

SELECTIVE CALL RECEIVER FOR PROVIDING AT LEAST TWO
USER CONFIGURABLE MENUS

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FIELD OF THE INVENTION

This invention relates to a selective call receiver
for providing at least two user configurable menus having
10 icons that can be moved from one menu to another.

BACKGROUND ART

Selective call receivers, often known as pagers, are
15 commonly used for displaying or presenting messages. In
recent years selective call receivers have been provided
with numerous functions that are displayed in the form of
icons upon a liquid crystal display. In order to access
these functions a pointer or cursor on the liquid crystal
20 display is moved by activating switches that are mounted
on the selective call receiver casing. When the cursor
is positioned over a desired icon (function identifier)
that identifies a particular function, one of the
switches mounted on the casing can be activated thereby
25 invoking this function.

In recent years the number of functions provided by
selective call receiver manufacturers has increased due
to technology advances and market requirements.
30 Unfortunately, this increase in the number of functions
has resulted in extra icons being displayed upon the
liquid crystal display. This has the disadvantage of not
readily allowing a user to quickly identify and invoke a
particular function.

SUMMARY OF THE INVENTION

5 It is an object of the present invention to provide a selective call receiver for providing at least two visually displayed menus with function identifiers that can be moved from one menu to another.

10 According to one aspect of the invention there is provided a selective call receiver for providing at least two menus on a visual display thereof, each of said menus providing for displaying one or more selectable function identifiers for invoking respective functions of said
15 selective call receiver,

wherein at least one of said function identifiers is movable from one of said menus to another of said menus.

Suitably, a plurality of said function identifiers
20 may be movable from one of said menus to another one of said menus.

Preferably, at least one of said menus may be accessible by selection of an icon displayed on another
25 one of said menus.

Suitably, said function identifiers may be movable from one of said menus to another one of said menus by suitable operation of one or more switches associated
30 with said selective call receiver.

Preferably, said function identifiers may be icons.

According to another aspect of the invention there is
35 provided a method for moving at least one function identifier displayed on a visual display of a selective call receiver, the method comprising the steps of:

selecting at least one said function identifier from a menu displayed upon said visual display; and

moving said function identifier to another menu displayable upon said visual display.

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Suitably, the method may be further characterised by said step of moving being effected by suitable operation of one or more switches associated with said selective call receiver.

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Preferably, said function identifiers may be icons.

According to another aspect of the invention there is provided a selective call receiver for providing at least two menus on a visual display thereof, each of said menus comprising one or more selectable function identifiers for invoking respective functions of said selective call receiver,

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wherein at least one of said menus is accessible by selection of an icon displayed on another one of said menus.

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BRIEF DESCRIPTION OF THE DRAWINGS

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In order that the invention may be readily understood and put into practical effect, reference will now be made to a preferred embodiment as illustrated with reference to the accompanying drawings in which:

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FIG. 1 is a diagram illustrating a selective call receiver in accordance with the invention;

FIG. 2 illustrates different menus of the selective call receiver of FIG. 1;

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5 FIG. 4 is a flow diagram illustrating moving an icon from an often used first menu to a hidden second menu of the selective call receiver of FIG. 1;

FIG. 5 is a flow diagram illustrating moving an icon from
10 the hidden second menu to the often used first menu of
the selective call receiver of FIG. 1.

15 DETAILED DESCRIPTION OF A PREFERRED EMBODIMENT OF THE
INVENTION

Referring to Fig. 1 there is illustrated a selective call receiver 1 comprising a casing 2 and a visual display in the form of a liquid crystal display 3. Displayed upon liquid crystal display 3 is an often used first menu 4 comprising function identifiers in the form of message flag icons 5, notebook access icon 6, erase message icon 7, audible/silent alarm icon 8, pager off icon 9 and a hidden second menu select icon 10.

Selective call receiver 1 also has six switches or buttons, these being an arrow up button 11, arrow down button 12, read/escape button 13, mode/select button 14, right button 15 and left button 16. Each of buttons 11 to 16 are associated with respective switches operatively coupled to a micro-processor and associated circuitry. Accordingly, buttons 11 to 16 operate selective call receiver 1 and provide for moving a cursor 17 on liquid crystal display 3. The micro-processor and associated circuitry are known to a skilled addressee and therefore

they are not illustrated or explained in this patent specification.

