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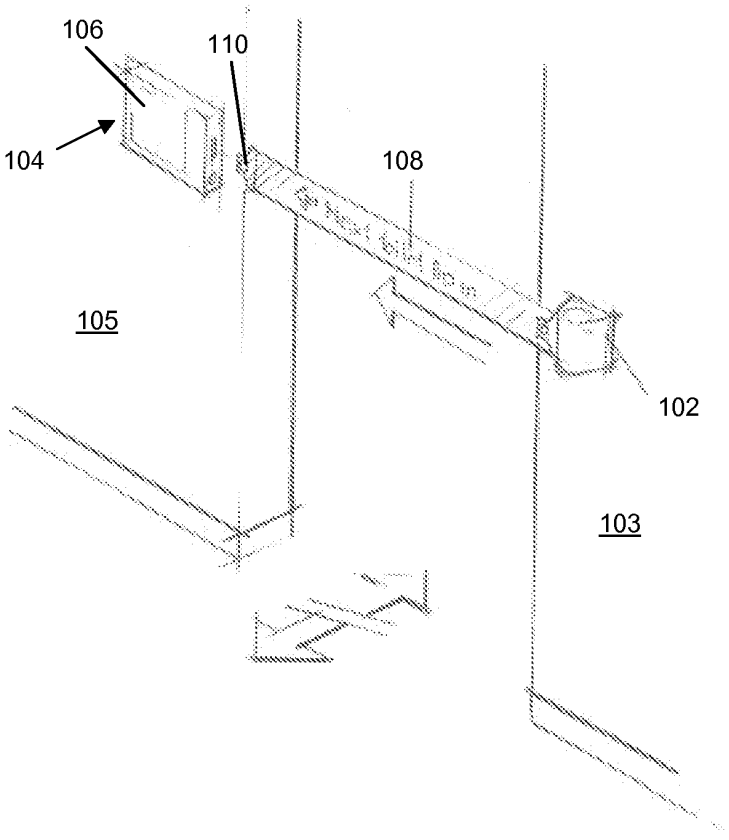
(71) Applicant: **CPH Design A/S**
2300 Copenhagen S (DK)

(72) Inventor: **Thøgersen, Lars**
DK-2300 Copenhagen S (DK)

(74) Representative: **Inspicos A/S**
Kogle Allé 2
P.O. Box 45
2970 Hørsholm (DK)

(54) Access control in a building

(57) A device for temporarily denying access through a passage, e.g. through a door of a building, comprises a first unit (102) suitable for being mounted at a first side of the passage, such as a door passage, and a second unit (104) for being mounted at a second side of the passage. The first unit (102) including a strap (108) and a winch for rolling up the strap (108) inside the first unit (102). The second unit (104) includes structure (112) for releasably securing a free end of the strap (108) to the second unit (104), and an electronic display (106) for displaying information related to the cause and/or expected duration of the access denial. The device is useful, e.g., for preventing access to public toilet facilities, or unwanted passage through check-out counters.



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Description

Technical field

[0001] The present invention relates to a device for temporarily denying access through an opening in a wall of a building or between walls in the building. The device is useful, e.g., for preventing access to public toilet facilities, and includes an information unit for providing user information.

Background of the invention

[0002] For many purposes, access to rooms or areas of buildings needs to be temporarily denied on a regular basis. For example, toilet areas of airports are blocked a number of times during a day in order to allow cleaning personnel to work in an undisturbed manner. Check-out counters at grocery stores are to be blocked frequently, and in shops, restaurants, office buildings and other localities, selected entrances may have to be blocked in order to force entering persons to walk through other passageways. These are only examples of a wide variety of environments, in which temporary access denial may be desirable.

[0003] Usually, such temporary access denial is achieved by means of signs indicating e.g. that a check-out counter is closed, by means of signs placed on the counter, floor signs, or in case of blocked door passages, by means of closed doors, possibly supplemented signs placed on the doors.

[0004] These known access denial systems generally suffer from the disadvantage that they provide no information to persons seeking access to the closed zones about the duration of closure, the reason there for, the expected time of re-opening, or directions to the nearest alternative open toilet, entrance, etc. Hence, at airports for example, passengers tend to search for an alternative toilet areas, in case they find themselves at a closed toilet facility, even though the closed toilet area may reopen in, say, half a minute, as they are not informed about the duration of the closure. Likewise, at grocery stores, customers do not queue at closed counters, even though the waiting time until re-opening of a closed counter may in fact be shorter than the time it takes to get to the front of a queue at an open counter.

