

ELEVATOR SYSTEM

FIELD

Embodiments described herein relate generally to an elevator system comprising a hall destination controller.

BACKGROUND

Generally, in the elevator hall of each floor of a building, call buttons for use in registering a hall call are installed. When a call button is operated by a user (passenger) at a given floor to register a hall call, a car is moved to the floor. When the user enters the car and operates a destination floor button of a car operation panel, a destination floor is registered and the car is moved to the destination floor.

In recent years, an elevator system comprising a hall destination controller (HDC) in place of the hall call buttons has been put to practical use. The HDC enables a user at an elevator hall to specify a destination floor directly at the hall. Such an elevator system is referred to as a destination control system (DCS). The DCS is configured to select an optimal car from two or more cars based on the destination floor registered by the user at the hall, and cause the optimal car to respond to the hall. In this case, users of the same destination floor are invited to get on the same car to improve transportation efficiency.

It should be noted that a DCS in which a hall destination controller is installed in every floor, i.e., hall destination controllers are installed in respective floors, is referred to as a full DCS. In the full DCS, a destination floor can be registered at the hall of any floor, and the cars do not need to have destination floor buttons.

However, in a system in which cars have no destination floor buttons, it is necessary to register

a destination floor in advance at an elevator hall. Thus, in case of emergency such as fire, it is difficult that after getting on a car, an operator freely causes a car to move to a desired floor.

SUMMARY

5 According to an aspect, there is provided an elevator system comprising: hall destination controllers provided at respective elevator halls at floors and each allowing a user to register a destination floor under normal condition; one or more cars each including specific operation buttons to register a destination
10 floor in case of emergency, which are locked under normal condition; an emergency switch provided at every floor or at least one floor; a car selection unit configured to select, when the emergency switch is operated, an arbitrary one of the one or more cars as an emergency car, and cause the selected car to move to a
15 floor where the emergency switch is operated; an operation control unit configured to release the specific operation buttons in the car selected as the emergency car by the car selection unit, from a locked state of the specific operation buttons; and a drive control unit configured to control an operation of the selected
20 car in accordance with an operation of the specific operation buttons released from the locked state by the operation control unit.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a diagram showing the structure of an elevator
25 hall according to a first embodiment.

FIG. 2 is a diagram showing the structure of the car of an elevator according to the first embodiment.

FIG. 3 is a diagram showing an example of specific operation buttons for a specific person, which are provided at an inspection
30 box provided in the car of the elevator according to the first embodiment.

FIG. 4 is a diagram showing the configuration of an elevator system according to the first embodiment.

FIG. 5 is a diagram showing the functional configuration of a group controller according to the first embodiment.
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FIG. 6 is a flowchart illustrating an operation of

the group controller according to the first embodiment when an elevator system is in emergency operation.

FIG. 7 is a flowchart illustrating an operation of a group controller according to a second embodiment
5 when an elevator system is in emergency operation.

FIG. 8 is a flowchart illustrating an operation of a group controller according to a third embodiment when an elevator system is in emergency operation.

FIG. 9 is a flowchart illustrating an operation of a group controller according to a fourth embodiment
10 when an elevator system is in emergency operation.

DETAILED DESCRIPTION

Embodiments will now be described with reference to the accompanying drawings.

15 (First embodiment)

FIG. 1 is a diagram showing the structure of an elevator hall according to the first embodiment. The term "elevator" used here refers basically to a "car".

The figure illustrates an arbitrary elevator hall
20 10 and hall doors 11a and 11b. The hall door 11a is opened and closed as being interlocked with a car door when the car of elevator A arrives. The hall door 11b is opened and closed as being interlocked with a car door when the car of elevator B arrives.

25 Between hall doors 11a and 11b, a hall destination controller 12 is installed for users to register a destination floor. The hall destination controller 12 comprises an operation unit 12a configured to enter a destination floor and an indicator 12b configured to
30 indicate a car (designated car), etc., for a user to get on.

