US 20090051666A1

(19) **United States**

(12) **Patent Application Publication**

Choi et al.

(10) **Pub. No.: US 2009/0051666 A1**

(43) **Pub. Date: Feb. 26, 2009**

(54) **PORTABLE TERMINAL**

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(21) Appl. No.: **12/181,298**

(22) Filed: **Jul. 28, 2008**

Related U.S. Application Data

(60) Provisional application No. 60/952,658, filed on Jul. 30, 2007.

Publication Classification

(51) **Int. Cl.**
G06F 3/041 (2006.01)
H04M 1/00 (2006.01)

(52) **U.S. Cl.** **345/173**; 455/566

(57) **ABSTRACT**

A portable terminal comprising: a first body having a keypad containing a plurality of keys arranged thereon and a display disposed in one direction for displaying information inputted via the keypad; and a second body slidably connected to the first body in a direction perpendicular to the one direction and having a touch screen configured to be exposed to the outside when the portable terminal is converted from a closed state into an open state, wherein the touch screen is activated in the open state to display visual information related to information to be displayed on the display, whereby a portable terminal having a convenient user interface environment and also a new design can be provided.

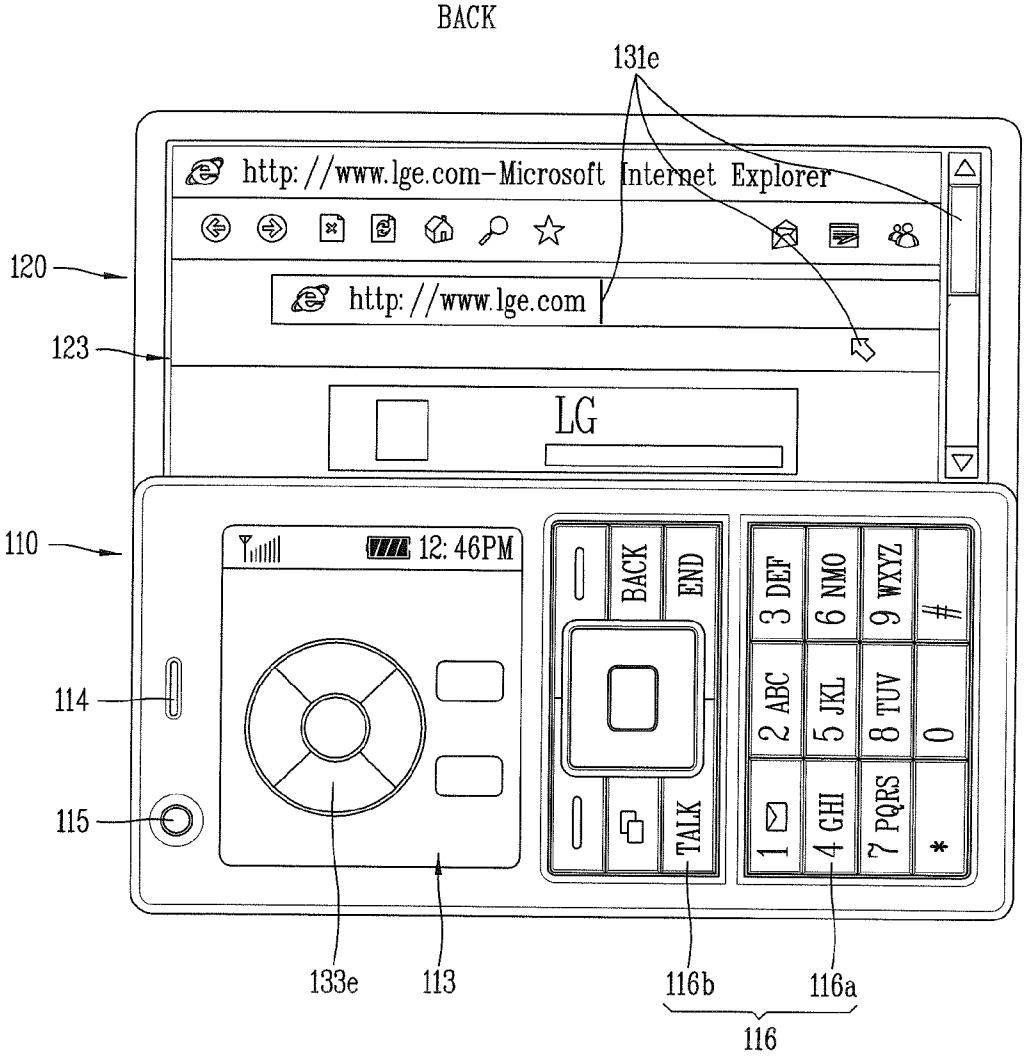


FIG. 1

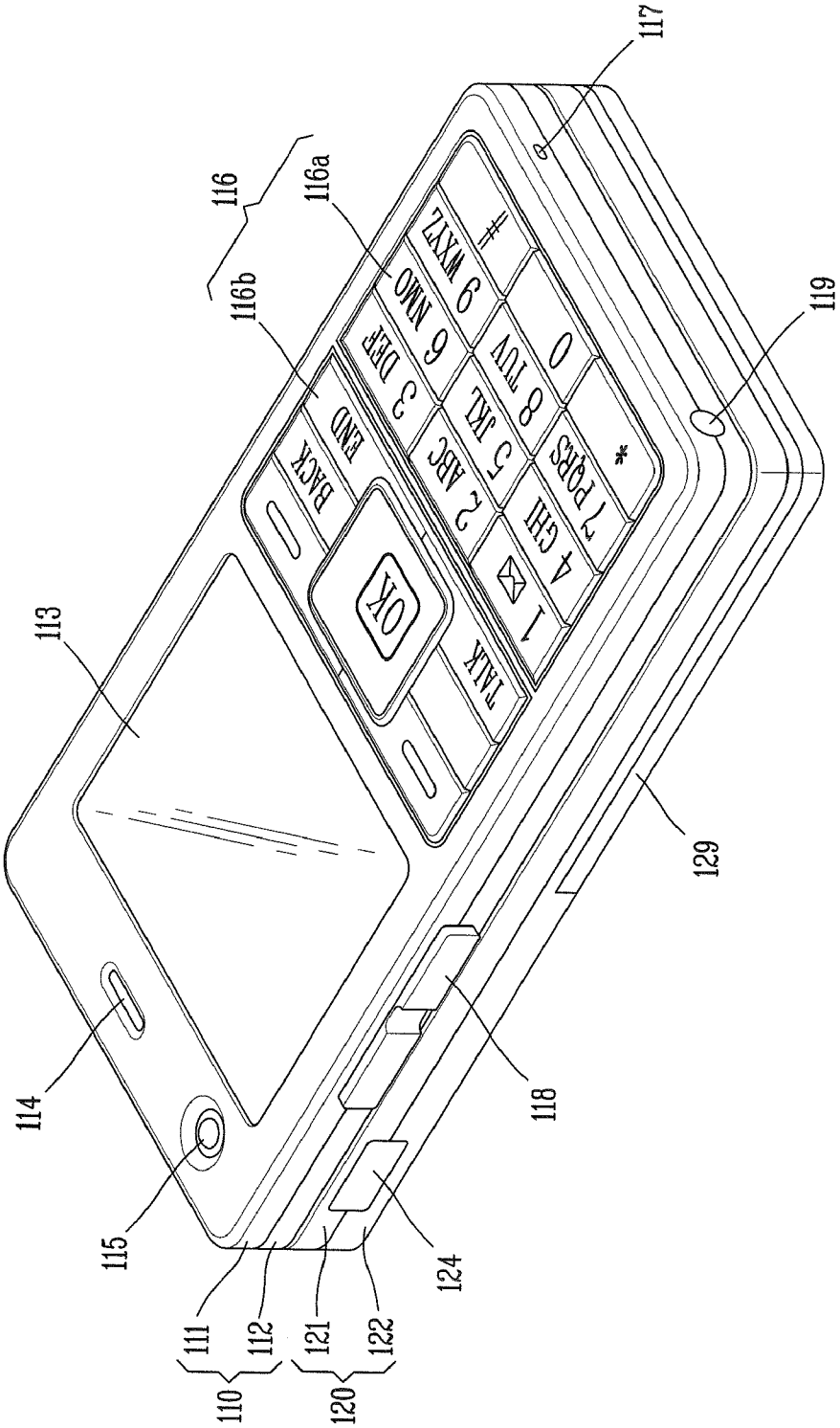

117
116
116a
116b
119
113
114
115
118
129
124
111
112
121
122
110
120
OK
BACK
END
TALK
1
2 ABC
3 DEF
4 GHI
5 JKL
6 MNO
7 PQRS
8 TUV
9 WXYZ
0
*
#

FIG. 2

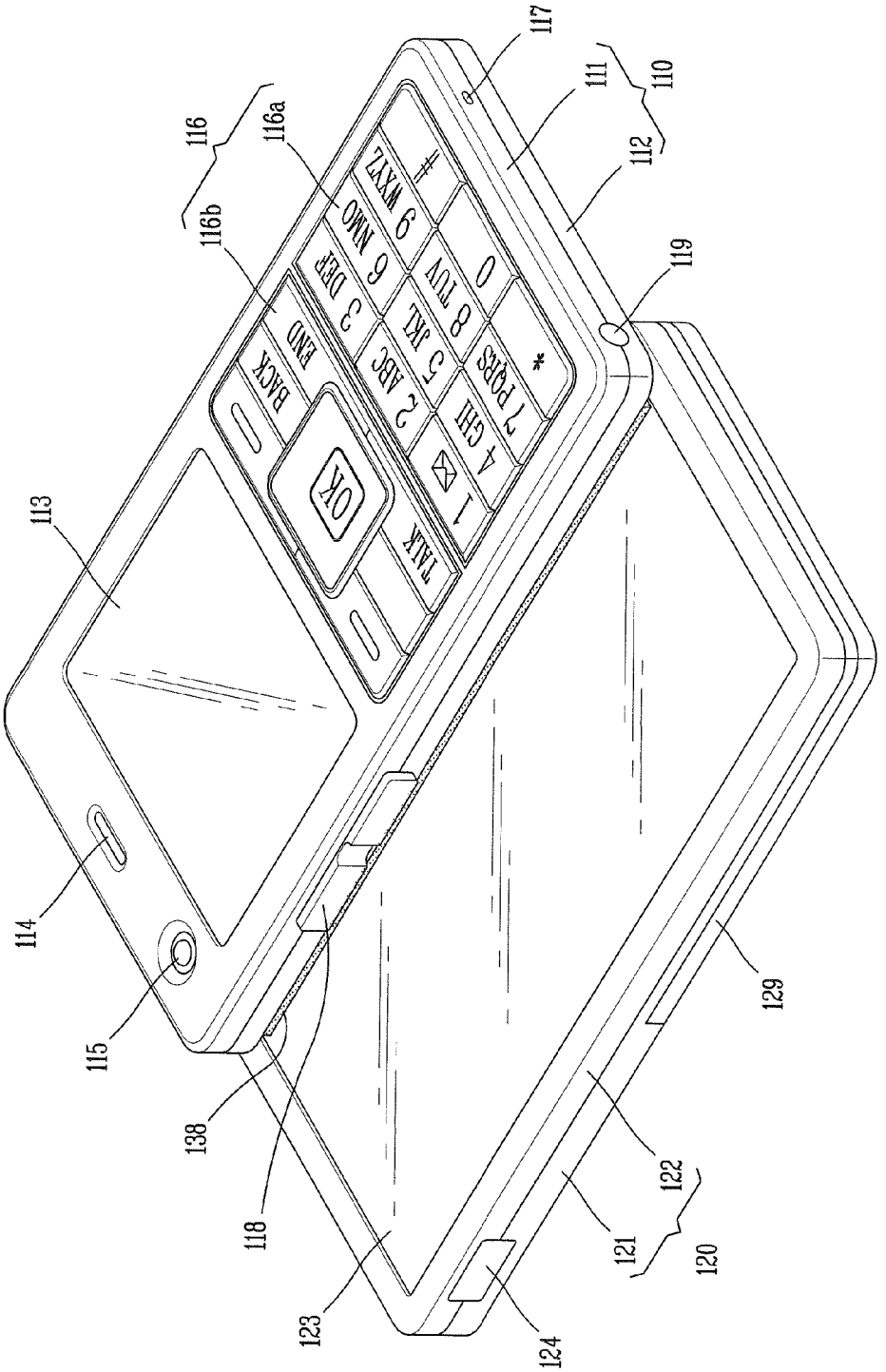

117
111
110
112
116
116a
116b
119
113
114
115
138
118
123
124
121
122
120
129
OK
TALK
END
BACK
1
2 ABC
3 DEF
4 GHI
5 JKL
6 MNO
7 PQRS
8 TUV
9 WXYZ
0
*
#

