



(12) **EUROPEAN PATENT APPLICATION**
published in accordance with Art. 153(4) EPC

(43) Date of publication:
12.09.2012 Bulletin 2012/37

(51) Int Cl.:
B66B 1/14 (2006.01) B66B 3/00 (2006.01)

(21) Application number: **09851104.1**

(86) International application number:
PCT/JP2009/069003

(22) Date of filing: **06.11.2009**

(87) International publication number:
WO 2011/055452 (12.05.2011 Gazette 2011/19)

(84) Designated Contracting States:
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO SE SI SK SM TR

(72) Inventor: **MABUCHI, Mitsuji**
Tokyo 100-8310 (JP)

(71) Applicant: **Mitsubishi Electric Corporation**
Tokyo 100-8310 (JP)

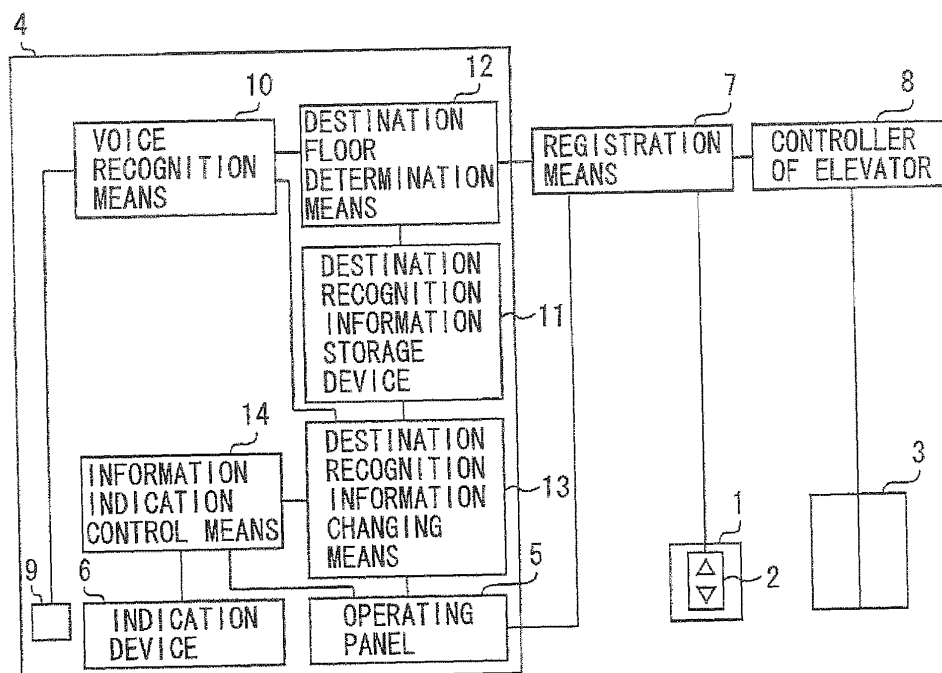
(74) Representative: **HOFFMANN EITLE**
Patent- und Rechtsanwälte
Arabellastrasse 4
81925 München (DE)

(54) **ELEVATOR CALL REGISTRATION DEVICE**

(57) Provided is a call registration device of an elevator which can easily change recognition information for determining a destination floor without using external equipment. For this purpose, this call registration device includes a microphone provided in an elevator hall or a car, a storage device which has stored recognition information on the floor of a building in which the elevator is installed as information to be compared with a voice in-

putted from the microphone in registering a car call on the basis of the voice inputted to the microphone and change means for changing the recognition information stored in the storage device on the basis of a voice inputted to the microphone within a given period of time after a special operation set beforehand is performed by use of elevator equipment of a hall or car where the microphone is provided.

FIG. 1



Description

Technical Field

[0001] The present invention relates to a call registration device of an elevator.

Background Art

[0002] In general, an elevator hall is provided with hall buttons in the vicinity of an elevator door. And it is ensured that when an upward or downward hall button is pressed, a hall call is registered. That is, a user waiting in the elevator hall can call an elevator by pressing a hall button.

[0003] However, for those who use a wheelchair, users with disabled hands and able-bodied persons with both hands carrying objects, such a call registration device poses the problem that it is difficult for them to press a hall button.

[0004] In recent years, therefore, voice recognition techniques for recognizing the voices generated by un-specific speakers have been improved, and as a result of this, there have been proposed call recognition devices which perform hall call registrations and call registrations and indicate the result of recognition using such voice recognition techniques (refer to Patent Literature 1, for example).

