 17-22 under 35 U.S.C. § 103(a);
- Ground 6: *Schroeder* anticipates claims 1-10 and 12-21 under 35 U.S.C. § 102(a);
- Ground 6: *Schroeder* and *Josenhans* render obvious claims 1-10 and 12-21 under 35 U.S.C. § 103(a);

XI. SUMMARY OF THE SUBSTANTIAL NEW QUESTIONS OF PATENTABILITY

A. SNQ 1 – *Perlman* raises a substantial new question of patentability as to claims 1-7, 12-15, and 17-18

Perlman anticipates claims 1-7 and 12-18, and a reasonable examiner would have considered the combined teachings of these references important when assessing the patentability of those claims.

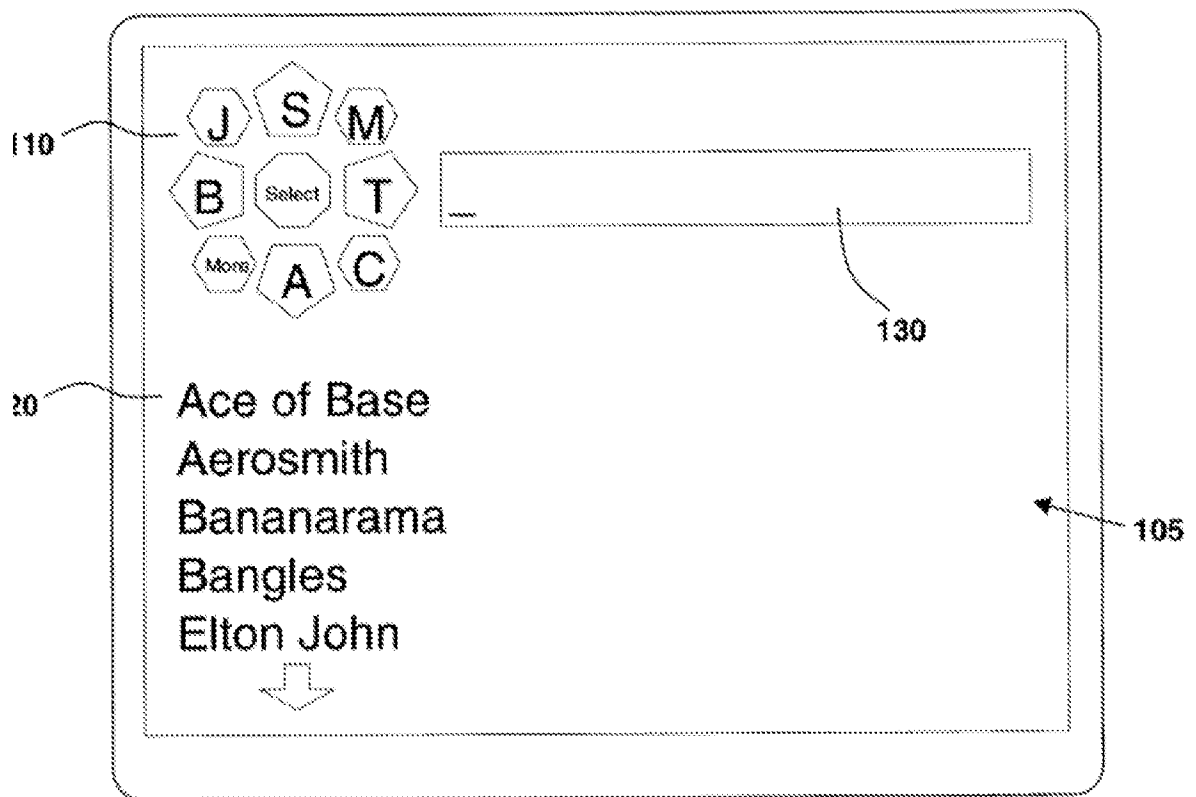
In the '852 IPR, Petitioner offered the combination of *Perlman* and *Dostie* as a ground for rejection of claims 1-8 and 12-19. As explained above, rejecting this ground, the PTAB Board applied a very narrow construction of the claim term “a part of an item identifier for at least a first set of items and a part of an item identifier for at least a second set of items in a database.” Ex. 1012 at 14-16, 21-23. Requester disagrees with this construction, and contends that under the Broadest Reasonable Interpretation, this limitation was met in the IPR petition. But, regardless, as explained below, even incorporating the PTAB Board’s erroneous construction, the *Josenhans* reference rectifies the issue identified by the Board, and renders all of the claims obvious.

As discussed in greater detail below, *Perlman* discloses the claimed “computer-implemented method of selecting an item from a plurality of items.” Ex. 1001; Ex. 1005 ¶[0014]. Specifically, *Perlman* describes various

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“embodiments of an apparatus and method for selecting data” including an embodiment that “allows user to rapidly enter alphanumeric characters (or other types of symbols) without looking away from the television/computer screen.” *Id.*

Perlman describes a GUI that presents a user with various suggested inputs corresponding to potential multimedia titles as shown in Fig. 2. *Id.* Fig 2.



The user's previously selected input is displayed in text box 130 while a different set of inputs are displayed on character-mapped buttons 110, as shown in

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Figures 2 and 3 of *Perlman*. Ex. 1005, ¶[0017] In this way, the selected inputs are combined in text box 130 (Figure 2) to form a larger portion of the multimedia program or title. Ex. 1005, ¶¶[0017], [0025]-[0026] and Figs. 2-5.

Thus, as explained in more detail below, *Perlman*, teaches each and every element of the challenged claims, regardless of the claim interpretation. A detailed explanation of how *Perlman* anticipates claims 1-7, 12-15, and 17-18 is provided in Section XII.

B. SNQ 2 – *Perlman*, *Dostie*, and *Josenhans* raise a substantial new question of patentability as to claims 1-10 and 12-21

Perlman, *Dostie*, and *Josenhans* render obvious claims 1-10 and 12-21, and a reasonable examiner would have considered the combined teachings of these references important when assessing the patentability of those claims.

In the '852 IPR, Petitioner offered the combination of *Perlman* and *Dostie* as a ground for rejection of claims 1-10 and 12-21. As explained above, rejecting this ground, the PTAB Board applied a very narrow construction of the claim term “a part of an item identifier for at least a first set of items and a part of an item identifier for at least a second set of items in a database.” Ex. 1012 at 14-16, 21-23. Requester disagrees with this construction, and contends that under the Broadest Reasonable Interpretation, this limitation was met in the IPR petition. But, regardless, as explained below, even incorporating the PTAB Board’s erroneous

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construction, the *Josenhans* reference rectifies the issue identified by the Board, and renders all of the claims obvious.

As discussed in greater detail below, *Perlman*, *Dostie*, and *Josenhans* disclose the claimed “computer-implemented method of selecting an item from a plurality of items.” Ex. 1001; Ex. 1005 ¶[0014]. Specifically, *Perlman* describes various “embodiments of an apparatus and method for selecting data” including an embodiment that “allows user to rapidly enter alphanumeric characters (or other types of symbols) without looking away from the television/computer screen.” *Id.*

Perlman describes a GUI that presents a user with various suggested inputs corresponding to potential multimedia titles as shown in Fig. 2. *Id.* Fig 2.

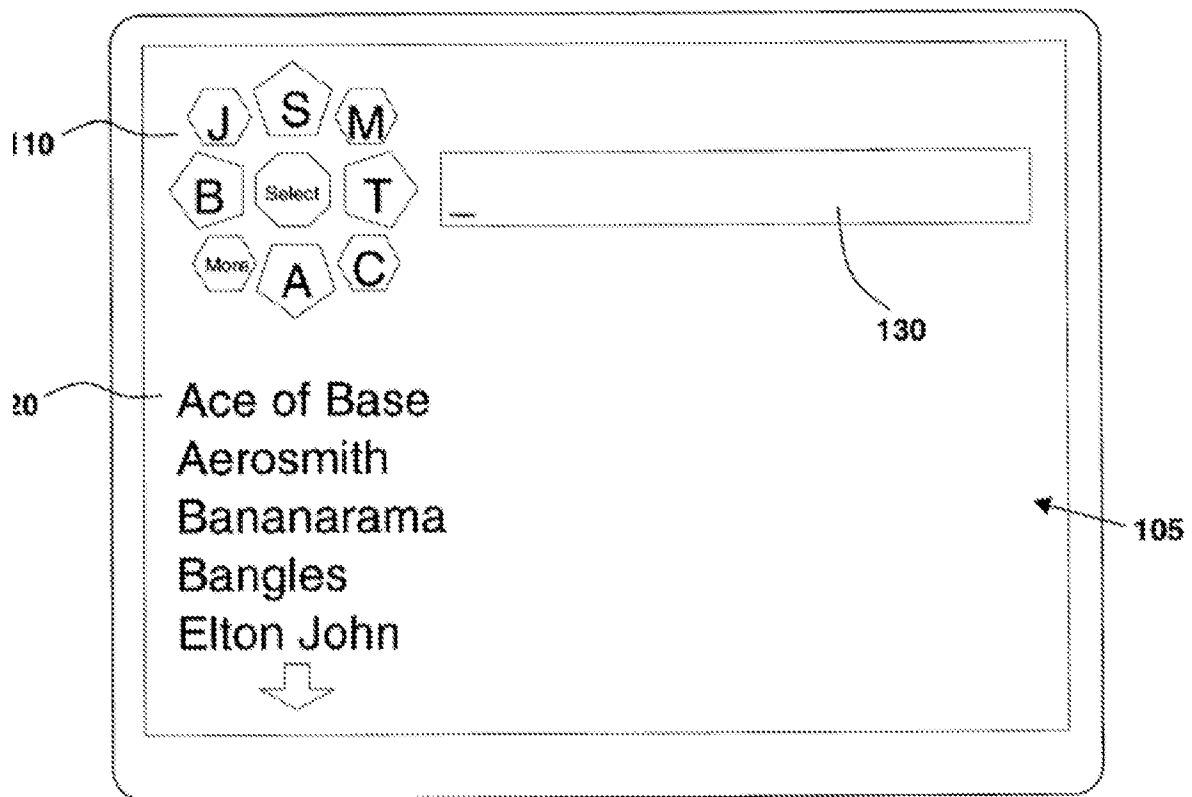
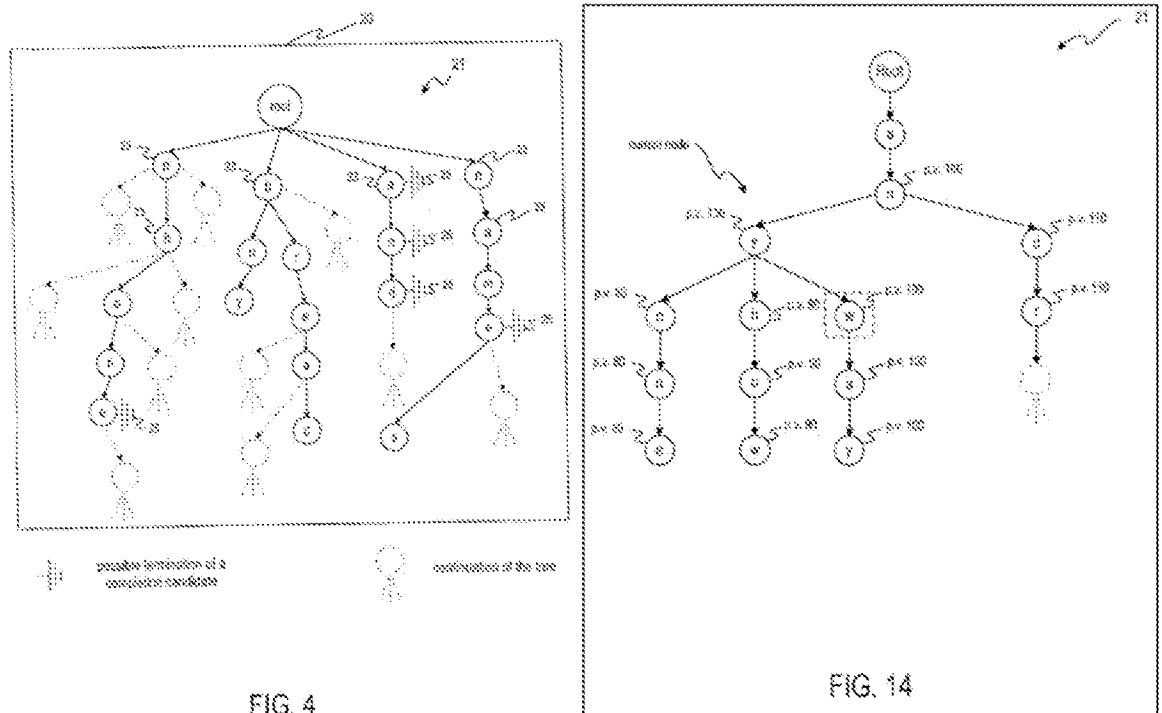


FIG. 2

The user's previously selected input is displayed in text box 130 while a different set of inputs are displayed on character-mapped buttons 110, as shown in Figures 2 and 3 of *Perlman*. Ex. 1005, ¶[0017] In this way, the selected inputs are combined in text box 130 (Figure 2) to form a larger portion of the multimedia program or title. Ex. 1005, ¶¶[0017], [0025]-[0026] and Figs. 2-5.

Josenhans similarly provides suggested words in multiple separate databases. “This allows the user to search in various databases just as simply as when searching in a single database.” Ex. 1008, ¶[0010].

Dostie likewise provides suggested words and item identifiers in a tree hierarchy. *Dostie* shows a dictionary organized in a hierarchical tree structure where character or word completion candidates are stored in the nodes of the hierarchical tree structure (which may take the form of a binary tree or B-tree). Ex. 1006, ¶¶[0088]-[0090], Figs. 4 & 14.



Thus, as explained in more detail below, *Perlman*, *Dostie*, and *Josenhans* teach each and every element of the challenged claims, regardless of the claim

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interpretation. A detailed explanation of how Almblad anticipates claims 1-10 and 12-21 is provided in Section XII.

C. SNQ 3 – *Badarneh* raises a substantial new question of patentability as to claims 1-4, 6-14, and 17-22

Badarneh anticipates claims 1-4, 6-14, and 17-22, and a reasonable examiner would have considered the combined teachings of these references important when assessing the patentability of those claims.

As discussed in greater detail below, *Badarneh* discloses the claimed “computer-implemented method of selecting an item from a plurality of items.” Ex. 1001; Ex. 1008 at Abstract, [0002]. *Badarneh* describes “a system for input of data elements, e.g. letters, signs, numbers and/or symbols in connection with an electronic apparatus or device which has or is connected to a display, wherein the system is so configured that on input of at least one first data element in a data phrase it offers suggestions of the data phrase.” *Id.*

Further in figures 5c-12, *Badarneh* describes a GUI with character-mapped buttons (I, II, III, IV) corresponding to an up, down, left, and right configuration, which can be controlled by a multifunction key, such as a rotary switch. Ex. 1007, 14:30-15:2.

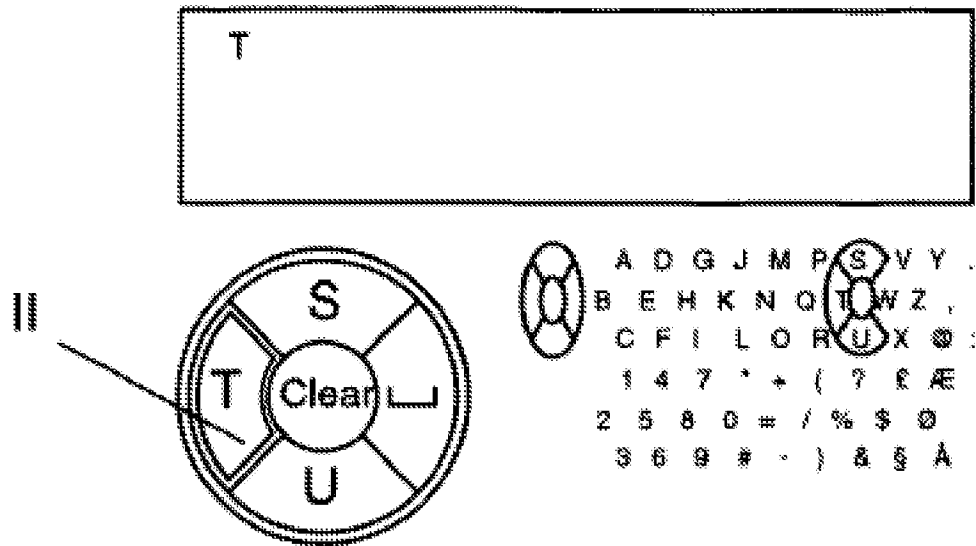
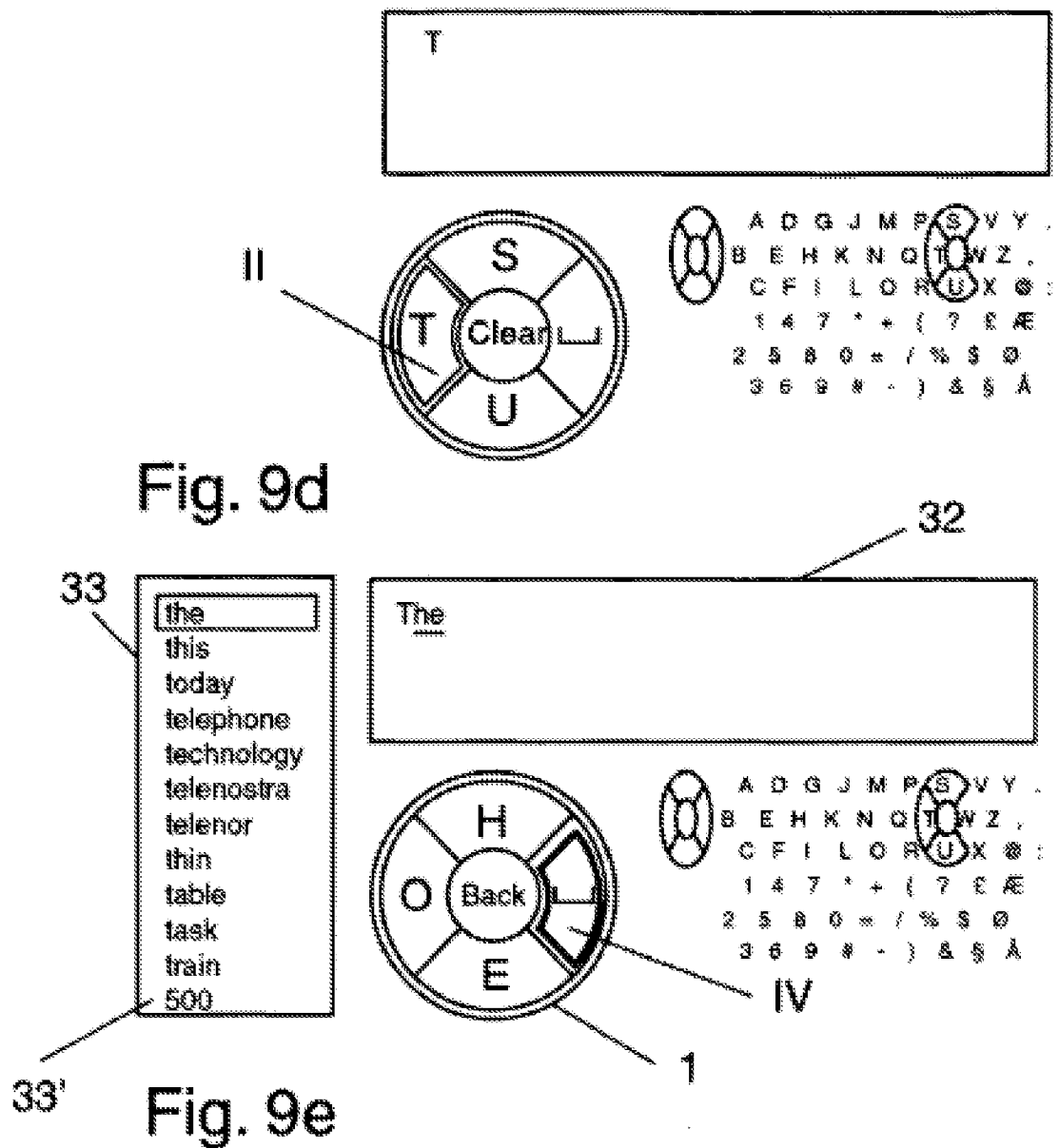


Fig. 9d

This GUI provides suggested inputs corresponding to “likely words and/or letters according to priority of use” (*id.*, 15:15-20), which corresponds to, for example, “a database which contains options and data that should be available.” *Id.*, 24:15-19. And provides further suggested inputs based on the user’s prior inputs. *See id.* Fig. 9d and 9e.



Thus, *Badarneh* anticipates all of the challenged claims. A detailed explanation of how *Badarneh* anticipates claims 1-4, 6-14, and 17-22 is provided in Section XII.

D. SNQ 4 – *Badarneh* and *Josenhans* raise a substantial new question of patentability as to claims 1-4, 6-14, and 17-22

Badarneh and *Josenhans* renders obvious claims 1-4, 6-14, and 17-22, and a reasonable examiner would have considered the combined teachings of these references important when assessing the patentability of those claims.

As discussed in greater detail below, *Badarneh* discloses the claimed “computer-implemented method of selecting an item from a plurality of items.” Ex. 1001; Ex. 1008 at Abstract, [0002]. *Badarneh* describes “a system for input of data elements, e.g. letters, signs, numbers and/or symbols in connection with an electronic apparatus or device which has or is connected to a display, wherein the system is so configured that on input of at least one first data element in a data phrase it offers suggestions of the data phrase.” *Id.*

Further in figures 5c-12, *Badarneh* describes a GUI with character-mapped buttons (I, II, III, IV) corresponding to an up, down, left, and right configuration, which can be controlled by a multifunction key, such as a rotary switch. Ex. 1007, 14:30-15:2.

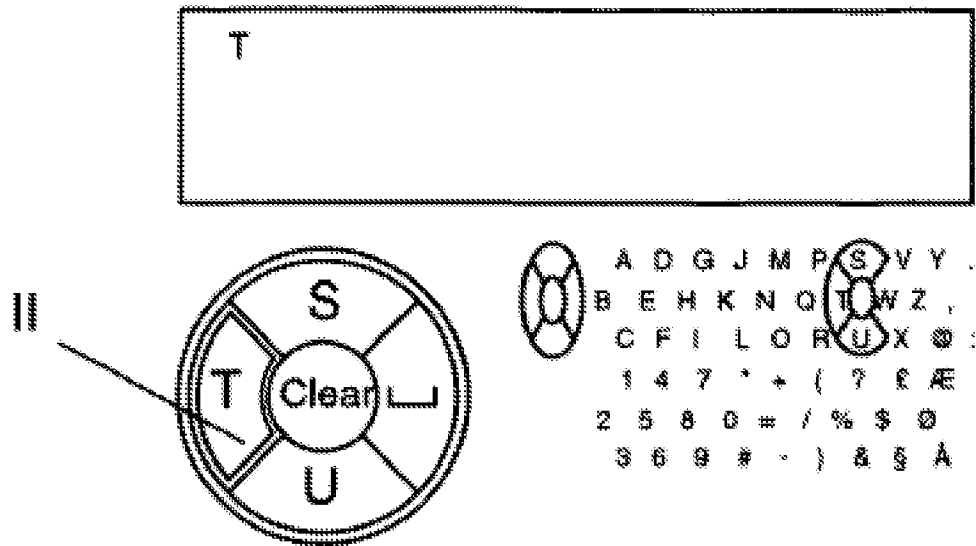
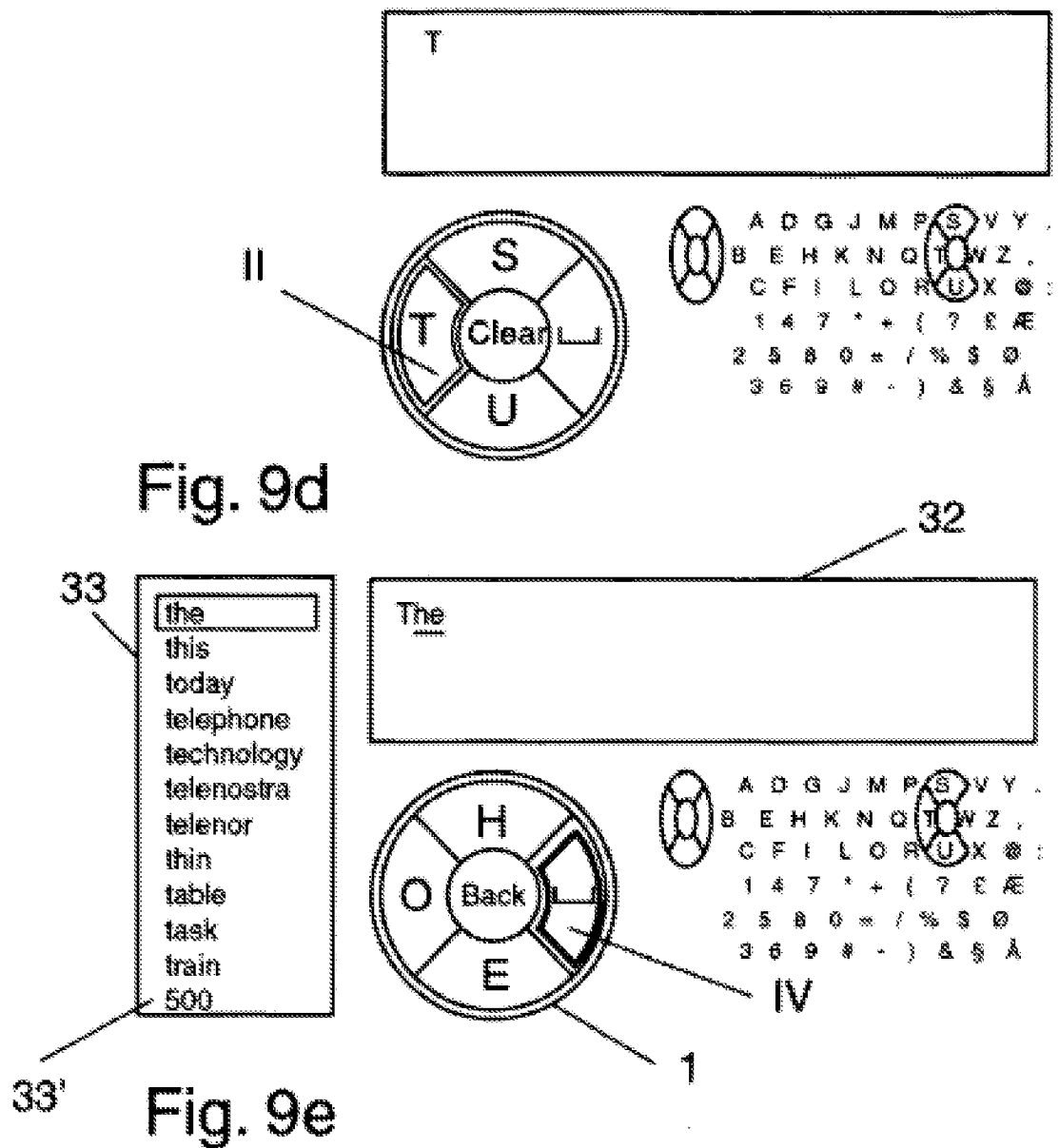


Fig. 9d

This GUI provides suggested inputs corresponding to “likely words and/or letters according to priority of use” (*id.*, 15:15-20), which corresponds to, for example, “a database which contains options and data that should be available.” *Id.*, 24:15-19. And provides further suggested inputs based on the user’s prior inputs. *See id.* Fig. 9d and 9e.



Josenhans similarly provides suggested words in multiple separate databases. “This allows the user to search in various databases just as simply as when searching in a single database.” Ex. 1008, ¶[0010].

Thus, the combination of *Badarneh* and *Josenhans* renders obvious all of the challenged claims. A detailed explanation of how *Badarneh* and *Josenhans* renders obvious claims 1-4, 6-14, and 17-22 is provided in Section XII.

E. SNQ 5 – *Schroeder* raises a substantial new question of patentability as to claims 1-10 and 12-21.

Schroeder anticipates claims 1-10, and 12-21, and a reasonable examiner would have considered the combined teachings of these references important when assessing the patentability of those claims.

As discussed in greater detail below, *Schroeder* discloses the claimed “computer-implemented method of selecting an item from a plurality of items.” Ex. 1001; Ex. 1009, 1:38-53, 2:21-25. *Schroeder* teaches a “predictive keyboard input method” including a “global search method for searching text strings in all of the different memory sections.” *Id.*, *see id.* Fig. 1A.

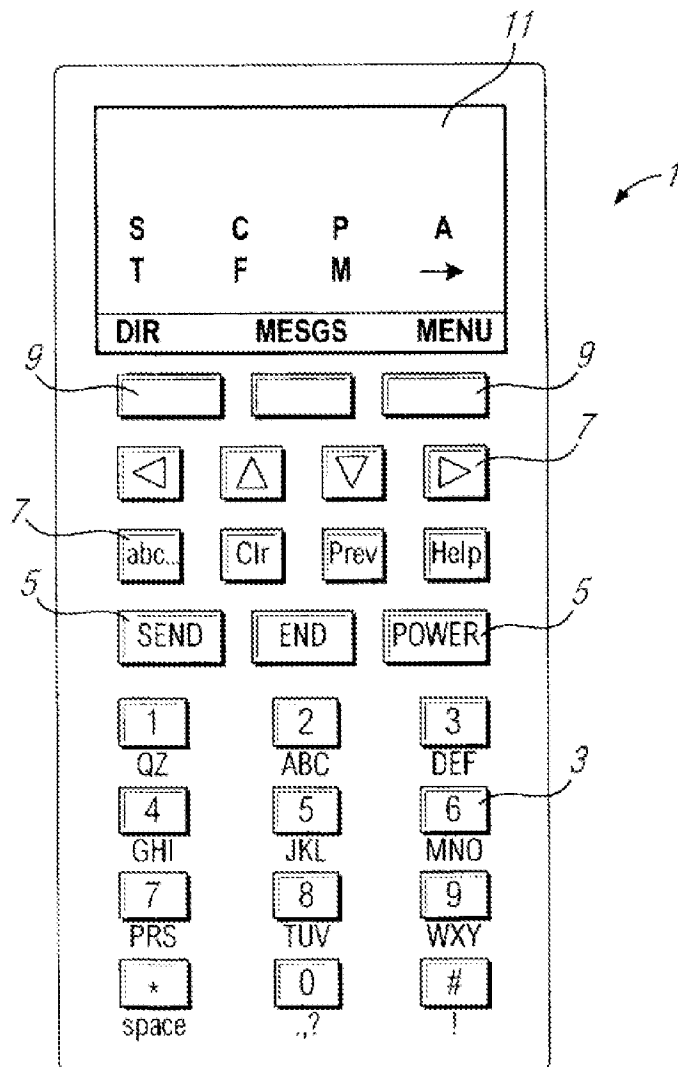


FIG. 1A

Schroeder explains as a user enters letters, they are displayed on a display.

Ex. 1009, 5:58-6:3. In response to the user entering letters, further suggested letters are displayed corresponding to predicted next words. *See id.* Fig. 4.

