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(54) **ELEVATOR DESTINATION FLOOR REGISTRATION DEVICE**

AUFZUGZIELETAGENREGISTRIERUNGSVORRICHTUNG

DISPOSITIF D'ENREGISTREMENT DE L'ÉTAGE DE DESTINATION D'UN ASCENSEUR

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JP-A- 2006 056 700

EP 2 159 183 B1

Description

Technical Field

[0001] The present invention relates to a destination floor registration device of elevator which uses a touch panel display.

Background Art

[0002] An elevator hall and a car which ascends and descends in an elevator shaft are provided with a destination floor registration device which users operate to register their destination floors. In such a destination floor registration device, in general, a mechanical pushbutton type has hitherto been adopted as an input method thereof. On the other hand, in recent years, in order to meet the specifications of a building in which elevators are installed, various customer requirements and the like, a large number of destination floor registration devices in which input methods other than the pushbutton type are adopted have been developed.

[0003] For example, a touch panel display is adopted in a destination floor registration device, and the touch panel is caused to indicate floors capable of being serviced by the elevator by use of buttons. In such a destination floor registration device, it is possible to freely set and change the display method of floor buttons and the arrangement of the buttons. Therefore, this destination floor registration device has the advantage that flexible measures adapted to the specifications of buildings can be taken. In particular, this destination floor registration device is suitable for high-rise buildings which require a large number of floor buttons.

[0004] In addition to the above-described input method, as conventional arts, there have been proposed methods which enable destination floors to be registered by writing characters or drawing figures with fingers directly on a touch panel (refer to Patent Document 1, for example).

[0005] Also, as other conventional arts, there have been proposed methods in which besides the adoption of the handwriting input method described in Patent Document 1, an indication area which shows the registration condition of destination floors is provided in the immediate vicinity of the handwriting input area (refer to Patent Document 2, for example). In such a destination floor registration device, when a destination floor has been registered by handwriting input, the fact that the destination floor has been registered is clearly shown to users by lighting up an object region within the indication area.

[0006] JP 2006 056 700 discloses a destination floor registration device according to the preamble of claim 1.

[0007]

Patent Document 1: Japanese Patent Laid-Open No. 10-167596

Patent Document 2: Japanese Patent Laid-Open No. 2004-277119

Disclosure of the Invention

Problems to be Solved by the Invention

[0008] In destination floor registration devices which have hitherto been generally used, the surface of each pushbutton was provided with asperities (Braille points and the like) for visually-handicapped persons. Incidentally, in a pushbutton- type destination floor registration device, no destination floor is registered unless a pushbutton is pressed down. Therefore, a destination floor is not registered if a visually- handicapped person only touches the surface of a pushbutton to make sure of a Braille point and the worsening of operability or a wrong registration of a destination floor did not occur.

[0009] On the other hand, in destination floor registration devices in which a touch panel display is adopted, it is impossible for visually-handicapped persons to get to know the arrangement of floor buttons, posing the problem that a wrong registration of a destination floor is apt to occur. That is, in such a destination floor registration device, a destination floor is registered simply by the touching of a touch panel by a user. Therefore, if a visually-handicapped person who considers that a pushbutton-type destination floor registration device is installed touches a touch panel in order to make sure of Braille points, then destination floors corresponding to touched parts are all registered, posing the problem that the operation efficiency of the elevator decreases remarkably.

[0010] When the handwriting input method is adopted as a destination floor input method like the destination floor registration devices described in Patent Documents 1 and 2, it is necessary for a user to write in numerals and the like each time the user uses an elevator. For this reason, this posed the problem that operability decreases remarkably for users who are not visually disadvantaged.

[0011] The present invention has been made to solve problems as described above and the object of the invention is to provide a destination floor registration device of elevator which uses a touch panel display and is excellent in operability, and by use of which even visually-handicapped persons can easily and accurately register their destination floors.

Means for Solving the Problems

[0012] A destination floor registration device of elevator of the present invention is a destination floor registration device installed in a hall or a car of an elevator, which comprises a touch panel arranged according to the operating position of a user of the elevator, image display means which causes the touch panel to indicate floors capable of being serviced by the elevator by use of buttons, and destination floor registration means which determines whether or not the user is a visually-handicapped person on the basis of a locus along which the

user touched the touch panel, registers a destination floor on the basis of the locus along which the user touched the touch panel and the arrangement of floor buttons indicated on the touch panel when it has been determined that the user is not a visually-handicapped person, and registers a destination floor on the basis of a pattern recognition of the locus along which the user touched the touch panel when it has been determined that the user is a visually-handicapped person.

Effect of the Invention

[0013] According to the present invention, it is possible to provide a destination floor registration device of elevator which enables a touch panel display to be used and is excellent in operability, and by use of which even visually-handicapped persons can easily and accurately register their destination floors.

Brief of Description of the Drawings

[0014]

Figure 1 is a block diagram showing an essential part of an elevator in First Embodiment of the present invention.

Figure 2 is a block diagram showing a destination floor registration device of elevator in First Embodiment of the present invention.

Figure 3 is a flowchart showing the operation of the destination floor registration device of elevator in First Embodiment of the present invention.

Figure 4 is a diagram to explain the operating method of the destination floor registration device of elevator in First Embodiment of the present invention.

