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(54) Floor and direction indicator unit for an elevator.

(57) The invention relates to a floor and direction indicator unit for an elevator, comprising a housing with a cover panel and an indicator board consisting of a dot matrix display (3). According to the invention, the unit is provided with a microprocessor (4), in whose memory (5) the symbols (6) to be displayed on the dot matrix are stored, and with a selector (7) serving to inform the microprocessor about the operational position of the unit.

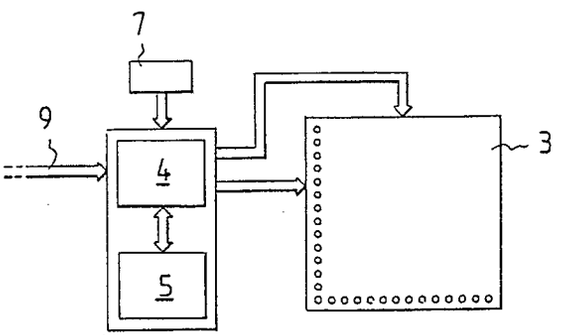

Fig.4

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The present invention relates to a floor and direction indicator unit for an elevator as defined in the introductory part of claim 1.

Traditionally, elevator systems use various indicator units to indicate travel direction and floor level data. These units may be provided with fixed illuminable arrow figures, various numeric displays and also fixed dot matrix displays. As these indicator units must be installed in different elevators and in different places at the landings, i.e. sometimes above the door, sometimes on the left or right of the door, while the size of the space available for the installation varies greatly, it is necessary to use a large number of indicator units of different sizes and shapes to permit installation in any place. This diversity of indicator units leads to small production series and high manufacturing costs and requires relatively large stocks of different indicator units.

The object of the present invention is to eliminate the drawbacks referred to above. A specific object of the invention is to achieve a floor and direction indicator unit which can be adapted for use in all places of application.

As for the features characteristic of the invention, reference is made to the claims.

The floor and direction indicator unit of the invention comprises a housing with a cover panel and an indicator board consisting of a dot matrix display. The indicator unit of the invention is provided with a microprocessor in whose memory the various symbols, e.g. numbers, letters and arrow figures, to be displayed on the dot matrix are stored. The unit is also provided with a selector for the selection of the operational position of the dot matrix display, i.e. for telling the microprocessor in which position the dot matrix display is to be operated. Based on this selection, the microprocessor turns the symbols to be shown on the dot matrix to the correct position.

The functions used for turning the display are preferably stored in the memory of the microprocessor, and additionally in such manner that the display, of an essentially quadratic form, can be turned and used at 90° intervals in four different operational positions.

The selector used in the indicator unit preferably consists of a mechanical multi-step selector switch, e.g. a selector plate rotatable with a screwdriver, separate push buttons or some other type of switch permitting selection. It is also possible to employ automatic selection e.g. by means of a gravity-based selector, in which case, when the display is simply turned into the desired position, the selector automatically recognizes the position in which the display is mounted.

As compared to previously known indicator units, the invention has the advantages that the same indicator unit can be used in almost all places of application, because the display can always be operated in the correct position regardless of the orientation in which the unit is installed. Thus, e.g. an elongated indicator unit with an essentially quadratic dot matrix display can be mounted in a vertical position in the generally narrow spaces at door edges, but if the unit is to be placed above the door, it can be mounted in a horizontal position. Thus, the indicator unit of the invention makes it possible to achieve significant savings in the manufacturing and storage costs.

In the following, the invention is described in detail by referring to the attached drawing, in which

Fig. 1 presents a floor and direction indicator unit to which the invention can be applied,

Fig. 2 presents a dot matrix display,

Fig. 3 presents another dot matrix display,

Fig. 4 presents the idea of the invention in the form of a block diagram.

The floor and direction indicator unit for an elevator shown in Fig. 1 consists of an essentially rectangular boxlike housing 1 with a cover panel 2. At one end of the indicator unit is a dot matrix display 3 and at the other end, an acoustic signal device 8.