[0005] Also, there have been proposed call registration devices which are such that recognition information on a destination floor is inputted from equipment other than the elevator and when a voice corresponding to the recognition information is inputted, the car call is registered (refer to Patent Literature 2, for example).

Citation List

Patent Literature

[0006]

Patent Literature 1: Japanese Patent Laid-Open No. 6-255911

Patent Literature 2: Japanese Patent Laid-Open No. 2002-128404

Summary of Invention

Technical Problem

[0007] When a change in an inhabitant of a building occurs or a change in the layout within the building occurs, it is necessary to change the recognition information for determining a destination floor by voice recognition. However, in the call recognition device described in Patent Literature 2, external equipment becomes necessary for changing recognition information, posing the problem that the cost increases. Also, the external equipment becomes necessary each time the recognition information

is changed and this poses the problem that a change in the recognition information is inconvenient.

[0008] The present invention has been made to solve the problems described above, and the object of the invention is to provide a call registration device of an elevator which can easily change recognition information for determining a destination floor without using external equipment.

Means for Solving the Problems

[0009] A call registration device of an elevator of the present invention includes a microphone provided in an elevator hall or a car, a storage device which has stored recognition information on the floor of a building in which the elevator is installed as information to be compared with a voice inputted from the microphone in registering a car call on the basis of the voice inputted to the microphone and change means for changing the recognition information stored in the storage device on the basis of a voice inputted to the microphone within a given period of time after a special operation set beforehand is performed by use of elevator equipment of a hall or car where the microphone is provided.

Advantageous Effects of Invention

[0010] According to the present invention, it is possible to easily change recognition information for determining a destination floor without using external equipment.

Brief Description of the Drawings

[0011]

Figure 1 is a block diagram to explain the call registration device of an elevator in Embodiment 1 of the present invention.

Figure 2 is a diagram for describing a specific example of destination recognition information stored in the call registration device of an elevator in Embodiment 1 of the present invention.

Figure 3 is a flowchart to explain the actions of a call registration device of the elevator in Embodiment 1 of the present invention.

Figure 4 is a flowchart to explain the action of the call registration device of an elevator in Embodiment 2 of the present invention.

Figure 5 is a flowchart to explain the actions of a call registration device of the elevator in Embodiment 3 of the present invention.

Description of Embodiments

[0012] Embodiments of the present invention will be described with reference to the accompanying drawings. Incidentally, in each of the drawings, like numerals refer to like or similar parts and overlaps of description of these

parts are appropriately simplified or omitted.

Embodiment 1

[0013] Figure 1 is a block diagram to explain the call registration device of an elevator in Embodiment 1 of the present invention.

In Figure 1, reference numeral 1 denotes hall-side elevator equipment. This hall-side elevator equipment 1 is provided in each hall of the elevator. This hall-side elevator equipment 1 comprises a hall button 2 and the like.

[0014] Reference numeral 3 denotes a car of the elevator. This car 3 is arranged in a shaft formed in the building. Reference numeral 4 denotes car-side elevator equipment. The actual car-side elevator equipment 4 is provided in the car 3. This car-side elevator equipment 4 is provided with an operating panel 5 and an indication device 6. The operating panel 5 is provided with a car call button, a door open button, and a door close button, which correspond to each floor. The indication device 6 has the function of indicating the operation condition of the elevator, such as the position, running direction and the like of the car 3.

[0015] Reference numeral 7 denotes call registration means. This call registration means 7 has the function of registering a call in response to the pressing of the hall button 2 and the car call button of the operating panel 5. Reference numeral 8 denotes a controller of the elevator. This controller 8 has the function of performing the operation control of the whole elevator. For example, the controller 8 has the function of causing the car 3 to ascend and descend on the basis of a call registered in the call registration means 7.

[0016] In an elevator of this configuration, when a user in a hall presses the hall button 2, a hall call of the floor in question is registered in the call registration means 7. The controller 8 causes the car 3 to move to the floor in question in response to this call registration. And when the door of the elevator opens, the user can move into the car 3.

[0017] After that, a given period of time elapses, the elevator door closes and the user presses a car call button of the operating panel 5, whereby a car call corresponding to the car call button in question is registered in the registration means 7. In response to this call registration, the controller 8 causes the car 3 to move to a floor corresponding to the car call. As a result of this, the user can move to his or her destination floor.

[0018] In the elevator of this embodiment, a microphone 9, voice recognition means 10, a destination recognition information storage device 11, and destination floor determination means 12 are also provided as the car-side elevator equipment 4. The microphone 9 has the function of converting an inputted voice into an electrical signal. The voice recognition means 10 has the function of performing voice recognition on the basis of the electrical signal inputted from the microphone 9.

