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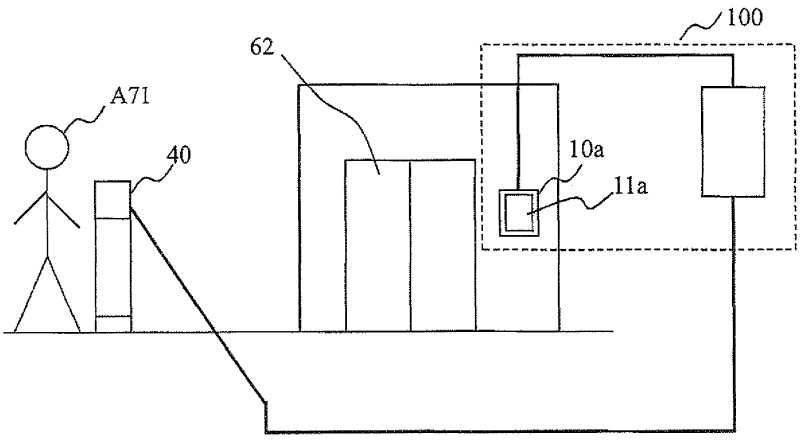
(54) ELEVATOR CALL REGISTRATION DEVICE

(57) The call registration device 100 is connected to the authentication information inputting device 40 set to the elevator platform. The call registration device 100 provides the platform call registration terminal 10a set to the same elevator platform as the authentication information inputting device 40. The platform call registration terminal 10a has the platform side information displaying unit 11a that displays the destination buttons under the normal mode. When the proper user A71 inputs the authentication information to the authentication information inputting device 40, the call registration device 100 executes the authentication processing. The destination floor of the proper user A71 is already registered to the call registration device 100. When the authentication is established, the call registration device 100 automatically registers the platform call and the destination call. Along with this automatic registration, the call registration device 100 switches the display of the destination buttons of the platform side information displaying unit 11a to the display of predetermined information until the car arrives, by the automatic registration of the platform call.

FIG. 1



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Description

TECHNICAL FIELD

[0001] The present invention relates to a call registration device of an elevator, that automatically registers a call of the elevator by establishing a personal authentication. Particularly, it relates to the call registration device of the elevator that provides a call registration terminal having an information displaying unit.

BACKGROUND ART

[0002] Patent document 1 discusses a technology for displaying an information such as a message on an available space besides a display area of touch buttons when a call is automatically registered, for a platform operating board comprised of a touch panel.

[0003] Patent document 2 discusses a technology related to a multi-functional touch panel that comprises a screen being switchable to a plurality of function modes, and that provides an input device being operated by touch of a human finger.

[0004] Patent document 3 discusses a technology for calling an elevator to an entrance floor by performing the personal authentication at the entrance and automatically dispatching the car to a residence floor.

[0005] In case that a guidance information such as a news is displayed on a destination operating board of the touch panel display, destination buttons and the guidance information can be displayed altogether by dividing the screen. However, in this case, display sizes of the guidance information and the destination buttons for displaying will be reduced, thereby decreasing its operability and visibility. One can consider about increasing a size of the touch panel display, however, a size of the operating board gets large also, which increases the cost.

Patent document 1: JP64-28190
Patent document 2: JP6-144726
Patent document 3: JP11-349238

DISCLOSURE OF THE INVENTION

PROBLEMS TO BE SOLVED BY THE INVENTION

[0006] The present invention is directed to provide a call registration device that automatically registers a call of an elevator based on a personal authentication and that can display an information, wherein the call registration device displays a highly convenient information to a user.

MEANS TO SOLVE THE PROBLEMS

[0007] An elevator call registration device for registering a call of an elevator, comprising:

an authentication information reading unit that is set to a predetermined elevator platform, and that reads an authentication information for indicating a proper user;

an authenticating unit that determines whether or not the authentication information read by the authentication information reading unit is indicating the proper user;

a call accepting unit that provides an information displaying unit for displaying an information, that is set together with the information displaying unit to at least either one of a reading unit installation platform serving as the elevator platform where the authentication information reading unit is set and an inside of a car of the elevator, and that accepts the call of the elevator;

a platform destination call automatic registering unit that automatically registers a platform call for calling the car to the reading unit installation platform and a destination call for indicating a predetermined destination floor by corresponding to the proper user authenticated, when the authenticating unit establishes the authentication;

a car destination call allocating unit that allocates the destination call to the car that responded to the platform call; and

a display control unit that displays, when the authenticating unit establishes the authentication, a predetermined information on a platform side information displaying unit serving as the information displaying unit of the call accepting unit set to the reading unit installation platform in case that the call accepting unit is set to the reading unit installation platform, and displays a predetermined information on a car side information displaying unit serving as the information displaying unit of the call accepting unit set inside the car for which the destination call is automatically registered based on an authentication establishment in case that the call accepting unit is set inside the car.

EFFECTS OF THE INVENTION

[0008] Based on the call registration device of the elevator of the present invention, a lot of highly convenient information can be supplied to elevator users.

PREFERRED EMBODIMENTS FOR CARRYING OUT THE INVENTION

First Embodiment

[0009] The first embodiment will be described by using Figs. 1 to 7. The first embodiment describes a case in which a call registration device 100, provided with a registration terminal 10 having an information displaying unit 11, automatically registers a call of an elevator and switches a display of the information displaying unit 11,

by taking an opportunity of an establishment of the personal authentication. The call registration device 100 which will be described hereinafter has the information displaying unit 11, however, this information displaying unit 11 is included to the call registration terminal 10 (the call accepting unit) that accepts a destination of an elevator car. The information displaying unit 11 and the call registration terminal 10 are set to the same installation location. The call registration terminal 10 may be set to an elevator platform, or it may be set inside the elevator car, alternatively, it may be set at both. The call registration terminal 10 set to the elevator platform is referred to as the "platform call registration terminal 10a", and the call registration terminal 10 set inside the elevator car is referred to as the "car call registration terminal 10b". It is referred to as the call registration terminal 10 unless a particular distinction is required. The call registration terminal 10 is executed as a touch panel display, for example. Hereinbelow, the call registration terminal 10 is the touch panel display. Also, in the first embodiment as in below, the case of setting the call registration terminal 10 to the elevator platform (the platform call registration terminal 10a) is described first, which is followed by a description of the case of setting the call registration terminal 10 inside the elevator car (hereinafter, referred to as "car") (the car call registration terminal 10b).

<A. Platform call registration terminal 10a>

[0010] Fig. 1 is a drawing that describes the case in which the platform call registration terminal 10a is set to the elevator platform. As shown in Fig. 1, the call registration device 100 provides the platform call registration terminal 10a. On the platform where the platform call registration terminal 10a is being set, an authentication information inputting device 40 (the authentication information reading unit) is set. The authentication information inputting device 40 is connected to the call registration device 100. A user A71 inputs an authentication information to the authentication information inputting device 40. Accordingly, the platform call registration terminal 10a and the authentication information inputting device 40 are set to the same elevator platform.

[0011] In the first and second embodiments described hereinbelow, the followings (1) to (3) are set forth as premises.

(1) The call registration terminal 10 (the platform call registration terminal 10a and the car call registration terminal 10a) is the touch panel display.
(2) The authentication information inputting device 40 is set to the elevator platform of a common entrance on a first floor.
(3) The user A71 is a proper user, who is a resident owning a room on a third floor.

(Platform side information displaying unit 11a)

[0012] Fig. 2 is a drawing showing a display of the platform side information displaying unit 11a that the platform call registration terminal 10a provides. And likewise for a car side information displaying unit 11b. As shown in Fig. 2, the platform call registration terminal 10a provides the platform side information displaying unit 11a for displaying the information. (a) of Fig. 2 shows a normal display mode of the platform side information displaying unit 11a. As shown in (a) of Fig. 2, for example, the platform side information displaying unit 11a displays, under the normal mode, destination buttons 13 indicating destination floors such as "1", "2" and so forth. The platform side information displaying unit 11a, as will be described later, when a collating unit 4 establishes a user authentication, switches from a display of the normal display mode of the destination buttons 13 to a display of previously set guidance information (the predetermined information) such as news or image shown in (b) of Fig. 2. Further, the "guidance information" described herein denotes typical information such as television broadcasting, video broadcasting, news delivery and stock exchange information. Also, as will be described in the second embodiment, it may be an information related to an individual such as camera images inside the car 60, the elevator platform and the room, or an information of a home delivery box. These information related to individual will be described in detail in the second embodiment as the "user corresponding information".

(Outline of operation)

[0013] Fig. 3 is a flowchart showing an outline of operation of the call registration device 100. The outline of operation for a characteristic portion of the call registration device 100 will be described by referring to Fig. 3. In Fig. 1, provided that the user A71 is the proper user, then the call registration device 100 is already storing a personal information of the user A71. Provided that the common entrance where the authentication information inputting device 40 is being set is on the first floor, and the room of the user A71 is on the third floor, then the call registration device 100 is storing the information of the room floor and the room number of the user A71 which can be transformed to a "destination call", as the personal information on the user A71. Based on this assumption, the outline of operation of the call registration device 100 is as follows.

(1) In S11, at the call registration device 100, the collating unit 4 determines whether or not an authentication for the personal information of the user A71 input from the authentication information inputting device 40 is established. If the authentication is "OK", the process advances to S12. If the authentication is "NG", the process advances to S13.
(2) If the authentication is "OK", then in S12, the call

registration device 100, as shown in Fig. 2, switches a display content of the platform side information displaying unit 11a from the normal display mode of the destination buttons 13 ((a) of Fig. 2) to the display of the guidance information ((b) of Fig. 2).
(3) If the authentication is "NG", then in S13, the platform side information displaying unit 11a maintains the display of the destination buttons 3.
(4) As noted above, the characteristic of the call registration device 100 resides in the fact that the current "display of destination buttons 13" of the platform side information displaying unit 11a provided by the platform call registration terminal 10a is switched to the "predetermined display" which is previously determined, when the personal authentication is established.