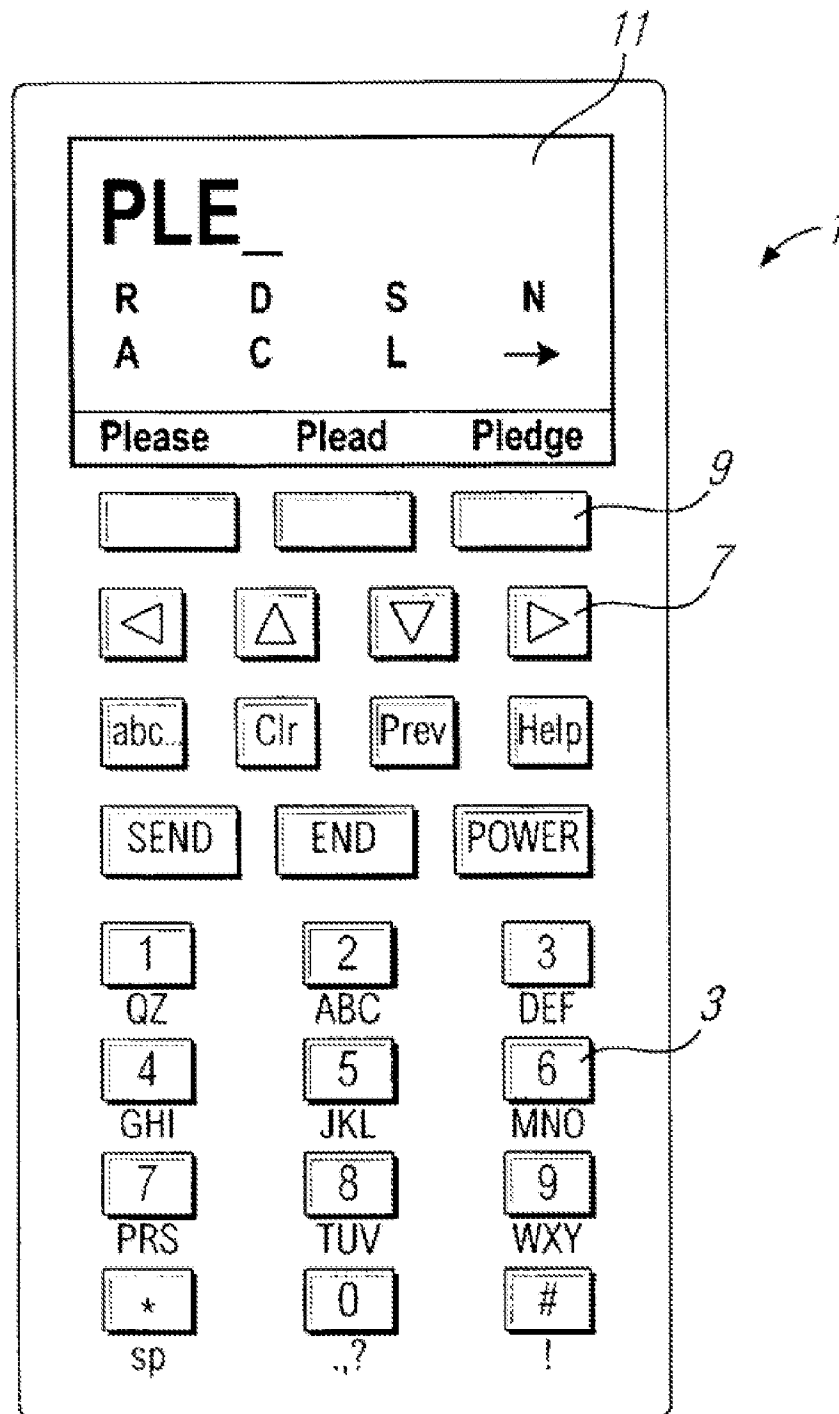


FIG. 4

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Indeed *Schroeder* discloses selecting words from a multitude of mutually exclusive sets of items and item identifiers. Ex. 1009, 52-6:10. As shown in Fig. 3, each character input corresponds to a set of potential words corresponding to a potential next letter:

a	<start>	S T	C F	P M	A →
b	P	R L	E P	O I	A →
c	L	E Y	A O	L D	I →
d	E	R A	D C	S L	N →
e	A	R C	L S	T I	N →
f	S	T O	E U	I H	S →
g	E	R A	D C	S L	N →
h	<sp>	S T	C F	P M	A →
i	C	E H	O I	T L	A →
j	A	R C	L S	T I	N →
k	L	E Y	A O	L D	I →
l	L	E Y	A O	L D	I →
m	<sp>	S T	C F	P M	A →
n	→	R E	D L	B H	W →
o	H	E T	O U	A R	I →
p	O	N W	R L	U O	M →
q	M	E P	A S	O B	I →
r	E	R A	D C	S L	N →

FIG. 3

A detailed explanation of how *Schroeder* anticipates claims 1-10, and 12-21 is provided in Section XII.

F. SNQ 6 – *Schroeder* and *Josenhans* raise a substantial new question of patentability as to claims 1-10, and 12-21.

Schroeder and *Josenhans* render obvious claims 1-10, and 12-21, and a reasonable examiner would have considered the combined teachings of these references important when assessing the patentability of those claims.

As discussed in greater detail below, *Schroeder* and *Josenhans* disclose the claimed “computer-implemented method of selecting an item from a plurality of items.” Ex. 1001; Ex. 1009, 1:38-53, 2:21-25. *Schroeder* teaches a “predictive keyboard input method” including a “global search method for searching text strings in all of the different memory sections.” *Id.*, *see id.* Fig. 1A.

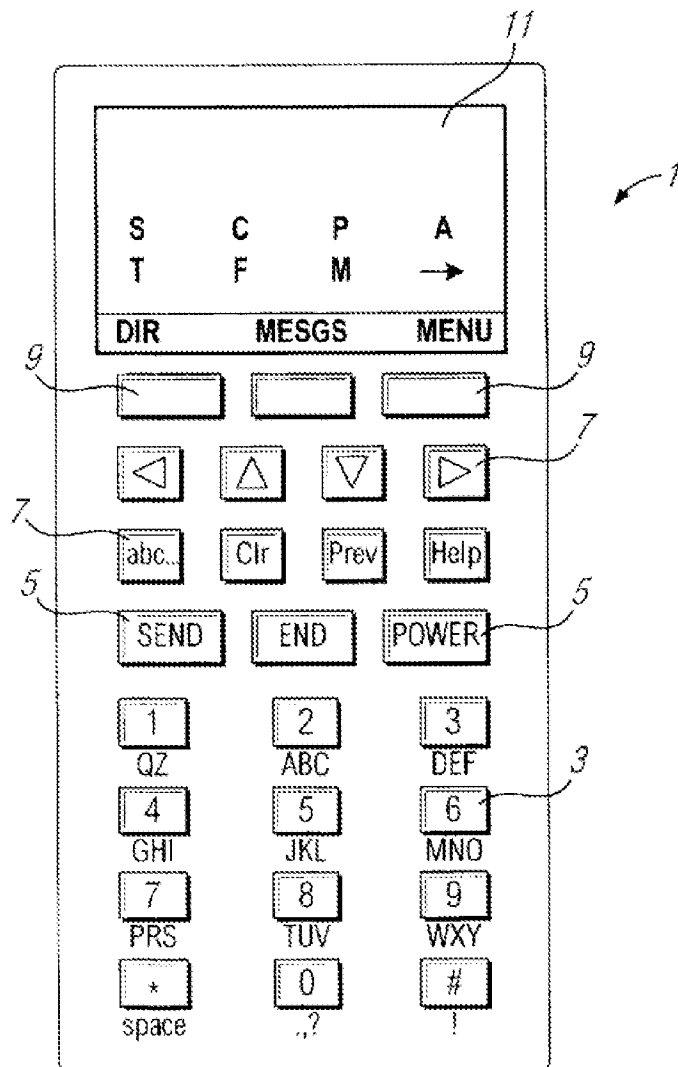


FIG. 1A

Schroeder explains as a user enters letters, they are displayed on a display.

Ex. 1009, 5:58-6:3. In response to the user entering letters, further suggested letters are displayed corresponding to predicted next words. *See id.* Fig. 4.

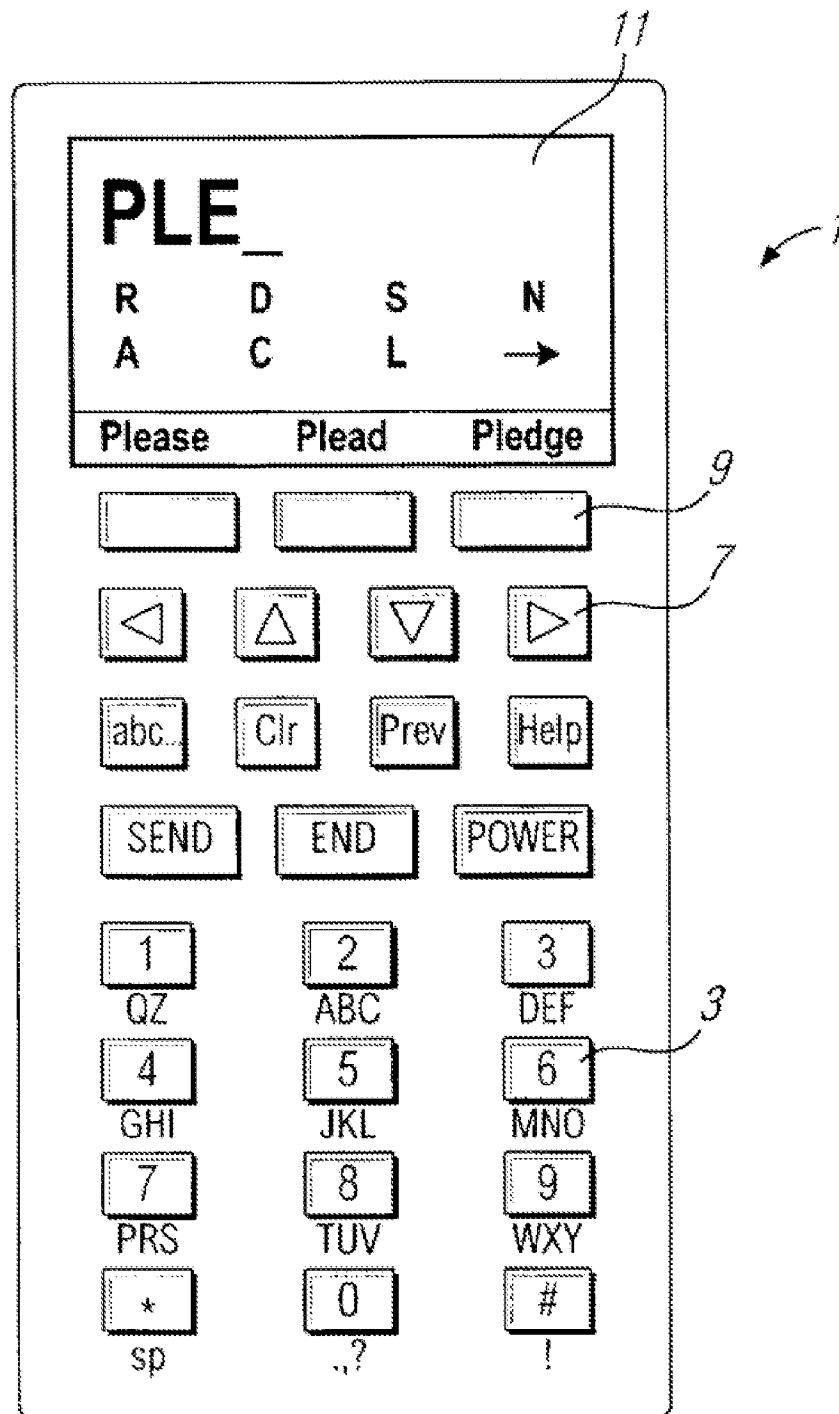


FIG. 4

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Indeed *Schroeder* discloses selecting words from a multitude of mutually exclusive sets of items and item identifiers. Ex. 1009, 52-6:10. As shown in Fig. 3, each character input corresponds to a set of potential words corresponding to a potential next letter:

a	<start>	S T	C F	P M	A →
b	P	R L	E P	O I	A →
c	L	E Y	A O	L D	I →
d	E	R A	D C	S L	N →
e	A	R C	L S	T I	N →
f	S	T O	E U	I H	S →
g	E	R A	D C	S L	N →
h	<sp>	S T	C F	P M	A →
i	C	E H	O I	T L	A →
j	A	R C	L S	T I	N →
k	L	E Y	A O	L D	I →
l	L	E Y	A O	L D	I →
m	<sp>	S T	C F	P M	A →
n	→	R E	D L	B H	W →
o	H	E T	O U	A R	I →
p	O	N W	R L	U O	M →
q	M	E P	A S	O B	I →
r	E	R A	D C	S L	N →

FIG. 3

Josenhans similarly provides suggested words in multiple separate databases. “This allows the user to search in various databases just as simply as when searching in a single database.” Ex. 1008, ¶[0010].

A detailed explanation of how *Schroeder* and *Josenhans* renders obvious claims 1-10, and 12-21 is provided in Section XII.

XII. DETAILED EXPLANATION OF THE PROPOSED REJECTIONS

A. SNQ 1 – *Perlman* raises a substantial new question of patentability as to claims 1-7, 12-15, and 17-18

Perlman anticipates claims 1-7, 12-15, and 17-18, and a reasonable examiner would have considered the combined teachings of these references important when assessing the patentability of those claims.

1. Claim 1

(a) 1a A computer-implemented method of selecting an item from a plurality of items, the method comprising:

To the extent the preamble is considered limiting, *Perlman* discloses this limitation. Ex. 1003, ¶85. *Perlman* describes various “embodiments of an apparatus and method for selecting data” including an embodiment that “allows user to rapidly enter alphanumeric characters (or other types of symbols) without looking away from the television/computer screen.” Ex. 1005, ¶[0014]. These alphanumeric characters/symbols are portions of item identifiers taken from full

item identifiers, such as titles of content, and are used to select particular multimedia content, ie. an item, from a database of multimedia content, i.e. a plurality. *See Id.*, ¶[0017], *Infra* §XII.A.1(b). The alphanumeric characters/symbols described in *Perlman* constitute a plurality of items, and the embodiments described therein relate to selecting alphanumeric characters/symbols from a plurality of characters/symbols.

- (b) 1b generating, by at least one computer processor, a first display, the first display comprises: a part of an item identifier for at least a first set of items and a part of an item identifier for at least a second set of items in a database;**

Under the proper “broadest reasonable interpretation,” *Perlman* discloses this limitation. Ex. 1003, ¶86-87. In Figures 2-8, *Perlman* describes a GUI with character-mapped buttons 110 in a “star” configuration corresponding to the same “star” configuration on a remote control input device to a television/computer. Ex. 1005, ¶[0014]. Other configurations are also expressly disclosed. *Id.* at ¶[0016].

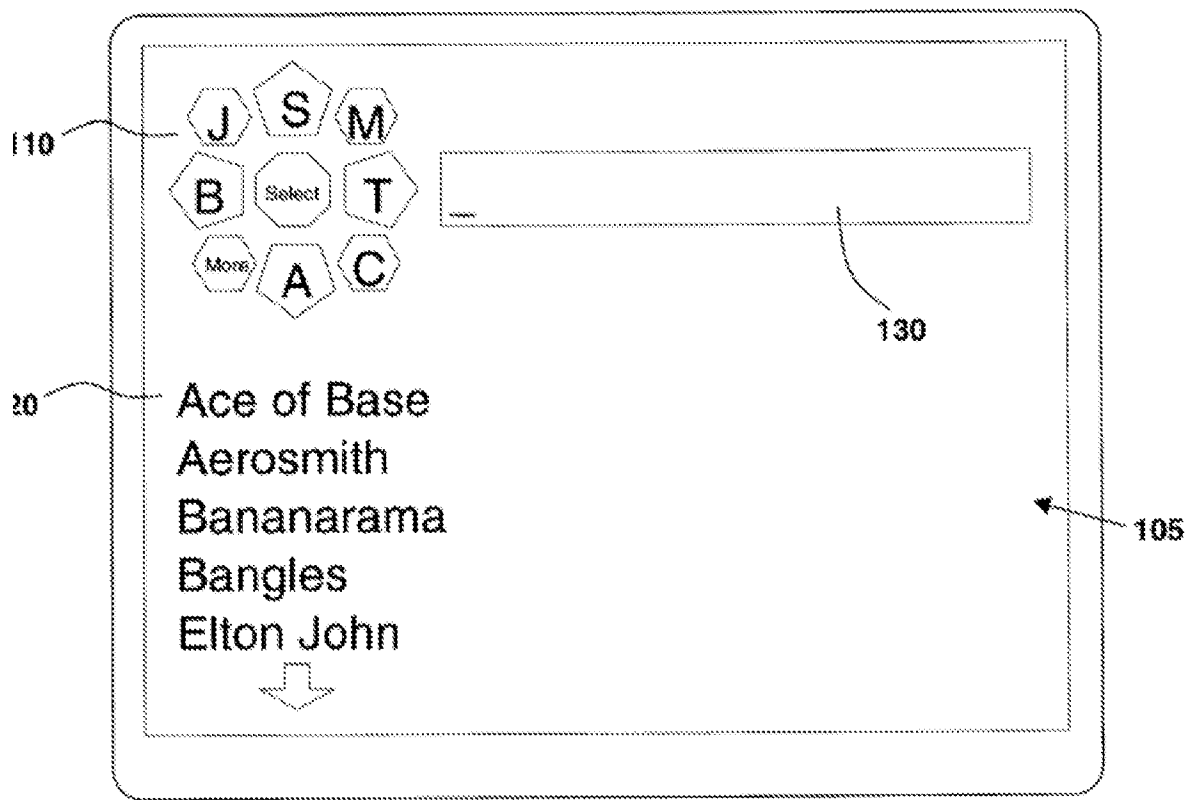


FIG. 2

Id., Fig. 2.

The “star” configuration includes within character-mapped buttons 110 a part of an item identifier for at least a first set of items and a part of an item identifier for at least a second set of items in a database. For example, the characters shown in Figure 2 correspond to the “most common first letters of words in the database list 120,” which corresponds to “available multimedia content” accessible by the television/computer. Ex. 1005, ¶[0017]. First, each part

of an item identifier (*i.e.*, letter) would correspond to the set of content/titles having that item identifier as a first letter. Ex. 1003, ¶87. In this way, each displayed part of an item identifier is for a different set of items in the database. Second, although the embodiment shown in Figure 2 shows multimedia content, *Perlman* notes that the invention is “not limited to any particular type of database” and in fact describes multiple different types of content databases, such as those for television “program content” (Ex. 1005, ¶[0004]), “multimedia programs/files” (*id.*, ¶[0017]), and “MP3 music” titles (*id.*, Figs. 7-8). Each of these different types of content databases includes a different set of items comprising the entries in that particular database. Ex. 1003, ¶87.

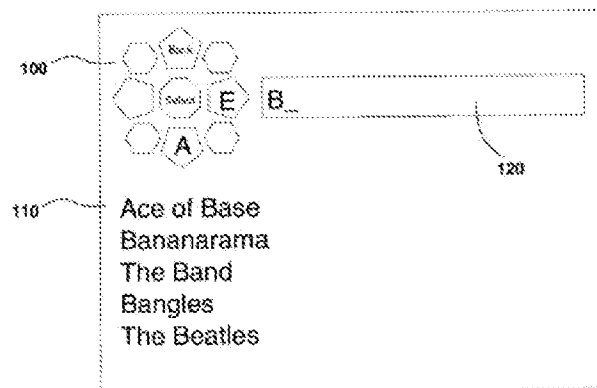
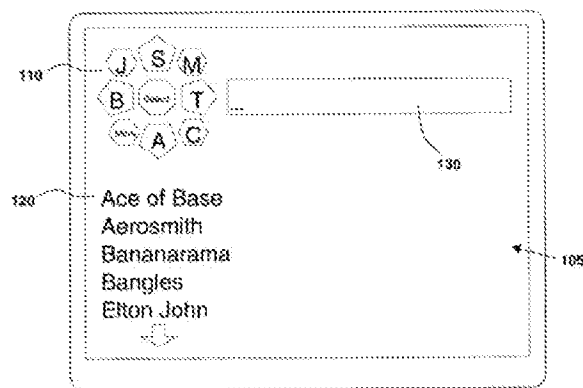
(c) 1c enabling, by the at least one computer processor, selection of one of the two parts of the item identifiers by a user using a user interface;

Perlman discloses this limitation. Ex. 1003, ¶88. A user may select a letter from the GUI by using the character-mapped buttons of the star configuration of the remote control device. Ex. 1005, ¶[0017] (“As the user selects letters via the displayed character-mapped buttons 110, the user’s letter selections will appear in a text box 130, and the database list 120 will change to reflect the user’s selections.”).

(d) 1d generating, by the at least one computer processor, in response to the selection of the one of the

two parts, a further display; wherein the further display comprises: an additional part of an item identifier for at least a third set of items and an additional part of an item identifier for at least a fourth set of items; and the previously selected one of the two parts of the item identifiers;

Perlman discloses this limitation. Ex. 1003, ¶89. The user's previously selected one of the two parts of the item identifiers is displayed in text box 130 while a different set of item identifiers are displayed on character-mapped buttons 110, as shown in Figures 2 and 3 of *Perlman*. Ex. 1005, ¶[0017] ("As the user selects letters via the displayed character-mapped buttons 110, the user's letter selections will appear in a text box 130, and the database list 120 will change to reflect the user's selections.").



Id., Figs. 2 & 3.

As shown above, once the part 'B' of the item identifier is selected, database list 110 is updated to reflected database items containing a word beginning with the

selected letter. Additional parts of item identifiers ‘A’ and ‘E’ are both displayed.

Part ‘A’ corresponds to the set of entries in the database containing ‘BA’ as the first two letters of a word in the database item, while part ‘E’ corresponds to the set of entries in the database containing ‘BE’ as the first two letters of a word in the database item. Ex. 1003, ¶90.

- (e) 1e enabling, by the at least one computer processor, selection of one of the two additional parts of the item identifiers by the user using the user interface;**

Perlman discloses this limitation. Ex. 1003, ¶91. After the user selects a letter (*e.g.*, the character ‘B’), a new set of parts of item identifiers are automatically mapped to the character-mapped buttons of the “star” configuration GUI and displayed for another user selection. Ex. 1005, ¶[0017] (“Initially (*i.e.*, before the user has selected a character), the alphanumeric characters mapped to the character-mapped buttons 101, 110 correspond to the most common first letters of words in the database list 120. Once the user selects a first character, a new set of characters are mapped to the character-mapped buttons 101, 110 which correspond to the most common second letters of words in the database list 120 which begin with the first-selected character.”).

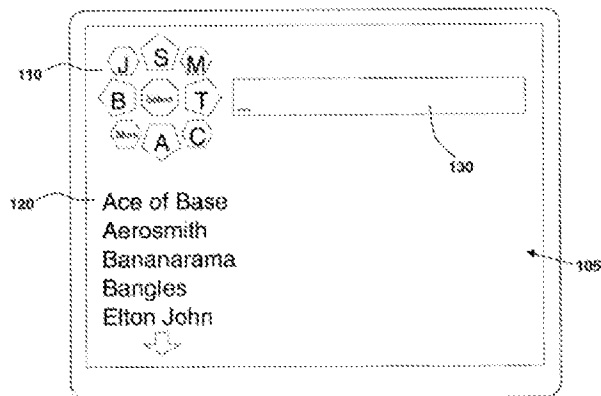


FIG. 2

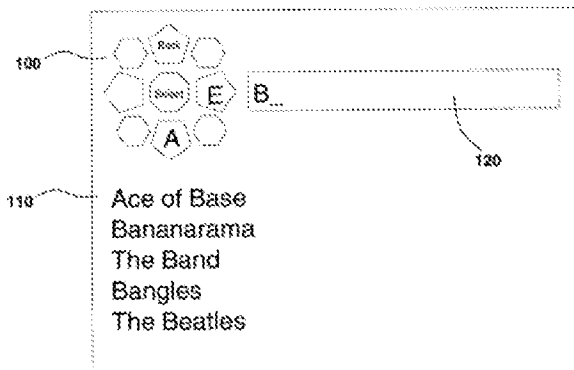


FIG. 3

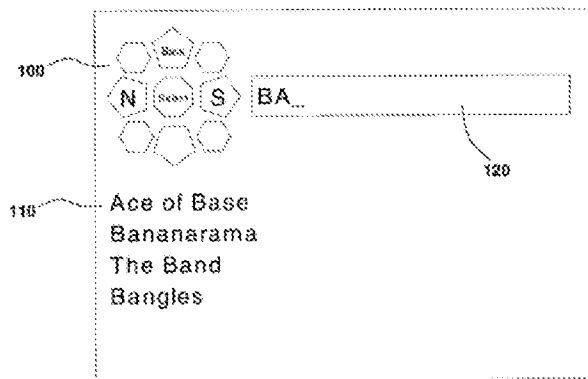


FIG. 4

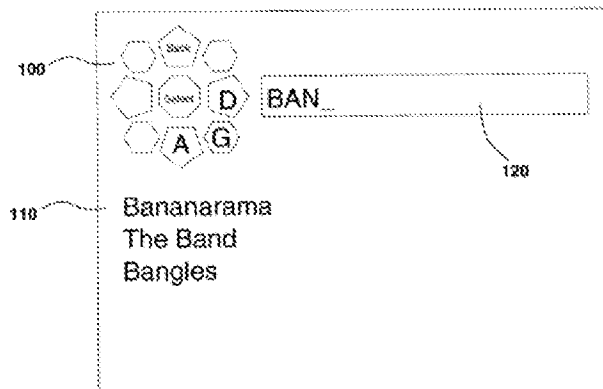


FIG. 5

Id., Figs. 2-5.

In the above figures, at least parts of item identifiers 'E' and 'A' (Figure 3) are chosen for display based on the user's prior selection of the part 'B'. At least portions 'N' and 'S' (Figure 4) are chosen for display based on the user's prior selection of the parts 'B' and 'A'. At least parts 'D', 'G', and 'A' (Figure 5) are

chosen for display in the first area based on the user's prior selection of the parts 'B', 'A', and 'N'. Ex. 1003, ¶92.

- (f) 1f combining, by the at least one computer processor, the selected one of the two parts of the item identifiers with the selected one of the two additional parts of the item identifiers to create a larger part of the item identifiers; and**

Perlman discloses this limitation. Ex. 1003, ¶93. As shown in Figures 2-5, the selected portions are combined in text box 130 (Figure 2) to form a larger portion of the multimedia program or title. Ex. 1005, ¶¶[0017], [0025]-[0026] and Figs. 2-5.

- (g) 1g displaying, by the at least one computer processor, the larger part of the item identifiers;**

Perlman discloses this limitation. Ex. 1003, ¶94. As shown in Figures 2-5, the selected portions are displayed in text box 130 (Figure 2) to form a larger part of the multimedia program or title. Ex. 1005, ¶[0017] and Figs. 2-5.

- (h) 1h wherein the parts of the item identifiers and the additional parts of the item identifiers are text symbols and the additional parts of the item identifiers are shorter than the complete item identifiers; and**

Perlman discloses this limitation. Ex. 1003, ¶95. All the parts of item identifiers are letters or characters within the English alphabet, which are text symbols in the English language. Ex. 1005, ¶¶[0004], [0017]. A built-in dictionary

comprising English letters or characters may also be used. *Id.*, ¶¶[0035]-[0036].

The additional parts of item identifiers (*i.e.*, the single letters representing the second letter of the content/title) are shorter than complete item identifiers, as shown above in Figures 2-5.

- (i) **1i the first set of items identifiers and the second set of item identifiers are mutually exclusive of one another and the third set of item identifiers and the fourth set of item identifiers are mutually exclusive subsets of the first set of item identifiers or the second set of item identifiers.**

Perlman discloses this limitation. Ex. 1003, ¶96. As explained above, once a letter is selected, a new set of item identifiers is displayed reflecting “the most common second letters of words in the database list 120 which begin with the first-selected character.” Ex. 1005, ¶[0017]. Because each part of an item identifier (*i.e.*, letter) corresponds to the matching content/titles having that item identifier as a first letter, the first and second sets of item identifiers (which correspond to different letters in *Perlman*) are mutually exclusive. As one simple example, the part ‘J’ shown in Figure 2 would correspond to the set of all content/titles starting with ‘J’, while the part ‘S’ would correspond to the set of all content/titles starting with ‘S’. Since the content/titles cannot start with both ‘J’ and ‘S’, these two sets of item identifiers would be mutually exclusive.

Moreover, the third set of item identifiers and the fourth set of item identifiers are mutually exclusive subsets of the first set of item identifiers or the second set of item identifiers because each of those sets requires a first and second letter to match. As the user enters each additional letter, the set of matching content/titles is reduced to a subset of the prior set. Forlines Decl. ¶300.

2. The method in accordance with claim 1, comprising a further step of iterating the selections until the item identifiers are completed.

Claim 2 recites “[t]he method in accordance with claim 1, comprising a further step of iterating the selections until the item identifiers are completed.” *Perlman* discloses this limitation. Ex. 1003, ¶98. A user can continue selecting additional letters until the multimedia program or title is completed. Ex. 1005, ¶¶[0017], [0025]-[0026] (describing examples in which the user iterates the selections until ‘ACE OF BASE’ or ‘BANGLES’ is selected using the select button).

3. The method in accordance with claim 1, wherein the step of generating the first display includes selecting the parts of the item identifiers for the first and second set of items to be displayed based on predetermined criteria.

Claim 3 recites “[t]he method in accordance with claim 1, wherein the step of generating the first display includes selecting the parts of the item identifiers for the first and second set of items to be displayed based on predetermined criteria.”

Perlman discloses this limitation. Ex. 1003, ¶99. The selected two parts of item identifiers are selected based on “the commonality of each of the characters” and “the user’s preferences for each of the multimedia selections.” Ex. 1005, ¶[0019]. In addition, predetermined weights may be assigned to the selection criteria. *Id.* (describing the selection based on “0% character incidence/50% user preferences; 75% character incidence/25% user preferences”). At least the user preferences and the predetermined weights are two examples of a predetermined criteria. Ex. 1003, ¶99.

4. 4 The method in accordance with claim 3, wherein one of the predetermined criteria is a frequency of selection of database items associated within the item identifier parts for the first and second set of items.

Claim 4 recites “[t]he method in accordance with claim 3, wherein one of the predetermined criteria is a frequency of selection of database items associated within the item identifier parts for the first and second set of items.” *Perlman* discloses this limitation. Ex. 1003, ¶100. As described above in connection with claims 1 and 3, the selected two portions of item identifiers are selected because they are the “most common” first/second/third letters of words in the database list. Ex. 1005, ¶[0017]. In addition, “the user’s preferences for each of the multimedia selections” may be taken into account in a weighted selection. *Id.*, ¶[0019]. The

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user's preferences can be based on whether "a user plays back a particular multimedia program more frequently than any other program." *Id.*

In addition, *Perlman* supports "multi-word typing" where the most likely series of words are displayed based on monitoring the "user's prior typing" or how frequently the user types a certain word. *Id.*, ¶[0033]-[0034]. A built-in dictionary can also be automatically extended each time the user enters a full word and used in prioritizing parts of item identifiers for display. *Id.*, ¶[0034]. Each of these examples uses "a frequency of selection of database items associated within the item identifier parts for the first and second set of items" as the predetermined criteria. Ex. 1003, ¶101.