FIG. 3

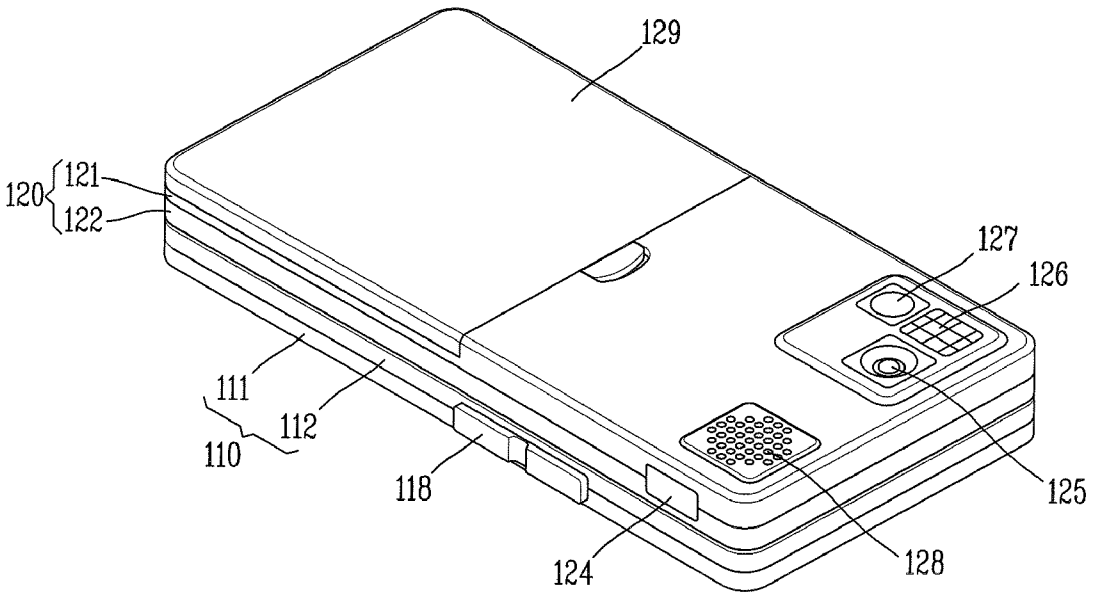


FIG. 4A

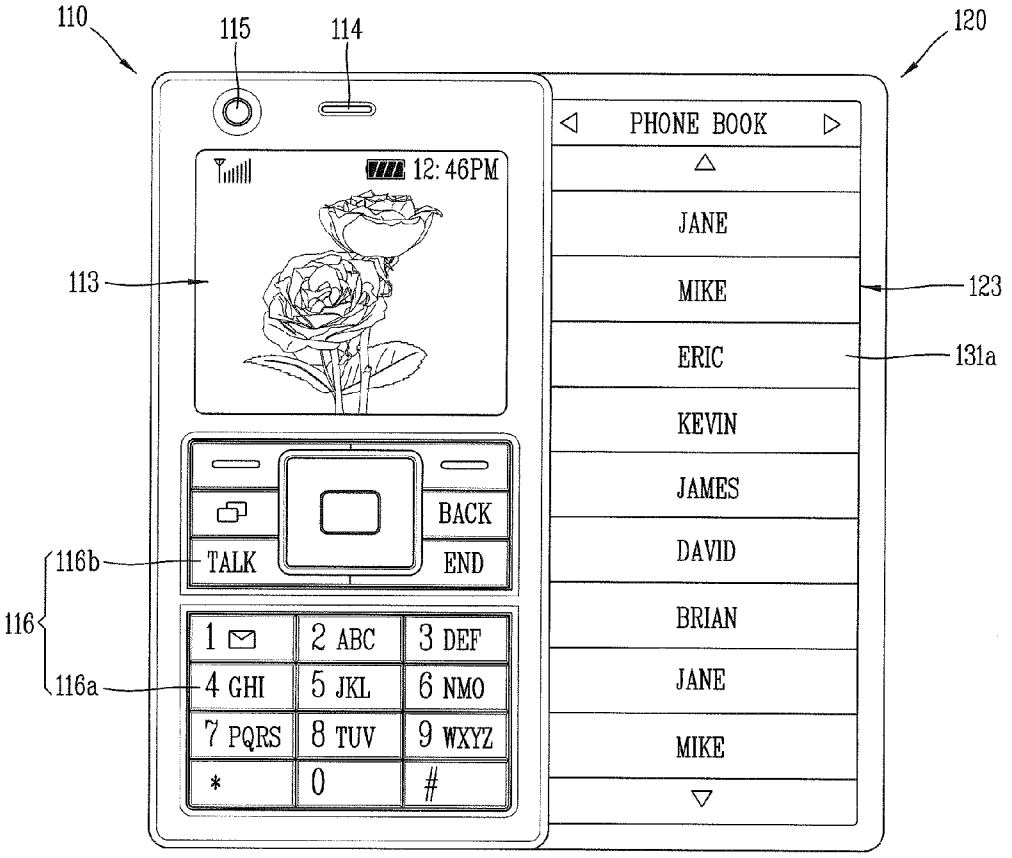

110
115
114
120
12:46PM
113
PHONE BOOK
JANE
MIKE
123
ERIC
131a
KEVIN
JAMES
DAVID
BRIAN
JANE
MIKE
BACK
TALK
END
116b
116
116a
1
2 ABC
3 DEF
4 GHI
5 JKL
6 NMO
7 PQRS
8 TUV
9 WXYZ
*
0
#

FIG. 4B

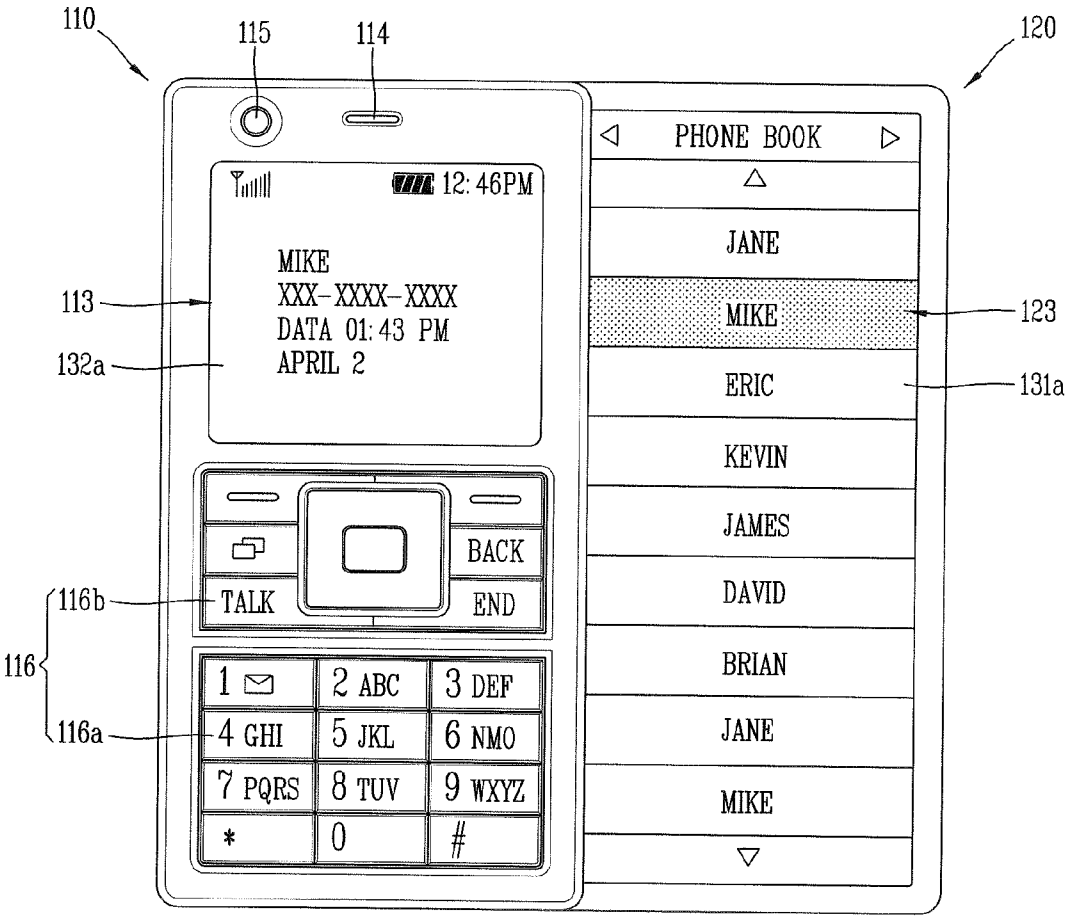

110
115
114
120
PHONE BOOK
12:46PM
MIKE
XXX-XXXX-XXXX
DATA 01:43 PM
APRIL 2
113
132a
123
131a
JANE
MIKE
ERIC
KEVIN
JAMES
DAVID
BRIAN
JANE
MIKE
BACK
TALK
END
116b
116
116a
1
2 ABC
3 DEF
4 GHI
5 JKL
6 MNO
7 PQRS
8 TUV
9 WXYZ
*
0
#