(Configuration of call registration device 100)

[0014] Fig. 4 illustrates a configuration of the call registration device 100. The configuration of the call registration device 100 will be described with reference to Fig. 4. Note that the call registration device 100 of Fig. 4 comprises the platform call registration terminal 10a (the call accepting unit) and the car call registration terminal 10b (the call accepting unit). The call registration device 100 comprises the call registration terminal 10 (includes the platform call registration terminal 10a and the car call registration terminal 10b), a display target information inputting unit 20, acarinside passenger detecting unit 31, a platform elevator user detecting unit 32, a car stop detecting unit 33, a display switch control unit 2 (the display control unit) for controlling switching of a display between the platform side information displaying unit 11a and the car side information displaying unit 11b, the collating unit 4 (the authenticating unit), and a personal information database 5 (the personal information storing unit and the specific information storing unit). Also, the call registration device 100 connects with a common management device 80, an each car management device 90, and the authentication information inputting device 40 (the authentication information readingunit) . The authentication information inputting device 40 connects to the collating unit 4.

(Platform call registration terminal 10a)

[0015] The platform call registration terminal 10a comprises the platform side information displaying unit 11a and a platform side call input control unit 12a. The platform side information displaying unit 11a displays the information based on a control of the display switch control unit 2. The platform side call input control unit 12a accepts a platform call.

(Car call registration terminal 10b)

[0016] The car call registration terminal 10b also has the same configuration as the platform call registration terminal 10a. The car call registration terminal 10b comprises the car side information displaying unit 11b and a car side call input control unit 12b. The car side information displaying unit 11b displays the information based on a control of the display switch control unit 2. The car side call input control unit 12b accepts a car call.

(Common management device 80)

[0017] The common management device 80 comprises a platform call registering unit 81, a platform destination call automatic registering unit 82, and a car destination call allocating unit 83.

(Each car management device 90)

[0018] The each car management device 90 comprises a car call registering unit 91.

[0019] These are described with reference to Fig. 4.

(1) The platform call registration terminal 10a is a terminal that accepts a destination floor of the elevator, at the platform of the common entrance. As described previously, in this example, the platform call registration terminal 10a is the touch panel display. The platform call registration terminal 10a provides the platform side information displaying unit 11a and the platform side call input control unit 12a. The platform side information displaying unit 11a, as shown in (a) of Fig. 2, displays the destination buttons 13 as the normal mode. The platform side call input control unit 12a, when any one of the destination buttons 13 of the plat form side information displaying unit 11a is touched, accepts a destination floor indicated by a destination button 13 touched as a destination call, and outputs to the platform call registering unit 81 an information of the destination button 13 touched.
(2) The authentication information inputting device 40 accepts an input of authentication information (a personal identification number, a biological information, and so forth) for a personal authentication purpose from an elevator user such as the user A71.
(3) The personal information database 5 (the personal information storing unit) is a database that stores a personal information such as an information for authenticating a proper user to be compared with the authentication information output by the authentication information inputting device 40 and a room number and a room floor information of the proper user for specifying a "destination call". The personal information of the proper user stored in this personal information database 5 is used for collation by the collating unit 4, or, is used to specify a destination floor corresponding to the destination call by the platform destination call automatic registering unit 82.
(4) The collating unit 4 collates the authentication

information output by the authentication information inputting device 40 with the information for authenticating stored on the personal information database 5. The collating unit 4, when the user authentication is established, outputs an information that can specify a "destination floor" of the user, stored on the personal information database 5, to the platform destination call automatic registering unit 82.

(5) The platform destination call automatic registering unit 82 inputs the information that can specify the "destination floor" of the proper user from the collating unit 4, and automatically registers a platform call and the destination call based on this "destination floor" information. Specifically, the platform destination call automatic registering unit 82 inputs an information of the "destination floor" from the collating unit 4, registers the platform call to the platform call registering unit 81, and requests allocation of "car" to the car destination call allocating unit 83. The car destination call allocating unit 83 decides the allocation of "car", and requests a control of the allocated "car" to the each car management device 90 that controls the "car". The car call registering unit 91 of the each car management device 90 responds to the request from the car destination call allocating unit 83 and controls the "car". That is, the "car" is transported to the destination floor of the authenticated proper user.

(6) On the other hand, the display target information inputting unit 20 inputs from another device a display target information serving as a target to be displayed on the platform side information displaying unit 11a. In the case of Fig. 4, the display target information inputting unit 20 provides a general information receiving unit 21 for inputting a general information such as the news. In this case, the "another device" means, for example, a server apparatus that delivers the news.

The general information receiving unit 21 inputs the news from the server apparatus.

(7) The car inside passenger detecting unit 31 detects whether or not a passenger is present in the car 60.

(8) The platform elevator user detect ing unit 32 detects an elevator user present in the elevatorplatform. In this case, the elevator platform having set the authentication information inputting device 40 is the issue, therefore, the platform elevator user detecting unit 32 is set to the elevator platform of the common entrance floor where the authentication information inputting device 40 is being set.

(9) The display switch control unit 2 executes the control that displays on the plat form side information displaying unit 11a the information inputted by the display target information inputting unit 20.

[0020] Fig. 5 is a flowchart showing an operation of the display switch control unit 2, when the platform call registration terminal 10a is set to the elevator plat form of the common entrance. A specific operation of the display switch control unit 2 will be described with reference to Fig. 5. The case conceives that the proper user A71 is being authenticated. At first, a process by the call registration device 100 prior to S101 will be described.

(1) The authentication information inputting device 40 accepts the input of authentication information (the personal identification number, the biological information, and so forth) from the user A71.

(2) The authentication information inputting device 40 outputs the authentication information accepted from the user A71 to the collating unit 4.

(3) The collating unit 4 performs an authentication process by collating a data for authentication (a part of the personal information) stored on the personal information database 5 with the authentication information output from the authentication information inputting device 40. The collating unit 4, when the authentication is established, outputs to the platform destination call automatic registering unit 82 an information regarding the user A71, which is required to perform an automatic registration of the "destination call", such as the "destination floor" already being stored.

(4) The platform destination call automatic registering unit 82, as described previously, in accordance with the information indicating the "destination floor" output by the collating unit 4, automatically registers the "platform call" and the "destination call" of the user A71.

(5) The car 60 is dispatched to the first floor elevator platform where there is the common entrance by responding to the automatically registered "platform call".

(6) On the other hand, the collating unit 4, when the authentication of the user A71 is established, outputs to the display switch control unit 2 an authentication establishment information being an information indicating the authentication establishment. The display switch control unit 2 inputs the authentication establishment information and switches the display of the platform side information displaying unit 11a of the platform call registration terminal 10a from the display of the destination buttons 13 to the predetermined display, based on a series of operation of Fig. 5.

(Operation of display switch control unit 2)

[0021] In S101, the display switch control unit 2 is waiting to receive the authentication establishment information from the collating unit 4. The display switch control unit 2, when the authentication establishment information is not sent from the collating unit 4 (NO of S101), maintains the display of the destination buttons 13 as in (a) of Fig. 2 (S107).

[0022] In S101, the display switch control unit 2 advances to a process of S102 when it receives the authentication establishment information from the collating unit 4 (YES of S101).

[0023] In S102, before the automatic registration of the destination call and the platform call by the platform destination call automatic registering unit 82, the process determines whether or not "another platform call" is being registered or not. The display switch control unit 2 acquires from the common management device 80 an information required in the determination. When there is no "another platform call", the process advances to S103, and when there is "another platform call", the process advances to S107.

[0024] In S103, the display switch control unit 2, as shown in (b) of Fig. 2, switches the display of the destination buttons 13 which is the normal mode of the platform side information displaying unit 11a to the display of the predetermined information. What kind of display it is being switched to is previously set to the display switch control unit 2. In the example of Fig. 4, the display switch control unit 2 switches the display of the platform side information displaying unit 11a to a display of the news received by the general information receiving unit 21.

[0025] In S104, the display switch control unit 2 refers to an output of the platform elevator user detecting unit 32 and determines whether or not a passenger is present at the platform of the common entrance. The display switch control unit 2, in case that a plurality of elevator users is detected by the platform elevator user detecting unit 32 (YES of S104) after switching of the display of the platform side information displaying unit 11a to the display of (b) of Fig. 2, returns the display of the platform side information displaying unit 11a to the original display of the destination buttons 13 ((a) of Fig. 2). If the plurality of elevator users is undetected by the platform elevator user detecting unit 32 (NO of S104), the process advances to S105. What is meant bya case in which the plurality of elevator users is undetected, is that the case in which the user A71 only is present at the elevator platform of the common entrance. Accordingly, the display switch control unit 2 returns the display of the platform side information displaying unit 11a to the original display when the elevator users other than the user related to the authentication have been detected by the platform elevator user detecting unit 32, thereby improving the convenience of all the elevator users. Further, the display switch control unit 2, in case that a new elevator user is further detected after at least a single elevator user has been detected in the platform of the common entrance by the platform elevator user detecting unit 32, in addition to that, when the collating unit 4 establishes the authentication after the detection of the new elevator user, maintains a current display of the destination buttons 13 without having to perform the predetermined display on the platform side information displaying unit 11a.