[0019] The destination recognition information storage

device 11 has the function of storing destination recognition information on the floors of the building. Specifically, the floor names of the building, uses of each of the floors and the like are stored as destination recognition information. The destination floor determination means 12 has the function of determining a floor corresponding to destination recognition information as a destination floor when the information which is voice-recognized by the voice recognition means 10 and the destination recognition information which is stored in the destination recognition information storage device 11 are in agreement with each other.

[0020] In the case of this configuration, for those who use a wheelchair, users with disabled hands and able-bodied persons with both hands carrying objects, when one wants to register a car call, he or she speaks destination recognition information, such as floor names and uses of each of the floors, to the microphone 9. Because of this speech, the destination floor determined by the destination floor determination means 12 is registered in the call registration means 7 as a car call. As a result of this, the user moves to his or her destination floor.

[0021] Furthermore, in the elevator of this embodiment, also destination recognition information changing means 13 and information indication control means 14 are provided as the car-side elevator equipment 4. The destination recognition information changing means 13 has the function of changing the destination recognition information of the destination recognition information storage device 11. Specifically, it is ensured that the destination recognition information is changed on the basis of the result of recognition of a voice inputted to the microphone 9 within a given period of time after a special operation set beforehand on the car-side elevator equipment 4 is performed. And the information indication control means 14 has the function of causing the indication device 6 to indicate the destination recognition information of the destination recognition information storage device 11 and the information obtained from the destination recognition information changing means 13.

[0022] Next, with the aid of Figure 2 a more concrete description will be given of a method of changing the destination recognition information stored in the destination recognition information storage device 11.

Figure 2 is a diagram for describing a specific example of destination recognition information stored in the call registration device of an elevator in Embodiment of the present invention.

[0023] As shown in Figure 2, it is ensured that the destination recognition information storage device 11 can store three pieces of destination recognition information corresponding to each destination floor. Specifically, destination recognition information corresponding to a general floor name of each floor is stored in the "information 1" column. And information corresponding to the uses of destination floors and the like can be stored in the "information 2" column and "information 3" column. For example, "1st floor," "front counter," and "lobby" are

stored in the "information 1" column, the "information 2" column, and the "information 3" column corresponding to the destination floor "1st floor", respectively.

[0024] In this embodiment, the destination recognition information changing means 13 determines that a special operation for adding destination recognition information has been performed when the car call button and door open button of the operating panel 5 continue to be pressed for a prescribed period of time. On the other hand, the destination recognition information changing means 13 determines that a special operation for deleting destination recognition information has been performed when the car call button and door close button of the operating panel 5 continue to be pressed for a prescribed period of time.

[0025] For example, when the operator wants to store the inhabitant "Yamamoto" as the destination recognition information corresponding to the 6th floor, the operator continues to simultaneously press the car call button corresponding to the 6th floor and the door open button of the operating panel 5 for a prescribed period of time and thereafter speaks "Yamamoto" to the microphone 9. As a result of this, "Yamamoto" is stored in the "information 2" or "information 3" column corresponding to the destination floor "6th floor."

[0026] On the other hand, when the operator wants to delete "Yamamoto" from the destination recognition information corresponding to the 6th floor, the operator the operator continues to simultaneously press the car call button corresponding to the 6th floor and the door close button of the operating panel 5 for a prescribed period of time and thereafter speaks "Yamamoto" to the microphone 9. As a result of this, "Yamamoto" is deleted from the "information 2" or "information 3" column corresponding to the destination floor "6th floor."

[0027] Next, with the aid of Figure 3 a description will be given of a series of actions performed to change the destination recognition information stored in the destination recognition information storage device 11.

Figure 3 is a flowchart to explain the actions of a call registration device of the elevator in Embodiment 1 of the present invention.

[0028] First in Step S1, the destination recognition information changing means 13 makes a determination as to whether or not a special operation for the n-th floor has been performed by use of the operating panel 5. When a special operation was not performed, the action is finished. In contrast to this, when a special operation for the n-th floor has been performed, the flow of processing proceeds to Step S2. In Step S2, a determination is made as to whether or not the destination recognition information changing means 13 has obtained the result of voice recognition within a given period of time from the voice recognition means 10. When the result of voice recognition was not obtained, the action is finished. In contrast to this, when the result of voice recognition has been received, the flow of processing proceeds to Step S3. In Step S3, on the basis of the obtained voice rec-

ognition, the destination recognition information changing means 13 changes the destination recognition information for the n-th floor, and the action is finished.