[0005] Moreover, operation of known systems is often inconvenient. For example, floor signs are bulky and difficult to store in areas of limited space. Door signs are often placed, such that they block other information, or restaurant or shop owners forget to place them when doors are being locked. Further, simple signs, e.g. floor signs in public toilet facilities are often not respected by users of such facilities, to the annoyance of cleaning personnel.

Summary of the invention

[0006] On this background, it is an object of embodiments of the present invention to provide a system for temporarily denying access to a zone, which is easy to install, provides a clear and unequivocal indication of closure, and which are capable of appropriately informing users of temporarily closed zoned about the expected time of re-opening of the reason for the closure.

[0007] In a first aspect, the invention hence provides a device for temporarily denying access through a passage, the device comprising:

- a first unit suitable for being mounted at a first side of the passage, said first unit including a strap and a winch for rolling up the strap inside the first unit;
- a second unit for being mounted at a second side of the passage, said second unit including:
  - structure for releasably securing a free end of the strap to the second unit;
  - an electronic display for displaying information related to the cause and/or expected duration of the access denial.

[0008] The invention also provides a building comprising a passage through a wall opening of the building or between walls in the building, and a device for temporarily denying access through the passage, the device comprising:

- a first unit suitable mounted to the wall at a first side of the passage, said first unit including a strap and a winch for rolling up the strap inside the first unit;
- a second unit mounted to the wall at a second side of the passage, said second unit including:
  - structure for releasably securing a free end of the strap to the second unit;
  - an electronic display for displaying information related to the cause and/or expected duration of the access denial.

[0009] The first and second unit may thus be places on respective right and left sides of, e.g. a door opening, and the free end of the strap may easily be attached to the second unit and fixed thereto, thus providing a clearly visible indication that the area in question is closed. As the first and second units are wall-mountable, no floor space is required for their storage, and cleaning personnel or other staff need not carry the system along, as it is permanently installed at the door opening or door passage in question.

[0010] The electronic display allows for display of various information, e.g. duration of the temporary access denial, the reason there for, and/or directions to the next alternative area, e.g. toilet.

[0011] The free end of the strap may conveniently be

provided with a belt fastener to be attached to a fixation system within the second unit. The other end of the belt fastener is attached to the winch in the first unit, the winch being e.g. spring-biased, such that the strap is automatically rolled onto the winch and thereby drawn into the first unit upon release thereof from its engagement with the second unit.

[0012] It will hence be understood that the second unit may be a powered, electronic unit, whereas the first unit may be a purely mechanical, non-power consuming entity.

[0013] The second unit may include a timer, in which case the display may be configured to at least display information indicative of the time of re-opening of the passage access or an expected duration of the temporary closure.

[0014] Further, the second unit may comprise a memory and an interface for storing words or text messages in the memory, form which the words or text messages to be displayed may be fetched.

[0015] In order to program the second unit, the interface may comprise structure for connecting an external computer to the second unit, so as to allow words or next messages to be downloaded from the computer into said memory of the second unit. The interface may be through a bus, e.g. USB, connection or via a communications network, such as a wired or wireless network as available in most office buildings, airports, modern homes etc.

[0016] The interface may comprise one or more selection buttons allowing a user to select which word(s) or message(s) stored in the memory to be displayed on the display, or allowing a user to perform other operations, such as switching the second unit off, entering a programming mode, etc.

[0017] Further, the second unit may comprise, as a part of the structure for releasably securing the free end of the strap to the second unit, a mechanism or switch for releasing the strap from the second unit. The mechanism or switch may be arranged such that it is not visible or even inaccessible to persons without appropriate access. For example, a mechanical release switch may be provided at a lower, downwardly facing side portion of the second unit. Alternatively, an electronically controlled release device may be accessible only upon entering of a pin code, e.g. via a touch screen area of the display monitor.

[0018] In addition to the information provided via the display, the strap itself may also be used as an information carrier. For example, a printed or woven text may be provided on at least one side of the strap, indicating e.g. the direction to the nearest alternative toilet.

