ABSTRACT OF THE DISCLOSURE

A METHOD OF DISPLAYING MENU IN A MOBILE COMMUNICATION TERMINAL

A method of displaying a menu in a mobile communication terminal and a mobile communication terminal are provided. The method of displaying menus in a mobile communication terminal comprises displaying a standby screen on a display of the mobile communication terminal. When one of a plurality of specific directions is selected through an input device of the mobile communication terminal, the method further comprises displaying at least a menu corresponding to the specific direction simultaneously with the standby screen.

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CLAIMS

1. A method of displaying menus in a mobile communication terminal (100), comprising:

displaying (S1100; S1600) a standby screen (300) on a display of the mobile communication terminal;

wherein, when one of a plurality of specific directions is selected (S1110; S1610) through an input device (10, 30) of the mobile communication terminal, the method further comprises:

displaying (S1120; S1630, S1650) at least a menu corresponding to the specific direction simultaneously with the standby screen.

2. The method of claim 1, wherein a menu corresponding to the specific direction is displayed at a position corresponding to said specific direction selected by the input device (10, 30) on the standby screen.

3. The method of claim 1, wherein a menu corresponding to said specific direction is displayed on the standby screen in a transparent window form.

4. The method of claim 1, wherein a menu corresponding to said specific direction comprises one menu selected in a group of menus related to icons displayed in an indicator area (320) on the standby screen, said group of menus consisting of a user setting menu, a communication service provider additional service menu, or a basic setting menu of the mobile communication terminal.

5. The method of claim 4, wherein an icon is visually modified when a cursor (750; 850) is positioned at the icon, and if said cursor is moved to an icon different from the current icon by moving the cursor, a menu related to the different icon is displayed.

6. The method of claim 1 comprising:

displaying a plurality of menus in a predetermined area on the standby screen corresponding to the selected direction; and

reducing, when one of the plurality of menus is selected, an area in which the plurality of menus is displayed; and

displaying a sub-menu (730; 870) of the selected menu.

7. The method of claim 6, wherein a space for displaying the sub-menu (730; 870) is secured by reducing the area in which the plurality of menus is displayed.

8. The method of claim 6, wherein each of the plurality of menus comprises an icon (830) and a menu name (840) corresponding thereto, and
when an area in which the plurality of menus is displayed is reduced, the menu name disappears and an icon of the selected menu is highlighted.

9. The method of claim 6, wherein each of the plurality of menus is arranged in a vertical direction on the standby screen, and
an icon and a menu name comprised in each menu are displayed in a horizontal direction on the standby screen.

10. The method of claim 1, comprising:
detecting a touch and drag operation of said specific direction in a touch input device (10).

11. The method of claim 10, wherein the displaying of at least a menu comprises sequentially displaying (S1630, S1650) a plurality of specific menu lists (1500; 1700,

1710) according to a distance of the touch and drag operation.

12. The method of claim 10, wherein the displaying of a menu list comprises sequentially displaying a plurality of identifiers for displaying each menu comprised in the menu list according to a distance of the touch and drag operation, and

the plurality of identifiers comprises an icon and a text.

13. The method of claim 10, further comprising displaying a specific graphic (1800) for notifying a start position of the touch and drag operation.

14. A mobile communication terminal (100) comprising:

a wireless transceiver (60) for performing a communication function of the mobile communication terminal;

a display (40);

an input device (10, 30) for selecting one of a plurality of specific directions; and

a controller (50) for displaying, when one of a plurality of specific directions is selected by the input device and when a standby screen (300) is displayed, at least a

menu corresponding to the selected specific direction simultaneously with the standby screen.

15. The mobile communication terminal of claim 14, wherein the controller controls the display of a menu corresponding to said specific direction at a position corresponding to the direction selected by the input device.

16. The mobile communication terminal of claim 14, wherein the controller controls the display of a menu corresponding to said specific direction on the standby screen in a transparent window form.

17. The mobile communication terminal of claim 14, wherein a menu corresponding to said specific direction comprises one menu selected in a group of menus related to icons displayed in an indicator area (320) on the standby screen, said group of menus consisting of a user setting menu, a communication service provider additional service menu, or a basic setting menu of the mobile communication terminal.

18. The mobile communication terminal of claim 17, wherein the controller controls the display of an icon to be visually modified when a cursor (750; 850) is positioned at the icon.

19. The mobile communication terminal of claim 14, wherein the specific direction is selected by selecting one of a plurality of direction keys provided in the input device (10).

20. The mobile communication terminal of claim 14 wherein:

when one direction is selected by the input device, the controller controls the display of a plurality of menus in a predetermined area on the standby screen corresponding to the selected direction; and

when one of a plurality of menus is selected by the input device, the controller controls reducing an area in which the plurality of menus is displayed, and displaying a sub-menu (730; 870) of the selected menu.

A METHOD OF DISPLAYING MENU IN A MOBILE COMMUNICATION TERMINAL

This document relates to a method of displaying a menu in a mobile communication terminal.

In a mobile communication terminal, if a specific button is selected on a standby screen, the standby screen disappears and a menu screen corresponding to the specific button is displayed.

When a menu list or a file list is displayed, device characteristics of the touch input device are not considered available. Methods and systems are needed to overcome the above-noted shortcomings.

To this effect, the invention relates to a method of displaying menus as recited in claim 1 and a corresponding terminal as recited in claim 14.

The method of displaying menus in a mobile communication terminal comprises displaying a standby screen on a display of the mobile communication terminal. When one of a plurality of specific directions is selected through an input device of the mobile communication terminal, the method further comprises displaying at least a menu

corresponding to the specific direction simultaneously with the standby screen.

The mobile communication terminal comprises a wireless transceiver for performing a communication function of the mobile communication terminal a display, an input device for selecting one of a plurality of specific directions and

a controller. When one of a plurality of specific directions is selected by the input device and when a standby screen is displayed, the controllers controls the display of at least a menu corresponding to the selected specific direction simultaneously with the standby screen.

Accordingly, the invention allows the simultaneous display of specific menus and of the standby screen. Of course, the invention can be combined with a traditional display of menus once the stand by screen is disabled.

Other embodiments and advantages of the invention are recited in the dependant claims.

The details of one or more implementations are set forth in the accompanying drawings and the description below. Like reference numerals represent corresponding parts throughout various figures.

FIG. 1 is a block diagram illustrating a configuration of a mobile communication terminal in an implementation;

FIG. 2 is a diagram illustrating a key input device and a display of FIG. 1;

FIGS. 3A to 3E illustrate screens for explaining a method of displaying a menu when an upward direction key is selected in a mobile communication terminal in an implementation;

FIGS. 4A and 4B illustrate screens for explaining a method of displaying a menu when a rightward direction key is selected in a mobile communication terminal in an implementation;

FIGS. 5A to 5D illustrate screens in which one or more sub-menus of FIG. 4B is selected;

FIGS. 6A and 6B illustrate screens for explaining a method of displaying a menu when a downward direction key is selected in a mobile communication terminal in an implementation;

FIGS. 7A to 7C illustrate screens for explaining a method of displaying a menu when a leftward direction key is selected in a mobile communication terminal in an implementation;

FIGS. 8A to 8C illustrate screens for explaining a method of displaying a menu in a mobile communication terminal in accordance with another implementation;

FIG. 9A illustrates an example of a screen in which a cursor is moved to a specific menu (e.g. a setting menu) as a user manipulates a direction key on the screen of FIG. 8C;

FIG. 9B illustrates an example of a case where a user presses a rightward direction key or a confirmation key of an input device in a state where a cursor is moved to a specific menu.

FIG. 9C illustrates an example of a screen in which a sub-menu disappears when a user presses a leftward direction key or a termination key in a state where a sub-menu is displayed.

FIG. 10 illustrates an example of another screen displayed when a rightward direction key is selected in a state where a setting menu list is displayed on a standby screen.

FIG. 11 is a flowchart illustrating a method of displaying a menu in a mobile communication terminal having a touch input device according with one implementation.

FIG. 12 illustrates an example of a standby screen displayed on a mobile communication terminal;

FIGS. 13 to 15 illustrate an example of a screen for displaying a menu list according to a touch and drag operation of a specific direction;

FIG. 16 is a flowchart illustrating a method of displaying a menu in a mobile communication terminal having a touch input device according to another implementation;

FIG. 17 illustrates an example of a screen for displaying a plurality of menu lists according to a drag distance in a touch operation; and

FIG. 18 illustrates an example of a screen for indicating a start position for a touch and drag operation to a user.

Hereinafter, implementations of this document will be described in detail with reference to the accompanying drawings.

Referring to FIG. 1, a mobile communication terminal 100 may comprise a touch input device 10, a memory 20, a key input device 30, a display 40, a controller 50, and a

wireless transceiver 60. The above-described elements may be connected by a bus 70.

The touch input device 100 is a device in which a user inputs various information or instruction with a touch method. The touch input device 100 comprises, for example, a touch screen or a touch pad.

The memory 20 comprises a program memory and a data memory. Programs for controlling a general operation of the mobile communication terminal 100 are stored in the program memory.

The key input device 30 comprises various buttons for inputting numeral and character information, function buttons for setting various functions, and a direction key for selecting a specific direction.

The display 40 may provide outputs various display information and various menu screens 100, and may comprise a Liquid Crystal Display (LCD) or an Organic Light Emitting Diode (OLED). Further, the display 40 can be embodied with a plurality of displays comprising an external display and an internal display.

The controller 50 controls a general operation of the mobile communication terminal 100. In this implementation, the controller 50 determines when a standby screen is displayed in the display 40, if a specific direction is

selected by the touch input device 10 or the key input device 30, to display a menu corresponding to the selected direction on the standby screen.

In this implementation, menus corresponding to the selected direction may comprise a menu related to an icon displayed in an indicator area, a 'my menu' set by the user, a communication provider additional service menu, and a basic setting menu, for example.

Referring to FIG. 2, a key input device 30 comprises four direction keys, i.e. an upward direction key 32, a rightward direction key 34, a downward direction key 36, a leftward direction key 38, and a confirmation (OK) button 31. In this implementation, the four direction keys are used to select a specific direction on a standby screen.

FIGS. 3A to 3E illustrate screens for explaining a method of displaying a menu when an upward motion or direction key is selected in a mobile communication terminal in an implementation.

First, referring to FIG. 3A, a standby screen 300 set by a user is displayed in the display 40 of the mobile communication terminal 100.

If the user selects the upward direction key 32 from the four direction keys provided in the key input device 30,

an icon 310 corresponding to an icon displayed on the upward direction key 32 disappears in the standby screen 300 while moving in an upward direction after being displayed around the center of the standby screen 300, as shown in FIG. 3B.

Thereafter, as shown in FIG. 3C, a pop-up menu window 340 related to an icon 330 displayed in the indicator area 320 is transparently displayed. In an implementation, when the user selects the upward direction key 32, the user can directly enter a menu related to the icon 330 displayed in the indicator area 320 on the standby screen 300.

Further, as a pop-up menu window 340 related to the icon 330 is transparently displayed on the standby screen 300, the preset standby screen 300 is not hidden by the pop-up menu window 340 related to the icon 330, whereby the user can directly enter a menu related to the icon 330 while viewing the standby screen 300 in a standby screen state.

In FIG. 3C, the icon 330 displayed in the indicator area 320 comprises a signal intensity icon 330a, a message notification icon 330b, a background music setting icon 330c, a reception mode setting icon 330d, a watch icon 330e, and a battery residual quantity display icon 300f, for example. In addition to the above-described icons,

various icons can be displayed in the indicator area 320 on the standby screen 300, depending on implementation.

In general, the signal intensity icon 330a, the reception mode setting icon 330d, the watch icon 330e, and the battery residual quantity display icon 330f may be displayed in the indicator area 320. In one embodiment, the message notification icon 330b is displayed in the indicator area 320 if a message arrives, and the background music setting icon 330d is displayed in the indicator area 320 if music is being played.

In FIG. 3C, the pop-up menu window 340 related to the message notification icon 330b is transparently displayed. For example, a cursor is positioned at a Short Message Service (SMS) menu, which is a first sub-menu of the pop-up menu window 340 related to the message notification icon 330b.

Further, the message notification icon 330b in the pop-up menu window 340 may be displayed highlighted in a color different than the icons displayed in the indicator area 320. The user may select a sub-menu among sub-menus in the pop-up menu window 340 by moving the cursor using the upward direction key 32 and the downward direction key 36.

Depending on implementation, the message notification icon 330b may be displayed in a size different from that of other icons or an icon related to a currently displayed menu may be displayed to be easily recognized by the user with other various methods.

Referring to FIG. 3C, when the pop-up menu window 340 related to the message notification icon 330b is displayed a cursor may be positioned at a sub-menu of a top position among sub-menus of the pop-up menu window 340. If the user clicks the rightward direction key 34, the pop-up menu window 340 related to the background music setting icon 330c positioned at the direct right side of the

at the direct right side of the message notification icon 330b is transparently displayed, as shown in FIG. 3D.

In one embodiment, a cursor is moved to a first sub-menu in the pop-up menu window 340 related to the background music icon 330c, the background music icon 330c may be displayed in a color different than those of other icons. If the user clicks the leftward direction key 38 shown in FIG. 3C, a pop-up menu window 340 related to the signal intensity icon 330a positioned at the direct left side of the message notification icon 330b is transparently displayed, as shown in FIG. 3E. A cursor may not exist in

a sub-menu in the pop-up menu window 340 related to the signal intensity icon 330a, and thus the user may not be able to select corresponding sub-menus. This may be true when a pop-up menu window related to the battery residual quantity display icon 330f is displayed.

When the standby screen 300 is displayed in this way, if the user selects the upward direction key 32, the pop-up menu window 340 related to the icon 330 displayed in the indicator area 320 is transparently displayed. Therefore, the user can enter menus related to the icon 330 displayed in the indicator area 320 when the standby screen 300 is displayed without separate menu manipulation.

FIGS. 4A and 4B illustrate sample screens for explaining a method of displaying a menu when a rightward direction key is selected in a mobile communication terminal in an implementation.

First, when the standby screen 300 is displayed, as in FIG. 3A, if the user selects the rightward direction key 34 provided in the key input device 30, an icon 410 corresponding to an icon displayed in the rightward direction key 34 disappears on the standby screen 300 while moving to the right side after being displayed

around the center of the standby screen 300, as shown in FIG. 4A.

Thereafter, a user menu 420 as shown in FIG. 4B is displayed at the right side of the standby screen 300. The user menu 420 comprises sub-menus set by the user in order for the user to easily enter a menu in which the user frequently uses. In FIG. 4B, the user menu 420 may comprise sub-menus such as a brightness setting menu 420a, a standby screen setting menu 420b, an alarm setting menu 420c, a bell sound setting menu 420d, an initial value setting menu 420e, and a camera menu 420f. FIGS. 5A to 5D illustrate screens in which each of sub-menus of FIG. 4B are selected.

Referring to FIG. 5A, when the user selects the brightness setting menu 420a, a brightness setting window 510 for setting brightness is displayed in a transparent window, for example, at the left side of the brightness setting menu 420a. The user can set brightness of various screens displayed on the standby screen 300 using the brightness setting window 510.

Referring to FIG. 5B, when the user selects the standby screen setting menu 420b, a standby screen setting window 520 for setting a standby screen is displayed in a

transparent window, for example, at the left side of the standby screen setting menu 420b.

Standby screens that can be set are provided in a thumbnail image form on the standby screen setting window 520, and the user can move a cursor and set a desired standby screen by manipulating the leftward direction key 38 and the rightward direction key 34. In one embodiment, when the cursor is moved to a specific thumbnail image, a screen corresponding thereto is set as a standby screen. In this implementation, it can be seen that a screen corresponding to a second thumbnail image 530 where the cursor is positioned is set as a standby screen. FIG. 5C shows a case where the user sets a corresponding image as a standby screen by pressing the OK button 31 of the input device 30 in a state of FIG. 5B.

Referring to FIG. 5D, when the user selects the alarm setting menu 420c, an alarm setting window 540 for setting an alarm is displayed in a transparent window, for example, at the left side of the alarm setting menu 420c. The user can easily set an alarm on the standby screen 300 by using the alarm setting window 540.

FIGS. 6A and 6B illustrate screens for explaining a method of displaying a menu when a downward direction key

is selected in a mobile communication terminal in an implementation.

First, as in FIG. 3A, when the standby screen 300 is displayed, if the user selects the downward direction key 36 of a plurality of direction keys provided in the key input device 30, an icon 610 corresponding to an icon displayed in the downward direction key 36 disappears while moving to a lower direction after being displayed around the center of the standby screen 300, as shown in FIG. 6A.

Thereafter, a communication service provider additional service menu 620 shown in FIG. 6B is transparently displayed on the standby screen 300. In this implementation, a communication service provider is 'LG telecom', however an additional service menu provided by various communication service providers can be included. In this implementation, the additional service menu comprises a 'music service', a 'directory service', a 'bank service' and may comprise other various additional services.

In this implementation, when the standby screen 300 is displayed, if the user selects a downward direction through the key input device 30, a communication service provider additional service menu in which various

additional service provided by a communication service provider are included is displayed on the standby screen 300. Therefore, the user can confirm and select additional services which the communication service provider provides on the standby screen 300 through simple manipulation.

FIGS. 7A to 7C illustrate screens for explaining a method of displaying a menu when a leftward direction key is selected in a mobile communication terminal in implementation.

First, when the standby screen 300 is displayed on the display 40, as in FIG. 3A, if the user selects the leftward direction key 38 of a plurality of direction keys provided in the key input device 30, an icon 710 corresponding to an icon displayed in the leftward direction key 38 disappears while moving to left after being displayed around the center of the standby screen 300, as shown in FIG. 7A.

Thereafter, a basic setting menu list 720 of the mobile communication terminal 100 shown in FIG. 7B is displayed in a transparent window form in a left area of the standby screen 300. The basic setting menu list 720 comprises a plurality of menus, and each menu comprises an icon 730 and a menu name 740 corresponding thereto. A

plurality of menus constituting the basic setting menu list 720 are arranged in a vertical direction, and the icon 730 and the menu name 740 are arranged in a horizontal direction. In this implementation, the user can select a specific menu while viewing the standby screen 300 without entering a separate menu screen.

In an "Ez service" menu, which is a menu positioned at a top position in the basic setting menu list 720, a cursor 750 for selecting a specific menu is positioned and an arrow 760 indicating a right direction is displayed. By moving the cursor 750 to a desired menu through manipulating the upward direction key 32 and the downward direction key 36 of the key input device 30, the user can select a corresponding menu.