Figure 5 is a diagram to explain the operating method of the destination floor registration device of elevator in First Embodiment of the present invention.

Description of symbols

[0015] 1 hall, 2 car, 3 operating panel,4 operating panel, 5 speaker, 6 speaker, 7 controller, 8 machine room, 9 touch panel, 10 image display means, 11 destination floor registration means, 12 locus recording means, 13 locus judgment means, 14 pattern judgment and check means, 15 storage means, 16 voice alarm means, 17 floor button, 18 locus

Best Mode for Carrying Out the Invention

[0016] The present invention will be described in more detail 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.

First Embodiment

[0017] Figure 1 is a block diagram showing an essential part of an elevator in First Embodiment of the present invention. In Figure 1, reference numeral 1 denotes an elevator hall and reference numeral 2 denotes a car which ascends and descends in an elevator shaft. The hall 1 and the car 2 are provided with touch panel display type operating panels 3 and 4, respectively, and speakers 5 and 6, respectively. The operating panels 3 and 4 are intended to be used by users of the elevator in registering their destination floors and the arrangement thereof is appropriately set according to the specifications of the hall 1 and the car 2, and to suit those who operate the operating panel and the like. The speakers 5 and 6 are intended for providing audio guidance to people in the hall 1 and the car 2, including elevator users who operate the operating panels 3 and 4, and the arrangement thereof is appropriately set according to the specifications of the hall 1 and the car 2, the arrangement of the operating panels 3 and 4 and the like. Reference numeral 7 denotes a controller (control panel) provided in a machine room 8 above a shaft. The controller 7 supervises the operation control of all elevators, including the control of the operating panels 3 and 4 and the speakers 5 and 6.

[0018] Figure 2 is a block diagram showing a destination floor registration device of elevator in First Embodiment of the present invention. Incidentally, in the following, the configuration of the operating panel 3 and the speaker 5 installed in the hall 1 will be described. However, the configuration on the car 2 side is the same as the configuration on the hall 1 side, and the car 2 side performs the same operation as the hall 1 side.

[0019] In Figure 2, on the operating panel 3 there are provided a touch panel 9, image display means 10, and destination floor registration means 11. The touch panel 9 provides a portion which a user operates by actual touch in registering a destination floor. This touch panel 9 is arranged according to the operating position of users, for example, at a prescribed height in the vicinity of the door.

[0020] The image display means 10 is means for causing the touch panel 9 to indicate prescribed images. Also, the image display means 10 performs changes of images indicated on the touch panel 9 on the basis of instructions from the controller 7. For example, when no destination floor has been registered, the image display means 10 causes the touch panel 9 to indicate floors capable of being serviced by the elevator by use of buttons, all in the same condition (colors, shapes and the like). When a signal to the effect that a destination floor has been registered is inputted from the controller 7, the image display means 10 changes the indication condition of a floor button corresponding to the input signal (for example, causes the floor button to light), and visually informs the users that the destination floor has been registered.

[0021] The destination floor registration means 11 is

means for registering a destination floor (for causing the controller 7 to register a destination floor) on the basis of an input signal from the touch panel 9. On the basis of a locus along which a user touched the touch panel 9, this destination floor registration means 11 first determines whether or not the user is a visually-handicapped person. When it has been determined under specific conditions that the user is not a visually-handicapped person, the destination floor registration means 11 registers a destination floor on the basis of the locus along which the user touched the touch panel 9 and the arrangement of floor buttons indicated on the touch panel 9. That is, the destination floor registration means 11 detects a position on the touch panel 9 touched by the user and registers the floor shown by a floor button arranged in this position as a destination floor.

[0022] On the other hand, when it has been determined that the user is a visually-handicapped person, a destination floor is registered on the basis of a pattern recognition of the locus along which the user touched the touch panel 9. That is, the destination floor registration means 11 performs a pattern recognition of the locus along which the user touched the touch panel 9, and registers the floor indicated by the locus itself as a destination floor.

[0023] Concretely, the destination floor registration means 11 is provided with locus recording means 12, locus judgment means 13, pattern judgment and check means 14, and storage means 15. The locus of a finger along which a user touched the touch panel 9 is recorded in the locus recording means 12. On the basis of a locus recorded in the locus recording means 12, the locus judgment means 13 makes a judgment as to whether or not a user who operated the touch panel 9 is a visually-handicapped person. Incidentally, the conditions for making a judgment as to whether or not a user is a visually-handicapped person, are stored beforehand in the storage means 15, and the locus judgment means 13 makes a judgment as to whether or not a user is a visually-handicapped person depending on whether or not the locus of a finger meets the above-described conditions. And when it has been judged that the user is not a visually-handicapped person, the locus judgment means 13 outputs information for registering a destination floor to the controller 7.

[0024] On the other hand, when it has been judged that the user is a visually-handicapped person, the locus judgment means 13 outputs a signal for performing audio guidance to the controller 7 by use of the speaker 5, and causes information to the effect that a destination floor should be inputted to the touch panel 9 by handwriting to be provided from the speaker 5. Incidentally, reference numeral 16 denotes voice alarm means which causes a voice alarm to be given from the speaker 5 on the basis of instructions from the controller 7.