[0026] In S105, the display switch control unit 2 determines whether or not the "car 60" that automatically registers the platform call by the platform destination call automatic registering unit 82 has arrived at the platform. An information of the determination is acquired from the platform destination call automatic registering unit 82. The display switch control unit 2 determines that the "car 60" has arrived at the platform (YES of S105), and returns the display of the platform side information displaying unit 11a of the platform call registration terminal 10a to the original display of the destination buttons 13 (S106). When the display switch control unit 2 determines that the "car 60" has not arrived (NO of S105), then the process returns to S104. Accordingly, the display switch control unit 2 returns the display of the platform side information displaying unit 11a to the original display when the "car 60" of the elevator arrives, thereby improving the convenience of all elevator users.

<B. Car call registration terminal 10b>

[0027] Next, by referring to Figs. 6 and 7, the case of the car call registration terminal 10b set inside the "car 60" will be described. Similar to the case of Fig. 1, the authentication information inputting device 40 is set to the first floor platform where there is the common entrance, and the proper user A71 performs the authentication.

[0028] In Fig. 6, the car call registration terminal 10b is set close to a car door 61. Further, the configuration of the call registration device 100 is shown in Fig. 4.

[0029] Fig. 7 is a flowchart showing an operation of the display switch control unit 2, in case of setting the car call registration terminal 10b inside the car 60. As described previously, the car call registration terminal 10b is displayed and controlled by the display switch control unit 2. A specific operation of the display switch control unit 2 will be described by referring to Fig. 7. A process by the call registration device 100 prior to S201 is the same as the case of the platform call registration terminal 10a, and will not be further explained for this reason.

(Operation of display switch control unit 2)

[0030] In S201, the display switch control unit 2, similar to the case of S101, is waiting for receiving the authentication establishment information from the collating unit 4. The display switch control unit 2, when the authentication establishment information is not sent from the collating unit 4 (NO of S201), maintains the display of the destination buttons 13 as in (a) of Fig. 2 (S206). When the display switch control unit 2 receives the authentication establishment information, then the process advances to S202.

[0031] In S202, the display switch control unit 2 refers to an output of the car inside passenger detecting unit 31, and determines whether or not a passenger is present inside the "car 60". In other words, the display switch control unit 2 maintains the display mode of the destination buttons 13 without having to switch the display of the

car side information displaying unit 11b, when the passenger other than the user A71 has already been detected by the car inside passenger detecting unit 31, in the "car 60" to which a destination call based on the automatic registration is allocated by the car destination call allocating unit 83 (S206). When the passenger has not been detected by the car inside passenger detecting unit 31, the process advances to S203.

[0032] In S203, the display switch control unit 2, as shown in (b) of Fig. 2, switches the display of destination buttons 13 in the normal mode of the car side information displaying unit 11b to the display of predetermined information. Similar to the case of S103, what kind of display it is being switched to is previously set.

[0033] In S204, the display switch control unit 2 determines whether or not the "car 60" has arrived at the destination floor that the automatically registered "destination call" indicates. This determination is determinable by acquiring a stop information of the "car 60" from the car stop detecting unit 33, and acquiring a transport information of the "car 60" from the each car management device 90. When the car has not arrived, the display switch control unit 2 maintains the display after the switching (NO of S204). When the car has arrived, the display switch control unit 2 returns the display of the car side information displaying unit 11b to the original display of the destination buttons 13 (S205).

[0034] Further, the display switch control unit 2 maintains the display of the current destination buttons 13 without having to switch the display of the car side information displaying unit 11b, when a destination call is being registered to any floor before an automatic registration of the destination call, for the "car 60" to which the destination call based on the automatic registration is allocated by the car destination call allocating unit 83.

[0035] As described in the first embodiment, an elevator used by operating in response to the personal authentication focuses on the fact that the user does not need to manipulate the call (the platform call) of the elevator (the car), or the "destination call". The call registration device has been described, that provides the display switch control unit for switching the display content of the touch panel display to the guidance information (the predetermined display), for a predetermined period.

[0036] In the above-mentioned first embodiment, the display switch control unit 2 of the call registration device 100 displays the guidance information when the personal authentication is established. The user convenience improves from this.

Second Embodiment

[0037] The second embodiment will be described by referring to Figs. 8 to 11. The second embodiment describes the case in which the guidance information for displaying (S103 of Fig. 5 and S203 of Fig. 7) is a user corresponding information that corresponds to an individual (the user) authenticated by the collating unit 4. In the case of the first embodiment, a typical news has been displayed to the user A71, for example. In contrast to this, the second embodiment is the example that displays the "user corresponding information" corresponding to the user A71 on the platform side information displaying unit 11a or the car side information displaying unit 11b. The second embodiment is the example related to displaying of the information, which is the same for both the platform call registration terminal 10a and the car call registration terminal 10b. In the following description, the platform side information displaying unit 11a is described as the example.

[0038] Fig. 8 is a block chart showing a configuration of the call registration device 100 according to the second embodiment. The call registration device 100 of Fig. 8, in contrast to the call registration device 100 of Fig. 4, wherein the display target information inputting unit 20 (the user target information inputting unit) further comprises a home delivery goods information inputting unit 22, a residence room inside information inputting unit 23, and a platform floor information inputting unit 24. That is, the display target information inputting unit 20 inputs a plurality of display target information serving as a target for display on the platform side information displaying unit 11a, from another apparatus. Also, the present embodiment differs in that the personal information database 5 (the specific information storing unit) provides a corresponding table 52 (the specific information).

(Outline of operation)

[0039] Fig. 9 is a flowchart showing an outline of the operation of the call registration device 100 according to the second embodiment. Referring to Fig. 9, the outline of operation for a characteristic portion of the call registration device 100 of the second embodiment will be described. Fig. 9 is almost the same as Fig. 2 described in the first embodiment, however, it is distinguished from S12 of the first embodiment by the fact that the user corresponding information which corresponds to an individual (the user) related to the authentication is displayed in S52 when the personal authentication is established.

[0040] Fig. 10 is a drawing showing the corresponding table 51 (one example of the specific information) stored on the personal information database 5. The corresponding table 51 includes a personal number, display contents A to C, and so forth.

(1) The personal number is an identification number for specifying the proper user. In the example of Fig. 10, the personal number is also the room number. The personal number of the authenticated user is specifiable based on the authentication information input from the authentication information inputting device 40. For example, another table that corresponds the personal number and the authentication information may be provided on the personal information database 5.

(2) The display contents A to C are the "specific information" that specify the user corresponding information serving as the information that corresponds to the user, being the information displayed on the platform side information displaying unit 11a, among a plurality of display target information input (acquired) by the display target information inputting unit 20 which includes the general information receiving unit 21 to the platform floor information inputting unit 24. The corresponding table 51 is a table that defines a corresponding relationship between a user and the user corresponding information corresponding to the user. The corresponding table 51, as in S103 of Fig. 5 and S203 of Fig. 7, specifies the content of information to be displayed on the platform side information displaying unit 11a per user. For example, if a personal number of the user A71 is 301, "a news", "an image of the third floor platform", and "an information of the home delivery box 301" are displayed in S103 and S203, for the user A71.

[0041] Herein, a relationship of the display target information inputting unit 20 and the display content A and the like will be described.

(1) The general information receiving unit 21 acquires the news from the server apparatus (another device) that delivers, for example, the news. This corresponds to the display content A of the corresponding table 51.
(2) The home delivery goods information inputting unit 22 acquires a detection signal (an example of home delivery goods information) whether or not a goods is present in a delivery box n, from each detection device (another device) arranged on the delivery box n set for each room n (n symbolizes the room number). This corresponds to the display content C of the corresponding table 51.
(3) The residence room inside information inputting unit 23 acquires a photographed image of room interior (an example of the residence room inside information), from each imaging apparatus (another device) arranged for each room n. This is not specified in the example of the corresponding table 51.
(4) The platform floor information inputting unit 24 acquires a photographed image of the platform (one example of the platform floor information), from each imaging apparatus (another device) arranged on an elevator platform of each floor. This corresponds to the display content B of the corresponding table 51.

[0042] Fig. 11 is a flowchart showing an operation of displaying the user corresponding information based on the personal authentication by the call registration device 100, indicating the processing contents of S103 of Fig. 5 and S203 of Fig. 7. Operation of displaying the user corresponding information by the call registration device 100 will be described by referring to Fig. 11.

[0043] In S301, the display switch control unit 2, in case that the collating unit 4 authenticates the user A71, refers to the corresponding table 51 and specifies the specific information that corresponds to the authenticated user A71. In this case, provided that the personal number of the user A71 is "301", the display switch control unit 2 specifies the specific information corresponding to a "personal number 301". In this case, the specific information specified is "a news", "an image of third floor platform", and "an information of the home delivery box 301".

[0044] In S302, the display switch control unit 2, based on the "specific information" specified, selects a user corresponding information that corresponds to the authenticated user A71, among a plurality of display target information input by the display target information inputting unit 20. In this case, the display switch control unit 2 selects "the news", "the image of the third floor platform", and "the information of the home delivery box 301". Then, the display switch control unit 2 displays the user corresponding information of the selected user A71 on the platform side information displaying unit 11a.

[0045] In the second embodiment described above, the display switch control unit 2 of the call registration device 100 displays the user corresponding information when the personal authentication is established. For this reason, the information corresponding to the individual can be supplied, thereby improving the convenience.

[0046] In the foregoing embodiments, the call registration terminal 10 is described by assuming the touch panel display. However, the call registration terminal 10 is not limited to the touch panel display. Besides the touch panel display, the call registration terminal 10 may have a configuration provided with the destination buttons and a display unit such as a liquid crystal display. Also, the display target information input by the display target information inputting unit 20 is displayed on the platform side information displaying unit 11a provided by the call registration terminal 10. However, the display target information is not displayed on the call registration terminal 10, but it may be configured to display on the display apparatus (for example, the liquid crystal display) set inside the car 60 or the elevator platform where the authentication information inputting device 40 is being set.