As a method of registering a destination floor, generally, a numeric (10-digit) key unit is used, but a method using, for example, an IC card may be employed.
35 Furthermore, the hall destination controller 12 may be installed at a place distant from the hall 10.

The indicator 13a is provided near the top of the

hall door 11a. The indicator 13a indicates a destination floor, a travelling direction, etc., of the car of elevator A. Similarly, an indicator 13b is provided near the top of the hall door 11b. The
5 indicator 13b indicates the destination floor, the travelling direction, etc. of the car of elevator B.

Furthermore, a push-button emergency switch 14 is provided at an arbitrary place (for example, near a hall door) in the hall 10. The emergency switch 14 is
10 a switch for switching, in case of emergency, for example, fire, the operation of an elevator system from a normal operation to an emergency operation. It should be noted that if the emergency switch 14 is provided as a switch to be applied in case of fire, it
15 is referred to as a "fireman switch".

When the emergency switch 14 is turned on, the operation of the elevator system is switched to the emergency operation, and at least one car is moved as an emergency car to a floor where the emergency switch
20 14 is turned on. It should be noted that emergency switches 14 may be provided at all the floors, respectively, or a single emergency switch 14 may be provided at only a specific floor (for example, a standard floor).

25 Also, it should be noted that the first embodiment is described on the assumption that a full DCS is provided; that is, hall destination controllers are provided in the halls of all the floors. Thus, none of the cars include a destination floor button.

30 FIG. 2 shows the structure of the car of an elevator.

A car door 22 is provided to be openable/closable in the doorway of a car 21. An indicator 23, a door open button 24a and a door close button 24b are
35 provided near the car door 22. The indicator 23 indicates information regarding the operational status of the car 21, such as a current location and a

traveling direction. The door open button 24a is an operation switch for giving an instruction to open the car door 22. The door close button 24b is an operation switch for giving an instruction to close the car door 22.

It should be noted that an inspection box 25 with a lock is provided at an arbitrary location in the car 21. The inspection box 25 accommodates a console panel 27 as shown in FIG. 3. The console panel 27 includes specific operation buttons 26 for a specific person such as an operator or a fireman to give an instruction. The specific operation buttons 26 include destination floor buttons for use in designating a destination floor. Usually, the inspection box 25 is locked, and the lock to the inspection box 25 is managed by, for example, the manager of the building. Therefore, unauthorized users cannot open the inspection box 25 to operate the specific operation buttons 26.

FIG. 4 shows the configuration of an elevator system in which three elevators (cars) are controlled as a group. In the following descriptions, the elements identical to those in the first embodiment will be denoted by the same reference numerals as in the first embodiment.

The elevator system according to the first embodiment comprises car controllers 31a, 31b, and 31c and a group controller 32.

The car controllers 31a, 31b and 31c are provided in association with the cars 21a, 21b and 21c, respectively. The car controllers 31a, 31b, and 31c are each connected to the group controller 32, and exercise controls of the respective associated cars independently, which include driving of a hoist (not shown) and opening/closing of the door.

The indicator 13a is connected to the car controller 31a. The indicator 13a is provided near a

hall door for the car 21a, and indicates the destination floor, the driving direction, etc., of the car 21a. Similarly, the indicator 13b is connected to the car controller 31b, and the indicator 13c is
5 connected to the car controller 31c. The indicator 13b is provided near a hall door for the car 21b, and indicates the destination floor, the driving direction, etc. of the car 21b. Also, the indicator 13c is provided near a hall door for the car 21c, and
10 indicates the destination floor, the driving direction, etc., of the car 21c.

It should be noted that FIG. 4 show only one indicator 13a, one indicator 13b and one indicator 13c as a matter of convenience; however, actually, sets of
15 indicators 13a, 13b and 13c are provided at elevator halls, respectively.

To the car controllers 31a, 31b and 31c, the emergency switch or switches 14 are connected. An operation signal from the emergency switch 14 or any of
20 the emergency switches 14 is given to the group controller 32 through the car controllers 31a, 31b and 31c.