- 5. The method in accordance with claim 3, wherein one of the predetermined criteria is a ranking of the parts of item identifiers for the first and second set of items in relation to a tree hierarchy classification of the parts of item identifiers for the first and second set of items.**

Claim 5 recites "[t]he method in accordance with claim 3, wherein one of the predetermined criteria is a ranking of the parts of item identifiers for the first and second set of items in relation to a tree hierarchy classification of the parts of item identifiers for the first and second set of items." *Perlman* anticipates this claim. Ex. 1003, ¶102.

In *Perlman*, “the list of entries 120 will continuously change to reflect the user’s character selections.” Ex. 1005, ¶[0025]. After the user inputs a first character, only those multimedia programs or titles containing that first character will be displayed in the list of entries and “the only possible second letters of words in the list which begin with [the selected second character]” are displayed. *Id.* This process continues until a complete multimedia program or title is inputted. *Id.*, ¶¶[0025]-[0026]. Because the process determines all possible next letters from the set of database entries matching the letters inputted so far, it would have been obvious in view of *Perlman* alone to use a ranking in relation to a tree hierarchy classification as the predetermined criteria. Ex. 1003, ¶103. In other words, “because the system in *Perlman* searches through all possible database items matching the first *N* characters where *N* corresponds to the letter position of the character currently being inputted by the user and displays matching titles in the database list, it would make intuitive sense to use a tree hierarchy classification (*i.e.*, one with levels and orders) based on the sequencing and ordering of letters within the matching database items.” *Id.*

6. The method in accordance with claim 1, wherein the item identifiers are text strings.

Claim 6 recites “[t]he method in accordance with claim 1, wherein the item identifiers are text strings.” *Perlman* discloses this limitation. Ex. 1003, ¶104. In

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addition to character item identifiers, *Perlman* supports groups of letters and “textual multi-word typing” where “the most likely series of words are provided in the content list 110 when the user selects a particular set of characters (e.g., based on the user’s prior typing).” Ex. 1005, ¶¶[0029] (groups of letters), [0033]-[0034] (words). Groups of letters and sets of characters, such as the examples given in *Perlman*—“Ace of Base” and “Bangles”—are text strings. *Id.*, ¶¶[0025]-[0026].

7. The method in accordance with claim 6 wherein the item identifiers are words.

Claim 7 recites “[t]he method in accordance with claim 1, wherein the item identifiers are words.” *Perlman* discloses this limitation. Ex. 1003, ¶105. As described above in connection with claim 6, “Ace of Base” and “Bangles” are both words. Ex. 1005, ¶¶[0025]-[0026].

8. Claim 12

Claim 12 recites all the same elements as claim 1, but in system form. *Perlman* discloses all the limitations of claim 12 for the same reasons as described above in connection with claim 1. Ex. 1003, ¶106.

Perlman discloses an apparatus for selecting items, the apparatus comprising an output display, an input, and a computer processor. *See* Ex. 1005, ¶¶[0014] (television/computer display 105 and remote control device 100), [0037]-[0038] (“general-purpose or special-purpose processor”). The processor is configured to

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associate items with corresponding item identifiers as well as perform all the steps of claim 1. *Id.*, ¶¶[0017] (describing associating “available multimedia content” with items in database list 120), [0037]-[0038] (describing implementing all the steps using a processor).

9. Claim 13

Claim 13 recites the same features as claim 3 and is disclosed by *Perlman* for the same reasons. Ex. 1003, ¶108.

10. Claim 14

Claim 14 recites the same features as claim 4 and is disclosed by *Perlman* for the same reasons. Ex. 1003, ¶109.

11. Claim 15

Claim 15 recites the same features as claim 5 and is disclosed by *Perlman* for the same reasons. Ex. 1003, ¶110.

12. Claim 17

Claim 17 recites the same features as claim 6 and is disclosed by *Perlman* for the same reasons. Ex. 1003, ¶111.

13. Claim 18

Claim 18 recites the same features as claim 7 and is disclosed by *Perlman* for the same reasons. Ex. 1003, ¶112.

B. SNQ 2 – *Perlman*, *Dostie*, and *Josenhans* raise a substantial new question of patentability as to claims 1-10 and 12-21

Perlman, *Dostie*, and *Josenhans* render obvious claims 1-10 and 12-21, and a reasonable examiner would have considered the combined teachings of these references important when assessing the patentability of those claims.

1. Claim 1

(a) 1a A computer-implemented method of selecting an item from a plurality of items, the method comprising:

To the extent the preamble is considered limiting, *Perlman* discloses this limitation. Ex. 1003, ¶114. *Perlman* describes various “embodiments of an apparatus and method for selecting data” including an embodiment that “allows user to rapidly enter alphanumeric characters (or other types of symbols) without looking away from the television/computer screen.” Ex. 1005, ¶[0014]. These alphanumeric characters/symbols are portions of item identifiers taken from full item identifiers, such as titles of content, and are used to select particular multimedia content, i.e. an item, from a database of multimedia content, i.e. a plurality. *See Id.*, ¶[0017], *Infra* §XII.B.1(b). The alphanumeric characters/symbols described in *Perlman* constitute a plurality of items, and the embodiments described therein relate to selecting alphanumeric characters/symbols from a plurality of characters/symbols.

- (b) **1b** generating, by at least one computer processor, a first display, the first display comprises: a part of an item identifier for at least a first set of items and a part of an item identifier for at least a second set of items in a database;

Under the proper “broadest reasonable interpretation,” *Perlman* discloses this limitation. Ex. 1003, ¶115. In Figures 2-8, *Perlman* describes a GUI with character-mapped buttons 110 in a “star” configuration corresponding to the same “star” configuration on a remote control input device to a television/computer. *Id.*, ¶[0014]. Other configurations are also expressly disclosed. Ex. 1005, ¶[0016].

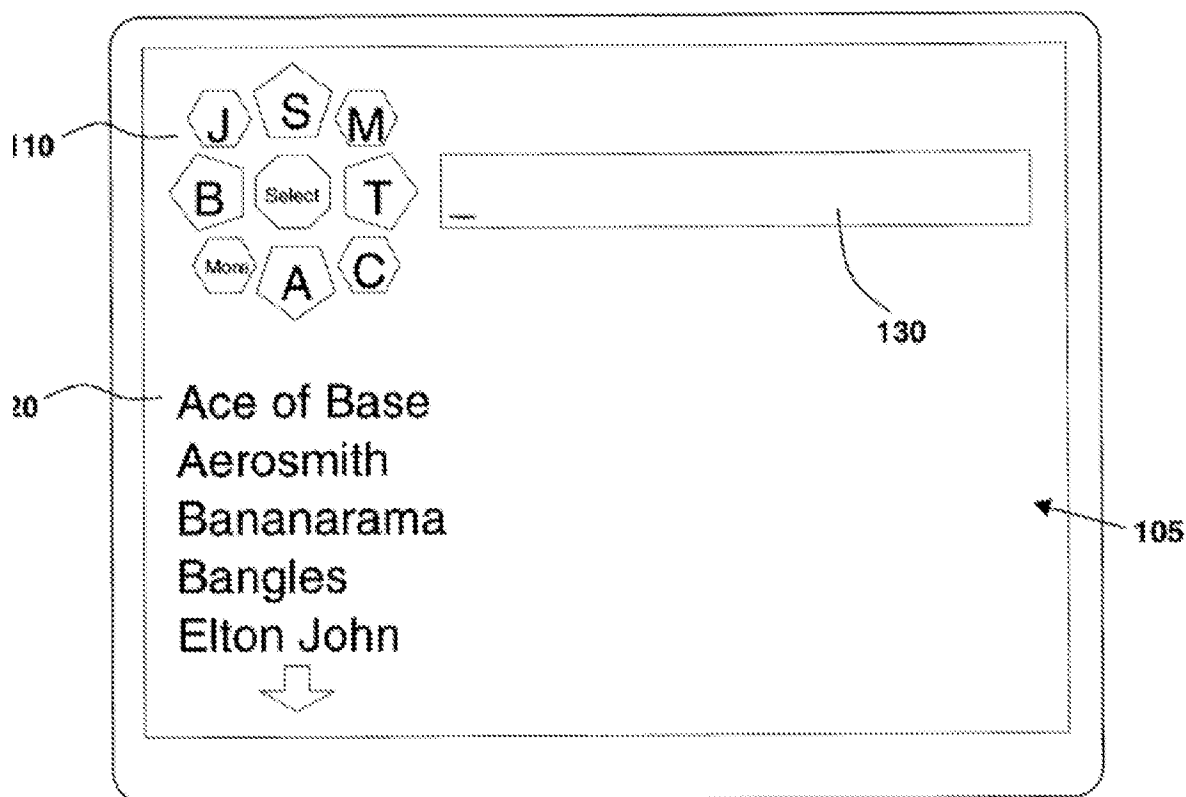


FIG. 2

Id., Fig. 2.

The “star” configuration includes within character-mapped buttons 110 a part of an item identifier for at least a first set of items and a part of an item identifier for at least a second set of items in a database. For example, the characters shown in Figure 2 correspond to the “most common first letters of words in the database list 120,” which corresponds to “available multimedia content” accessible by the television/computer. Ex. 1005, ¶[0017]. First, each part of an item identifier (*i.e.*, letter) would correspond to the set of content/titles having that item identifier as a first letter. Ex. 1003, ¶116. In this way, each displayed part of an item identifier is for a different set of items in the database. Second, although the embodiment shown in Figure 2 shows multimedia content, *Perlman* notes that the invention is “not limited to any particular type of database” and in fact describes multiple different types of content databases, such as those for television “program content” (*id.*, ¶[0004]), “multimedia programs/files” (*id.*, ¶[0017]), and “MP3 music” titles (*id.*, Figs. 7-8). Each of these different types of content databases includes a different set of items comprising the entries in that particular database. Ex. 1003, ¶116v.

Although the PTAB Board did not construe this term, the Board stated “Petitioner does not explain sufficiently how *Perlman*’s display comprises a part of

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an item identifier (i.e., a letter or letters displayed in the star configuration) for at least a first set of items or entries in a particular database ***and*** a part of an item identifier (i.e., a letter or letters displayed in the star configuration) for at least a second set of items or entries in ***a different particular database.***” Ex. 1012 at 15-16. Therefore, the Board apparently interpreted the claims to require the first and second sets of item identifiers to be in separate databases. As explained above, Requester does not agree with this construction and it certainly does not constitute the “broadest reasonable interpretation.”

To the extent the Examiner adopts the Board’s construction, *Josenhans* discloses two sets of identifiers in separate databases. Specifically, *Josenhans* discloses that in the invention:

a search table is thus set up in which, ***for each connected database,*** at least the immediate predecessor and the immediate successor to the entered search term and, if the search term itself has likewise been found in the database, the search term itself are also stored. If the search term itself has not been found in any of the connected databases, then, among the immediate successors stored in the search table, the one selected is that which comes closest after the search term. This selected successor is then displayed to a user. On the basis of this, the user can then display the next

term or the previous term. He thus has the impression that he is searching for the desired information in a single database. ***This allows the user to search in various databases just as simply as when searching in a single database.***

Ex. 1008 at [0010] (emphasis added).

Accordingly, *Josenhans* discloses a system where various search terms are stored in separate databases, and further discloses that the system works so that a user can simply search all of the databases at once without knowing that they are actually using identifiers from separate databases.

It would have been obvious to incorporate *Josenhans*' database organizational structure into *Perlman* for the same reasons because *Josenjans* itself deals with the issue the same type of text entry techniques and character prediction that is dealt with in *Perlman*. PHOSITA would have recognized that the *Josenhans* system presents a way of organizing data into different databases without affecting the user interface for the user. Ex. 1003, ¶120.

(c) 1c enabling, by the at least one computer processor, selection of one of the two parts of the item identifiers by a user using a user interface;

Perlman discloses this limitation. Ex. 1003, ¶121. A user may select a letter from the GUI by using the character-mapped buttons of the star configuration of the remote control device. Ex. 1005, ¶[0017] (“As the user selects letters via the

displayed character-mapped buttons 110, the user's letter selections will appear in a text box 130, and the database list 120 will change to reflect the user's selections.”).

- (d) **1d generating, by the at least one computer processor, in response to the selection of the one of the two parts, a further display; wherein the further display comprises: an additional part of an item identifier for at least a third set of items and an additional part of an item identifier for at least a fourth set of items; and the previously selected one of the two parts of the item identifiers;**

Perlman discloses this limitation. Ex. 1003, ¶122. The user's previously selected one of the two parts of the item identifiers is displayed in text box 130 while a different set of item identifiers are displayed on character-mapped buttons 110, as shown in Figures 2 and 3 of *Perlman*. Ex. 1005, ¶[0017] (“As the user selects letters via the displayed character-mapped buttons 110, the user's letter selections will appear in a text box 130, and the database list 120 will change to reflect the user's selections.”).

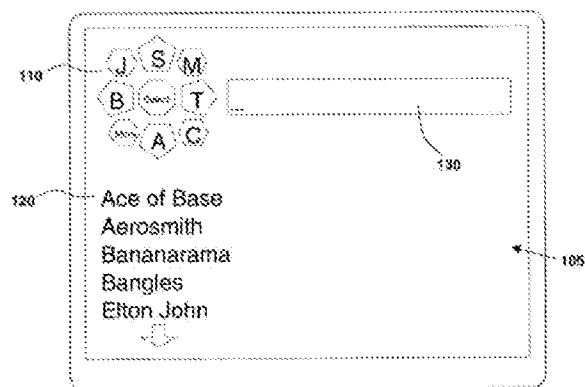


FIG. 2

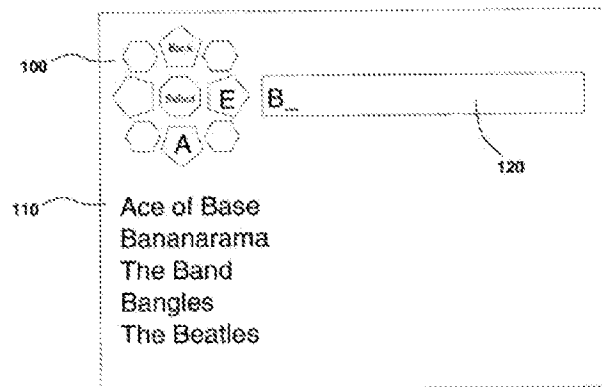


FIG. 3

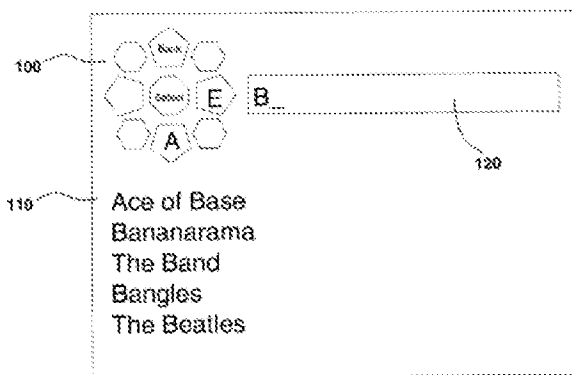
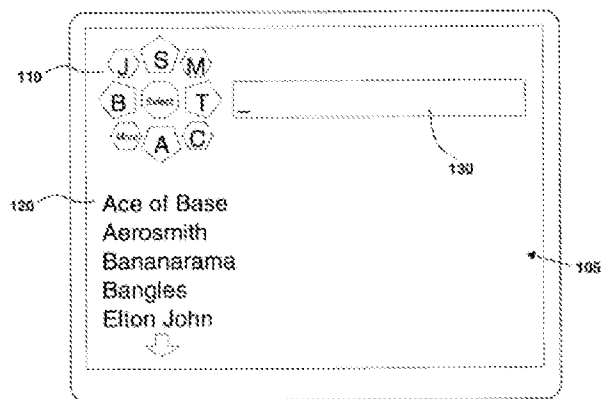
Id., Figs. 2 & 3.

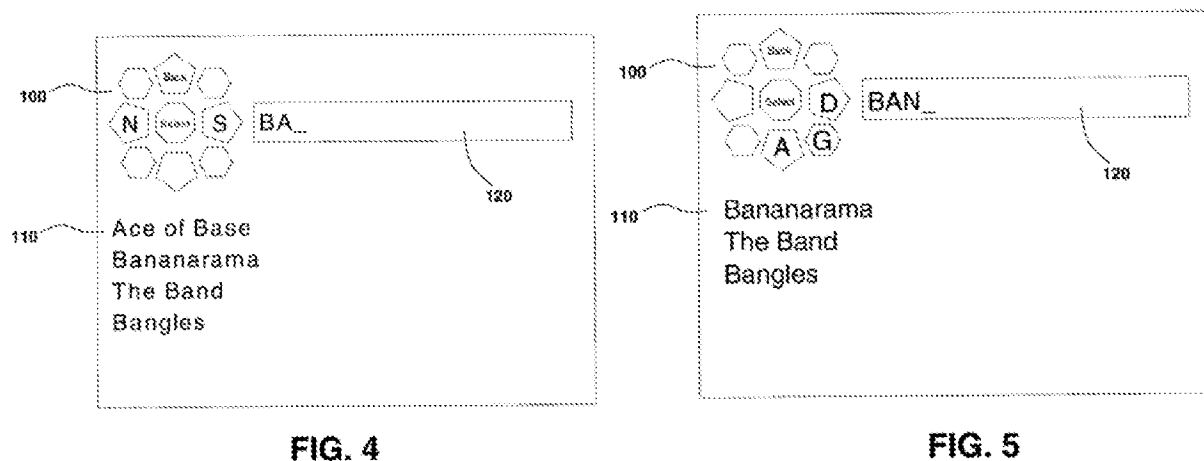
As shown above, once the part 'B' of the item identifier is selected, database list 110 is updated to reflected database items containing a word beginning with the selected letter. Additional parts of item identifiers 'A' and 'E' are both displayed. Part 'A' corresponds to the set of entries in the database containing 'BA' as the first two letters of a word in the database item, while part 'E' corresponds to the set of entries in the database containing 'BE' as the first two letters of a word in the database item. Ex. 1003, ¶123.

- (e) **1e enabling, by the at least one computer processor, selection of one of the two additional parts of the item identifiers by the user using the user interface;**

Perlman discloses this limitation. Ex. 1003, ¶124. After the user selects a letter (*e.g.*, the character 'B'), a new set of parts of item identifiers are automatically mapped to the character-mapped buttons of the "star" configuration

GUI and displayed for another user selection. Ex. 1005, ¶[0017] (“Initially (i.e., before the user has selected a character), the alphanumeric characters mapped to the character-mapped buttons 101, 110 correspond to the most common first letters of words in the database list 120. Once the user selects a first character, a new set of characters are mapped to the character-mapped buttons 101, 110 which correspond to the most common second letters of words in the database list 120 which begin with the first-selected character.”).





Id., Figs. 2-5.

In the above figures, at least parts of item identifiers 'E' and 'A' (Figure 3) are chosen for display based on the user's prior selection of the part 'B'. At least portions 'N' and 'S' (Figure 4) are chosen for display based on the user's prior selection of the parts 'B' and 'A'. At least parts 'D', 'G', and 'A' (Figure 5) are chosen for display in the first area based on the user's prior selection of the parts 'B', 'A', and 'N'. Ex. 1003, ¶125.

- (f) **1f combining, by the at least one computer processor, the selected one of the two parts of the item identifiers with the selected one of the two additional parts of the item identifiers to create a larger part of the item identifiers; and**

Perlman discloses this limitation. Ex. 1003, ¶126. As shown in Figures 2-5, the selected portions are combined in text box 130 (Figure 2) to form a larger

portion of the multimedia program or title. Ex. 1005, ¶¶[0017], [0025]-[0026] and Figs. 2-5.

- (g) 1g displaying, by the at least one computer processor, the larger part of the item identifiers;**

Perlman discloses this limitation. Ex. 1003, ¶127. As shown in Figures 2-5, the selected portions are displayed in text box 130 (Figure 2) to form a larger part of the multimedia program or title. Ex. 1005, ¶[0017] and Figs. 2-5.

- (h) 1h wherein the parts of the item identifiers and the additional parts of the item identifiers are text symbols and the additional parts of the item identifiers are shorter than the complete item identifiers; and**

Perlman discloses this limitation. Ex. 1003, ¶128. All the parts of item identifiers are letters or characters within the English alphabet, which are text symbols in the English language. Ex. 1005, ¶¶[0004], [0017]. A built-in dictionary comprising English letters or characters may also be used. *Id.*, ¶¶[0035]-[0036]. The additional parts of item identifiers (*i.e.*, the single letters representing the second letter of the content/title) are shorter than complete item identifiers, as shown above in Figures 2-5.

- (i) 1i the first set of items identifiers and the second set of item identifiers are mutually exclusive of one another and the third set of item identifiers and the fourth set of item identifiers are mutually exclusive**

subsets of the first set of item identifiers or the second set of item identifiers.

Perlman discloses this limitation. Ex. 1003, ¶129. As explained above, once a letter is selected, a new set of item identifiers is displayed reflecting “the most common second letters of words in the database list 120 which begin with the first-selected character.” Ex. 1005, ¶[0017]. Because each part of an item identifier (*i.e.*, letter) corresponds to the matching content/titles having that item identifier as a first letter, the first and second sets of item identifiers (which correspond to different letters in *Perlman*) are mutually exclusive. As one simple example, the part ‘J’ shown in Figure 2 would correspond to the set of all content/titles starting with ‘J’, while the part ‘S’ would correspond to the set of all content/titles starting with ‘S’. Since the content/titles cannot start with both ‘J’ and ‘S’, these two sets of item identifiers would be mutually exclusive.

Moreover, the third set of item identifiers and the fourth set of item identifiers are mutually exclusive subsets of the first set of item identifiers or the second set of item identifiers because each of those sets requires a first and second letter to match. As the user enters each additional letter, the set of matching content/titles is reduced to a subset of the prior set. Ex. 1003, ¶130.

Dostie also discloses this limitation. *Dostie*’s implementation organizes its database in a “tree structure” which can take the form of a binary tree or “B-tree.”

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Ex. 1006, ¶[0088]. Because “[c]haracters making up a completion candidate are stored in separate nodes within the tree structure” and “each node pointing to a child node containing the next character in the completion candidate,” *Dostie*’s tree structure discloses that the first set of items identifiers and the second set of item identifiers are mutually exclusive of one another and the third set of item identifiers and the fourth set of item identifiers are mutually exclusive subsets of the first set of item identifiers or the second set of item identifiers. Ex. 1003, ¶131.

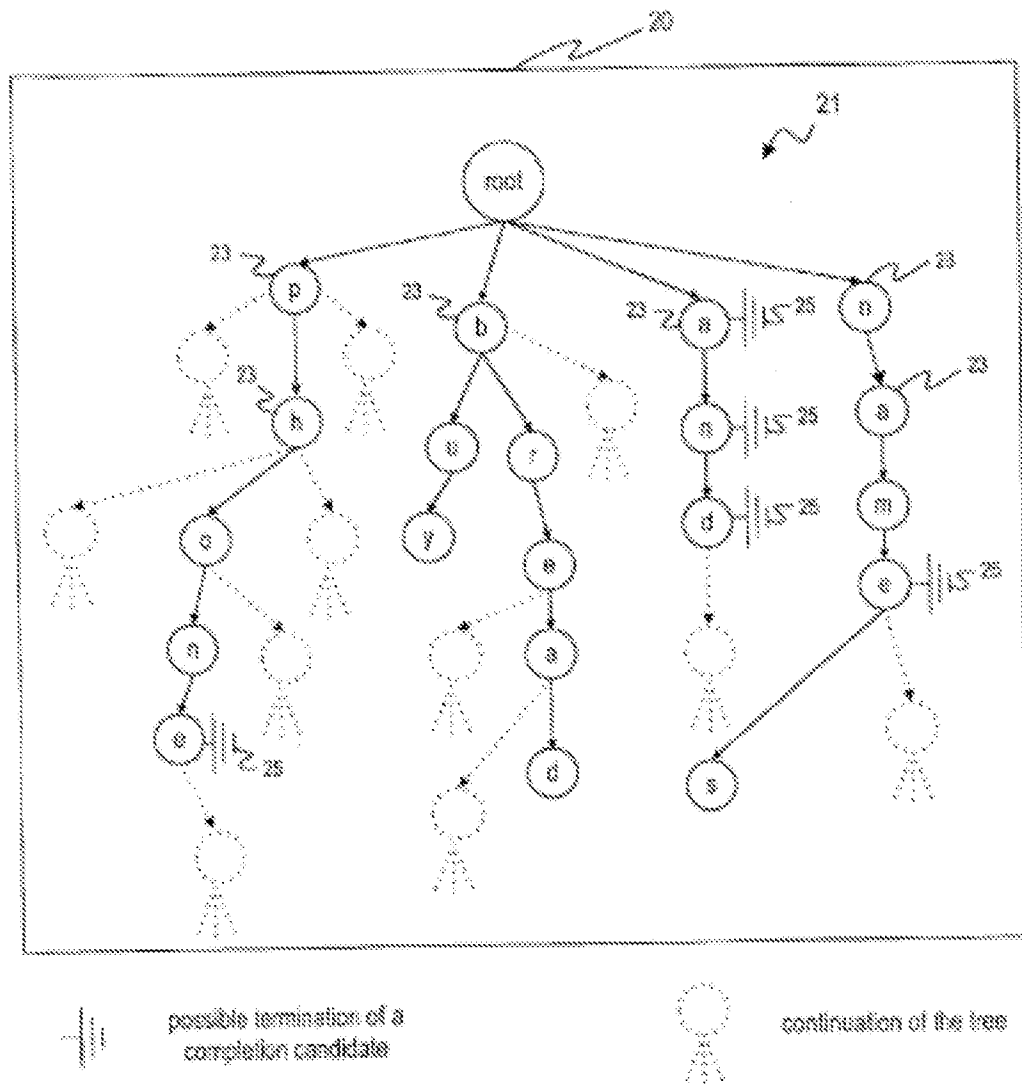


FIG. 4

For example, Figure 4 of *Dostie* shows various sets of item identifiers that are mutually exclusive of one another and subsets of one another. The mutually exclusive sets would constitute different branches within candidate tree 21, while

the mutually exclusive subsets would constitute all items below a certain node in the same branch or a different branch. *Id.* The mutually exclusive subsets would also be described by the “child list” or “child nodes pointer” for each node in the tree, which represent “a list of nodes which directly follow the current node, i.e. a list of nodes which are the immediate children of the current node.” *Id.*; Ex. 1006, ¶¶[0090]-[0096]. It would have been obvious to incorporate *Dostie*’s tree structure into *Perlman* for the same reasons described below in connection with claim 5 and because *Dostie* itself recognizes that use of a candidate tree helps “to rapidly predict potential completion candidates” and “provides a mechanism for supporting enhanced data entry techniques such as character prediction.” *Id.*, ¶[0097]. The “enhanced data entry techniques” and “character prediction” are the same techniques described by *Perlman*, so a POSITA would have found it natural to incorporate *Dostie*’s candidate tree into the character selection system of *Perlman*. Ex. 1003, ¶132.

2. The method in accordance with claim 1, comprising a further step of iterating the selections until the item identifiers are completed.

Claim 2 recites “[t]he method in accordance with claim 1, comprising a further step of iterating the selections until the item identifiers are completed.” *Perlman* discloses this limitation. Ex. 1003, ¶133. A user can continue selecting

additional letters until the multimedia program or title is completed. Ex. 1005, ¶¶[0017], [0025]-[0026] (describing examples in which the user iterates the selections until ‘ACE OF BASE’ or ‘BANGLES’ is selected using the select button).

3. The method in accordance with claim 1, wherein the step of generating the first display includes selecting the parts of the item identifiers for the first and second set of items to be displayed based on predetermined criteria.

Claim 3 recites “[t]he method in accordance with claim 1, wherein the step of generating the first display includes selecting the parts of the item identifiers for the first and second set of items to be displayed based on predetermined criteria.” *Perlman* discloses this limitation. Ex. 1003, ¶134. The selected two parts of item identifiers are selected based on “the commonality of each of the characters” and “the user’s preferences for each of the multimedia selections.” Ex. 1005, ¶[0019]. In addition, predetermined weights may be assigned to the selection criteria. *Id.* (describing the selection based on “0% character incidence/50% user preferences; 75% character incidence/25% user preferences”). At least the user preferences and the predetermined weights are two examples of a predetermined criteria. Ex. 1003, ¶134.

4. The method in accordance with claim 3, wherein one of the predetermined criteria is a frequency of selection of

**database items associated within the item identifier parts
for the first and second set of items.**

Claim 4 recites “[t]he method in accordance with claim 3, wherein one of the predetermined criteria is a frequency of selection of database items associated within the item identifier parts for the first and second set of items.” *Perlman* discloses this limitation. Ex. 1003, ¶136. As described above in connection with claims 1 and 3, the selected two portions of item identifiers are selected because they are the “most common” first/second/third letters of words in the database list. Ex. 1005, ¶[0017]. In addition, “the user’s preferences for each of the multimedia selections” may be taken into account in a weighted selection. *Id.*, ¶[0019]. The user’s preferences can be based on whether “a user plays back a particular multimedia program more frequently than any other program.” *Id.*

In addition, *Perlman* supports “multi-word typing” where the most likely series of words are displayed based on monitoring the “user’s prior typing” or how frequently the user types a certain word. *Id.*, ¶[0033]-[0034]. A built-in dictionary can also be automatically extended each time the user enters a full word and used in prioritizing parts of item identifiers for display. *Id.*, ¶[0034]. Each of these examples uses “a frequency of selection of database items associated within the item identifier parts for the first and second set of items” as the predetermined criteria. Ex. 1003, ¶137.