If the user presses the rightward direction key 34 or the confirmation key 31 after moving the cursor 750 to one menu of the basic setting menu list 720 shown in FIG. 7B, a width of the basic setting menu list 720 is reduced, as shown in FIG. 7C, and sub-menus 730 of the selected menu are displayed in a transparent window form at the right side of the basic setting menu list 720.

In this case, while the sub-menu 730 is displayed, a width of the basic setting menu list 720 is reduced and icons related to the basic setting menu list 720 are

displayed. In more detail, the menu name disappears in the basic setting menu list 720, and the icon 730 corresponding to the selected menu is highlighted, and thus it can be seen that a corresponding menu item is selected.

In this implementation, when the standby screen 300 is displayed, if the user selects the leftward direction key 38, a setting menu of the mobile communication terminal 100 is transparently displayed on the standby screen 300, for example. Therefore, the user can interact with the setting menu while viewing a standby screen in a standby state.

Further, in this implementation, by reducing the width of the basic setting menu list 720, a space for displaying the sub-menu 730 on the standby screen 300 can be secured.

In the above-described implementation, menus corresponding to a direction selected by the user are transparently displayed on the standby screen 300. Please note, however that this is an illustration, and menus displayed on the standby screen 300 can be embodied in a translucent form or an opaque form, depending on implementation

In one embodiment, as a menu corresponding to a direction is selected by the user, a menu related to an icon displayed in the indicator area 320, a 'my menu' set by the user, a communication service provider additional service menu, and a basic setting menu are displayed. Please note however that this is an exemplary illustration, and various menus can be displayed, depending on implementation.

In one embodiment, the user selects a specific direction using four direction keys provided in the key input device 30. Please note however that the invention is not limited thereto, and the user can select a direction using any input device that can select a direction, such as an upper and lower direction side key, an 8-way navigation key, a joy stick, a touch pad, a touch screen, etc. That is, if the input device has a function of selecting a direction, the input device can be applied to the implementation regardless of the form or quantity.

FIGS. 8A to 8C illustrate screens for explaining a method of displaying a menu in a mobile communication terminal in another implementation.

Referring to FIG. 8A, the standby screen 300 set by the user is displayed in the display 40.

If the user selects the leftward direction key 38 of four direction keys provided in the key input device 30, the icon 310 corresponding to an icon displayed in the leftward direction key 38 disappears on the standby screen 300 while moving to a left direction after being displayed around the center of the standby screen 300, as shown in FIG. 8B.

Thereafter, a basic setting menu list 820 of the mobile communication terminal 100 shown in FIG. 8C is displayed in a left area of the standby screen 300. The basic setting menu list 820 comprises a plurality of menus, and each menu comprises an icon 830 and a menu name 840 corresponding thereto. A plurality of menus constituting the basic setting menu list 820 is arranged in a vertical direction, and the icon 830 and the menu name 840 are arranged in a horizontal direction.

A cursor 850 is positioned at one (e.g. Ez service menu) of menus of the basic setting menu list 820, and an arrow 860 indicating a right direction is displayed. The user can vertically move the cursor 850 by manipulating the upward direction key 32 and the downward direction key 36 of the key input device 30.

That is, by manipulating the upward direction key 32 or the downward direction key 36, the user can move the

cursor 850 to a desired menu and thus a corresponding menu can be selected.

FIG. 9A illustrates an example of a screen in which a cursor 850 is moved to a specific menu (e.g. a setting menu) when the user manipulates a direction key on the screen shown in FIG. 8C.

When the cursor 850 is moved to the specific menu, if the user presses the leftward direction key 38 or a termination key, the basic setting menu list 820 disappears, and the screen returns to an initial standby screen state shown in FIG. 8A.

FIG. 9B illustrates an example of a case where a user presses a rightward direction key 34 or a confirmation key 31 of the key input device 30 in a state where a cursor is moved to a specific menu, as in FIG. 9A.

As shown in FIG. 9A, when the cursor is moved to a setting menu, if the user presses the rightward direction key 34 or the confirmation key 31, a width of the basic setting menu list 820 reduces, and a sub-menu 870 of the setting menu is displayed at the right side of the basic setting menu list 820, as shown in FIG. 9B.

In more detail, when the menu name 840 disappears in the basic setting menu list 820, and the icon 830

corresponding to the selected setting menu is highlighted, it can be seen that a corresponding menu is selected.

By reducing and displaying a width of the basic setting menu list 820, a space for displaying the sub-menu 870 on the standby screen 300 can be implemented.

Further, when the rightward direction key 34 corresponding to a direction of the arrow 860 is pressed, a specific menu is selected and a sub-menu of the selected menu is displayed, whereby a menu interface is provided to the user.

When the sub-menu 870 is displayed, as in FIG. 9B, if the user presses the leftward direction key 38 or the termination key, the screen returns to a previous state as shown in FIG. 8C or returns to an initial standby screen, as shown in FIG. 8A.

Further, when the sub-menu is displayed, as in FIG. 9B, if the user presses the leftward direction key 38 or the termination key, the sub-menu 870 may disappear in the standby screen 300 and the basic setting menu list 820 may be displayed.

FIG. 9C illustrates an example of a screen in which a sub-menu disappears when a user presses a leftward direction key 38 or a termination key in a state where the sub-menu is displayed, as in FIG. 9B.

As described above, when the sub-menu 870 is displayed, if the user presses the leftward direction key 38, the screen returns to a previous state, where a menu interface is provided to the user.

FIG. 10 illustrates an example of another screen displayed when a rightward direction key 34 is selected in a state where a basic setting menu list 820 is displayed on a standby screen 300, as in FIG. 8C.

Referring to FIG. 10, when the basic setting menu list 820 of FIG. 8C is displayed, if the user presses the rightward direction key 34, the user setting menu 420 is displayed in a right area of the standby screen 300.

Further, the cursor 850 positioned at a menu item of the basic setting menu list 820 is moved to the first menu 420a of the user setting menu 420. As the cursor 850 is moved to the user setting menu 420, the user can select one of the user setting menu 420 by manipulating the upward direction key 32 or the downward direction key 36.

Further, when the cursor 850 is positioned at the first menu 420a of the user setting menu 420, as in FIG. 10, if the user presses the upward direction key 32, the cursor 850 is moved to the camera menu 420f, for example, positioned at the bottom of the user setting menu 420 or

to a setting menu positioned at the end of the basic setting menu list 820.

In an implementation, when the user first selects the leftward direction key 38 on the standby screen 300, the basic setting menu list 820 is displayed in the left area of the standby screen 300. Please note however that the above-described implementations can be equally applied to a case where the user setting menu 420 is displayed in the right area of the standby screen 300 as the user selects the rightward direction key 34 in a standby screen 300.

FIG. 11 is a flowchart illustrating a method of displaying a menu in a mobile communication terminal having a touch input device. Hereinafter, it is assumed that the touch input device 10 is a touch screen 10.

The controller 50 controls to display the standby screen 300 in the display 40 of the mobile communication terminal 100 (S1100).

FIG. 12 illustrates an example in which a standby screen is displayed in a display of a mobile communication terminal.

The controller 50 detects a touch and drag operation of a specific direction on the touch screen 10 (S1110). The

touch and drag operation indicates movement of an external object on the touch screen 10.

As the touch and drag operation is detected, the controller 50 controls to display an item list matched to the specific direction in the display 40 (S1120). The item list comprises, for example, a menu list or a file list. The memory 20 stores matching information between the specific direction and the item list. The memory 20 can store at least one matching information. For example, a menu list A comprising menu a, menu b, menu c, and menu d may be matched to a right direction. Further, for example, a menu list B comprising menu e, menu f, menu g, menu h, and menu i may be matched to a left direction.

The controller 50 controls to perform step S1120 using the matching information stored in the memory 20. The user can set the matching information. For example, the user can set a menu list having a plurality of specific menus to a right direction.

FIGS. 13 to 15 illustrate an example of a screen for displaying a menu list according to a touch and drag operation of a specific direction.

For example, referring to FIGS. 13a and b, if the user touches a specific position of the touch screen 10 and drags the touch in a left direction a menu list 1300

matched to a left direction is displayed in the display 40.

Further, for example, referring to FIGS. 14a and b, if the user touches screen 10 and drags the touch in an upward direction, a menu list 1400 matched to the upward direction is displayed in the display 40. Further, for example, referring to FIGS. 15a and b, if the user touches screen 10 and drags the touch in a rightward direction, a menu list 1500 matched to a right direction is displayed in the display 40.

A position in which the item list is displayed in the display 40 can be preset. For example, referring to FIGS. 13 to 15, a menu list matched to a left direction is set to be displayed at the right side of the display 40 (FIG. 13(b)), a menu list matched to a upward direction is set to be displayed at a lower end of the display 40 (FIG. 14(b)), a menu list matched to a right direction is set to be displayed at the left side of the display 40 (FIG. 15(b)). The memory 20 can store information about a position in which the item list is displayed.

FIG. 16 is a flowchart illustrating a method of displaying a menu in a mobile communication terminal having a touch input device in another implementation. In

this implementation, it is assumed that the touch input device 10 is a touch screen 10.

The controller 50 controls to display the standby screen 300 in the display 40 of the mobile communication terminal 100 (S1600). Step S1600 corresponds to step S1100 of FIG. 11.

The controller 50 detects a touch and drag operation of a specific direction in the touch screen 10 (S1610). Step S1610 corresponds to step S1110 of FIG. 11.

The controller 50 controls to sequentially display a plurality of specific menu lists according to a distance of the detected touch and drag operation.

The controller 50 determines whether a drag distance of the detected touch and drag operation is a first distance or more (S1620). If a drag distance of the detected touch and drag operation is a first distance or more, the controller 50 controls to display a first menu list matched to the specific direction (S1630).

The controller 50 determines whether a drag distance of the detected touch and drag operation is a second distance or more (S1640). If a drag distance of the detected touch and drag operation is a second distance or more, the controller 50 controls to display a second menu

list matched to the specific direction (S1650). The second distance is longer than the first distance.

FIG. 17 illustrates an example of a screen for displaying a plurality of menu lists according to a drag distance of a touch operation. For example, if a drag distance of the detected touch and drag operation reaches a distance d1, the controller 50 controls to display a first menu list 1700 in the display 40. If a touch operation dragged by the distance d1 reaches a distance d2, the controller 50 controls to display a second menu list 1710 in the display 40.

As shown in FIG. 17, the second menu list 1710 may be displayed together with the first menu list 1700. For example, when a drag distance of the touch operation reaches the distance d1, the first menu list 1700 is displayed. If the drag distance of the touch operation reaches the distance d2, the first menu list 1700 disappears and the second menu list 1710 may be displayed. The first menu list 1700 and the second menu list 1710 may be included in the same menu. In this case, the first menu list 1700 and the second menu list 1710 can comprise different identifiers displaying the same menu. For example, the first menu list may comprise menus displayed

with an icon, and the second menu list may comprise menus displayed with a text.

Further, the first menu list 1700 and the second menu list 1710 may comprise different menus.

In the above-described implementation, only a case where the first menu list 1700 and the second menu list 1710 are displayed according to a drag distance of a touch operation is displayed, however this implementation is not to be construed as limiting the scope of the invention to the disclosed exemplary embodiments. That is, in other implementation, a plurality of menu lists can be sequentially displayed according to a drag distance of the touch operation.

For example, the controller 50 controls to display a different specific menu list in the display 40 according to a distance of the touch and drag operation. Referring to FIG. 17, if the user drags the touch screen 10 by a distance longer than or equal to the distance d1 and shorter than the distance d2, the first menu list 1700 is displayed, and if the user drags the touch screen 10 by a distance longer than or equal to the distance d2, the second menu list 1710 is displayed. In this case, if the user drags by the distance d2 or more, the first menu list 1700 is not displayed. That is, if the touch and

drag operation of the user is completed, the controller 50 determines a distance of the touch and drag operation, whereby a specific menu list corresponding to the distance can be displayed in the display 40.

In the above-described implementations, if the touch and drag operation of a specific direction is performed in the touch input device 10, an identifier for notifying the user that an item list matched to the specific direction is displayed in the display 40 can be displayed in the display 40. The identifier may be graphical in form, such as an icon. For example, the identifier may be a specific icon for notifying a start position of the touch and drag operation.

FIG. 18 illustrates an example of a screen for displaying a graphical display for notifying a start position of a touch and drag operation to a user. For example, referring to FIG. 18(a), if the user drags in a right direction after touching the screen, a graphical shadow 1800 is displayed in the display 40, and the menu list 1500 shown in FIG. 15(b) can be displayed in the display 40. In this case, as the user drags the graphic shadow 1800, the menu list 1500 can be displayed along the dragged graphic 1800.

Further, for example, referring to FIG. 18(b), if the user touch drags to the left, the menu list 1500 shown in FIG. 15(b) can be displayed in the display 40. In this case, as the user may press the graphic 1800 with a finger, the graphic 1800 gradually disappears in the display 40, and the menu list 1500 can be displayed as emerging from the left side of the display 40 while the graphic 1800 disappears in the display 40.

Other features will be apparent from the description and drawings, and from the claims.

Designation of inventor

User reference: NSL/080066/BLO
Application No:

	Inventor	
	Name:	CHO Hwi Mun
	Address:	c/o LG ELECTRONICS INC.IP GROUP 60-39, Kasan-dong, Kumchon-gu SEOUL 153-801 Republic of Korea
	The applicant has acquired the right to the European patent:	As employer

Designation of inventor

User reference: NSL/080066/BLO
Application No:

	Inventor	
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	The applicant has acquired the right to the European patent:	As employer

Designation of inventor

User reference: NSL/080066/BLO
Application No:

	Inventor	
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	Address:	c/o LG ELECTRONICS INC. IP GROUP 60-39, Kasan-dong, Kumchon-gu SEOUL 153-801 Republic of Korea
	The applicant has acquired the right to the European patent:	As employer

Designation of inventor

User reference: NSL/080066/BLO
Application No:

	Inventor	
	Name:	AHN Hye Sang
	Address:	c/o LG ELECTRONICS INC.IP GROUP 60-39, Kasan-dong, Kumchon-gu SEOUL 153-801 Republic of Korea
	The applicant has acquired the right to the European patent:	As employer

Designation of inventor

User reference: NSL/080066/BLO
Application No:

	Inventor	
	Name:	PARK Jun Serk
	Address:	c/o LG ELECTRONICS INC.IP GROUP 60-39, Kasan-dong, Kumchon-gu SEOUL 153-801 Republic of Korea
	The applicant has acquired the right to the European patent:	As employer