At the hall of each floor, at least one hall destination controller 12 is provided. As explained
25 with reference to FIG. 1, the hall destination controller 12 is a device for a user at the hall to register a destination floor. When the destination floor is registered using the hall destination controller 12, two information pieces indicating the destination floor and a floor at which the destination
30 floor is registered are sent as single hall call information to the group controller 32.

Upon reception of the hall call information, the group controller 32 gives the hall call information to
35 an optimal one of the cars 21a, 21b and 21c. This optimal car given the hall call information will be referred to as a "designated car". When the designated

car is determined, the elevator name of the designated car is indicated in the indicator 12b of the hall destination controller 12 operated by the user. In DCS, the operations of the cars 21a, 21b and 21c are controlled (as a group control) with the hall destination controller 12.

The group controller 32 is a controller which exercises a centralized control of the operations of the cars 21a, 21b and 21c. As shown in FIG. 5, the group controller 32 comprises a car selection module 32a, an operation controller 32b and a drive controller 32c as modules for effecting an emergency operation.

When the emergency switch 14 is operated, the car selection module 32a selects an arbitrary one of the cars 21a, 21b and 21c as an emergency car, and causes the selected car to move to a floor at which the emergency switch 14 is operated. "Emergency car" is a car to be driven in case of emergency, for example, in the event of an accident. Thus, a specific worker or workers such as firemen or elevator engineers get on the emergency car.

The operation controller 32b releases specific operation buttons 26 provided in the car 21 selected as the emergency car by the selection module 32a, from their locked state.

The drive controller 32c controls the operation of the car 21 selected as the emergency car in accordance with the operation of the specific operation buttons 26 released from their locked state by the operation controller 32b.

Next, the operation of the first embodiment will be explained.

It should be noted that each of processes as shown in flowcharts is executed by reading a predetermined program with the group controller 32, which is a computer.

FIG. 6 is the flowchart of the operation of the

group controller 32 according to the first embodiment in the case where the elevator system is in emergency operation.

5 Suppose a fire breaks out at a given floor in a building, and a fireman rushes to the building and operates an emergency switch 14 to turn it on. When the emergency switch 14 is turned on, the operation of the elevator system changes to the emergency operation, and an emergency car is moved to a floor where the
10 emergency switch 14 is operated.

 To be more specific, when the emergency switch 14 is turned on (Yes in step S101), first, an arbitrary one of the cars 21a, 21b and 21c is selected as an emergency car by the car selection module 32a in the
15 group controller 32 to move to the floor where the emergency switch 14 is operated (step S102).

 For example, suppose the emergency switch 14 is provided at the first floor of the building, and the car 21a of elevator A is selected as an emergency car
20 by the operation of the emergency switch 14. In this case, the car 21a is moved to the first floor where the emergency switch 14 is operated, and stops at the first floor while its door is open. It should be noted that although in the above case, a single car is selected as
25 an emergency car, two or more cars may be selected as emergency cars.

 If the car 21a of elevator A is selected as an emergency car, the indicator 13a of elevator A indicates that the car 21a of elevator A is in
30 emergency operation (step S103). It should be noted that a speaker not shown provided at the same elevator hall as the indicator 13a may be caused to issue a voice notification indicating that the car 21a of elevator A is in emergency operation.

35 Then, the operation controller 32b in the group controller 32 releases the specific operation buttons 26 provided in the car 21a from the locked state of the

specific operation buttons 26 (step S104). As shown in
FIGS. 2 and 3, the specific operation buttons 26 are
provided in the inspection box 25 with the lock. When
the emergency switch 14 is turned on, the operation
5 controller 32b releases the inspection box 25 in the
car 21a from the locked state of the inspection box 25
to permit the specific operation buttons 26 to be
operated.

If a fireman gets on the car 21a, and operates the
10 specific operation buttons 26, an operation signal
thereof is given to the group controller 32 through the
car controller 31a. Thereby, the drive controller 32c
in the group controller 32 controls the operation of
the car 21a in accordance with the operation of the
15 specific operation buttons 26 (step S105). That is,
the operation of the car 21a is controlled by the
operation of the specific operation buttons 26,
independently of the hall destination controller 12.

