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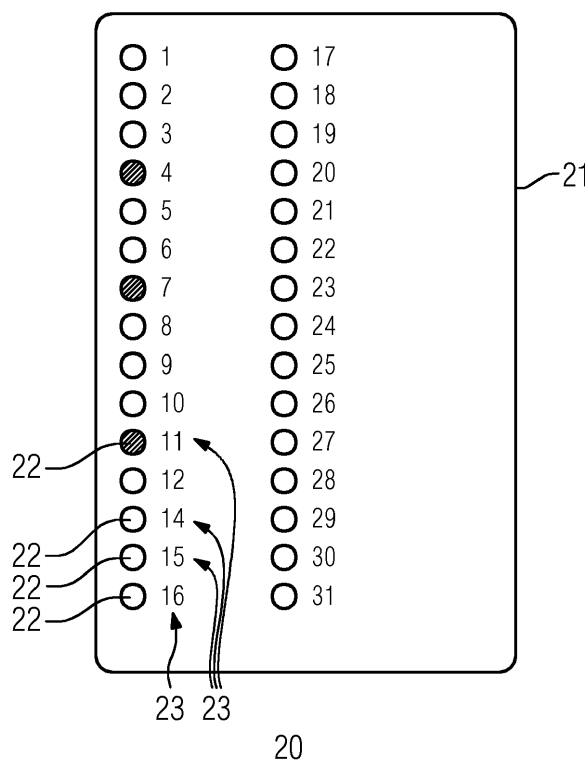
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(54) **METHOD, SYSTEM AND WIRELESS DRIVER UNIT FOR IMPLEMENTING LANDING CALL SIGNALIZATION IN AN ELEVATOR**

(57) To enable construction-time use of an elevator, a method for implementing landing call signalization in an elevator is proposed. In the method, a number of call units (10) each comprising a wireless signalling unit is installed at landing locations. Furthermore, a wireless

driver unit (20) is installed at an elevator car, configured to receive landing calls from the number of call units (10) and also configured to indicate from which landing location a landing call has been received. Patent claims for a system and a wireless driver unit are also included.

FIG 2



Description

Field of the invention

[0001] The invention relates to elevator control and driving of elevator.

Technical background

[0002] The present applicant offers to its selected customers the possibility to use an elevator already during the construction time of a building. A construction time use -elevator (CTU elevator) is a permanent elevator, equipped with temporary signalization and protective materials so that it can be used during construction time. It normally operates at the elevator's rated speed - up to 10 m/s - so it can save hundreds of man-hours every day. A CTU elevator also speeds up the transportation of goods such as drywall, plumbing and electrical equipment, and the removal of pallets and packaging.

[0003] Presently, in the Occident, when landing call signalization of a CTU elevator is implemented, the landing call devices, sometimes referred to as destination operator panels, usually situated at each floor of the building where the elevator car is to stop, and the car operator panel in the elevator car, must normally be protected from dirt and wear and, such as covering them with plywood panels. Furthermore, a temporary signalization must be implemented. For the temporary signalization, temporary signalling devices that are separate from the elevator signalling means are used in the car and in the landing floors.

[0004] In the Orient, the need for CTU elevators is also present but, especially in certain countries and regions, at least the present applicant's actual implementation of the temporary signalisation is not commonly used. Instead, the CTU elevators may be operated by a driver manually stopping the elevator at a desired destination by pushing a button. Passengers willing to take an elevator ride have been observed at some times to unlock and to open the door leading to the elevator shaft and verbally requesting the driver to pick them up. Obviously, this manner of placing landing calls in a CTU elevator cannot be accepted by the manufacturer because of safety reasons.

Objective of the invention

[0005] An objective of the invention is to improve elevator safety for placing landing calls with relatively simple technical means. This objective can be achieved with the method according to claim 1, with the wireless driver unit according to claim 6, and with the system according to claim 7.

[0006] The dependent claims describe advantageous embodiments of the method, the wireless driver unit and of the system.

Advantages of the invention

[0007] The wireless driver unit for implementing landing call signalization in an elevator comprises a receiving unit for receiving landing calls from a number of call units and a number of indicating units, such as indicator lights, for indicating from which call unit it has received a landing call.

[0008] The system for implementing landing call signalization in an elevator comprises a number of call units each comprising a wireless signalling unit and installed at landing locations, and a wireless driver unit according to the invention. Indicating units at the wireless driving unit have been paired with the call units to indicate requests for landing at different landing locations.