FIG. 4C

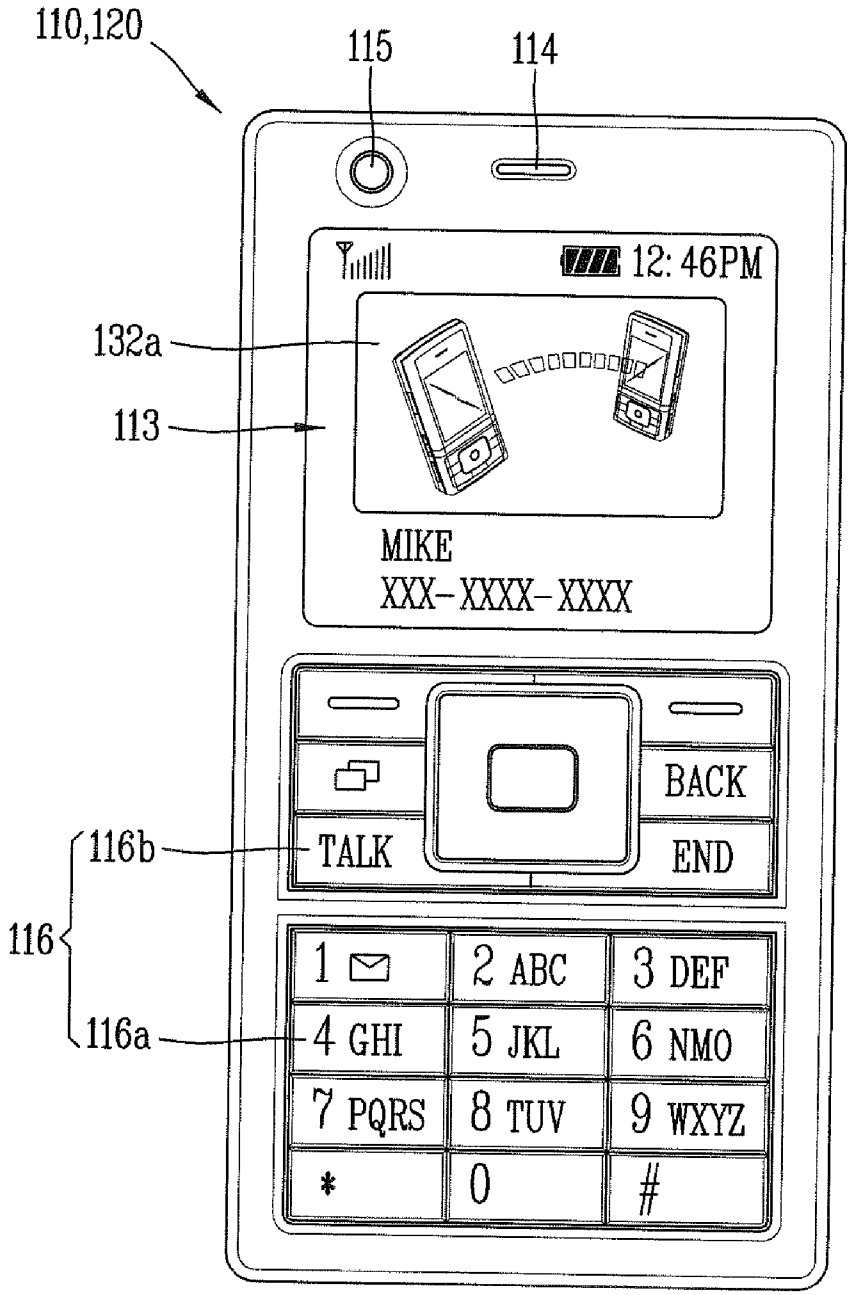

110,120
115
114
12: 46PM
132a
113
MIKE
XXX-XXXX-XXXX
BACK
116b
TALK
END
116
1
2 ABC
3 DEF
116a
4 GHI
5 JKL
6 NMO
7 PQRS
8 TUV
9 WXYZ
*
0
#

FIG. 5A

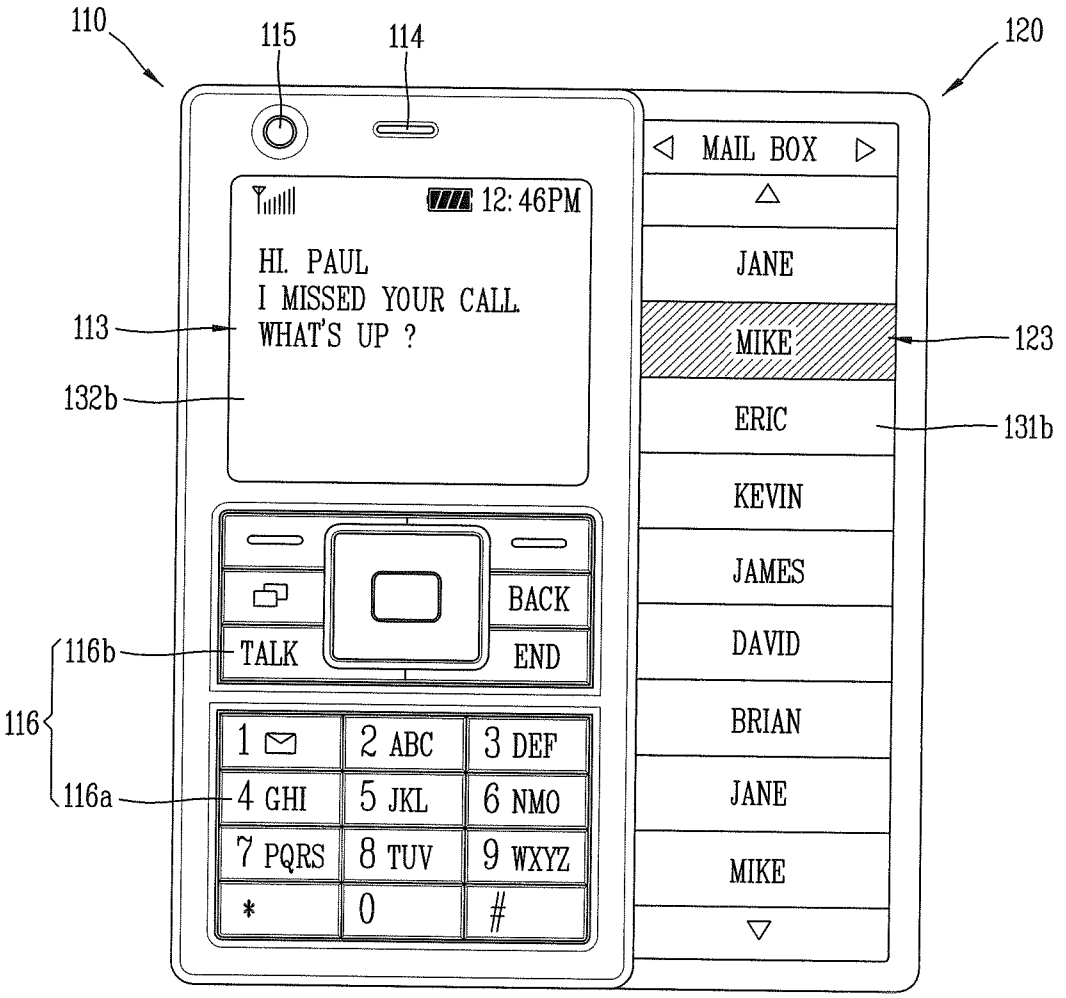

110
115
114
120
MAIL BOX
12:46PM
HI. PAUL
I MISSED YOUR CALL.
WHAT'S UP ?
113
132b
JANE
MIKE
123
ERIC
131b
KEVIN
JAMES
DAVID
BRIAN
JANE
MIKE
BACK
TALK
END
116b
116
116a
1
2 ABC
3 DEF
4 GHI
5 JKL
6 NMO
7 PQRS
8 TUV
9 WXYZ
*
0
#

FIG. 5B

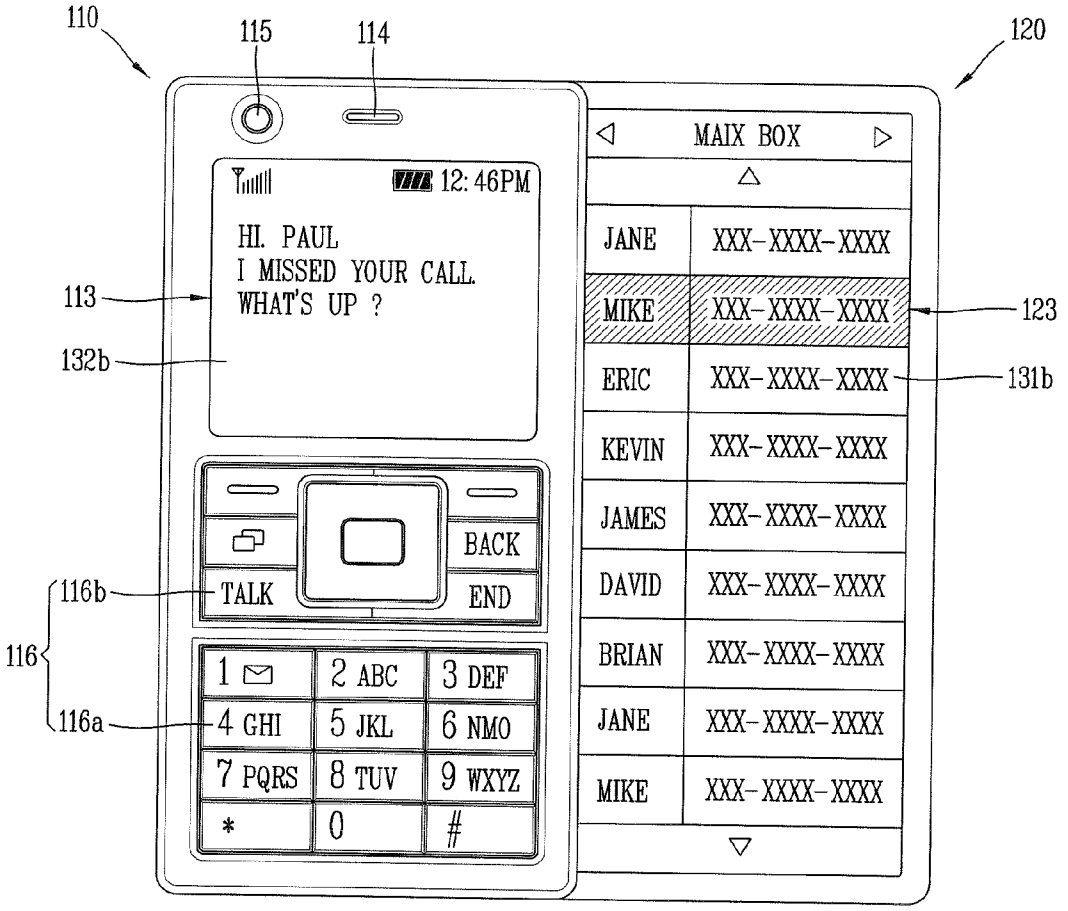

110
115
114
120
MAIX BOX
12:46PM
HI. PAUL
I MISSED YOUR CALL.
WHAT'S UP ?
113
132b
123
131b
JANE XXX-XXXX-XXXX
MIKE XXX-XXXX-XXXX
ERIC XXX-XXXX-XXXX
KEVIN XXX-XXXX-XXXX
JAMES XXX-XXXX-XXXX
DAVID XXX-XXXX-XXXX
BRIAN XXX-XXXX-XXXX
JANE XXX-XXXX-XXXX
MIKE XXX-XXXX-XXXX
BACK
TALK
END
116b
116
116a
1
2 ABC
3 DEF
4 GHI
5 JKL
6 MNO
7 PQRS
8 TUV
9 WXYZ
*
0
#