[0025] When it has been judged by the locus judgment means 13 that a user is a visually-handicapped person, the pattern judgment and check means 14 performs a pattern check of the locus recorded in the locus recording means 12, and outputs a floor obtained from the result of the check as destination floor information to the controller 7. Incidentally, reference patterns for performing check are recorded beforehand in the storage means 15.

[0026] Next, the operation and operating method of a destination floor registration device having the above-described configuration will be described in detail. Figure 3 is a flowchart showing the operation of the destination floor registration device of elevator in First Embodiment of the present invention, and Figure 4 and Figure 5 are diagrams to explain the operating method of the destination floor registration device of elevator in First Embodiment of the present invention.

[0027] In Figures 3 to 5, when there is no elevator user, serviceable floor buttons 17 are indicated at sight on the touch panel 9 of the operating panel 3, as shown in Figure 4(a). Therefore, a user who is not visually disadvantaged registers his or her destination floor by pressing one of the floor buttons 17 indicated on the touch panel 9. For example, when the user wants to move to the second floor, the user presses the floor button 17 on which "2" is indicated in the middle. Figure 4(b) shows a locus 18 of a finger obtained at this time.

[0028] When it has been detected that a user touched the touch panel 9, on the operating panel 3, recording of the locus 18 along which the user touched the touch panel 9 is started by use of the locus recording means 12 (S1 to S2). When the locus 18 has been recorded in the locus recording means 12, on the basis of the locus 18 recorded in the locus recording means 12 a judgment is made by use of the locus judgment means 13 as to whether the user simultaneously touched a plurality of floor buttons 17 indicated on the touch panel 9 (S3) and whether the user touched the touch panel beyond the region of the floor buttons 17 indicated on the touch panel 9 (S4).

[0029] In the case shown in Figure 4(b), the answer is NO in both S3 and S4. In such a case, when a prescribed time has lapsed after the recording of the locus 18 was started (S5), it is determined that the user is not a visually-handicapped person (S6). And the floor indicated by the floor button 17 pressed by the user within the above-described prescribed time is registered as a destination floor (S7).

[0030] Incidentally, in S6, for example, when the answer is YES in either S3 or S4, it is judged that the user is a visually-handicapped person. That is, when the user is a visually-handicapped person, it is necessary for the user to make sure of the position of the operating panel 3 gropingly and hence the user touches the touch panel 9 regardless of the contents indicated on the touch panel 9. For this reason, the result is that the whole hand of the user touches the touch panel 9 and that the tip of a finger moves on the touch panel 9 regardless of the arrangement of the floor buttons 17.

[0031] In such a case, after the recording of the locus 18 is started (S1 to S2), the answer is YES in at least in either S3 or S4 and the flow proceeds to S8. And when the operating method has not been announced with a

voice, an announcement to the effect that a destination floor should be written on the touch panel 9 by handwriting input is made (S9). At this time, the size of the touch panel 9, the size of the floor buttons 17 and the like may also be announced. Figures 4(c) to 4(f) show the loci 18 obtained when the user wrote his or her destination floor on the touch panel 9 by handwriting in accordance with the above-described announcement.

[0032] When the user inputs a destination floor by handwriting as shown in Figures 4(c) to 4(f), in S6, it is judged that the user is a visually-handicapped person. In such a case, a pattern judgment of the locus 18 along which the user touched the touch panel 9 is made by the pattern judgment and check means 14 and the identification of a character matching the pattern is performed (S10 to S11). When a character matching the pattern has been identified, a check of the identified character against a floor is made and a judgment is made as to whether or not there is a floor matching the identified character (S12 to S13). And when there is a floor matching the identified character, the floor is registered as a destination floor (S 14).

[0033] Incidentally, Figure 5 shows the relationship between characters identified by the pattern recognition of the loci 18 and the floors registered as destination floors. For example, when a user inputted his or her destination floor by handwriting as shown in Figure 4(c), the character "3" is identified by pattern recognition, this shows that the third floor obtained by counting from the lowest floor above the ground is registered as a destination floor. Incidentally, in a case where a plurality of handwriting input methods are conceivable as in a case where a second basement obtained by counting from the lowest floor above the ground is to be inputted by handwriting as a destination floor, it is possible to cause the plurality of patterns to be stored beforehand in the storage means 15. For example, as shown in Figure 5, it is possible to ensure that standard characters used in various kinds of buildings and special characters used only in the building in question are set beforehand and that an input of any of the characters by handwriting enables a corresponding destination floor to be registered.

[0034] When a destination floor has been registered on the basis of the pattern recognition of the locus 18, the announcement of the registered destination floor is performed by use of the speaker 5 (S15).

[0035] According to First Embodiment of the present invention, even in the case of a destination floor registration device using a touch panel display, the destination floor registration device is excellent in operability and it becomes possible even for visually-handicapped persons to easily and accurately register their destination floors.

[0036] That is, in the destination floor registration device having the above-described configuration, a user who is not visually disadvantaged can register his or her destination floor simply by pressing (touching) a floor button 17 indicated on the touch panel 9. For this reason, it is possible to perform operation with the same feeling as in the conventional mechanical-type button operation and operability is not impaired.