[0009] In the method for implementing landing call signalization in an elevator, a number of call units each comprising a wireless signalling unit is installed at landing locations, and a wireless driver unit is installed at an elevator car, configured to receive landing calls from the number of call units and also configured to indicate from which landing location a landing call has been received.

[0010] With the wireless driver unit, the system and the method, temporary landing call signalization can be implemented with technically relatively simple components. Especially, the implementing cost can be reduced thus improving elevator safety also in the countries and regions where CTU elevators are currently operated without appropriate temporary signalisation.

[0011] Preferably, the elevator has an elevator control system and the call units and the wireless unit are independent of the elevator control system. This enables that the landing call signalization can be implemented as a temporary signalization and that the elevator can be operated as a CTU elevator with improved safety, especially compared with the situation where passengers unlock and open the door leading to the elevator shaft and verbally request the driver to pick them up.

[0012] Preferably, the call units may use a license-free radio communication band.

[0013] The indicator light may be switched on at the driver unit when a landing call is received. The wireless driver unit may be configured to reverse the indication of the received landing call upon landing at the landing call location, such as by switching off the indicator light. Alternatively, each indicator light may have a first colour when no landing call has been received, a second colour when a landing call has received, and the colour of the indicator light is then changed from the second colour to the first colour when the landing call has been serviced.

[0014] Advantageously, the call units may be or comprise wireless doorbells. These are commercially available and their purchase price is relatively cheap.

[0015] Preferably, the call units are operable in the 433 MHz radio band. In most countries this is currently a license-free radio band.

List of drawings

[0016] In the following, the method, the system and the driver unit will be described in more detail with reference to the exemplary embodiments shown FIG 1 and 2 of the accompanying drawings, of which:

FIG 1 shows a call unit; and

FIG 2 shows a wireless driver unit.

Detailed description

[0017] FIG 1 shows a call unit 10. The call unit 10 comprises a housing 11, a landing call placing unit, such as a push button 12, and a wireless signalling unit that preferably is located in the housing 11. The call unit 10 is installed at a landing location. The landing unit 10 may be operable in the 433 MHz radio band or in any other, preferably license-free, radio communication band.

[0018] In one embodiment, as a call unit 10, a wireless doorbell can be used.

[0019] FIG 2 shows a wireless driver unit 20 for implementing landing call signalization in an elevator. The wireless driving unit 20 comprises a wireless receiving unit for receiving landing calls from a number of call units 10 and a number of indicating units 22, preferably arranged in a housing 21, for indicating from which call unit 10 the wireless driver unit 20 has received a landing call. For this purpose, the call units 10 and the indicating units 22 are paired.

[0020] The indicating units 22 may be implemented as lamps. Furthermore, there is an indicator descriptor 23 for each indicating unit 22. Preferably, as indicator descriptor 23 a floor level designation is used.

[0021] The system for implementing landing call signalization in an elevator comprises a number of call units 10 each comprising a wireless signalling unit installed at landing locations, and a wireless driver unit 20. Indicator units 22 at the wireless driving unit 20 have been paired with the call units 10 so that the indicator units 22 can indicate requests for landing at different landing locations.

[0022] In the method for implementing landing call signalization in an elevator, a number of call units 10 each comprising a wireless signalling unit is installed at landing locations. The wireless driver unit 20 is installed at an elevator car, configured to receive landing calls from the number of call units 10 and also configured to indicate from which landing location a landing call has been received.

[0023] Preferably, the elevator has an elevator control system and the call units 10 and the wireless unit 20 are independent of the elevator control system. Especially in this case, the elevator may be a CTU elevator.

[0024] The wireless driver unit 20 is configured to reverse the indication of the received landing call upon landing at the landing call location. In other words, a respective indicator unit 22 is activated (e.g. a lamp is lit)

whenever the respective call unit 10 is activated and, respectively, deactivated (e.g. the lamp is turned off) whenever the elevator car has landed at the respective floor.

List of reference numerals used:

[0025]

10	call unit
11	housing
12	push button
20	driver unit
21	housing
22	indicating unit
23	indicator description

Claims

1. A method for implementing landing call signalization in an elevator, **characterized in that:**

a number of call units (10) each comprising a wireless signalling unit is installed at landing locations;

a wireless driver unit (20) is installed at an elevator car, configured to receive landing calls from the number of call units (10) and also configured to indicate from which landing location a landing call has been received.

