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(54) **Post or mail alert apparatus**

(57) Mail alert apparatus (10) comprises a base housing (12), an electronic emitter (14) and receiver (16) in the base housing (12) for sensing mail or post (74), a

reflector (22), and an alert device (20) within the base housing (12) which outputs at least an audible alert signal based on an output from the receiver (16). A method is also provided.

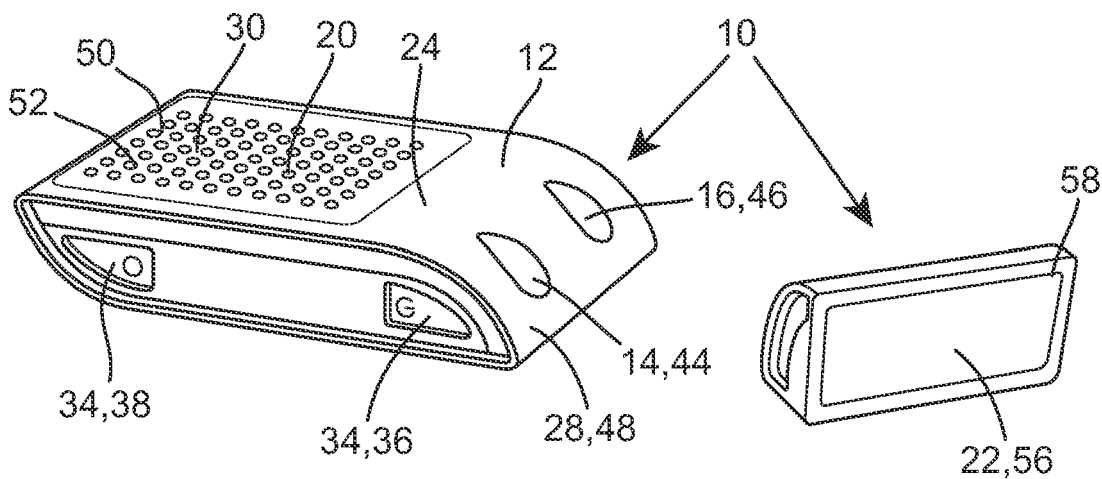


Fig. 1

Description

[0001] The present invention relates to post or mail alert apparatus for alerting a user to incoming post or mail through a post box or mailbox, as well as preferably alerting to tampering with the post box or mailbox.

[0002] Frequently, post will arrive at different times during the day and will be missed by the addressee. This occurs especially in larger homes and buildings, or if the post box is situated at a remote location, such as in a front door or even spaced from the building. If the post includes one or more important documents, a delay can result in a deadline being missed.

[0003] Since a post box or mailbox is also typically provided at an entrance and exit of a building, it would be a convenient place to position reminder notes.

[0004] Furthermore, a post box or mailbox at the entrance or exit can often be tampered with, either to retrieve post or to gain access to the building.

[0005] The present invention seeks to provide a solution to these problems.

[0006] According to a first aspect of the invention, there is provided mail alert apparatus comprising a base housing, an electronic emitter and receiver in the base housing for sensing post or mail, a reflector, and an alert device within the base housing which outputs at least an audible alert signal based on an output from the receiver.

[0007] Preferable and/or optional features of the invention are set forth in claims 2 to 13, inclusive.

[0008] According to a second aspect of the invention, there is provided a housing having a post opening therein adapted to receive delivery of post therethrough, and post alert apparatus in accordance with the first aspect of the invention.

[0009] According to a third aspect of the invention, there is provided a method of alerting a user to receipt of post, the method comprising the steps of : a) locating a base housing having an electronic receiver and emitter to one side of a mail opening in a housing, and locating a reflector at another side so as to be opposite the emitter and receiver; and b) outputting a receiver signal from the receiver to an alert device within the base housing when the emitter signal is blocked from reaching the receiver by post or mail, the alert device outputting at least an audible alert signal to alert the user.

[0010] The invention will now be more particularly described, by way of example only, with reference to the accompanying drawings, in which :

Figure 1 is a perspective view of one embodiment of post alert apparatus, in accordance with the first aspect of the invention;

Figure 2 shows an underside of a base housing of the apparatus;

Figure 3 shows the underside of a base housing of the apparatus, with cover removed;

Figures 4 and 5 show the post alert apparatus in use, in accordance with the second aspect of the invention; and

Figure 6 shows a holder of the post alert apparatus holding a note.