[0037] On the other hand, when the user is a visually-handicapped person, the registration of a destination floor is changed to handwriting input and, therefore, even a visually-handicapped person can easily and accurately register his or her destination floor. Particularly, guidance on the operation method is provided after a judgment is made as to whether or not the user is a visually-handicapped person by the locus along which the user touched the touch panel 9. Therefore, even when the visually-handicapped person does not know that the destination floor registration device is of a touch panel display type, the visually-handicapped person does not have difficulty in the operation. Also, the visually-handicapped person can easily make sure of a registered destination floor by listening to the audio guidance after the registration of the destination floor.

[0038] Incidentally, because the above-described destination floor registration device uses an input method by means of the touch panel 9, it is possible to freely set and change the indication method of the floor buttons 17 and the button arrangement. In First Embodiment, when the answer is YES in S3 or S4 in Figure 3, it is determined that the user is a visually-handicapped person. In this case, however, the conditions for making a judgment as to whether or not the user is a visually-handicapped person are not limited to the above-described two cases. The above-described conditions are appropriately set on the basis of, for example, the size, arrangement and the like of the floor buttons 17 indicated on the touch panel 9.

Industrial Applicability

[0039] The destination floor registration device of elevator related to the present invention can be applied to all destination floor registration devices so long as they are of a touch panel display type.

Claims

1. A destination floor registration device installed in a hall or a car of an elevator, comprising:

   a touch panel (9) arranged according to the operating position of a user of the elevator;
   image display means (10) which causes the touch panel (9) to indicate floors capable of being serviced by the elevator by use of buttons; and
   destination floor registration means (11) which determines whether or not the user is a visually-handicapped person on the basis of a locus along which the user touched the touch panel (9), registers a destination floor on the basis of the locus along which the user touched the touch

panel (9) and the arrangement of floor buttons indicated on the touch panel (9) when it has been determined that the user is not a visually-handicapped person, **characterised in that**, the destination floor registering means registers a destination floor on the basis of a pattern recognition of the locus along which the user touched the touch panel (9) when it has been determined that the user is a visually-handicapped person.

2. The destination floor registration device of elevator according to claim 1, wherein
the destination floor registration device comprises a speaker (5, 6) for providing audio guidance to a user who operates the touch panel (9), and
destination floor registration means (11) causes information to the effect that a destination floor should be inputted to the touch panel (9) by handwriting to be provided from the speaker (5, 6) when it has been determined that the user is a visually-handicapped person.

3. The destination floor registration device of elevator according to claim 2, wherein the destination floor registration means (11) causes information on a registered destination floor to be provided from the speaker (5, 6) upon registration of the destination floor on the basis of a pattern recognition of the locus along which a user touched the touch panel (9).

4. The destination floor registration device of elevator according to any one of claims 1 to 3, wherein the destination floor registration means (11) determines that a user is a visually-handicapped person when it has been detected on the basis of the locus along which the user touched the touch panel (9) that the user simultaneously touched a plurality of floor buttons indicated on the touch panel (9).

5. The destination floor registration device of elevator according to any one of claims 1 to 3, wherein the destination floor registration means (11) determines that a user is a visually-handicapped person when it has been detected on the basis of the locus along which the user touched the touch panel (9) that the user touched the touch panel (9) beyond the region of the floor buttons indicated on the touch panel (9).

Patentansprüche

1. Zieletagen-Registrierungsvorrichtung, die in einem Flur oder einem Fahrkorb eines Aufzugs angebracht ist, umfassend:

ein Touch-Panel (9), das entsprechend der Bedienposition eines Benutzers des Aufzugs angeordnet ist;

ein Bildanzeigemittel (10), das bewirkt, dass das Touch-Panel (9) Etagen anzeigt, die von dem Aufzug durch Verwendung von Schaltflächen angefahren werden können; und

ein Zieletagen-Registrierungsmittel (11), welches auf der Grundlage eines Berührungswegs, entlang welchem der Benutzer das Touch-Panel (9) berührte, ermittelt, ob der Benutzer eine sehbehinderte Person ist oder nicht, eine Zieletage auf der Grundlage des Berührungswegs, entlang welchem der Benutzer das Touch-Panel (9) berührte, und der Anordnung von Etagen-Schaltflächen, die auf dem Touch-Panel (9) angezeigt sind, registriert, wenn ermittelt wurde, dass der Benutzer keine sehbehinderte Person ist, **dadurch gekennzeichnet, dass** das Zieletagen-Registrierungsmittel eine Zieletage auf der Grundlage einer Mustererkennung des Berührungswegs registriert, entlang welchem der Benutzer das Touch-Panel (9) berührte, wenn ermittelt wurde, dass der Benutzer eine sehbehinderte Person ist.

2. Zieletagen-Registrierungsvorrichtung eines Aufzugs nach Anspruch 1, wobei
die Zieletagen-Registrierungsvorrichtung einen Lautsprecher (5,6) zum Bereitstellen von Audioführung für einen Benutzer, der das Touch-Panel (9) bedient, umfasst, und
das Zieletagen-Registrierungsmittel (11) bewirkt, dass Informationen dahingehend, dass eine Zieletage in das Touch-Panel (9) handschriftlich eingegeben werden sollte, von dem Lautsprecher (5, 6) bereitgestellt werden, wenn ermittelt wurde, dass der Benutzer eine sehbehinderte Person ist.