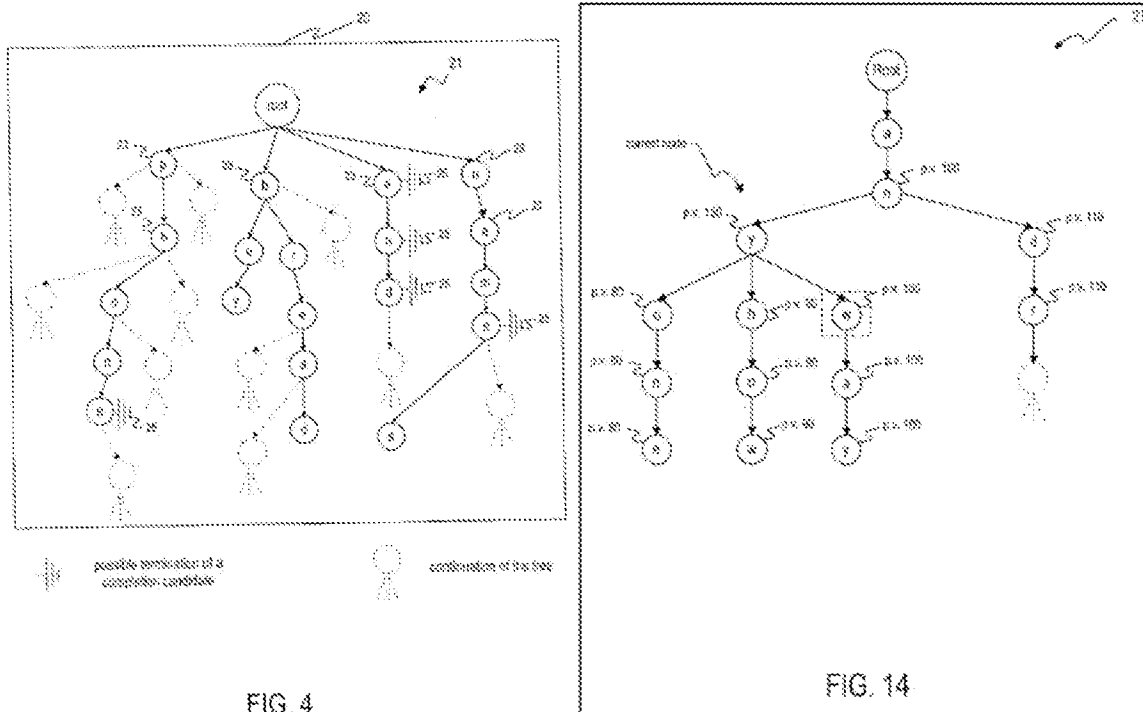
- 5. The method in accordance with claim 3, wherein one of the predetermined criteria is a ranking of the parts of item identifiers for the first and second set of items in relation to a tree hierarchy classification of the parts of item identifiers for the first and second set of items.**

Claim 5 recites “[t]he method in accordance with claim 3, wherein one of the predetermined criteria is a ranking of the parts of item identifiers for the first and second set of items in relation to a tree hierarchy classification of the parts of item identifiers for the first and second set of items.” *Perlman* in view of *Dostie* renders this claim obvious. Ex. 1003, ¶138.

In *Perlman*, “the list of entries 120 will continuously change to reflect the user’s character selections.” Ex. 1005, ¶[0025]. After the user inputs a first character, only those multimedia programs or titles containing that first character will be displayed in the list of entries and “the only possible second letters of words in the list which begin with [the selected second character]” are displayed. *Id.* This process continues until a complete multimedia program or title is inputted. *Id.*, ¶¶[0025]-[0026]. Because the process determines all possible next letters from the set of database entries matching the letters inputted so far, it would have been obvious in view of *Perlman* alone to use a ranking in relation to a tree hierarchy classification as the predetermined criteria. Ex. 1003, ¶139. In other words, “because the system in *Perlman* searches through all possible database items

matching the first N characters where N corresponds to the letter position of the character currently being inputted by the user and displays matching titles in the database list, it would make intuitive sense to use a tree hierarchy classification (*i.e.*, one with levels and orders) based on the sequencing and ordering of letters within the matching database items.” *Id.*

Dostie also discloses this feature. *Dostie* shows a dictionary organized in a hierarchical tree structure where character or word completion candidates are stored in the nodes of the hierarchical tree structure (which may take the form of a binary tree or B-tree). Ex. 1006, ¶¶[0088]-[0090]. As shown in Figure 14, a “preference value” (denoted “p.v.”) can be associated with each node within the tree for “ranking completion candidates relative to each other.” *Id.*, ¶[0085], Figs. 4 & 14.



The tree structures shown in Figures 4, 14, 19, and 22 of *Dostie* are each “a ranking of the parts of item identifiers for the first and second set of items in relation to a tree hierarchy classification of the parts of item identifiers for the first and second set of items.” Ex. 1003, ¶141. Therefore, to the extent this limitation is not already disclosed by *Perlman*, *Dostie* clearly discloses such a classification system.

6. The method in accordance with claim 1, wherein the item identifiers are text strings.

Claim 6 recites “[t]he method in accordance with claim 1, wherein the item identifiers are text strings.” *Perlman* discloses this limitation. Ex. 1003, ¶142. In

addition to character item identifiers, *Perlman* supports groups of letters and “textual multi-word typing” where “the most likely series of words are provided in the content list 110 when the user selects a particular set of characters (e.g., based on the user’s prior typing).” Ex. 1005, ¶¶[0029] (groups of letters), [0033]-[0034] (words). Groups of letters and sets of characters, such as the examples given in *Perlman*—“Ace of Base” and “Bangles”—are text strings. *Id.*, ¶¶[0025]-[0026].

7. The method in accordance with claim 6 wherein the item identifiers are words.

Claim 7 recites “[t]he method in accordance with claim 1, wherein the item identifiers are words.” *Perlman* discloses this limitation. Ex. 1003, ¶143. As described above in connection with claim 6, “Ace of Base” and “Bangles” are both words. Ex. 1005, ¶¶[0025]-[0026].

8. The method in accordance with claim 1, wherein the database is stored in a memory of the computing device.

Claim 8 recites “[t]he method in accordance with claim 1, wherein the database is stored in a memory of the computing device.” *Perlman* in view of *Dostie* renders this claim obvious. Ex. 1003, ¶144.

Although *Perlman* may be silent as to exactly where its database is stored, *Dostie* explains that “[t]he size of the dictionary 20 is limited only by the amount of memory available on the personal computing device concerned.” Ex. 1006,

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¶[0090]. *Dostie* also discloses an embodiment where its candidate tree is stored in “compact” form in order to “reduce the memory requirements” on the computing device. *Id.*, ¶[0220]. It would have been obvious to store the database in a memory of the computing device because that is the most readily accessible storage location and would eliminate the need to access network resources in order to access the database. Forlines Decl. ¶314.

**9. Claim 9 The method in accordance with claim 8,
wherein the computing device is a mobile phone**

Claim 8 recites “[t]he method in accordance with claim 8, wherein the computing device is a mobile phone.” *Perlman* in view of *Dostie* and *Josenhans* render this claim obvious. Ex. 1003, ¶146.

Josenhans discloses its use of databases in mobile phones:

As electronic devices such as mobile telephones, that is to say car telephones and ‘mobiles’, cordless telephones, which communicate via a base station connected to the landline network, electronic notebooks and PCs, which contain databases, such as personal telephone directories, appointments diaries, personal address books, task lists and the like, become more and more widespread, there is the increasing problem that a user needs to manage various electronic telephone directories and/or electronic appointments diaries.

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Ex. 1008 at [0002]. It would have been obvious to port *Perlman*'s enhanced input interface to mobile telephones because the benefits espoused by *Perlman* (more rapid text input without looking away from the display, *see* Ex. 1005, ¶[0006]) are equally applicable to mobile telephones. Ex. 1003, ¶146. Moreover, *Perlman* already contemplates various types of electronic "displays" (computer, television, and automobile in-dashboard displays) as well as "touch screens" that were widely used in mobile telephones at the time. Ex. 1005, ¶[0032]. A POSITA would therefore have ample motivation to port *Perlman*'s interface to a mobile telephone. Ex. 1003, ¶146.

**10. Claim 10 The method in accordance with claim 8,
wherein the computing device is a Personal Digital Assistant
(PDA)**

Claim 8 recites "[t]he method in accordance with claim 8, wherein the computing device is a Personal Digital Assistant (PDA)." *Perlman* in view of *Dostie* and *Josenhans* render this claim obvious. Ex. 1003, ¶147.

Josenhans discloses its use of databases in mobile phones:

As electronic devices such as mobile telephones, that is to say car telephones and 'mobiles', cordless telephones, which communicate via a base station connected to the landline network, electronic notebooks and PCs, which contain databases, such as personal telephone directories,

appointments diaries, personal address books, task lists and the like, become more and more widespread, there is the increasing problem that a user needs to manage various electronic telephone directories and/or electronic appointments diaries.

Ex. 1008 at [0002]. Specifically, one of ordinary skill in the art would recognize that the different applications identified, including “personal telephone directories, appointments diaries, personal address books, task lists and the like” are precisely the applications that appear on PDAs. Therefore, *Josenhans* is describing PDAs.

Moreover, *Josenhans* describes the Nokia 9110 Communicator, which is known to one of ordinary skill in the art as having a PDA.

https://en.wikipedia.org/wiki/Nokia_9000_Communicator. A POSITA would have ample motivation to port *Perlman*’s interface to a PDA for the same reasons discussed above with respect to claim 9. Ex. 1003, ¶148.

11. Claim 12

Claim 12 recites all the same elements as claim 1, but in system form. *Perlman*, *Dostie*, and *Josenhans* disclose all the limitations of claim 12 for the same reasons as described above in connection with claim 1. Ex. 1003, ¶149.

Perlman discloses an apparatus for selecting items, the apparatus comprising an output display, an input, and a computer processor. *See* Ex. 1005, ¶¶[0014]

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(television/computer display 105 and remote control device 100), [0037]-[0038] (“general-purpose or special-purpose processor”). The processor is configured to associate items with corresponding item identifiers as well as perform all the steps of claim 1. *Id.*, ¶¶[0017] (describing associating “available multimedia content” with items in database list 120), [0037]-[0038] (describing implementing all the steps using a processor).

12. Claim 13

Claim 13 recites the same features as claim 3 and is disclosed by *Perlman* for the same reasons. Ex. 1003, ¶151.

13. Claim 14

Claim 14 recites the same features as claim 4 and is disclosed by *Perlman* for the same reasons. Ex. 1003, ¶152.

14. Claim 15

Claim 15 recites the same features as claim 5 and is disclosed by *Perlman* for the same reasons. Ex. 1003, ¶153.

15. Claim 16 The apparatus in accordance with claim 15, including a memory storing the tree hierarchy

Claim 16 recites “[t]he apparatus in accordance with claim 15, including a memory storing the tree hierarchy.” *Perlman* in view of *Dostie* renders this claim obvious. Ex. 1003, ¶154. *Dostie* discloses that its dictionary, which is organized in

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a tree hierarchy, is stored in data structure 29 within “memory available on the personal computing device concerned.” Ex. 1006, ¶¶[0090]- [0091]. The most natural place to store the tree hierarchy would be in a memory. Ex. 1003, ¶154.

16. Claim 17

Claim 17 recites the same features as claim 6 and is disclosed by *Perlman* for the same reasons. Ex. 1003, ¶155.

17. Claim 18

Claim 18 recites the same features as claim 7 and is disclosed by *Perlman* for the same reasons. Ex. 1003, ¶156.

18. Claim 19

Claim 19 recites the same features as claim 8 and is obvious in view of *Perlman* and *Dostie* for the same reasons. Ex. 1003, ¶157.

19. Claim 20

Claim 20 recites the same features as claim 9 and is obvious in view of *Perlman*, *Dostie*, and *Josenhans* for the same reasons. Ex. 1003, ¶158.

20. Claim 21

Claim 21 recites the same features as claim 10 and is obvious in view of *Perlman*, *Dostie*, and *Josenhans* for the same reasons. Ex. 1003, ¶159.

21. Motivation to Combine *Perlman*, *Dostie*, and *Josenhans*

It would have been obvious to incorporate *Dostie*'s dictionary trees (with mutually exclusive identifiers and subsets of identifiers) stored in memory of computing devices and rankings based on tree hierarchy classifications into *Perlman* because it was well known at the time of *Perlman* to conduct database searches using hierarchical trees like the ones described in *Dostie*. Ex. 1003, ¶160. Moreover, *Dostie* provides express motivation to incorporate its candidate trees into systems like *Perlman* in order to “rapidly predict potential completion candidates” and “provide[] a mechanism for supporting enhanced data entry techniques such as character prediction,” like the mechanisms described in *Perlman*. Ex. 1006, ¶[0097].

As explained by Dr. Forlines, “the most efficient way to identify matching prefixes would be to use a hierarchical search tree.” Ex. 1003, ¶161. This is because “a hierarchical search tree promotes efficient traversal forward and backward through a series of search candidates, which are often stored in nodes of the tree.” *Id.* In addition, “the nodes of a search tree are often associated with weights, which can be used in the candidate ranking process.” *Id.* Hierarchical trees also “promote simple ranking of candidates stored in the tree because the number of nodes in the search path through the tree can simply be summed (for

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example, ranking of 1 per node).” *Id.* In fact, database search techniques routinely used search trees and other hierarchical classifications in the searching, ranking, and selection processes. *Id.* Moreover, as described above, *Perlman* already displays a sorted list of database items matching the first *N* letters of the user’s input. At the time of *Perlman*, this form of search was almost always performed using a hierarchical search tree. *Id.* Because of the well-known benefits of using hierarchical search trees to search a database, these trees would have been “a trivial and routine addition” to *Perlman* that would have permitted simple and efficient searching based on a known prefix of database entries, like the searching discussed in *Perlman*. *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 416 (2007) (combination of familiar elements according to known methods is likely obvious when it does no more than yield predictable results). This is especially true since *Perlman* discloses “forward and backward/reverse searching capabilities” (Ex. 1005 at [0027]) that would “likely have used hierarchical search trees as these were in standard use for database searching at the time to move back and forward through the tree. Ex. 1003, ¶161.

It would have been equally obvious to incorporate *Josenhans*’ database structures and unified search into *Perlman* because, like *Perlman*, *Josenhans* deals with a method of searching for items stored in different data sets or databases.

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Specifically, one of ordinary skill in the art would look to references such as *Josenhans* to determine the best way to incorporate and setup the databases of *Perlman*. For example, *Josenhans* provides express motivation to provide a unified search across multiple databases (like the ones described in *Perlman*) for simplicity (*Josenhans*, ¶[0010]), for efficiency, convenience, and reduced memory requirements (*id.*, ¶[0011]-[0013]), and for speed and reduced data transfer requirements (*id.*, ¶[0012], [0018]). A POSITA would have immediately recognized these well-known benefits and would have therefore had ample motivation to add a unified search across multiple database to any search application involving multiple data sources, like *Perlman*'s various types of multimedia context and programming. Ex. 1003, ¶162.

Furthermore, consumer word processing and other computer applications had been making use of multiple databases for many years at the time of the alleged invention. Spell checking, initially provided through stand-alone applications but ultimately incorporated into word processing and other applications such as Microsoft Word, WordStar, and WordPerfect, employed simultaneous searching within multiple databases (e.g. one database for the English language and a second custom database for proper names familiar to the user). It is highly likely that the reader of this document used applications that

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employed the simultaneous searching of multiple databases for years before the '852 patent – presenting the results of these searches in a unified way within the user interface. Thus is it very reasonable that a POSITA would consider the use of multiple databases when designing searching systems such as those present in the mentioned work and display the results of these multiple searches in a unified manner within the user interface. Ex. 1003, ¶163.

C. SNQ 3 – *Badarneh* raises a substantial new question of patentability as to claims 1-4, 6-14, and 17-22

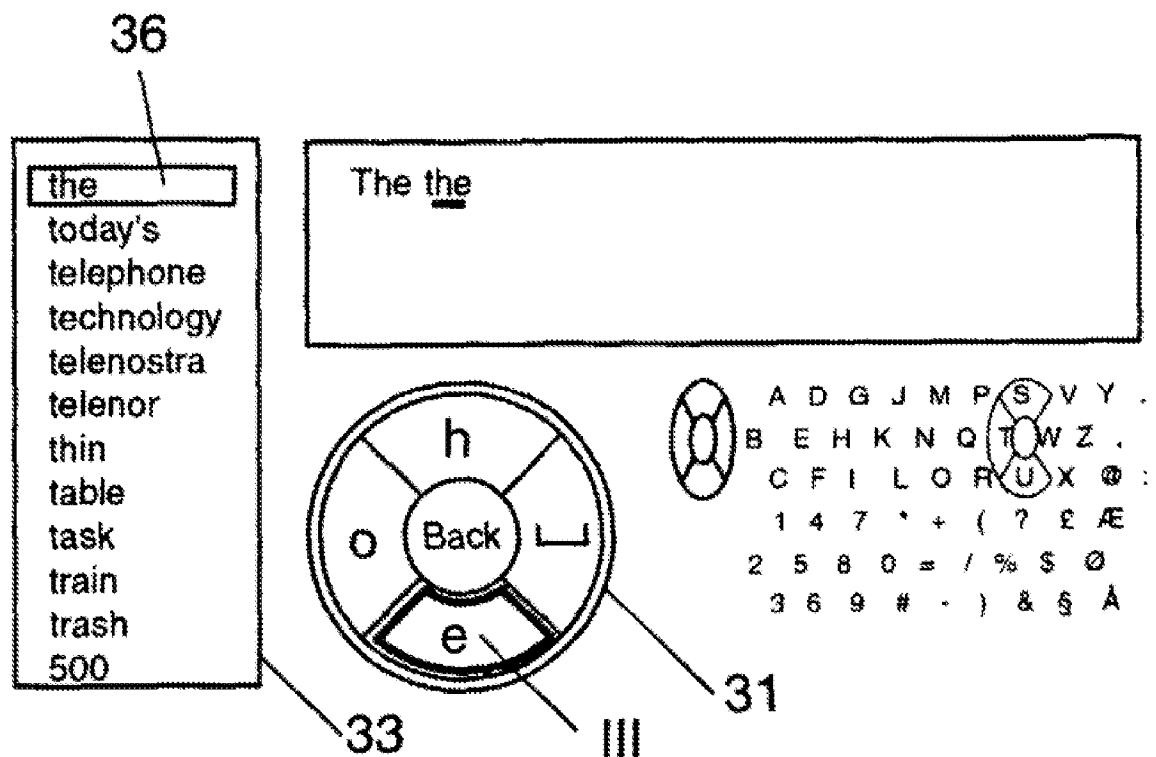
Under the broadest reasonable interpretation of the claims, *Badarneh* anticipates claims 1-4, 6-14, and 17-22, and a reasonable examiner would have considered the teachings of *Badarneh* important when assessing the patentability of those claims.

1. Claim 1

(a) 1a A computer-implemented method of selecting an item from a plurality of items, the method comprising:

To the extent the preamble is considered limiting, *Badarneh* discloses this limitation. Ex. 1003, ¶164. *Badarneh* describes “a system for input of data elements, e.g. letters, signs, numbers and/or symbols in connection with an electronic apparatus or device which has or is connected to a display, wherein the system is so configured that on input of at least one first data element in a data

phrase it offers suggestions of the data phrase.” Ex. 1008 at [0002]. As shown in the figure below, *Badarneh* discloses entering letters to select a word (item) from the list (36) (plurality of items).



Id. The alphanumeric characters/symbols described in *Badarneh* constitute a plurality of items, and the embodiments described therein relate to selecting alphanumeric characters/symbols from a plurality of characters/symbols.

- (b) 1b generating, by at least one computer processor, a first display, the first display comprises: a part of an item identifier for at least a first set of items and a

**part of an item identifier for at least a second set of
items in a database;**

Under the proper “broadest reasonable interpretation,” *Badarneh* discloses this limitation. Ex. 1003, ¶165. In figures 5c-12, *Badarneh* describes a GUI with character-mapped buttons (I, II, III, IV) corresponding to an up, down, left, and right configuration, which can be controlled by a multifunction key, such as a rotary switch. Ex. 1007, 14:30-15:2.

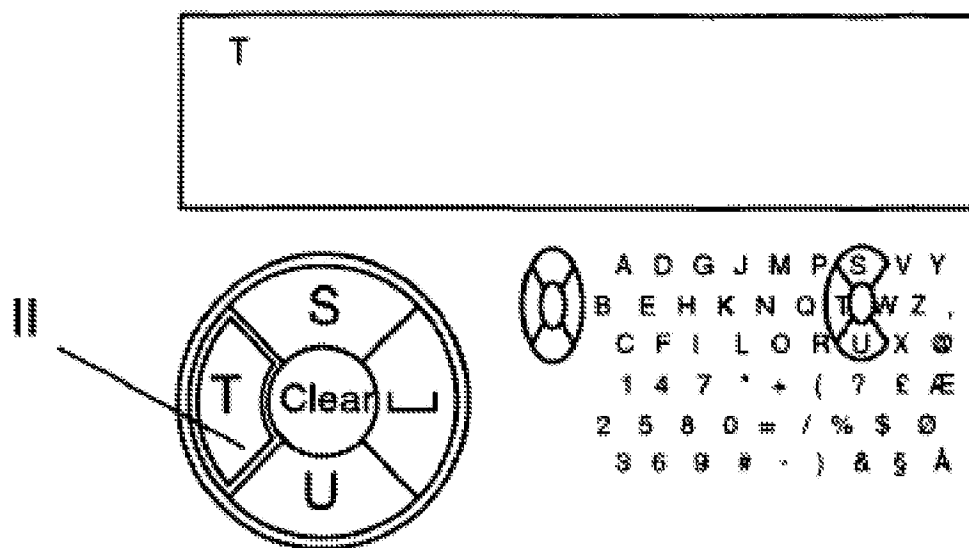


Fig. 9d

Other configurations are also expressly disclosed. *See Id.*, Figs. 9-12.

The up, down, left, right configuration includes within character-mapped buttons I, II, III, IV a part of an item identifier for at least a first set of items and a part of an item identifier for at least a second set of items in a database. For

example, the characters shown in Figure 9d correspond to “likely words and/or letters according to priority of use,” (*Id.*, 15:15-20.) which corresponds to, for example, “a database which contains options and data that should be available.” *Id.*, 24:15-19. As such *Badarneh* discloses selecting from a part of an item identifier (*i.e.* a letter of a word) for at least a first set of items (those words/items that begin with that letter/portion of an item identifier) and a part of an item identifier for at least a second set of items in a database (those words/items that begin with a different letter/portion of an item identifier).

(c) 1c enabling, by the at least one computer processor, selection of one of the two parts of the item identifiers by a user using a user interface;

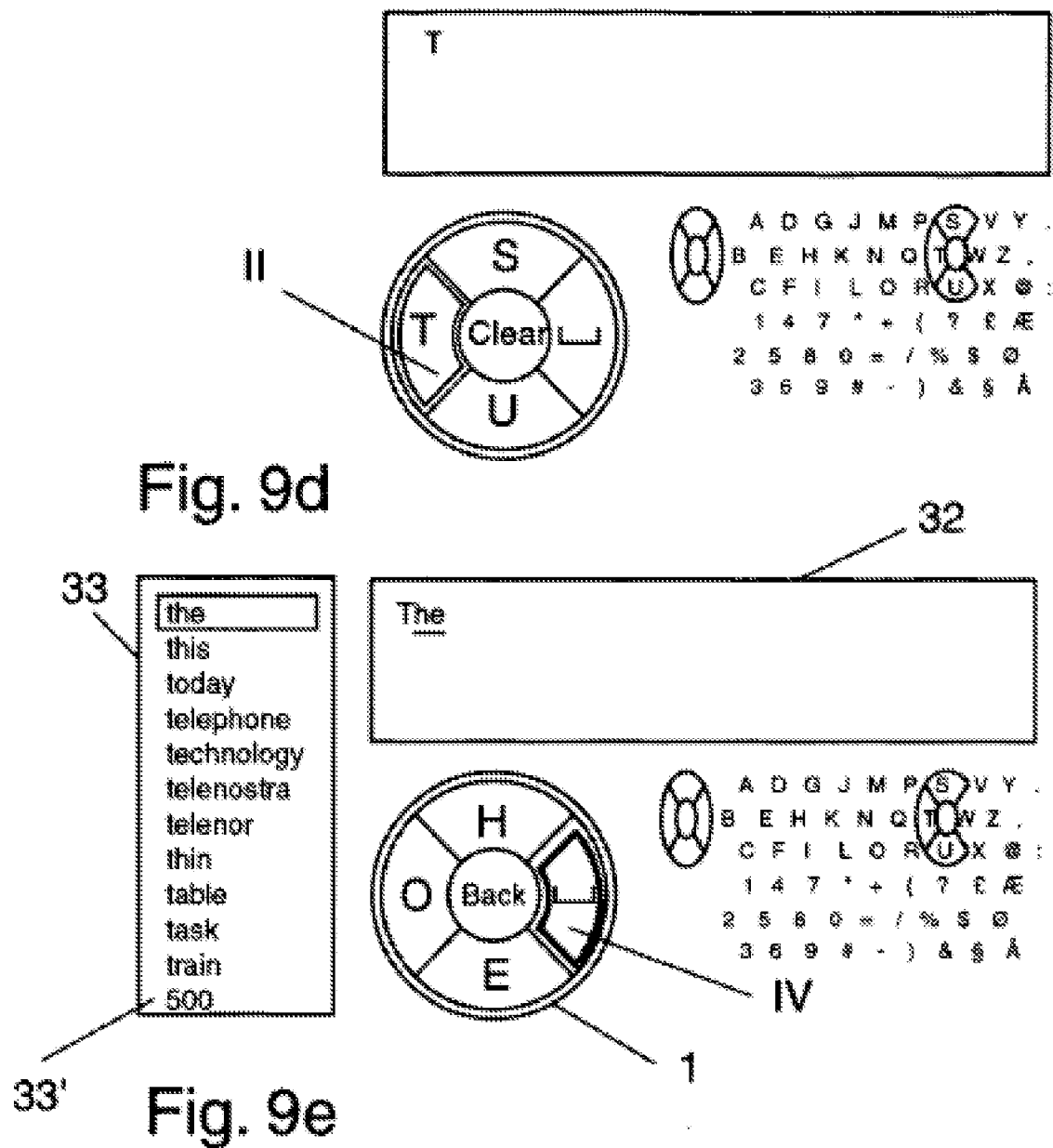
Badarneh discloses this limitation. Ex. 1003, ¶168. A user may select a letter from the GUI by using the character mapped options of the up, down, left, and right configuration, such as a multifunction key. *See* Ex. 1007, 16:23-31.

(d) 1d generating, by the at least one computer processor, in response to the selection of the one of the two parts, a further display; wherein the further display comprises: an additional part of an item identifier for at least a third set of items and an additional part of an item identifier for at least a fourth set of items; and the previously selected one of the two parts of the item identifiers;

Badarneh discloses this limitation. Ex. 1003, ¶169. The user’s previously selected one of the two parts of the item identifiers is displayed in text box 32

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while a different set of item identifiers are displayed on character-mapped buttons 1, as shown in Figure 9 of *Badarneh*. Ex. 1007, 17:28-31 (“The system now guesses the word “The”, which is thus written out in full in the text field 32, see Fig. 9e. Field 33 shows the candidate words which are picked from the available list of word in the order made according to how often these words have been used statistically”).



Id., Figs. 9d and 9e.

As shown above, once the part 'T' of the item identifier is selected, list of words 33' is updated to reflected database items containing a word beginning with the selected letter. Additional parts of item identifiers 'H' 'O' and 'E' are each

displayed. Part ‘H’ corresponds to the set of entries in the database containing ‘TH’ as the first two letters of a word in the database item, while part ‘E’ corresponds to the set of entries in the database containing ‘TE’ as the first two letters of a word in the database item and part ‘O’ refers to the first two letters of a word in the database item “TO.” Ex. 1003, ¶170.

- (e) 1e enabling, by the at least one computer processor, selection of one of the two additional parts of the item identifiers by the user using the user interface;**

Badarneh discloses this limitation. Ex. 1003, ¶171. After the user selects a letter (e.g., the character ‘T’), a new set of parts of item identifiers are automatically mapped to the up down left right configuration GUI 1 and displayed for another user selection. Ex. 1007, 17:29-34 (“Field 33 shows the candidate words which are picked from the available list of word in the order made according to how often these words have been used statistically. On the basis thereof, the system will choose letters which follow the previously entered letter. In this case, HOE are chosen as the letters which will provide letter number two in the first words that are chosen from the displayed list. These letters appear in the animation 31”).

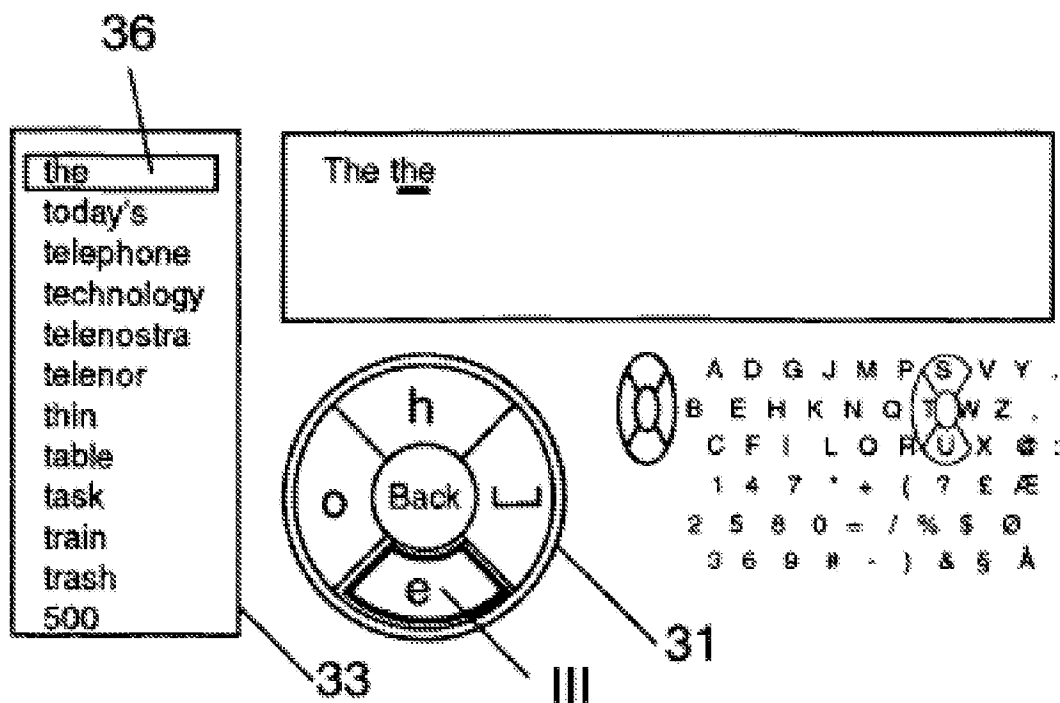


Fig. 9g

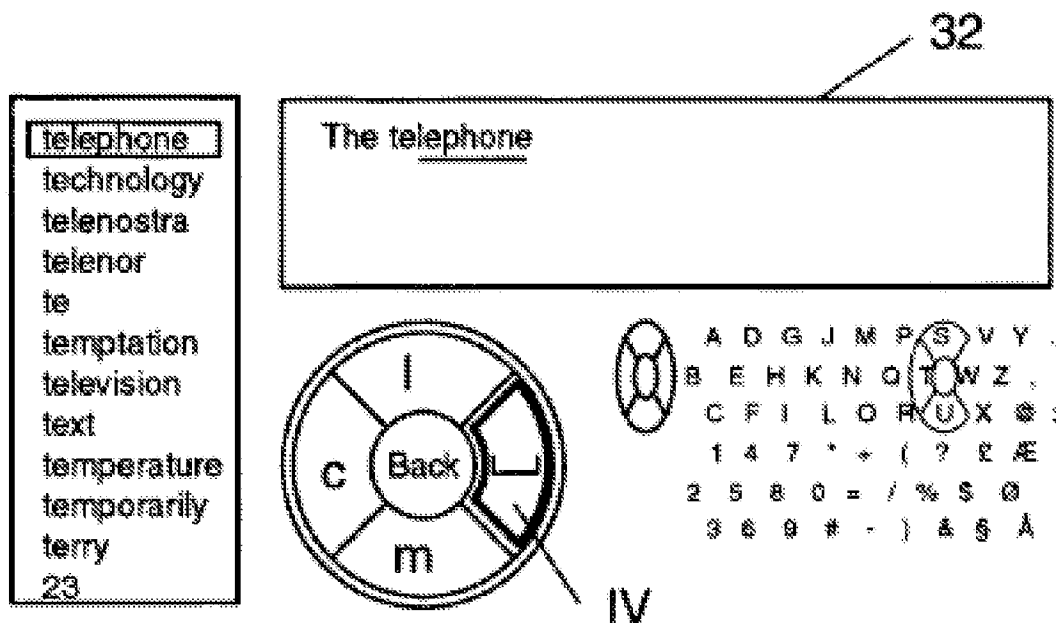


Fig. 9h

Id., Figs. 9g-h.