FIG. 1

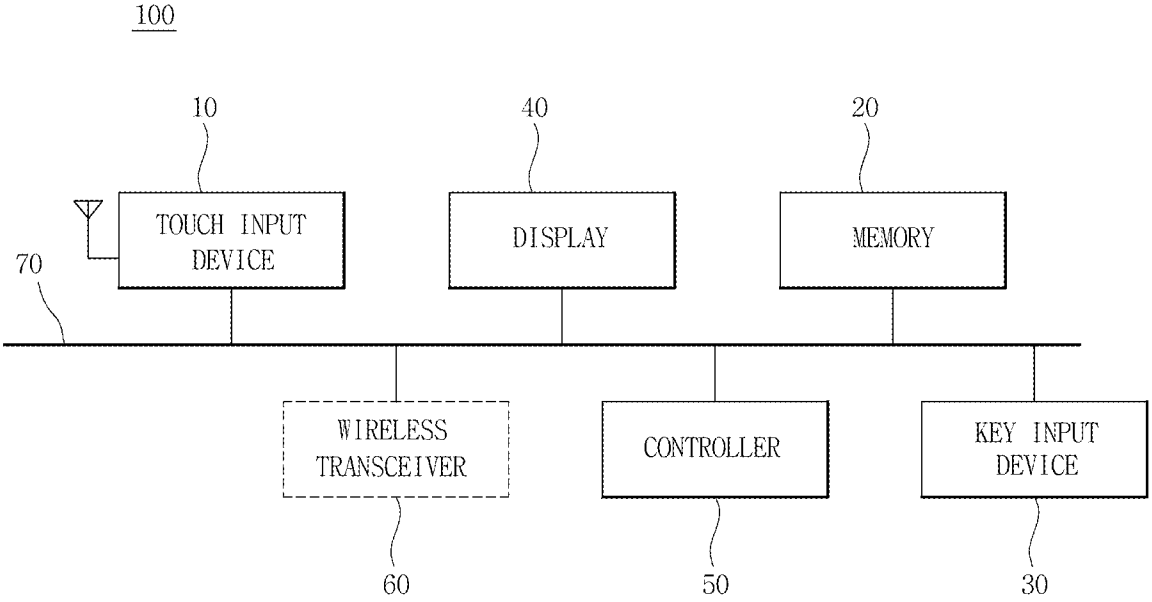

100
10
40
20
TOUCH INPUT DEVICE
DISPLAY
MEMORY
70
WIRELESS TRANSCEIVER
CONTROLLER
KEY INPUT DEVICE
60
50
30

FIG. 2

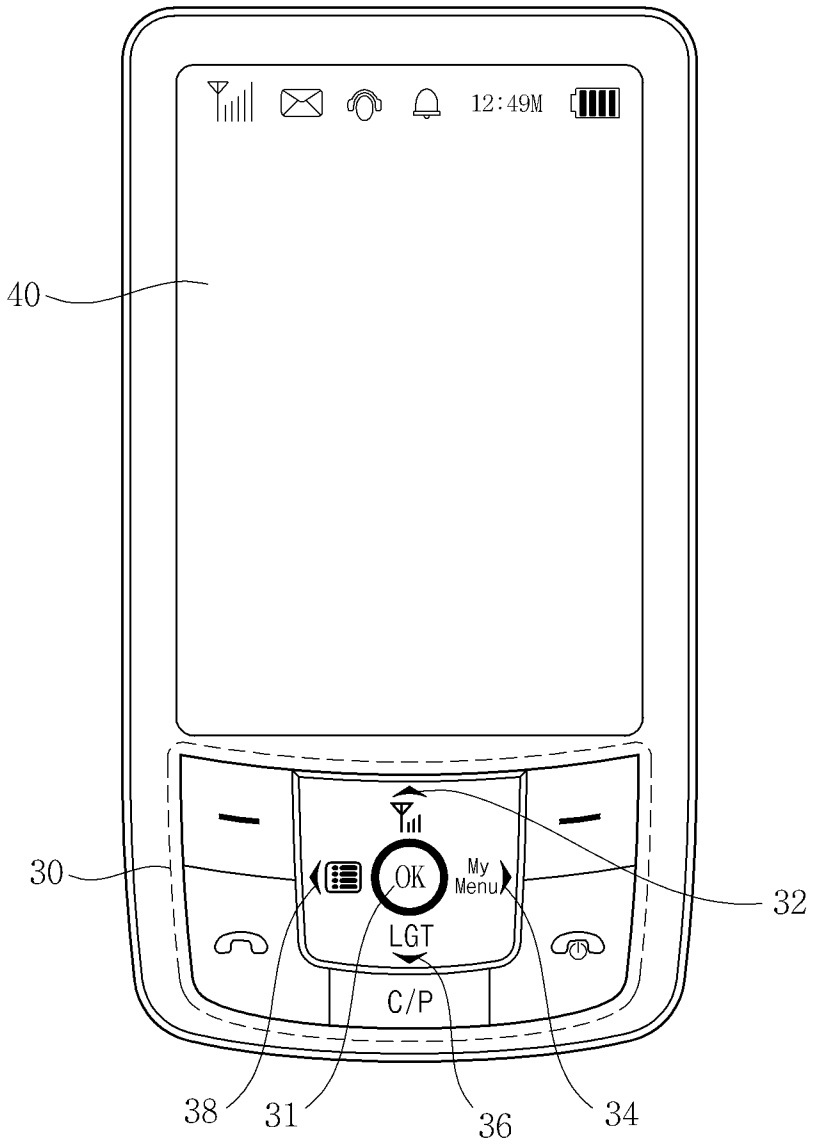


FIG. 3A

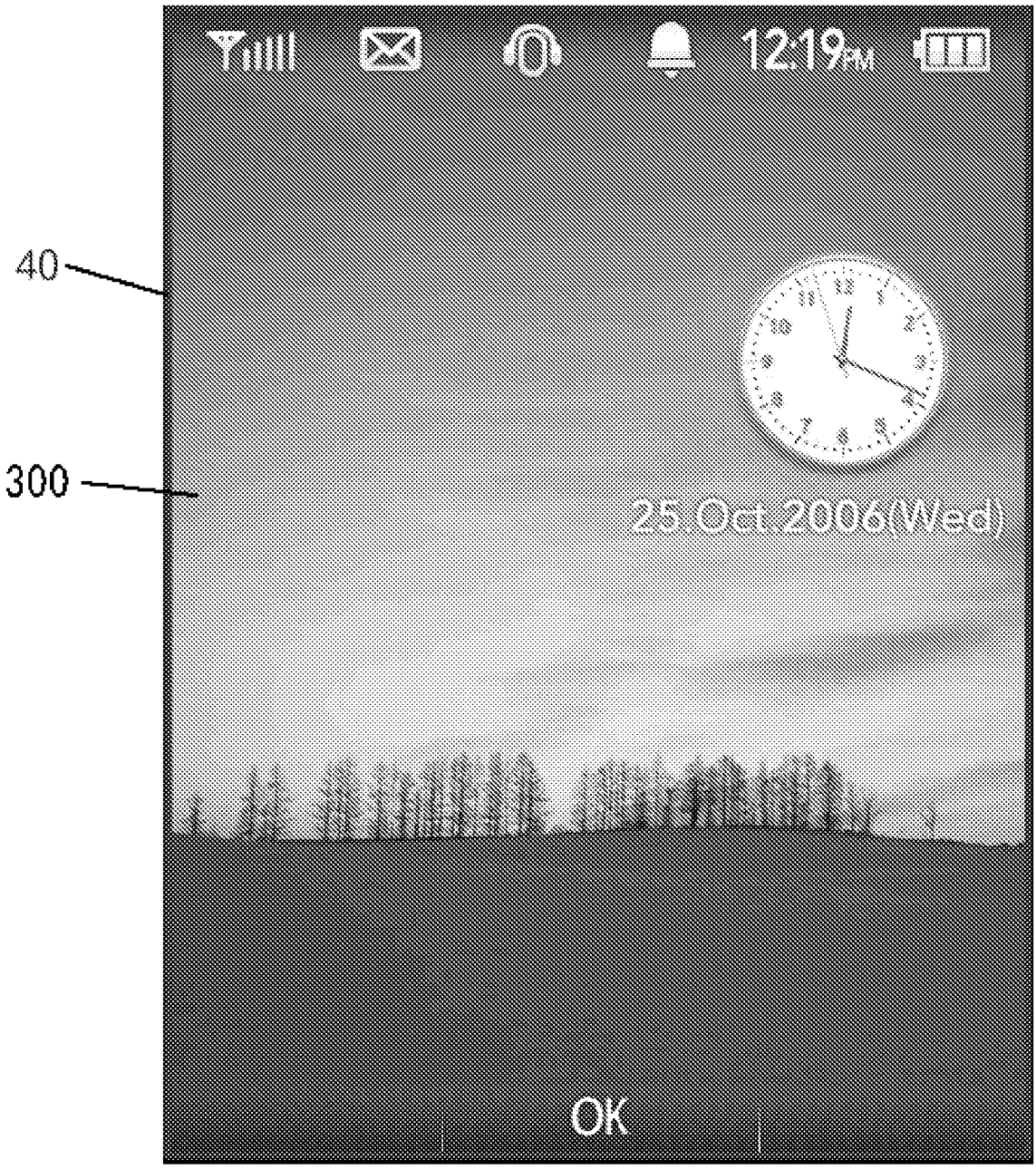


FIG. 3B

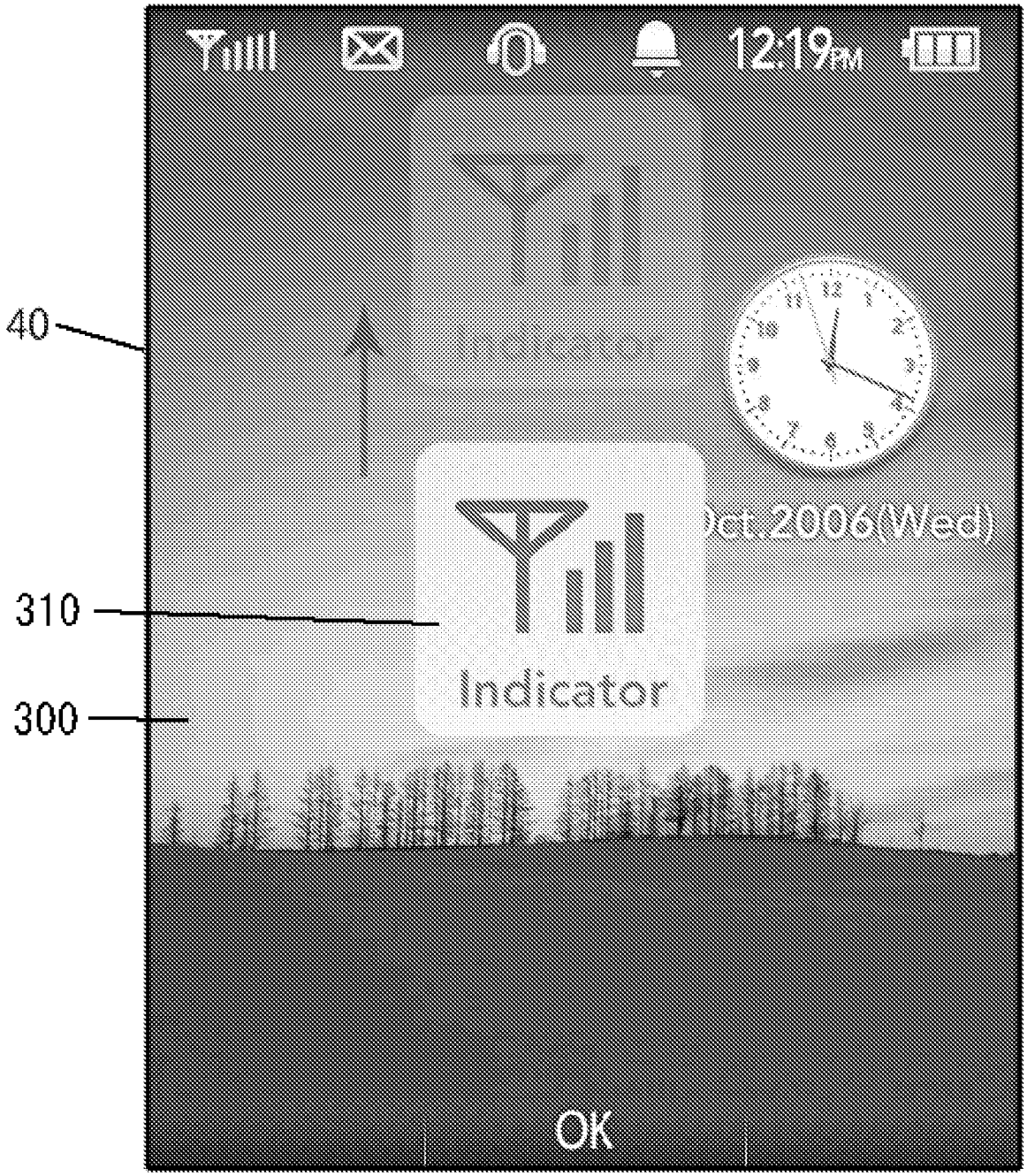


FIG. 3C

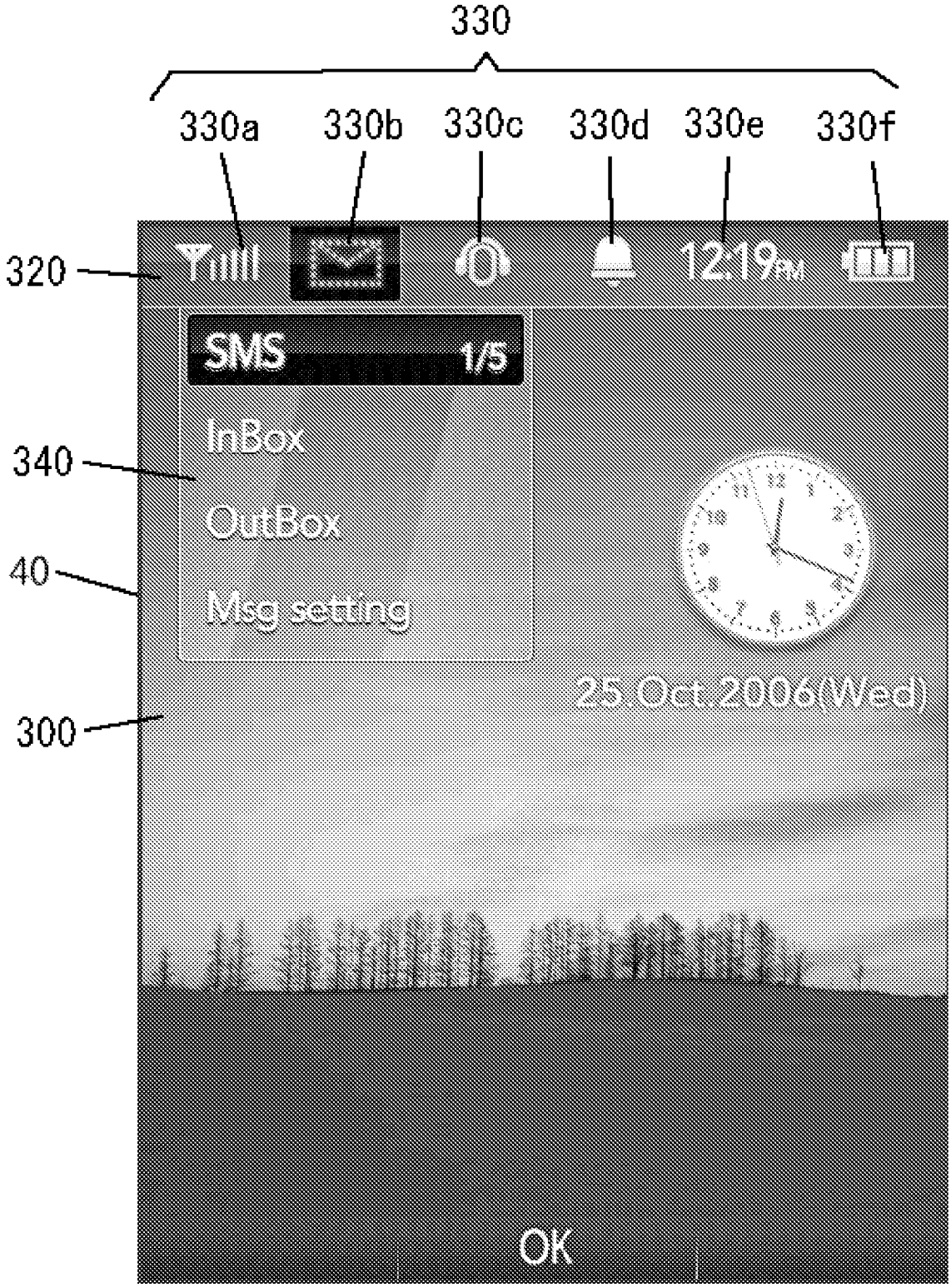

330
330a
330b
330c
330d
330e
330f
320
12:19PM
SMS
1/5
340
InBox
OutBox
40
Msg setting
25 Oct 2006(Wed)
300
OK

FIG. 3D

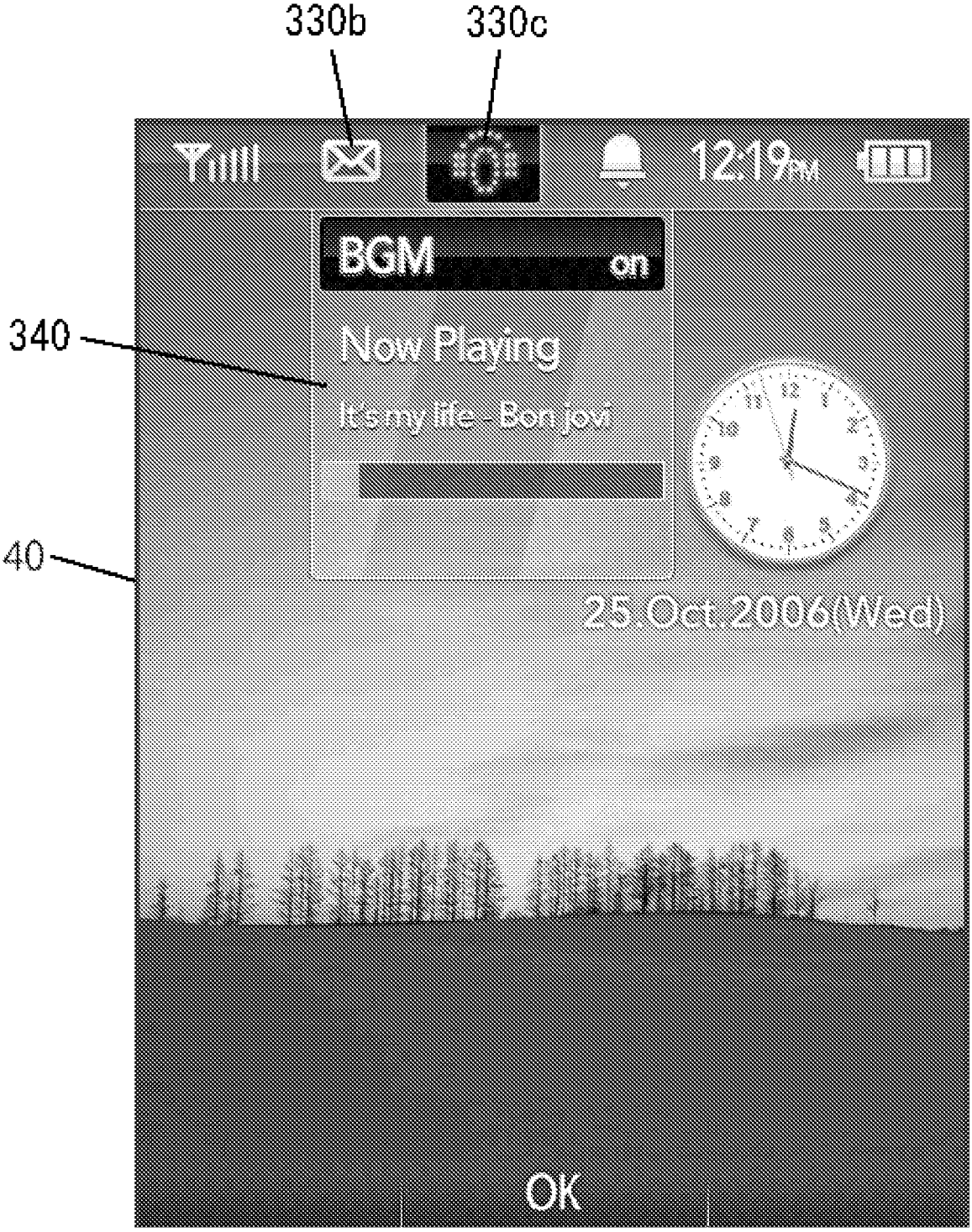

330b
330c
12:19PM
BGM
on
340
Now Playing
It's my life - Bon jovi
40
25.Oct.2006(Wed)
OK