Such an emergency operation is continued until the
20 emergency switch 14 is released from its on state,
i.e., the emergency switch 14 is turned off. If the
fireman finishes his or her operation, and turns off
the emergency switch 14 (Yes in step S106), the
operation controller 32b locks the specific operation
25 buttons 26 in the car 21a (step S107). To be more
specific, when the emergency switch 14 is turned off,
the operation controller 32b locks the inspection box
25 in the car 21a to inhibit the specific operation
buttons 26 from being operated.

30 Then, the operation of the elevator system is
switched to the normal operation, and the operations of
the cars 21a, 21b and 21c are controlled based on a
destination floor registered by the operation of the
hall destination controller 12.

35 In such a manner, according to the first
embodiment, when the emergency switch 14 is turned on
in case of emergency such as fire, specific operation

buttons 26 in a car selected as an emergency car are released from their locked state, and are thus usable.

Therefore, it is unnecessary to perform troublesome operations such as an operation of the hall destination controller 12 to register a destination floor and unlocking of the inspection box 25. After getting on a car moved as an emergency car to the floor, a specific worker such as a fireman can operate specific operation buttons 26 in the car to freely cause the car to move to a desired floor.

(Second embodiment)

The second embodiment will be explained.

In the first embodiment, the specific operation buttons 26 in the car selected as the emergency car are released from their locked state immediately when the emergency switch 14 is turned on. On the other hand, in the second embodiment, if the emergency switch 14 is turned on, and a specific operation is performed, the specific operation buttons 26 are released from their locked state.

The basic equipment configuration of the second embodiment is the same as that of the first embodiment. The operation of the second embodiment will be explained with reference to FIG. 7.

FIG. 7 is a flowchart of the operation of the group controller 32 according to the second embodiment in the case where the elevator system is in emergency operation. It should be noted that referring to FIG. 7, the processes of steps S201 to S203 and S205 to S208 are the same as those of steps S101 to S103 and S104 to S107 as shown in FIG. 6 in the first embodiment.

To be more specific, when the emergency switch 14 is turned on, for example, the car 21a of elevator A is selected as an emergency car, and moved to a floor where the emergency switch 14 is operated (steps S201 and S202). At this time, the indicator 13a of elevator

A is made to indicate that the car 21a of elevator A is in emergency operation (step S203).

Then, in the second embodiment, it is determined whether a specific operation has been performed with the hall destination controller 12 or not. The specific operation is, for example, an operation of inputting a passcode. The passcode is known to only a person or persons permitted to get on the emergency car.

When the emergency switch 14 is turned on, the operation controller 32b in the group controller 32 determines whether a passcode has been input by operating the hall destination controller 12 or not (step S204). It should be noted that in the above case, when the emergency switch 14 is turned on, the indicator 13a of elevator A provided with the car 21a selected as the emergency car or the indicator 12b of the hall destination controller 12 may be made to indicate a message requesting input of a passcode. Alternatively, the speaker not shown provided at the same elevator hall as the indicator 13a may be made to issue a voice notification requesting input of a passcode.

If a correct passcode is input (Yes in step S204), the operation controller 32b releases the specific operation buttons 26 provided in the car 21a from the locked state of the specific operation buttons 26, using the car controller 31a of elevator A (step S205). To be more specific, it releases the inspection box 25 in the car 21a from the locked state of the inspection box 25 to allow the specific operation buttons 26 to be operated.

The subsequent processes are the same as those in the first embodiment. That is, the operation of the car 21a is controlled in accordance with the operation of the specific operation buttons 26 (step S206). Furthermore, when the emergency switch 14 is turned off

(Yes in step S207), the specific operation buttons 26 of the car 21a are locked (step S208), and the operation of the car is switched to the normal operation.

