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(54) ELEVATOR CAR OPERATION PANEL

(57) The present invention discloses an elevator car operation panel. The elevator car operation panel includes a glass touch panel. First type function keys (C) and second type function keys (S2) are provided on the elevator car operation panel. When the elevator is in a normal function mode, the first type function keys are in an active visible state, and the second type function keys are in an inactive hidden state. When the elevator is in a special function mode, both the first type function keys and the second type function keys are in the active visible state. Thereby, in the present invention, it does not need to cut an opening in the glass panel of the elevator car operation panel for installing a drive control box, which ensures the integrity of the glass panel, and improves the aesthetics of the glass panel.

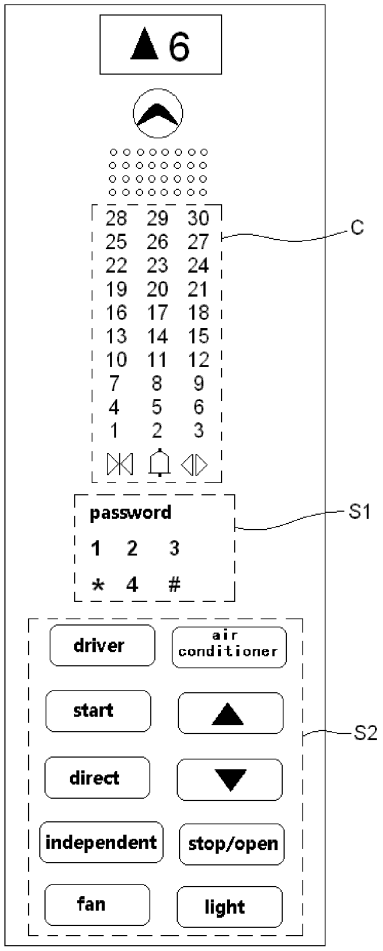

Fig.3

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Description

BACKGROUND OF THE INVENTION

Field of the Invention

[0001] The present invention relates to an elevator car operation panel, more particularly, relates to an elevator car operation panel with a driver operation function.

Description of the Related Art

[0002] In current elevator market, when an elevator car operation panel uses an all-glass panel structure, if it is required to provide a driver control box specialized for operations of an elevator driver, an opening must be cut in the glass panel, so that the elevator driver may access the driver control box through the opening in the glass panel and control the elevator by the driver control box. However, cutting the opening in the glass panel damages the integrity of the glass panel, and adversely affects aesthetics of the glass panel.

[0003] Moreover, in the prior art, the driver control box usually includes a mechanical lock. The elevator driver needs to insert a key into the mechanical lock so as to open the driver control box, which is inconvenience in use for the elevator driver.

SUMMARY OF THE INVENTION

[0004] The present invention intends to overcome or alleviate at least one aspect of the above-mentioned problems and disadvantages existing in the prior art.

[0005] According to an aspect of the present invention, there is provided an elevator car operation panel comprising a glass touch panel. First type function keys and second type function keys are provided on the elevator car operation panel. When the elevator is in a normal function mode, the first type function keys are in an active visible state, and the second type function keys are in an inactive hidden state. When the elevator is in a special function mode, both the first type function keys and the second type function keys are in the active visible state. In the above various exemplary embodiments of the present invention, when the elevator is in the normal function mode in which a passenger operates and controls the elevator, the second type function keys are in the inactive hidden state so that the passenger cannot see them and cannot operate them. When the elevator is in the special function mode in which a driver operates and controls the elevator, the second type function keys are in the active visible state, so that the driver can see them and can operate them. Thereby, it does not need to cut an opening in the glass panel of the elevator car operation panel, for installing the driver control box, which ensures the integrity of the glass panel, and improves the aesthetics of glass panel.

[0006] The other objectives and advantages of the present invention will become apparent by means of the description with reference to the drawings below and it can help entirely understand the present invention.

BRIEF DESCRIPTION OF THE DRAWINGS

[0007] The above and other features of the present invention will become more apparent by describing in detail exemplary embodiments thereof with reference to the accompanying drawings, in which:

Fig.1 is a schematic view of an elevator car operation panel according to an exemplary embodiment of the present invention, in which password input keys and second type function keys are in an inactive hidden state;

Fig.2 is a schematic view of an elevator car operation panel according to an exemplary embodiment of the present invention, in which password input keys are in an active visible state, and second type function keys are in the inactive hidden state; and

Fig.3 is a schematic view of an elevator car operation panel according to an exemplary embodiment of the present invention, in which password input keys and second type function keys are in the active visible state.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS OF THE IVENTION

[0008] Exemplary embodiments of the present invention will be described hereinafter in detail with reference to the attached drawings, wherein the same or like reference numerals refer to the same or like elements. The present disclosure may, however, be embodied in many different forms and should not be construed as being limited to the embodiment set forth herein; rather, these embodiments are provided so that the present disclosure will be thorough and complete, and will fully convey the general inventive concept of the disclosure to those skilled in the art.