[0029] According to Embodiment 1 described above, the destination recognition information stored in the destination recognition information storage device 11 is changed on the basis of a voice inputted to the microphone 9 within a given period of time after a special operation set beforehand is performed by use of the car-side elevator equipment 4. For this reason, it is possible to easily change destination recognition information for determining a destination floor without using special external equipment.

[0030] Specifically, on the basis of a voice inputted to the microphone 9 within a given period of time after a special operation set beforehand is performed by use of the operating panel 5, the destination recognition information stored in the destination recognition information storage device 11 is changed. More specifically, on the basis of a voice inputted to the microphone 9 within a given period of time after a special operation set beforehand is performed by use of the car call button of the operating panel 5, the destination recognition information on the destination floor corresponding to the car call button is changed. For this reason, it is possible to easily change the destination recognition information by a simple operation without using external equipment.

Embodiment 2

[0031] Figure 4 is a flowchart to explain the action of the call registration device of an elevator in Embodiment 2 of the present invention. Incidentally, parts which are the same as in Embodiment 1 or corresponding parts bear like numerals and descriptions of these parts are omitted.

[0032] In Embodiment 1, it is determined that a special operation has been performed when the car call button of the n-th floor continues to be pressed for a prescribed period of time. On the other hand, in Embodiment 2, it is determined that a special operation has been performed when the car call button of the n-th floor is pressed a prescribed number of times or more within a prescribed period of time.

[0033] If in the case where the destination recognition information stored in the destination recognition information storage device 11 is to be changed, the indication of the indication device 6 is switched from the operation condition of the elevator to the contents of the destination recognition information, then it is possible to perform the changing work of the destination recognition information more efficiently. Therefore, in Embodiment 2, the configuration is such that the destination recognition information stored in the destination recognition information storage device 11 is indicated on the indication device 6 when a special operation has been performed.

[0034] Specifically, as shown in Figure 4, first, in Step S11 the destination recognition information changing

means 13 makes a determination as to whether or not a special operation for the n-th floor has been performed by use of the operating panel 5. When a special operation was not performed, the action was not finished. In contrast to this, when a special operation for the n-th floor has been performed, the flow of processing proceeds to Step S12. In Step S12, the information indication control means 14 causes the indication device 6 to indicate the destination recognition information of the n-th floor to be indicated, and the action is finished.

[0035] According to Embodiment 2 described above, when a special operation is performed, the indication on the indication device 6 of the car 3 changes from the indication of the operation condition of the elevator to the indication of the destination recognition information. For this reason, it is possible to perform the changing work of the destination recognition information more efficiently.

[0036] Unless the car call button of the n-th floor is pressed a prescribed number of times or more within a prescribed period of time, it is impossible to change the destination recognition information. For this reason, it is possible to prevent the destination recognition information from being changed without the user's knowledge because a baggage or the like of a user continues to press the car call button by accident.

[0037] Incidentally, in Embodiment 2, as described above the configuration is such that only the destination recognition information of the n-th floor is indicated when a special operation has been performed. However, the configuration is such that the destination recognition information on floors other than the n-th floor may also be simultaneously indicated when the indication device 6 is a liquid crystal monitor and the like which are picturesque.

Embodiment 3

[0038] Figure 5 is a flowchart to explain the actions of a call registration device of the elevator in Embodiment 3 of the present invention. Incidentally, parts which are the same as in Embodiment 1 or corresponding parts bear like numerals and descriptions of these parts are omitted.

[0039] In Embodiments 1 and 2, the configurations are such that a prescribed operation of the car call button is a special operation. On the other hand, in Embodiment 3, the configuration is such that a determination is made as to whether or not the operation is a special operation on the basis of the result of recognition of a voice inputted to the microphone 9. Specifically, change start information for recognition as a special operation is stored in the destination recognition information storage device 11. Terms related to changes, such as "change" and "correction", are selected as this change start information.

[0040] And the configuration is such that when a special operation has been performed by use of the car-side elevator equipment 4, a method of changing the destination recognition information is indicated on the indica-

tion device 6. Furthermore, the configuration is such that when the destination recognition information has been changed on the basis of a voice inputted to the microphone 9 within a given period of time after a special operation is performed, the result of the change of the destination recognition information is indicated on the indication device 6.