FIG. 6A

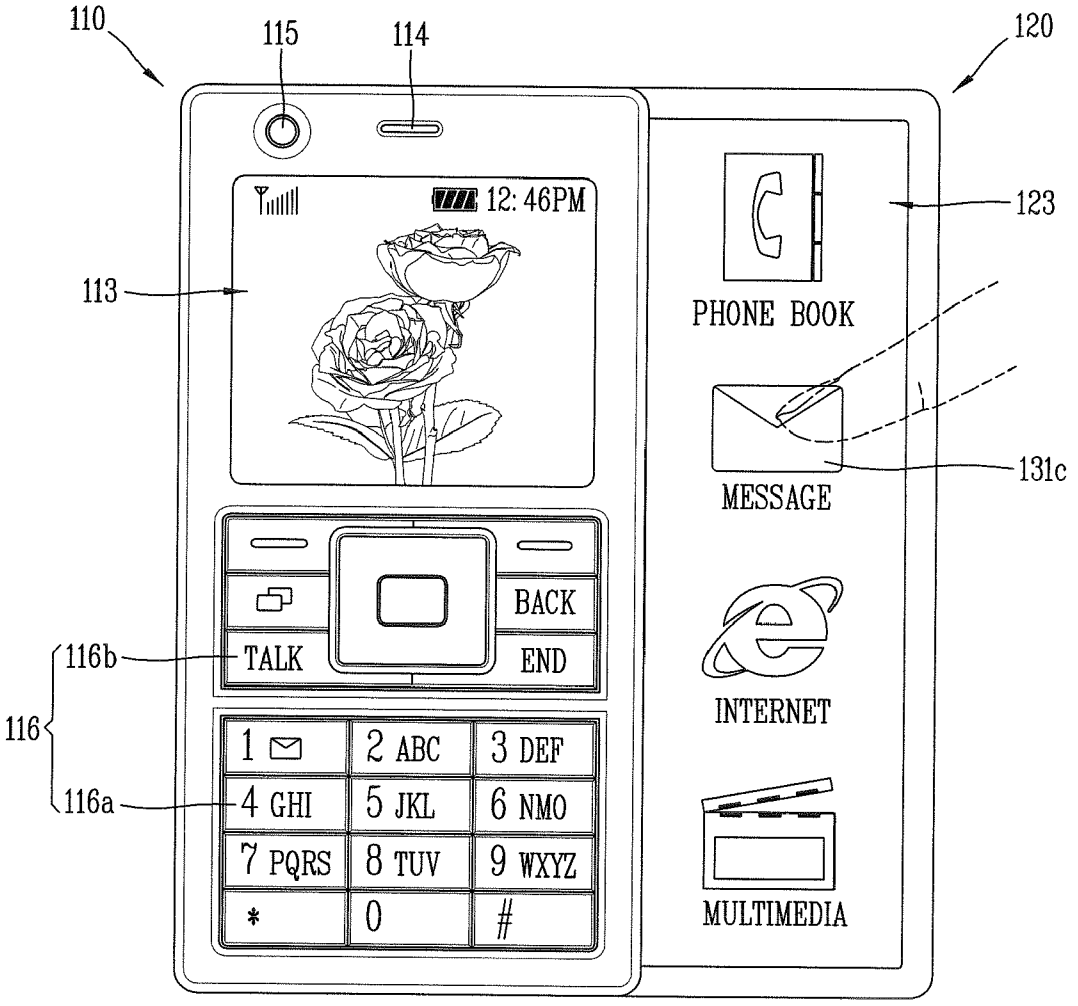

110
115
114
120
12: 46PM
113
123
PHONE BOOK
MESSAGE
131c
BACK
TALK
END
116b
116
116a
1
2 ABC
3 DEF
4 GHI
5 JKL
6 NMO
7 PQRS
8 TUV
9 WXYZ
*
0
#
INTERNET
MULTIMEDIA

FIG. 6B

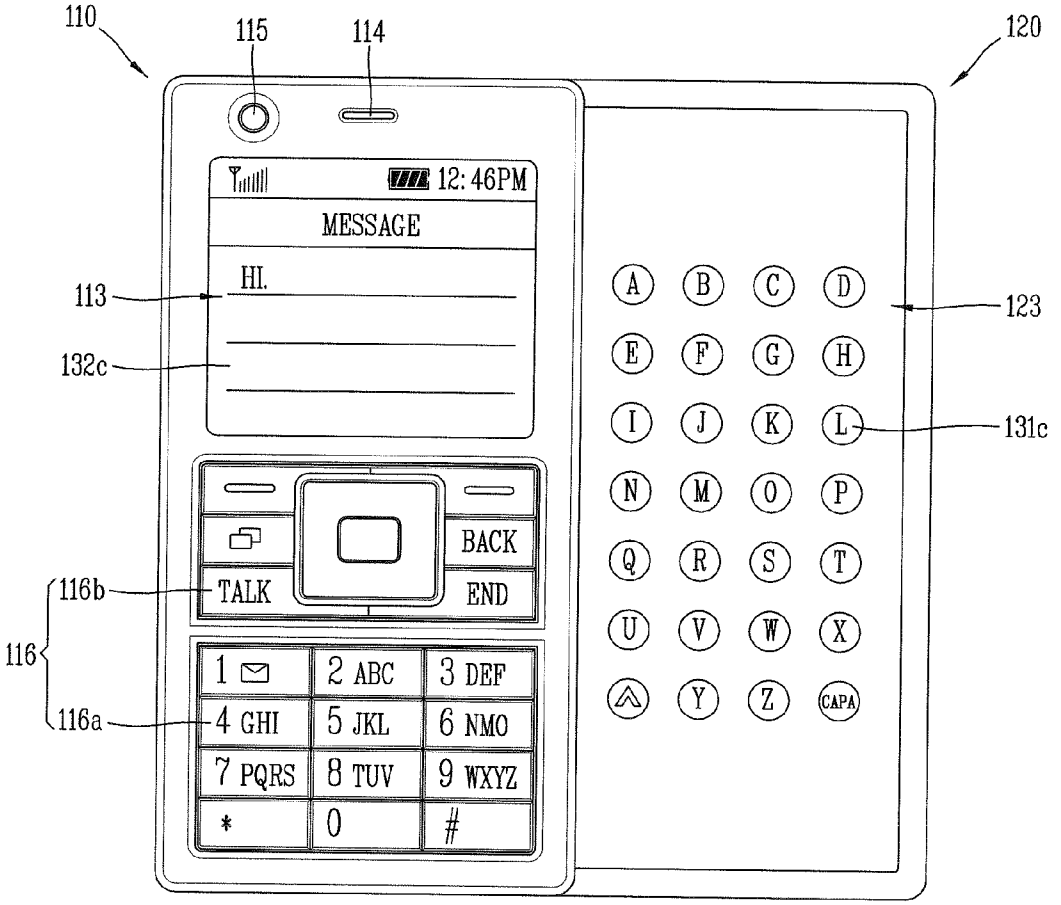

110
115
114
120
12:46PM
MESSAGE
HI.
113
132c
123
131c
BACK
TALK
END
116b
116
116a
1
2 ABC
3 DEF
4 GHI
5 JKL
6 NMO
7 PQRS
8 TUV
9 WXYZ
*
0
#
A
B
C
D
E
F
G
H
I
J
K
L
N
M
O
P
Q
R
S
T
U
V
W
X
Y
Z
CAPA

FIG. 6C

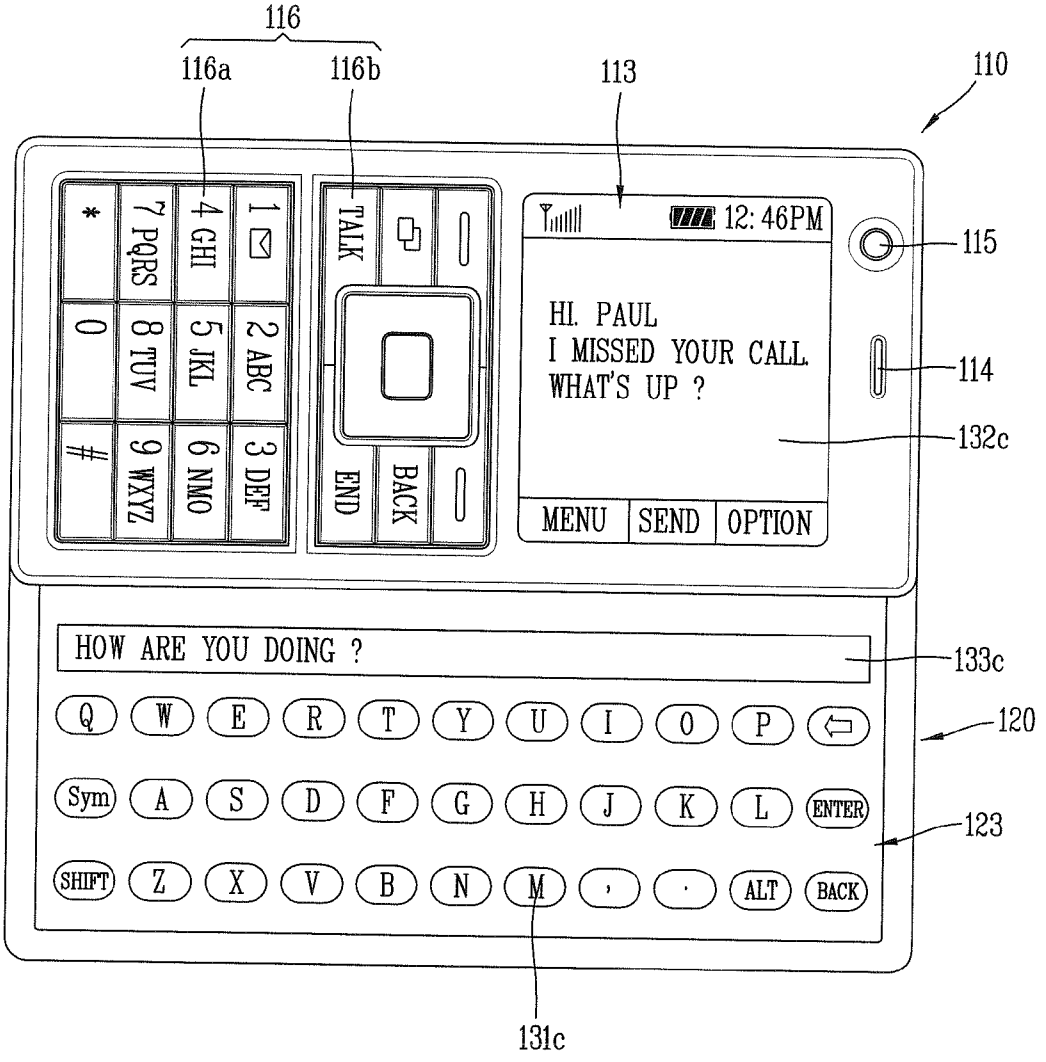

116
116a
116b
113
110
115
114
132c
133c
120
123
131c
TALK
END
BACK
MENU
SEND
OPTION
12: 46PM
HI. PAUL
I MISSED YOUR CALL.
WHAT'S UP ?
HOW ARE YOU DOING ?
ENTER
SHIFT
ALT
BACK
Sym

FIG. 7

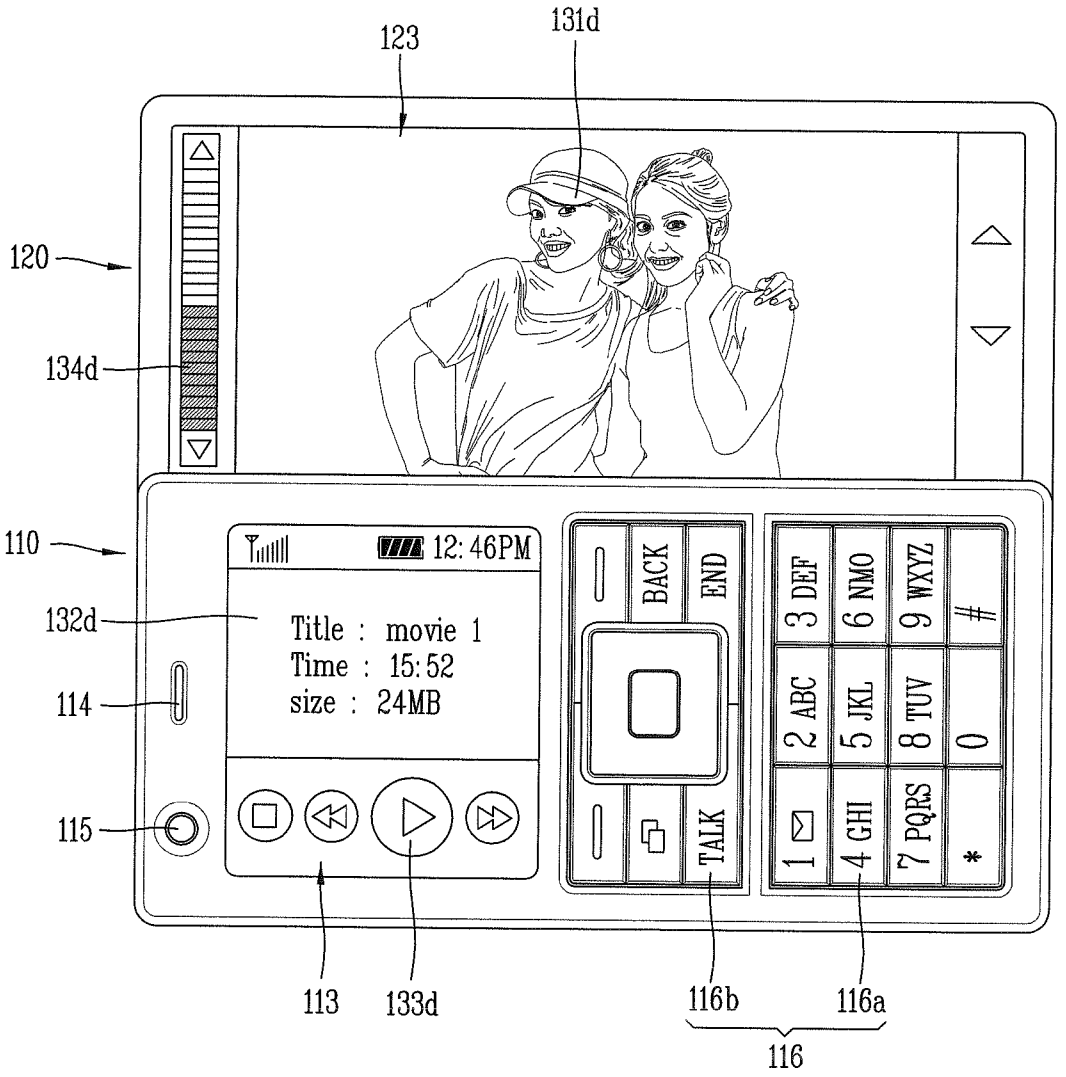

123
131d
120
134d
110
132d
114
115
12:46PM
Title : movie 1
Time : 15:52
size : 24MB
BACK
END
TALK
3 DEF
6 NMO
9 WXYZ
#
2 ABC
5 JKL
8 TUV
0
1
4 GHI
7 PQRS
*
113
133d
116b
116a
116