Referring to Fig. 2 and 3 there is illustrated a method of how a user can move from an often used first menu 4 to a hidden second menu 18. As illustrated, selective call receiver 1 will remain in standby mode at step 20 until an event is detected by a test step 21. Such an event may include reception of a paged message or a user of selective call receiver 1 activating any of buttons 11 to 16. Upon test step 21 detecting an event a status screen 19 is displayed upon liquid display 3 at display step 22. Status screen 19 displays message flag icon 5, notebook access icon 6, date and time information.

Status screen 19 will be continuously displayed until an event occurs at a mode button test step 23. Mode button test step 23 determines if mode/select button 14 has been activated. If test step 23 detects that mode/select button 14 has been activated then often used first menu 4 is displayed at step 24 on liquid crystal display 3. If test step 23 detects that read/escape button 13 is activated or a time out occurs, then selective call receiver 1 will return to standby mode 20.

Upon often used first menu 4 being displayed upon liquid crystal display 3 at step 24, the user can then activate left or right buttons 15, 16 at step 25 to move cursor 17 to a desired one of icons 7,8,9,10. If at test step 26 activation of mode/select button 14 is detected then test step 27 results. Alternatively, if read/escape button 13 is activated or a time out occurs then step 22 will result and status screen 19 will be displayed upon liquid crystal display 3 (this is not explicitly illustrated in FIG. 3).

If test step 26 detects activation of a button other than mode/select button 14 or read/escape button 13 then test step 33 detects whether or not arrow down button 12 has been activated. If test step 33 detects activation of arrow down button 12 then the icon selected by cursor 17 is required to be moved to hidden second menu 18 and a subroutine identified by (A) is called (refer to FIG. 4). Alternatively, if there is no detection of arrow down button 12 being activated at test step 33, then step 25 will result to allow the user to move cursor 17.

At test step 27 it is determined if cursor 17 is positioned over hidden second menu select icon 10. If test step 27 results in a NO then at test step 28 an action or function associated with the icon selected by cursor 17 will be invoked after which status screen 19 is displayed at step 22.

If the test at step 27 results in a YES then hidden second menu 18, comprising a plurality of icons 18a, is displayed on liquid crystal display 3 at step 29. The user may then activate left or right buttons 15,16 at step 30 to select one of icons 18a. A test step 31 then detects if mode/select button 14 has been activated. If activation mode/select button 14 is detected step 32 will result thereby invoking an action or function associated with one of icons 18a selected by cursor 17. After step 32 status screen 19 is displayed at step 22.

If at test step 31 the read/escape button 13 is activated or a time out occurs then step 22 will result and status screen 19 will be displayed upon liquid crystal display 3 (this is not explicitly illustrated in FIG. 3). Alternatively, if a button other than read/escape button 13 or mode/select button 14 is activated then test step 34 will test for activation of

arrow up button 11. If activation of arrow up button 11 is detected then icon selected by cursor 17 is required to be moved to often used first menu 4 and a subroutine identified by (C) is called (refer to FIG. 5). If there
 5 is no detection of arrow up button 11 activation at test step 34, then step 24 will result and often used first menu 4 will be displayed.

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Referring to FIG. 4 there is illustrated a flow diagram of a subroutine for moving icons 7,8,9 and icons 18a from often used first menu 4 to hidden second menu 18. The subroutine of FIG. 4 is called when test step 33
 15 of FIG. 3 determines that arrow down button 12 has been activated. Accordingly, step 41 displays a confirmation prompt message on liquid crystal display 3 identifying which one of icons 18a has been selected by cursor 17. Test step 42 then determines if mode/select button 14 is
 20 activated to confirm the confirmation prompt message displayed at step 41. If any other button other than mode/select button 14 is activated then this subroutine will terminate resulting in step 22 being effected to display status screen 19 on liquid crystal display 3.

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If step 42 detects activation of mode/select button 14 then step 43 moves the selected icon from often used first menu 4 to hidden second menu 18. The subroutine will then terminate resulting in step 22 being
 30 effected to display status screen 19 on liquid crystal display 3.

Referring to FIG. 5 there is illustrated a flow diagram of a subroutine for moving icons 18a from hidden
 35 second menu 18 to often used first menu 4. The subroutine of FIG. 5 is called when test step 34 of FIG. 3 determines that arrow up button 11 has been activated. Accordingly, step 51 displays a confirmation prompt

message on liquid crystal display 3 identifying which one of icons 18a has been selected by cursor 17. Test step 52 then determines if mode/select button 14 is activated to confirm the confirmation prompt message displayed at
5 step 51. If any other button other than mode/select button 14 is activated then this subroutine will terminate resulting in step 22 being effected to display status screen 19 on liquid crystal display 3. If step 52 detects activation of mode/select button 14 then step 53
10 moves the selected icon from hidden second menu 18 to often used first menu 4. The subroutine will then terminate resulting in step 22 being effected to display status screen 19 on liquid crystal display 3.