FIG. 3E

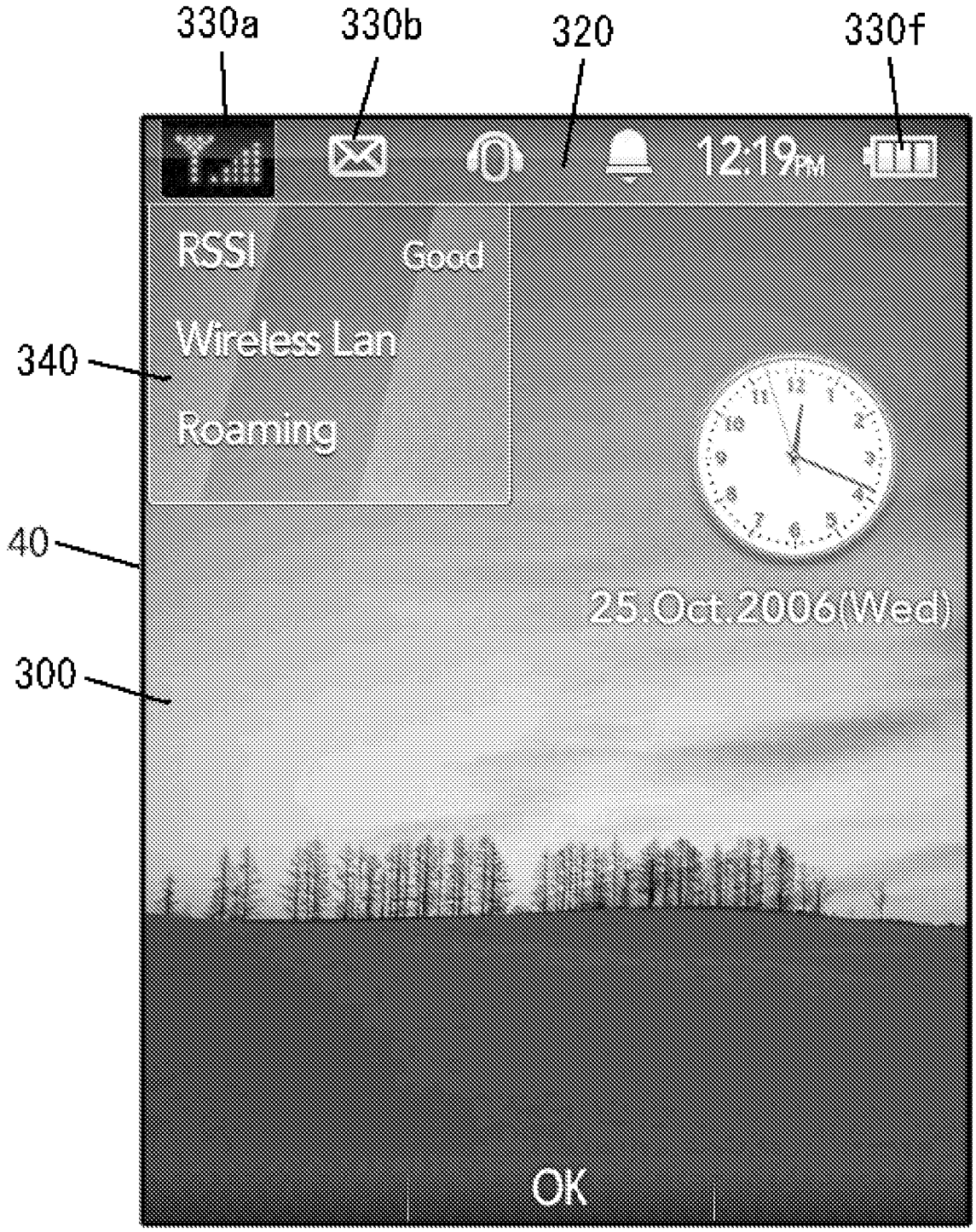

330a
330b
320
330f
12:19PM
RSSI
Good
Wireless Lan
Roaming
340
40
300
25.Oct.2006(Wed)
OK