[0009] In the following detailed description, for purposes of explanation, numerous specific details are set forth in order to provide a thorough understanding of the disclosed embodiments. It will be apparent, however, that one or more embodiments may be practiced without these specific details. In other instances, well-known structures and devices are schematically shown in order to simplify the drawing.

[0010] According to a general inventive concept of the present invention, there is provided an elevator car operation panel, the elevator car operation panel comprises a glass touch panel. First type function keys and second type function keys are provided on the elevator car operation panel. When the elevator is in a normal function mode, the first type function keys are in an active visible state, and the second type function keys are in an inactive hidden state. When the elevator is in a special function

mode, the first type function keys and the second type function keys are all in the active visible state.

[0011] In an exemplary embodiment of the present invention, the elevator car operation panel mainly comprises a control panel and a glass touch panel covered on the control panel. The control panel is provided with various keys. A passenger or a driver may operate the elevator by touching the various keys displayed on the glass touch panel.

[0012] Fig.3 is a schematic view of an elevator car operation panel according to an exemplary embodiment of the present invention, in which password input keys and second type function keys are in an active visible state.

[0013] As shown in Fig.3, in an embodiment as illustrated, the first type function keys (the keys shown in a region "C" of Fig.3) exclusively for the passenger are provided on the elevator car operation panel. Herein, the first type function keys may also be referred as passenger function keys.

[0014] As shown in Fig.3, in the illustrated embodiment, the second type function keys (the keys shown in a region "S2" of Fig.3) exclusively for the driver are provided on the elevator car operation panel. Herein, the second type function keys may also be referred as driver function keys.

[0015] Fig.1 is a schematic view of an elevator car operation panel according to an exemplary embodiment of the present invention, in which password input keys and second type function keys are in an inactive hidden state.

[0016] As shown in Fig.1, in the illustrated embodiment, when the elevator is in a normal function mode in which the passenger operates the elevator, the first type function keys in the region "C" are in an active visible state, so that the passenger may see them and operate them. However, when the elevator is in the normal function mode, the second type function keys in the region " S2 " are in an inactive hidden state, so that the passenger cannot see them and cannot operate them.

[0017] As shown in Fig.3, in the illustrated embodiment, when the elevator is in a special function mode in which the driver operates the elevator, the first type function keys in the region "C" and the second type function keys in the region "S2" are all in the active visible state. Thereby, the driver may see the second type function keys and operate them. In this way, the driver may control the elevator by touching the second type functions keys displayed on the glass touch panel.

[0018] In an exemplary embodiment of the present invention, the special function mode as described above may include a driver operation mode and an independent operation mode. When the elevator is in the driver operation mode, the elevator does not have a function of automatic closing door. The door of the elevator is closed under a condition that the driver keeps pressing a shutting button. In addition, the driver may also choose a direct travelling function. When the elevator is in the independent operation mode (or referred as a special operation mode), the elevator neither accepts any external calls, nor has the function of automatic closing door. Because both the driver operation mode and the independent operation mode are terms commonly used in the elevator field, further detailed descriptions about them are omitted herein for the sake of simplicity.

[0019] Fig.2 is a schematic view of an elevator car operation panel according to an exemplary embodiment of the present invention, in which password input keys are in an active visible state, and second type function keys are in an inactive hidden state.

[0020] As shown in Figs.2-3, in this embodiment, the elevator car operation panel is further provided with the password input keys (the keys in a region "S1" shown Figs.2-3). The driver may input a password by the password input keys in the region "S1" . In an embodiment, the second type function keys in the region "S2" will not be activated and visible until a correct password is entered by the password input keys in the region "S1". As shown in Fig.3, in this embodiment, the region "S2" (or referred as the second region) in which the second type function keys are located is located below the region "S1" (or referred as the first region) in which the password input keys are located.