15 The present invention allows the user to move icons 7,8,9 and 18a from often used first menu 4 to hidden second menu 18 and vice versa. This advantageously allows a user to move the majority icons 7,8,9 and 18a that are seldom used from often used first menu 4 to
20 hidden second menu 18. Further, hidden second menu 18 is from often used first menu. The present invention therefore advantageously allows the user to personalise menus 4 and 18 so that only often used icons can be located in often used first menu 4. These icons can then
25 be conveniently accessed to invoke their associated function.

Although the invention has been described with reference to a preferred embodiment it is to be
30 understood that the invention is not restricted to the embodiment described herein. For example, some of the steps of FIGs. 3 to 5 may be effected by interrupts as will be apparent to a skilled addressee.



WE CLAIM:

1. A selective call receiver for providing at least two menus on a visual display thereof, each of said menus providing for displaying one or more selectable function identifiers for invoking respective functions of said selective call receiver,
wherein at least one of said function identifiers is movable from one of said menus to another of said menus.
2. A selective call receiver as claimed in claim 1, wherein at least one of said menus is accessible by selection of an icon displayed on another one of said menus.
3. A selective call receiver as claimed in any one preceding claim, wherein said function identifiers are movable from one of said menus to another one of said menus by suitable operation of one or more switches associated with said selective call receiver.
4. A selective call receiver as claimed in any one preceding claim, wherein said function identifiers are icons.
5. A method for moving at least one function identifier displayed on a visual display of a selective call receiver, the method comprising the steps of:
selecting at least one said function identifier from a menu displayed upon said visual display; and
moving said function identifier to another menu displayable upon said visual display.
6. A method as claimed in claim 5, wherein said step of moving is effected by suitable operation of one or more switches associated with said selective call receiver.



7. A method as claimed in claim 5 or claim 6, wherein said function identifiers are icons.

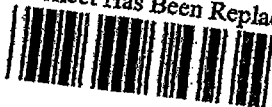
5 8. A selective call receiver for providing at least two menus on a visual display thereof, each of said menus comprising one or more selectable function identifiers for invoking respective functions of said selective call receiver,

10 wherein at least one of said menus is accessible by selection of an icon displayed on another one of said menus.

15 9. A selective call receiver substantially as described herein with reference to and as illustrated by the accompanying drawings.

10. A method substantially as described herein with reference to and as illustrated by the accompanying drawings.

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REPLACED

ABSTRACT OF THE DISCLOSURE

5 A selective call receiver (1) for providing at least two
menus on a visual display (3), each of the menus
providing for displaying one or more icons (7,8,9) for
invoking respective functions of the selective call
receiver (1). At least one of the icons (7,8,9) can be
10 moved from one of the menus to another of the menus by
suitable operation of buttons (11,12,15,16) mounted to a
casing (2) of the selective call receiver (1).

FIG. 1 accompanies this abstract.

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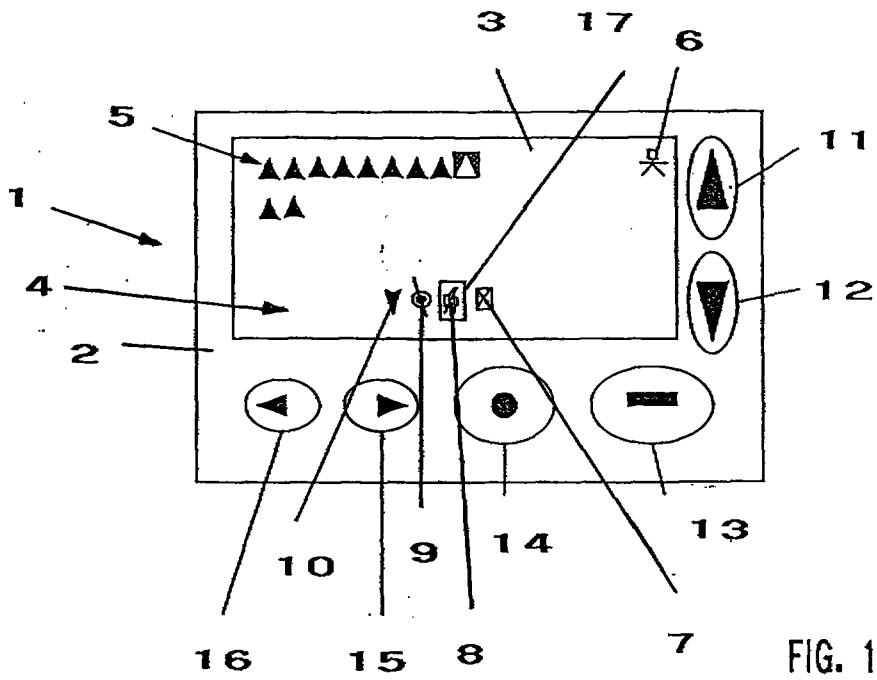