BRIEF DESCRIPTION OF THE DRAWINGS

[0047]

Fig. 1 illustrates the case of setting the platform call registration terminal 10a and the authentication information inputting device 40 on the same platform according to the first embodiment.
Fig. 2 illustrates the display of the platform side information displaying unit 11a of the platform call registration terminal 10a according to the first embodiment.
Fig. 3 illustrates an operation outline flowchart of the call registration device 100 according to the first em-

bodiment.

Fig. 4 illustrates a configuration of the call registration device 100 according to the first embodiment.

Fig. 5 illustrates an operation flow chart of the display switch control unit 2 in case of setting the platform call registration terminal 10a and the authentication information inputting device 40 on the same platform according to the first embodiment.

Fig. 6 is a drawing for describing the case of setting the car call registration terminal 10b inside the car 60 according to the first embodiment.

Fig. 7 is an operation flowchart of the display switch control unit 2 in case of setting the car call registration terminal 10b inside the car 60 according to the first embodiment.

Fig. 8 is block chart showing a configuration of the call registration device 100 according to the second embodiment.

Fig. 9 is an operation outline flowchart of the call registration device 100 according to the second embodiment.

Fig. 10 is a drawing showing the corresponding table 51 according to the second embodiment.

Fig. 11 is an operation flowchart that displays the user corresponding information based on the personal authentication, by the call registration device 100 according to the second embodiment.

REFERENCE SIGNS LIST

[0048] 2: display switch control unit; 4: collating unit; 5: personal information database; 51: corresponding table; 10a: platform call registration terminal; 10b: car call registration terminal; 11a: platform side information displaying unit; 11b: car side information displaying unit; 12a: platform side call input control unit; 12b: car side call input control unit; 20: display target information inputting unit; 21: general information receiving unit; 22: home delivery goods information inputting unit; 23: residence room inside information inputting unit; 24: platform floor information inputting unit; 31: car inside passenger detecting unit; 32: platform elevator user detecting unit; 33: carstopdetectingunit; 40: authentication information inputting device; 80: common management device; 81: platform call registering unit; 82: platform destination call automatic registering unit; 83 : car destination call allocating unit; 90: each car management device; 91: car call registering unit; 100: call registration device

Claims

1. An elevator call registration device for registering a call of an elevator, comprising:

   an authentication information reading unit that is set to a predetermined elevator platform, and that reads an authentication information for indicating a proper user;

   an authenticating unit that determines whether or not the authentication information read by the authentication information reading unit is indicating the proper user;

   a call accepting unit that provides an information displaying unit for displaying an information, that is set together with the information displaying unit to at least either one of a reading unit installation platform serving as the elevator platform where the authentication information reading unit is set and an inside of a car of the elevator, and that accepts the call of the elevator;

   aplatform destination call automatic registeringunitthat automatically registers a platform call for calling the car to the reading unit installation platform and a destination call for indicating a predetermined destination floor by corresponding to the proper user authenticated, when the authenticating unit establishes the authentication;

   a car destination call allocating unit that allocates the destination call to the car that responded to the platform call; and

   a display control unit that displays, when the authenticating unit establishes the authentication, a predetermined information on a platform side information displaying unit serving as the information displaying unit of the call accepting unit set to the reading unit installation platform in case that the call accepting unit is set to the reading unit installation platform, and displays a predetermined information on a car side information displaying unit serving as the information displaying unit of the call accepting unit set inside the car for which the destination call is automatically registered based on an authentication establishment in case that the call accepting unit is set inside the car.

2. The elevator call registration device according to claim 1,
   wherein the call accepting unit is set to the reading unit installation platform; and
   wherein the display control unit displays the predetermined information on the platform side information displaying unit of the call accepting unit set to the reading unit installation platform, for a time interval starting from the authentication establishment by the authenticating unit until the car that responded to an automatic registration of the platform call by the platform destination call automatic registering unit arrives at the reading unit installation platform.

3. The elevator call registration device according to claim 1 or 2,
   wherein the call accepting unit is set to the reading unit installation platform;

wherein the elevator call registration device further comprises a platform elevator user detecting unit that detects an elevator user present in the reading unit installation platform; and
wherein the display control unit displays the predetermined information on the platform side information displaying unit of the call accepting unit set to the reading unit installation platform, in case that only the proper user authenticated is detected by the platform elevator user detecting unit in the reading unit installation platform and when the authenticating unit establishes the authentication, and returns a display of the platform side information displaying unit to the original display mode, in case that an elevator user other than the proper user authenticated is detected by the platform elevator user detecting unit in the reading unit installation platform while displaying the predetermined information on the platform side information displaying unit.

4. The elevator call registration device according to any one of claims 1 to 3,
wherein the call accepting unit is set to the reading unit installation platform;
wherein the elevator call registration device further comprises a platform elevator user detecting unit that detects an elevator user present in the reading unit installation platform; and
wherein the display control unit maintains a current display mode without performing the predetermined display on the platform side information displaying unit set to the reading unit installation platform in case that a new elevator user is further detected after at least one elevator user has been detected by the platform elevator user detecting unit and when the authenticating unit establishes the authentication after the detection of the new elevator user.

5. The elevator call registration device according to any one of claims 1 to 4,
wherein the call accepting unit is set inside the car;
wherein the elevator call registration device further comprises a personal information storing unit that stores a destination information for associating with the proper user and for specifying a destination floor;
wherein the platform destination call automatic registering unit automatically registers the destination floor specified by the destination information by associating with the proper user authenticated as the destination call when the authenticating unit establishes the authentication; and
wherein the display control unit displays the predetermined information on the car side information displaying unit of the call accepting unit set inside the car when the car that responded to the automatic registration of the platform call arrives at the reading unit installation platform, and returns a display of the car side information displaying unit to the original display mode when the car that responded to the automatic registration of the platform call arrives at the destination floor indicated by the destination call.

6. The elevator call registration device according to any one of claims 1 to 5,
wherein the call accepting unit is set inside the car;
wherein the elevator call registration device further comprises a personal information storing unit that stores a destination information for associating with the proper user and for specifying a destination floor;
wherein the platform destination call automatic registering unit automatically registers the destination floor specified by the destination information by associating with the proper user authenticated as the destination call when the authenticating unit establishes the authentication; and
wherein the display control unit maintains a current display mode without displaying the predetermined information on the car side information displaying unit of the call accepting unit set inside the car, in case that a destination call to any of the floors is being registered to the car to which the destination call is allocated by the car destination call allocating unit before the automatic registration of the destination call.

7. The elevator call registration device according to any one of claims 1 to 6,
wherein the call accepting unit is set inside the car,
wherein the elevator call registration device further comprises a personal information storing unit that stores a destination information for associating with the proper user and for specifying a destination floor;
and a car inside passenger detecting unit that detects a passenger inside the car;
wherein the platform destination call automatic registering unit automatically registers the destination floor specified by the destination information by associating with the proper user as the destination call when the authenticating unit establishes the authentication; and
wherein the display control unit maintains a current display mode without displaying the predetermined information on the car side information displaying unit of the call accepting unit set inside the car, in case that a passenger has been detected by the car inside passenger detecting unit, in the car to which the destination call is allocated by the car destination call allocating unit.

8. The elevator call registration device according to any one of claims 1 to 7,
wherein the display control unit displays on the information displaying unit a user corresponding information predetermined by corresponding to the proper user, as the predetermined information.

9. The elevator call registration device according to claim 8, further comprising a user corresponding information inputting unit that inputs the user corresponding information from another apparatus,
wherein the display control unit displays on the information displaying unit the user corresponding information input by the user corresponding information inputting unit.

10. The elevator call registration device according to claim 9, wherein the user corresponding information inputting unit inputs a plurality of display target information serving as a target to be displayed on the information displaying unit, as the predetermined information;
wherein the elevator call registration device further comprises a specific information storing unit that stores, for each one of the proper users, a specific information that specifies at least any one of the plurality of the display target information input by the user corresponding information inputting unit, as the user corresponding information; and
wherein the display control unit specifies the specific information corresponding to the proper user authenticated by theauthenticatingunit, byreferringto the specific information stored on the specific information storing unit, when the authenticating unit determines the proper user, selects the user corresponding information corresponding to the proper user authenticated by the authenticating unit among the plurality of display target information input by the user information inputting unit based on the specified specific information, and displays on the information displaying unit the selected user corresponding information as the predetermined information.

11. The elevator call registration device according to any one of claims 8 to 10, wherein the call accepting unit displays a destination floor of the car on the information displaying unit, and accepts the destination floor touched as the destination call of the car when any one of the destination floors displayed is touched; and
wherein the display control unit switches a display of the destination floor of the information displaying unit to a display of the predetermined information when the authenticating unit establishes the authentication.