[0041] In this call registration device, as shown in Figure 5, first, in Step S21 the destination recognition information changing means 13 makes a determination as to whether or not the result of voice recognition has been obtained from the voice recognition means 10. When the result of voice recognition was not obtained, the action is finished. In contrast to this, when the result of voice recognition has been obtained, the flow of processing proceeds to Step S22. In Step S22, on the basis of the result of voice recognition the destination recognition information changing means 13 determines the contents of the voice. When the contents of the voice are the destination recognition information corresponding to a "destination" floor, a car call of the floor corresponding to the destination recognition information is registered, and the action is finished. In contrast to this, in the case of change start information corresponding to the "change," the flow of processing proceeds to Step S23.

[0042] In Step S23, the information indication control means 14 causes the indication device 6 to indicate an operation method. Specifically, an indication is provided to the effect that "press the car call button of the floor you want to change and speak to the microphone." After that, the flow of processing proceeds to Step S24, where the destination recognition information changing means 13 waits for the input of the car call button of the operating panel 5, and sets the destination recognition information of the floor corresponding to the inputted car call button for the n-th floor, which is the object of change, and the flow of processing proceeds to Step S25.

[0043] In Step S25, the information indication control means 14 causes the indication device 6 to indicate the destination recognition information corresponding to the n-th floor, which is taken out of the destination recognition information storage device 11 via the destination recognition information changing means 13, and the flow of processing proceeds to Step S26. In Step S26, the destination recognition information changing means 13 waits for the result of voice recognition from the voice recognition means 10, and the flow of processing proceeds to Step S27.

[0044] In Step S27, the information indication control means 14 causes the indication device 6 to indicate the result of voice recognition, and the flow of processing proceeds to Step S28. In Step S28, the information indication control means 14 causes the indication device 6 to indicate confirmation information. Specifically, an indication is provided to the effect that "the contents of the n-th floor will be changed. Are you OK? When you are going to make a change, press the car call button of the n-th floor. When you are not going to make a change,

press a button except the button of the n-th floor."

[0045] After that, the flow of processing proceeds to Step S29, where the destination recognition information changing means 13 performs the confirmation of the input of the car call button of the operating panel 5. When the car call button of the n-th floor has been pressed, the flow of processing proceeds to Step S30. In Step S30, the destination recognition information changing means 13 changes the destination recognition information corresponding to the n-th floor on the basis of the result of voice recognition in Step S26, and the flow of processing proceeds to Step S31. In Step S31, the information indication control means 14 causes the indication device 6 to indicate information to the effect that the change has been completed, and the action is finished.

[0046] In contrast to this, when in Step S29 a car call button of a floor except the n-th floor has been pressed, the flow of processing proceeds to Step S32. In Step S32, the information indication control means 14 causes the indication device 6 to indicate information to the effect that the change has not yet been completed, and the action is finished.

[0047] According to Embodiment 3 described above, the recognition information stored in the destination recognition information storage device 11 is changed on the basis of a voice inputted to the microphone 9 within a given period of time after a voice in agreement with the change start information set beforehand in the microphone 9 is inputted. For this reason, it is possible to change the destination recognition information with a simpler configuration.

[0048] And when a special operation is performed by use of the car-side elevator equipment 4, a method of changing the destination recognition information is indicated. Also, when the destination recognition information has been changed on the basis of a voice inputted to the microphone 9 within a given period of time after a special operation is performed, the result of the change of the destination recognition information is indicated. For these reasons, it is possible to change the destination recognition information while verifying the contents indicated on the indication device 6.

[0049] Incidentally, in Embodiments 1 to 3, the configurations are such that a change is made by a special operation by use of the car-side elevator equipment 4. However, even in the configuration that the microphone 9 is provided on the hall side and the change action of the destination recognition information is started by a special operation of the hall-side elevator equipment 1, such as the hall button 2, the hall car-call button and the microphone 9, it is possible to obtain the same effect as with Embodiments 1 to 3 described above.

Industrial Applicability

[0050] As described above, the call registration device of an elevator of the present invention can be used in an elevator which registers a destination floor by voice recognition.

ognition.

Description of symbols

5 [0051]

1 hall-side elevator equipment, 2 hall button, 3 car, 4 car-side elevator equipment, 5 operating panel, 6 indication device,
10 7 call registration means, 8 controller, 9 microphone, 10 voice recognition means,
11 destination recognition information storage device,
12 destination floor determination means,
15 13 destination recognition information changing means,
14 information indication control means.

20 Claims

1. A call registration device of an elevator, comprising:

a microphone provided in an elevator hall or a car;
a storage device which has stored recognition information on the floor of a building in which the elevator is installed as information to be compared with a voice inputted from the microphone in registering a car call on the basis of the voice inputted to the microphone; and
change means for changing the recognition information stored in the storage device on the basis of a voice inputted to the microphone within a given period of time after a special operation set beforehand is performed by use of elevator equipment of a hall or car where the microphone is provided.