3. Zieletagen-Registrierungsvorrichtung eines Aufzugs nach Anspruch 2, wobei das Zieletagen-Registrierungsmittel (11) bewirkt, dass Informationen über eine registrierte Zieletage nach Registrierung der Zieletage auf der Grundlage einer Mustererkennung des Berührungswegs, entlang welchem ein Benutzer das Touch-Panel (9) berührte, von dem Lautsprecher (5, 6) bereitgestellt werden.

4. Zieletagen-Registrierungsvorrichtung eines Aufzugs nach einem beliebigen der Ansprüche 1 bis 3, wobei das Zieletagen-Registrierungsmittel (11) ermittelt, dass ein Benutzer eine sehbehinderte Person ist, wenn auf der Grundlage des Berührungswegs, entlang welchem der Benutzer das Touch-Panel (9) berührte, detektiert wurde, dass der Benutzer mehrere Etagen-Schaltflächen, die auf dem Touch-Panel (9) angezeigt werden, gleichzeitig berührte.

5. Zieletagen-Registrierungsvorrichtung eines Aufzugs nach einem beliebigen der Ansprüche 1 bis 3, wobei das Zieletagen-Registrierungsmittel (11) er-

mittelt, dass ein Benutzer eine sehbehinderte Person ist, wenn auf der Grundlage des Berührungswegs, entlang welchem ein Benutzer das Touch-Panel (9) berührte, detektiert wurde, dass der Benutzer das Touch-Panel (9) außerhalb des Bereichs der auf dem Touch-Panel (9) angezeigten Etagen-Schaltflächen berührte.

Revendications

1. Dispositif d'enregistrement de l'étage de destination installé dans un hall ou dans une cabine d'un ascenseur, comprenant :

un panneau tactile (9) agencé selon la position d'actionnement de l'ascenseur effectué par un utilisateur ;
un moyen d'affichage d'image (10) qui amène le panneau tactile (9) à indiquer des étages capables d'être desservis par l'ascenseur en utilisant des boutons ; et
un moyen d'enregistrement de l'étage de destination (11) qui détermine si l'utilisateur est une personne présentant un handicap visuel ou pas sur la base d'un trajet le long duquel l'utilisateur a touché le panneau tactile (9), enregistre un étage de destination sur la base du trajet le long duquel l'utilisateur a touché le panneau tactile (9) et de l'agencement de boutons d'étage indiqués sur le panneau tactile (9) lorsqu'il a été déterminé que l'utilisateur n'est pas une personne présentant un handicap visuel, **caractérisé en ce que** le moyen d'enregistrement de l'étage de destination enregistre un étage de destination sur la base d'une reconnaissance de formes du trajet le long duquel l'utilisateur a touché le panneau tactile (9) lorsqu'il a été déterminé que l'utilisateur est une personne présentant un handicap visuel.

2. Dispositif d'enregistrement de l'étage de destination d'un ascenseur selon la revendication 1,
dans lequel
le dispositif d'enregistrement de l'étage de destination comprend un haut-parleur (5, 6) destiné à fournir un guidage audio à un utilisateur qui actionne le panneau tactile (9), et
un moyen d'enregistrement de l'étage de destination (11) amène des informations, indiquant qu'un étage de destination doit être fourni en entrée au panneau tactile (9) par une écriture manuscrite, à être fournies à partir du haut-parleur (5, 6) lorsqu'il a été déterminé que l'utilisateur est une personne présentant un handicap visuel.

3. Dispositif d'enregistrement de l'étage de destination d'ascenseur selon la revendication 2, dans lequel le moyen d'enregistrement de l'étage de destination (11) amène des informations sur un étage de destination enregistré à être fournies à partir du haut-parleur (5, 6) lors d'un enregistrement de l'étage de destination sur la base d'une reconnaissance de formes du trajet le long duquel un utilisateur a touché le panneau tactile (9).

4. Dispositif d'enregistrement de l'étage de destination d'un ascenseur selon l'une quelconque des revendications 1 à 3, dans lequel le moyen d'enregistrement de l'étage de destination (11) détermine qu'un utilisateur est une personne présentant un handicap visuel lorsqu'il a été détecté sur la base du trajet le long duquel l'utilisateur a touché le panneau tactile (9) que l'utilisateur a touché simultanément une pluralité de boutons d'étage indiqués sur le panneau tactile (9).

5. Dispositif d'enregistrement de l'étage de destination d'un ascenseur selon l'une quelconque des revendications 1 à 3, dans lequel le moyen d'enregistrement de l'étage de destination (11) détermine qu'un utilisateur est une personne présentant un handicap visuel lorsqu'il a été détecté sur la base du trajet le long duquel l'utilisateur a touché le panneau tactile (9) que l'utilisateur a touché le panneau tactile (9) au-delà de la zone des boutons d'étage indiqués sur le panneau tactile (9).