[0021] As shown in Fig. 1, in the illustrated embodiment, when the elevator is in the normal function mode in which the passenger operates and controls the elevator, the password input keys in the region "S1" are in the inactive hidden state, so that the passenger cannot see them and cannot operate them.

[0022] As shown in Fig.3, in the illustrated embodiment, when the elevator is in the special function mode in which the driver operates and controls the elevator, the password input keys in the region "S1" are in the active visible state, so that the driver may see them and operate them.

[0023] As shown in Fig.1, in the illustrate embodiment, a password activation key "J" is provided on the elevator car operation panel, the password input keys will be activated and visible by pressing the password activation key "J".

[0024] In an exemplary embodiment of the present invention, the password input keys will not be activated and visible until the password activation key "J" is pressed continuously for a first predetermined time. In an embodiment, the first predetermined time may be within a range of 5 to 20 seconds, for example, the first predetermined time may be set to 5, 10, 15 or 20 seconds.

[0025] In an exemplary embodiment of the present invention, the password activation key "J" may be located at a predetermined position on the elevator car operation panel. For example, as shown in Fig. 1, the password activation key "J" may be located at an elevator brand identity on the elevator car operation panel or at a corner of the elevator car operation panel. In an exemplary embodiment of the present invention, the password activation key "J" may be in the invisible hidden state when it is not pressed down. But the present invention is not limited to this, the password activation key "J" may be in a

visible state when it is not pressed down.

[0026] In an exemplary embodiment of the present invention, after the password input keys and the second type function keys are activated, if any one of the second type function keys is in a working state, all of the password input keys and all of the second type function keys are in the active visible state.

[0027] In an exemplary embodiment of the present invention, after the password input keys and the second type function keys are activated, if all second type function keys are not in the working state, all of the password input keys and all of the second type function keys will be automatically returned from the active visible state to the inactive hidden state after a predetermined time. In an embodiment, the predetermined time may be within a range of 1 to 5 minutes, for example, the predetermined time may be set to 1, 2, 3, 4, or 5 minutes.

[0028] In an embodiment of the present invention, as shown in Figs.2-3, the password input keys may include an exit key, the password input keys and the second type function keys will be returned from the active visible state to the inactive hidden state when the driver presses down the exit key.

[0029] In the illustrated embodiment, as shown in Figs. 2-3, the exit key may be a key indicated by a symbol of "*".

[0030] In an exemplary embodiment of the present invention, the password input keys and the second type function keys are returned from the active visible state to the inactive hidden state only when the exit key "*" is pressed continuously for a second predetermined time. In an exemplary embodiment of the present invention, the second predetermined time is less than the first predetermined time. In this way, after pressing down the exit key "*", the password input keys and the second type function keys may be quickly returned from the active visible state to the inactive hidden state.

[0031] In an exemplary embodiment of the present invention, the second predetermined time may be within a range of 1 to 10 seconds. For example, the second predetermined time may be set to 1, 5 or 10 seconds.

[0032] In the illustrated embodiment, as shown in Fig. 1, the first type function keys which are exclusively for the passenger are in a third region "C" on the elevator car operation panel. As shown in Figs.2-3, in the illustrated embodiment, the region (or called as third region) "C" in which the first type function keys are located is located above the first region "S1" in which the password input keys are located.

[0033] Hereafter, it will describe a process of operating the elevator by the driver with reference to Figs. 1-3.

[0034] Firstly, as shown in Figs. 1-2, the driver keeps pressing the password activation key "J" to reach the first predetermined time, so that the password input keys in the region "S1" are activated and visible.

[0035] Then, as shown in Figs.2-3, the driver enters the correct password by the password input keys in the region "S1" , so that the second type function keys in the region "S2" are activated and visible.

[0036] Then, as shown in Fig.3, the driver may operate the second type function keys in the region "S2" by touching the glass touch panel, so as to control the elevator.

[0037] It should be appreciated for those skilled in this art that the above embodiments are intended to be illustrated, and not restrictive. For example, many modifications may be made to the above embodiments by those skilled in this art, and various features described in different embodiments may be freely combined with each other without conflicting in configuration or principle.

[0038] Although the present invention has been described with the reference to the drawings, the embodiments disclosed by the drawings are intended to illustratively explain the preferred embodiments of the present invention, rather than construing as limiting to the present invention.