FIG. 8

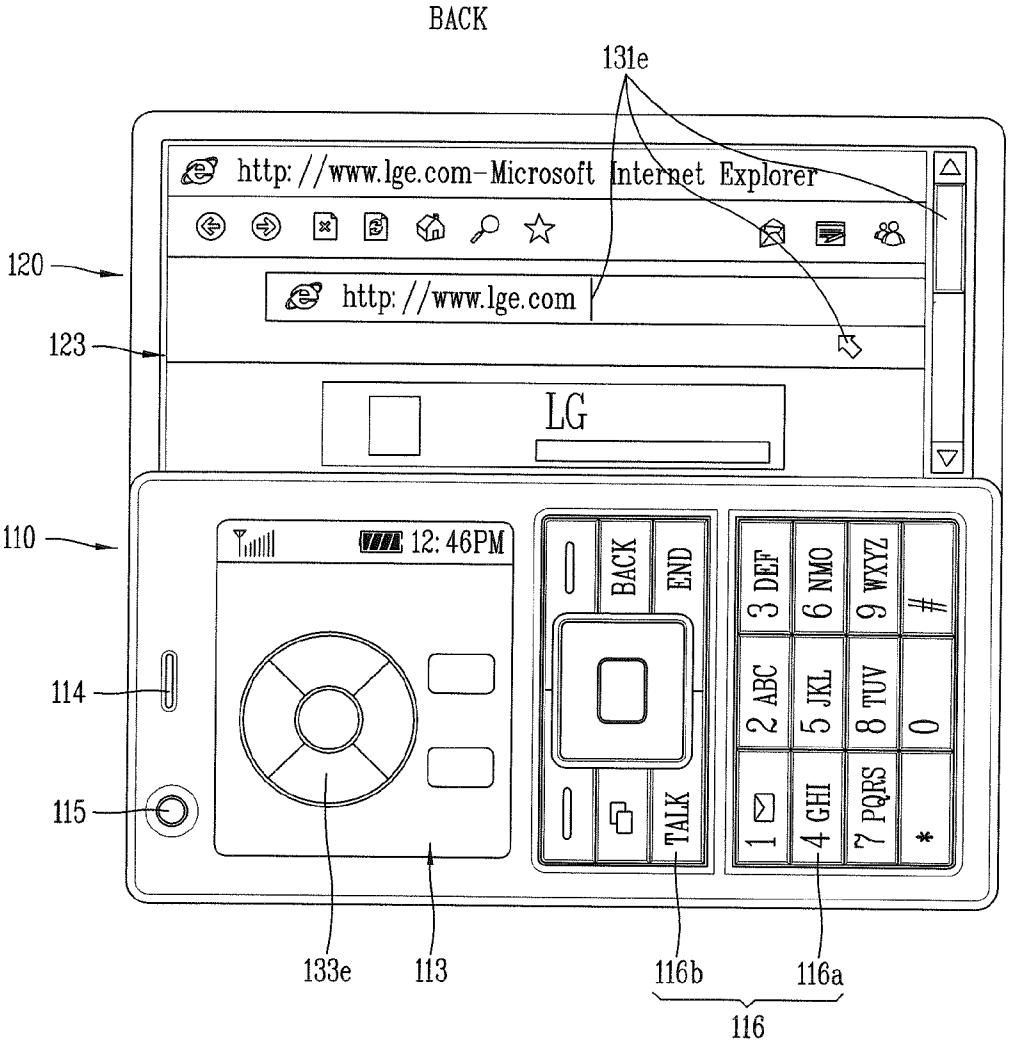

BACK
131e
http://www.lge.com-Microsoft Internet Explorer
http://www.lge.com
LG
120
123
110
114
115
12:46PM
BACK
END
TALK
3 DEF
6 NMO
9 WXYZ
#
2 ABC
5 JKL
8 TUV
0
1
4 GHI
7 PQRS
*
133e
113
116b
116a
116

FIG. 9A

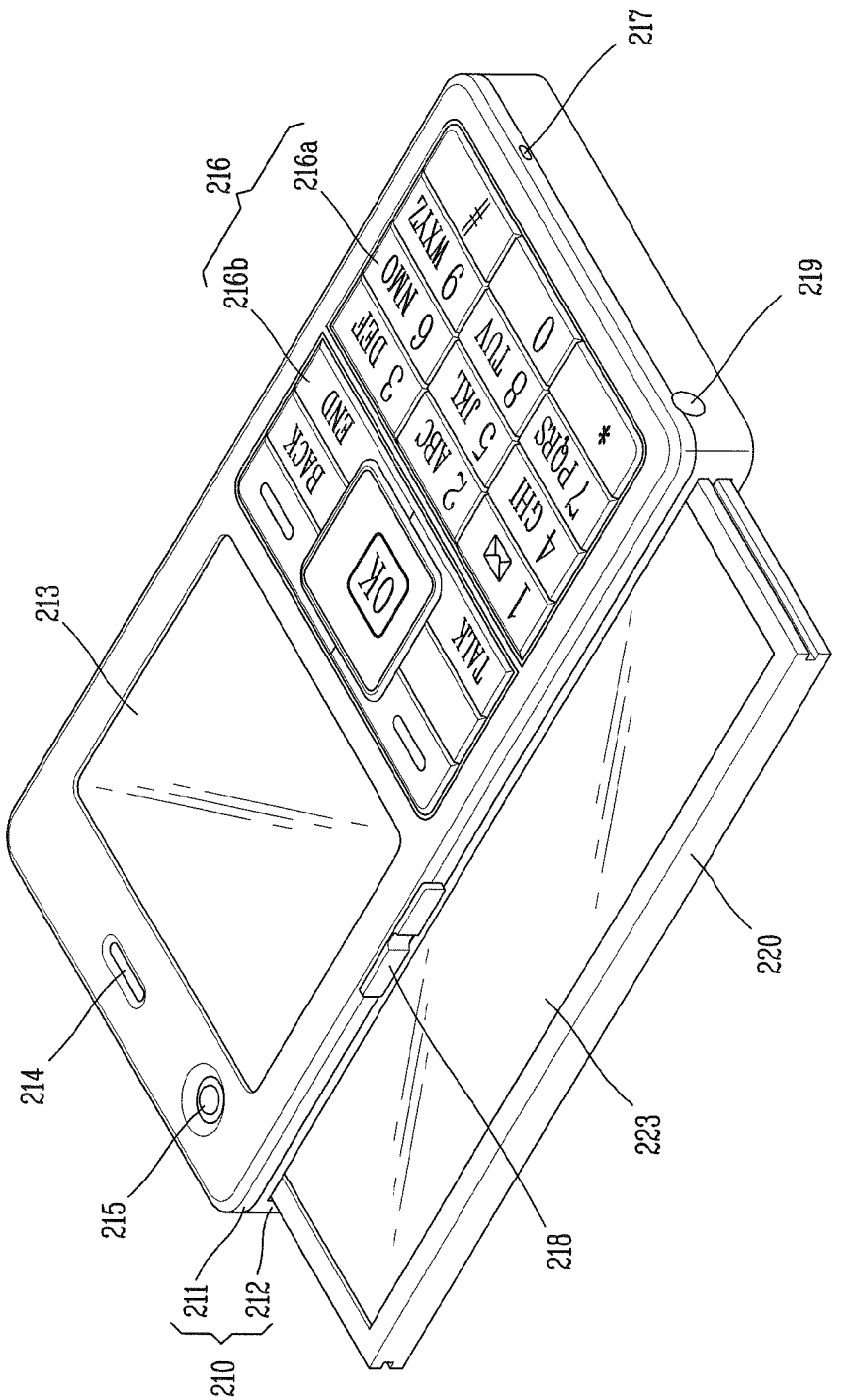

217
216
216a
216b
219
213
214
215
211
212
210
218
223
220
OK
BACK
END
TALK
1
2 ABC
3 DEF
4 GHI
5 JKL
6 MNO
7 PQRS
8 TUV
9 WXYZ
0
*
#