In the above figures, at least parts of item identifiers ‘H’ ‘O’ and ‘E’ (Figure 9g) are chosen for display based on the user’s prior selection of the part ‘T’. At least portions ‘l’ ‘C’ and ‘m’ (Figure 9h) are chosen for display based on the user’s prior selection of the parts ‘T’ and ‘E’. Ex. 1003, ¶172.

- (f) 1f combining, by the at least one computer processor, the selected one of the two parts of the item identifiers with the selected one of the two additional parts of the item identifiers to create a larger part of the item identifiers; and**

Badaneh discloses this limitation. Ex. 1003, ¶173. As shown in figures 9a-m, the selected portions are combined in text box shown at the top of the figures (Figures 9a-m) to form a larger portion of the words in the list 33’. *See* Ex. 1007, 20-24.

- (g) 1g displaying, by the at least one computer processor, the larger part of the item identifiers;**

Badaneh discloses this limitation. Ex. 1003, ¶174. As shown in figures 9a-m, the selected portions are combined in text box shown at the top of the figures (Figures 9a-m) to form a larger portion of the words in the list 33’. *See* Ex. 1007, 17:20-24..

- (h) 1h wherein the parts of the item identifiers and the additional parts of the item identifiers are text symbols and the additional parts of the item identifiers are shorter than the complete item identifiers; and**

Badaneh discloses this limitation. Ex. 1003, ¶175. All the parts of item identifiers are letters or characters within the English alphabet, which are text symbols in the English language. Ex. 1007, 9:20-24, 17:20-24. The additional parts of item identifiers (*i.e.*, the single letters representing the second letter of the words in the list of words 33') are shorter than complete item identifiers, as shown above in Figures 9a-m.

- (i) 1i the first set of items identifiers and the second set of item identifiers are mutually exclusive of one another and the third set of item identifiers and the fourth set of item identifiers are mutually exclusive subsets of the first set of item identifiers or the second set of item identifiers.**

Badarneh discloses this limitation. Ex. 1003, ¶176. As explained above, once a letter is selected, a new set of item identifiers is displayed reflecting the next letters in “the available list of word in the order made according to how often these words have been used statistically.” Ex. 1007, 17:29-31. Because each part of an item identifier (*i.e.*, letter) corresponds to the matching words in list 33 with that item identifier as a first letter, the first and second sets of item identifiers (which correspond to different letters in *Badarneh*) are mutually exclusive. As one

simple example, the part ‘T’ shown in Figure 9G would correspond to the set of words starting with ‘T’, while the part ‘S’ would correspond to the set of all content/titles starting with ‘S’. Since the words cannot start with both ‘J’ and ‘S’, these two sets of item identifiers would be mutually exclusive.

Moreover, the third set of item identifiers and the fourth set of item identifiers are mutually exclusive subsets of the first set of item identifiers or the second set of item identifiers because each of those sets requires a first and second letter to match. As the user enters each additional letter, the set of matching content/titles is reduced to a subset of the prior set. Ex. 1003, ¶177.

2. 2 The method in accordance with claim 1, comprising a further step of iterating the selections until the item identifiers are completed.

Claim 2 recites “[t]he method in accordance with claim 1, comprising a further step of iterating the selections until the item identifiers are completed.”

Badarneh discloses this limitation. Ex. 1003, ¶178. A user can continue selecting additional letters until the word from list 33’ is completed. Ex. 1007, 17:29-31, Ex. 1003, ¶178.

3. 3 The method in accordance with claim 1, wherein the step of generating the first display includes selecting the

parts of the item identifiers for the first and second set of items to be displayed based on predetermined criteria.

Claim 3 recites “[t]he method in accordance with claim 1, wherein the step of generating the first display includes selecting the parts of the item identifiers for the first and second set of items to be displayed based on predetermined criteria.”

Badarneh discloses this limitation. Ex. 1003, ¶179. The selected two parts of item identifiers reflecting the next letters in “the available list of word in the order made according to how often these words have been used statistically.” Ex. 1007, 17:29-31, Ex. 1003, ¶179.

4. 4 The method in accordance with claim 3, wherein one of the predetermined criteria is a frequency of selection of database items associated within the item identifier parts for the first and second set of items.

Claim 4 recites “[t]he method in accordance with claim 3, wherein one of the predetermined criteria is a frequency of selection of database items associated within the item identifier parts for the first and second set of items.” *Badarneh* discloses this limitation. Ex. 1003, ¶180. *Badarneh* explains that “The system is intended to be programmed so that the words which the user employs most come first, that it is to say that, no matter what their length, words will come or be shown successively in the priority order they have according to previous use. If the list of

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words does not have any priority order, the shortest words will be shown first.”

Ex. 1007, 5:22-24.

5. 6 The method in accordance with claim 1, wherein the item identifiers are text strings.

Claim 6 recites “[t]he method in accordance with claim 1, wherein the item identifiers are text strings.” *Badarneh* discloses this limitation. Ex. 1003, ¶181. In addition to character item identifiers, *Badarneh* supports groups of letters where the user can type multiple characters in a word and the system will predict the next letter (e.g., based on the user’s prior typing). *See* Ex. 1007, 18:1-10. Groups of letters and sets of characters, such as the examples given in *Badarneh* are text strings.

6. 7 The method in accordance with claim 6 wherein the item identifiers are words.

Claim 7 recites “[t]he method in accordance with claim 1, wherein the item identifiers are words.” *Badarneh* discloses this limitation. Ex. 1003, ¶182. As described above in connection with claim 6, “The” and “Telephone” are both words. Ex. 1007, 18:1-10.

7. 8 The method in accordance with claim 1, wherein the database is stored in a memory of the computing device.

Claim 8 recites “[t]he method in accordance with claim 1, wherein the database is stored in a memory of the computing device.” *Badarneh* discloses this

limitation. Ex. 1003, ¶183. *Badarneh* discloses that “[t]he apparatus will preferably have a memory in which is stored a reference book/dictionary for the language that it is to be used.” Ex. 1007, 5:10-12.

**8. Claim 9 The method in accordance with claim 8,
wherein the computing device is a mobile phone**

Claim 9 recites “[t]he method in accordance with claim 8, wherein the computing device is a mobile phone.” *Badarneh* discloses this limitation. Ex. 1003, ¶184. *Badarneh* discloses “For input or writing to take place the user must be in a write mode, i.e., for example, he must write SMS if the apparatus is, for example, a mobile telephone, as assumed in this example.” Ex. 1007, 5:10-12. *Badarneh* also discloses “Fig. 5a shows an electronic apparatus (e.g., a mini-computer/PDA/mobile telephone) which is controlled by a multifunction key, in this case a rotary switch with four clicks (as shown before) and with an alternative centre click.” Ex. 1007, 14:30-33.

**9. Claim 10 The method in accordance with claim 8,
wherein the computing device is a Personal Digital Assistant
(PDA)**

Claim 10 recites “[t]he method in accordance with claim 8, wherein the computing device is a Personal Digital Assistant (PDA).” *Badarneh* discloses this limitation. Ex. 1003, ¶185. *Badarneh* explains “Fig. 5a shows an electronic apparatus (e.g., a mini-computer/PDA/mobile telephone) which is controlled by a

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multifunction key, in this case a rotary switch with four clicks (as shown before) and with an alternative centre click.” Ex. 1007, 14:30-33.

10. Claim 11 The method in accordance with claim 8, wherein the steps of enabling selections allow selections of the one of the two parts or the one of the two additional patts of the item identifiers by way of a joystick.

Claim 11 recites “[t]he method in accordance with claim 8, wherein the steps of enabling selections allow selections of the one of the two parts or the one of the two additional patts of the item identifiers by way of a joystick.” *Badarneh* discloses this limitation. Ex. 1003, ¶186. Specifically, *Badarneh* discloses “The cursor fields will move across the functions which are in the field. Fig. 5d shows active navigation selected (by arrows). Alternative navigation can be obtained if a cursor control switch 11' is mounted in the centre of the switch 11 (stepless joystick-like system).” Ex. 1007, 15:13-15.

11. Claim 12

Claim 12 recites all the same elements as claim 1, but in system form. *Badarneh* discloses all the limitations of claim 12 for the same reasons as described above in connection with claim 1. Ex. 1003, ¶187.

Badarneh discloses

In the following description it will be understood that a screen image on a display will reflect the input and navigation options which, for example, the

use of a multifunction switch will have. The screen image can be adapted to a smaller display screen which is usual for a mobile telephone, but is of course adaptable to larger display screens which are not only used on mobile telephones but also for other apparatus. Therefore the system is not limited to mobile telephone application, but could also easily be used in other apparatus and applications such as ordinary telephones, PDAs, PCs, remote control units, other input devices etc.

Ex. 1007, 4:4-11. A POSITA would recognize that electronic devices like mobile phones, PDAs, PCs, etc. each have an output display, a mechanism for inputting, and a computer processor. Ex. 1003, ¶187.

12. Claim 13

Claim 13 recites the same features as claim 3 and is disclosed by *Badarneh* for the same reasons. Ex. 1003, ¶188.

13. Claim 14

Claim 14 recites the same features as claim 4 and is disclosed by *Badarneh* for the same reasons. Ex. 1003, ¶189.

14. Claim 17

Claim 17 recites the same features as claim 6 and is disclosed by *Badarneh* for the same reasons. Ex. 1003, ¶190.

15. Claim 18

Claim 18 recites the same features as claim 7 and is disclosed by *Badarneh* for the same reasons. Ex. 1003, ¶191.

16. Claim 19

Claim 19 recites the same features as claim 8 and is obvious in view of *Badarneh* for the same reasons. Ex. 1003, ¶192.

17. Claim 20

Claim 20 recites the same features as claim 9 and is obvious in view of *Badarneh* for the same reasons. Ex. 1003, ¶193.

18. Claim 21

Claim 21 recites the same features as claim 10 and is obvious in view of *Badarneh* for the same reasons. Ex. 1003, ¶194.

19. Claim 22 The apparatus in accordance with claim 21, wherein the input is a joystick

Claim 22 recites the same features as claim 11, and is obvious in view of *Badarneh* for the same reasons. Ex. 1003, ¶195.

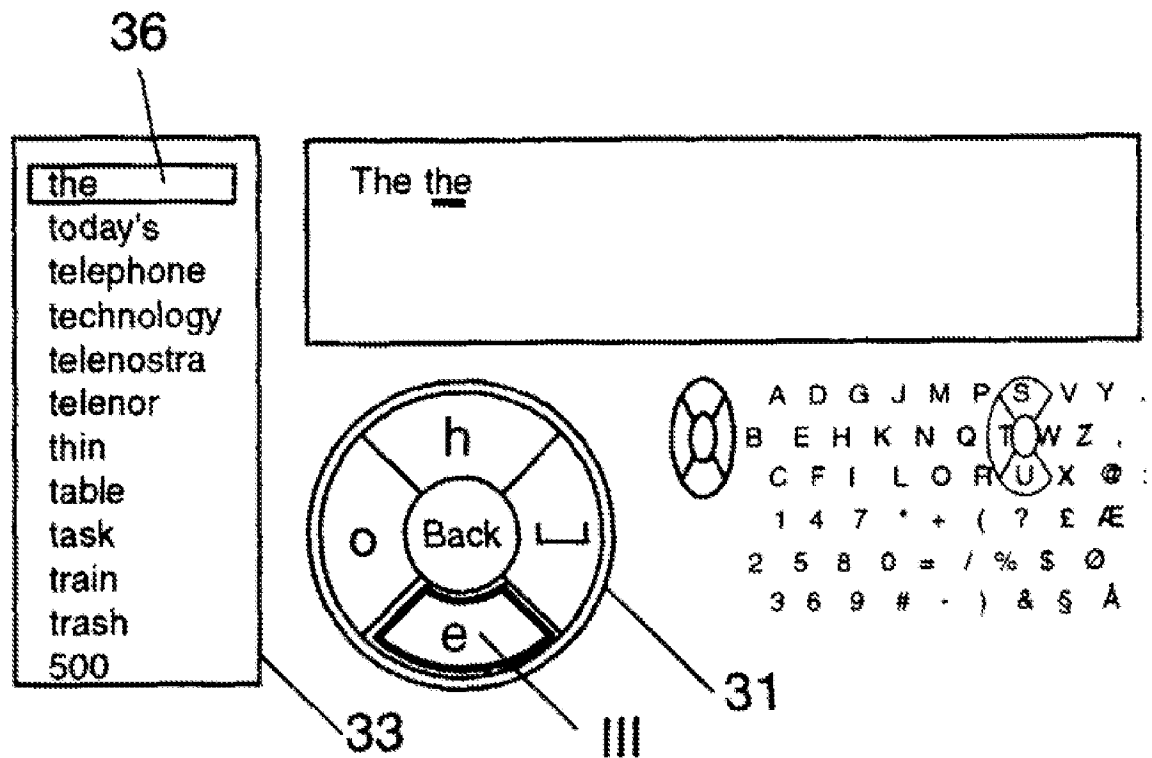
D. SNQ 4 – *Badarneh* and *Josenhans* raise a substantial new question of patentability as to claims 1-4, 6-14, and 17-22

Badarneh, and *Josenhans* render obvious claims 1-4, 6-14, and 17-22, and a reasonable examiner would have considered the combined teachings of these references important when assessing the patentability of those claims.

1. Claim 1

- (a) 1a A computer-implemented method of selecting an item from a plurality of items, the method comprising:**

To the extent the preamble is considered limiting, *Badarneh* discloses this limitation. Ex. 1003, ¶197. *Badarneh* describes “a system for input of data elements, e.g. letters, signs, numbers and/or symbols in connection with an electronic apparatus or device which has or is connected to a display, wherein the system is so configured that on input of at least one first data element in a data phrase it offers suggestions of the data phrase.” Ex. 1007, Abstract. As shown in the figure below, *Badarneh* discloses entering letters to select a word (item) from the list (36) (plurality of items).



Id. The alphanumeric characters/symbols described in *Badarneh* constitute a plurality of items, and the embodiments described therein relate to selecting alphanumeric characters/symbols from a plurality of characters/symbols.

- (b) **1b generating, by at least one computer processor, a first display, the first display comprises: a part of an item identifier for at least a first set of items and a part of an item identifier for at least a second set of items in a database;**

Under the proper “broadest reasonable interpretation,” *Badarneh* discloses this limitation. Ex. 1003, ¶198. In figures 5c-12, *Badarneh* describes a GUI with character-mapped buttons (I, II, III, IV) corresponding to an up, down, left, and

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right configuration, which can be controlled by a multifunction key, such as a rotary switch. Ex. 1007,.14:30-15:2.

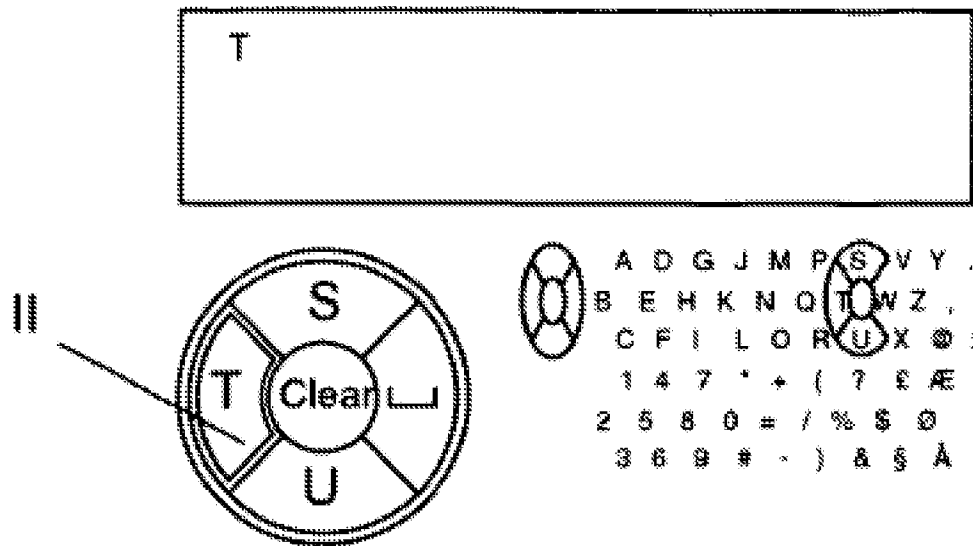


Fig. 9d

Other configurations are also expressly disclosed. *See Id.*, Figs. 9-12.

The up, down, left, right configuration includes within character-mapped buttons I, II, III, IV a part of an item identifier for at least a first set of items and a part of an item identifier for at least a second set of items in a database. For example, the characters shown in Figure 9b correspond to “likely words and/or letters according to priority of use,” (*Id.*, 15:15-20). which corresponds to, for example, “a database which contains options and data that should be available.” *Id.*, 24:15-19. As such *Badarneh* discloses selecting from a part of an item

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identifier (*i.e.* a letter of a word) for at least a first set of items (those words/items that begin with that letter/portion of an item identifier) and a part of an item identifier for at least a second set of items in a database(those words/items that begin with a different letter/portion of an item identifier).

Although the PTAB Board did not construe this term, the Board stated “Petitioner does not explain sufficiently how *Perlman*’s display comprises a part of an item identifier (*i.e.*, a letter or letters displayed in the star configuration) for at least a first set of items or entries in a particular database ***and*** a part of an item identifier (*i.e.*, a letter or letters displayed in the star configuration) for at least a second set of items or entries in ***a different particular database***.” Ex. 1012, 15-16. Therefore, the Board apparently interpreted the claims to require the first and second sets of item identifiers to be in separate databases. As explained above, Requester does not agree with this construction and it certainly does not constitute the “broadest reasonable interpretation.”

To the extent the Examiner adopts the Board’s construction, *Josenhans* discloses two sets of identifiers in separate databases. Specifically, *Josenhans* discloses that in the invention:

a search table is thus set up in which, ***for each connected database***, at least the immediate predecessor and the immediate successor to the entered

search term and, if the search term itself has likewise been found in the database, the search term itself are also stored. If the search term itself has not been found in any of the connected databases, then, among the immediate successors stored in the search table, the one selected is that which comes closest after the search term. This selected successor is then displayed to a user. On the basis of this, the user can then display the next term or the previous term. He thus has the impression that he is searching for the desired information in a single database. ***This allows the user to search in various databases just as simply as when searching in a single database.***

Ex. 1008, ¶[0010] (emphasis added).

Accordingly, *Josenhans* discloses a system where various search terms are stored in separate databases, and further discloses that the system works so that a user can simply search all of the databases at once without knowing that they are actually using identifiers from separate databases.

It would have been obvious to incorporate *Josenhans*' database organizational structure into *Badarneh* for the same reasons because *Josenjans* itself deals with the issue the same type of text entry techniques and character prediction that is dealt with in *Badarneh*. PHOSITA would have recognized that

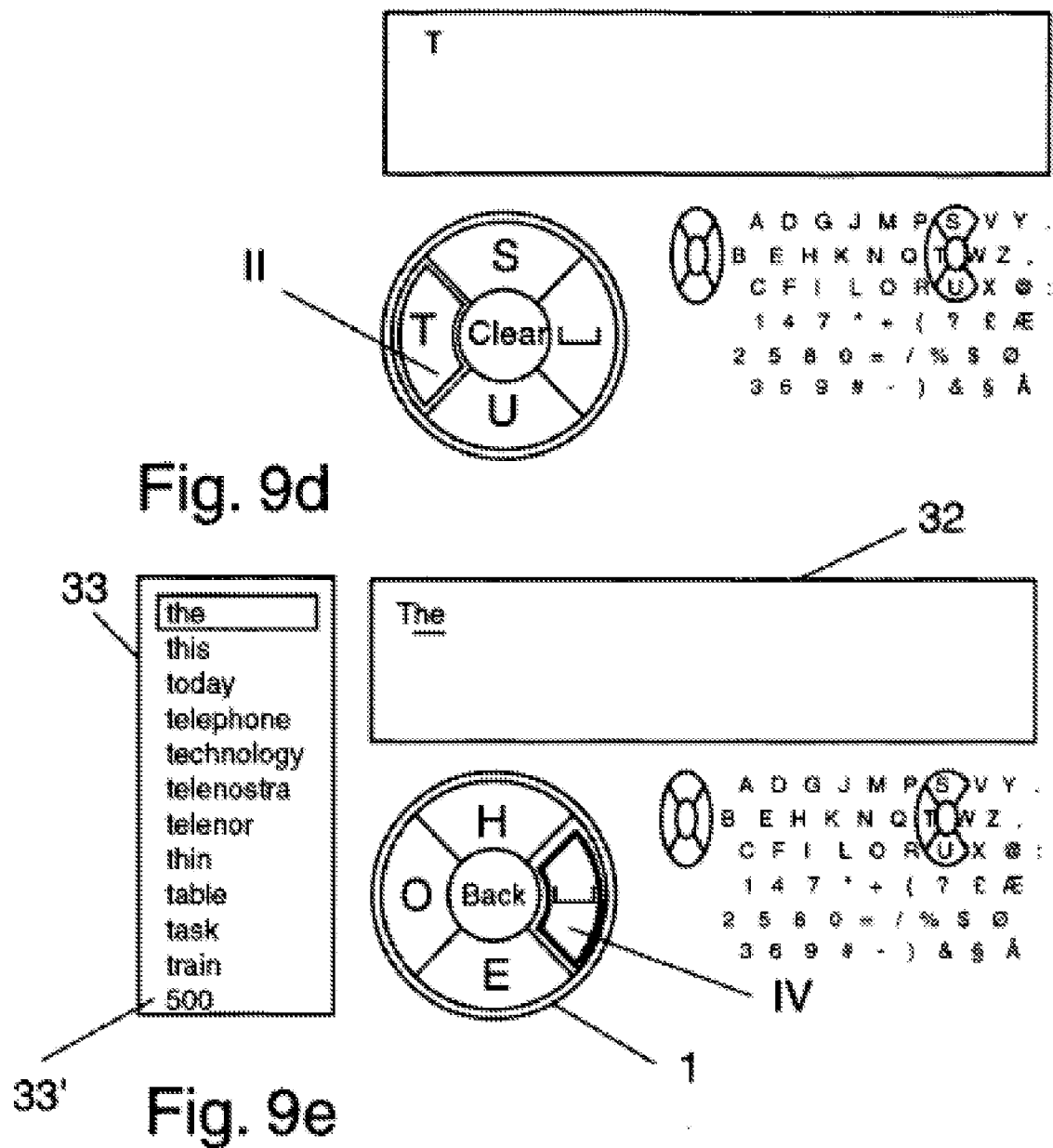
the *Josenhans* system presents a way of organizing data into different databases without affecting the user interface for the user. Ex. 1003, ¶203.

- (c) **1c enabling, by the at least one computer processor, selection of one of the two parts of the item identifiers by a user using a user interface;**

Badarneh discloses this limitation. Ex. 1003, ¶204. A user may select a letter from the GUI by using the character mapped options of the up, down, left, and right configuration, such as a multifunction key. *See* Ex. 1007, 16:23-31.

- (d) **1d generating, by the at least one computer processor, in response to the selection of the one of the two parts, a further display; wherein the further display comprises: an additional part of an item identifier for at least a third set of items and an additional part of an item identifier for at least a fourth set of items; and the previously selected one of the two parts of the item identifiers;**

Badarneh discloses this limitation. Ex. 1003, ¶205. The user's previously selected one of the two parts of the item identifiers is displayed in text box 32 while a different set of item identifiers are displayed on character-mapped buttons 1, as shown in Figure 9 of *Badarneh*. Ex. 1007, 17:28-31 ("The system now guesses the word "The", which is thus written out in full in the text field 32, see Fig. 9e. Field 33 shows the candidate words which are picked from the available list of word in the order made according to how often these words have been used statistically").



Id., Figs. 9d and 9e.

As shown above, once the part 'T' of the item identifier is selected, list of words 33' is updated to reflected database items containing a word beginning with the selected letter. Additional parts of item identifiers 'H' 'O' and 'E' are each

displayed. Part ‘H’ corresponds to the set of entries in the database containing ‘TH’ as the first two letters of a word in the database item, while part ‘E’ corresponds to the set of entries in the database containing ‘TE’ as the first two letters of a word in the database item and part ‘O’ refers to the first two letters of a word in the database item “TO.” Ex. 1003, ¶206.

- (e) 1e enabling, by the at least one computer processor, selection of one of the two additional parts of the item identifiers by the user using the user interface;**

Badarneh discloses this limitation. Ex. 1003, ¶207. After the user selects a letter (e.g., the character ‘T’), a new set of parts of item identifiers are automatically mapped to the up down left right configuration GUI 1 and displayed for another user selection. Ex. 1007, 17:29-34 (“Field 33 shows the candidate words which are picked from the available list of word in the order made according to how often these words have been used statistically. On the basis thereof, the system will choose letters which follow the previously entered letter. In this case, HOE are chosen as the letters which will provide letter number two in the first words that are chosen from the displayed list. These letters appear in the animation 31”).

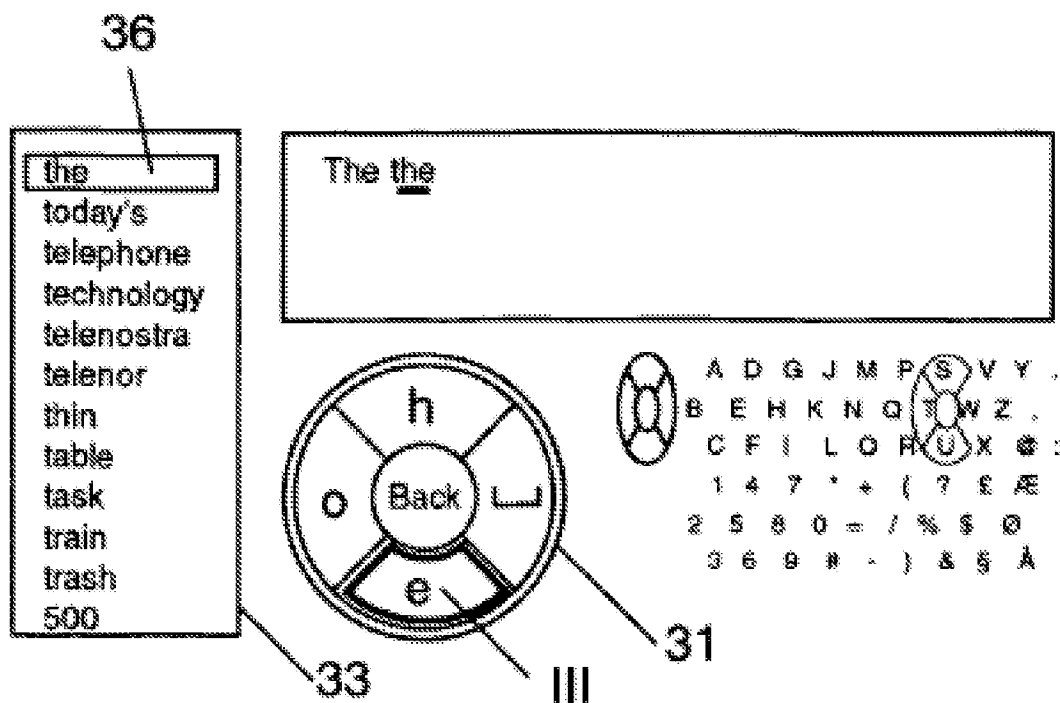


Fig. 9g

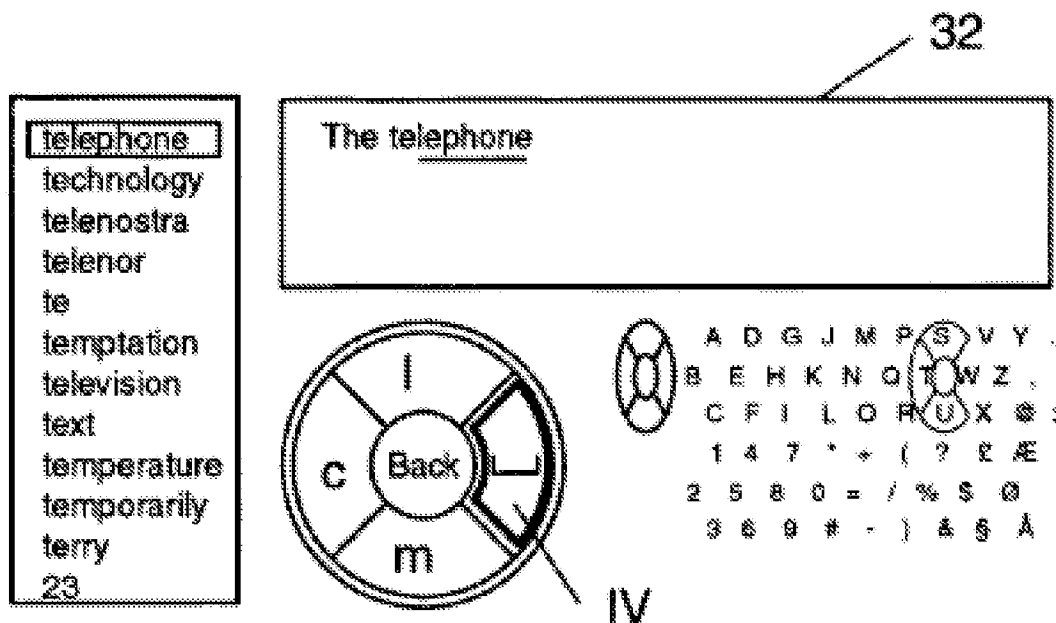


Fig. 9h

Id., Figs. 9g-h.

In the above figures, at least parts of item identifiers ‘H’ ‘O’ and ‘E’ (Figure 9g) are chosen for display based on the user’s prior selection of the part ‘T’. At least portions ‘l’ ‘C’ and ‘m’ (Figure 9h) are chosen for display based on the user’s prior selection of the parts ‘T’ and ‘E’. Ex. 1003, ¶208.

- (f) 1f combining, by the at least one computer processor, the selected one of the two parts of the item identifiers with the selected one of the two additional parts of the item identifiers to create a larger part of the item identifiers; and**

Badaneh discloses this limitation. Ex. 1003, ¶209. As shown in figures 9a-m, the selected portions are combined in text box shown at the top of the figures (Figures 9a-m) to form a larger portion of the words in the list 33’. *See* Ex. 1007, 20-24.

- (g) 1g displaying, by the at least one computer processor, the larger part of the item identifiers;**

Badaneh discloses this limitation. Ex. 1003, ¶210. As shown in figures 9a-m, the selected portions are combined in text box shown at the top of the figures (Figures 9a-m) to form a larger portion of the words in the list 33’. *See* Ex. 1007, 20-24.