FIG. 4A

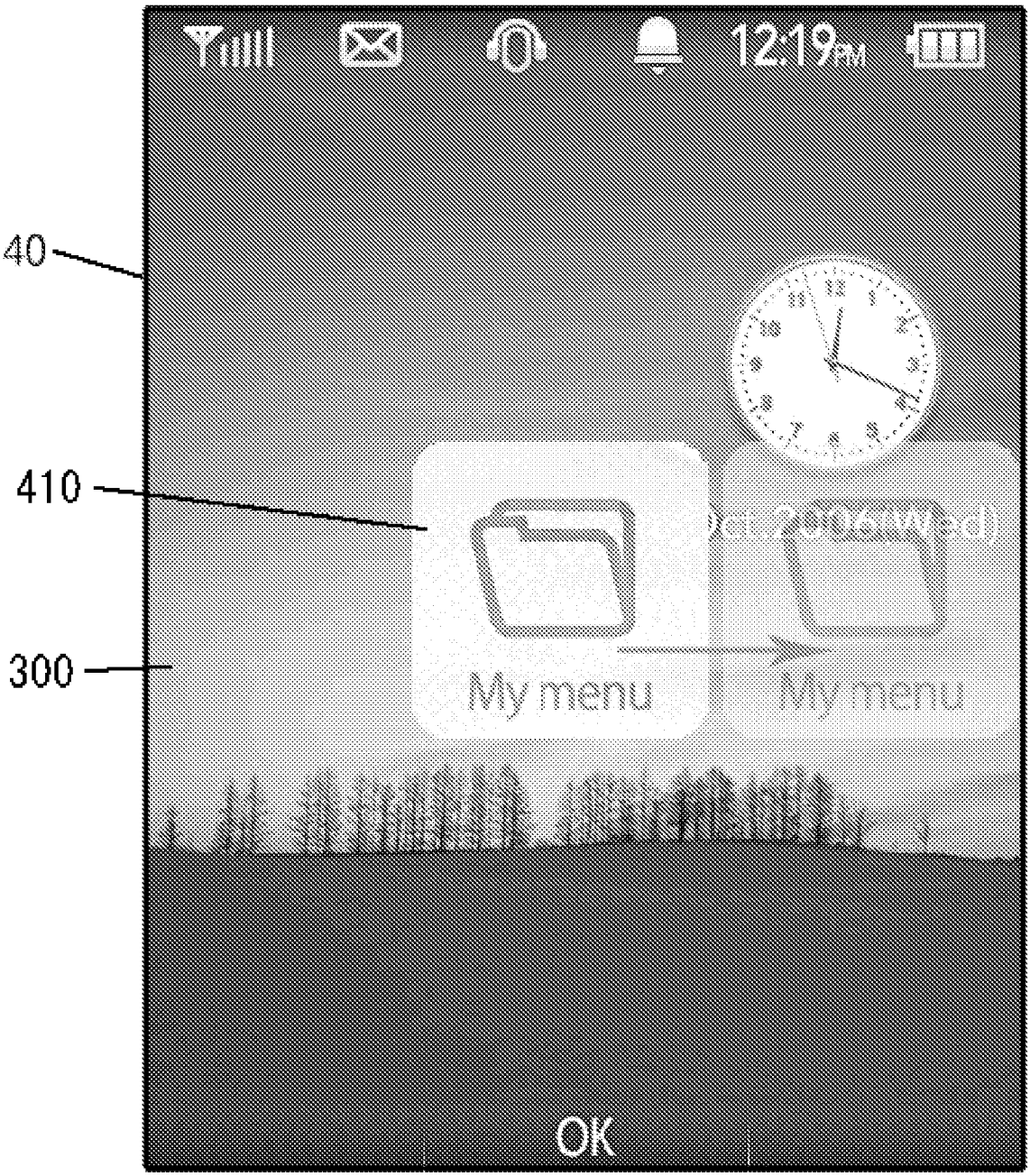


FIG. 4B

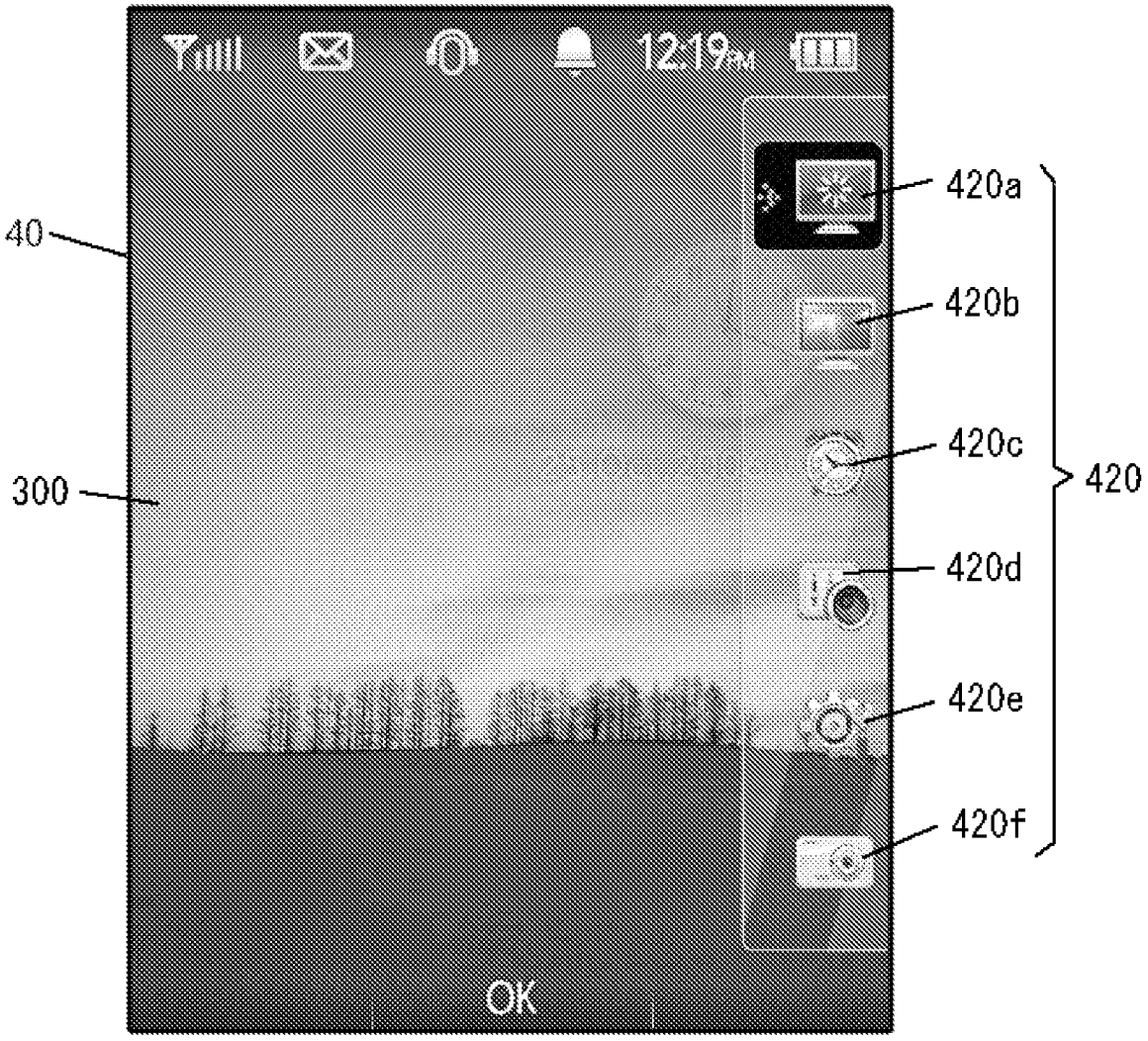


FIG. 5A

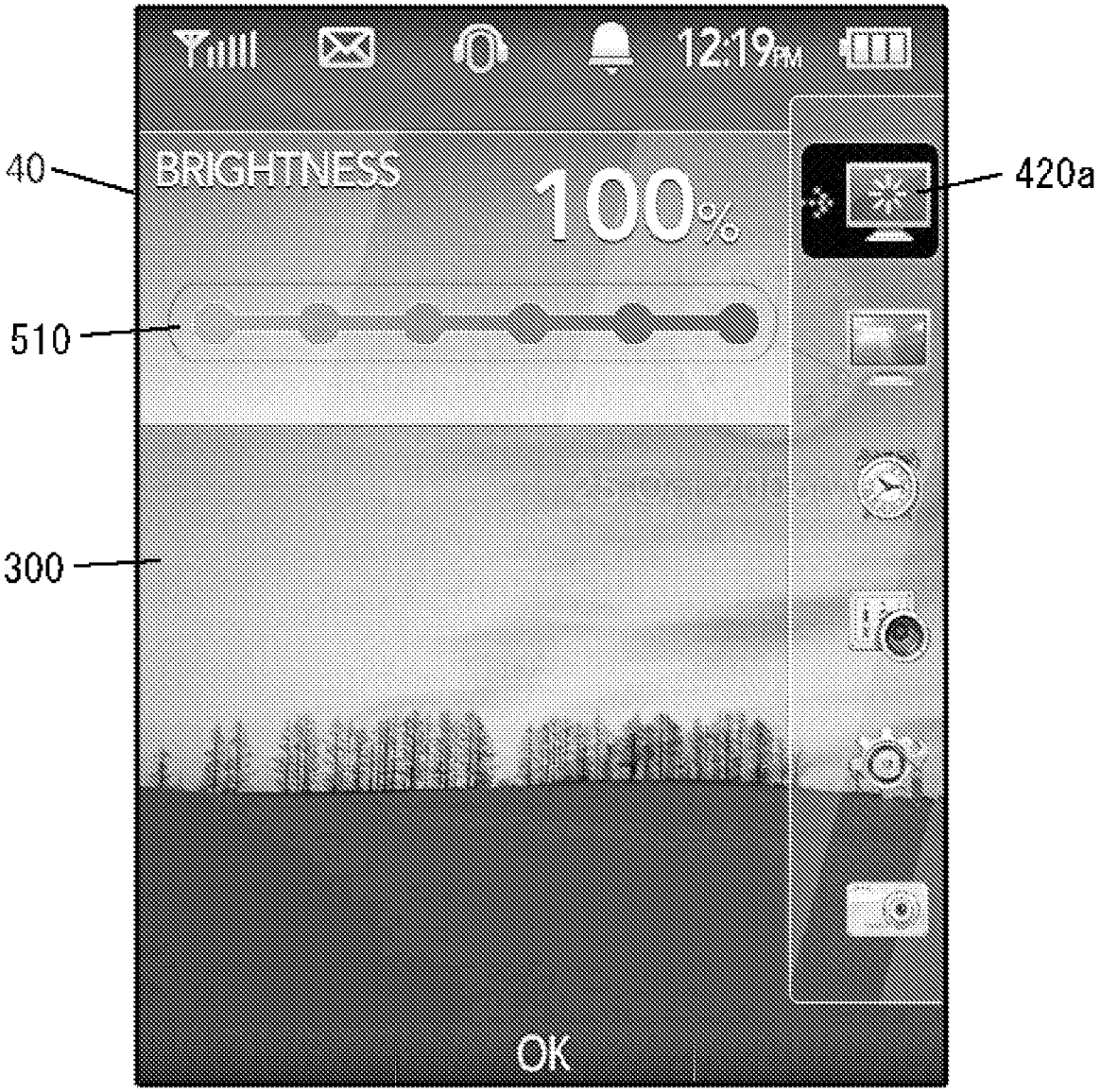


FIG. 5B

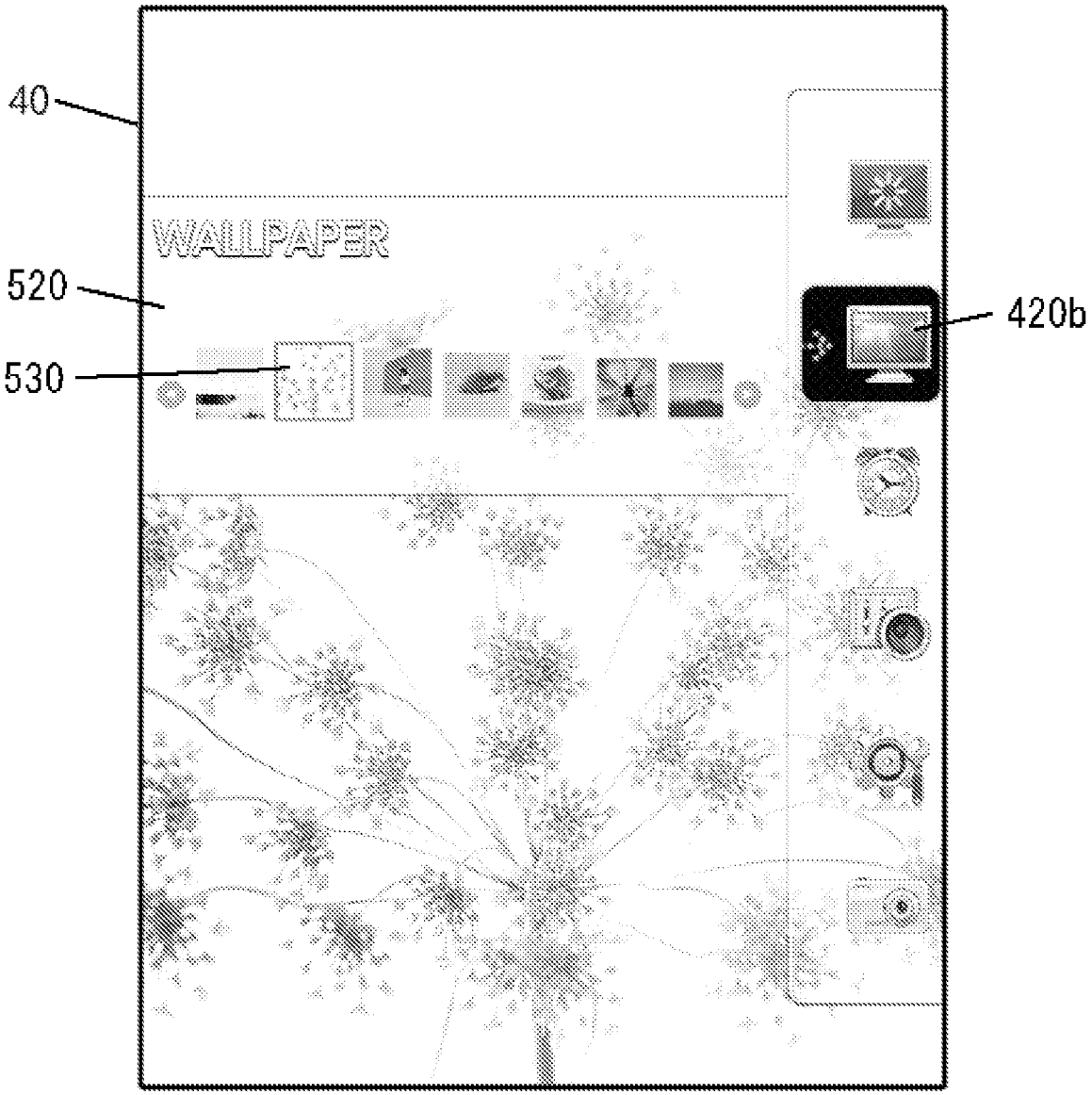


FIG. 5C

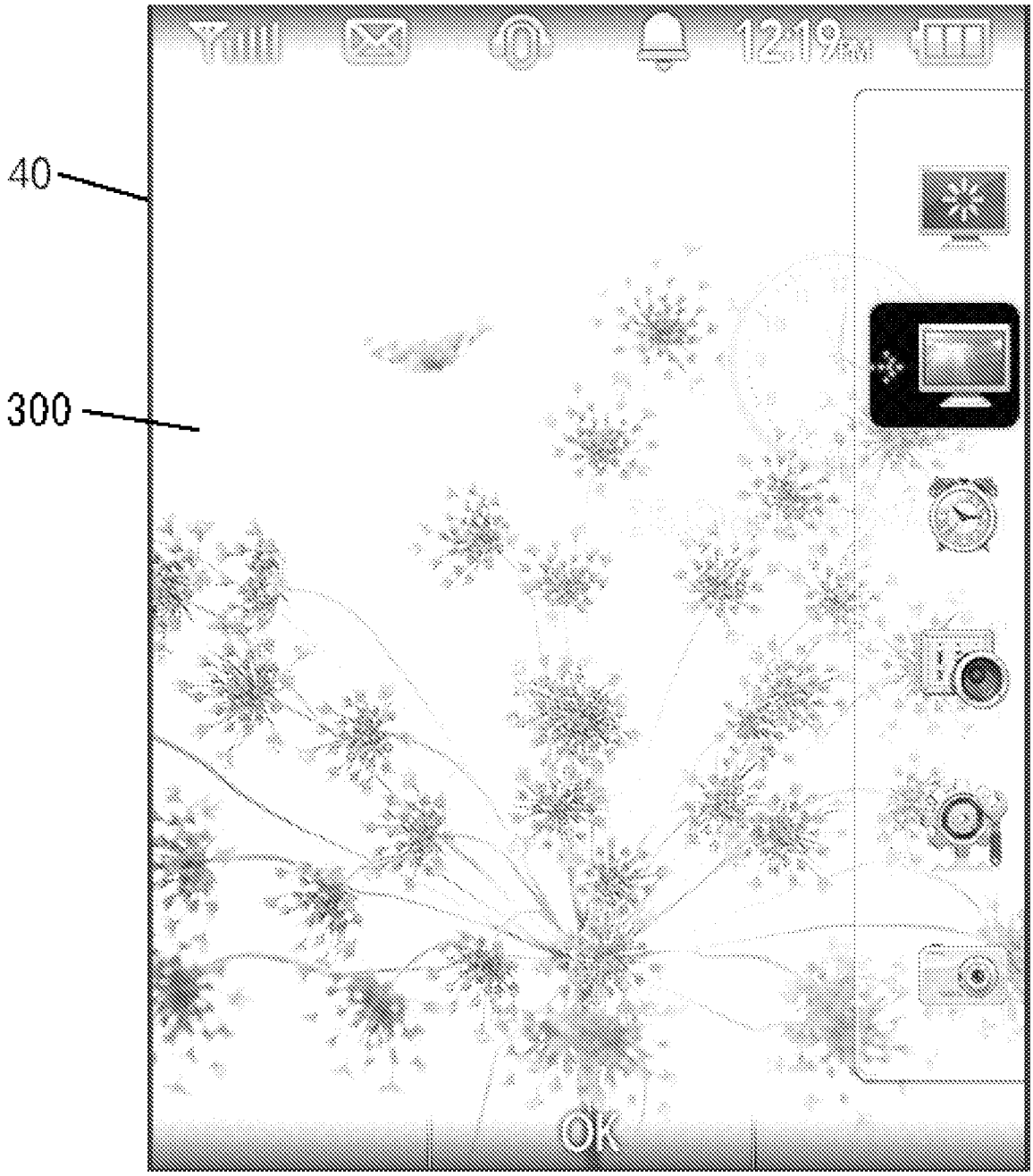


FIG. 5D

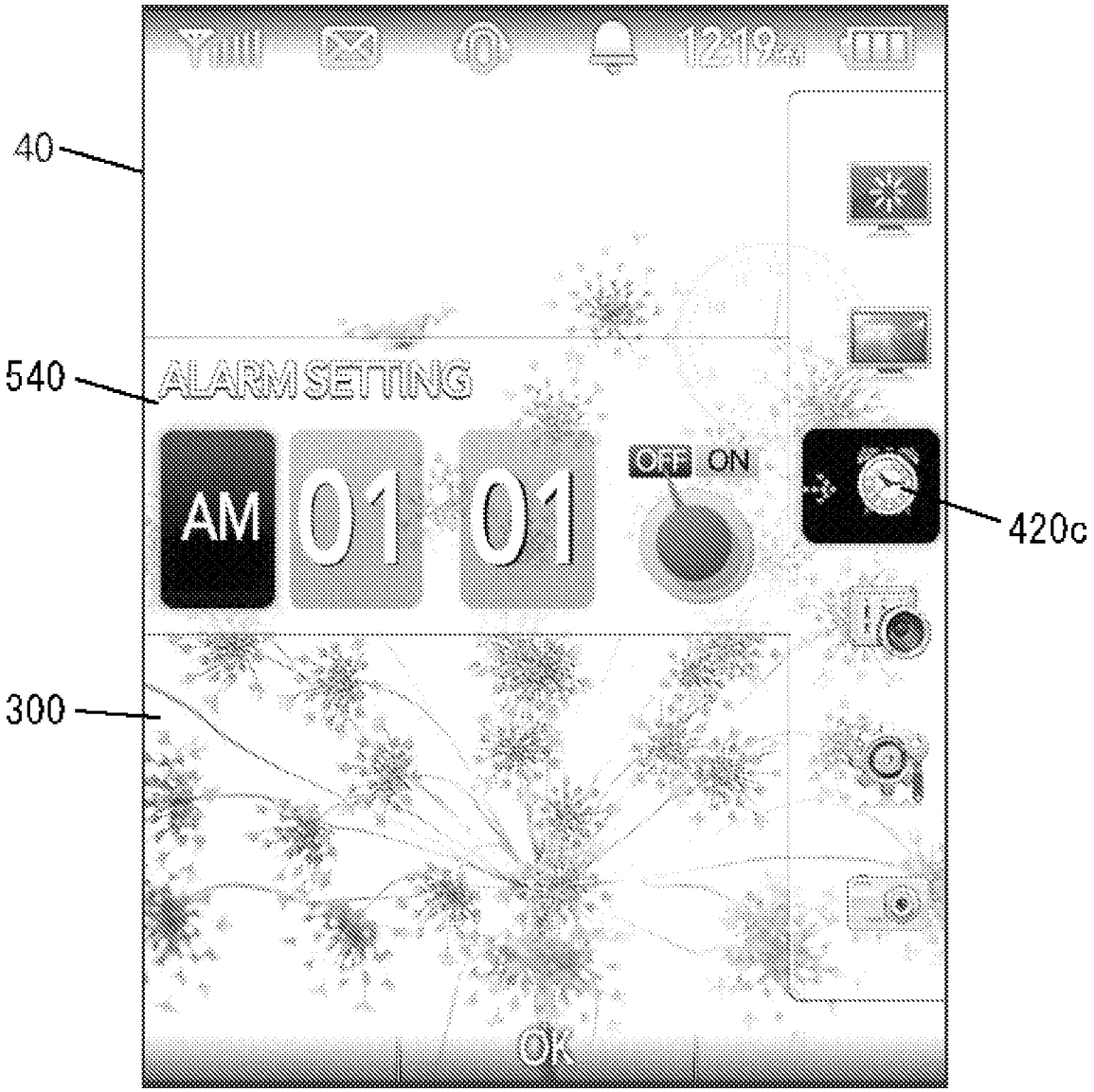


FIG. 6A

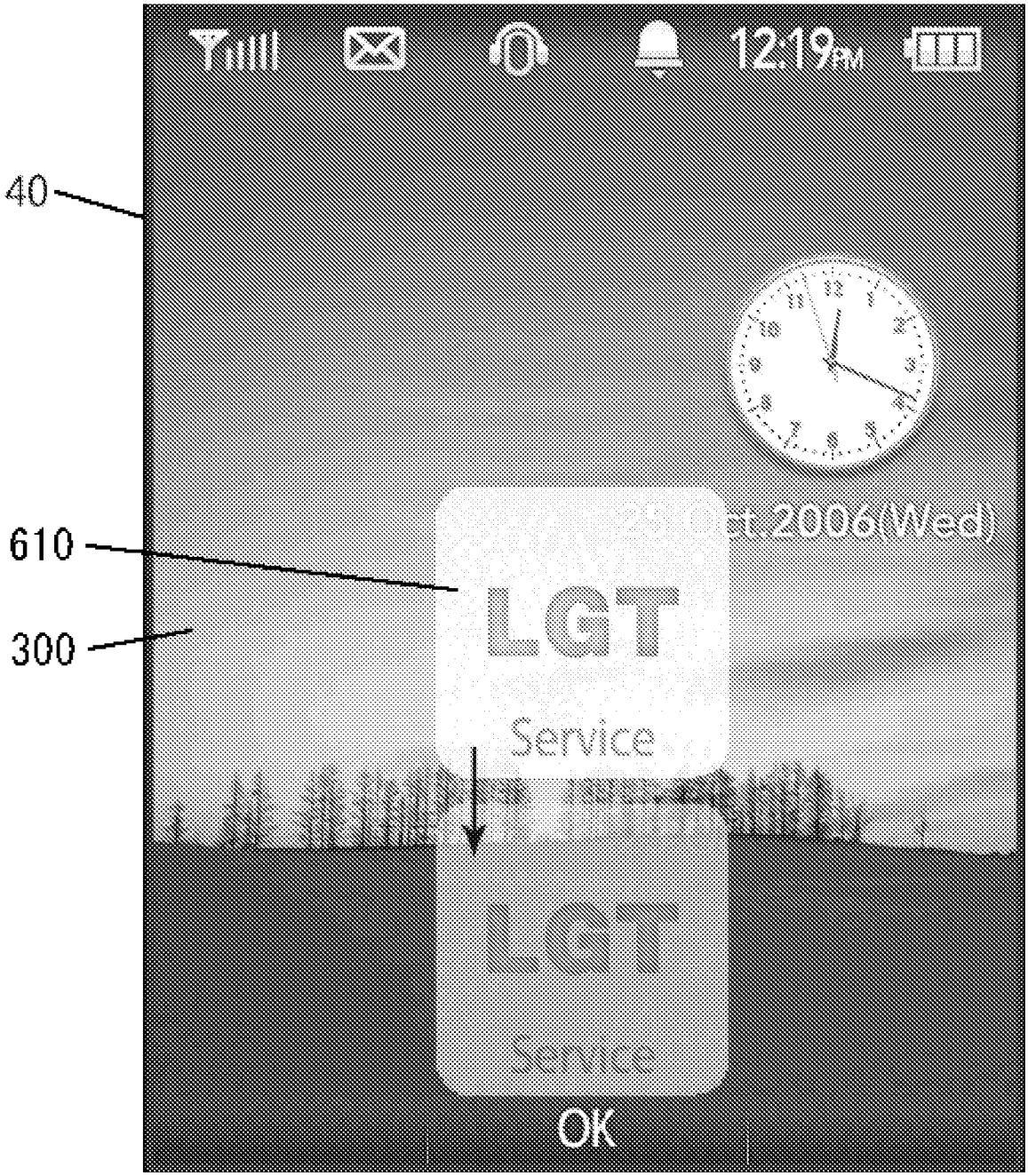


FIG. 6B

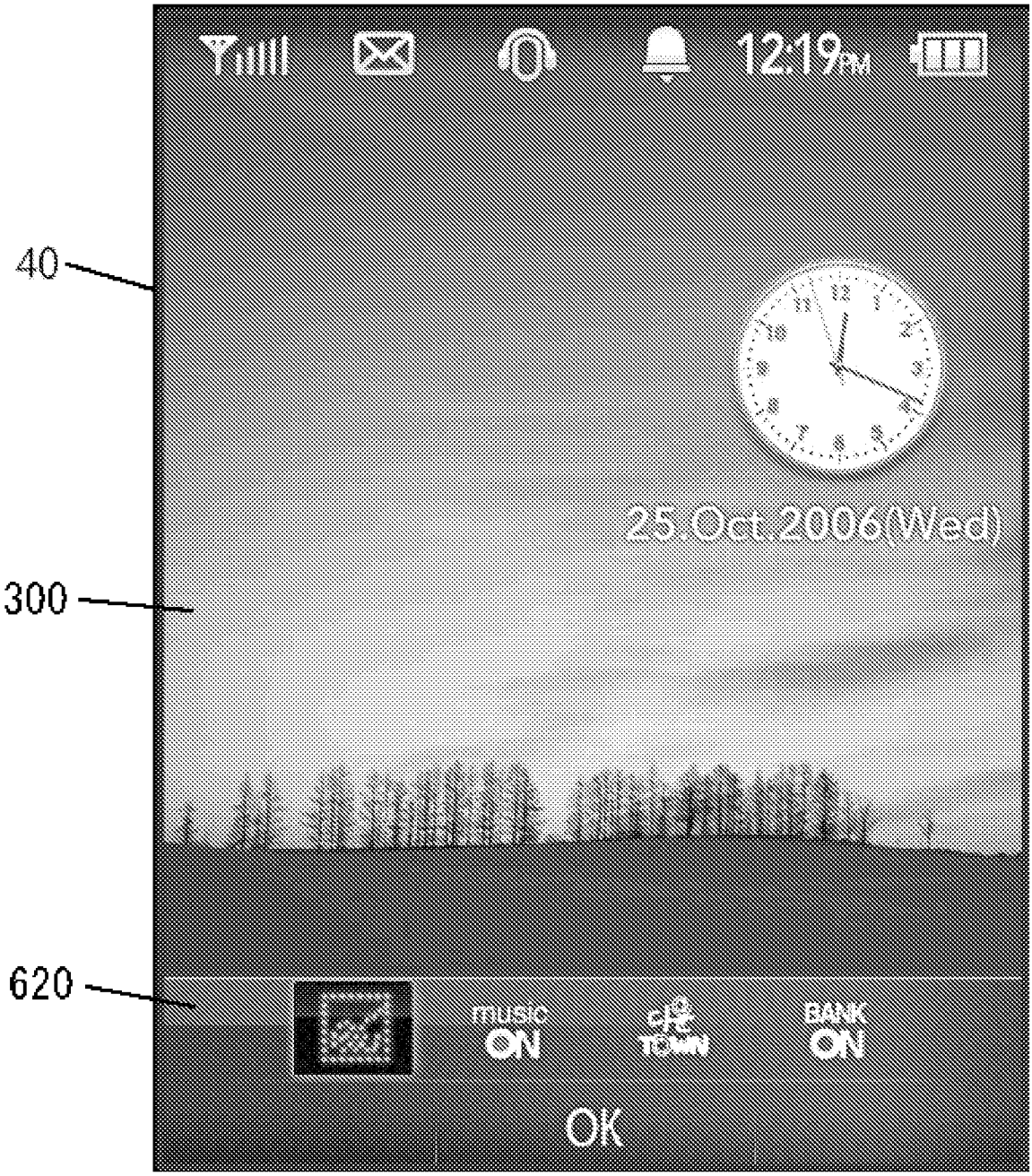


FIG. 7A

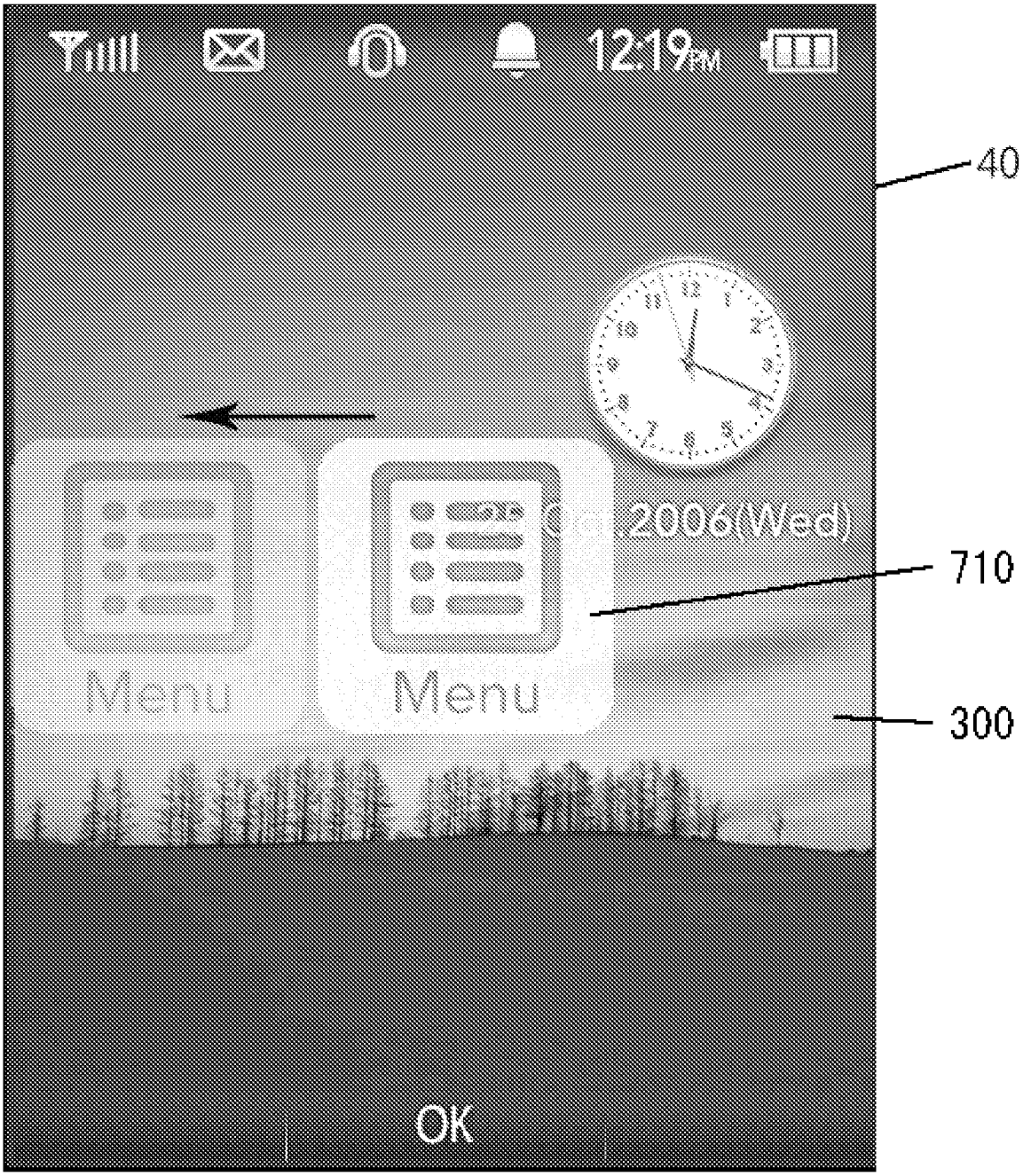


FIG. 7B

730
740
750
760
720
40
300
12:19PM
Ez service
Contacts
Messages
Organizer
Multimedia
Utilities
Sounds
Screen
Settings
25 Oct.2006(Wed)
OK