2. The method according to claim 1, **wherein:** the elevator has an elevator control system and the call units (10) and the wireless driver unit (20) are independent of the elevator control system.

3. The method according to claim 1 or 2, **wherein:** the call units (10) use a license-free radio communication band.

4. The method according to any one of the preceding claims, **wherein:** in the method, the wireless driver unit (20) has been configured to reverse the indication of the received landing call upon landing at the landing call location.

5. The method according to any one of the preceding claims, **wherein:** the elevator is a CTU elevator.

6. A wireless driver unit (20) for implementing landing call signalization in an elevator, **characterized in that:** the wireless driving unit (20) comprises a receiving unit for receiving landing calls from a number of call units (10) and a number of indicating units (22) for indicating from which call unit (20) it has received a landing call.

7. A system for implementing landing call signalization in an elevator, **comprising:** a number of call units (10) each comprising a wireless signalling unit and installed at landing locations, and the wireless driver unit (20) according to claim 6, and wherein indicating units (22) at the wireless driver unit (20) have been paired with the call units (10) to indicate requests for landing at different landing locations. 5
8. The system according to claim 7, **wherein:** the call units (10) are or comprise wireless doorbells. 10
9. The system according to claim 7 or 8, **wherein:** the call units (10) are operable in the 433 MHz radio band. 15
10. The system according to any one of claims 7 to 9, **wherein:** the elevator is a CTU elevator.

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FIG 1

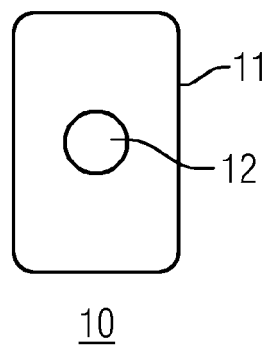
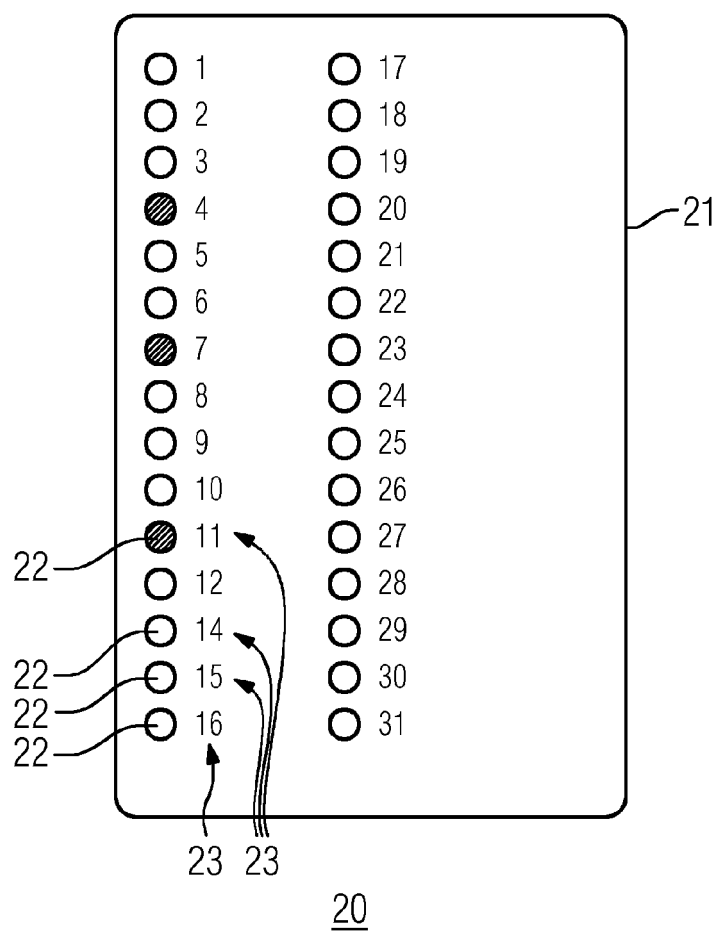


FIG 2





EUROPEAN SEARCH REPORT

Application Number
EP 15 19 1563

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The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 13 May 2016	Examiner Iuliano, Emanuela
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	

EPO FORM 1503 03.02 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
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EP 15 19 1563

5 This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82