Detailed description of an embodiment of the invention

[0019] Embodiments of the invention will now be further described with reference to the accompanying drawings, in which:

Fig. 1 illustrates an embodiment of the device according to the present invention, in a state in which it is nearly closed to indicate temporary access denial through a passage in a wall of a building;

Fig. 2O illustrates a detail of the embodiment of Fig. 1;

Fig. 3 shows an embodiment of the invention at a toilet facility of an airport, in which the device closes the access to the toilet;

Fig. 4 shows the embodiment of Fig. 3, in which the toilet access is open.

[0020] Referring to Fig. 1, the access device shown therein comprises a first unit 102 mounted at a first wall portion 103, and a second unit 104 mounted at a second wall portion 105. The second unit 104 includes an electronic display is shown in further detail in Fig. 2.

[0021] The device further comprises a strap 108, mounted on a spring-loaded winch (not shown). At the free end of the strap 108, it comprises a buckle 110 for engaging a corresponding female fastening structure 112 within the second unit 104. As shown in Fig. 1, the strap 108 may comprise printed or woven information. In the example of Figs. 1 and 3, the information indicates a direction and distance to the nearest alternative toilet.

[0022] Fig. 2 shows a detail of the second unit 104. The display indicates the reason for access denial, i.e. in the example shown "closed for cleaning", and a countdown indicator showing the number of minutes until the toilet, to which passage is denied, re-opens.

[0023] In order to operate and program the second unit 104, there is provided a time control or time-setting button 114, a USB interface 116 for connecting an external computer to the second unit, a text selection switch 118, and a counter reset button 120. Further a switch 122 for releasing the belt buckle's 110 engagement with the female fastening structure 112 is provided.

[0024] Fig. 3 shows an embodiment of the invention at a toilet facility of an airport, in which the device closes the access to the toilet;

[0025] Fig. 4 shows the embodiment of Fig. 3, in which the toilet access is open.

Claims

1. A device for temporarily denying access through a passage, the device comprising:

   - a first unit suitable for being mounted at a first side of the passage, said first unit including a strap and a winch for rolling up the strap inside the first unit;
   - a second unit for being mounted at a second side of the passage, said second unit including:

- structure for releasably securing a free end of the strap to the second unit;
- an electronic display for displaying information related to the cause and/or expected duration of the access denial.

2. A device according to claim 1, wherein the second unit includes a timer, and wherein said display is configured to at least display information indicative of the time of re-opening of the passage access.

3. A device according to claim 1 or 2, wherein the second unit comprises a memory and an interface for storing words or text messages in the memory, and wherein the display is configured to display said words or text messages stored in the memory.

4. A device according to claim 3, wherein the interface comprises structure for connecting an external computer to the second unit, so as to allow words or text messages to be downloaded from the computer into said memory of the second unit.

5. A device according to claim 3 or 4, wherein the interface comprises structure for connecting the second unit to a computer network.

6. A device according to any of claims 3-5, wherein the interface comprises one or more selection buttons allowing a user to select which word(s) or message (s) stored in the memory to be displayed on the display.

7. A device according to any of the preceding claims, wherein said structure for releasably securing the free end of the strap to the unit comprises a mechanism or switch for releasing the strap from the second unit.