[0011] Referring to the drawings, there is shown post alert apparatus 10 which comprises a base housing 12, an electronic emitter 14 and receiver 16 mounted in the base housing 12, a controller 18 also within the base housing 12, an alert device 20 for outputting an alert signal from the base housing 12, and a reflector 22.

[0012] The base housing 12 is typically moulded plastics and has major upper and lower planar surfaces 24, 26 and ramped portions 28 at each lateral end which curve to meet the opposing major surface 24, 26. A speaker grill 30 is provided in the upper major surface 24, and a battery compartment cover 32 is provided in the lower major surface 26, as shown in Figure 3.

[0013] User interface controls 34 are provided along longitudinal sides of the base housing 12, allowing a user to operate functions of the apparatus as described hereinafter. In this embodiment, the user interface controls 34 include a power button 36, a record button 38 and volume buttons 40.

[0014] The user interface controls 34 interface with the controller 18 within the base housing 12. The controller 18 typically includes a microprocessor for controlling the emitter 14 and receiver 16, along with the alert device 20. Preferably, a replaceable coin battery 42 having an advantageously slim form factor can be utilised. However, a rechargeable battery and/or a connection to mains electricity can be considered.

[0015] The electronic emitter 14 and receiver 16 include an infra-red light emitter element 44 and an infra-red light receiver element 46 recessed within one lateral end wall 48. The emitter element 44 and the receiver element 46 are spaced apart, but may be provided within a common recess.

[0016] The emitter 14 and receiver 16 both include dedicated circuitry which enables the input of an emitter signal from the controller 18 to energise the emitter element 44 and the output of a receiver signal to the controller 18.

[0017] The alert device 20 is within the base housing 12 and is connected to the controller 18 so that, on receipt of an appropriate receiver signal from the receiver 16, the controller 18 outputs a control signal to the alert device 20 to output an alert signal.

[0018] The alert device 20 includes a speaker 50 mounted beneath the speaker grill 30 of the base housing 12, but may also, additionally, include a light emitting element for outputting a visual alert in addition to the audible alert.

[0019] As an option, the apparatus 10 may include recording means for recording a bespoke audible alert to be outputted by the alert device 20. To this end, the re-

cording means includes an audio input, such as a microphone 52, audio jack or phono socket and/or a USB port, along with a data storage device 54. By utilising the record button 38 of the user interface, a user generated audio signal can be inputted and recorded by the controller 18 on the data storage device 54.

[0020] The reflector 22 includes a preferably planar mirrored surface 56. In this case, the reflector 22 has a reflector body 58 formed with a preferably segment shaped lateral profile uniform along its longitudinal extent. The two contiguous radial surfaces are planar or substantially planar, and at least one of the radial surfaces includes the mirrored surface 56. Although the mirrored surface 56 is fixed in this embodiment, it may be mounted for angular displacement on the back support to allow accurate alignment with the emitter 14 and/or receiver 16 in the base housing 12.

[0021] The apparatus 10 also includes a holder 60 in the form of a rigid tongue element integrally formed as one-piece with the lower major surface 26 and provided substantially across a recess 62 therebelow and which is spaced from the battery compartment cover 32. The tongue is generally in the form of a cantilever so that at least one note 64 can be slid and trapped between it and the recess 62.

[0022] In use, a mailbox or post box 66 is typically provided in a door 68 of a house or building, thereby providing a post opening for the insertion of post or mail. The base housing 12 is located along one longitudinal side 70 of the post box 66 and the reflector 22 is positioned along the other longitudinal side 72 directly opposite the base housing 12. The base housing 12 and reflector 22 are oriented so that the emitter 14 and receiver 16 directly face the mirrored surface 56. Any suitable attachment means can be used, such as hook and loop fasteners or adhesive. The benefit of hook and loop fasteners, such as Velcro RTM, is that the base housing 12 and the reflector 22 can be easily removed.

[0023] Once installed, the power button 36 can be utilised to activate the emitter 14 and receiver 16. An infra-red light beam is then emitted by the emitter 14, reflected by the mirrored surface 56 of the reflector 22, and received by the receiver 16.

[0024] Once post or mail 74 is inserted through the post opening of the post box 66, it breaks the infra-red light beam, shown as arrows A and B in Figure 3, causing the receiver 16 to output a signal to the controller 18, which in turn activates the alert device 20 to output an alert signal. A user is thus alerted to the presence of post 74 and can collect it.