FIG. 9B

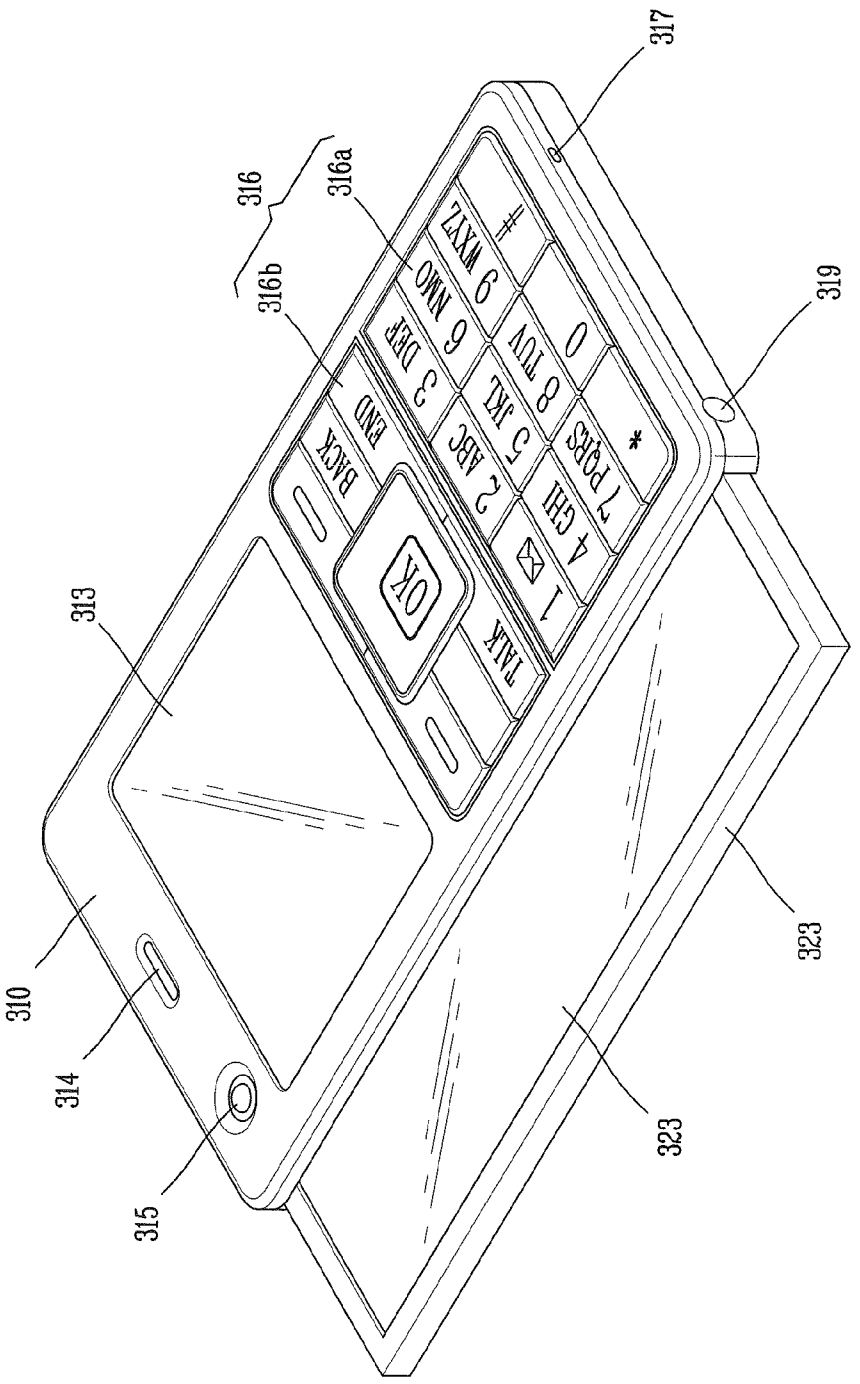
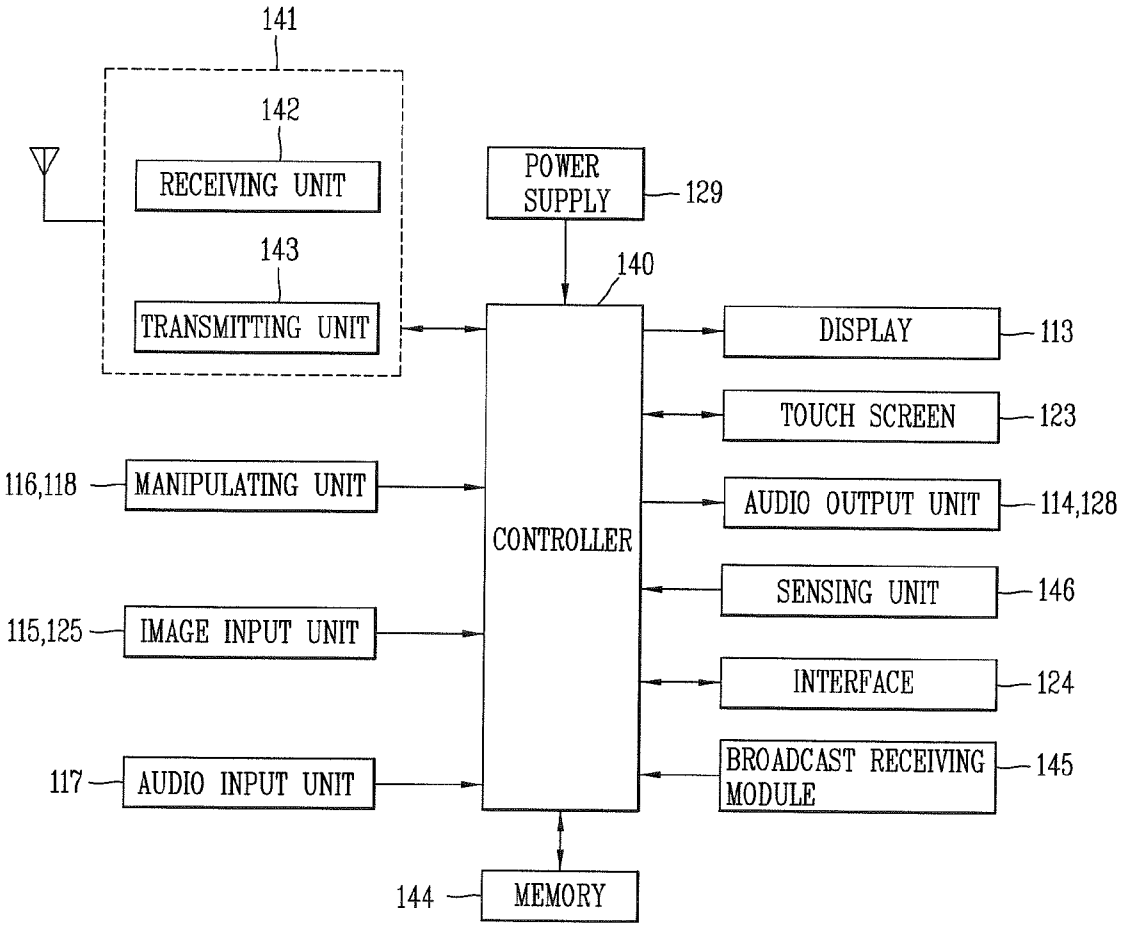

317
316
316a
316b
319
313
310
314
315
323
323
OK
BACK
END
TALK
1
2 ABC
3 DEF
4 GHI
5 JKL
6 MNO
7 PQRS
8 TUV
9 WXYZ
*
0
#

FIG. 10


141
142
RECEIVING UNIT
143
TRANSMITTING UNIT
POWER SUPPLY
129
140
CONTROLLER
DISPLAY
113
TOUCH SCREEN
123
AUDIO OUTPUT UNIT
114,128
SENSING UNIT
146
INTERFACE
124
BROADCAST RECEIVING MODULE
145
116,118
MANIPULATING UNIT
115,125
IMAGE INPUT UNIT
117
AUDIO INPUT UNIT
144
MEMORY

PORTABLE TERMINAL

CROSS REFERENCE TO RELATED APPLICATIONS

[0001] The present application claims priority to U.S. Provisional Application No. 60/952,658 on Jul. 30, 2007, the entire contents of which is hereby incorporated by reference in its entirety.

BACKGROUND OF THE INVENTION

[0002] 1. Field of the Invention

[0003] The present invention relates to a portable terminal having a touch screen for displaying visual information related to information to be displayed on a display.

[0004] 2. Background of the Invention

[0005] Portable terminals can be easily carried and have one or more of functions such as supporting voice calls and telephony calls, inputting and/or outputting information, storing data and the like.

[0006] As it becomes multifunctional, the portable terminal can be allowed to capture still images or moving images, play music or video files, play games, receive broadcast and the like, so as to be implemented as an integrated multimedia player.

[0007] Various attempts have been done for the multimedia devices by hardware or software in order to implement such complicated functions. For example, a user interface environment is provided in order for users to easily and conveniently retrieve or select functions.

[0008] Also, many users have their portable terminal to express his personality, and accordingly, various designs are required for the portable terminal.

[0009] As the enhancement of multimedia environment of the portable terminal and new designs therefor are required, a portable terminal having a convenient user interface environment and a new formation is needed.

SUMMARY OF THE INVENTION

[0010] Therefore, an object of the present invention is to provide a portable terminal having a convenient user interface environment and a new formation.

[0011] Another object of the present invention is to provide a portable terminal capable of extending an output region for visual information and utilizing various input manners as well as a typical communication function.

[0012] To achieve these and other advantages and in accordance with the purpose of the present invention, as embodied and broadly described herein, there is provided a portable terminal comprising: a first body having a keypad containing a plurality of keys arranged thereon and a display disposed in one direction for displaying information inputted via the keypad; and a second body slidably connected to the first body in a direction perpendicular to the one direction, and having a touch screen configured to be exposed to the outside when the portable terminal is converted from a closed state into an open state, wherein the touch screen is activated in the open state to display visual information related to information to be displayed on the display.

[0013] The touch screen may display first visual information inputtable in a touch-sensitive manner when the portable terminal is converted from the closed state into the open state.

[0014] As the first visual information is touch-sensitively inputted, second visual information related to the first visual information may be displayed on the display.

[0015] The first and second visual information may be controlled to have the same output direction.

[0016] When the portable terminal is converted from the closed state into the open sate, the first and second bodies intermittently make a relative movement to each other by a plurality of steps according to an exposed area of the touch screen. The touch screen may display different contents for each step.

[0017] The first visual information may be outputted as much as an amount corresponding to the exposed area of the touch screen for each step.

[0018] The display may further be provided with a touch-sensitive input unit allowing information input in a touch-sensitive manner, and may display third visual information which controls the first visual information by the touching manner.

[0019] The first body may be provided with a wiper for washing up the surface of the touch screen in response to the relative movement between the first and second bodies.

[0020] The foregoing and other objects, features, aspects and advantages of the present invention will become more apparent from the following detailed description of the present invention when taken in conjunction with the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0021] The accompanying drawings, which are included to provide a further understanding of the invention and are incorporated in and constitute a part of this specification, illustrate embodiments of the invention and together with the description serve to explain the principles of the invention.

[0022] In the drawings:

[0023] FIGS. **1** and **2** are perspective view of a front side of a portable terminal according to the present invention;

[0024] FIG. **3** is a perspective view of a rear side of the portable terminal according to the present invention;

[0025] FIGS. **4***a* to **4***c* are front views of the portable terminal showing sequential operational states thereof in accordance with a first embodiment of the present invention;

[0026] FIGS. **5***a* and **5***b* are front views of the portable terminal showing sequential operational states thereof in accordance with a second embodiment of the present invention;

[0027] FIGS. **6***a* to **6***c* are front views of the portable terminal showing sequential operational states thereof in accordance with a third embodiment of the present invention;

[0028] FIG. **7** is a front view of the portable terminal showing a certain operational state in accordance with a fourth embodiment of the present invention;

[0029] FIG. **8** is a front view of the portable terminal showing a certain operational state in accordance with a fifth embodiment of the present invention;

[0030] FIGS. **9***a* and **9***b* are perspective views of a portable terminal having first and second bodies coupled in a different structure; and

[0031] FIG. **10** is a block diagram of a portable terminal in accordance with one embodiment of the present invention.

DETAILED DESCRIPTION OF THE INVENTION

[0032] Description will now be given in detail of a portable terminal according to the present invention, with reference to the accompanying drawings.

[0033] FIGS. **1** and **2** are perspective views of a front side of a portable terminal in accordance with one embodiment of the present invention.

[0034] As shown in FIG. **1**, a first body **110** is positioned over the second body **120**, which is referred to as a closed position (closed state or closed configuration). As shown in FIG. **2**, the first body **100** exposes at least part of the second body **120**, which is referred to as an open position (open state or open configuration).

[0035] The portable terminal according to the present invention may typically operate in a call-communication mode in the closed configuration. Also, the portable terminal may operate in other operation modes in the open configuration.

[0036] A case (casing, housing, cover, etc.) forming an outer appearance of the first body **110** may be formed from a front case **111** and a rear case **112**. A space formed by the front case **111** and the rear case **112** may accommodate various components therein.

[0037] At least one intermediate case may further be disposed between the front case **111** and the rear case **112**.

[0038] Such cases may be formed by injection-molded synthetic resin, or may be formed using a metallic material such as stainless steel (STS) or titanium (Ti).

[0039] The first body **110**, in detail, the front case **111** is shown having a display **113**, a first audio output unit **114**, a first image input unit **115**, a keypad **116**, an audio input unit **117** and the like.

[0040] The display **113** may include a Liquid Crystal Display (LCD) module, an Organic Light Emitting Diodes (OLED) module or the like, which can visually represent information. The display **113** may further include a touch screen to allow the input of information by a user's touch.

[0041] The first audio output unit **114** may be implemented as a receiver or a speaker. The first image input unit **115** may be implemented as a camera module for capturing images or video for a user or the like.

[0042] The keypad **116** may receive a command for controlling operations of the portable terminal in accordance with the one embodiment of the present invention.

[0043] The keypad **116** may have a plurality of keys **116***a* and **116***b* arranged thereon. Such keys **116***a* and **116***b* may be implemented to be operated in a pushing or touching manner. The keys **116***a* and **116***b* may include first keys **116***a* having numbers, characters, symbols and the like to enable a user to input phone number or text in the closed state of the portable terminal, and second keys **116***b* to allow the input of commands such as START, END or the like.