As shown in Figs. 2 and 3, the dot matrix display may consist of a 14 x 14 dot matrix capable of displaying various symbols 6. The display may show numbers only or a number and an arrowhead to indicate elevator position and travel direction simultaneously, or the display may only show an arrow or arrows to indicate travel direction. It is also possible to use other signs, figures or series of these to present required information to elevator users.

Fig. 4 illustrates the operation of the dot matrix display 3 in the unit of the invention. The various symbols to be displayed in the dot matrix are stored in the memory 5 of the microprocessor 4. The symbol to be displayed in each case is determined by signals 9 obtained from the elevator control system. A suitable selector 7 determines the orientation of the symbol in the display, i.e. the selector 7 tells the microprocessor 4 which way the dot matrix display 3 has been installed. Using the selector, the symbol to be displayed can be rotated through 90°, 180° and 270° from the basic position, in other words, the selector enables the indicator unit to be installed in any of the four different positions.

In the above, the invention has been described by the aid of an example with reference to the drawings attached, yet it can be implemented in various embodiments in the scope of the idea of the invention as defined in the claims.

Claims

1. Floor and direction indicator unit for an elevator, comprising a housing (1) with a cover panel (2) and an indicator board consisting of a dot matrix display (3), **characterized** in that the unit is provided with a microprocessor (4) in whose memory (5) the symbols (6) to be displayed on the dot matrix are stored, and with a selector (7) serving to inform the microprocessor about the operational position of the dot matrix display, i.e. to electrically rotate the symbols displayed by the dot matrix display to the position corresponding to the selected orientation of installation of the unit.

2. Floor and direction indicator unit according to claim 1, **characterized** in that the functions performing the rotation of the display are stored in the memory (5) of the microprocessor (4).

3. Floor and direction indicator unit according to claim 1 or 2, **characterized** in that the selector (7) comprises a mechanical multi-step switch by means of which the selection is made.

4. Floor and direction indicator unit according to claim 1 or 2, **characterized** in that the selector (7) is provided with push buttons by means of which the selection is made.

5. Floor and direction indicator unit according to any one of claims 1-4, **characterized** in that the selector (7) permits rotation of the unit and operation of the indicator board (3) in four different freely selectable positions at 90° intervals.

6. Floor and direction indicator unit according to any one of claims 1-5, **characterized** in that the symbols (6) presented in the dot matrix display (3) include numbers, letters and arrow figures.

7. Floor and direction indicator unit according to claim 1 or 2,
characterized by a gravity-based selector which automatically recognizes the position in which the display is mounted.

8. Floor and direction indicator unit according to any of the preceding claims,
characterized in that the display has an essentially quadratic form.