FIG. 7C

12:19PM
720
730
Answer Options
Auto Retry
Data
Airplane Mode
Roam Option
TTY Mode
25 Oct 2006(Wed)
40
300
730
OK

FIG. 8A

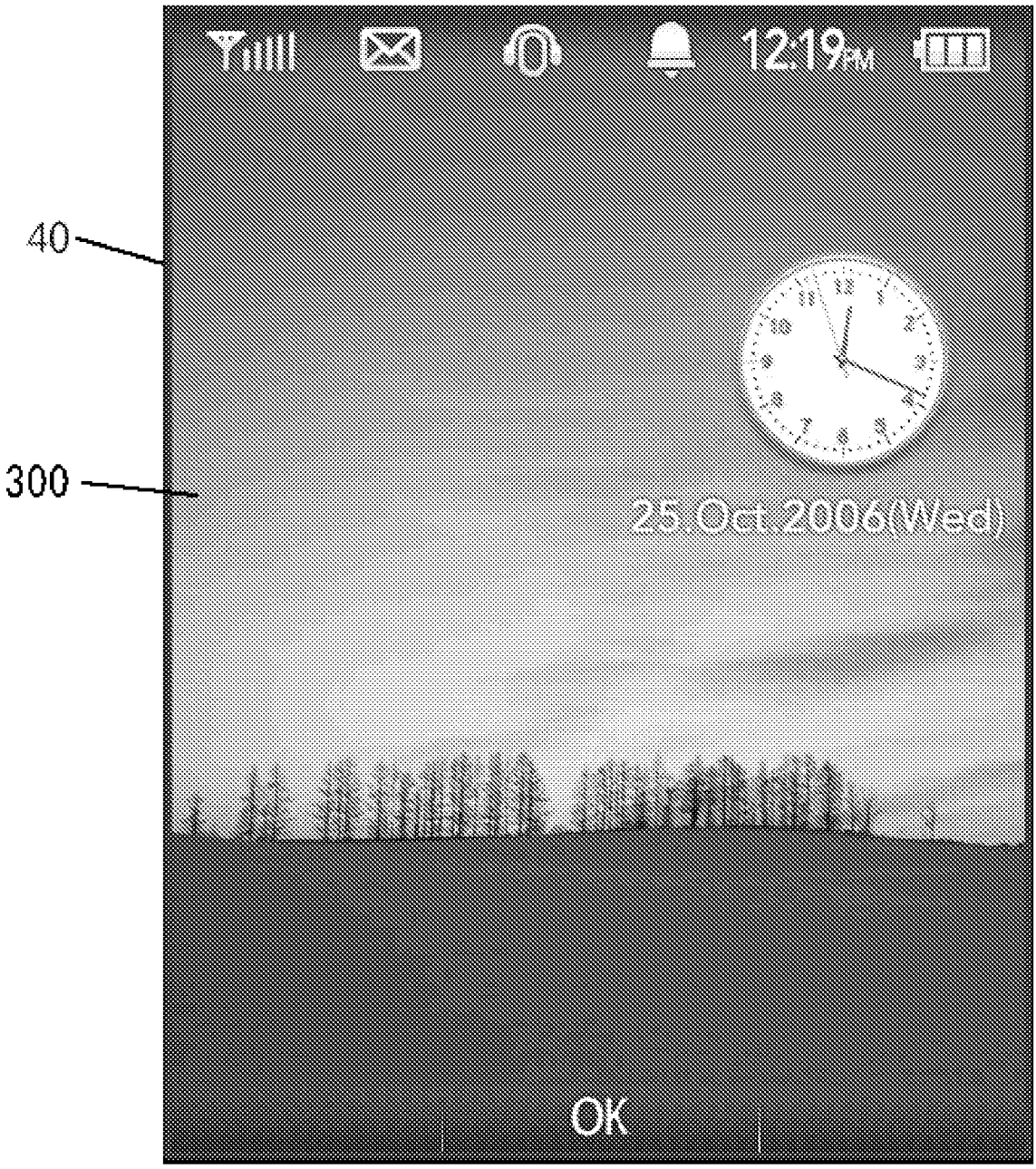


FIG. 8B

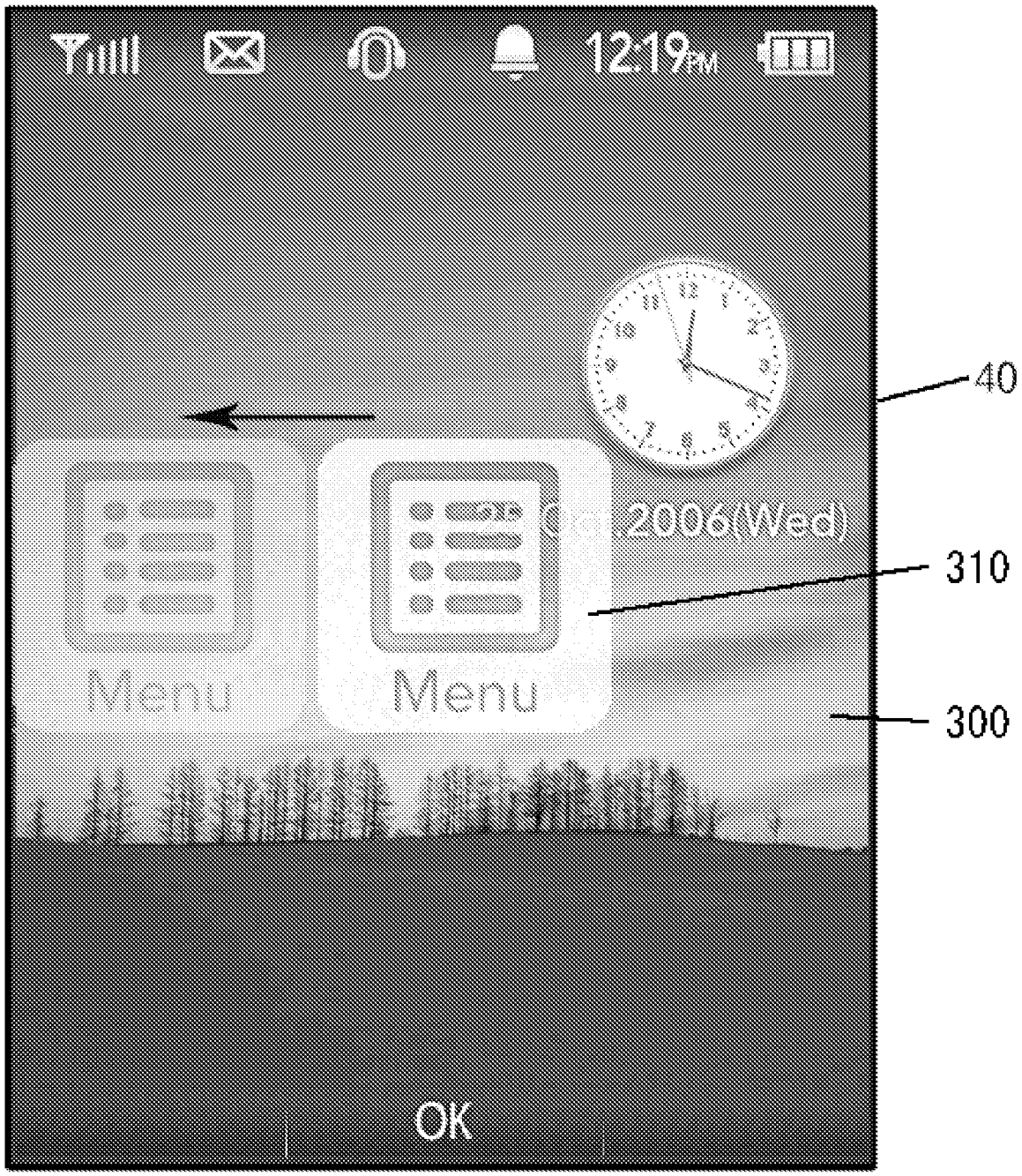


FIG. 8C

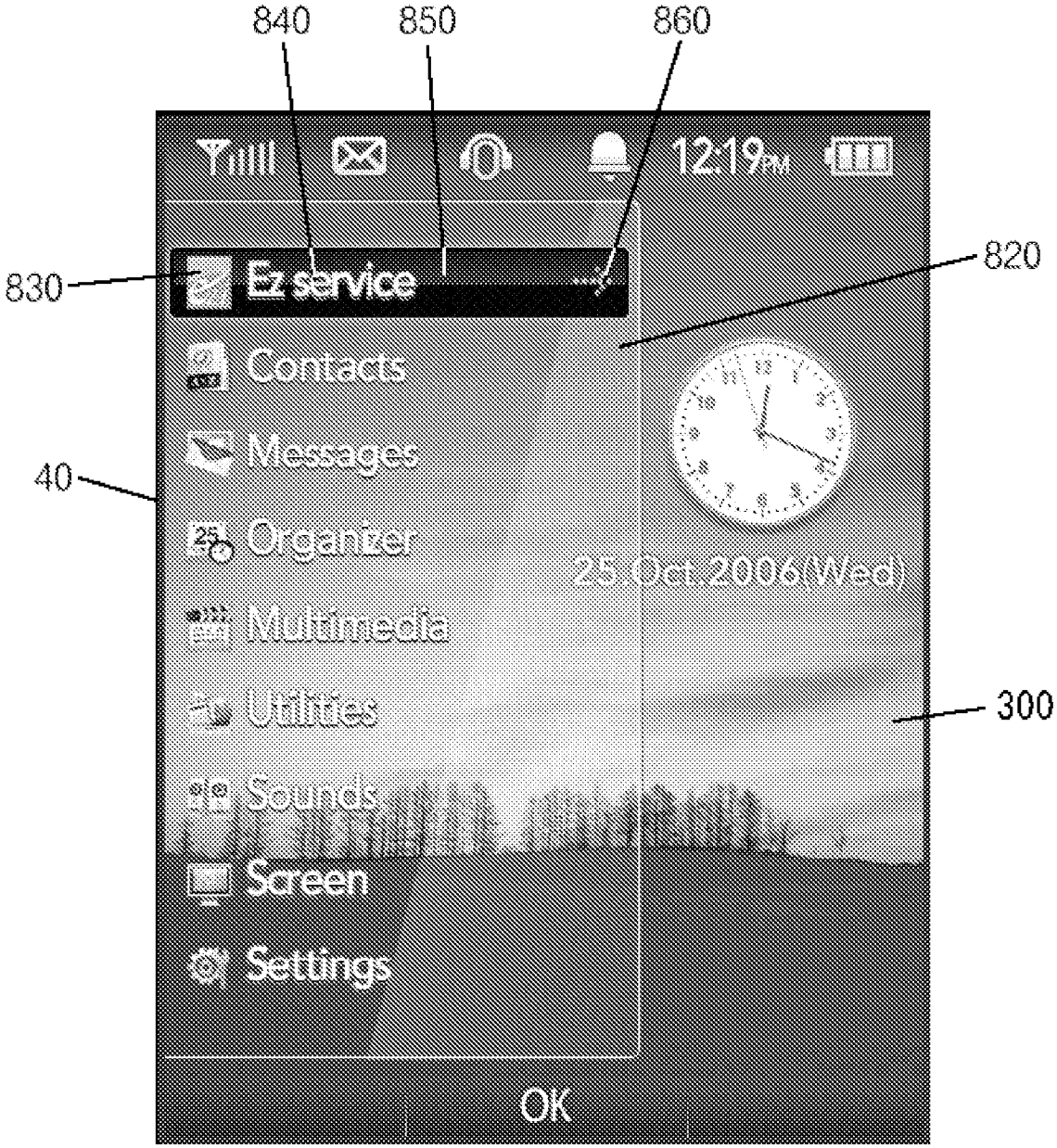

840
850
860
12:19PM
830
820
Ez service
Contacts
Messages
40
Organizer
25.Oct.2006(Wed)
Multimedia
Utilities
300
Sounds
Screen
Settings
OK

FIG. 9A

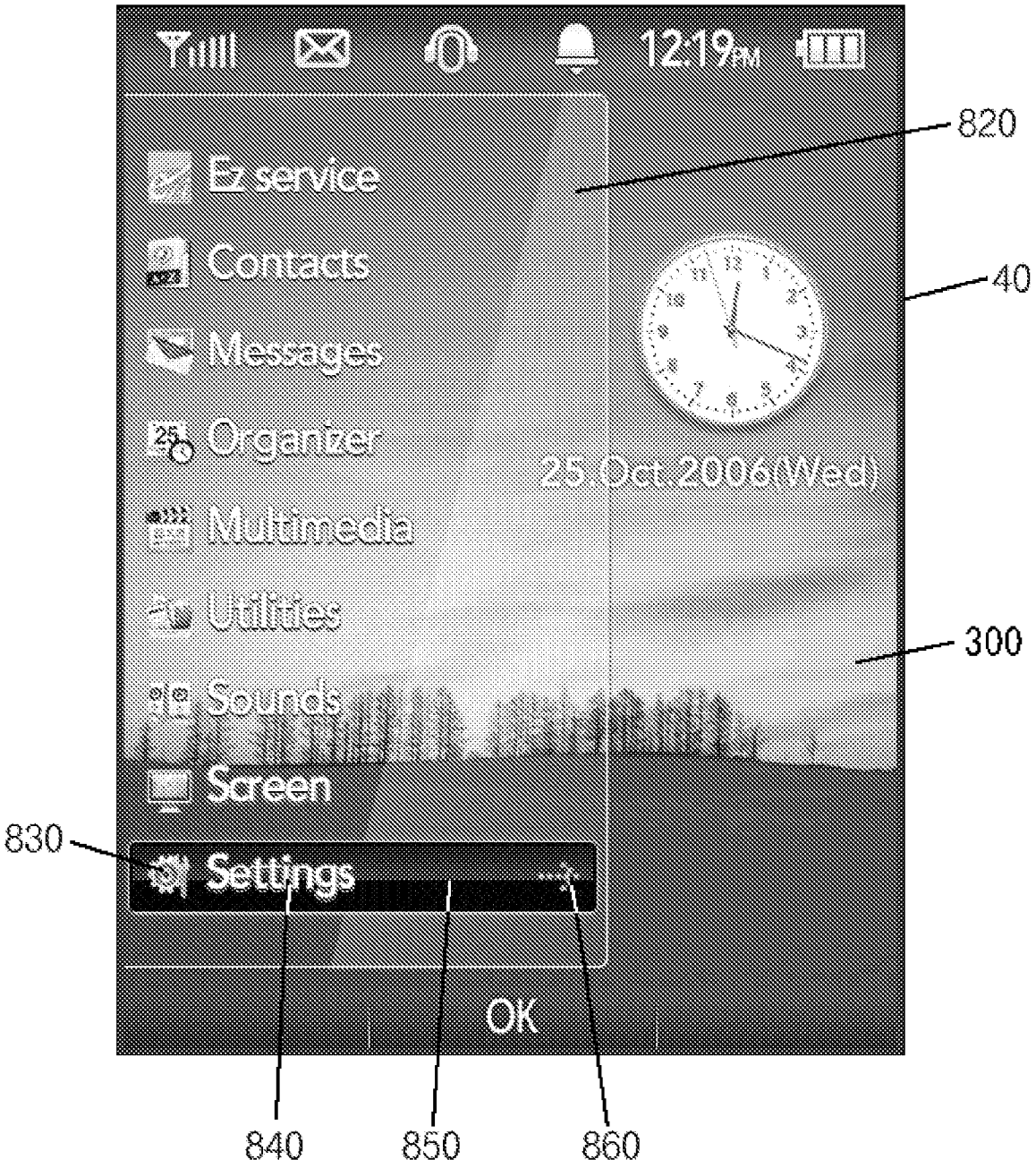

12:19PM
820
EZ service
Contacts
40
Messages
Organizer
25 Oct 2006(Wed)
Multimedia
Utilities
300
Sounds
Screen
830
Settings
OK
840
850
860

FIG. 9B

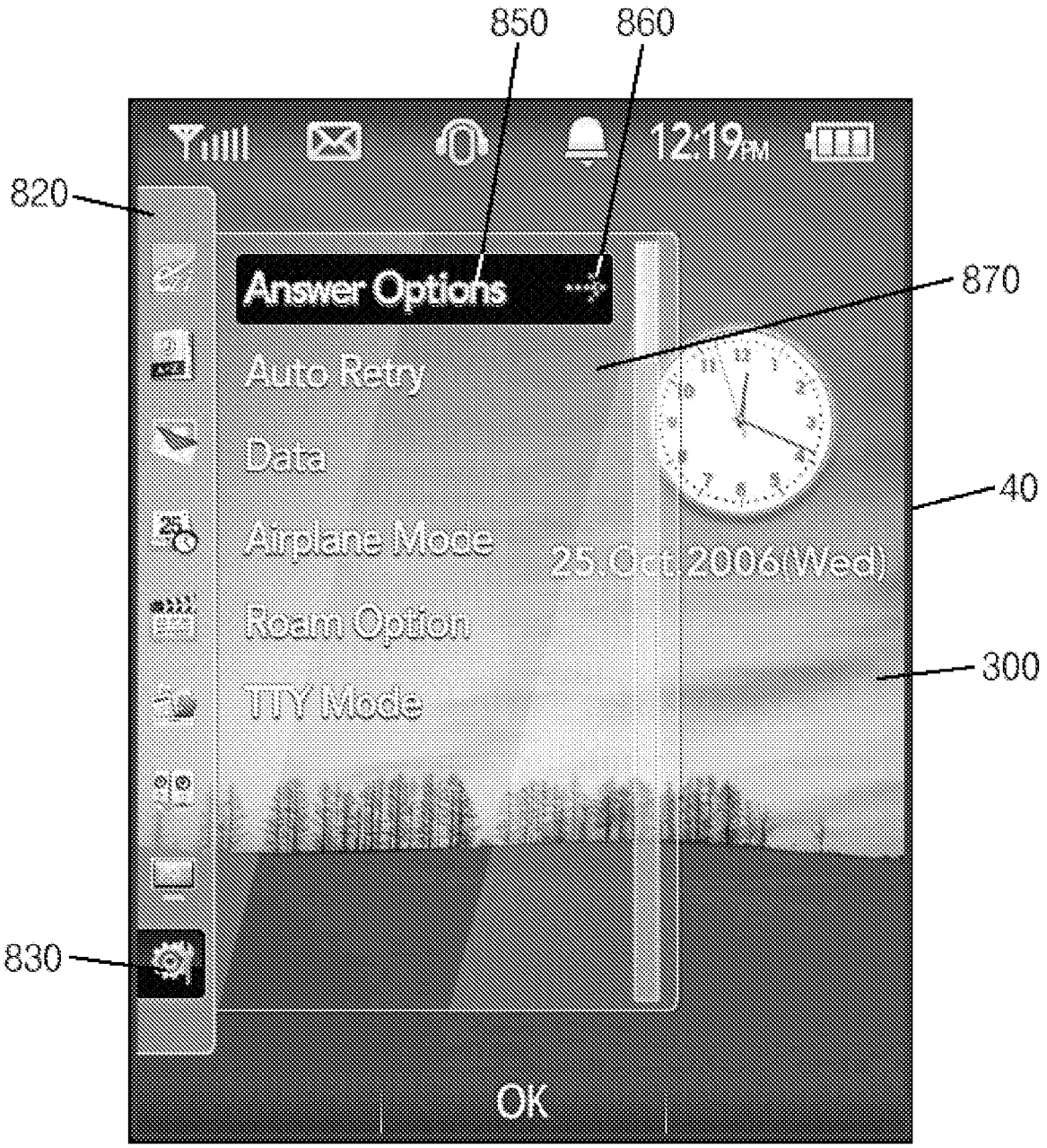

850
860
820
870
40
300
830
12:19PM
Answer Options
Auto Retry
Data
Airplane Mode
Roam Option
TTY Mode
25.Oct.2006(Wed)
OK