5 On the other hand, in step S205, if the correct passcode is not input, or no passcode is input within a predetermined time, the operation controller 32b inhibits the specific operation buttons 26 from being released from their locked state. At this time, in the
10 above case, the indicator 13a of elevator A provided with the car 21a selected as the emergency car or the indicator 12b of the hall destination controller 12 may be made to indicate a message requesting inputting or re-inputting of a passcode. Alternatively, the speaker
15 not shown provided at the same elevator hall as the indicator 13a may be made to issue a voice notification requesting input or re-input of a passcode.

 In such a manner, in the second embodiment, the specific operation buttons 26 in the car selected as
20 the emergency car are not released from their locked state immediately when the emergency switch 14 is turned on: that is, if the emergency switch 14 is turned on, and also a specific operation is performed, the specific operation buttons 26 are released from
25 their locked state. Therefore, even if a general user mistakenly getting on the emergency car, he or she can be prevented from operating the specific operation buttons 26.

 It should be noted that the specific operation is
30 not limited to the operation of inputting a passcode. For example, in the case where the hall destination controller 12 has a card reading function, when it is made to read identification (ID) information recorded in advance in an IC card, it may be determined that the
35 specific operation has been performed.

 Also, in the case where an input equipment is provided at an arbitrary place at the elevator hall,

when a passcode or the like is input by operating the input equipment, it may be determined that the specific operation has been performed.

(Third embodiment)

5 The third embodiment will be explained.

 In the third embodiment, if the emergency switch 14 is turned on, and a specific operation is performed using the hall destination controller 12 provided at a floor where the emergency switch 14 is operated, the
10 specific operation buttons 26 are released from their locked state.

 The basic equipment configuration of the third embodiment is the same as that of the first embodiment. The operation of the third embodiment will be explained
15 with reference to FIG. 8.

 FIG. 8 is a flowchart of the operation of the group controller 32 according to the third embodiment in the case where the elevator system is in emergency operation. It should be noted that referring to
20 FIG. 8, steps S301 to S303 and S306 to S309 are the same as steps S101 to S103 and S104 to S107 as shown in FIG. 6 in the first embodiment.

 To be more specific, when the emergency switch 14 is turned on, for example, the car 21a of elevator A is
25 selected as an emergency car, and moved to the floor where the emergency switch 14 is operated (steps S301 and 302). At this time, the indicator 13a of elevator A is made to indicate that the car 21a of elevator A is in emergency operation (step S303).

30 The third embodiment is provided on the premise that emergency switches 14 and hall destination controllers 12 are both provided at respective floors. When the emergency switch 14 at a given floor is turned on, the operation controller 32b of the group
35 controller 32 enables the hall destination controller 12 at the given floor and disables the hall destination controllers 12 at the other floors (step S304).

Then, the operation controller 32b determines whether or not a passcode has been input using the hall destination controller 12 at the above floor where the emergency switch 14 is turned on (step S305).

5 It should be noted that when the emergency switch 14 is turned on, a message requesting input of a passcode may be displayed in the indicator 13a of elevator A or the indicator 12b of the hall destination controller 12 at the above given floor. Alternatively,
10 the speaker not shown provided at the same elevator hall as the indicator 12b may be made to issue a voice notification requesting input of a passcode.

 If a correct passcode is input (Yes in step S305), the operation controller 32b releases the specific
15 operation buttons 26 provided in the car 21a from the locked state of the specific operation buttons 26, with the car controller 31a of elevator A (step S306). To be more specific, the inspection box 25 in the car 21a is unlocked to make the specific operation buttons 26
20 operable.

 The subsequent operation is performed as in the first embodiment, and the operation of the car 21a is controlled in accordance with the operation of the specific operation buttons 26 (step S307).
25 Furthermore, when the emergency switch 14 is turned off (Yes in step S308), the specific operation buttons 26 in the car 21a are locked (step S309), and the operation of the elevator system is switched to the normal operation.