[0039] Although some exemplary embodiments of the present general inventive concept have been shown and described, it would be appreciated by those skilled in the art that various changes or modifications may be made in these embodiments without departing from the principles and spirit of the disclosure, the scope of which is defined in the claims and their equivalents. It should be noted that the word "comprise" or "include" does not exclude other elements or steps and the word "one" does not exclude the meaning of plural. In addition, any reference numeral involving in the pending claims shall not be interpreted as limiting the scope of the present invention.

Claims

1. An elevator car operation panel, comprising a glass touch panel, wherein first type function keys and second type function keys are provided on the elevator car operation panel; whereas when the elevator is in a normal function mode, the first type function keys are in an active visible state, and the second type function keys are in an inactive hidden state; and when the elevator is in a special function mode, the first type function keys and the second type function keys are all in the active visible state.

2. The elevator car operation panel according to claim 1, wherein the special function mode includes a driver operation mode and an independent operation mode.

3. The elevator car operation panel according to claim 1, wherein the elevator car operation panel is further provided with password input keys for entering passwords, the second type function keys will not be activated until a correct password is entered.

4. The elevator car operation panel according to claim 3, wherein
when the elevator is in the normal function mode,

the password input keys are in the inactive hidden state; and
when the elevator is in the special function mode, the password input keys are in the active visible state.

5. The elevator car operation panel according to claim 4, wherein a password activation key (J) is provided on the elevator car operation panel, and the password input keys are activated by pressing the password activation key (J).

6. The elevator car operation panel according to claim 5, wherein the password input keys will not be activated until the password activation key (J) is pressed continuously for a first predetermined time, the first predetermined time preferably being within a range of 5 to 20 seconds.

7. The elevator car operation panel according to claim 6, wherein the password activation key (J) is located at a predetermined position on the elevator car operation panel, preferably at an elevator brand identity on the elevator car operation panel or at a corner of the elevator car operation panel.

8. The elevator car operation panel according to claim 7, wherein the password activation key (J) is in the invisible hidden state when it is not pressed down.

9. The elevator car operation panel according to claim 4, wherein after the password input keys and the second type function keys are activated, if any one of the second type function keys is in a working state, all of the password input keys and all of the second type function keys are always in the active visible state.

10. The elevator car operation panel according to claim 9, wherein after the password input keys and the second type function keys are activated, if all of the second type function keys are not in the working state, all of the password input keys and all of the second type function keys will automatically return to the inactive hidden state after a predetermined time, the predetermined time preferably being within a range of 1 to 5 minutes.

11. The elevator car operation panel according to claim 6,
wherein the password input keys include an exit key, the password input keys and the second type function keys are returned from the active visible state to the inactive hidden state by pressing the exit key, the exit key preferably being a key indicated by a symbol of "*"

12. The elevator car operation panel according to claim 11, wherein the password input keys and the second type function keys are returned from the active visible state to the inactive hidden state only when the exit key is pressed continuously for a second predetermined time, the second predetermined time preferably being less than the first predetermined time, and/ or the second predetermined time being within a range of 1 to 10 seconds.

13. The elevator car operation panel according to claim 4, wherein the password input keys are located in a first region (S1) on the elevator car operation panel, and the second type function keys are located in a second region (S2) on the elevator car operation panel, wherein the second region (S2) is located below the first region (S1).

14. The elevator car operation panel according to claim 13, wherein the first type function keys are located in a third region (C) on the elevator car operation panel, and the third region (C) is located above the first region (S1).