[0044] The audio input unit **117** may be implemented, for example, as a microphone for receiving user's voice and other input sounds.

[0045] Side keys **118** may further be provided at a side surface of the first body **110**. The side keys **118** may perform specific functions, such as activating the first image input unit **115**, controlling a volume outputted from the audio output unit **114**.

[0046] Also, a broadcast signal receiving antenna **119** may be disposed at one side of the first body **110**. The antenna **119** may be configured to retract into the first body **110**.

[0047] The second body **120** may slide in a direction perpendicular to the arrangement direction of the display **113** and the keypad **116**. Similar to the first body **110**, the case of the second body **120** may be formed from a front case **121** and a rear case **122**.

[0048] The second body **120**, in detail, the front face of the front case **121**, may be provided with a touch screen **123**. When the portable terminal is converted from the open state into the closed state, the touch screen **123** is exposed to the outside. The touch screen **123** is also activated in the open state so as to display visual information related to visual information to be displayed on the display **113**.

[0049] At least one of the front case **121** or the rear case **122** may be provided with an interface **124**.

[0050] The interface **124** may interface the portable terminal according to the present invention and external devices so as to allow data exchange therebetween or the like. For example, the interface **124** may be at least one of a wired/wireless access terminal for earphones, a short-range communication port (e.g., IrDA port, wireless Lan port, and the like), and power supply terminals for supplying power to the portable terminal.

[0051] The interface **124** may be a card socket for accommodating an external card such as Subscriber Identification Module (SIM), User Identity Module (UIM), memory card for storing information, and the like.

[0052] The first body **110** may be formed further having a wiper **138** for washing up the surface of the touch screen **123** when the first body **110** slides relative to the second body **120**.

[0053] The wiper **138** is disposed at a rear surface of the first body **110**, namely, at the rear case **112**. The wiper **138** may be formed of cloth or a piece of cloth by which a window of the touch screen **123** is washed up. The wiper **138** may be installed in a direction parallel with the length direction of the first body **110**. The wiper **138** may be disposed to be biased at one side based upon the center of the first body **110**.

[0054] Also, the wiper **138** may be detachably installed at the first body **110** such that the wiper **138** can be washed up or foreign materials on the wiper **138** can be removed.

[0055] FIG. **3** is a perspective view of a rear side of the portable terminal of FIG. **1**.

[0056] As shown in FIG. **3**, a second image input unit **125** may further be disposed at the rear surface of the rear case **122** of the second body **120**. The second image input unit **125** faces a direction which is substantially opposite to a direction faced by the first image input unit **115** (see FIG. **1**). Also, the second image input unit **125** may be a camera having different pixels from those of the first image input unit **115**.

[0057] For example, the first image input unit **115** may operate with relatively lower pixels (lower resolution). Thus, the first image input unit **115** may be useful when a user can capture his face and send it to another party during a video call or the like. On the other hand, the second image input unit **125** may operate with relatively higher pixels (higher resolution) such that it can be useful for a user to obtain higher quality pictures for later use.

[0058] A flash **126** and a mirror **127** may be disposed adjacent to the second image input unit **125**. The flash **126** operates in conjunction with the second image input unit **125** when taking a picture using the second image input unit **125**.

The mirror **127** can cooperate with the second image input unit **125** to allow a user to photograph himself in a self-portrait mode.

[0059] A second audio output unit **128** and a power supply **129** may further be disposed at the rear case **122**.

[0060] The second audio output unit **128** can cooperate with the first audio output unit **114** (see FIG. **1**) to provide stereo output. Also, the second audio output unit **129** may be configured to operate as a speakerphone.

[0061] The power supply **129** is configured to provide power to the portable terminal. The power supply **129** may be in a form of a battery for charging, so as to be detachably coupled to the first or second body **110** or **120**.

[0062] A slide module for slidably connecting the first body **110** to the second body **120** may be disposed between the first body **110** and the second body **120**.

[0063] As described above, it has been described that the second image input unit **125** is disposed at the second body **120**; however, the present invention may not be limited to the configuration. It is also possible that one or more of those components (e.g., **125** to **128**), which have been described to be implemented on the second body **120**, such as the second image input unit **125**, will be implemented on the first body **110**, particularly, on the rear case **112**.

[0064] In this configuration, the component(s) disposed on the rear case **112** can be protected by the second body **120** in a closed state of the portable terminal. In addition, without the second image input unit **125**, the first image input unit **115** can be implemented to be rotatable so as to rotate up to a direction which the second image input unit **125** faces.

[0065] The portable terminal according to the present invention having described above can be used like a bar-type portable terminal in the closed state. That is, the portable terminal can perform functions associated with wireless communications (e.g., placing a call, sending text messages, and the like) in the closed state.

[0066] For example, in the closed state, a user can manipulate the first keys **116***a* on the keypad **116** to input a phone number. The user then manipulates at least one of the second keys **116***b* (e.g., a SEND button) so as to place a call. Also, the user can manipulate the first keys **116***a* and then manipulates the second keys **116***b* so as to send a text message.

[0067] The user can slide the first body **110** relative to the second body **120** in order to use additional functions (e.g., a multimedia function of playing music, video or the like), other than the above functions. Accordingly, the touch screen **123** is exposed to the exterior.

[0068] As the touch screen **123** is activated, the touch screen **123** displays visual information related to visual information to be displayed on the display **113**. Hereinafter, operational states of the display **113** and the touch screen **123** both applicable to the portable terminal according to the present invention will be described.

[0069] FIGS. **4***a* to **4***c* are front views of the portable terminal showing operational states thereof in accordance with a first embodiment of the present invention.

[0070] When the portable terminal is converted from the closed state into the open state, then the touch screen **123** displays first visual information **131***a* which can be inputted in a touch-sensitive manner. When the first visual information **131***a* is touched for input, then the display **113** displays second visual information **132***a* related to the inputted first visual information **131***a*.

[0071] The first visual information **131***a* may include a menu or list containing at least one selectable item. The second visual information **132***a* may include detailed information related to items selected by touching the first visual information **131***a*. FIGS. **4***a* to **4***c* show a list of calls received or sent (or a phone book), as one example of the menu or list.

[0072] As shown in FIG. **4***a*, when a user slides the first body **110** relative to the second body **120** to expose the touch screen to the outside, then the touch screen **123** displays the first visual information **131***a* indicating a list of calls currently received or sent. Here, the first visual information **131***a* may have, for example, a format of a list having another parties' names having talked with the user, or the like.

[0073] As shown in FIG. **4***b*, when any one item on the list of calls received or sent is selected by being touched or manipulating the first and second keys **116***a* and **116***b*, the display **113** displays second visual information **132***a* indicating detailed information related to the item selected. That is, the display **113** visually displays, for example, a phone number of another party having talked with the user, a time taken for the call continued, and the like.

[0074] In the state of FIG. **4***b*, if the user enters a TALK key **116***b* or touches the corresponding item, the portable terminal then places a call to another party of the corresponding item. During this process, the display **113** can newly display the second visual information **132***a* indicating the state of the call being connected as shown in FIG. **4***c*.

[0075] As shown in the state of FIG. **4***c*, the user slides the first body **110** relative to the second body **120** to the closed position so as to be able to speak to the another party.

[0076] As described above, the list of calls received or sent (or phone book) was provided as one example of the first visual information **131***a* displayed on the touch screen **123**. However, the first visual information **131***a* may also include various types of menus or lists, such as a mailing list containing messages sent, a list of music files or video files, and the like.

[0077] FIGS. **5***a* and **5***b* are front views of the portable terminal showing operational states thereof in accordance with a second embodiment of the present invention.

[0078] As shown in FIGS. **5***a* and **5***b*, when the first body **110** slides relative to the second body **120** to the open position, the first and second bodies **110** and **120** may be configured to intermittently move by a plurality of steps according to an exposed area of the touch screen **123**. As one example, the first and second bodies **110** and **120** may relatively move with each other by a first step of the touch screen **123** being partially exposed, and a second step of the touch screen **123** being entirely exposed.

[0079] The touch screen **123** may display different contents (information) for each step. The touch screen **123** may have an output screen with a size depending on the exposed area of the touch screen **123**.

[0080] When the first body **110** slides relative to the second body **120**, the touch screen **123** displays first visual information **131***b* in a format of menu or list containing selectable items, as similar to the previous embodiment, and the display **113** displays second visual information **132***b* indicating information related to the selected item.

[0081] As shown in FIG. **5***a*, when the first slides relative to the second body **120** to the first step, then the touch screen **123** displays first visual information **131***b* indicating a list of originators of messages currently received, and the display **113** displays second visual information **132***b* indicating

detailed information related to a message of an originator selected from the first visual information **131***b* in the touch-sensitive manner.

[0082] As shown in FIG. **5***b*, when the first body **110** further slides relative to the second body **120** to the second step, the first visual information **131***b* may be converted into a form of list having a plurality of columns. That is, upon the conversion from the first step into the second step, a column representing phone numbers of the originators may further be displayed.

[0083] In case of a list having more than 3 columns, at least one column of the plural columns may selectively be displayed depending on the exposed area of the touch screen **123**.

[0084] As such, the first visual information **131***b* may be outputted as much as corresponding to the exposed area of the touch screen **123** by each step of the relative movement between the first and second bodies **110** and **120**, which can be implemented in many variations as well as the previous embodiment.

[0085] FIGS. **6***a* to **6***c* are front views of the portable terminal showing operational states thereof in accordance with a third embodiment of the present invention.

[0086] As shown in FIG. **6***a*, when the portable terminal is open, the touch screen **123** displays first visual information **131***c* including at least one icon for executing operation modes of the portable terminal.

[0087] This embodiment implements that the first and second bodies **110** and **120** have relatively been moved to the first step having the touch screen **123** being partially exposed. However, it can equally be applied to the case where the first and second bodies **110** and **120** relatively move immediately to the state of the touch screen **123** being entirely exposed.

[0088] Upon touching one icon (e.g., "MESSAGE' icon) of a plurality of icons shown in FIG. **6***a*, then the display **113** displays second visual information **132***c* representing a screen (e.g., "text output screen") for executing a corresponding operation mode as shown in FIG. **6***b*.

[0089] Here, when the first slides relative to the second body **120** to the second step to thusly expose the entire of the touch screen **123**, then the first visual information **131***c* is converted into at least ones of character keys, number keys and functional keys touchable on the touch screen **123** for input.

[0090] The first visual information **131***c* may include either character keys having a plurality of alphabets aligned thereon as shown in FIG. **6***b*, or character keys arranged in a qwerty configuration.

[0091] As shown in FIG. **6***c*, the first visual information **131***c* may further include a text output window **133***c* on which text is outputted when keys are touched.

[0092] The display **113** outputs a text received from another user, and the text output window **133***c* of the touch screen **123** outputs a text outputted by entering (touching) keys. Under this state, if an "ENTER" key is inputted, the display **113** outputs such contents (text) displayed on the text output window **133***c*.

[0093] On the other hand, as shown in FIGS. **6***b* and **6***c*, the first and second visual information **131***c* and **132***c* are controlled to have the same output direction.

[0094] FIG. **7** is a front view of the portable terminal showing a certain operational state thereof in accordance with a fourth embodiment of the present invention.

[0095] First visual information **131***d* may include at lest one content of music, broadcast and video, and second visual information **132***d* may include information related to the contents.

[0096] For example, in a video reproducing mode, the touch screen **123** may display first visual information **131***d* representing an image of a playback file, and the display **113** may display second visual information **132***d* representing detailed information related to the file reproduced. The video reproducing mode may be set to be automatically executed when the portable terminal is converted from the closed state into the open state of exposing the entire of the touch screen **123**, or set to be executed by touching an icon for executing the mode at the first step.