[0025] Preferably and advantageously, if tampering of the post box is undertaken, for example, by an intruder inserting their hand or object through the slot, the infra-red light beam may again be broken and the alert device 20 is activated.

[0026] As a further benefit, one or more notes 64 can be held by the holder 60. This is beneficial since the post box 66 is typically at or near the front door 68, and will

thus be typically brought to a user's attention as and when they use the door 68.

[0027] To enable more configurable mounting, a spacer element may be included as part of the base housing and/or the reflector. The spacer element may be, for example, a double sided adhesive pad, or may be length adjustable studs or feet which space the body away from the mounting surface.

[0028] Although an infra-red light beam is utilised for the emitter, other types of emitter signals can be considered.

[0029] The reflector is beneficial, since it does not require any form of electronic communication with the base housing.

[0030] The base housing includes both the emitter and the receiver, thus keeping the apparatus compact and simplifying manufacture. Production costs are therefore kept to a minimum.

[0031] It is thus possible to provide mail alert apparatus which notifies a user of the delivery of post or mail, as well as tampering. The device can be utilised with any mailbox or post box having a post opening, and can either be provided integrally as part of a housing with post box, or retro-fitted as a kit of parts.

[0032] The embodiments described above are provided by way of examples only, and various other modifications will be apparent to persons skilled in the art without departing from the scope of the invention as defined by the appended claims.

Claims

1. Mail alert apparatus comprising a base housing, an electronic emitter and receiver in the base housing for sensing post or mail, a reflector, and an alert device within the base housing which outputs at least an audible alert signal based on an output from the receiver.
2. Mail alert apparatus as claimed in claim 1, wherein the base housing is detachably mountable to one side of a post opening.
3. Mail alert apparatus as claimed in claim 1 or claim 2, wherein the reflector includes a base element and an angularly adjustable reflector element mounted on the base element.
4. Mail alert apparatus as claimed in any one of claims 1 to 3, wherein the alert device further includes a visual alert emitter.
5. Mail alert apparatus as claimed in any one of the preceding claims, wherein the alert device includes recording means for recording a specific alert signal.
6. Mail alert apparatus as claimed in claim 5, wherein

the recording means includes an audio input and a memory storage element.

7. Mail alert apparatus as claimed in any one of the preceding claims, wherein the electronic emitter includes an infra-red light emitting element and the receiver includes an infra-red light receiving element. 5
8. Mail alert apparatus as claimed in any one of the preceding claims, wherein the reflector includes a mirrored surface adapted for reflecting an emitted signal from the emitter back to the receiver. 10
9. Mail alert apparatus as claimed in any one of the preceding claims, wherein the reflector is detachably mountable to one side of a post opening opposite that of the emitter and receiver. 15
10. Mail alert apparatus as claimed in any one of the preceding claims, further comprising a holder for releasably holding at least one note. 20
11. Mail alert apparatus as claimed in claim 10, wherein the holder is opposite the emitter and receiver. 25
12. Mail alert apparatus as claimed in claim 10 or claim 11, wherein the holder is a tongue provided to extend substantially across a recess in a base housing. 30
13. Mail alert apparatus as claimed in any one of the preceding claims, in the form of a kit of parts.
14. A housing having a post opening therein adapted to receive delivery of post therethrough, and mail alert apparatus as claimed in any one of the preceding claims for notifying of receipt of mail and/or of tampering. 35
15. A method of alerting a user to receipt of post and/or tampering of a mail box, the method comprising the steps of : a) locating a base housing having an electronic receiver and emitter to one side of a mail opening in a housing, and locating a reflector at another side so as to be opposite the emitter and receiver; 40
and b) outputting a receiver signal from the receiver to an alert device within the base housing when the emitter signal is blocked from reaching the receiver by post or mail, the alert device outputting at least an audible alert signal to alert the user. 45
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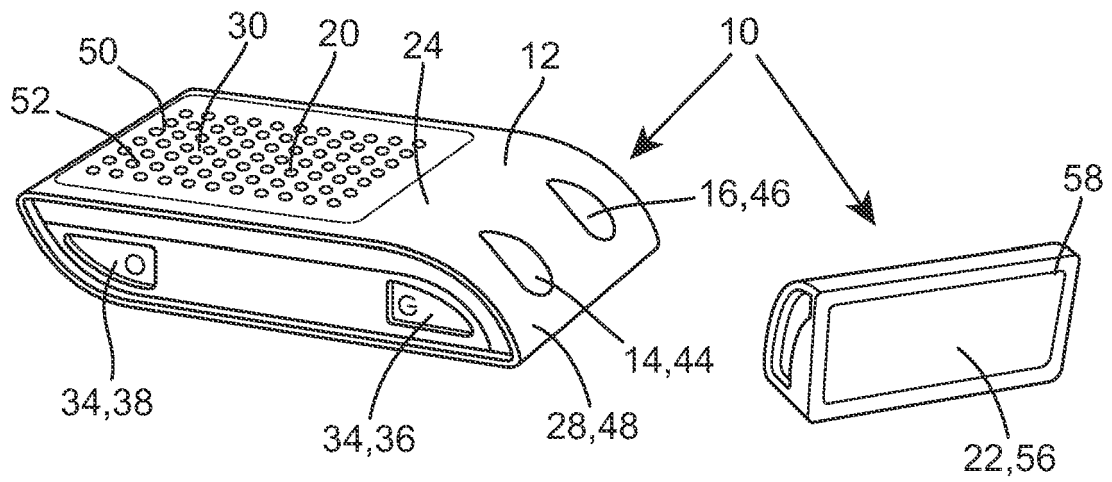