Fig. 1

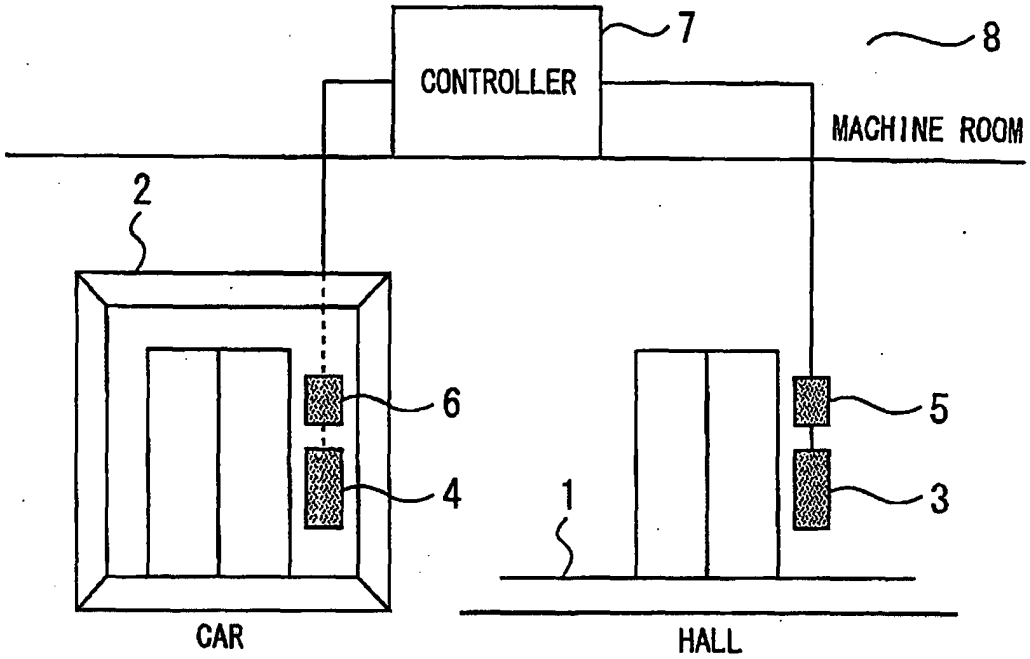
CONTROLLER
7
8
MACHINE ROOM
2
6
4
5
3
1
CAR
HALL

Fig. 2

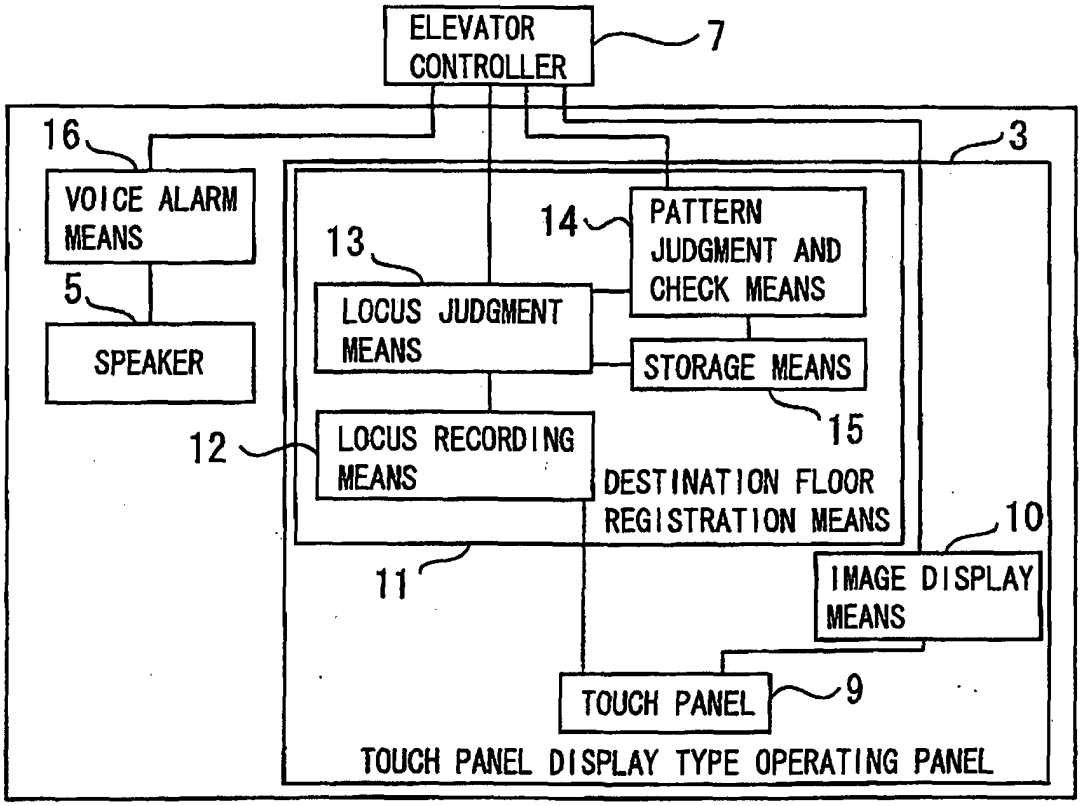
ELEVATOR CONTROLLER
7
16
VOICE ALARM MEANS
5
SPEAKER
3
14
PATTERN JUDGMENT AND CHECK MEANS
13
LOCUS JUDGMENT MEANS
STORAGE MEANS
15
12
LOCUS RECORDING MEANS
DESTINATION FLOOR REGISTRATION MEANS
10
11
IMAGE DISPLAY MEANS
TOUCH PANEL
9
TOUCH PANEL DISPLAY TYPE OPERATING PANEL