FIG. 1

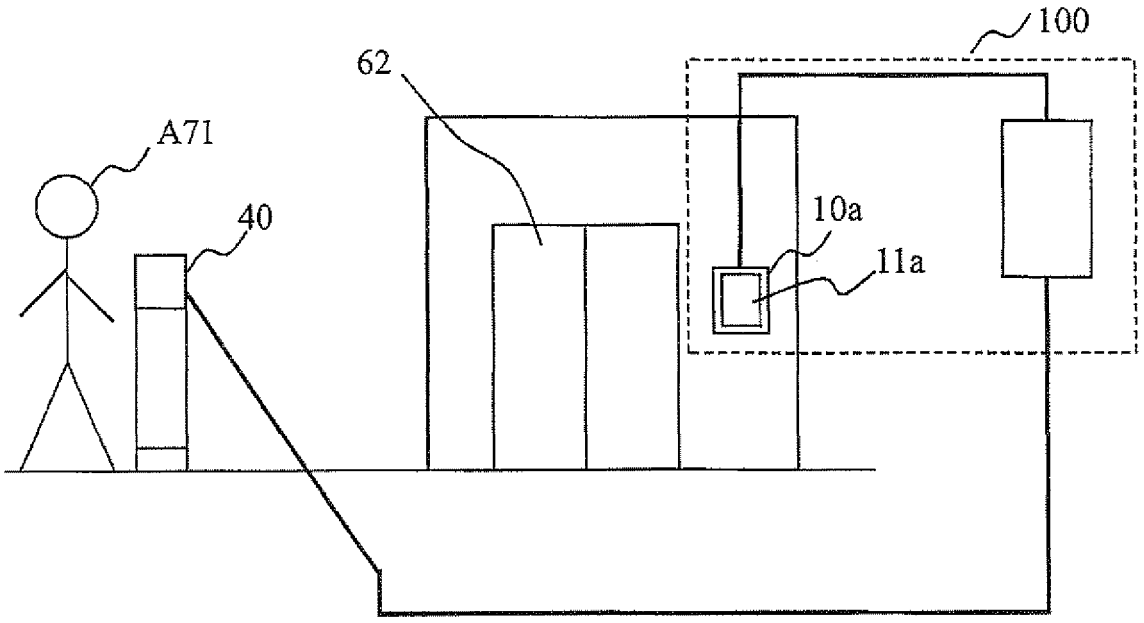


FIG. 2

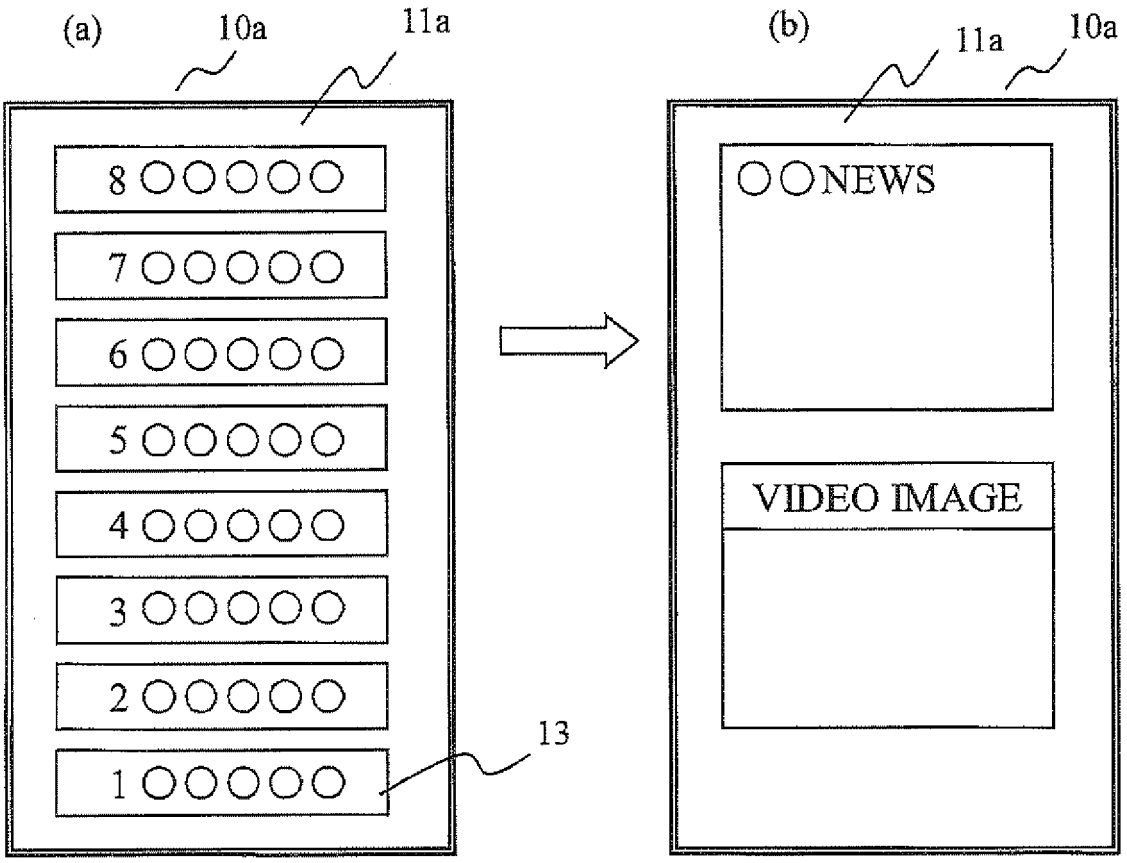


FIG. 3

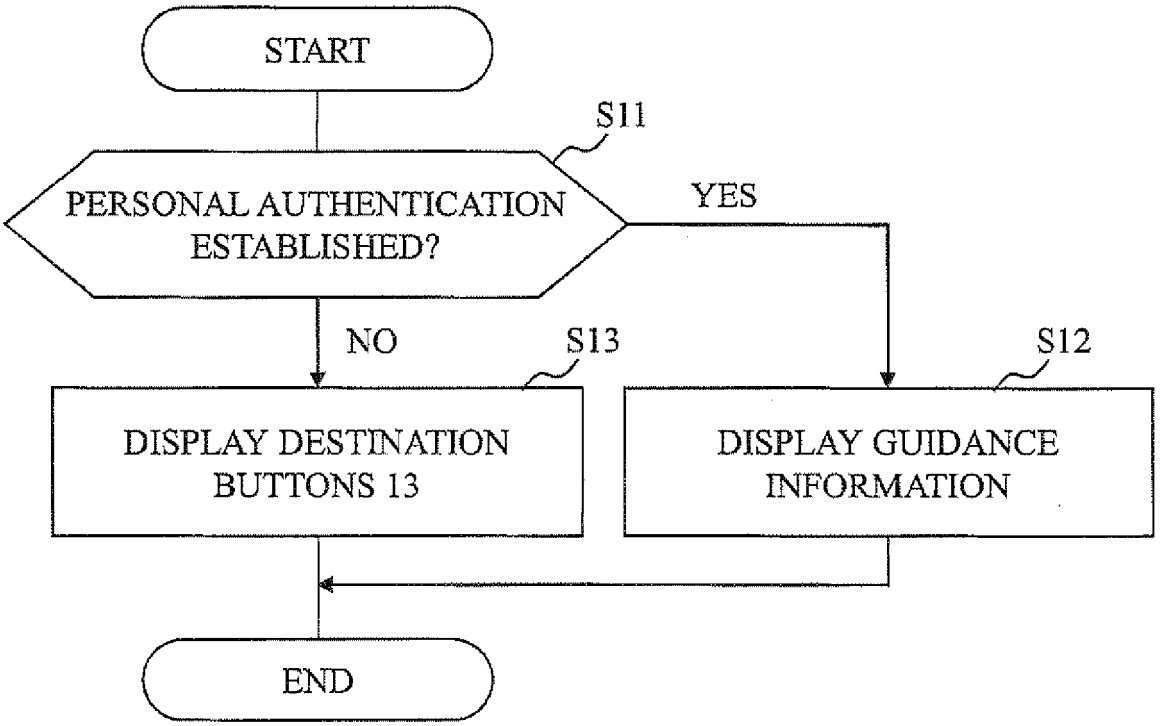

START
S11
PERSONAL AUTHENTICATION ESTABLISHED?
YES
NO
S13
S12
DISPLAY DESTINATION BUTTONS 13
DISPLAY GUIDANCE INFORMATION
END

