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(54) **Built-in lighting appliance**

(57) A built-in lighting appliance, comprising a reflecting body (1), on which a transparent screen (2) is assembled, at least one light source or lamp (3) electrically charged, at least one buffer battery (4) and possible electronic control circuits (5); in order to reduce the aesthetic impact of the lighting body of the appliance to the maximum, said lighting body is inserted inside a shaped cas-

ing (7) and embedded inside certain supporting surfaces (6), such as casings and/or masonry or wall boards. Furthermore, the transparent screen (2) and consequently the light sources (3) of the appliance are positioned inside floating bulkheads (12), present in front of the shaped casing (7) and whose opening and closing can be automatically activated.

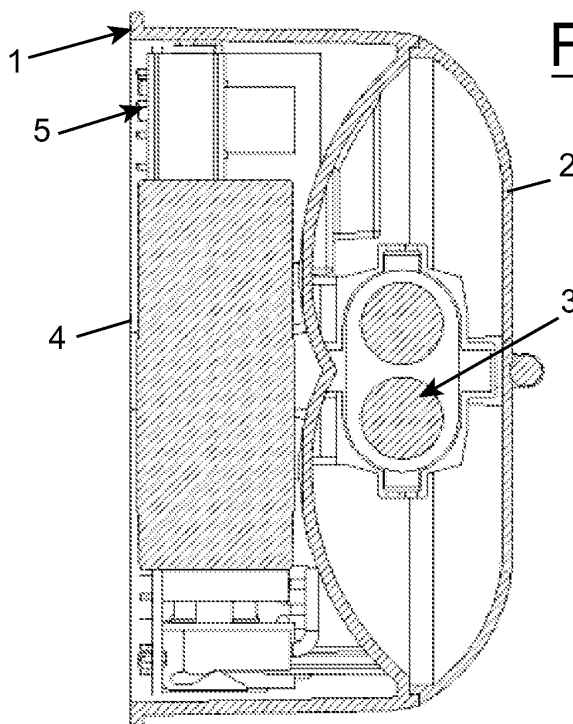


Fig. 1

Description

[0001] The present invention relates, in general, to a built-in light appliance.

[0002] More specifically, the invention relates to a lighting and/or emergency lighting appliance, built-in and/or disappearing, so that it is visible only when switched on, reducing the aesthetic impact of the lighting body to the maximum.

[0003] This constructive solution not only provides the lighting appliance with an extremely pleasant and architectural aesthetic appearance, but it also allows the structure of the lighting body to be totally and effectively exploited in vertical, saving further space, with the same photometric performances to be obtained.

[0004] Correct lighting must ensure, in the field of vision, sufficiently high luminances, which are rationally distributed to allow the perception of important areas, and also details, reducing to the minimum all forms of dazzling effects.

[0005] In particular, lighting appliances or emergency lamps must guarantee a light flow which is sufficiently intense and concentrated for allowing exits to be easily and rapidly identified, also and above all in cases of danger.

[0006] Direct lighting appliances are in fact widely used for the artificial lighting of buildings for civil and industrial use, both as a main light source and also as an emergency or safety source.

[0007] These lighting appliances generally comprise a hollow body, in which at least one fluorescent tube can be housed, connecting it to terminals which allow the electric charge, whereas the body is closed by means of transparent protection screens, which can be disassembled to allow continuous access to the tube and terminals.

[0008] In the last few years, a wide variety of lighting and/or emergency lighting appliances have been distributed on the market, which are innovative with respect to both stile and functionality.

[0009] These appliances however still have various drawbacks, firstly relating to the considerable encumbrance of both the containment casing and relative connections, especially under certain conditions and environments where they are to be installed.

[0010] Furthermore, an antiaesthetic and invasive visible impact is produced on the walls, mainly due to the shaped and protruding structure of the lighting body, whose features normally satisfy technical-functional requirements.

[0011] The present invention, which aims at achieving characteristics of elegance, efficiency and reliability in a lighting and/or emergency lighting appliance and whose structure therefore has aesthetic and functional advantages, falls within this general research program for obtaining improved aesthetic and technical characteristics for a lighting appliance.

[0012] An objective of the present invention is therefore to provide a built-in lighting appliance which over-

comes the disadvantages indicated above and, in particular, to provide a built-in lighting appliance which allows a less invasive structure to be obtained, from an aesthetic and therefore architectural point of view, on walls, with respect to traditional products, at the same time maintaining technical-functional performances comparable to the products of the same category.

[0013] Another objective of the present invention is to provide a built-in lighting appliance, with innovative characteristics of reduced volume and dimensions, which can also be used for any type of installation, and which is aesthetically elegant, functional, efficient and reliable.

[0014] A further objective of the present invention is to provide a built-in lighting appliance, which improves the functionality and aesthetic appearance of lighting and/or emergency lighting appliances already installed.

[0015] These and other objectives are achieved by a built-in lighting appliance, according to claim 1 enclosed.