Fig. 3

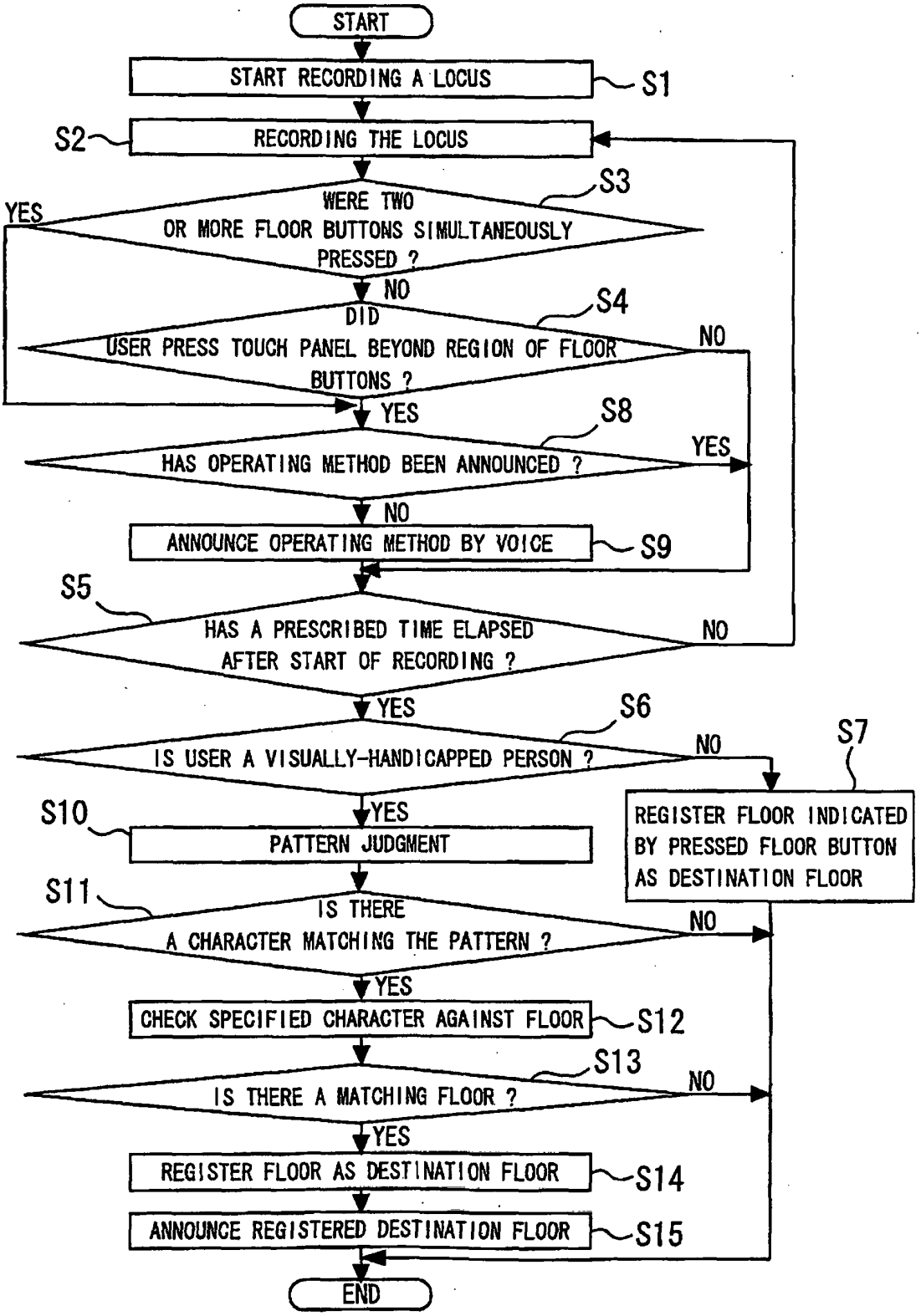
START
START RECORDING A LOCUS
S1
S2
RECORDING THE LOCUS
S3
WERE TWO OR MORE FLOOR BUTTONS SIMULTANEOUSLY PRESSED ?
YES
NO
S4
DID USER PRESS TOUCH PANEL BEYOND REGION OF FLOOR BUTTONS ?
NO
YES
S8
HAS OPERATING METHOD BEEN ANNOUNCED ?
YES
NO
ANNOUNCE OPERATING METHOD BY VOICE
S9
S5
HAS A PRESCRIBED TIME ELAPSED AFTER START OF RECORDING ?
NO
YES
S6
IS USER A VISUALLY-HANDICAPPED PERSON ?
NO
S7
REGISTER FLOOR INDICATED BY PRESSED FLOOR BUTTON AS DESTINATION FLOOR
YES
S10
PATTERN JUDGMENT
S11
IS THERE A CHARACTER MATCHING THE PATTERN ?
NO
YES
CHECK SPECIFIED CHARACTER AGAINST FLOOR
S12
S13
IS THERE A MATCHING FLOOR ?
NO
YES
REGISTER FLOOR AS DESTINATION FLOOR
S14
ANNOUNCE REGISTERED DESTINATION FLOOR
S15
END