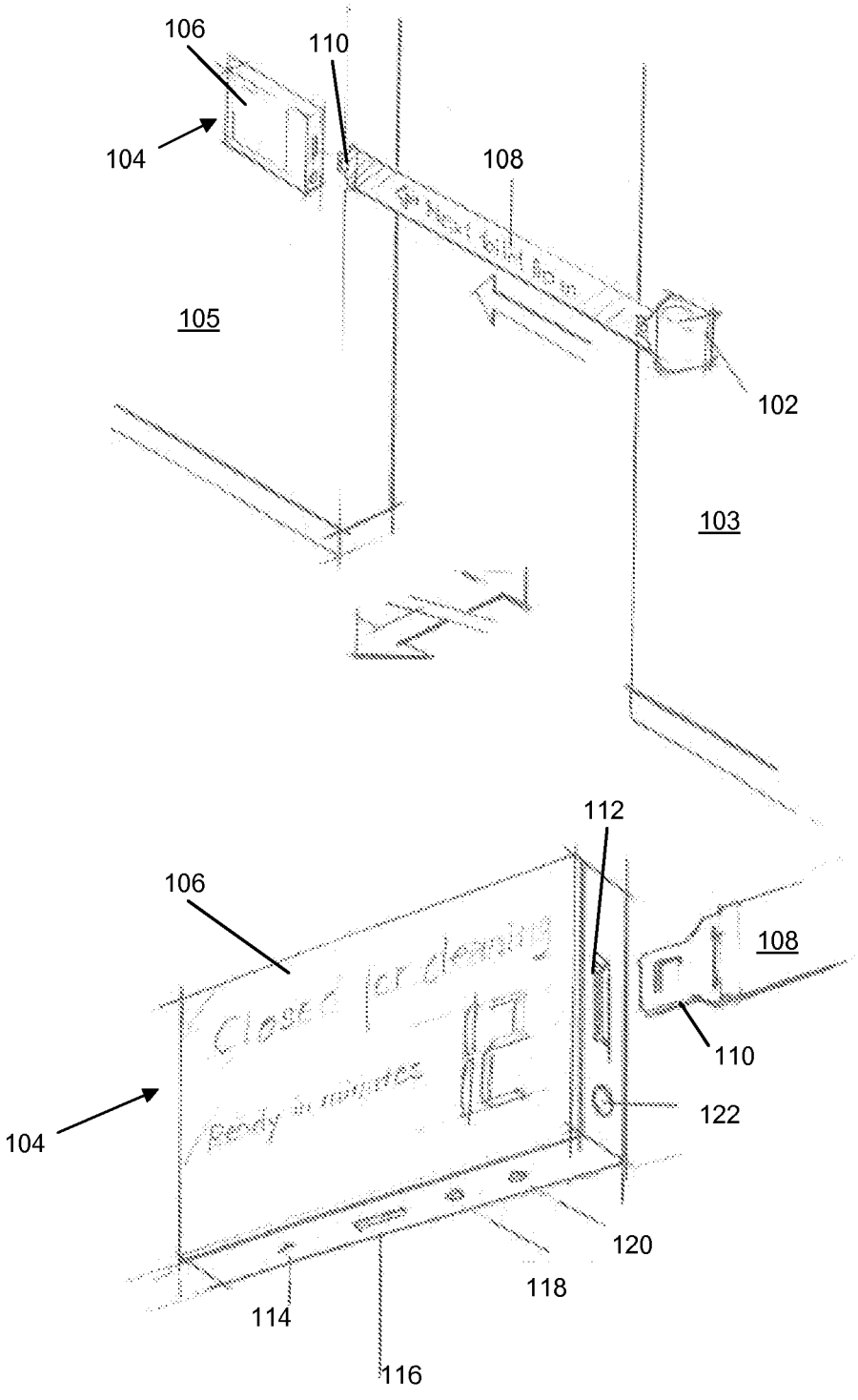
8. A device according to any of the preceding claims, further comprising information text printed on at least one side of the strap.

9. A building comprising a passage through a wall opening of the building or between walls in the building, and a device for temporarily denying access through the passage, the device comprising:

- a first unit suitable mounted to the wall at a first side of the passage, said first unit including a strap and a winch for rolling up the strap inside the first unit;
- a second unit mounted to the wall at a second side of the passage, said second unit including:

  - structure for releasably securing a free end of the strap to the second unit;
  - an electronic display for displaying information related to the cause and/or expected duration of the access denial.