- (h) 1h wherein the parts of the item identifiers and the additional parts of the item identifiers are text symbols and the additional parts of the item identifiers are shorter than the complete item identifiers; and**

Badarneh discloses this limitation. Ex. 1003, ¶211. All the parts of item identifiers are letters or characters within the English alphabet, which are text symbols in the English language. Ex. 1007, 9:20-24, 17:20-24. The additional parts of item identifiers (*i.e.*, the single letters representing the second letter of the words in the list of words 33') are shorter than complete item identifiers, as shown above in Figures 9a-m.

- (i) 1i the first set of items identifiers and the second set of item identifiers are mutually exclusive of one another and the third set of item identifiers and the fourth set of item identifiers are mutually exclusive subsets of the first set of item identifiers or the second set of item identifiers.**

Badarneh discloses this limitation. Ex. 1003, ¶212. As explained above, once a letter is selected, a new set of item identifiers is displayed reflecting the next letters in “the available list of word in the order made according to how often these words have been used statistically.” Ex. 1007, 17:29-31. Because each part of an item identifier (*i.e.*, letter) corresponds to the matching words in list 33 with that item identifier as a first letter, the first and second sets of item identifiers (which correspond to different letters in *Badarneh*) are mutually exclusive. As one

simple example, the part ‘T’ shown in Figure 9G would correspond to the set of words starting with ‘T’, while the part ‘S’ would correspond to the set of all content/titles starting with ‘S’. Since the words cannot start with both ‘J’ and ‘S’, these two sets of item identifiers would be mutually exclusive.

Moreover, the third set of item identifiers and the fourth set of item identifiers are mutually exclusive subsets of the first set of item identifiers or the second set of item identifiers because each of those sets requires a first and second letter to match. As the user enters each additional letter, the set of matching content/titles is reduced to a subset of the prior set. Ex. 1003, ¶213.

2. 2 The method in accordance with claim 1, comprising a further step of iterating the selections until the item identifiers are completed.

Claim 2 recites “[t]he method in accordance with claim 1, comprising a further step of iterating the selections until the item identifiers are completed.” *Badarneh* discloses this limitation. Ex. 1003, ¶214. A user can continue selecting additional letters until the word from list 33’ is completed. Ex. 1007, 17:29-31, Ex. 1003, ¶214.

3. 3 The method in accordance with claim 1, wherein the step of generating the first display includes selecting the

parts of the item identifiers for the first and second set of items to be displayed based on predetermined criteria.

Claim 3 recites “[t]he method in accordance with claim 1, wherein the step of generating the first display includes selecting the parts of the item identifiers for the first and second set of items to be displayed based on predetermined criteria.”

Badarneh discloses this limitation. Ex. 1003, ¶215. The selected two parts of item identifiers reflecting the next letters in “the available list of word in the order made according to how often these words have been used statistically.” Ex. 1007, 17:29-31, Ex. 1003, ¶215.

4. 4 The method in accordance with claim 3, wherein one of the predetermined criteria is a frequency of selection of database items associated within the item identifier parts for the first and second set of items.

Claim 4 recites “[t]he method in accordance with claim 3, wherein one of the predetermined criteria is a frequency of selection of database items associated within the item identifier parts for the first and second set of items.” *Badarneh* discloses this limitation. Ex. 1003, ¶216. *Badarneh* explains that “The system is intended to be programmed so that the words which the user employs most come first, that it is to say that, no matter what their length, words will come or be shown successively in the priority order they have according to previous use. If the list of

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words does not have any priority order, the shortest words will be shown first.”

Ex. 1007, 5:22-24.

5. 6 The method in accordance with claim 1, wherein the item identifiers are text strings.

Claim 6 recites “[t]he method in accordance with claim 1, wherein the item identifiers are text strings.” *Badarneh* discloses this limitation. Ex. 1003, ¶217. In addition to character item identifiers, *Badarneh* supports groups of letters where the user can type multiple characters in a word and the system will predict the next letter (e.g., based on the user’s prior typing).” *See* Ex. 1007, 18:1-10. Groups of letters and sets of characters, such as the examples given in *Badarneh* are text strings.

6. 7 The method in accordance with claim 6 wherein the item identifiers are words.

Claim 7 recites “[t]he method in accordance with claim 1, wherein the item identifiers are words.” *Badarneh* discloses this limitation. Ex. 1003, ¶218. As described above in connection with claim 6, “The” and “Telephone” are both words. Ex. 1007, 18:1-10.

7. 8 The method in accordance with claim 1, wherein the database is stored in a memory of the computing device.

Claim 8 recites “[t]he method in accordance with claim 1, wherein the database is stored in a memory of the computing device.” *Badarneh* discloses this

limitation. Ex. 1003, ¶219. *Badarneh* discloses that “[t]he apparatus will preferably have a memory in which is stored a reference book/dictionary for the language that it is to be used.” Ex. 1007, 5:10-12.

**8. Claim 9 The method in accordance with claim 8,
wherein the computing device is a mobile phone**

Claim 9 recites “[t]he method in accordance with claim 8, wherein the computing device is a mobile phone.” *Badarneh* discloses this limitation. Ex. 1003, ¶220. *Badarneh* discloses “For input or writing to take place the user must be in a write mode, i.e., for example, he must write SMS if the apparatus is, for example, a mobile telephone, as assumed in this example.” Ex. 1007, 5:8-10. *Badarneh* also discloses “Fig. 5a shows an electronic apparatus (e.g., a mini-computer/PDA/mobile telephone) which is controlled by a multifunction key, in this case a rotary switch with four clicks (as shown before) and with an alternative centre click.” Ex. 1007, 14:30-33.

**9. Claim 10 The method in accordance with claim 8,
wherein the computing device is a Personal Digital Assistant
(PDA)**

Claim 10 recites “[t]he method in accordance with claim 8, wherein the computing device is a Personal Digital Assistant (PDA).” *Badarneh* discloses this limitation. Ex. 1003, ¶221. *Badarneh* explains “Fig. 5a shows an electronic apparatus (e.g., a mini-computer/PDA/mobile telephone) which is controlled by a

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multifunction key, in this case a rotary switch with four clicks (as shown before) and with an alternative centre click.” Ex. 1007, 14:30-33.

10. Claim 11 The method in accordance with claim 8, wherein the steps of enabling selections allow selections of the one of the two parts or the one of the two additional patts of the item identifiers by way of a joystick.

Claim 11 recites “[t]he method in accordance with claim 8, wherein the steps of enabling selections allow selections of the one of the two parts or the one of the two additional patts of the item identifiers by way of a joystick.” *Badarneh* discloses this limitation. Ex. 1003, ¶222. Specifically, *Badarneh* discloses “The cursor fields will move across the functions which are in the field. Fig. 5d shows active navigation selected (by arrows). Alternative navigation can be obtained if a cursor control switch 11' is mounted in the centre of the switch 11 (stepless joystick-like system).” Ex. 1007, 15:13-15.

11. Claim 12

Claim 12 recites all the same elements as claim 1, but in system form. *Badarneh* and *Josenhans* disclose all the limitations of claim 12 for the same reasons as described above in connection with claim 1. Ex. 1003, ¶223.

Badarneh discloses

In the following description it will be understood that a screen image on a display will reflect the input and navigation options which, for example, the

use of a multifunction switch will have. The screen image can be adapted to a smaller display screen which is usual for a mobile telephone, but is of course adaptable to larger display screens which are not only used on mobile telephones but also for other apparatus. Therefore the system is not limited to mobile telephone application, but could also easily be used in other apparatus and applications such as ordinary telephones, PDAs, PCs, remote control units, other input devices etc.

Ex. 1007, 4:4-11. PHOSITA would recognize that electronic devices like mobile phones, PDAs, PCs, etc. each have an output display, a mechanism for inputting, and a computer processor. Ex. 1003, ¶223.

12. Claim 13

Claim 13 recites the same features as claim 3 and is disclosed by *Badarneh* for the same reasons. Ex. 1003, ¶224.

13. Claim 14

Claim 14 recites the same features as claim 4 and is disclosed by *Badarneh* for the same reasons. Ex. 1003, ¶225.

14. Claim 17

Claim 17 recites the same features as claim 6 and is disclosed by *Badarneh* for the same reasons. Ex. 1003, ¶226.

15. Claim 18

Claim 18 recites the same features as claim 7 and is disclosed by *Badarneh* for the same reasons. Ex. 1003, ¶227.

16. Claim 19

Claim 19 recites the same features as claim 8 and is obvious in view of *Badarneh* for the same reasons. Ex. 1003, ¶228.

17. Claim 20

Claim 20 recites the same features as claim 9 and is obvious in view of *Badarneh* for the same reasons. Ex. 1003, ¶229.

18. Claim 21

Claim 21 recites the same features as claim 10 and is obvious in view of *Badarneh* for the same reasons. Ex. 1003, ¶230.

**19. Claim 22 The apparatus in accordance with claim 21,
wherein the input is a joystick**

Claim 22 recites the same features as claim 11, and is obvious in view of *Badarneh* for the same reasons. Ex. 1003, ¶231.

20. Motivation to Combine *Badarneh*, and *Josenhans*

As described above, it would have been obvious to incorporate *Josenhans*' multiple database structures into *Badarneh* because, like *Badarneh*, *Josenhans* deals with “a method of searching for data in at least two databases.” Specifically, one of ordinary skill in the art would look to references such as *Josenhans* to

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determine the best way to incorporate and setup the databases of *Badarneh* without affecting the user interface. A POSITA designing a system that performs searches on mobile devices such as PDAs and cell phones would have been forced into considering the use of multiple databases as these devices store data of various types and frequently store data of the same type in multiple databases (e.g. a custom language dictionary that complements a dictionary of the English language). The combined system informed by *Badarneh* and *Josenhans* would permit a more efficient and user-friendly interface that permitted searching for items across multiple data sources or databases. A POSITA reading *Badarneh* would have looked to references like *Josenhans* in order to further “simplify...[the] input of data elements” and speed up text entry of items stored in different databases, as described in *Badarneh*. Ex. 1007, 3:1-4. Ex. 1003, ¶232.

E. SNQ 5 – *Schroeder* raises a substantial new question of patentability as to claims 1-10, and 12-21

Schroeder anticipates claims 1-22, and a reasonable examiner would have considered the teachings of *Schroeder* important when assessing the patentability of those claims.

1. Claim 1

- (a) 1a A computer-implemented method of selecting an item from a plurality of items, the method comprising:**

To the extent the preamble is considered limiting, *Schroeder* discloses this limitation. Ex. 1003, ¶234. *Schroeder* discloses “a word completion method for speeding up input”. Ex. 1009, [Abstract]. Moreover, *Schroeder* discloses the following functions:

- (1) A predictive keyboard input method that initially displays to a user the most commonly used characters for selected words in a particular language (e.g., English), associating those characters with programmable keys, and then accepting the user's input. Thereafter, a next set of characters is displayed that are most likely to occur after the character previously input by the user.
- (2) A word completion method in which a telephone displays user-defined or predefined candidate words matching initial characters input by a user, and assigns those candidate words to one or more available programmable keys. If one of the candidate words is the word being entered by the user, then the user need only press the associated programmable key to have the entirety of the candidate word automatically entered into the display.

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...

(7) A global search method for searching text strings in all of the different memory sections of a cellular telephone having an address book, a hierarchical menu structure, and stored data messages.

Ex. 1009, 1:38-53, 2:21-25.

(b) 1b generating, by at least one computer processor, a first display, the first display comprises: a part of an item identifier for at least a first set of items and a part of an item identifier for at least a second set of items in a database;

Under the proper “broadest reasonable interpretation,” *Schroeder* discloses this limitation. Ex. 1003, ¶235. Figure 1a shows a mobile device that has a limited keyboard:

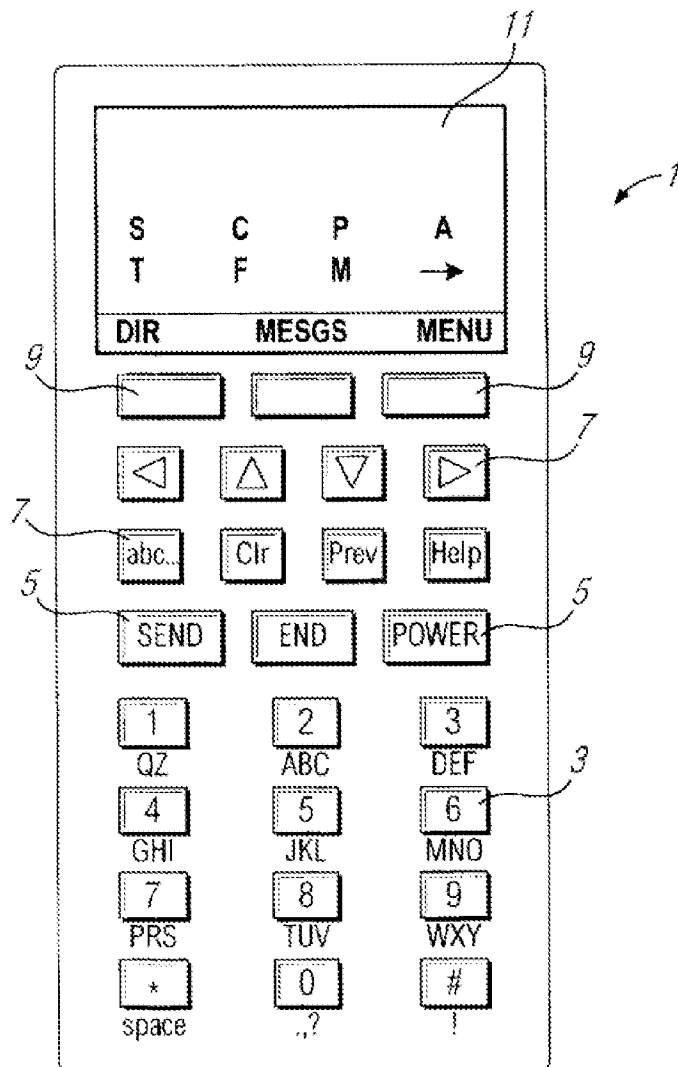


FIG. 1A

Schroeder explains:

In order to ease the problem of entering text using a limited keyboard, such as that shown in FIG. 1a, the present invention provides for predictive

keyboard input. Predictive keyboard input provides a method for initially displaying to a user the most commonly used characters for selected words in a particular language (e.g., English), associating those characters with programmable keys, and then accepting the user's input. Thereafter, a next set of characters is displayed that are most likely to occur after the character previously input by the user.

Ex. 1008, 4:31-40.

Schroeder explains that Fig. 1a shows 7 characters in display 11 that correspond to programmable keys 7 (including up down right and left arrows), and an 8th button that allows a user to request “more” letters if the right letters are not displayed. *See Id.*, 4:41-61. Once a user selects a character, “that character is displayed on the display 11 as text entry” (Step 212 of fig. 2). *Id.*, 5:7-9. Fig. 3 of Schroeder shows a scenario where “[w]hen the user presses the programmable key 7 corresponding to the character "P", the character subset shown in the display shifts to a new set, comprising the seven characters most likely to occur after the character "P". As can be seen in row b, the next character to be entered, "L", is already shown in the shifted display. Continuing on in this fashion, the entire phrase "PLEASE CALL" can be entered simply by selecting one of the

programmable keys 7 corresponding to one of the characters shown in the display

11.”

a	<start>	S T	C F	P M	A →
b	P	R L	E P	O I	A →
c	L	E Y	A O	L D	I →
d	E	R A	D C	S L	N →
e	A	R C	L S	T I	N →
f	S	T O	E U	I H	S →
g	E	R A	D C	S L	N →
h	<sp>	S T	C F	P M	A →
i	C	E H	O I	T L	A →
j	A	R C	L S	T I	N →
k	L	E Y	A O	L D	I →
l	L	E Y	A O	L D	I →
m	<sp>	S T	C F	P M	A →
n	→	R E	D L	B H	W →
o	H	E T	O U	A R	I →
p	O	N W	R L	U O	M →
q	M	E P	A S	O B	I →
r	E	R A	D C	S L	N →

FIG. 3

Each row of Fig. 3 therefore shows a different sets of item identifiers corresponding to a different set of items. Since, after each letter the user presses, the new character subset is based on the seven characters most likely to occur after the selected characters, there are different sets of identifiers and items. For example, once the user selects “P,” only the letters (portions of item identifiers)

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associated with words in the database that begin with “P” will be presented. Ex. 1003, ¶238. As such, *Schroeder* discloses a part of an item identifier for at least a first set of items(for example those words beginning with “P”) and a part of an item identifier for at least a second set of items(for example those words beginning with “S”) in a database.

(c) 1c enabling, by the at least one computer processor, selection of one of the two parts of the item identifiers by a user using a user interface;

Schroeder discloses this limitation. Ex. 1003, ¶239. As explained above, a user can select one of the item identifiers using the programmable buttons shows as “7” in Figure 1:

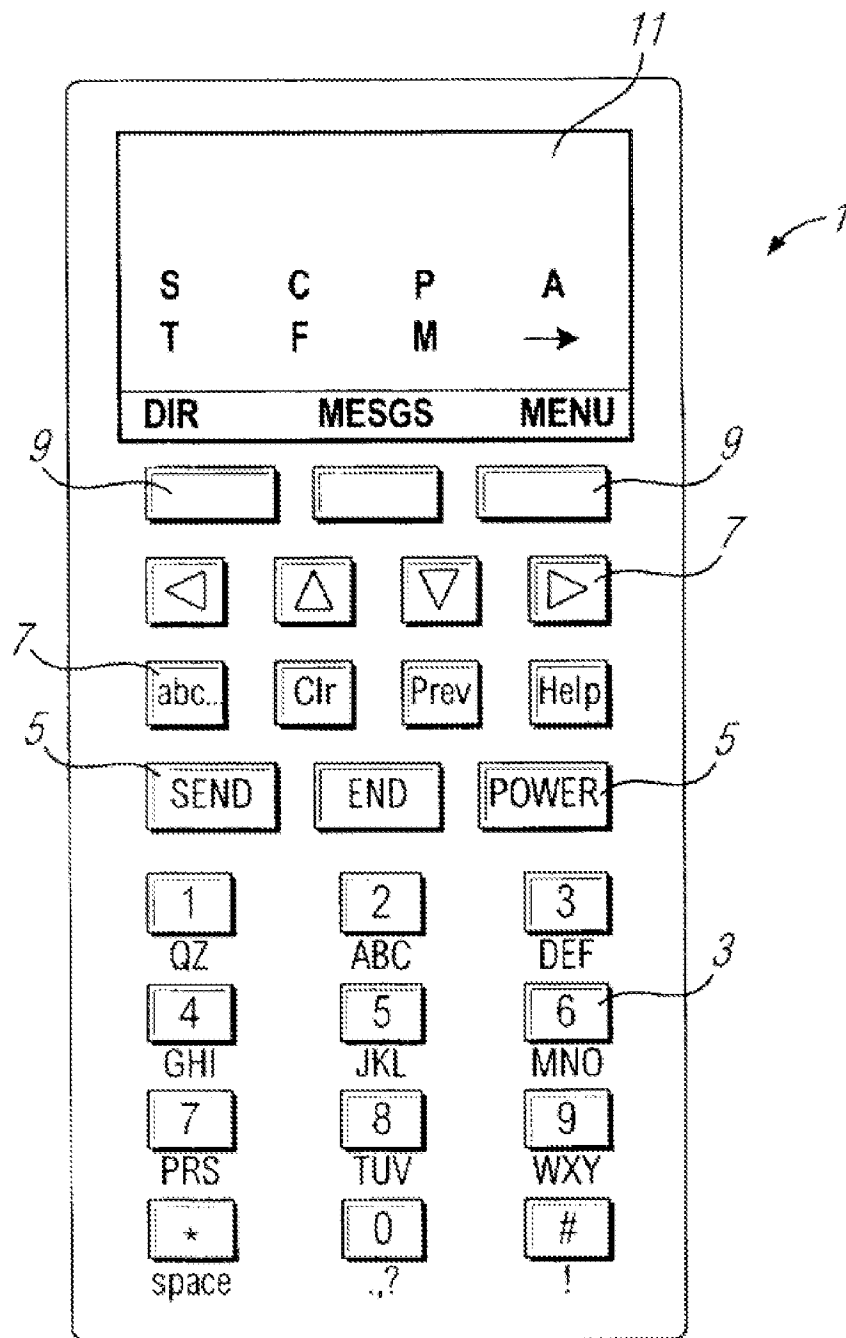


FIG. 1A

- (d) **1d generating, by the at least one computer processor, in response to the selection of the one of the two parts, a further display; wherein the further display comprises: an additional part of an item identifier for at least a third set of items and an additional part of an item identifier for at least a fourth set of items; and the previously selected one of the two parts of the item identifiers;**

Schroeder discloses this limitation. Ex. 1003, ¶240. Figure 3 shows the different sets of identifiers for sets of items based on the letters selected by the user:

a	<start>	S T	C F	P M	A →
b	P	R L	E P	O I	A →
c	L	E Y	A O	L D	I →
d	E	R A	D C	S L	N →
e	A	R C	L S	T I	N →
f	S	T O	E U	I H	S →
g	E	R A	D C	S L	N →
h	<sp>	S T	C F	P M	A →
i	C	E H	O I	T L	A →
j	A	R C	L S	T I	N →
k	L	E Y	A O	L D	I →
l	L	E Y	A O	L D	I →
m	<sp>	S T	C F	P M	A →
n	→	R E	D L	B H	W →
o	H	E T	O U	A R	I →
p	O	N W	R L	U O	M →
q	M	E P	A S	O B	I →
r	E	R A	D C	S L	N →

FIG. 3

As explained in *Schroeder*, each time a user selects a letter, a new set of items is determined based on the previously selected letters. When the user selects the “P,” the most used identifiers for words starting with “P” are shown. When the user selects the “L”, the most used identifiers for the next letter of words starting with “PL” are shown. Ex. 1003, ¶241.

- (e) **1e enabling, by the at least one computer processor, selection of one of the two additional parts of the item identifiers by the user using the user interface;**

Schroeder discloses this limitation. Ex. 1003, ¶242. After the user selects a letter (e.g., the character “P”), a new set of parts of item identifiers are mapped to the programmable buttons 7 and displayed for another user selection. Ex. 1009, 5:61-6:3 (“When the user presses the programmable key 7 corresponding to the character “P”, the character subset shown in the display shifts to a new set, comprising the seven characters most likely to occur after the character “P”. As can be seen in row b, the next character to be entered, “L”, is already shown in the shifted display. Continuing on in this fashion, the entire phrase “PLEASE CALL” can be entered simply by selecting one of the programmable keys 7 corresponding to one of the characters shown in the display 11.”).

a	<start>	S T	C F	P M	A →
b	P	R L	E P	O I	A →
c	L	E Y	A O	L D	I →
d	E	R A	D C	S L	N →
e	A	R C	L S	T I	N →
f	S	T O	E U	I H	S →
g	E	R A	D C	S L	N →
h	<sp>	S T	C F	P M	A →
i	C	E H	O I	T L	A →
j	A	R C	L S	T I	N →
k	L	E Y	A O	L D	I →
l	L	E Y	A O	L D	I →
m	<sp>	S T	C F	P M	A →
n	→	R E	D L	B H	W →
o	H	E T	O U	A R	I →
p	O	N W	R L	U O	M →
q	M	E P	A S	O B	I →
r	E	R A	D C	S L	N →

FIG. 3

In Figure 3, above, the letters ‘R’, ‘E’, ‘O’, ‘A’, ‘L’, ‘P’, and ‘I’ were selected based on the user’s prior selection of the part ‘P.’ Portions ‘E’, ‘A’, ‘L’, ‘I,’ ‘Y,’ ‘O’, and ‘D’ are chosen for display based on the user’s prior selection of the parts ‘P’ and ‘L.’ Ex. 1003, ¶243.

- (f) If combining, by the at least one computer processor, the selected one of the two parts of the item identifiers with the selected one of the two additional parts of the item identifiers to create a larger part of the item identifiers; and**

Schroeder discloses this limitation. Ex. 1003, ¶244. *Schroeder* explains that as the characters are selected, they are displayed on the display. Ex. 1009, 5:58-6:3 (“The example phrase to be entered is "PLEASE CALL HOME". As can be seen, the initial character "P" is one of the characters initially shown in the display 11. When the user presses the programmable key 7 corresponding to the character "P", the character subset shown in the display shifts to a new set, comprising the seven characters most likely to occur after the character "P". As can be seen in row b, the next character to be entered, "L", is already shown in the shifted display. Continuing on in this fashion, the entire phrase "PLEASE CALL" can be entered simply by selecting one of the programmable keys 7 corresponding to one of the characters shown in the display 11.”) Ex. 1003, ¶244. This can also be seen in Figure 4:

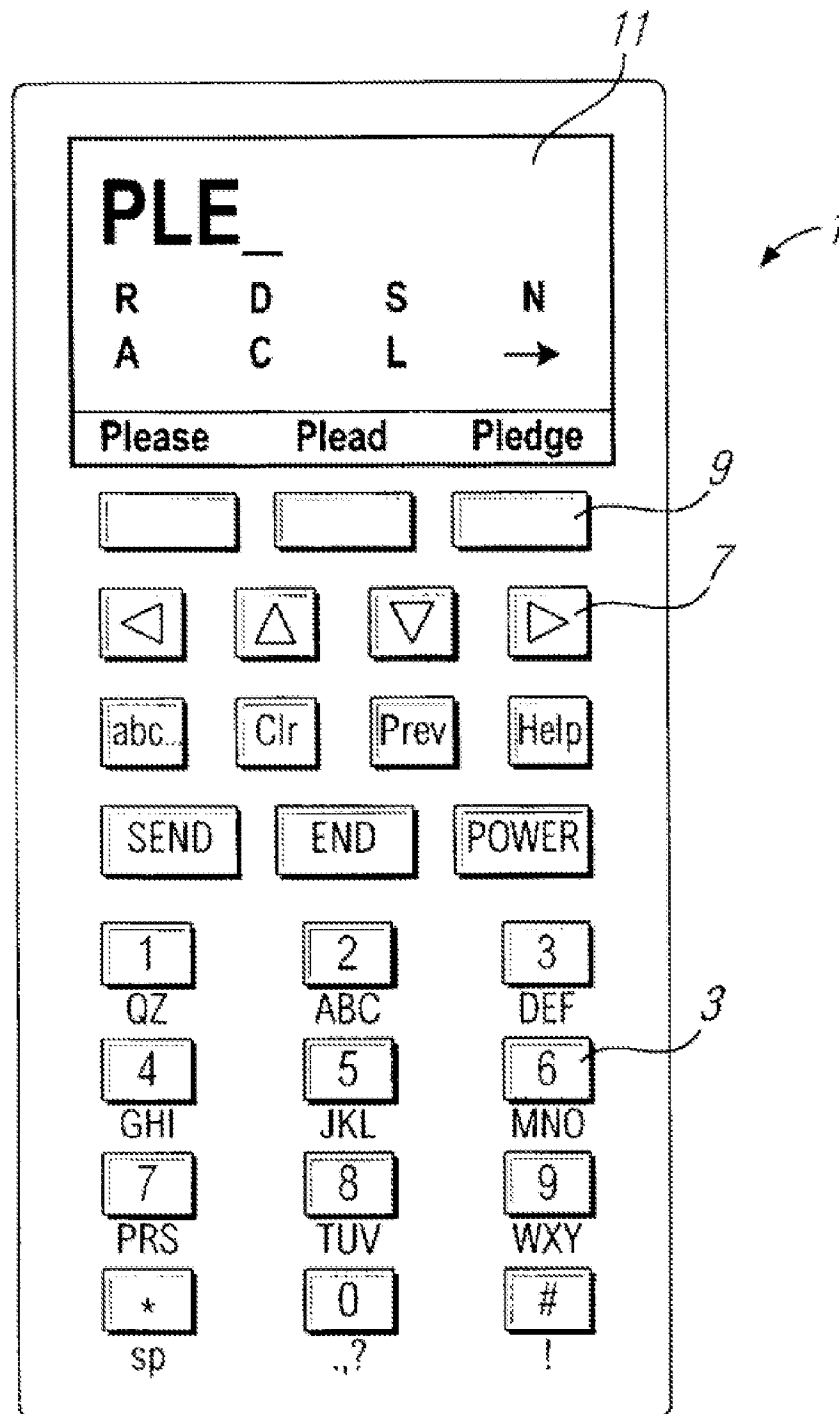


FIG. 4

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(g) 1g displaying, by the at least one computer processor, the larger part of the item identifiers;

Schroeder discloses this limitation. Ex. 1003, ¶245. As shown in figures 4, the selected portions are combined in text box shown at the top of the figure (Figures 9a-m) to form a larger portion of the word being selected. *See* Ex. 1009, 6:27-45.

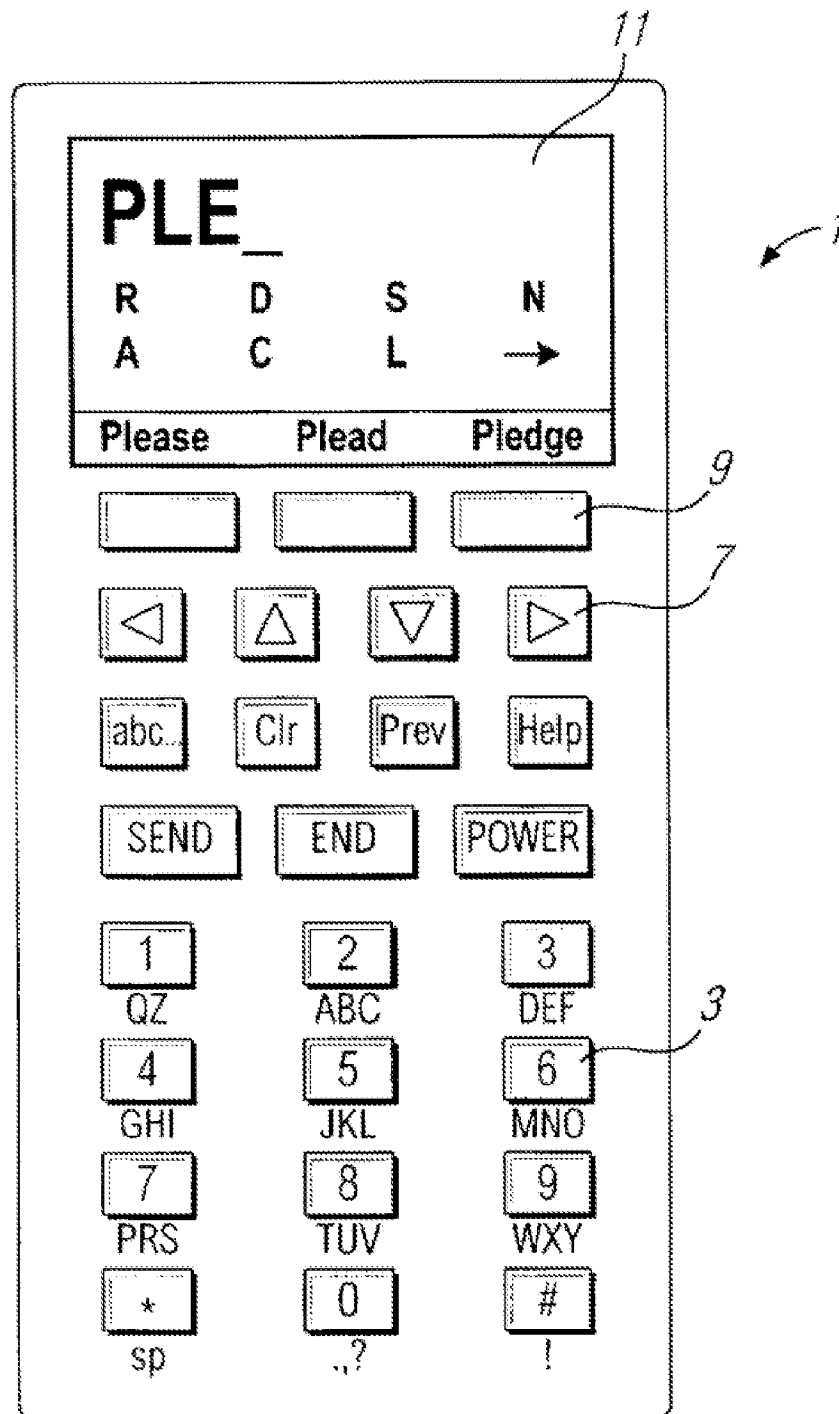


FIG. 4

- (h) 1h wherein the parts of the item identifiers and the additional parts of the item identifiers are text symbols and the additional parts of the item identifiers are shorter than the complete item identifiers; and**

Schroeder discloses this limitation. Ex. 1003, ¶246. All the parts of item identifiers are letters or characters within the English alphabet, which are text symbols in the English language. The additional parts of item identifiers (*i.e.*, the single letters representing the second letter of the words in the list of words 33') are shorter than complete item identifiers, as shown above in Figures 1, 3 and 4 (showing the words "Please Call Home").