30 On the other hand, in step S305, if the correct passcode is not input with the hall destination controller 12 at the floor where the emergency switch 14 is turned on, or if no passcode is input even after a predetermined time elapses, the operation controller
35 32b inhibits unlocking of the specific operation buttons 26. In this case, a message requesting input or re-input of a passcode may be displayed in the

indicator 13a of elevator A provided with the car 21a selected as the emergency car or the indicator 12b of the hall destination controller 12 at the above floor. Alternatively, the speaker not shown provided at the
5 same elevator hall as the indicator 13a may be made to issue a voice notification requesting input or re-input of a passcode.

In such a manner, according to the third embodiment, only the hall destination controller 12 at
10 the floor where the emergency switch 14 is turned on is enabled. Therefore, only when a specific operation is performed with the hall destination controller 12 at the above floor, the specific operation buttons 26 in the car selected as the emergency car can be released
15 from their locked state.

It should be noted that in the third embodiment, as in the second embodiment, the specific operation is not limited to inputting a passcode. For example, in the case where the hall destination controller 12 is
20 made to have a card reading function, it may be determined as the specific operation that the hall destination controller 12 is caused to read identification (ID) information recorded in advance in an IC card.

25 (Fourth embodiment)

The fourth embodiment will be explained.

It should be noted that in the first to third embodiments, an arbitrary car is selected as an emergency car. However, for example, if a fire breaks
30 out, there is a case where a car selected as an emergency car is unable to operate due to the fire. In view of this point, in the fourth embodiment, the order in which cars are successively selected as an emergency car is predetermined.

35 The basic equipment configuration of the fourth embodiment is the same as that of the first embodiment. The operation of the fourth embodiment will be

explained with reference to FIG. 9.

FIG. 9 is a flowchart of the operation of the group controller 32 according to the fourth embodiment in the case where the elevator system is in emergency operation.

Suppose a fire breaks out at a given floor in a building, and a fireman runs to the floor turns on the emergency switch 14 provided at the floor. When the emergency switch 14 is turned on (Yes in step S401), the operation of the elevator system is switched to the emergency operation.

In the fourth embodiment, first, the car selection module 32a of the group controller 32 selects one of the cars 21a, 21b and 21c as an emergency car according to the predetermined order (step S402). At this time, the car selection module 32a determines whether the car selected as the emergency car is able to operate or not (step S403).

It should be noted that the operation states of the cars 21a, 21b and 21c can be determined based on operation state information obtained from the car controllers 31a, 31b and 31c. The operation state information includes information items indicating the position and travelling direction of an associated car, the state of the car door of the car, an absence or presence of an abnormality in the car, etc.

If the car selected as the emergency car is not able to operate due to an abnormality (No in step S403), the car selection module 32a selects a subsequent car as the emergency car according to the predetermined order (step S404).

For example, first, the car 21a of elevator A is selected as the emergency car. If the car 21a is not able to operate, then the car 21b of elevator B is selected as the emergency car. Also, if the car 21b of elevator B is not able to operate, then the car 21c of elevator C is selected as the emergency car.

In such a manner, cars are successively selected according to the predetermined order to determine an emergency car capable of operating. It should be noted that although it is explained that a single car is
5 selected as an emergency car at a time, two or more cars may be selected as emergency cars at a time.

For example, in the case where two cars are selected as emergency cars, first, the car 21a of elevator A and the car 21b of elevator B are selected
10 as emergency cars. However, if one of those cars is unable to operate, the car 21c of elevator C is selected as an emergency car.

Also, if the car 21a of elevator A and the car 21b of elevator B are both unable to operate, the car 21c of elevator C is selected as an emergency car. In this
15 case, only the car 21c is applied as the emergency car.

Furthermore, the cars 21a, 21b and 21c are all unable to operate, the indicators 13a, 13b and 13C and/or the indicator 12b of the hall destination
20 controller 12 may be made to indicate that all the cars are unable to operate. Alternatively, the speaker not shown provided at the same elevator hall as the indicators may be cause to issue a voice notification indicating that all the cars are unable to operate.