2. The call registration device of an elevator according to claim 1, wherein the change means changes the recognition information stored in the storage device on the basis of a voice inputted to the microphone within a given period of time after the special operation is performed by use of an operating panel of a hall or car where the microphone is provided.

3. The call registration device of an elevator according to claim 2, wherein the change means changes the recognition information on a floor corresponding to a car call button on the basis of a voice inputted to the microphone within a given period of time after the special operation is performed by use of the car call button of the operating panel.

4. The call registration device of an elevator according to claim 1, wherein the change means changes the recognition information stored in the storage device

on the basis of a voice inputted to the microphone within a given period of time after the input of a voice in agreement with change start information set beforehand in the microphone as the special operation.

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5. The call registration device of an elevator according to any of the claims 1 to 4, further providing:

indication control means which causes the indication of the indication device of a hall or car where the microphone is provided to be switched from the indication of the operation condition of the elevator to the indication related to the recognition information stored in the storage device when the special operation has been performed.

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6. The call registration device of an elevator according to claim 5, wherein the indication control means causes the indication device to indicate a method of changing the recognition information when the special operation has been performed, and causes the indication device to indicate the result of the change of the recognition information on the basis of a voice inputted to the microphone when the recognition information has been changed within the given period of time.

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FIG. 1

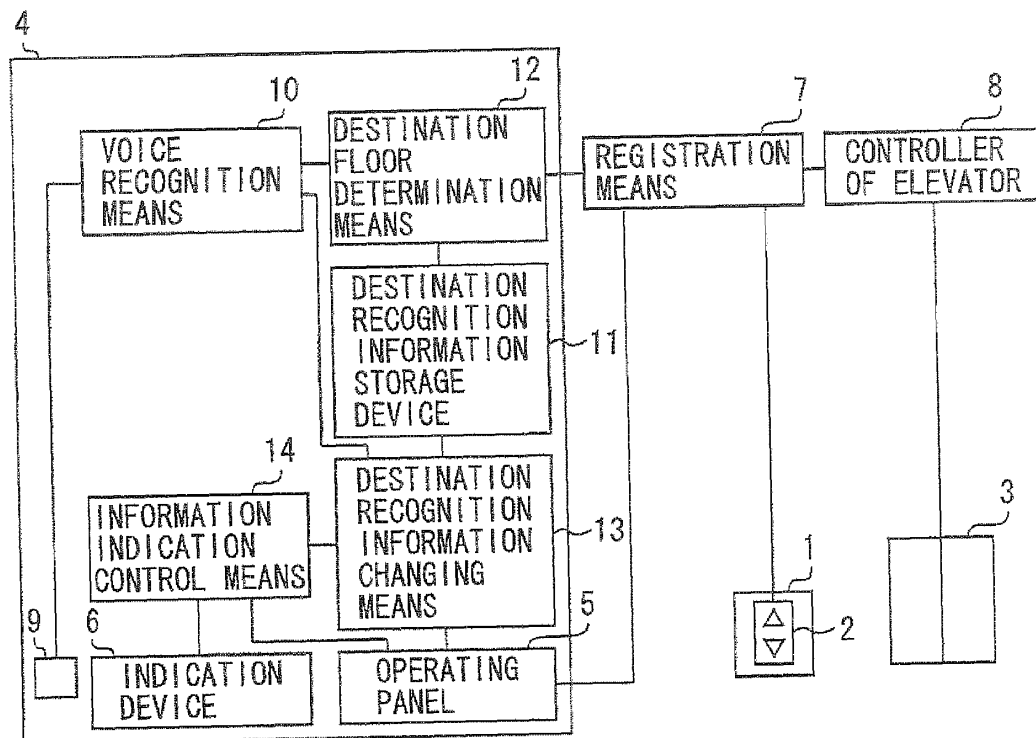


FIG. 2

DESTINATION FLOOR	INFORMATION 1	INFORMATION 2	INFORMATION 3
7	7TH FLOOR	RESTAURANT	
6	6TH FLOOR		
5	5TH FLOOR		
4	4TH FLOOR		
3	3RD FLOOR		
2	2ND FLOOR		
1	1ST FLOOR	FRONT COUNTER	LOBBY
B1	B1	BASEMENT	PARKING AREA