Fig. 4

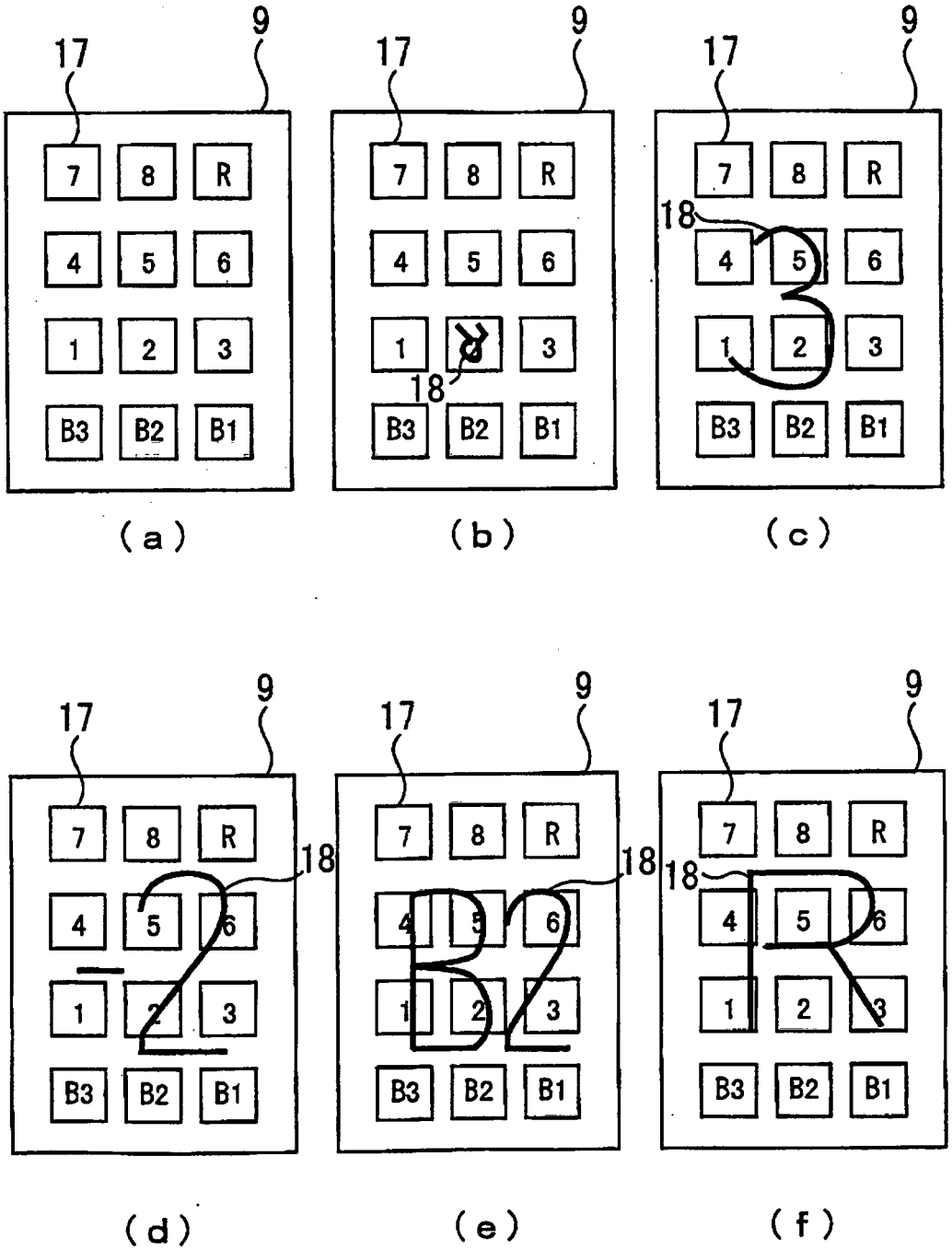

Fig. 5

KINDS OF CHARACTER	INPUT	DESTINATION FLOORS TO BE REGISTERED
STANDARD CHARACTER	...	...
	3	THIRD FLOOR OBTAINED BY COUNTING FROM THE LOWEST FLOOR ABOVE THE GROUND
	2	SECOND FLOOR OBTAINED BY COUNTING FROM THE LOWEST FLOOR ABOVE THE GROUND
	1	LOWEST FLOOR ABOVE THE GROUND
	−1	FIRST BASEMENT OBTAINED BY COUNTING FROM THE LOWEST FLOOR ABOVE THE GROUND
	−2	SECOND BASEMENT OBTAINED BY COUNTING FROM THE LOWEST FLOOR ABOVE THE GROUND
	−3	THIRD BASEMENT OBTAINED BY COUNTING FROM THE LOWEST FLOOR ABOVE THE GROUND
	...	...
SPECIAL CHARACTER	B1	FIRST BASEMENT OBTAINED BY COUNTING FROM THE LOWEST FLOOR ABOVE THE GROUND
	B2	SECOND BASEMENT OBTAINED BY COUNTING FROM THE LOWEST FLOOR ABOVE THE GROUND
	B3	THIRD BASEMENT OBTAINED BY COUNTING FROM THE LOWEST FLOOR ABOVE THE GROUND
	R	HIGHEST FLOOR
	...	...

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

- JP 2006056700 B **[0006]**
- JP 10167596 A **[0007]**
- JP 2004277119 A **[0007]**