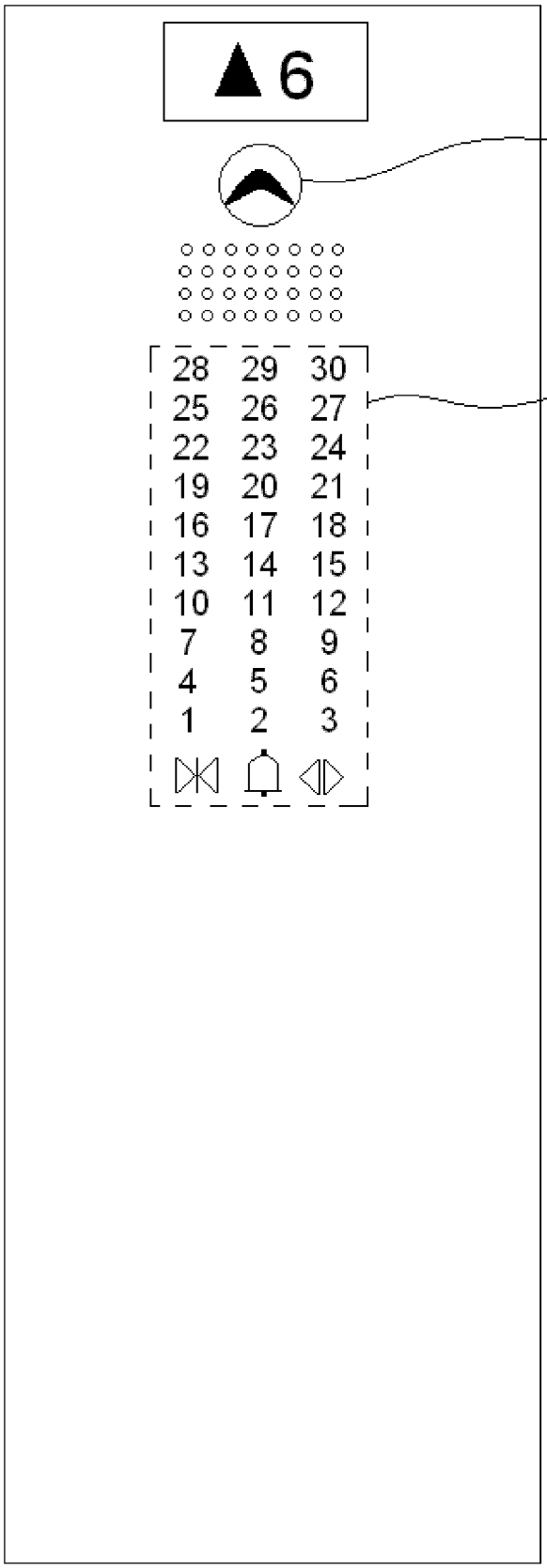
6
J
C
28 29 30
25 26 27
22 23 24
19 20 21
16 17 18
13 14 15
10 11 12
7 8 9
4 5 6
1 2 3

Fig.1

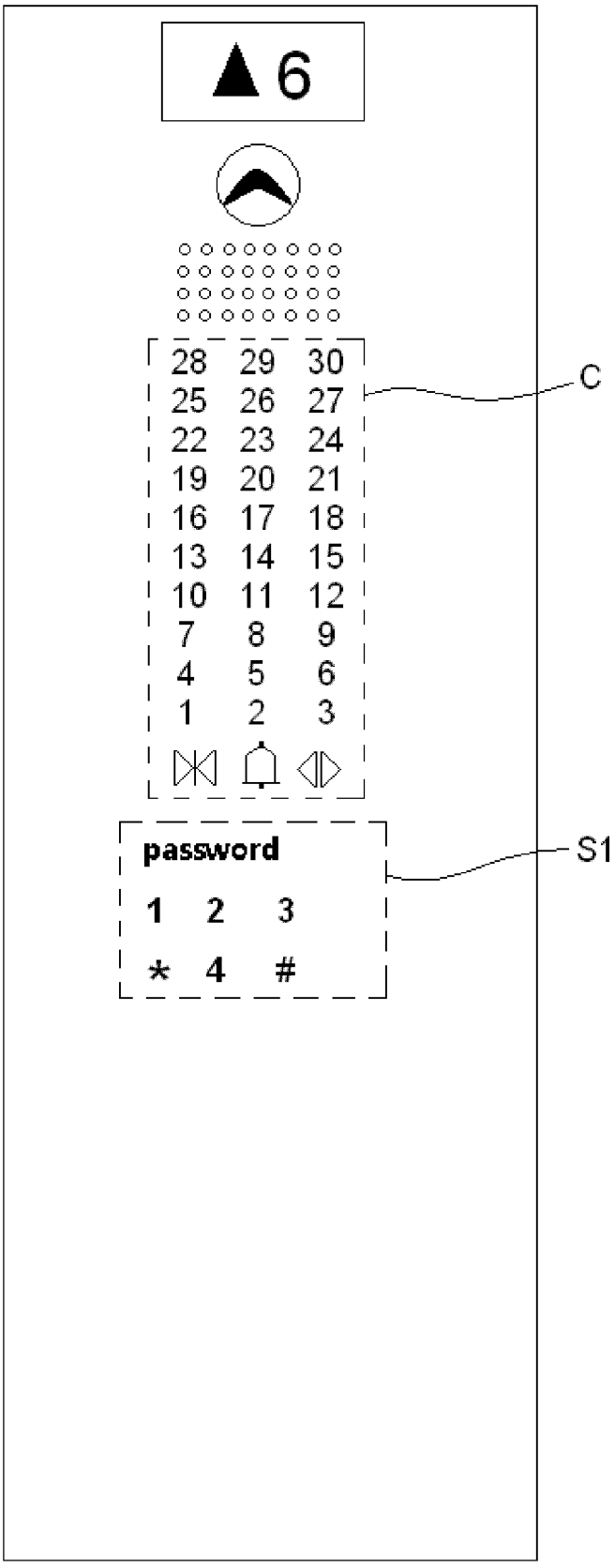
6
28 29 30
25 26 27
22 23 24
19 20 21
16 17 18
13 14 15
10 11 12
7 8 9
4 5 6
1 2 3
C
password
1 2 3
* 4 #
S1