- (i) 1i the first set of items identifiers and the second set of item identifiers are mutually exclusive of one another and the third set of item identifiers and the fourth set of item identifiers are mutually exclusive subsets of the first set of item identifiers or the second set of item identifiers.**

Schroeder discloses this limitation. Ex. 1003, ¶247. As explained above, once a letter is selected, a new set of item identifiers is displayed reflecting the next letters as shown in Figure 3. Ex. 1009, 52-6:10. Because each part of an item identifier (*i.e.*, letter) corresponds to the matching words in the dictionary with that item identifier as a first letter, the first and second sets of item identifiers (which correspond to different letters in *Schroeder*) are mutually exclusive. As one simple example, the part 'P' would correspond to the set of words starting with 'P', while

the part ‘S’ would correspond to the set of all content/titles starting with ‘S’. Since the words cannot start with both ‘P’ and ‘S’, these two sets of item identifiers would be mutually exclusive.

Moreover, the third set of item identifiers and the fourth set of item identifiers are mutually exclusive subsets of the first set of item identifiers or the second set of item identifiers because each of those sets requires a first and second letter to match. As the user enters each additional letter, the set of matching words is reduced to a subset of the prior set. Ex. 1003, ¶248.

2. 2 The method in accordance with claim 1, comprising a further step of iterating the selections until the item identifiers are completed.

Claim 2 recites “[t]he method in accordance with claim 1, comprising a further step of iterating the selections until the item identifiers are completed.” *Schroeder* discloses this limitation. Ex. 1003, ¶249. “The example phrase to be entered is “PLEASE CALL HOME”. As can be seen, the initial character “P” is one of the characters initially shown in the display 11. When the user presses the programmable key 7 corresponding to the character “P”, the character subset shown in the display shifts to a new set, comprising the seven characters most likely to occur after the character “P”. As can be seen in row b, the next character to be entered, “L”, is already shown in the shifted display. Continuing on in this

fashion, the entire phrase "PLEASE CALL" can be entered simply by selecting one of the programmable keys 7 corresponding to one of the characters shown in the display 11.” Ex. 1009, 5:58-6:3.

3. 3 The method in accordance with claim 1, wherein the step of generating the first display includes selecting the parts of the item identifiers for the first and second set of items to be displayed based on predetermined criteria.

Claim 3 recites “[t]he method in accordance with claim 1, wherein the step of generating the first display includes selecting the parts of the item identifiers for the first and second set of items to be displayed based on predetermined criteria.” *Schroeder* discloses this limitation. Ex. 1003, ¶250. *Schroeder* explains “The determination of which characters to display in a particular subset can be made by statistical analysis of sample text from a particular language. For example, applicants have determined, from a set of particular English words commonly used for simple messages (e.g., "call", "meet", "today", "tomorrow", etc.), that the seven most common initial characters are those shown in the display 11 of FIG. 1.” Ex. 1009, 5:15-21. *Schroeder* then further applies this criteria when a letter is selected: “In the preferred embodiment, a table is constructed in memory having (1) the characters of the English alphabet ranked in order of their occurrence as initial characters of English text, and (2) an entry for every individual character of the alphabet, with each entry comprising a list of the most common characters

occurring after each such character. For example, for the character "A", the list entry would be the 25 characters of the alphabet in order of their statistical occurrence after the character "A".” *Id.*, 5:24-30.

4. 4 The method in accordance with claim 3, wherein one of the predetermined criteria is a frequency of selection of database items associated within the item identifier parts for the first and second set of items.

Claim 4 recites “[t]he method in accordance with claim 3, wherein one of the predetermined criteria is a frequency of selection of database items associated within the item identifier parts for the first and second set of items.” *Schroeder* discloses this limitation. Ex. 1003, ¶251. *Schroeder* explains that “In an alternative embodiment, the cellular telephone 1 allows a user to enter a list of words that the user frequently uses in messages (e.g., names, locations, products, etc.) and the internal CPU 20 builds a character frequency table from that specific set of words.” Ex. 1009. 5:42-46.

5. 5 The method in accordance with claim 3, wherein one of the predetermined criteria is a ranking of the parts of item identifiers for the first and second set of items in relation to a tree hierarchy classification of the parts of item identifiers for the first and second set of items.

Claim 5 recites “[t]he method in accordance with claim 3, wherein one of the predetermined criteria is a ranking of the parts of item identifiers for the first and second set of items in relation to a tree hierarchy classification of the parts of

item identifiers for the first and second set of items.” *Schroeder* discloses this limitation. *Schroeder* describes: “The determination of which characters to display in a particular subset can be made by statistical analysis of sample text from a particular language. For example, applicants have determined, from a set of particular English words commonly used for simple messages (e.g., "call", "meet", "today", "tomorrow", etc.), that the seven most common initial characters are those shown in the display 11 of FIG. 1. Pressing the "more" function key would display the next seven most common initial characters, and so forth. In the preferred embodiment, a table is constructed in memory having (1) the characters of the English alphabet ranked in order of their occurrence as initial characters of English text, and (2) an entry for every individual character of the alphabet, with each entry comprising a list of the most common characters occurring after each such character. For example, for the character "A", the list entry would be the 25 characters of the alphabet in order of their statistical occurrence after the character "A".” Ex. 1009, 5:15-32.

Schroeder also shows a dictionary tree that can lead to completion of words in Figure 6:

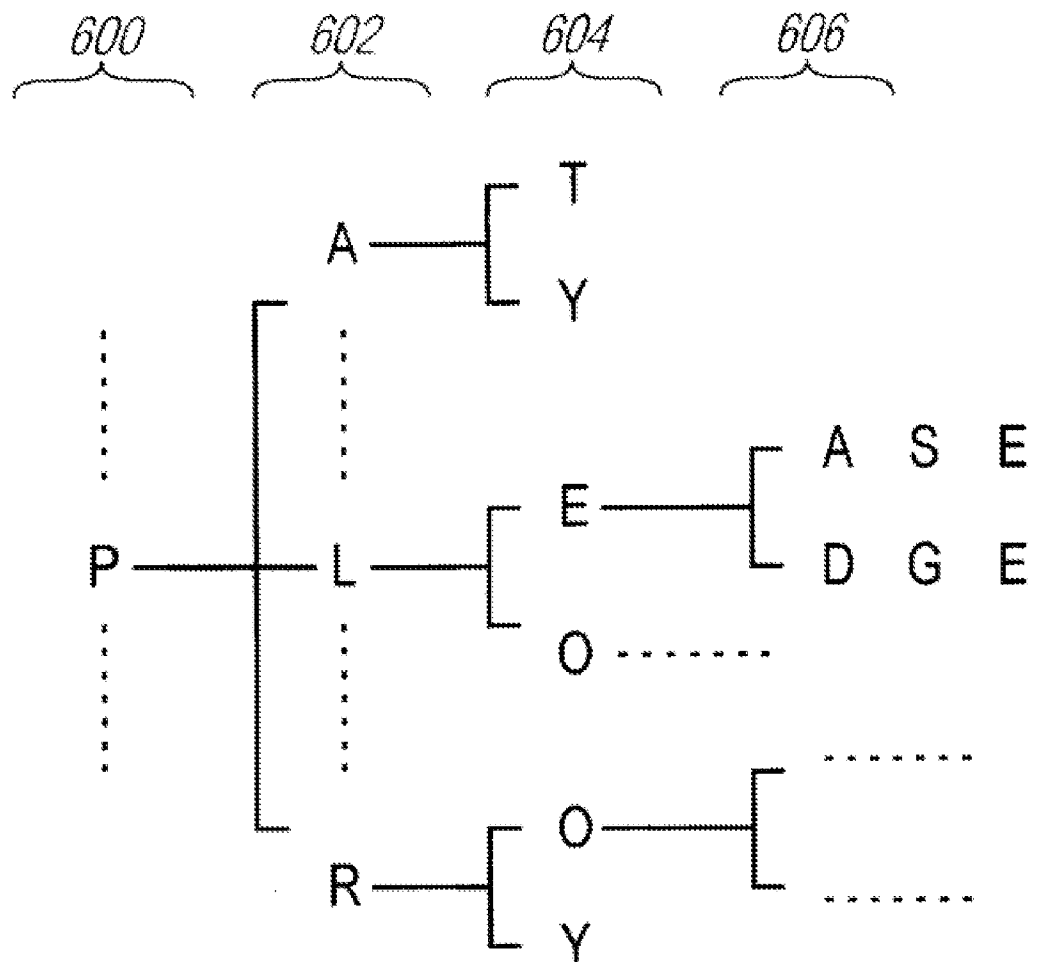


FIG. 6

Schroeder explains that “FIG. 6 shows a diagram of a portion of a dictionary tree, showing how the search function used for the word completion can be implemented. In the example shown, a first tier 600 has individual letters of the

alphabet, the letter "P" being shown. A next tier 602 of the dictionary tree contains letters of words in the dictionary that follow the letter of the preceding tier. In the example shown, the letters "A", "L", and "R" are shown. Additional tiers 604, 606 may be used to extend the dictionary tree, as shown in FIG. 6. The "leaf" nodes of the dictionary tree may contain single letters (such as the entry "P-A-T") or multiple letters (such as the entry "P-L-E-ASE"). The dictionary tree may be as extensive as desired." Ex. 1009, 7:10-21.

It should be noted that the patent discloses the tree in conjunction with the "word completion" function, which is in addition to the predictive text application described above. Indeed, *Schroeder* explains "Although the predictive keyboard input method discussed above substantially reduces the difficulty of entering text into the limited keyboard and display of a cellular telephone 1, it still requires that the user enter each character of a word." *Id.*, 6:17-20. PHOSITA would understand that the word completion function uses the same database structure and dictionary as the predictive text function. *Id.*, Ex. 1003, ¶255.

6. 6 The method in accordance with claim 1, wherein the item identifiers are text strings.

Claim 6 recites "[t]he method in accordance with claim 1, wherein the item identifiers are text strings." *Schroeder* discloses this limitation. Ex. 1003, ¶256. In addition to character item identifiers, *Schroeder* supports groups of letters where

the user can type multiple characters in a word and the system will predict the next letter. Ex. 1009, 5:34-41 (“In an alternative embodiment of the present invention, the table can take into account the preceding N characters, rather than just the preceding single character entered by the user. For example, a table could be constructed whereby, if a user enters the characters "th", the frequency of characters occurring after that combination are determined and made entries in the table. Other rules for generating the character subsets may be adopted as desired.”) Groups of letters and sets of characters, such as the examples given in *Schroeder* are text strings. *Id.*, 5:15-20.

7. 7 The method in accordance with claim 6 wherein the item identifiers are words.

Claim 7 recites “[t]he method in accordance with claim 1, wherein the item identifiers are words.” *Schroeder* discloses this limitation. Ex. 1003, ¶257. As described above in connection with claim 6, “Please” and “Call” and “Home” are all words. *Id.*

8. 8 The method in accordance with claim 1, wherein the database is stored in a memory of the computing device.

Claim 8 recites “[t]he method in accordance with claim 1, wherein the database is stored in a memory of the computing device.” *Schroeder* discloses this limitation. Ex. 1003, ¶258. *Schroeder* discloses that in the preferred embodiment,

“a table is constructed in memory having (1) the characters of the English alphabet ranked in order of their occurrence as initial characters of English text, and (2) an entry for every individual character of the alphabet, with each entry comprising a list of the most common characters occurring after each such character.” Ex. 1009, 5:24-29. Moreover, PHOSITA would recognize and know that the database must be stored in a memory. Ex. 1003, ¶258.

**9. Claim 9 The method in accordance with claim 8,
wherein the computing device is a mobile phone**

Claim 9 recites “[t]he method in accordance with claim 8, wherein the computing device is a mobile phone.” *Schroeder* discloses this limitation. Ex. 1003, ¶259. The patent is titled “User interface for cellular telephone.” Ex. 1009. A cellular telephone is a mobile phone.

**10. Claim 10 The method in accordance with claim 8,
wherein the computing device is a Personal Digital Assistant
(PDA)**

Claim 10 recites “[t]he method in accordance with claim 8, wherein the computing device is a Personal Digital Assistant (PDA).” *Schroeder* discloses this limitation. Ex. 1003, ¶260. *Schroeder* explains “For example, a number of the features of the invention can be used with any hand-held communication device, such as two-way pagers, wireless *personal digital assistants*, cordless telephones, etc. Accordingly, it is to be understood that the invention is not to be limited by the

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specific illustrated embodiment, but only by the scope of the appended claims.”

Ex. 1009, 12:18-24 (emphasis added).

11. Claim 12

Claim 12 recites all the same elements as claim 1, but in system form.

Schroeder discloses all the limitations of claim 12 for the same reasons as described above in connection with claim 1. Ex. 1003, ¶261.

Schroeder discloses the device in conjunction with the cellular telephone, but also discloses that the

he procedures described above are preferably implemented as computer programs stored on a storage media or device (e.g., ROM) readable by the programmable processing system 13, for configuring and operating the programmable processing system 13 when the storage media or device is read by the programmable processing system 13, the programmable processing system 13 being operated to perform the user interface functions described above. A number of embodiments of the present invention have been described. Nevertheless, it will be understood that various modifications may be made without departing from the spirit and scope of the invention. For example, a number of the features of the invention can be used with any hand-held communication device, such as two-way pagers,

wireless personal digital assistants, cordless telephones, etc. Accordingly, it is to be understood that the invention is not to be limited by the specific illustrated embodiment, but only by the scope of the appended claims.

Ex. 1009, 12:7-24. PHOSITA would recognize that electronic devices like mobile phones, PDAs, PCs, etc. each have an output display, a mechanism for inputting, and a computer processor. Ex. 1003, ¶262.

12. Claim 13

Claim 13 recites the same features as claim 3 and is disclosed by *Schroeder* for the same reasons. Ex. 1003, ¶263.

13. Claim 14

Claim 14 recites the same features as claim 4 and is disclosed by *Schroeder* for the same reasons. Ex. 1003, ¶264.

14. Claim 15

Claim 15 recites the same features as claim 5 and is disclosed by *Schroeder* for the same reasons. Ex. 1003, ¶265.

15. Claim 16 The apparatus in accordance with claim 15, including a memory storing the tree hierarchy

Claim 16 recites “[t]he apparatus in accordance with claim 15, including a memory storing the tree hierarchy.” *Schroeder* discloses this limitation. First, PHOSITA would recognize that the tree hierarchy would need to be stored in

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memory in order for the processor to return the results of the computations. Ex. 1003, ¶266. Moreover, *Schroeder* discloses “In the preferred embodiment, a table is constructed in memory having (1) the characters of the English alphabet ranked in order of their occurrence as initial characters of English text, and (2) an entry for every individual character of the alphabet, with each entry comprising a list of the most common characters occurring after each such character.” Ex. 1009, 5:24-29.

16. Claim 17

Claim 17 recites the same features as claim 6 and is disclosed by *Schroeder* for the same reasons. Ex. 1003, ¶267.

17. Claim 18

Claim 18 recites the same features as claim 7 and is disclosed by *Schroeder* for the same reasons. Ex. 1003, ¶268.

18. Claim 19

Claim 19 recites the same features as claim 8 and is obvious in view of *Schroeder* for the same reasons. Ex. 1003, ¶269.

19. Claim 20

Claim 20 recites the same features as claim 9 and is obvious in view of *Schroeder* for the same reasons. Ex. 1003, ¶270.

20. Claim 21

Claim 21 recites the same features as claim 10 and is obvious in view of *Schroeder* for the same reasons. Ex. 1003, ¶271.

F. SNQ 6 – *Schroeder* and *Josenhans* raise a substantial new question of patentability as to claims 1-10, and 12-21

Schroeder, and *Josenhans* render obvious claims 1-10, and 12-21, and a reasonable examiner would have considered the combined teachings of these references important when assessing the patentability of those claims.

1. Claim 1

(a) 1a A computer-implemented method of selecting an item from a plurality of items, the method comprising:

To the extent the preamble is considered limiting, *Schroeder* discloses this limitation. Ex. 1003, ¶273. *Schroeder* discloses “a word completion method for speeding up input”. Ex. 1009, [Abstract]. Moreover, *Schroeder* discloses the following functions:

- (1) A predictive keyboard input method that initially displays to a user the most commonly used characters for selected words in a particular language (e.g., English), associating those characters with programmable keys, and then accepting the user's input. Thereafter, a next set of characters is

displayed that are most likely to occur after the character previously input by the user.

(2) A word completion method in which a telephone displays user-defined or predefined candidate words matching initial characters input by a user, and assigns those candidate words to one or more available programmable keys.

If one of the candidate words is the word being entered by the user, then the user need only press the associated programmable key to have the entirety of the candidate word automatically entered into the display.

...

(7) A global search method for searching text strings in all of the different memory sections of a cellular telephone having an address book, a hierarchical menu structure, and stored data messages.

Ex. 1009, 1:38-53, 2:21-25.

(b) 1b generating, by at least one computer processor, a first display, the first display comprises: a part of an item identifier for at least a first set of items and a part of an item identifier for at least a second set of items in a database;

Under the proper “broadest reasonable interpretation,” *Schroeder* discloses this limitation. Ex. 1003, ¶274. Figure 1a shows a mobile device that has a limited keyboard:

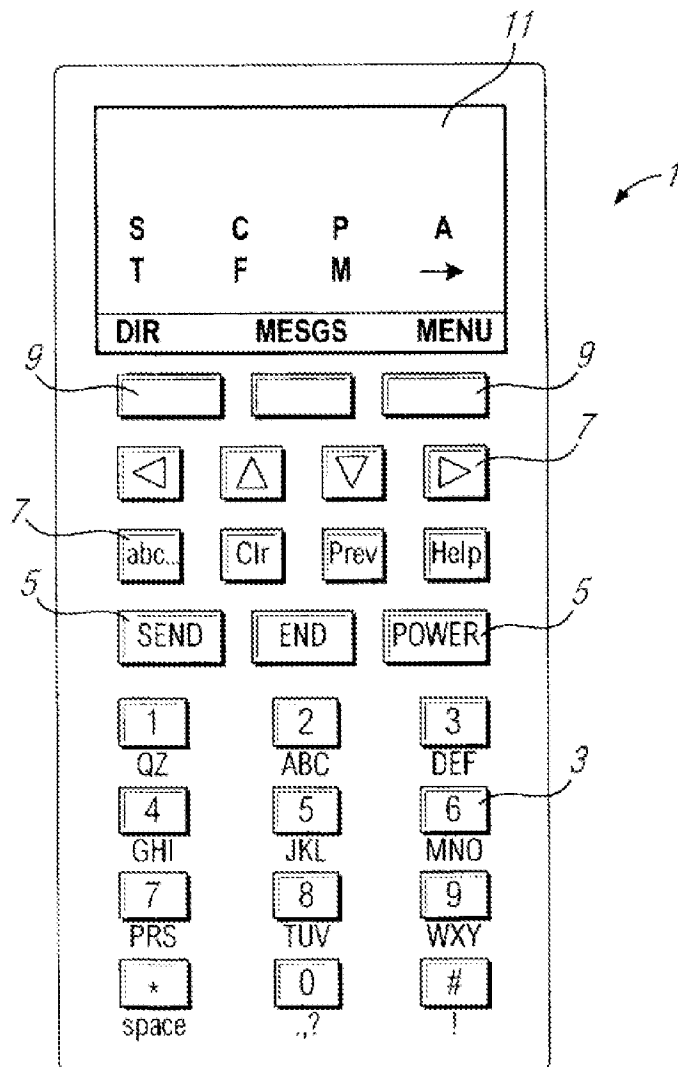


FIG. 1A

Schroeder explains:

In order to ease the problem of entering text using a limited keyboard, such as that shown in FIG. 1a, the present invention provides for predictive

keyboard input. Predictive keyboard input provides a method for initially displaying to a user the most commonly used characters for selected words in a particular language (e.g., English), associating those characters with programmable keys, and then accepting the user's input. Thereafter, a next set of characters is displayed that are most likely to occur after the character previously input by the user.

Ex. 1009, 4:31-40.

Schroeder explains that Fig. 1a shows 7 characters in display 11 that correspond to programmable keys 7 (including up down right and left arrows), and an 8th button that allows a user to request “more” letters if the right letters are not displayed. *See Id.*, 4:41-61. Once a user selects a character, “that character is displayed on the display 11 as text entry” (Step 212 of fig. 2). *Id.*, 5:7-9. Fig. 3 of Schroeder shows a scenario where “[w]hen the user presses the programmable key 7 corresponding to the character "P", the character subset shown in the display shifts to a new set, comprising the seven characters most likely to occur after the character "P". As can be seen in row b, the next character to be entered, "L", is already shown in the shifted display. Continuing on in this fashion, the entire phrase "PLEASE CALL" can be entered simply by selecting one of the

programmable keys 7 corresponding to one of the characters shown in the display

11.”

a	<start>	S T	C F	P M	A →
b	P	R L	E P	O I	A →
c	L	E Y	A O	L D	I →
d	E	R A	D C	S L	N →
e	A	R C	L S	T I	N →
f	S	T O	E U	I H	S →
g	E	R A	D C	S L	N →
h	<sp>	S T	C F	P M	A →
i	C	E H	O I	T L	A →
j	A	R C	L S	T I	N →
k	L	E Y	A O	L D	I →
l	L	E Y	A O	L D	I →
m	<sp>	S T	C F	P M	A →
n	→	R E	D L	B H	W →
o	H	E T	O U	A R	I →
p	O	N W	R L	U O	M →
q	M	E P	A S	O B	I →
r	E	R A	D C	S L	N →

FIG. 3

Each row of Fig. 3 therefore shows a different sets of item identifiers corresponding to a different set of items. Since, after each letter the user presses, the new character subset is based on the seven characters most likely to occur after the selected characters, there are different sets of identifiers and items. For example, once the user selects “P,” only the letters (portions of item identifiers)

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associated with words in the database that begin with “P” will be presented. Ex. 1003, ¶277. As such, *Schroeder* discloses a part of an item identifier for at least a first set of items (for example those words beginning with “P”) and a part of an item identifier for at least a second set of items (for example those words beginning with “S”) in a database.

Although the PTAB Board did not construe this term, the Board stated “Petitioner does not explain sufficiently how *Perlman*’s display comprises a part of an item identifier (i.e., a letter or letters displayed in the star configuration) for at least a first set of items or entries in a particular database **and** a part of an item identifier (i.e., a letter or letters displayed in the star configuration) for at least a second set of items or entries in **a different particular database.**” Ex. 1012, 15-16. Therefore, the Board apparently interpreted the claims to require the first and second sets of item identifiers to be in separate databases. As explained above, Requester does not agree with this construction and it certainly does not constitute the “broadest reasonable interpretation.”

To the extent the Examiner adopts the Board’s construction, *Josenhans* discloses two sets of identifiers in separate databases. Specifically, *Josenhans* discloses that in the invention:

a search table is thus set up in which, *for each connected database*, at least the immediate predecessor and the immediate successor to the entered search term and, if the search term itself has likewise been found in the database, the search term itself are also stored. If the search term itself has not been found in any of the connected databases, then, among the immediate successors stored in the search table, the one selected is that which comes closest after the search term. This selected successor is then displayed to a user. On the basis of this, the user can then display the next term or the previous term. He thus has the impression that he is searching for the desired information in a single database. ***This allows the user to search in various databases just as simply as when searching in a single database.***

Ex. 1008, [0010] (emphasis added).

Accordingly, *Josenhans* discloses a system where various search terms are stored in separate databases, and further discloses that the system works so that a user can simply search all of the databases at once without knowing that they are actually using identifiers from separate databases.

It would have been obvious to incorporate *Josenhans*' database organizational structure into *Schroeder* for the same reasons because *Josenhans* itself deals with the issue the same type of text entry techniques and character

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prediction that is dealt with in *Schroeder*. PHOSITA would have recognized that the *Josenhans* system presents a way of organizing data into different databases without affecting the user interface for the user. Ex. 1003, ¶281.

(c) 1c enabling, by the at least one computer processor, selection of one of the two parts of the item identifiers by a user using a user interface;

Schroeder discloses this limitation. Ex. 1003, ¶282. As explained above, a user can select one of the item identifiers using the programmable buttons shows as “7” in Figure 1:

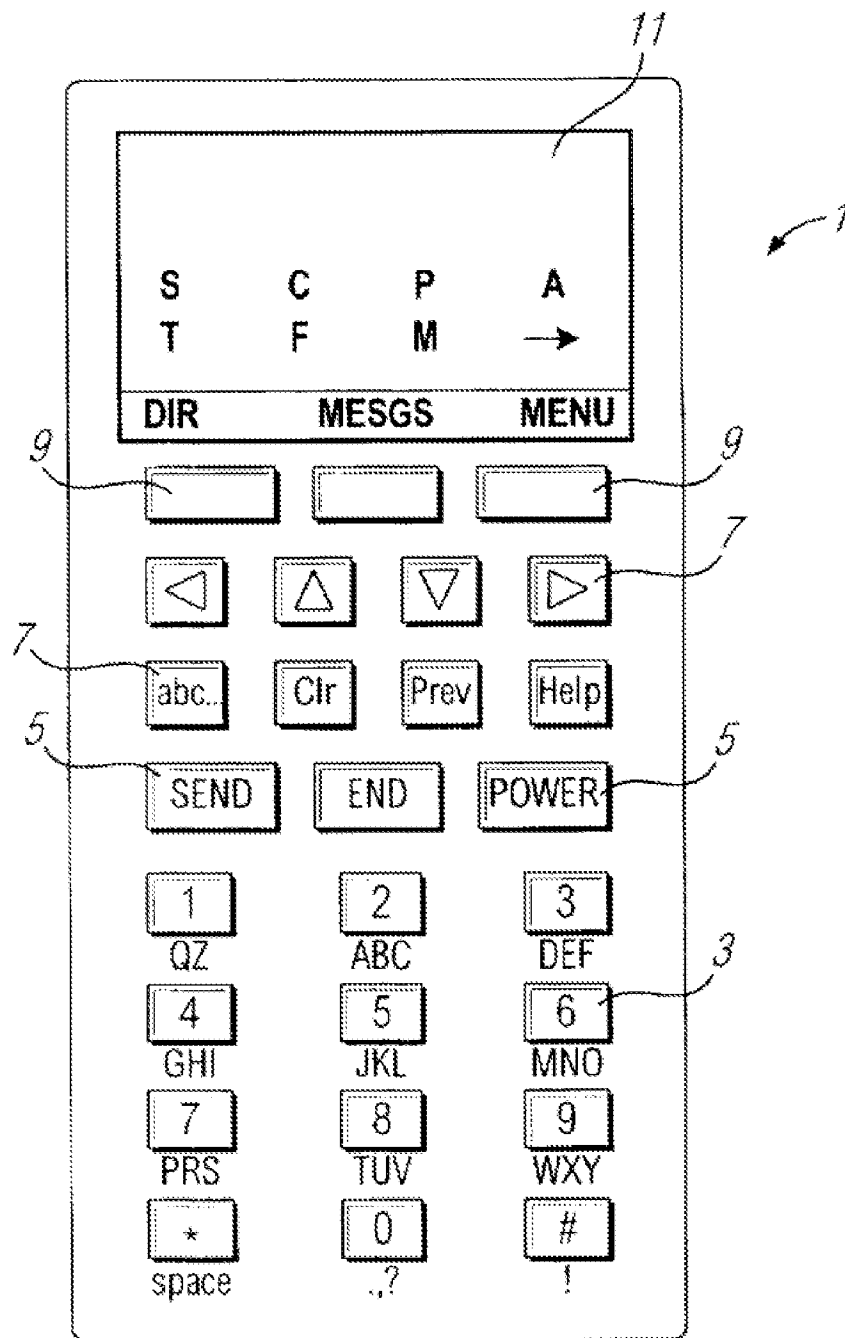


FIG. 1A

- (d) 1d generating, by the at least one computer processor, in response to the selection of the one of the two parts, a further display; wherein the further display comprises: an additional part of an item identifier for at least a third set of items and an additional part of an item identifier for at least a fourth set of items; and the previously selected one of the two parts of the item identifiers;

Schroeder discloses this limitation. Ex. 1003, ¶283. Figure 3 shows the different sets of identifiers for sets of items based on the letters selected by the user:

a	<start>	S T	C F	P M	A →
b	P	R L	E P	O I	A →
c	L	E Y	A O	L D	I →
d	E	R A	D C	S L	N →
e	A	R C	L S	T I	N →
f	S	T O	E U	I H	S →
g	E	R A	D C	S L	N →
h	<sp>	S T	C F	P M	A →
i	C	E H	O I	T L	A →
j	A	R C	L S	T I	N →
k	L	E Y	A O	L D	I →
l	L	E Y	A O	L D	I →
m	<sp>	S T	C F	P M	A →
n	→	R E	D L	B H	W →
o	H	E T	O U	A R	I →
p	O	N W	R L	U O	M →
q	M	E P	A S	O B	I →
r	E	R A	D C	S L	N →

FIG. 3

As explained in *Schroeder*, each time a user selects a letter, a new set of items is determined based on the previously selected letters. When the user selects the “P,” the most used identifiers for words starting with “P” are shown. When the user selects the “L”, the most used identifiers for the next letter of words starting with “PL” are shown. Ex. 1003, ¶284.