Fig. 1

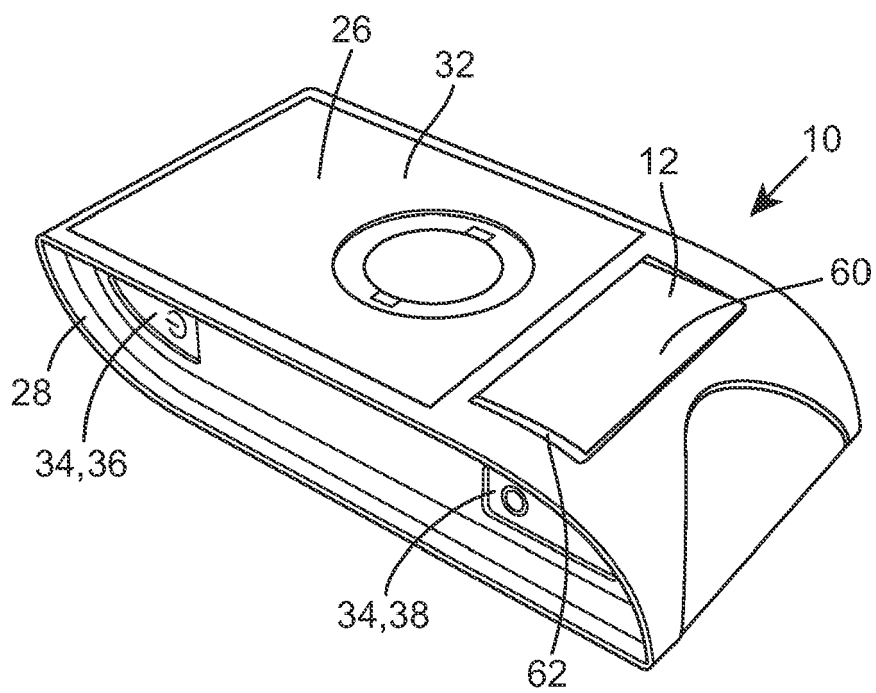


Fig. 2

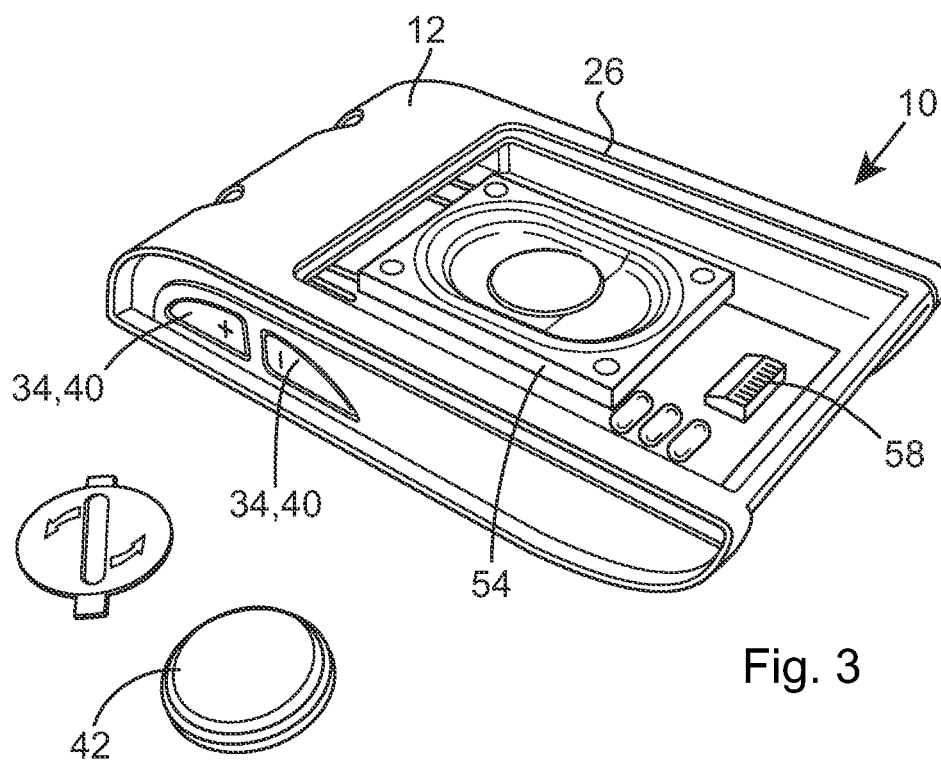


Fig. 3

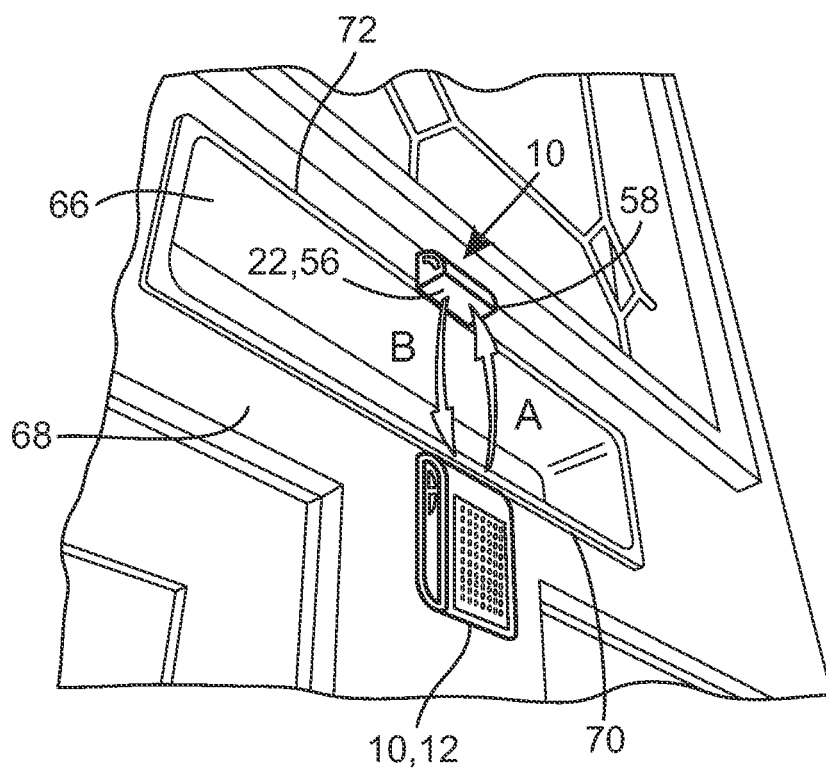


Fig. 4

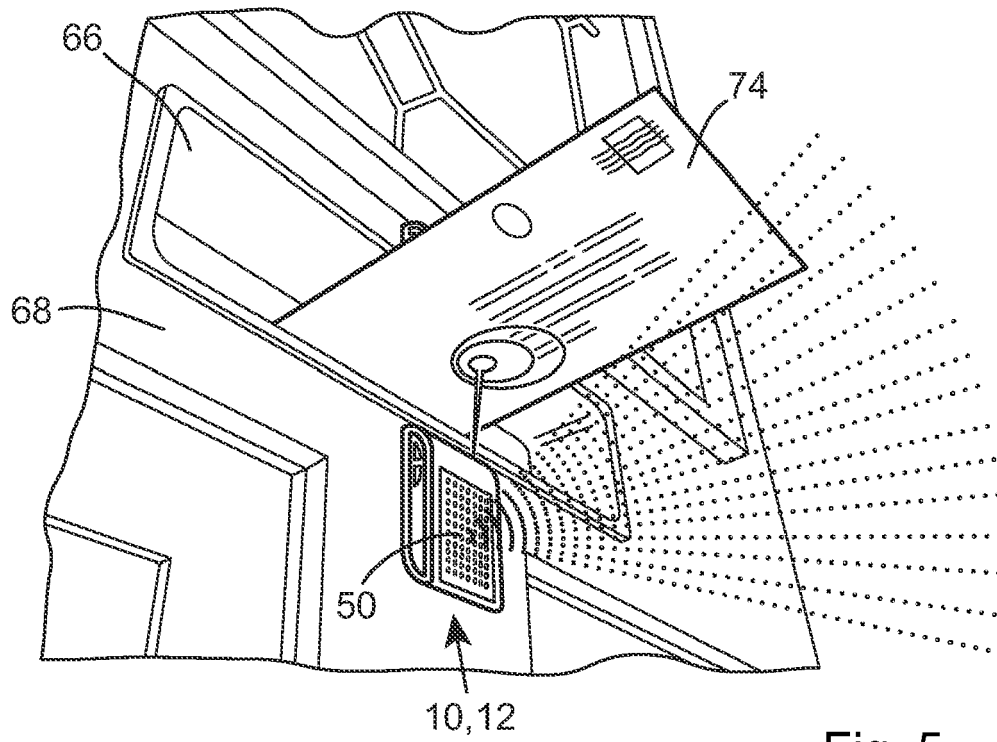