FIG. 9C

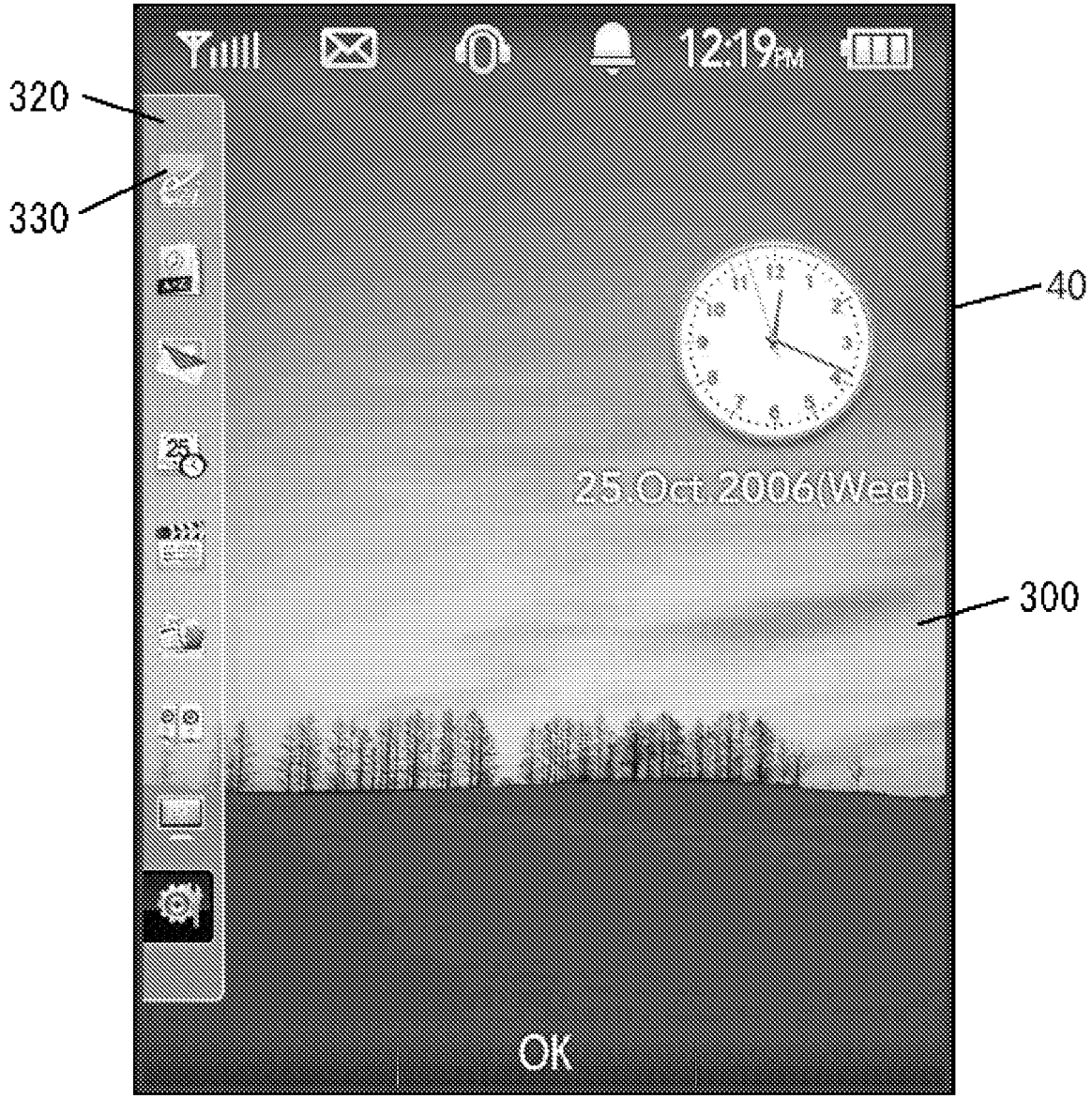


FIG. 10

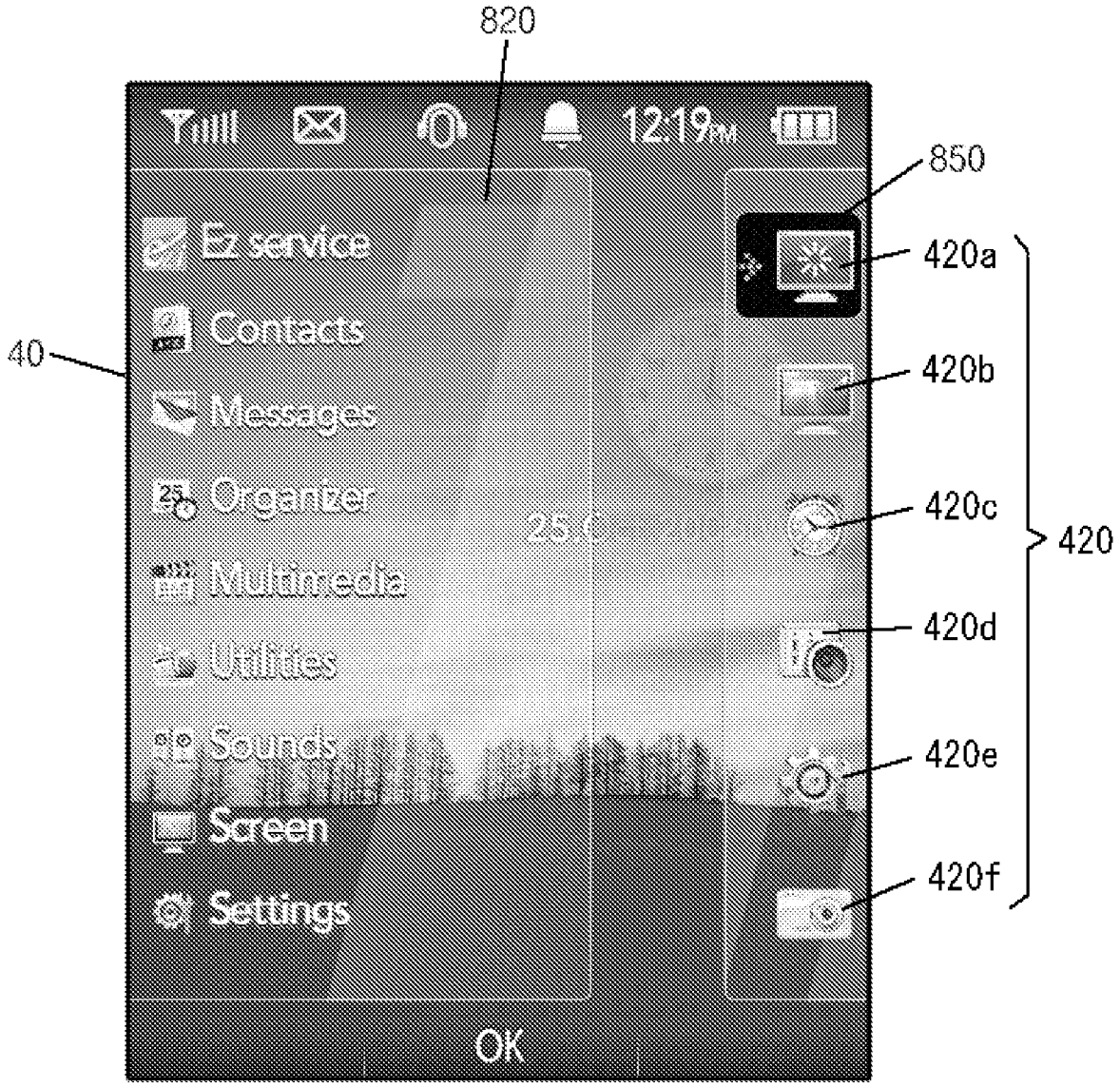

820
12:19PM
850
420a
420b
420c
420d
420e
420f
420
40
EZ service
Contacts
Messages
Organizer
Multimedia
Utilities
Sounds
Screen
Settings
OK

FIG. 11

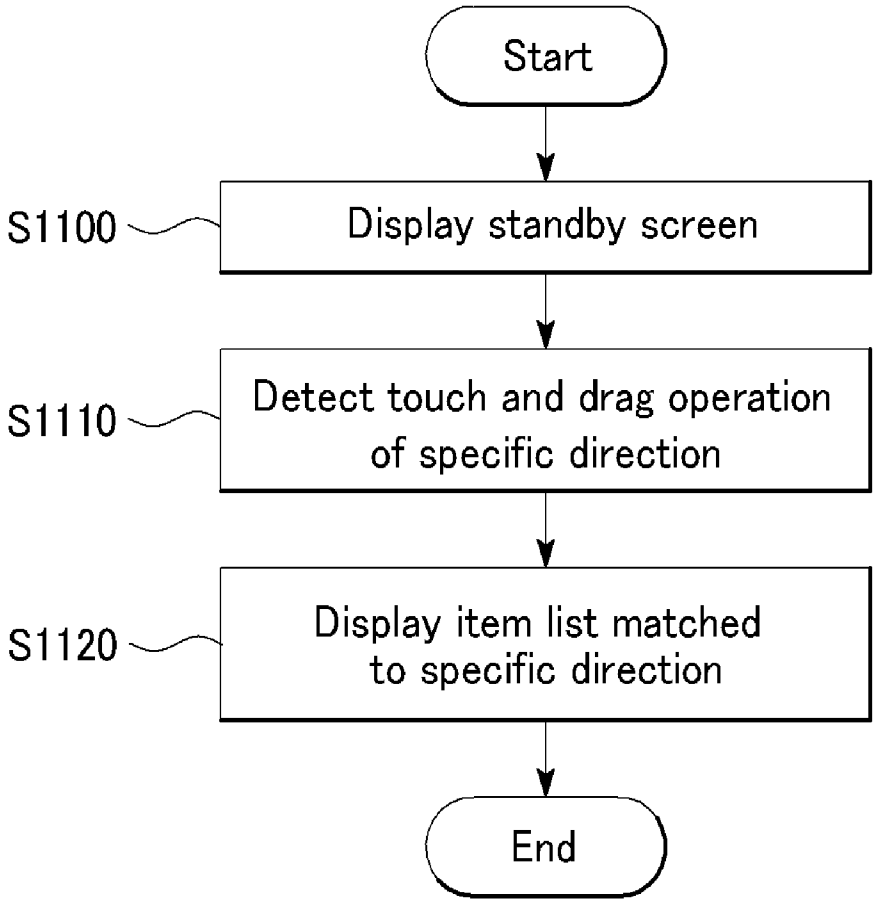

Start
S1100
Display standby screen
S1110
Detect touch and drag operation of specific direction
S1120
Display item list matched to specific direction
End