- (e) **1e enabling, by the at least one computer processor, selection of one of the two additional parts of the item identifiers by the user using the user interface;**

Schroeder discloses this limitation. Ex. 1003, ¶285. After the user selects a letter (e.g., the character “P”), a new set of parts of item identifiers are mapped to the programmable buttons 7 and displayed for another user selection. Ex. 1009, 5:61-6:3 (“When the user presses the programmable key 7 corresponding to the character “P”, the character subset shown in the display shifts to a new set, comprising the seven characters most likely to occur after the character “P”. As can be seen in row b, the next character to be entered, “L”, is already shown in the shifted display. Continuing on in this fashion, the entire phrase “PLEASE CALL” can be entered simply by selecting one of the programmable keys 7 corresponding to one of the characters shown in the display 11.”).

a	<start>	S T	C F	P M	A →
b	P	R L	E P	O I	A →
c	L	E Y	A O	L D	I →
d	E	R A	D C	S L	N →
e	A	R C	L S	T I	N →
f	S	T O	E U	I H	S →
g	E	R A	D C	S L	N →
h	<sp>	S T	C F	P M	A →
i	C	E H	O I	T L	A →
j	A	R C	L S	T I	N →
k	L	E Y	A O	L D	I →
l	L	E Y	A O	L D	I →
m	<sp>	S T	C F	P M	A →
n	→	R E	D L	B H	W →
o	H	E T	O U	A R	I →
p	O	N W	R L	U O	M →
q	M	E P	A S	O B	I →
r	E	R A	D C	S L	N →

FIG. 3

In Figure 3, above, the letters ‘R’, ‘E’, ‘O’, ‘A’, ‘L’, ‘P’, and ‘I’ were selected based on the user’s prior selection of the part ‘P.’ Portions ‘E’, ‘A’, ‘L’, ‘I,’ ‘Y,’ ‘O’, and ‘D’ are chosen for display based on the user’s prior selection of the parts ‘P’ and ‘L.’ Ex. 1003, ¶286.

- (f) If combining, by the at least one computer processor, the selected one of the two parts of the item identifiers with the selected one of the two additional parts of the item identifiers to create a larger part of the item identifiers; and**

Schroeder discloses this limitation. Ex. 1003, ¶287. *Schroeder* explains that as the characters are selected, they are displayed on the display. Ex. 1009, 5:58-6:3 (“The example phrase to be entered is "PLEASE CALL HOME". As can be seen, the initial character "P" is one of the characters initially shown in the display 11. When the user presses the programmable key 7 corresponding to the character "P", the character subset shown in the display shifts to a new set, comprising the seven characters most likely to occur after the character "P". As can be seen in row b, the next character to be entered, "L", is already shown in the shifted display. Continuing on in this fashion, the entire phrase "PLEASE CALL" can be entered simply by selecting one of the programmable keys 7 corresponding to one of the characters shown in the display 11.”) Ex. 1003, ¶287. This can also be seen in Figure 4:

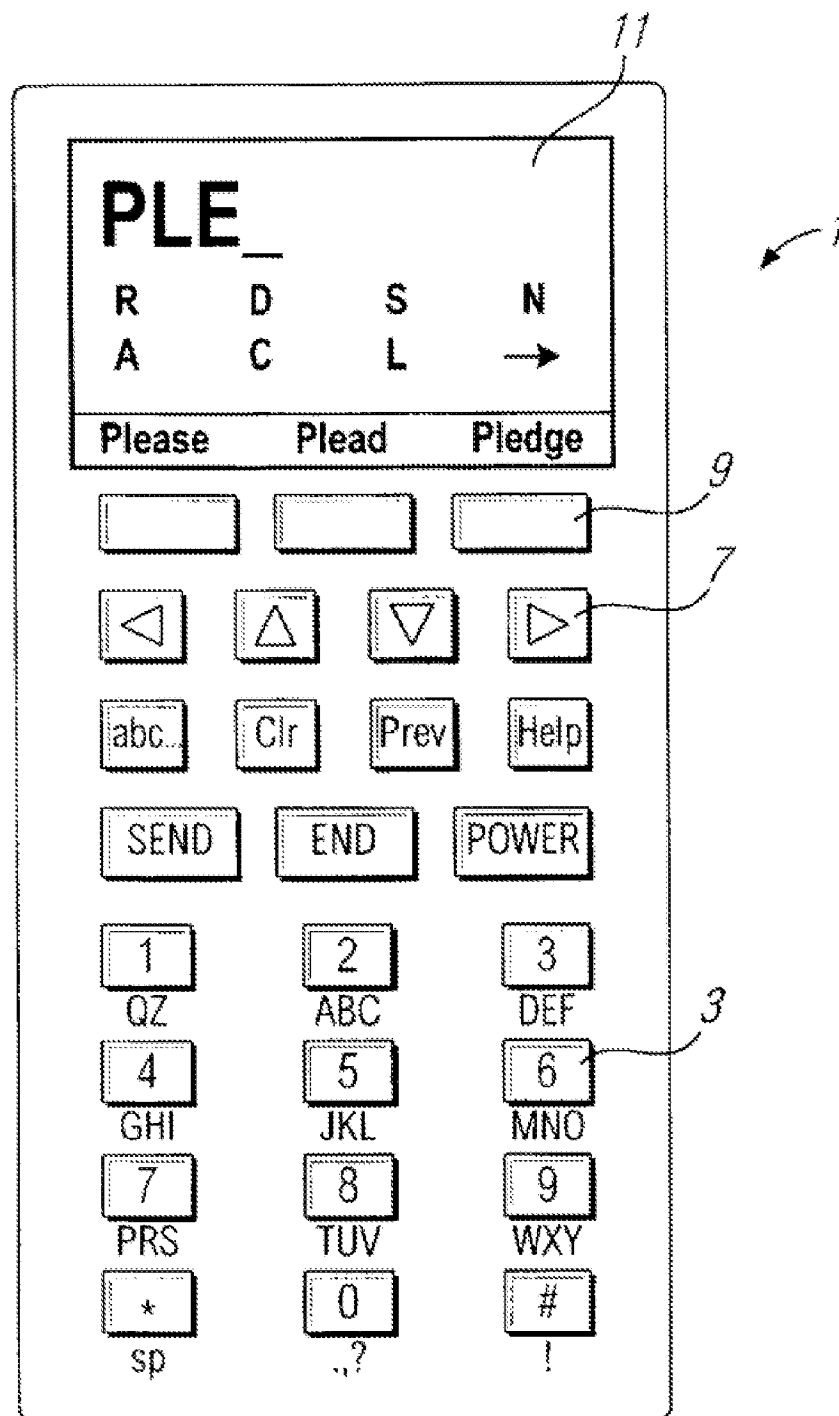


FIG. 4

(g) 1g displaying, by the at least one computer processor, the larger part of the item identifiers;

Badaneh discloses this limitation. Ex. 1003, ¶288. As shown in figures 4, the selected portions are combined in text box shown at the top of the figure (Figures 9a-m) to form a larger portion of the word being selected. *See* Ex. 1009, 6:27-45.

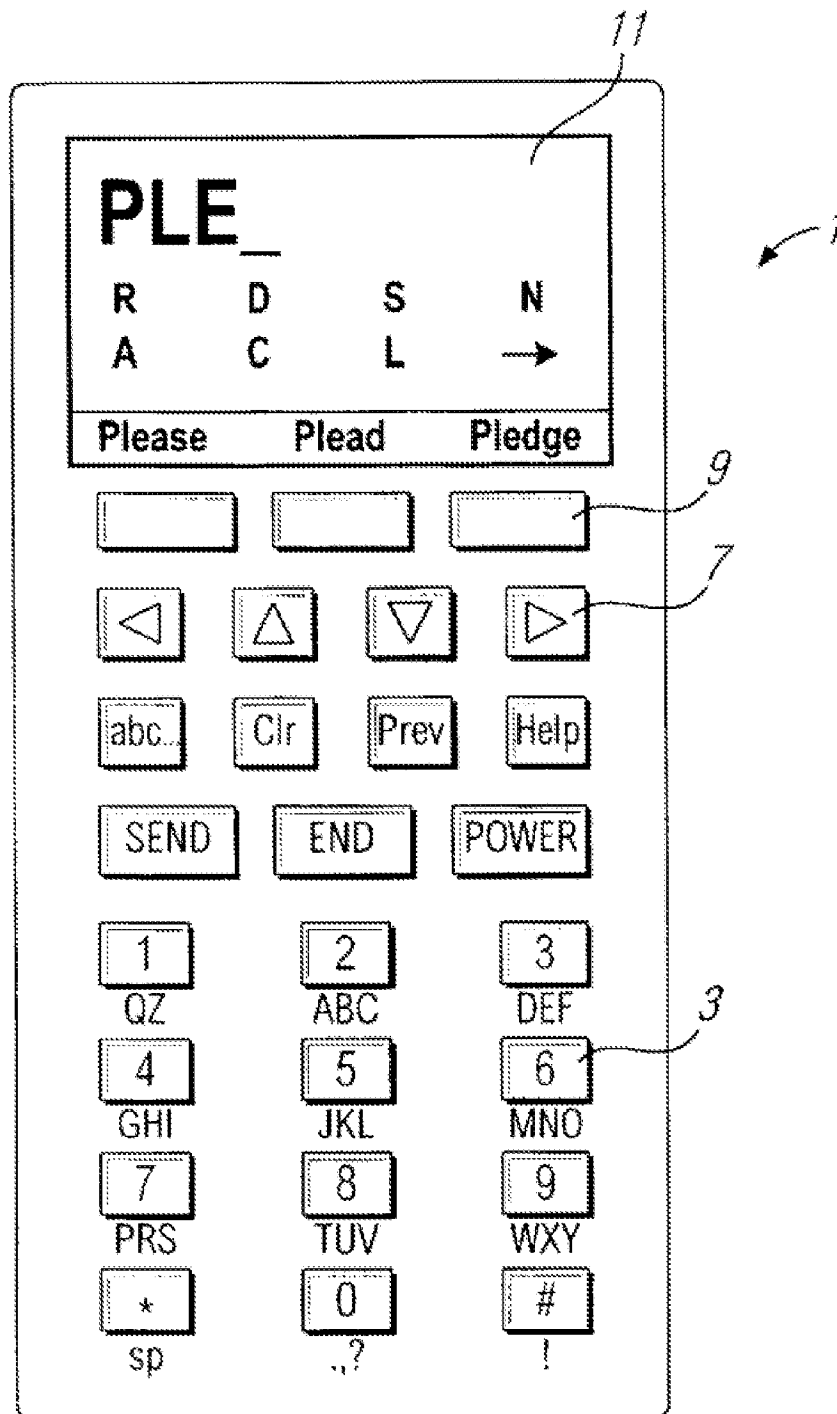


FIG. 4

- (h) 1h wherein the parts of the item identifiers and the additional parts of the item identifiers are text symbols and the additional parts of the item identifiers are shorter than the complete item identifiers; and**

Schroeder discloses this limitation. Ex. 1003, ¶289. All the parts of item identifiers are letters or characters within the English alphabet, which are text symbols in the English language. The additional parts of item identifiers (*i.e.*, the single letters representing the second letter of the words in the list of words 33') are shorter than complete item identifiers, as shown above in Figures 1, 3 and 4 (showing the words "Please Call Home.")

- (i) 1i the first set of items identifiers and the second set of item identifiers are mutually exclusive of one another and the third set of item identifiers and the fourth set of item identifiers are mutually exclusive subsets of the first set of item identifiers or the second set of item identifiers.**

Schroeder discloses this limitation. Ex. 1003, ¶290. As explained above, once a letter is selected, a new set of item identifiers is displayed reflecting the next letters as shown in Figure 3. Ex. 1009, 52-6:10. Because each part of an item identifier (*i.e.*, letter) corresponds to the matching words in the dictionary with that item identifier as a first letter, the first and second sets of item identifiers (which correspond to different letters in *Schroeder*) are mutually exclusive. As one simple example, the part 'P' would correspond to the set of words starting with 'P', while

the part 'S' would correspond to the set of all content/titles starting with 'S'. Since the words cannot start with both 'P' and 'S', these two sets of item identifiers would be mutually exclusive.

Moreover, the third set of item identifiers and the fourth set of item identifiers are mutually exclusive subsets of the first set of item identifiers or the second set of item identifiers because each of those sets requires a first and second letter to match. As the user enters each additional letter, the set of matching words is reduced to a subset of the prior set. Ex. 1003, ¶291.

2. 2 The method in accordance with claim 1, comprising a further step of iterating the selections until the item identifiers are completed.

Claim 2 recites "[t]he method in accordance with claim 1, comprising a further step of iterating the selections until the item identifiers are completed." *Schroeder* discloses this limitation. Ex. 1003, ¶292. "The example phrase to be entered is "PLEASE CALL HOME". As can be seen, the initial character "P" is one of the characters initially shown in the display 11. When the user presses the programmable key 7 corresponding to the character "P", the character subset shown in the display shifts to a new set, comprising the seven characters most likely to occur after the character "P". As can be seen in row b, the next character to be entered, "L", is already shown in the shifted display. Continuing on in this

fashion, the entire phrase "PLEASE CALL" can be entered simply by selecting one of the programmable keys 7 corresponding to one of the characters shown in the display 11.” Ex. 1009, 5:58-6:3.

3. 3 The method in accordance with claim 1, wherein the step of generating the first display includes selecting the parts of the item identifiers for the first and second set of items to be displayed based on predetermined criteria.

Claim 3 recites “[t]he method in accordance with claim 1, wherein the step of generating the first display includes selecting the parts of the item identifiers for the first and second set of items to be displayed based on predetermined criteria.” *Schroeder* discloses this limitation. Ex. 1003, ¶293. *Schroeder* explains “The determination of which characters to display in a particular subset can be made by statistical analysis of sample text from a particular language. For example, applicants have determined, from a set of particular English words commonly used for simple messages (e.g., "call", "meet", "today", "tomorrow", etc.), that the seven most common initial characters are those shown in the display 11 of FIG. 1.” Ex. 1009, 5:15-21. *Schroeder* then further applies this criteria when a letter is selected: “In the preferred embodiment, a table is constructed in memory having (1) the characters of the English alphabet ranked in order of their occurrence as initial characters of English text, and (2) an entry for every individual character of the alphabet, with each entry comprising a list of the most common characters

occurring after each such character. For example, for the character "A", the list entry would be the 25 characters of the alphabet in order of their statistical occurrence after the character "A".” *Id.*, 5:24-30.

4. 4 The method in accordance with claim 3, wherein one of the predetermined criteria is a frequency of selection of database items associated within the item identifier parts for the first and second set of items.

Claim 4 recites “[t]he method in accordance with claim 3, wherein one of the predetermined criteria is a frequency of selection of database items associated within the item identifier parts for the first and second set of items.” *Schroeder* discloses this limitation. Ex. 1003, ¶294. *Schroeder* explains that “In an alternative embodiment, the cellular telephone 1 allows a user to enter a list of words that the user frequently uses in messages (e.g., names, locations, products, etc.) and the internal CPU 20 builds a character frequency table from that specific set of words.” Ex. 1009. 5:42-46.

5. 5 The method in accordance with claim 3, wherein one of the predetermined criteria is a ranking of the parts of item identifiers for the first and second set of items in relation to a tree hierarchy classification of the parts of item identifiers for the first and second set of items.

Claim 5 recites “[t]he method in accordance with claim 3, wherein one of the predetermined criteria is a ranking of the parts of item identifiers for the first and second set of items in relation to a tree hierarchy classification of the parts of

item identifiers for the first and second set of items.” *Schroeder* discloses this limitation. *Schroeder* describes: “The determination of which characters to display in a particular subset can be made by statistical analysis of sample text from a particular language. For example, applicants have determined, from a set of particular English words commonly used for simple messages (e.g., "call", "meet", "today", "tomorrow", etc.), that the seven most common initial characters are those shown in the display 11 of FIG. 1. Pressing the "more" function key would display the next seven most common initial characters, and so forth. In the preferred embodiment, a table is constructed in memory having (1) the characters of the English alphabet ranked in order of their occurrence as initial characters of English text, and (2) an entry for every individual character of the alphabet, with each entry comprising a list of the most common characters occurring after each such character. For example, for the character "A", the list entry would be the 25 characters of the alphabet in order of their statistical occurrence after the character "A".” Ex. 1009, 5:15-32.

Schroeder also shows a dictionary tree that can lead to completion of words in Figure 6:

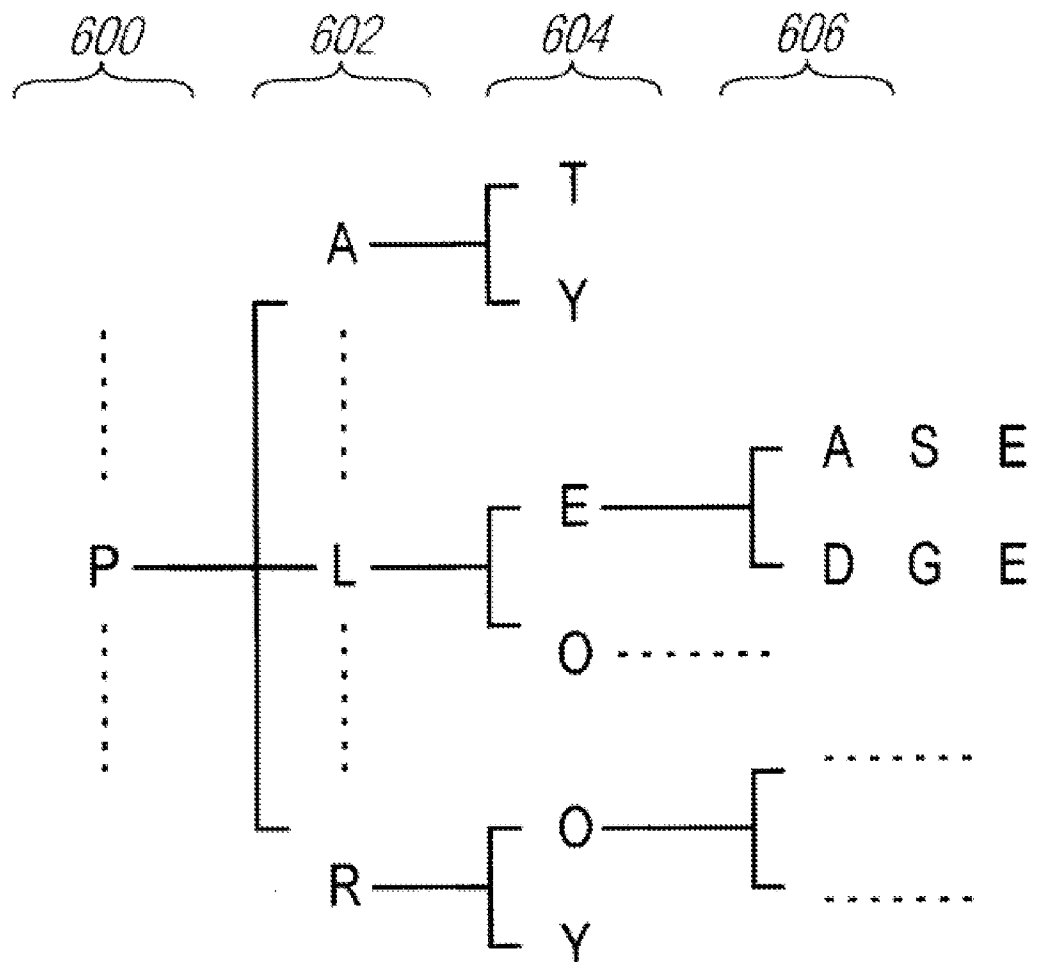


FIG. 6

Schroeder explains that “FIG. 6 shows a diagram of a portion of a dictionary tree, showing how the search function used for the word completion can be implemented. In the example shown, a first tier 600 has individual letters of the

alphabet, the letter "P" being shown. A next tier 602 of the dictionary tree contains letters of words in the dictionary that follow the letter of the preceding tier. In the example shown, the letters "A", "L", and "R" are shown. Additional tiers 604, 606 may be used to extend the dictionary tree, as shown in FIG. 6. The "leaf" nodes of the dictionary tree may contain single letters (such as the entry "P-A-T") or multiple letters (such as the entry "P-L-E-ASE"). The dictionary tree may be as extensive as desired." Ex. 1009, 7:10-21.

It should be noted that the patent discloses the tree in conjunction with the "word completion" function, which is in addition to the predictive text application described above. Indeed, *Schroeder* explains "Although the predictive keyboard input method discussed above substantially reduces the difficulty of entering text into the limited keyboard and display of a cellular telephone 1, it still requires that the user enter each character of a word." *Id.*, 6:17-20. PHOSITA would understand that the word completion function uses the same database structure and dictionary as the predictive text function. *Id.*, Ex. 1003, ¶295-98.

6. 6 The method in accordance with claim 1, wherein the item identifiers are text strings.

Claim 6 recites "[t]he method in accordance with claim 1, wherein the item identifiers are text strings." *Schroeder* discloses this limitation. Ex. 1003, ¶299. In addition to character item identifiers, *Schroeder* supports groups of letters where

the user can type multiple characters in a word and the system will predict the next letter. Ex. 1009, 5:34-41 (“In an alternative embodiment of the present invention, the table can take into account the preceding N characters, rather than just the preceding single character entered by the user. For example, a table could be constructed whereby, if a user enters the characters "th", the frequency of characters occurring after that combination are determined and made entries in the table. Other rules for generating the character subsets may be adopted as desired.”) Groups of letters and sets of characters, such as the examples given in *Schroeder* are text strings. *Id.*, 5:15-20.

7. 7 The method in accordance with claim 6 wherein the item identifiers are words.

Claim 7 recites “[t]he method in accordance with claim 1, wherein the item identifiers are words.” *Schroeder* discloses this limitation. Ex. 1003, ¶300. As described above in connection with claim 6, “Please” and “Call” and “Home” are all words. *Id.*

8. 8 The method in accordance with claim 1, wherein the database is stored in a memory of the computing device.

Claim 8 recites “[t]he method in accordance with claim 1, wherein the database is stored in a memory of the computing device.” *Badarneh* discloses this limitation. Ex. 1003, ¶301. *Schroeder* discloses that in the preferred embodiment, a

table is constructed in memory having (1) the characters of the English alphabet ranked in order of their occurrence as initial characters of English text, and (2) an entry for every individual character of the alphabet, with each entry comprising a list of the most common characters occurring after each such character.” Ex. 1009, 5:24-29. Moreover, PHOSITA would recognize and know that the database must be stored in a memory. Ex. 1003, ¶301.

**9. Claim 9 The method in accordance with claim 8,
wherein the computing device is a mobile phone**

Claim 9 recites “[t]he method in accordance with claim 8, wherein the computing device is a mobile phone.” *Schroeder* discloses this limitation. Ex. 1003, ¶302. The patent is titled “User interface for cellular telephone.” Ex. 1009. A cellular telephone is a mobile phone.

**10. Claim 10 The method in accordance with claim 8,
wherein the computing device is a Personal Digital Assistant
(PDA)**

Claim 10 recites “[t]he method in accordance with claim 8, wherein the computing device is a Personal Digital Assistant (PDA).” *Schroeder* discloses this limitation. Ex. 1003, ¶303. *Badarneh* explains “For example, a number of the features of the invention can be used with any hand-held communication device, such as two-way pagers, wireless *personal digital assistants*, cordless telephones, etc. Accordingly, it is to be understood that the invention is not to be limited by the

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specific illustrated embodiment, but only by the scope of the appended claims.”

Ex. 1009, 12:18-24 (emphasis added).

11. Claim 12

Claim 12 recites all the same elements as claim 1, but in system form.

Schroeder and *Josenhans* disclose all the limitations of claim 12 for the same reasons as described above in connection with claim 1. Ex. 1003, ¶304.

Schroeder discloses the device in conjunction with the cellular telephone, but also discloses that the

he procedures described above are preferably implemented as computer programs stored on a storage media or device (e.g., ROM) readable by the programmable processing system 13, for configuring and operating the programmable processing system 13 when the storage media or device is read by the programmable processing system 13, the programmable processing system 13 being operated to perform the user interface functions described above. A number of embodiments of the present invention have been described. Nevertheless, it will be understood that various modifications may be made without departing from the spirit and scope of the invention. For example, a number of the features of the invention can be used with any hand-held communication device, such as two-way pagers,

wireless personal digital assistants, cordless telephones, etc. Accordingly, it is to be understood that the invention is not to be limited by the specific illustrated embodiment, but only by the scope of the appended claims.

Ex. 1009, 12:7-24. A POSITA would recognize that electronic devices like mobile phones, PDAs, PCs, etc. each have an output display, a mechanism for inputting, and a computer processor. Ex. 1003, ¶305.

12. Claim 13

Claim 13 recites the same features as claim 3 and is disclosed by *Schroeder* for the same reasons. Ex. 1003, ¶306.

13. Claim 14

Claim 14 recites the same features as claim 4 and is disclosed by *Schroeder* for the same reasons. Ex. 1003, ¶307.

14. Claim 15

Claim 15 recites the same features as claim 5 and is disclosed by *Schroeder* for the same reasons. Ex. 1003, ¶308.

15. Claim 16 The apparatus in accordance with claim 15, including a memory storing the tree hierarchy

Claim 16 recites “[t]he apparatus in accordance with claim 15, including a memory storing the tree hierarchy.” *Schroeder* discloses this limitation. First, PHOSITA would recognize that the tree hierarchy would need to be stored in

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memory in order for the processor to return the results of the computations. Ex. 1003, ¶309. Moreover, *Schroeder* discloses “In the preferred embodiment, a table is constructed in memory having (1) the characters of the English alphabet ranked in order of their occurrence as initial characters of English text, and (2) an entry for every individual character of the alphabet, with each entry comprising a list of the most common characters occurring after each such character.” Ex. 1009, 5:24-29.

16. Claim 17

Claim 17 recites the same features as claim 6 and is disclosed by *Schroeder* for the same reasons. Ex. 1003, ¶310.

17. Claim 18

Claim 18 recites the same features as claim 7 and is disclosed by *Schroeder* for the same reasons. Ex. 1003, ¶311.

18. Claim 19

Claim 19 recites the same features as claim 8 and is obvious in view of *Schroeder* for the same reasons. Ex. 1003, ¶312.

19. Claim 20

Claim 20 recites the same features as claim 9 and is obvious in view of *Schroeder* for the same reasons. Ex. 1003, ¶313.

20. Claim 21

Claim 21 recites the same features as claim 10 and is obvious in view of *Schroeder* for the same reasons. Ex. 1003, ¶314.

21. Motivation to Combine *Schroeder* and *Josenhans*

It would have been obvious to incorporate *Josenhans*' unified search across multiple databases into *Schroeder*. *Schroeder* already describes a “global search” feature that is “conducted concurrently through the data structures comprising the address book, hierarchical menu structure, and stored data messages of the telephone 1.” *Schroeder*, 10:60-11:64. *Schroeder* explains that its “global search” can run across different memory partitions and different logical structures within the telephone. *Id.*, 11:1-31. According to *Schroeder*, its “search algorithm may work at the physical storage level (such as is shown in FIG. 12), or at a logical storage level (e.g. by traversing singly or doubly linked lists, sequential data records, hierarchical trees, etc.).” *Id.*, 11:35-39. *Schroeder* also explains that “[t]his unified, global search scheme means that the user can search for information in a plurality of memory structures without having to know in advance in which memory structure the information is likely to be,” making the search more efficient and transparent for the user. *Id.*, 12:2-5. “[P]lurality of memory

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structures” would have been understood by a POSITA to mean multiple data structures, e.g., multiple databases. *Id.*; Ex. 1003, ¶315.

Similarly, *Josenhans* relates to a unified search across multiple data sources or databases. It would have been equally obvious to incorporate *Josenhans*’ database structures into *Schroeder* because, like *Schroeder*, *Josenhans* deals with a method of searching for data in at least two databases. Specifically, one of ordinary skill in the art would look to references such as *Josenhans* to determine the best way to incorporate and setup the data sources of *Schroeder*. For example, *Josenhans* provides express motivation to provide a unified (a.k.a. global) search across multiple databases (like the ones described in *Schroeder*) for simplicity (*Josenhans*, ¶[0010]), for efficiency, convenience, and reduced memory requirements (*id.*, ¶[0011]-[0013]), and for speed and reduced data transfer requirements (*id.*, ¶[0012], [0018]). A POSITA would have immediately recognized these well-known benefits and would have therefore had ample motivation to add a unified search across multiple database to any search application involving multiple data sources. Whether reading about *Schroeder*’s searches that are “conducted concurrently through the data structures” or *Josenhans*’ searches that are performed “simultaneous[ly]... in at least two

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databases” a POSITA would have understood that these inventions overlapped in this regard and thus would inform one another. Ex. 1003, ¶316

XIII. SECONDARY CONSIDERATIONS OF NONOBVIOUSNESS

Although it is Patent Owner’s burden of production (*Fox Factory, Inc. v. SRAM, LLC*, 944 F.3d 1366, 1372-1375 (Fed. Cir. 2019), cert. denied, 141 S. Ct. 373, 208 L. Ed. 2d 95 (2020)) to come forward with secondary considerations of nonobviousness, Requester addresses alleged secondary indicia that Patent Owner has raised in previous proceedings. In those proceedings, Patent Owner relied heavily on secondary considerations, despite that those proceedings – as in this request – focused primarily on anticipation. It is, of course, black letter law that secondary considerations are not relevant to anticipation. *In re Wiggins*, 488 F.2d 538, 543, 179 USPQ 421, 425 (CCPA 1973).

Moreover, though Patent Owner sought, and Requestor produced, certain documents.^[1] Patent Owner alleged that those documents evidenced such

^[1] Requestor produced those documents as highly confidential, attorneys’ eyes only documents, and were subject to protective orders in the PTAB and in the district court litigation, executed by the same petitioner and patent owner in this reexamination. Petitioner would not object to Patent Owner’s use of those documents

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secondary considerations as commercial success and copying. However, those documents are irrelevant as Patent Owner failed to present *any* evidence on the nexus between its alleged secondary considerations and the claimed features. Requestor has attached, for the Examiner's convenience at Ex. 1013 redacted versions of the briefs filed in the prior proceedings. The parties' positions on secondary considerations that have been developed to date are laid out in those papers. As is plain, the evidence of nexus there is lacking.

XIV. REAL PARTIES OF INTEREST

Requestor certifies that Samsung Electronics Co., Ltd. is the real parties-in-interest.

limited solely to this proceeding, so long as Patent Owner agrees to be bound by the designations of those documents, and to be bound by the same protective orders the parties already agreed to in the PTO and the litigation, without change, subject to approval by Requestor to ensure the protections are respected. Petitioner would further require that both Patent Owner and the PTO assure Petitioner that those documents will not become part of the public record and will be expunged from this proceeding at its termination.

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XV. CONCLUSION

For at least the reasons cited herein, the prior art references cited in this Request present substantial new questions of patentability with respect to the Challenged Claims of the '852 patent. Accordingly, the Office should declare a reexamination of these claims and reject them on at least the SNQs detailed in this Request.

If there are any additional fees due in connection with the filing of this paper, please charge the fees to our Deposit Account No. 505708.

DATED: May 28, 2021

Respectfully submitted,

By /s/ Marissa Ducca
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Attachment (1)

CERTIFICATE OF SERVICE

I, Marissa Ducca, hereby certify that on the May 28, 2021, I caused a true and accurate copy of the enclosed:

REQUEST FOR *EX PARTE* REEXAMINATION

and supporting documents to be sent by Federal Express in its entirety with delivery confirmation to the Patent Owner, Kannuu Pty Ltd., at the following address listed as the Patent Owner's correspondence address in the patent file:

**JONES DAY
250 Vesey St.
NEW YORK, NY 10281**

Dated: May 28, 2021

By: /s/ Marissa Ducca
Marissa Ducca
(Reg. No. 59,807)