FIG. 4

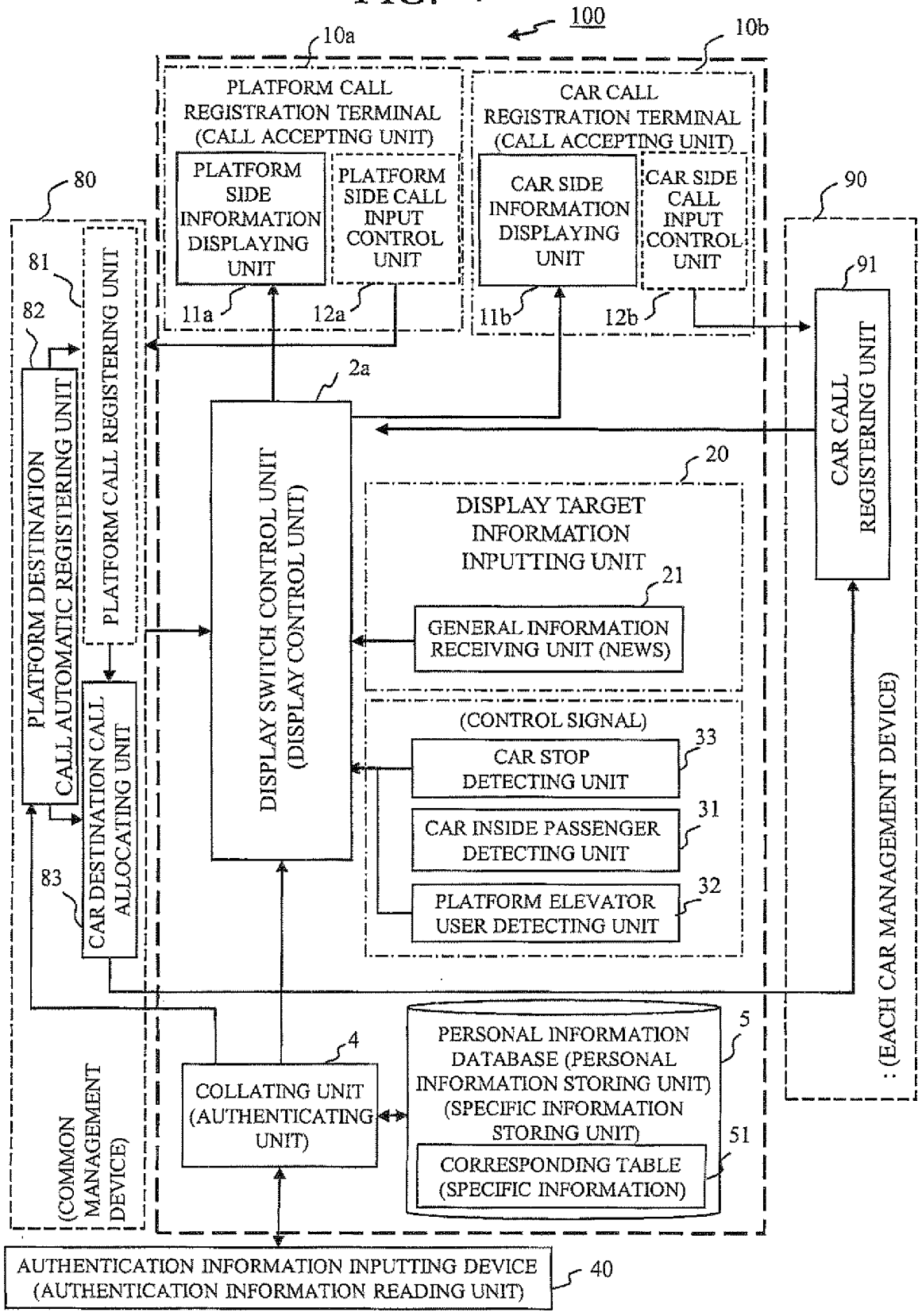

100
10a
10b
PLATFORM CALL REGISTRATION TERMINAL (CALL ACCEPTING UNIT)
PLATFORM SIDE INFORMATION DISPLAYING UNIT
PLATFORM SIDE CALL INPUT CONTROL UNIT
CAR CALL REGISTRATION TERMINAL (CALL ACCEPTING UNIT)
CAR SIDE INFORMATION DISPLAYING UNIT
CAR SIDE CALL INPUT CONTROL UNIT
80
90
81
82
91
11a
12a
11b
12b
2a
PLATFORM DESTINATION CALL AUTOMATIC REGISTERING UNIT
PLATFORM CALL REGISTERING UNIT
CAR CALL REGISTERING UNIT
20
DISPLAY SWITCH CONTROL UNIT (DISPLAY CONTROL UNIT)
DISPLAY TARGET INFORMATION INPUTTING UNIT
21
GENERAL INFORMATION RECEIVING UNIT (NEWS)
(CONTROL SIGNAL)
33
CAR STOP DETECTING UNIT
31
CAR INSIDE PASSENGER DETECTING UNIT
32
PLATFORM ELEVATOR USER DETECTING UNIT
83
CAR DESTINATION CALL ALLOCATING UNIT
5
PERSONAL INFORMATION DATABASE (PERSONAL INFORMATION STORING UNIT) (SPECIFIC INFORMATION STORING UNIT)
4
COLLATING UNIT (AUTHENTICATING UNIT)
51
CORRESPONDING TABLE (SPECIFIC INFORMATION)
(COMMON MANAGEMENT DEVICE)
: (EACH CAR MANAGEMENT DEVICE)
AUTHENTICATION INFORMATION INPUTTING DEVICE (AUTHENTICATION INFORMATION READING UNIT)
40

FIG. 5

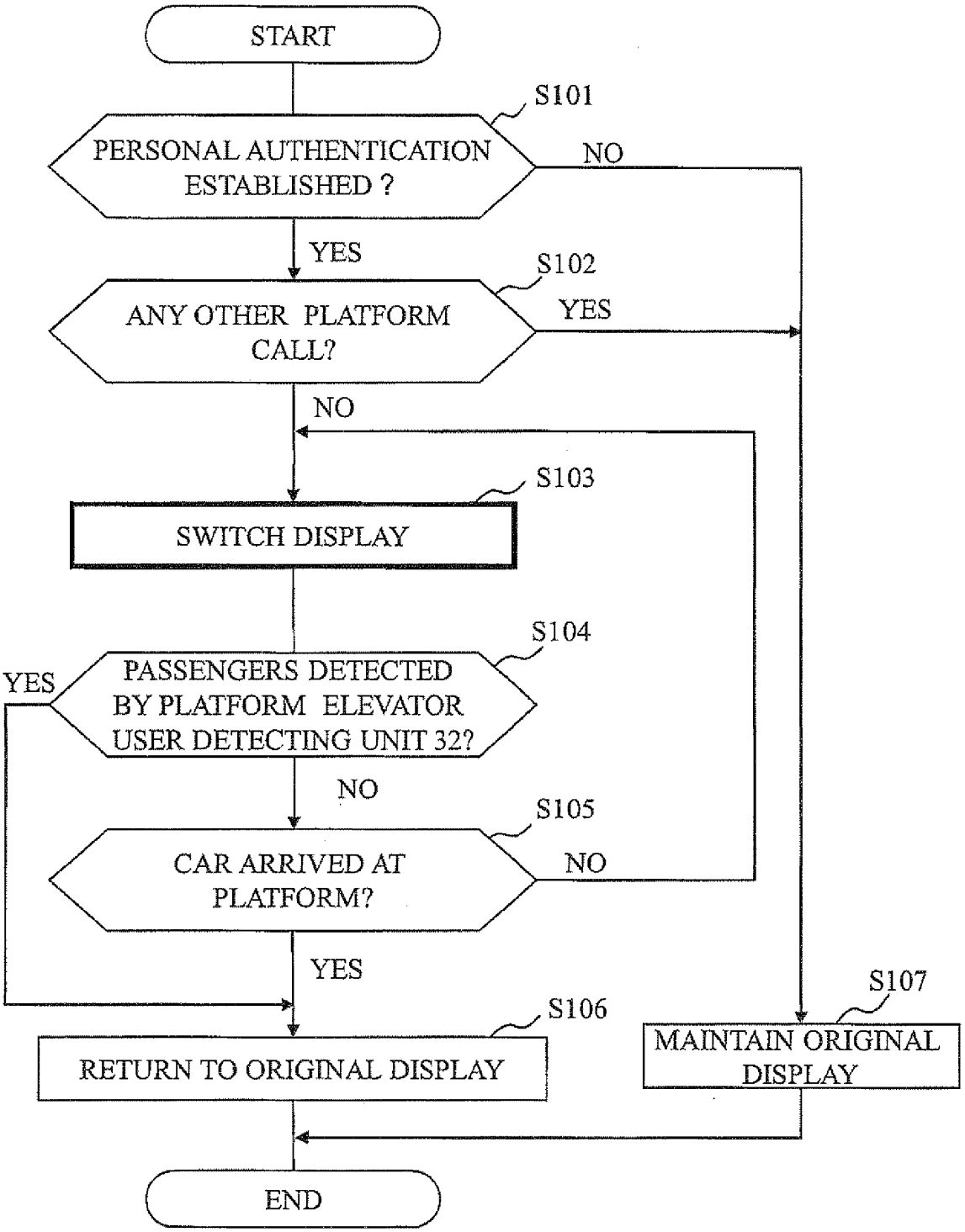

START
S101
PERSONAL AUTHENTICATION ESTABLISHED ?
NO
YES
S102
ANY OTHER PLATFORM CALL?
YES
NO
S103
SWITCH DISPLAY
S104
YES
PASSENGERS DETECTED BY PLATFORM ELEVATOR USER DETECTING UNIT 32?
NO
S105
CAR ARRIVED AT PLATFORM?
NO
YES
S106
RETURN TO ORIGINAL DISPLAY
S107
MAINTAIN ORIGINAL DISPLAY
END