10. A wall according to claim 9, wherein said passage provides access to a public toilet area.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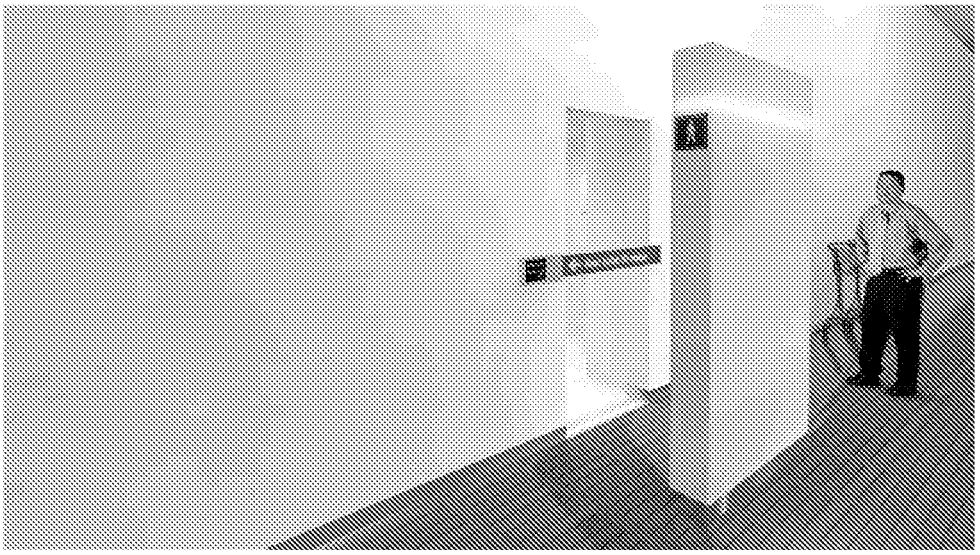

Fig. 3

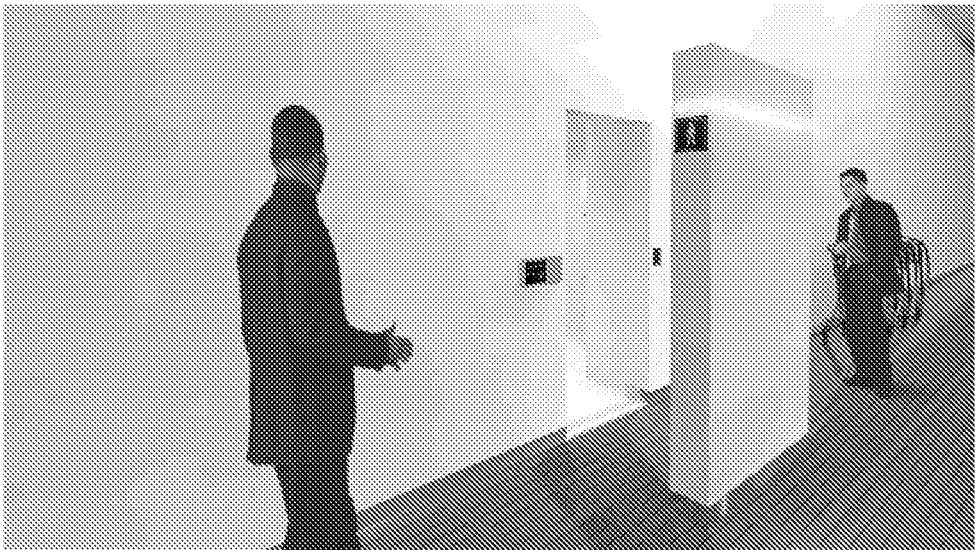

Fig. 4

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EUROPEAN SEARCH REPORT

Application Number
EP 09 15 3234

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	EP 1 720 134 A2 (KESSEBOEHMER KG [DE]) 8 November 2006 (2006-11-08) * abstract * * paragraph [0016] - paragraph [0017] * * paragraph [0020] * -----	1-10	INV. G07C9/00 E01F13/02
A	WO 2004/070117 A1 (PRIMAC LTD [GB]; PRISMALL IAN JAMES [GB]) 19 August 2004 (2004-08-19) * abstract * * page 2, line 10 - page 3, line 21 * -----	1-10	
A	WO 2006/024835 A2 (ADVANCED MFG CORP LTD [GB]; FIELD DAVID GREGORY [GB]) 9 March 2006 (2006-03-09) * abstract * * page 2, line 1 - line 32 * * page 7, line 10 - line 14 * -----	1-10	
			TECHNICAL FIELDS SEARCHED (IPC) G07C E01F

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
The Hague	30 June 2009	Teutloff, Ivo

CATEGORY OF CITED DOCUMENTS

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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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30-06-2009

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 1720134 A2	08-11-2006	NONE	
WO 2004070117 A1	19-08-2004	GB 2412399 A	28-09-2005
		US 2006162872 A1	27-07-2006
WO 2006024835 A2	09-03-2006	EP 1799914 A2	27-06-2007
		GB 2433288 A	20-06-2007

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