Fig. 5

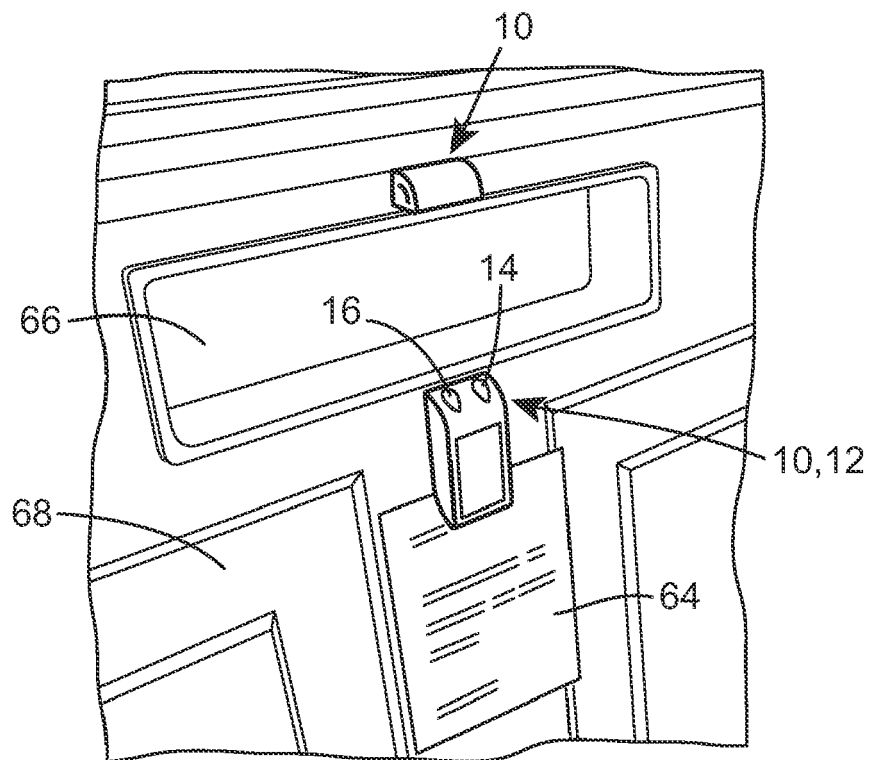


Fig. 6



EUROPEAN SEARCH REPORT

 Application Number
EP 10 18 8122

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Place of search The Hague		Date of completion of the search 7 February 2011	Examiner Tempels, Marco
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	

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