FIG. 6

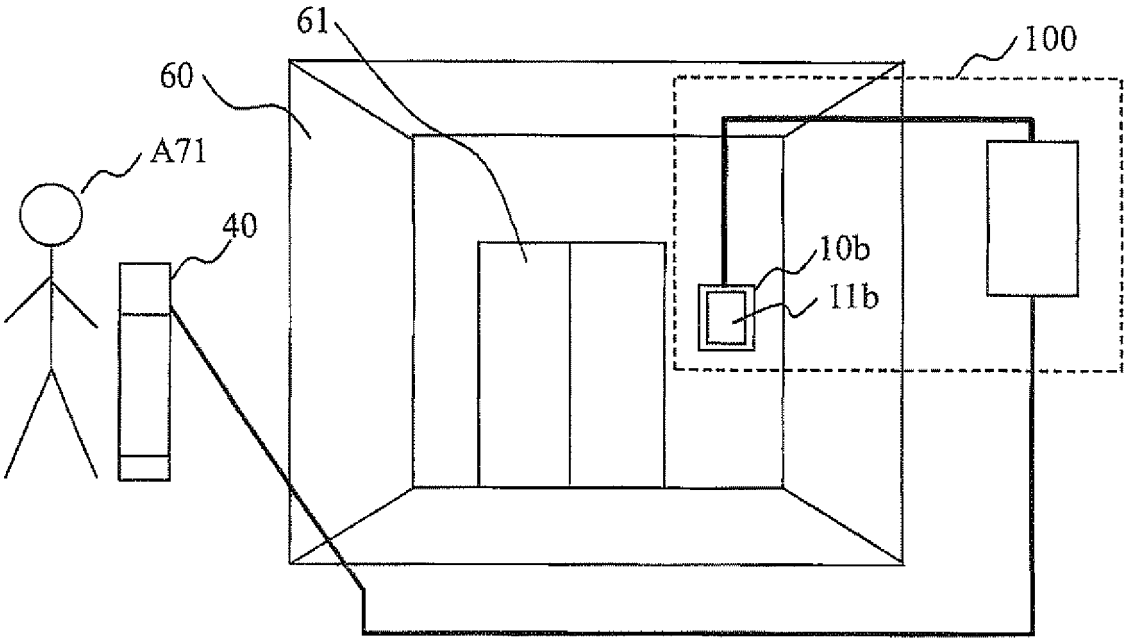


FIG. 7

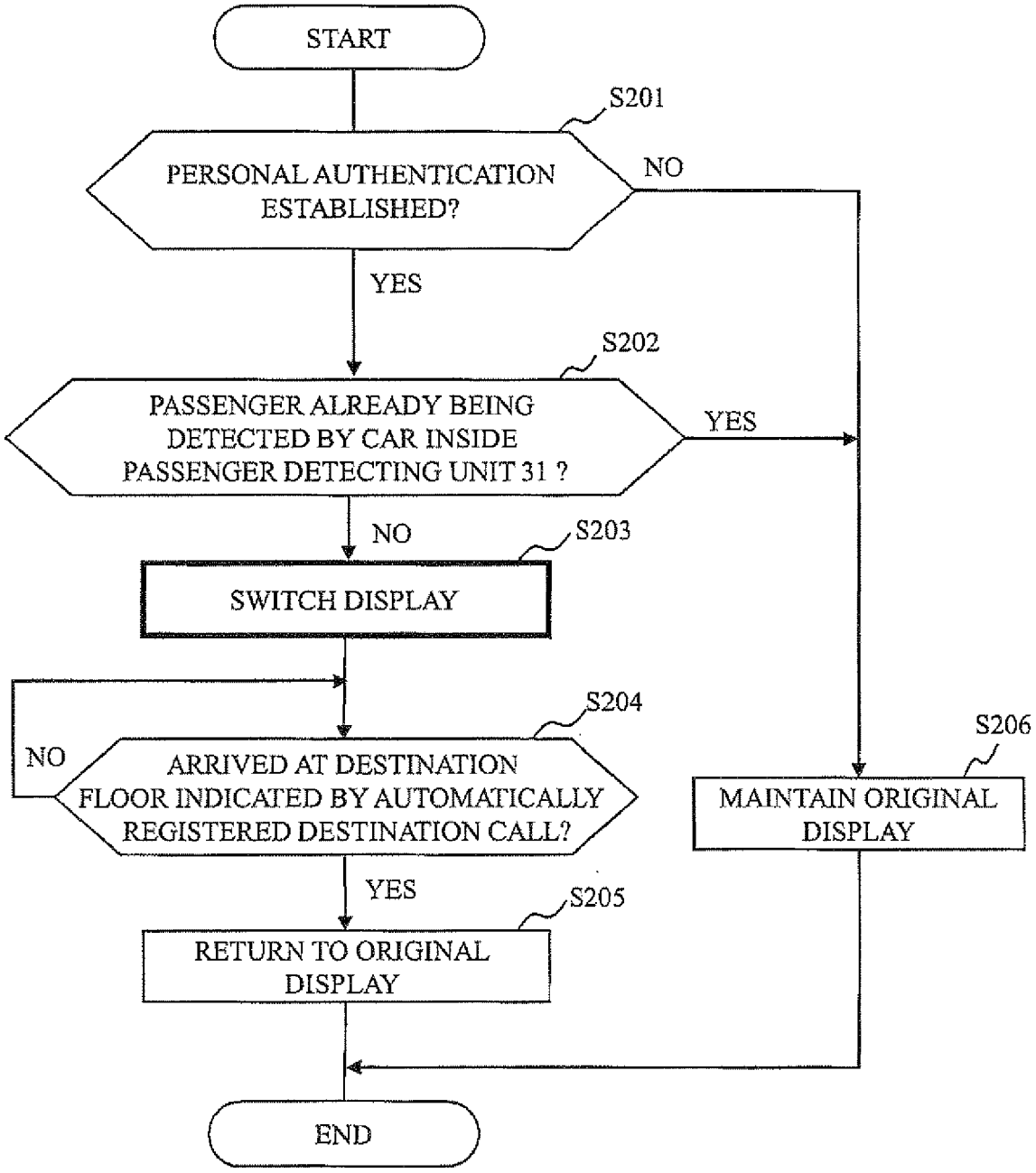

START
S201
PERSONAL AUTHENTICATION ESTABLISHED?
NO
YES
S202
PASSENGER ALREADY BEING DETECTED BY CAR INSIDE PASSENGER DETECTING UNIT 31 ?
YES
NO
S203
SWITCH DISPLAY
S204
NO
ARRIVED AT DESTINATION FLOOR INDICATED BY AUTOMATICALLY REGISTERED DESTINATION CALL?
S206
MAINTAIN ORIGINAL DISPLAY
YES
S205
RETURN TO ORIGINAL DISPLAY
END

FIG. 8

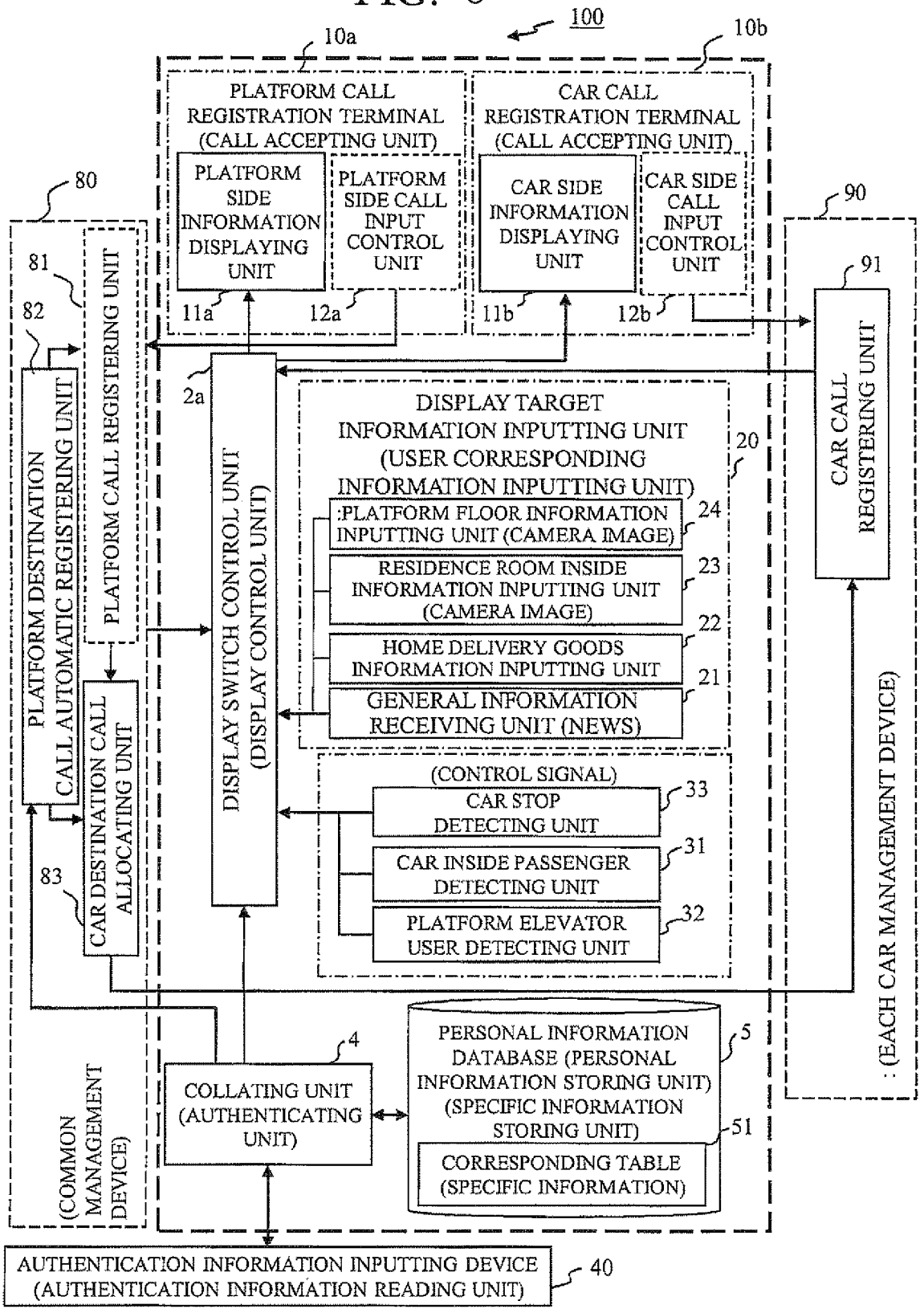

100
10a
10b
PLATFORM CALL REGISTRATION TERMINAL (CALL ACCEPTING UNIT)
CAR CALL REGISTRATION TERMINAL (CALL ACCEPTING UNIT)
PLATFORM SIDE INFORMATION DISPLAYING UNIT
PLATFORM SIDE CALL INPUT CONTROL UNIT
CAR SIDE INFORMATION DISPLAYING UNIT
CAR SIDE CALL INPUT CONTROL UNIT
11a
12a
11b
12b
80
81
82
83
90
91
PLATFORM DESTINATION CALL AUTOMATIC REGISTERING UNIT
PLATFORM CALL REGISTERING UNIT
CAR DESTINATION CALL ALLOCATING UNIT
2a
DISPLAY SWITCH CONTROL UNIT (DISPLAY CONTROL UNIT)
DISPLAY TARGET INFORMATION INPUTTING UNIT (USER CORRESPONDING INFORMATION INPUTTING UNIT)
20
:PLATFORM FLOOR INFORMATION INPUTTING UNIT (CAMERA IMAGE)
24
RESIDENCE ROOM INSIDE INFORMATION INPUTTING UNIT (CAMERA IMAGE)
23
HOME DELIVERY GOODS INFORMATION INPUTTING UNIT
22
GENERAL INFORMATION RECEIVING UNIT (NEWS)
21
CAR CALL REGISTERING UNIT
(CONTROL SIGNAL)
CAR STOP DETECTING UNIT
33
CAR INSIDE PASSENGER DETECTING UNIT
31
PLATFORM ELEVATOR USER DETECTING UNIT
32
4
COLLATING UNIT (AUTHENTICATING UNIT)
PERSONAL INFORMATION DATABASE (PERSONAL INFORMATION STORING UNIT) (SPECIFIC INFORMATION STORING UNIT)
5
CORRESPONDING TABLE (SPECIFIC INFORMATION)
51
(COMMON MANAGEMENT DEVICE)
: (EACH CAR MANAGEMENT DEVICE)
AUTHENTICATION INFORMATION INPUTTING DEVICE (AUTHENTICATION INFORMATION READING UNIT)
40