FIG. 12

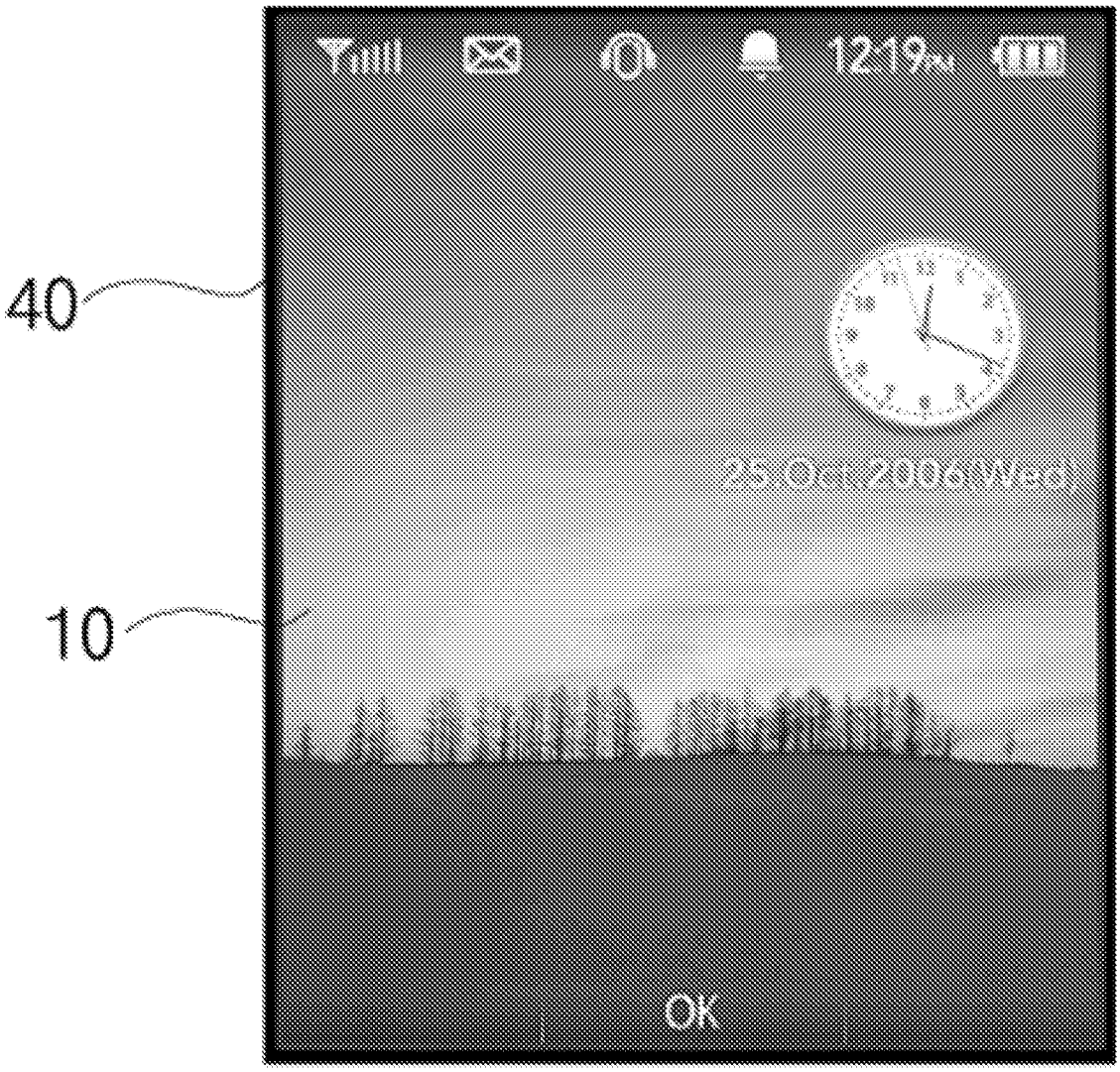


FIG. 13

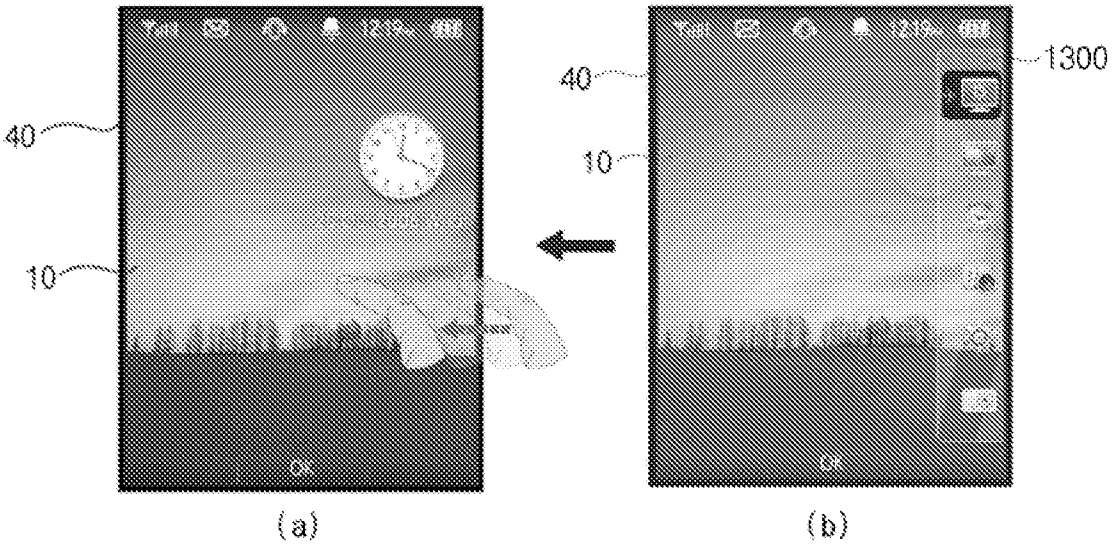


FIG. 14

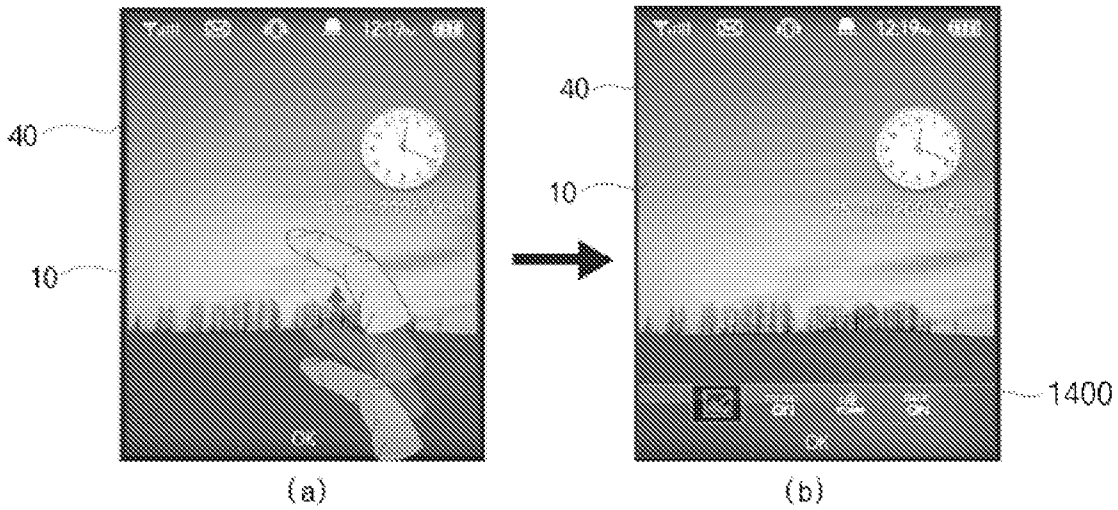


FIG. 15

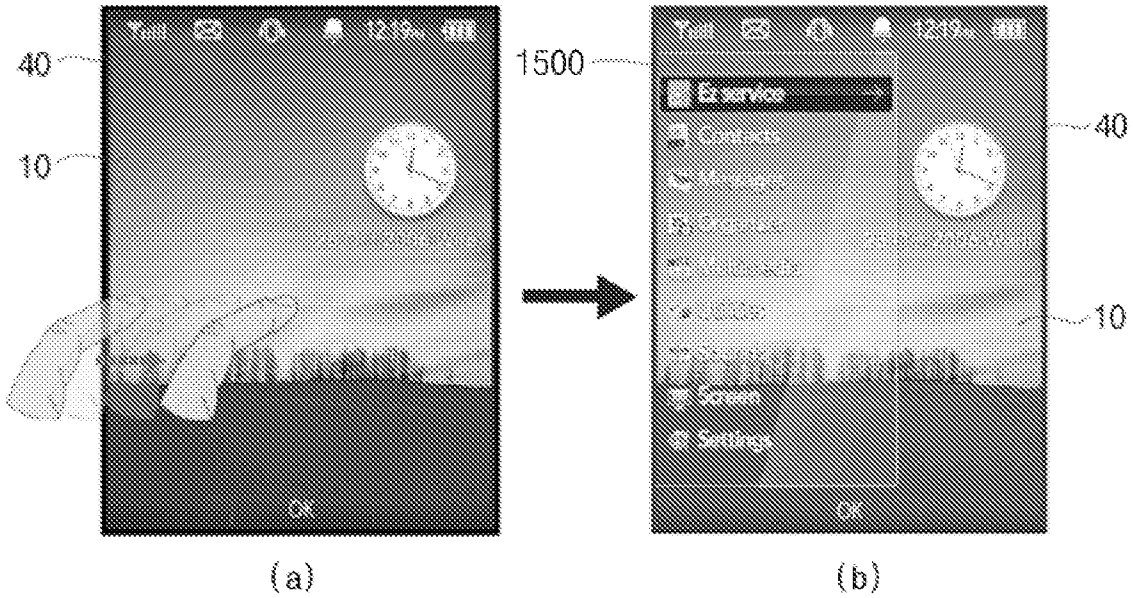


FIG. 16

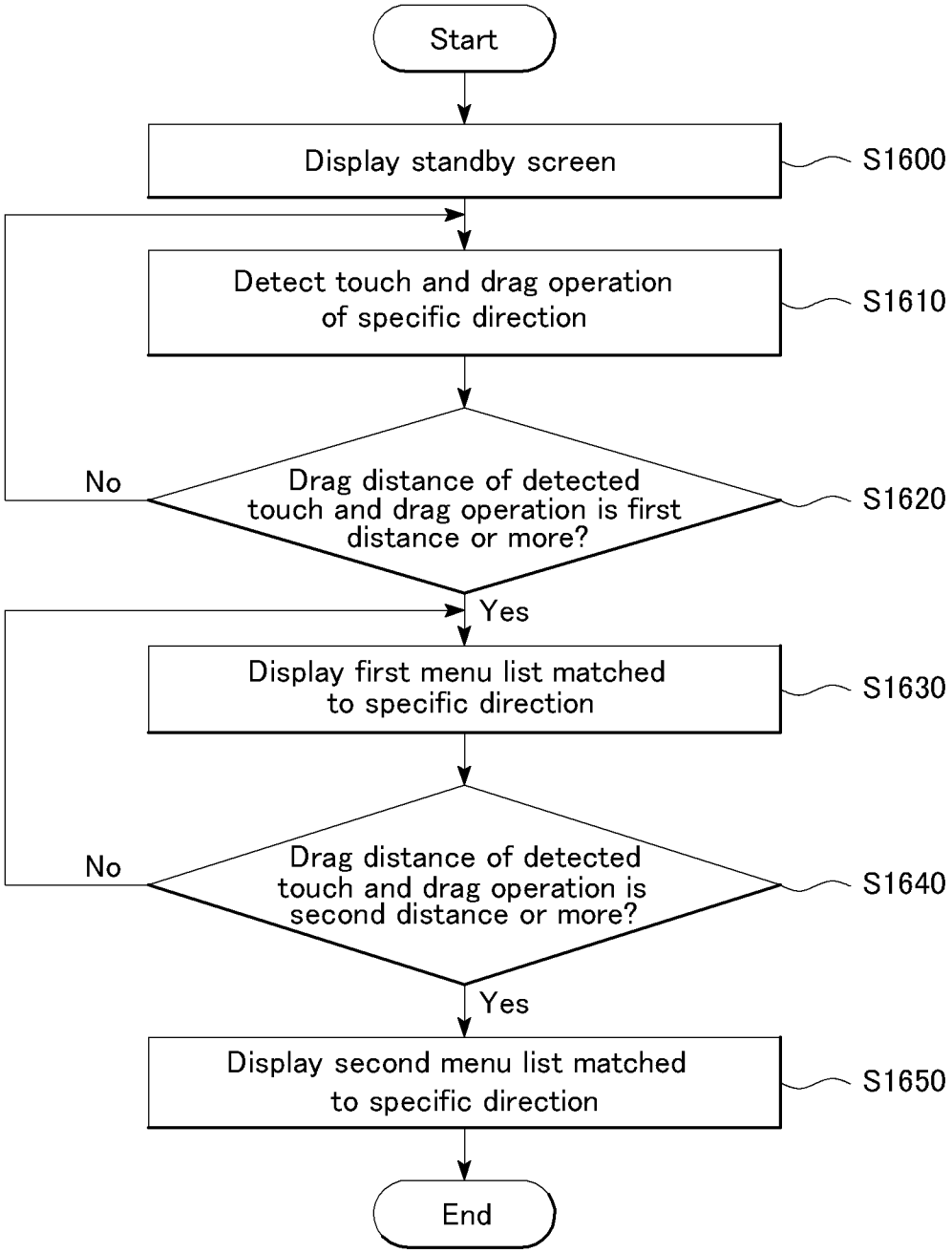
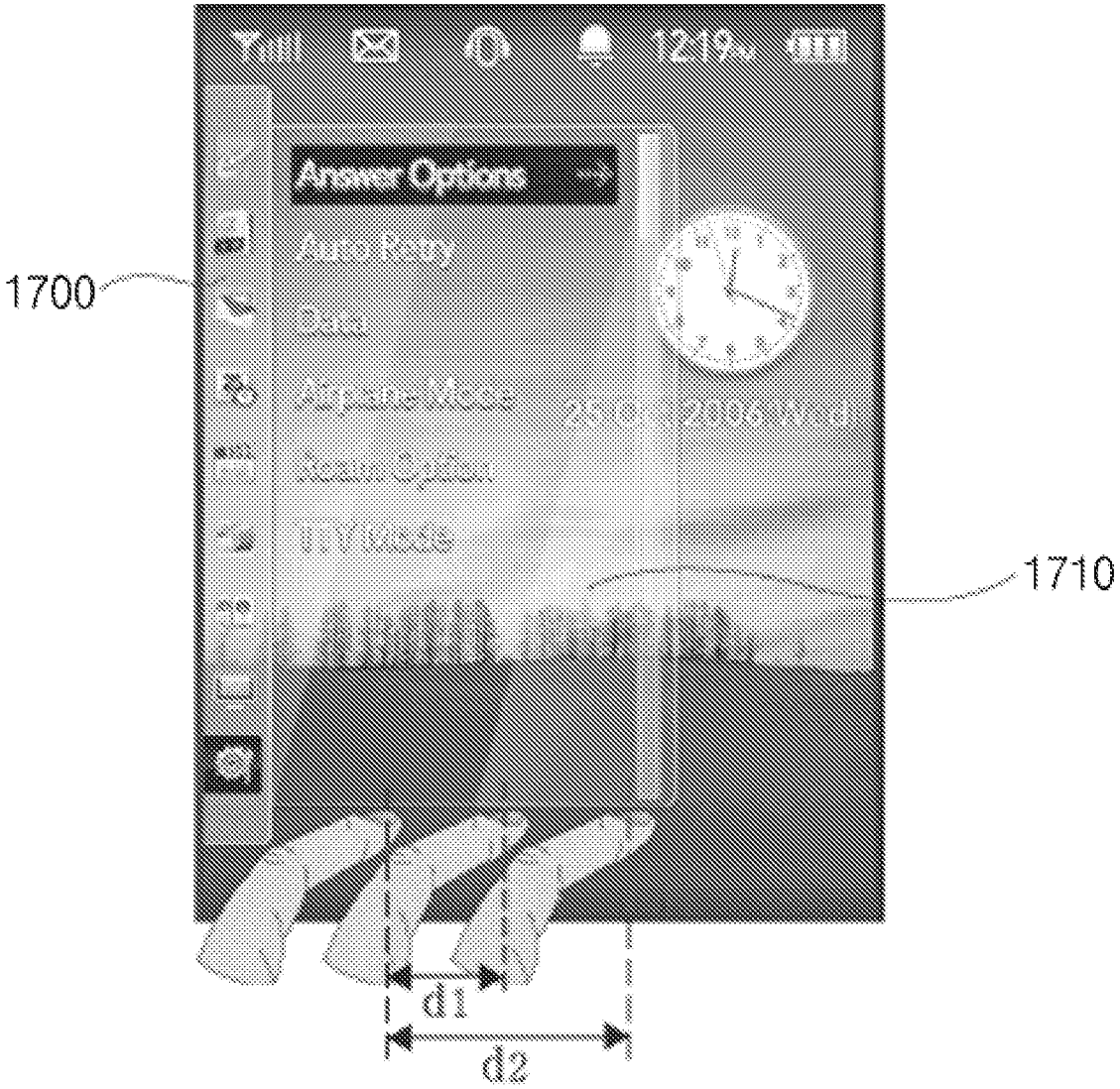
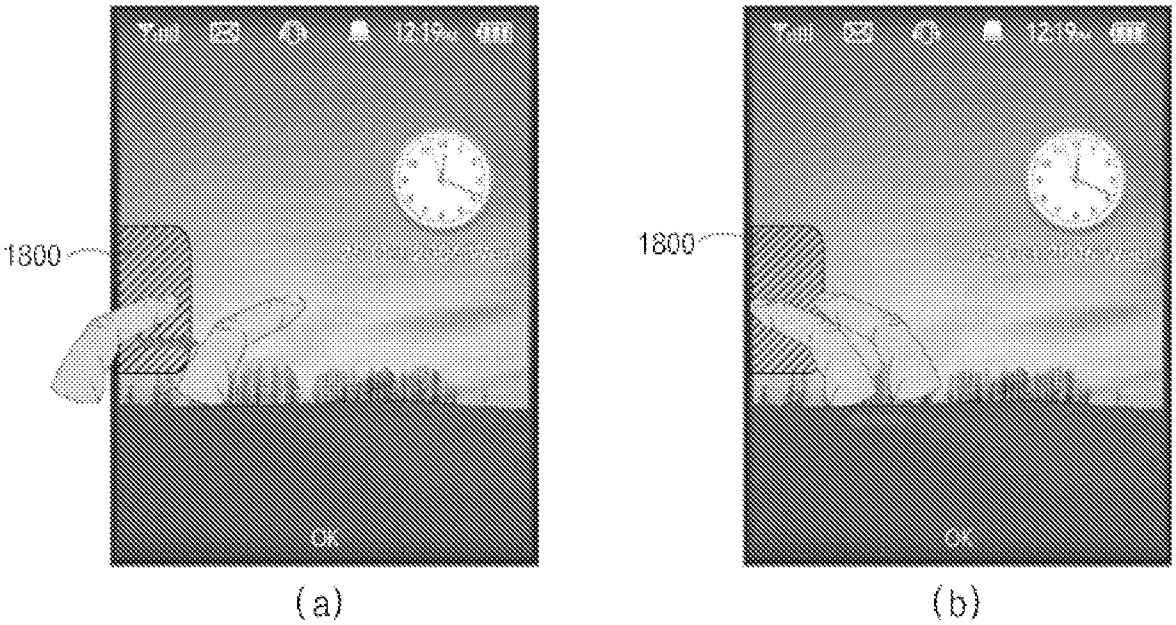

Start
Display standby screen
S1600
Detect touch and drag operation of specific direction
S1610
Drag distance of detected touch and drag operation is first distance or more?
S1620
No
Yes
Display first menu list matched to specific direction
S1630
Drag distance of detected touch and drag operation is second distance or more?
S1640
No
Yes
Display second menu list matched to specific direction
S1650
End

FIG. 17



12:19
Answer Options
Auto Retry
Data
Airplane Mode
Roam Option
TTY Mode
1700
1710
d1
d2

FIG. 18



Request for grant of a European patent

User reference: NSL/080066/BLO
Application No:

0	**For official use only** Application number MKEY Date of receipt (Rule 24(2) EPC): DREC Date of receipt at EPO (Rule 24(4) EPC): RENA Date of filing: DFIL	**MKEY - EP08101835.0** **DREC - 21 Feb 2008**
1	**Request** Grant of European patent, and examination of the application under Article 94, are hereby requested. Procedural language: Description and claims filed in: The applicant waives his right to indicate whether he wishes to proceed further with the application (Art. 96(1))	 en en
2-1	**Applicant 1** Name: Registration No.: Address:	 LG ELECTRONICS INC 1.8 20 Yeouido-dong Yeongdeungpo-gu 150-721 SEOUL Republic of Korea
3-1	**Representative 1** Name: Registration No.: Address of place of business: Telephone: Fax: e-mail:	 Cabinet Plasseraud / Groupement 280 100784233 52, rue de la Victoire 75440 Paris Cedex 09 France 00 33 1 40 16 70 00 00 33 1 42 80 01 59 info@plass.com
3-2	**Representative 2** Name: Registration No.: Company: Address of place of business: Telephone: Fax: e-mail:	 LOISEL Bertrand 100728434 Cabinet Plasseraud 52, rue de la Victoire 75440 Paris Cedex 09 France 00 33 1 40 16 70 00 00 33 1 42 80 01 59 info@plass.com
4	**Inventor(s)** Inventors details filled separately	
5	**Title of invention** Title of invention:	 A METHOD OF DISPLAYING MENU IN A MOBILE COMMUNICATION TERMINAL
6 6-1	**Designation of the Contracting States** All states which are contracting states to the EPC at the	 ✓

	time of filing of this application are hereby designated.	
6-2	It is requested that no communications under Rules 85a(1) and 69(1) EPC be notified concerning the contracting states not selected under 6.4	✓
6-3	If an automatic debit order has been issued, the EPO is authorised, on expiry of the basic period under Article 79(2) EPC, to debit seven times the amount of the designation fee. If fewer than seven contracting states are indicated, the EPO will debit designation fees only for those states, unless it is instructed to do otherwise before expiry of the basic period.	✓
6-4	The applicants currently intend to pay designation fees for the following States:	
6-5	Payment of seven times the amount of the designation fee is deemed to constitute payment of the designation fees for all the contracting states (Article 2, No. 3 RFees).	✓
7	**Extension of the European patent**	
7-1	This application is deemed to be a request to extend the European patent application and the European patent granted in respect of it to all non-contracting states to the EPC with which extension agreements exist on the date on which the application is filed. However, the extension only takes effect if the prescribed extension fee is paid.	✓
7-2	The applicant currently intends to pay extension fees for the following states:	

		State	Filing date	Kind	Application number
8	**Declaration of priority**				
8-01	Priority 01	KR	23 February 2007	ap	2007-018175
8-02	Priority 02	KR	04 April 2007	ap	2007-033308
8-03	Priority 03	KR	03 May 2007	ap	2007-043087

9	**Deposit of Biological Material**		
	The invention relates to and/or uses biological material which has been deposited under rule 28 EPC		
10	**Nucleotide and Amino Acid Sequences**		
11	**Forms**	Details:	Electronic File:
11-1	Request		as ep-request.pdf
11-2	1. Designation of Inventor	1. Inventor	as F1002-1.pdf
11-3	2. Designation of Inventor	2. Inventor	as F1002-2.pdf
11-4	3. Designation of Inventor	3. Inventor	as F1002-3.pdf
11-5	4. Designation of Inventor	4. Inventor	as F1002-4.pdf
11-6	5. Designation of Inventor	5. Inventor	as F1002-5.pdf
12	**Technical Documents**	Details:	Electronic File:
12-1	Drawings / Translation of text in drawings	33 figures	DRAW.pdf
12-2	Specification	20 claims	SPECEPO.pdf
13	**Other Documents**	Details:	Electronic File:
14	**Payment**		
14-1	**Mode of payment**	Debit from deposit account	
	The European Patent Office is hereby authorised, to debit from the deposit account with the EPO any fees and costs indicated on the fees page.	✓	
	Currency:	EUR	
	Deposit account number:	28040012	
	Account holder:	Cabinet PLASSERAUD	
14-2	**Refund/Reimburserment**		

	Reimbursement (if any) to be made to EPO deposit account:	28040012		
	Account holder:	Cabinet PLASSERAUD		
15	**Fees**	Factor applied	Fee schedule	Amount to be paid
15-1	001 Filing fee	1	95.00	95.00
15-2	002 Search fee	1	1 000.00	1 000.00
15-3	006 Examination fee (EP and Euro-PCT with supplementary European search report)	1	1 335.00	1 335.00
15-4	015 Claims fee	10	45.00	450.00
	Total:		**EUR**	**2 880.00**
16	**Annotations**			

17 Signature(s)

Place:

Date: **21.February 2008**

Signed by: **FR, Cabinet Plasseraud, B. Loisel 12298**

Capacity: **(Representative)**