[0097] The touch screen **123** may further include icons **134***d* for controlling volume and playback of video reproduced. Such icons **134***d* may operate in a touch-sensitive manner.

[0098] In the meantime, the display **113** may further be provided with a touch-sensitive input unit for receiving a touch input. In this case, the display **113** may further display third visual information **133***d* including an icon for controlling a video reproduction.

[0099] FIG. **8** is a front view of the portable terminal showing a certain operational state thereof in accordance with a fifth embodiment of the present invention.

[0100] This embodiment illustrates that the touch screen **123** is used for web-browsing. The touch screen **123** displays a webpage for web-browsing. On the webpage is displayed first visual information **131***e* which includes at least one of a cursor for inputting text information, a drag bar for moving up or down a screen displayed and a pointer for moving a cursor.

[0101] The display **113** may be implemented to be touch-sensitive as shown in the fourth embodiment. The display **113** may display third visual information **133***e* which includes control image for controlling the first visual information **131***e*. Here, the control image may be implemented to be operated in a touching or tapping manner. Alternatively, the control image can be operated in a scrolling or dragging manner.

[0102] The first visual information **131***e* may be controlled by touching, tapping, scrolling or dragging the touch screen **123**. Alternatively, the first visual information **131***e* may be controlled by touching, tapping, scrolling or dragging the third visual information **133***e*.

[0103] When one region of the touch screen **123** is touched upon the web-browsing, the display **113** may be configured to display an enlarged image for the corresponding region.

[0104] FIGS. **9***a* and **9***b* are perspective views of a portable terminal having first and second bodies coupled in a different structure.

[0105] The first and second bodies **110** and **120** configuring the portable terminal of the present invention may have a coupled structure as shown in FIGS. **9***a* and **9***b*.

[0106] As shown in FIG. **9***a*, a first body **210** has one side open, and may be configured in a box-like shape having an inner space. A second body **220** may retract into the first body **210**.

[0107] As shown in FIG. **9***b*, a first body **310** and a second body **320** may have a slidable structure such that each one surface thereof is overlapped. One side surface of the first body **310** extends so as to cover the side surface of the second body **320**.

[0108] The first body **210** and **310** and the second body **220** and **320** may include a rail groove and a sliding rail inserted into the rail groove so as to slidably couple the first and second bodies. The first and second bodies **210** and **220** and **310** and **320** may be connected to each other by a sliding module.

[0109] The portable terminals according to these embodiments may have the same configuration as the aforesaid portable terminal excluding the coupled structure between the first and second bodies. Such configuration has been described above, so as to be omitted. Here, the same configuration as that in the previous embodiment is given of similar reference numerals.

[0110] FIG. **10** is a block diagram of a portable terminal in accordance with one embodiment of the present invention.

[0111] As shown in FIG. **10**, a portable terminal according to the present invention may include a wireless communication module **141**, a manipulating unit **116**, image input units **115** and **125**, an audio input unit **117**, a display **113**, audio output units **114** and **128**, a sensing unit **146**, an interface **124**, a broadcast receiving module **145**, a memory **144**, a power supply **129**, and a controller **140**.

[0112] The controller **140** may control an overall operation of the portable terminal. For example, the controller **140** may perform related control and processing for a voice call communication, data communication, telephony communication and the like.

[0113] Also, the controller **140** may control operations of the portable terminal according to the present invention in addition to the typical control function. That is, when the first or second body **110** or **120** moves (slides) to the open position, the controller **140** may control such that the touch screen **123** can be activated and the touch screen **123** and the display **113** can display first to third information.

[0114] The wireless communication module **141** may transmit and receive wireless signals with a mobile communication base station via an antenna. For example, the wireless communication module **141** manages transmission and reception of audio data, text data, video data and control data under the control of the controller **140**. To this end, the wireless communication module **141** may include a transmitting unit **143** for modulating and transmitting a signal to be sent, and a receiving unit **142** for demodulating a signal received.

[0115] The manipulating unit **116** (See keypad in FIG. **1**) may provide key input data inputted by a user for controlling the operation of the terminal to the controller **140**. The manipulating unit **116** may be implemented as a dome switch, a touchpad (e.g., static pressure/capacitance), a jog wheel, a jog switch and the like.

[0116] The image input units **115** and **215** process image frames of still images or video obtained by an image sensor in a video call mode or a capturing mode. Such processed image frames are converted into image data displayable on the display **113** to be then outputted on the display **113**.

[0117] The image frames processed by the image input units **115** and **125** may be stored in the memory **144** by the control of the controller **140** or be sent to the exterior via the wireless communication module **141**.

[0118] The audio input unit **117** receives an external audio signal via a microphone while the portable terminal is in a particular mode, such as phone call mode, recording mode and voice recognition. This audio signal is processed and converted into digital data. Such processed digital data is converted into a data format transmittable to a mobile communication base station via the wireless communication module **141** when the portable terminal is in the phone call mode, and then outputted to the wireless communication module **141**. The processed digital data may be stored in the memory **144** in a recording mode.

[0119] The audio input unit **117** may include assorted noise removing algorithms to remove noise generated in the course of receiving the external audio signal.

[0120] The display **113** displays information processed in the portable terminal. For example, when the portable terminal is in a phone call mode, the display **113** displays User Interface (UI) or (Graphic User Interface (GUI) related to the call under the control of the controller **140**. When the portable terminal is in the video call mode or a capturing mode, the display **113** displays images captured or UI or GUI under the control of the controller **140**. The display **113** may be configured with including a touch screen. Such configuration permits the display **113** to function both as an output device and an input device.

[0121] The audio output units **114** and **128** may convert audio data received from the wireless communication module **141** or audio data stored in the memory **144** under the control of the controller **140** when the portable terminal is in the call-receiving mode, a phone call mode, a recording mode, a voice recognition mode, or a broadcast receiving mode. Such converted audio data is then outputted to the exterior.

[0122] The audio output units **114** and **128** also output an audio signal associated with a function (e.g., outputting a call receiving sound, a message receiving sound, or the like) performed in the portable terminal.

[0123] The sensing unit **146** provides status measurements of various aspects of the portable terminal. For instance, the sensing unit **146** may detect an open/close status of the portable terminal, a change of position of the portable terminal or a component of the portable terminal, a presence or absence of user contact with the portable terminal and the like, thereby generating a sensing signal for controlling the operation of the portable terminal. For example, the sensing unit **146** senses the open or closed state of the portable terminal, and output the sensed result to the controller **140**, such that the operation of the portable terminal can be controlled. Other examples include the sensing unit **140** sensing the presence or absence of power provided by the power supply **129**, the presence or absence of a coupling or other connection between the interface **124** and an external device.

[0124] The interface **124** is often implemented to couple the portable terminal with external devices. Typical external devices include wired/wireless headphones, external chargers, wired/wireless data ports, card sockets (e.g., memory card, SIM/UIM card or the like) and the like. The interface **124** may allow the portable terminal to receive data or power from external devices and transfer such data or power to each component inside the portable terminal, or transmit internal data of the portable terminal to external devices.

[0125] The memory **144** may store a program for the control and processing of the controller **140**, or temporarily store input/output data (e.g., phone book data, messages, still images, video or the like).

[0126] The memory **144** may store a program for controlling the operation of the portable terminal according to the present invention.

[0127] The memory **144** may include typically known hard disk, a card-type memory (e.g., SD or XD memory), a flash memory, RAM, ROM and the like.

[0128] The broadcast receiving module **145** may receive broadcast signals transmitted via satellites or terrestrial waves and convert such broadcasting signal into a broadcast data format displayable onto the touch screen **123** so as to output to the controller **140**. The broadcast receiving module **145** may also receive additional data associated with broadcasting (e.g., Electric Program Guide (EPG), channel list, or the like). The broadcast data converted in the broadcast receiving module **145** and the additional data may be stored in the memory **144**.

[0129] The power supply **129** provides power required by the various components for the portable terminal. The provided power may be internal power, external power, or combinations thereof.

[0130] As described above, the present invention provides a portable terminal which has a bar-type configuration in a closed state and a configuration of exposing a touch screen in an open state. Accordingly, a new design can be provided to the portable terminal and also more convenient multimedia environment can be supported therefor.

[0131] Also, the present invention allows second visual information in relation to first visual information displayed on the touch screen to be displayed on a display, so as to provide more convenient user interface environment.

[0132] The present invention also provides a wiper for washing up the surface of the touch screen, to allow fingerprints or other foreign materials on the touch screen made due to the relative movement between first and second bodies to be removed.

[0133] The aforementioned portable terminal may not be limitedly applied to the configurations and methods of the foregoing embodiments, but part or entire of each embodiment can optionally be combined to thusly implement many variations can be made from those embodiments.

[0134] As the present features may be embodied in several forms without departing from the characteristics thereof, it should also be understood that the above-described embodiments are not limited by any of the details of the foregoing description, unless otherwise specified, but rather should be construed broadly within its scope as defined in the appended claims, and therefore all changes and modifications that fall within the metes and bounds of the claims, or equivalents of such metes and bounds are therefore intended to be embraced by the appended claims.

What is claimed is:

1. A portable terminal comprising:

a first body having a keypad containing a plurality of keys arranged thereon and a display disposed in one direction for displaying information inputted via the keypad; and

a second body slidably connected to the first body in a direction perpendicular to the one direction, and having a touch screen configured to be exposed to the outside when the portable terminal is converted from a closed state into an open state,

wherein the touch screen is activated in the open state to display visual information related to information to be displayed on the display.

2. The terminal of claim **1**, wherein the keys contain numbers or characters thereon to allow the input of phone numbers or text messages in the closed state of the portable terminal.

3. The terminal of claim **1**, wherein the touch screen displays first visual information which is able to be inputted in a touch-sensitive manner when the portable terminal is converted from the closed into the open state.

4. The terminal of claim **3**, wherein the display displays second visual information related to the first visual information when touching the first visual information for input.

5. The terminal of claim **4**, wherein the first visual information includes a menu or list containing at least one selectable item, and the second visual information includes detailed information related to the at least one item.

6. The terminal of claim **4**, wherein the first visual information includes at least one icon for executing an operation mode of the portable terminal, and the second visual information includes a working image of the operation mode.

7. The terminal of claim **4**, wherein the first visual information includes at least ones of character keys, number keys and functional keys to be inputted, and the second visual information includes a text output screen representing text corresponding to the key input.

8. The terminal of claim **7**, wherein the first visual information further includes a text output window representing text corresponding to the key input.

9. The terminal of claim **4**, wherein the first visual information includes at least one content of music, broadcast and video, and the second visual information includes information related to the content.

10. The terminal of claim **4**, wherein the first visual information includes image information having one touchable region, and the second visual information includes an enlarged image of the one region.

11. The terminal of claim **4**, wherein the first and second visual information are controlled to have the same output direction.

12. The terminal of claim **3**, wherein the first and second bodies intermittently relatively move with each other by a plurality of steps according to an exposed area of the touch screen when the portable terminal is converted from the closed state into the open state, and the touch screen displays different information for each step.

13. The terminal of claim **12**, wherein the first visual information is outputted as much as an amount corresponding to the exposed area of the touch screen for each step.

14. The terminal of claim **13**, wherein the first visual information includes a list containing a plurality of columns, and at least one of the columns is optionally outputted according to the steps.

15. The terminal of claim **3**, wherein the display further includes a touch-sensitive input unit for allowing an information input in a touch-sensitive manner, and displaying third visual information to control the first visual information by the touching manner.

16. The terminal of claim **15**, wherein the first visual information includes a movable pointer or cursor, and the third visual information includes control image for controlling the movement of the pointer or cursor.

17. The terminal of claim **15**, wherein the first visual information includes playback image for reproducing video or music, and the third visual information includes an icon for controlling the reproduction of the video or music.

18. The terminal of claim **1**, wherein the first body includes a wiper configured to wash up a screen of the touch screen in response to the relative movement between the first and second bodies.

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