FIG. 9

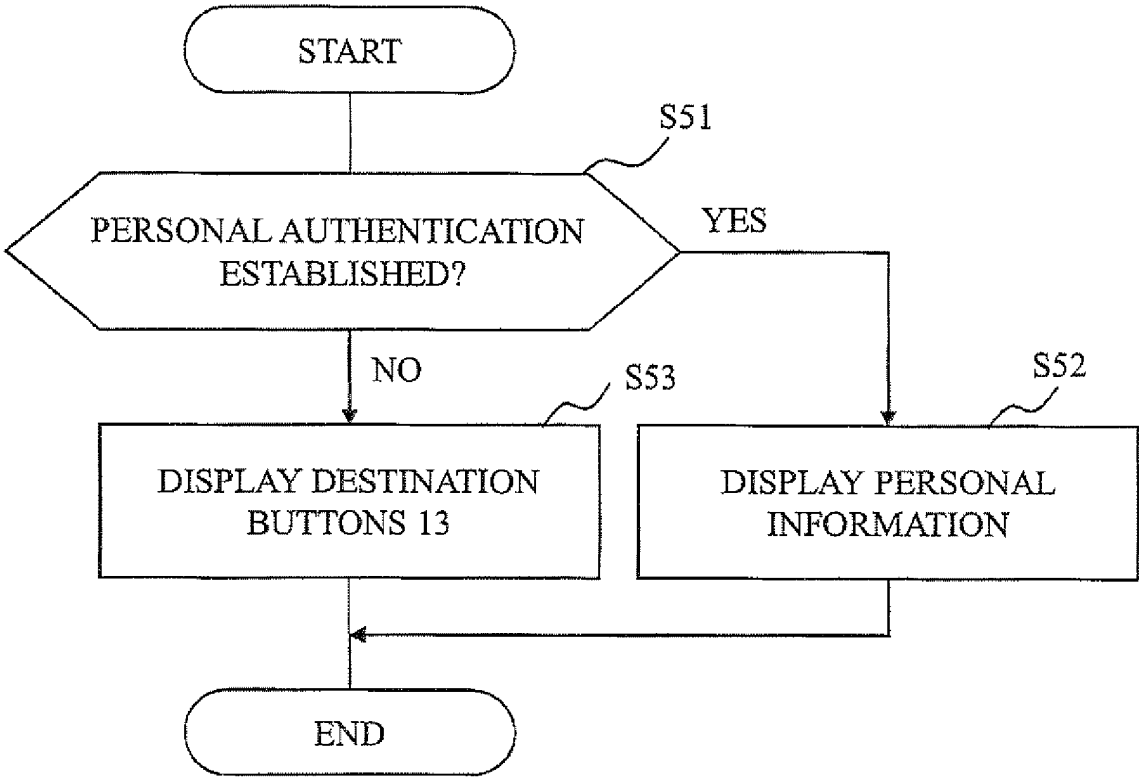
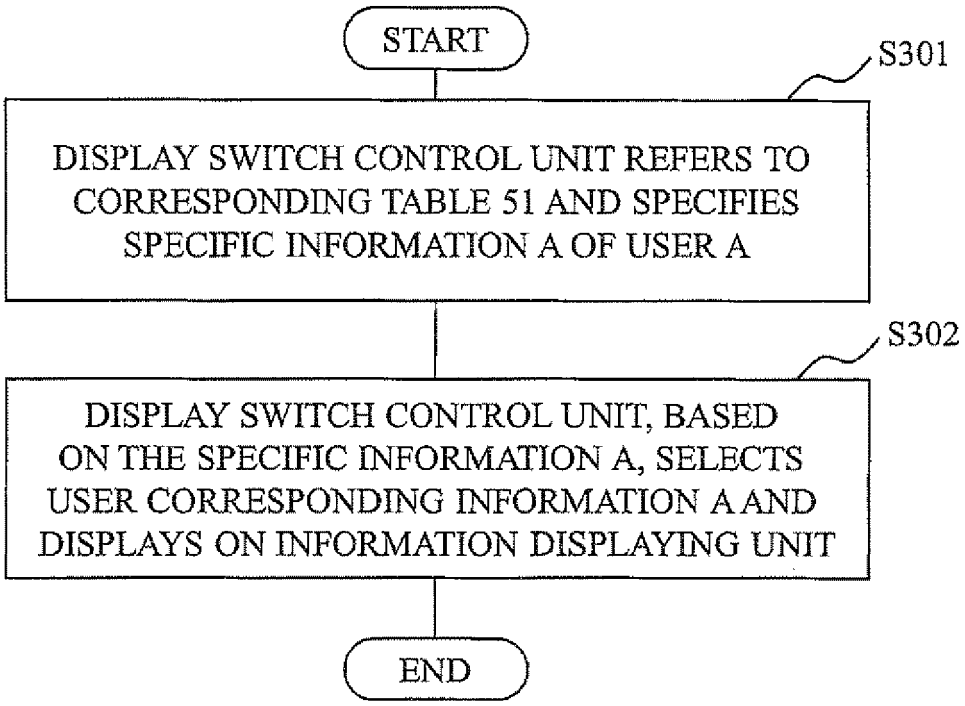

START
S51
PERSONAL AUTHENTICATION ESTABLISHED?
YES
NO
S53
S52
DISPLAY DESTINATION BUTTONS 13
DISPLAY PERSONAL INFORMATION
END

FIG. 10

51

PERSONAL NUMBER (ROOM NUMBER)	DISPLAY CONTENT A	DISPLAY CONTENT B	DISPLAY CONTENT C
201	NEWS	VIDEO IMAGE OF 2F PLATFORM	INFORMATION OF HOME DELIVERY BOX 201
202	NEWS	VIDEO IMAGE OF 2F PLATFORM	INFORMATION OF HOME DELIVERY BOX 202
203	NEWS	VIDEO IMAGE OF 2F PLATFORM	INFORMATION OF HOME DELIVERY BOX 203
301	NEWS	VIDEO IMAGE OF 3F PLATFORM	INFORMATION OF HOME DELIVERY BOX 301
302	NEWS	VIDEO IMAGE OF 3F PLATFORM	INFORMATION OF HOME DELIVERY BOX 302
303	NEWS	VIDEO IMAGE OF 3F PLATFORM	INFORMATION OF HOME DELIVERY BOX 303
401	NEWS	VIDEO IMAGE OF 4F PLATFORM	INFORMATION OF HOME DELIVERY BOX 401
402	NEWS	VIDEO IMAGE OF 4F PLATFORM	INFORMATION OF HOME DELIVERY BOX 402
403	NEWS	VIDEO IMAGE OF 4F PLATFORM	INFORMATION OF HOME DELIVERY BOX 403
:	:	:	:

FIG. 11


START
S301
DISPLAY SWITCH CONTROL UNIT REFERS TO CORRESPONDING TABLE 51 AND SPECIFIES SPECIFIC INFORMATION A OF USER A
S302
DISPLAY SWITCH CONTROL UNIT, BASED ON THE SPECIFIC INFORMATION A, SELECTS USER CORRESPONDING INFORMATION A AND DISPLAYS ON INFORMATION DISPLAYING UNIT
END

INTERNATIONAL SEARCH REPORT

International application No.
PCT/JP2008/056318

A. CLASSIFICATION OF SUBJECT MATTER
B66B1/14(2006.01)i

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
B66B1/14

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
Jitsuyo Shinan Koho 1922-1996 Jitsuyo Shinan Toroku Koho 1996-2008
Kokai Jitsuyo Shinan Koho 1971-2008 Toroku Jitsuyo Shinan Koho 1994-2008

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y A	JP 2007-290811 A (Mitsubishi Electric Corp.), 08 November, 2007 (08.11.07), (Family: none)	1-5,7-11 6
Y A	JP 2002-104747 A (Mitsubishi Electric Corp.), 10 April, 2002 (10.04.02), Claims 1 to 9; Par. Nos. [0055] to [0056] (Family: none)	1-5,7-11 6
Y A	JP 2006-240818 A (Toshiba Elevator and Building Systems Corp.), 14 September, 2006 (14.09.06), Par. No. [0038] (Family: none)	3-5,7-11 6

☐ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

* Special categories of cited documents:
"A" document defining the general state of the art which is not considered to be of particular relevance
"E" earlier application or patent but published on or after the international filing date
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"O" document referring to an oral disclosure, use, exhibition or other means
"P" document published prior to the international filing date but later than the priority date claimed
"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
11 December, 2008 (11.12.08)	22 December, 2008 (22.12.08)
Name and mailing address of the ISA/ Japanese Patent Office Facsimile No.	Authorized officer Telephone No.

Form PCT/ISA/210 (second sheet) (April 2007)

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- JP 6428190 B **[0005]**
- JP 6144726 A **[0005]**
- JP 11349238 A **[0005]**