ELEVATOR GROUP MANAGEMENT SYSTEM

FIELD

Embodiments described herein relate generally to a group management system for an elevator group provided with a plurality of cars.

BACKGROUND

For example, in a building in a well-trafficked area, such as an office building, a plurality of cars of elevators are installed. In such a building, when a hall call is registered in a hall of an arbitrary floor, one of cars of elevators is caused to move to the floor at which the hall call is registered. At this time, there is a case where the car arrives at the floor while carrying some passengers. In such a case, even if in the car, space is still provided to allow a further passenger or passengers to get into the car, and if plural passengers stand in the vicinity of the car door in the car, in some cases, a passenger or passengers waiting in the hall at the floor do not get into the car, and call another car.

In such a manner, when a car arrives at a floor, there is a case where a passenger or passengers waiting in the hall of the floor do not get into the car, in consideration of the state of passengers in the car. However, if a passenger does not get into a car which the passenger calls, the operation efficiency of elevators remarkably lowers. Consequently, a lot of passengers continue to stay waiting at the hall, thus increasing the time for which passengers wait for a car.

SUMMARY

According to one aspect, there is provided an elevator group management system which includes plural cars, and causes, in response to a hall call registered at an arbitrary floor, a selected one of the cars to move to the floor at which the hall call is registered, the elevator group management system comprising:

hall detection means for detecting a state of a passenger or passengers waiting at a hall, when the selected car arrives at the floor and a door of the car is opened;

occupancy detection means for detecting an occupancy ratio of the car;

ridable/unridable-state determination means for determining, when the hall detection means detects the state of the passenger or passengers waiting at the hall, whether or not the passenger or passengers waiting at the hall are allowed to get into the car, based on an occupancy ratio of the car at a point of time at which the car arrives at the floor, which is detected by the occupancy detection means;

notification control means for issuing, when the ridable/unridable-state determination means determines that the passenger or passengers are allowed to get into the car, a notification prompting a passenger or passengers to get into the car; and

operation control means for closing the door of the car and causing the car to move to a next destination floor, when the occupancy ratio of the car is increased by the notification issued by the notification control means so that the occupancy ratio of the car is higher than that at the point of time at which the car arrives at the floor.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a block diagram showing a configuration of a group management system of elevators, according to a first embodiment.

FIG. 2 is a view for explaining an imaging range of a camera installed in a car of an elevator and a function configuration of a car controller in the first