CLAIMS

1. An elevator system characterized by comprising:

an image capture means installed in a car, for capturing an image in a predetermined range extending from a vicinity of a door in the car toward a hall;

a storage means for storing pattern information items of a passenger-detection area varying according to a shape of each hall;

a setting means for comparing the image captured by the image capture means with each of the stored pattern information items, selecting a pattern information item corresponding to a shape of a hall shown in the captured image, and setting a passenger-detection area indicated by the pattern information item;

a detection means for detecting a passenger in the passenger-detection area set by the setting means; and

a control means for controlling opening and closing of the door, based on a result of detection by the detection means.

2. The elevator system of Claim 1, characterized in that the setting means compares an image captured for a first time after the door is fully opened with each of the stored pattern information items.

3. The elevator system of Claim 1, characterized in that the storage means stores pattern information items of a passenger-detection area varying according to a shape of a three-sided frame installed in the hall.

4. The elevator system of Claim 3, characterized in that the storage means stores a first edge, a second edge, and a third edge as the pattern information items, the first edge corresponding to a side on the hall side extending vertically with respect to a floor of the hall of sides constituting each of right and left frames of three frames constituting the three-sided frame, the second edge corresponding to a side which is in contact with the floor of the hall of the sides constituting each of the right and left frames, the third edge corresponding to a side on the hall side extending parallel to directions in which the door is opened and closed of sides constituting a sill on the hall side.

5. The elevator system of Claim 4, characterized in that the setting means

extracts edges from the captured image,

performs matching between the extracted edges and the first to third edges indicated by the pattern information items, and calculates a rate of coincidence between the extracted edges and the first to third edges for each of the pattern information items, and

selects a pattern information item corresponding to a greatest rate of coincidence of the calculated rates of coincidence, and sets the passenger-detection area.

6. The elevator system of Claim 3, characterized in that the storage means stores corners on a building-wall side which are in

contact with a floor of the hall of right and left frames of three frames constituting the three-sided frame as the pattern information items.

7. The elevator system of Claim 6, characterized in that the setting means

extracts corners from the captured image,

performs matching between the extracted corners and corners indicated by the pattern information items, and calculates a rate of coincidence between the extracted corners and the corners indicated by the pattern information items for each of the pattern information items, and

selects a pattern information item corresponding to a greatest rate of coincidence of the calculated rates of coincidence, and sets the passenger-detection area.

8. The elevator system of Claim 1, characterized in that the storage means further stores a standard pattern information item of a passenger-detection area corresponding to a shape of a standard hall in addition to the pattern information items stored according to the shape of each hall, and

the setting means selects the stored standard pattern information item and sets a passenger-detection area indicated by the standard pattern information item, when a pattern information item corresponding to the shape of the hall shown in the captured image is not obtained as a result of the comparison.