25 If a given car is selected as an emergency car, and also able to operate, it is moved to the floor where the emergency switch 14 is operated. At this time, one of the indicators 13a, 13b and 13c which is associated with the above selected car is made to
30 indicate that the car is in emergency operation (step S405).

The subsequent operations are performed in the same manner as in the first embodiment. The specific operation buttons 26 in the car selected as the
35 emergency car are released from their locked state, and the operation of the car is controlled in accordance with the operation of the specific operation buttons

26.

It should be noted that in the fourth embodiment, as in the second embodiment, the specific operation buttons 26 may be released from their locked state when the specific operation is performed, or as in third embodiment, they may be released from their locked state when the specific operation is performed with the hall destination controller 12 at the floor where the emergency switch 14 is turned on.

In such a manner, in the fourth embodiment, according to the predetermined order, cars are successively selected and determined able to operate. If a car or cars are determined as an emergency car or cars, the specific operation buttons 26 in the selected car or cars are released from their locked state. By virtue of this feature, even if the selected car or cars are unable to operate due to an abnormality, the other car can be applied and freely moved to a desired floor by operating the specific operation buttons 26 in the car.

According to at least one of the above embodiments, it is possible to provide an elevator system which enables an operator or the like to move a car on which he or she gets to a desired floor without the need to perform a complicated operation in case of emergency.

It should be noted that the above explanations of the embodiments are given by referring to by way of example the case where a fire breaks out; however, the same is true of the case where some accident or disaster happens.

Also, the above explanations of the embodiments are given on the premise that a group of cars are managed. However, a structure in which the operation of a single car is controlled by DCS may be applied. In this case, in addition to the function of DCS, the car controller for the single car is made to have

functions corresponding to the functions of the car selection module 32a, the operation controller 32b and the drive controller 32c. The car controller for the single car applies the single car as an emergency car
5 when the emergency switch 14 is turned on, and causes the car to move to the floor where the emergency switch 14 is turned on. The controller releases the specific operation buttons 26 in the car from their locked state, and controls the operation of the car.

10 While certain embodiments have been described, these embodiments have been presented by way of example only, and are not intended to limit the scope of the inventions. Indeed, the novel embodiments described herein may be embodied in a variety of other forms;
15 furthermore, various omissions, substitutions and changes in the form of the embodiments described herein may be made without departing from the spirit of the inventions. The accompanying claims and their
20 modifications as would fall within the scope and spirit of the inventions.

WHAT IS CLAIMED IS:

1. An elevator system comprising:

hall destination controllers provided at
respective elevator halls at floors and each allowing a
5 user to register a destination floor under normal
condition;

one or more cars each including specific operation
buttons to register a destination floor in case of
emergency, which are locked under normal condition;

10 an emergency switch provided at every floor or at
least one floor;

a car selection unit configured to select, when
the emergency switch is operated, an arbitrary one of
the one or more cars as an emergency car, and cause the
15 selected car to move to a floor where the emergency
switch is operated;

an operation control unit configured to release
the specific operation buttons in the car selected as
the emergency car by the car selection unit, from a
20 locked state of the specific operation buttons; and

a drive control unit configured to control an
operation of the selected car in accordance with an
operation of the specific operation buttons released
from the locked state by the operation control unit.

25 2. The elevator system of Claim 1, wherein the
operation control unit releases the specific operation
buttons from the locked state thereof when a specific
operation is performed.

3. The elevator system of Claim 1,

30 wherein the operation control unit releases the
specific operation buttons from the locked state
thereof when a specific operation is performed with the
hall destination controller provided at one of the
floors, where the emergency switch is operated.

4. The elevator system of Claim 2 or 3, wherein the specific operation includes an operation of inputting a passcode.

5 5. The elevator system of Claim 1, wherein the car selection unit selects a predetermined one of the one or more cars as the emergency car, and selects, if the selected predetermined car is unable to operate, another one of the one or more cars according to a predetermined order.

10 6. The elevator system of Claim 1, by further comprising an indication unit configured to indicate that the car selected as the emergency car is in emergency operation.