FIG. 3

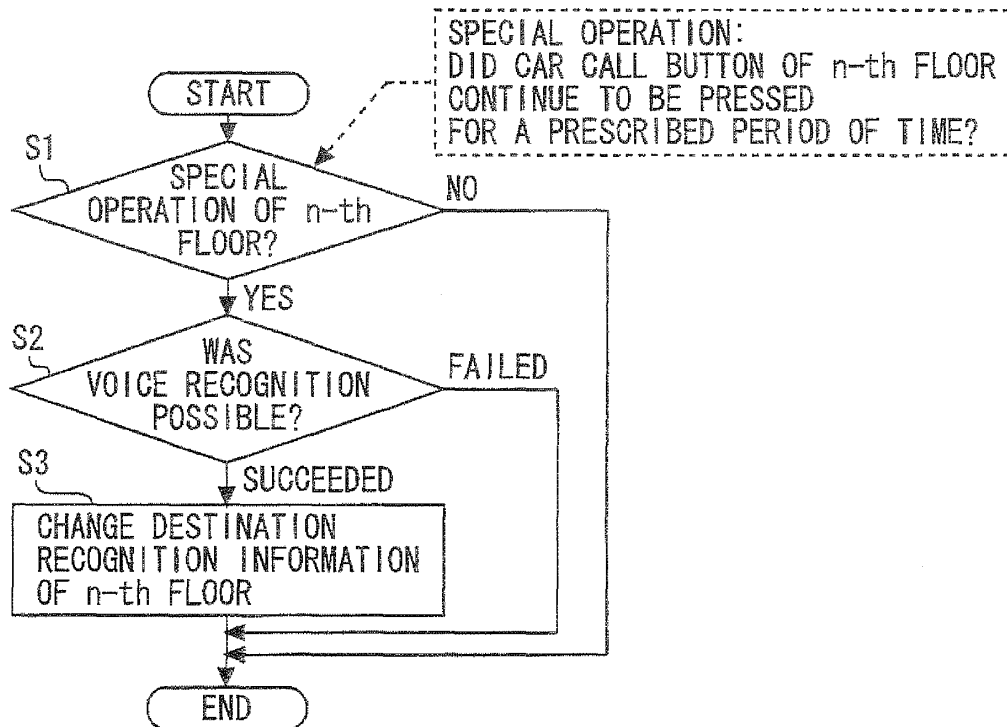


FIG. 4

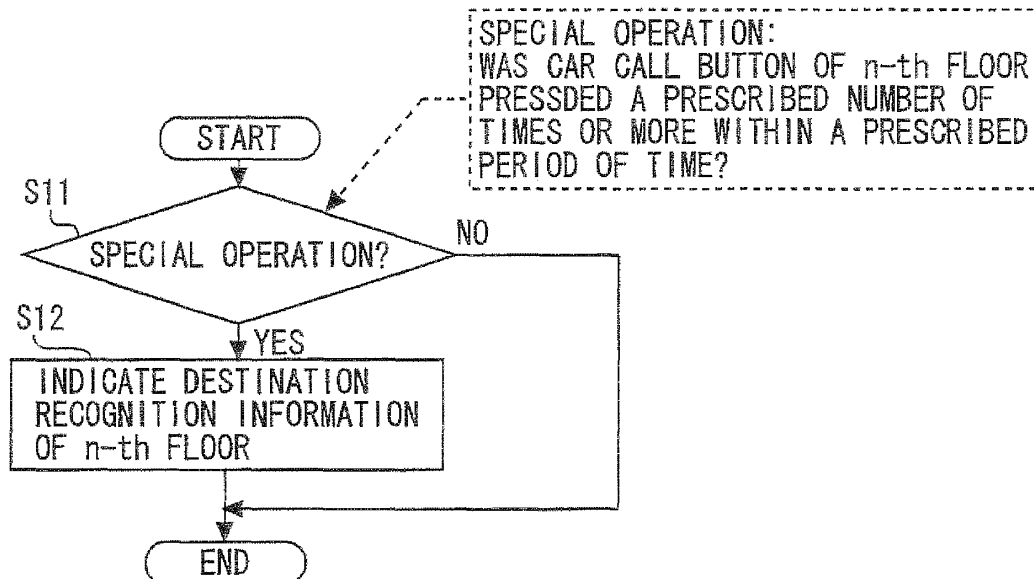
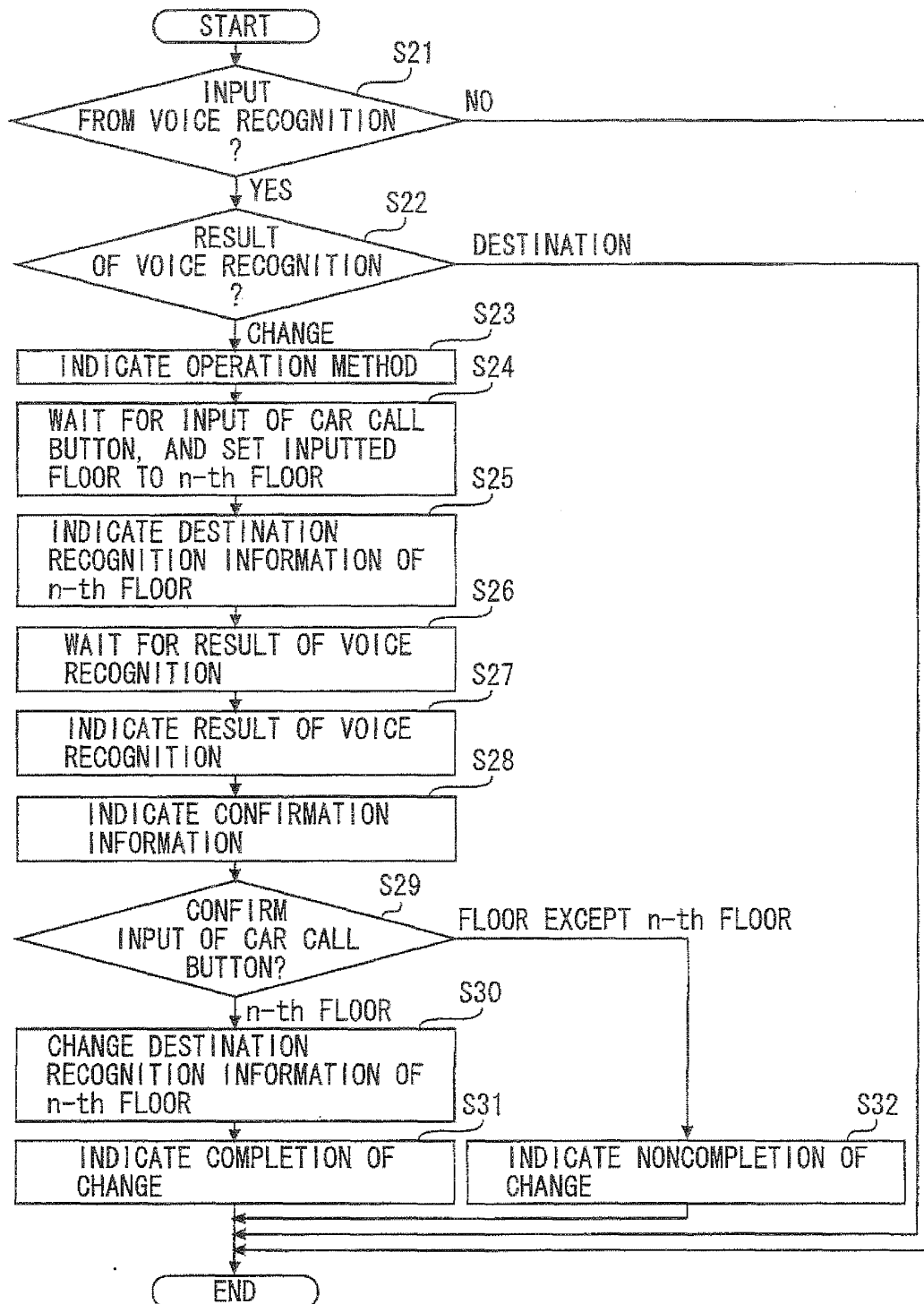


FIG. 5



INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2009/069003

A. CLASSIFICATION OF SUBJECT MATTER

B66B1/14 (2006.01) i, B66B3/00 (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, B66B3/00

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	1996-2010
Kokai Jitsuyo Shinan Koho	1971-2010	Toroku Jitsuyo Shinan Koho	1994-2010

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.
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Y	JP 2003-201071 A (Inventio AG.), 15 July 2003 (15.07.2003), paragraphs [0017] to [0018], [0024], [0046] to [0049], [0071] & US 2003/0080851 A1 & EP 1308409 A1 & CA 2410059 A & BR 204423 A & CN 1415527 A	1-6



Further documents are listed in the continuation of Box C.



See patent family annex.

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Date of the actual completion of the international search
01 February, 2010 (01.02.10)Date of mailing of the international search report
09 February, 2010 (09.02.10)Name and mailing address of the ISA/
Japanese Patent Office

Authorized officer

Facsimile No.

Telephone No.

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

INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2009/069003

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

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REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

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- JP 2002128404 A [0006]