Fig.2

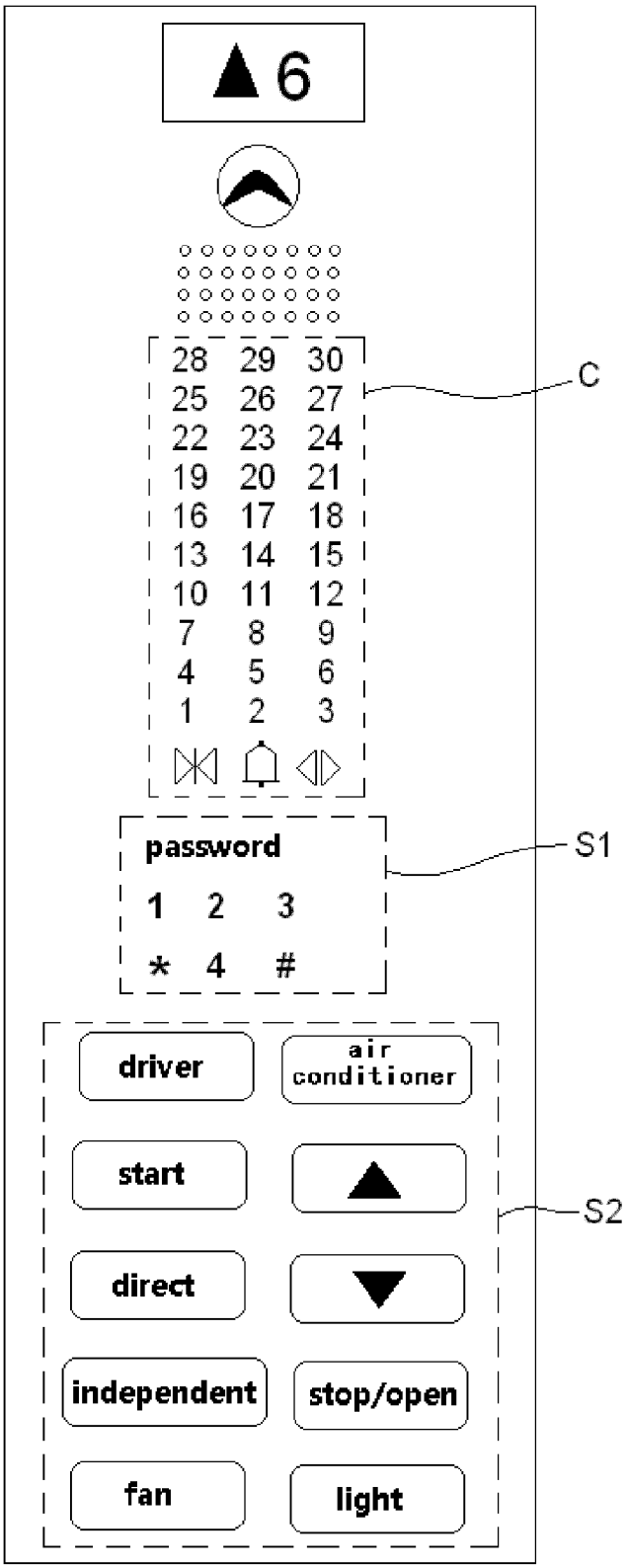
6
28 29 30
25 26 27
22 23 24
19 20 21
16 17 18
13 14 15
10 11 12
7 8 9
4 5 6
1 2 3
C
password
1 2 3
* 4 #
S1
driver
air conditioner
start
direct
independent
stop/open
fan
light
S2

Fig.3

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EUROPEAN SEARCH REPORT

Application Number
EP 18 18 8709

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The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	14 February 2019	Oosterom, Marcel

CATEGORY OF CITED DOCUMENTS

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