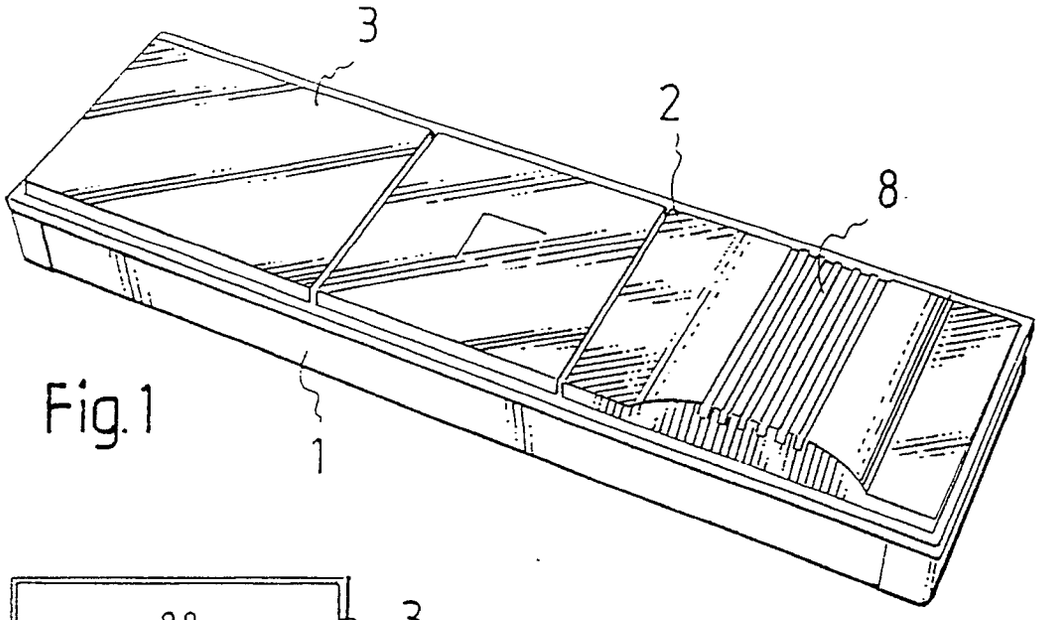

Fig.1

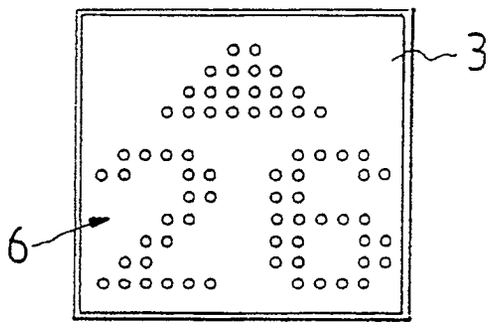

Fig.2

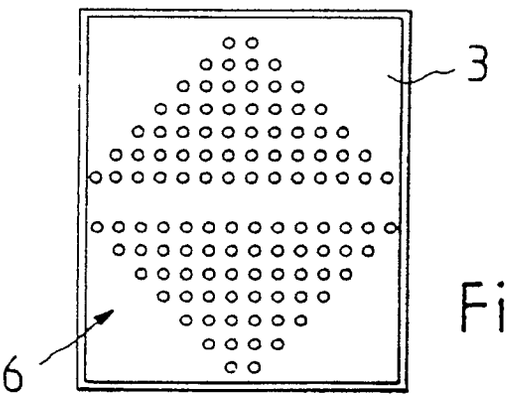

Fig.3

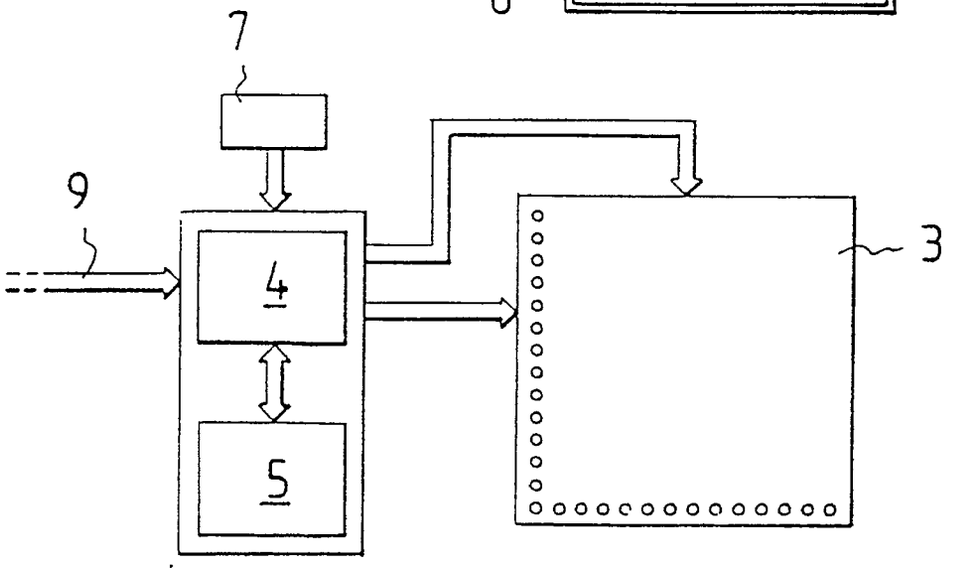

Fig.4