FIG. 1

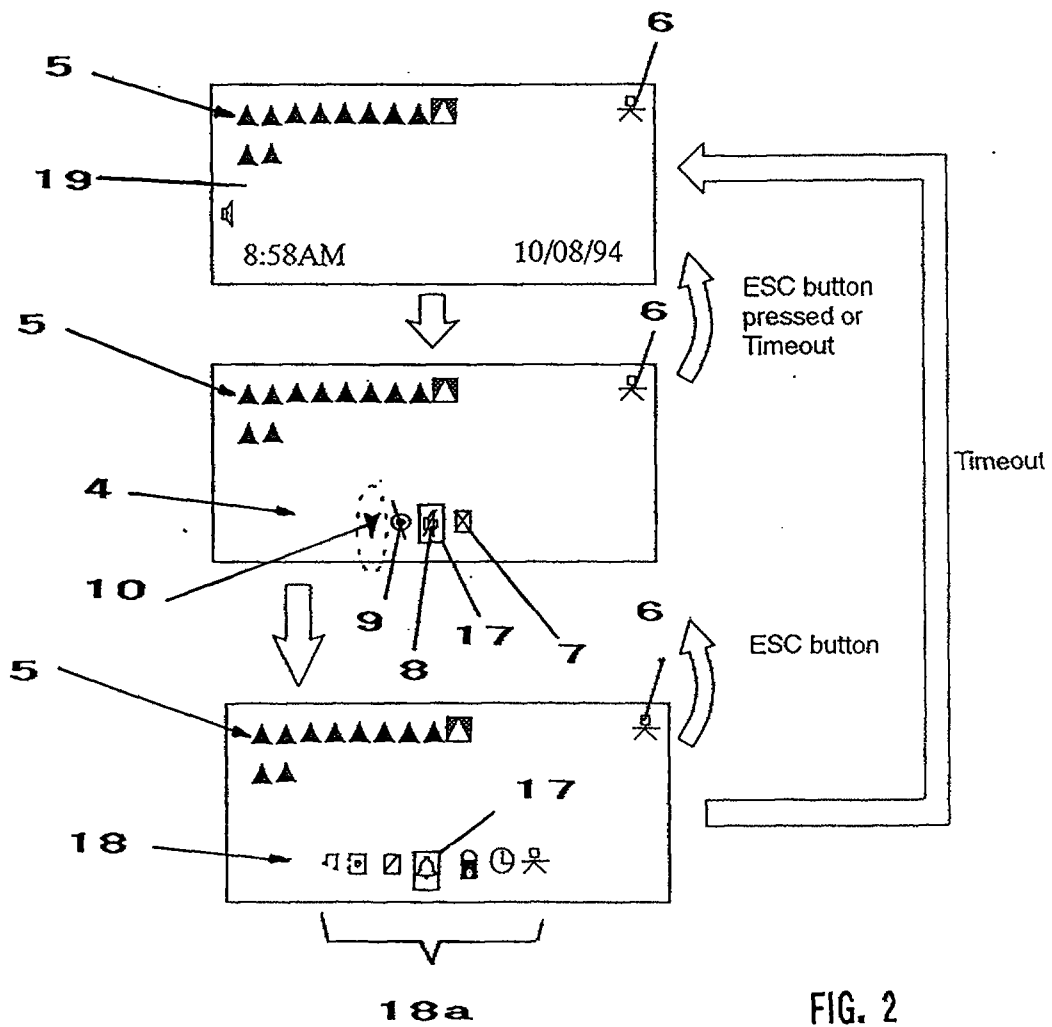


FIG. 2

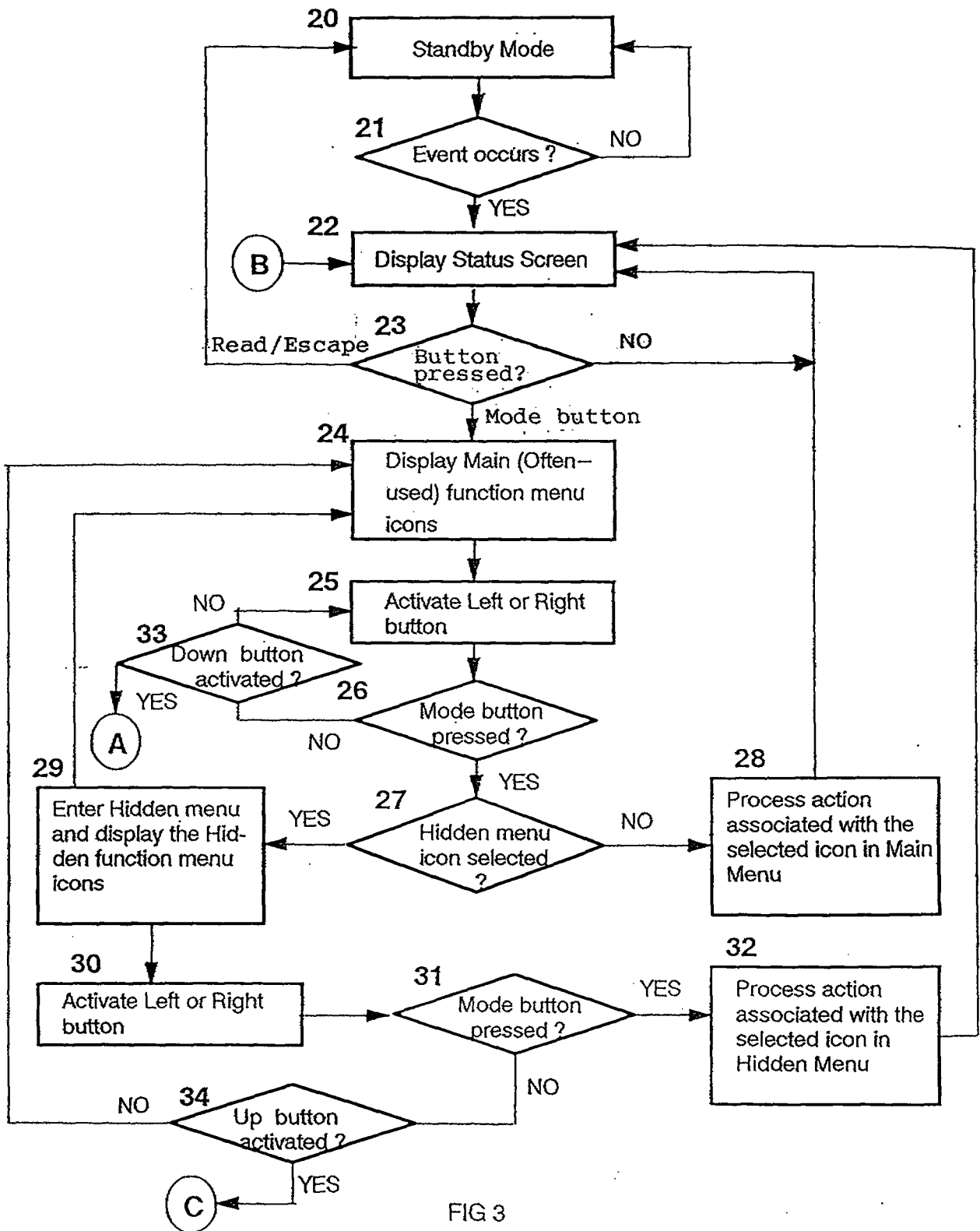


FIG 3

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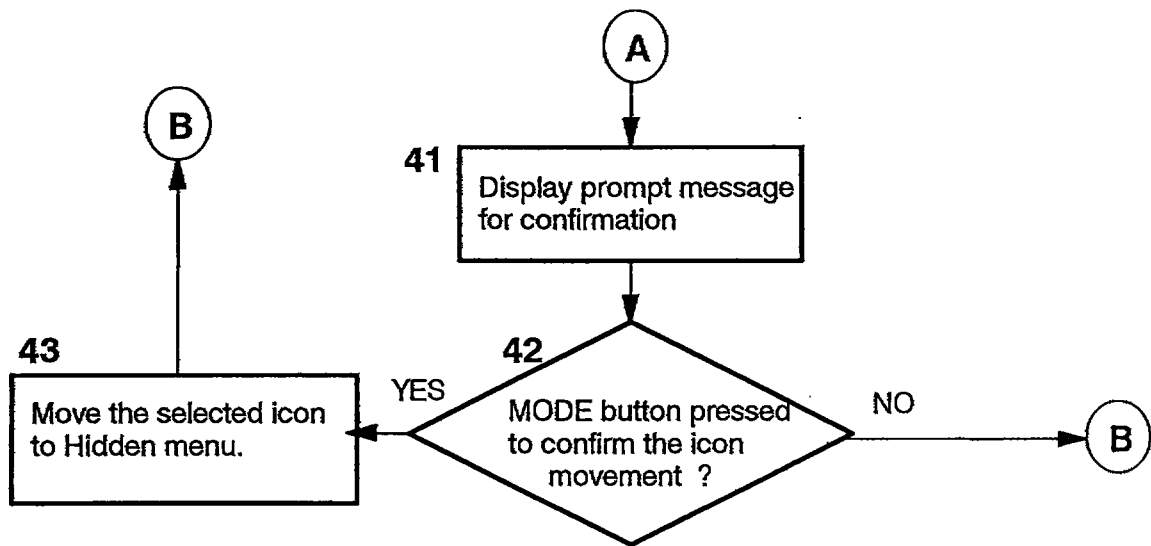


FIG. 4

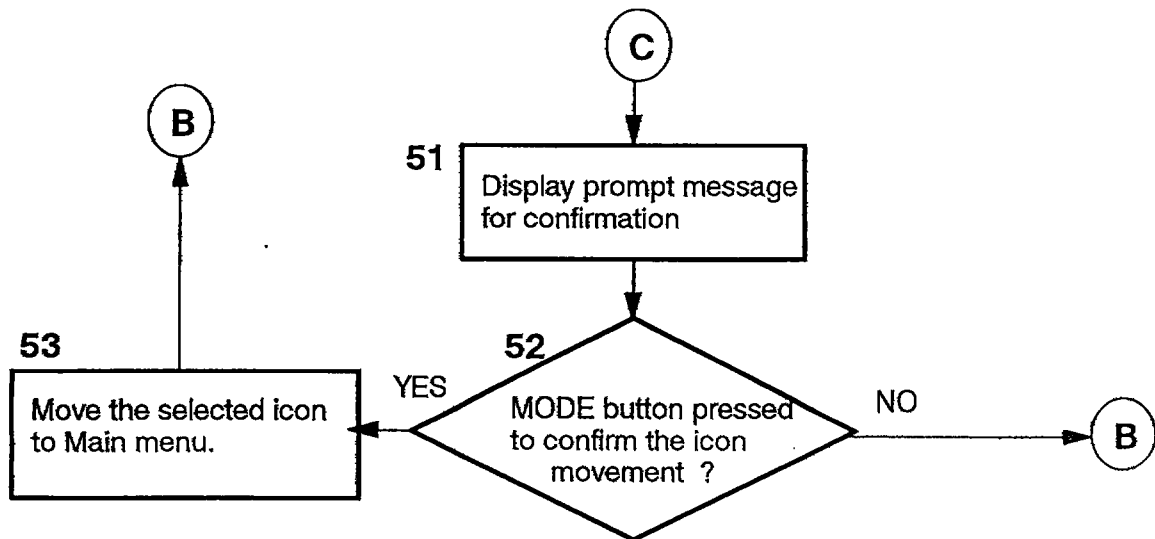


FIG. 5

10 DEC 1996

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ABSTRACT OF THE DISCLOSURE

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A selective call receiver (1) for providing at least two menus on a visual display (3), each of the menus providing for displaying one or more icons (7,8,9) for invoking respective functions of the selective call receiver (1). At least one of the icons (7,8,9) can be moved from one of the menus to another of the menus by suitable operation of buttons (11,12,15,16) mounted to a casing (2) of the selective call receiver (1).

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15 FIG. 1 accompanies this abstract.



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7. A method as claimed in claim 5 or claim 6, wherein said function identifiers are icons.

5 8. A selective call receiver for providing at least two menus on a visual display thereof, each of said menus comprising one or more selectable function identifiers for invoking respective functions of said selective call receiver,

10 wherein at least one of said menus is accessible by selection of an icon displayed on another one of said menus.