[0016] The dependent claims contain other detailed characteristics of the invention.

[0017] The inspirational principle of the present invention is advantageously the desire to reduce the aesthetic impact of the lighting body of a lighting and/or emergency lighting appliance to the maximum.

[0018] Further characteristics and advantages of the invention will appear more evident from the following description referring to an illustrative and preferred but non-limiting embodiment, of the invention, and enclosed drawings, in which:

- figure 1 shows a transversal sectional view of the built-in lighting appliance, according to the present invention;
- figure 2 shows a side view of the built-in lighting appliance according to the present invention, with the outer casing partially removed;
- figure 3 shows a perspective view of the built-in lighting appliance according to the present invention, with the device switched off and lighting body hidden;
- figure 3A is a transversal section of the appliance as per figure 3, once inserted in the wall, according to the invention;
- figure 4 shows a perspective view of the built-in lighting appliance according to the present invention, with the device switched on and the lighting body partially visible;
- figure 4A is a transversal section of the appliance as per figure 4, once inserted in the wall, according to the invention;
- figure 5 shows a perspective view of the built-in lighting appliance according to the present invention, with the device switched on and the lighting body completely visible;
- figure 5A is a transversal section of the appliance as per figure 5, once inserted in the wall, according to the invention.

[0019] With reference to the above figures, the lighting

and/or emergency lighting appliance, according to the present invention, essentially consists of a reflecting body 1, on which a transparent screen 2 is assembled, a light source or lamp 3 (which, in the specific case, can comprise one or more fluorescent tubes, as represented in the enclosed figures) electrically charged, a buffer battery 4 and relative electronic control circuits generically indicates with 5 (figure 1).

[0020] In order to reduce the aesthetic impact of the lighting body to the maximum, comprising the reflecting body 1 and transparent screen 2, the invention envisages the insertion of the lighting body inside a shaped outer casing 7, completely housing the product inside certain supporting surfaces, such as shaped casings and/or masonry or wall boards (structures generically indicated with 6 in the enclosed figures).

[0021] Furthermore, the illuminating part, i.e. the transparent screen 2 and the light source 3, is also envisaged to be hidden inside floating bulkheads, present in front of the casing 7 and indicated with 12 in the enclosed figures, which can be automatically activated.

[0022] In particular, the floating bulkheads 12, of which there are normally two in the lighting appliance, according to the invention, operate on the reflecting body 1 and are activated by an electric motor 11, generally of the step-by-step type (figure 2).

[0023] The functioning of built-in lighting appliance, according to the present invention, is substantially as follows.

[0024] When the appliance is switched off (consequently with the light source 3 switched off), the bulkheads 12 present in front of the casing 7 completely hide the lighting body and are perfectly in line with the wall 6 (figures 3 and 3A); furthermore, said bulkheads 12 can be painted with the shade of the surrounding wall in order to completely hide the product.

[0025] In this case, the visibility of the lighting body can be maintained with the use of a guide light 8, for example blue-coloured, positioned in the centre of the casing 7, between the two bulkheads 12.

[0026] When the lighting appliance is switched on, i.e. when the electronic control intervenes 5, without the electric power supply, for switching on the emergency lamp 3, the buffer battery 4 automatically activates the step-by-step motor 11, which, in turn, causes the rotation of the bulkheads 12, thanks to the use of toothed portions 9 of the above bulkheads 12, which engage with each other, and the opening of the case 7, thus allowing the visibility of the lighting body and, in particular, of the transparent screen 2 (figures 4 and 4A).

[0027] When the casing 7 is completely opened, the bulkheads 12 completely re-enter the wall 6, without creating any type of encumbrance and allowing the appliance to function as a normal lighting and/or emergency lighting lamp installed in line with the wall 6 (figures 5 and 5A).

[0028] When the light source or lamp is switched off, i.e. when the supply voltage has returned, which conse-

quently switches off the lamp, if the lighting appliance is of the emergency type, the bulkheads 12 reclose in front of the casing 7, in line with the transparent screen 2.

[0029] As described, the hidden functioning and built-in solution of the structure allow the aesthetic impact of the lighting body of lighting and/or emergency lighting appliances to be reduced to the maximum, considering limiting encumbrances and also producing front panels having the same colour shade as the wall on which the appliance is applied or in any case personalized according to personal taste or requirements, thus making installation innovative and insertion adaptable to any living environment.

[0030] It is also possible to modify lighting plants already installed, by dismantling the appliances and preparing them again for the configuration described above, with the total development of the built-in and completely hidden unit.

[0031] The particular embodiment of the lighting appliance described, therefore, clearly allows the overall encumbrances of the structure to be considerably reduced, especially in relation to the total depth, thus limiting protruberances and eliminating the visual impact on the walls of civil and/or industrial buildings.

[0032] The characteristics of the built-in lighting appliance, object of the present invention, are evident from the above description, as also the advantages.

[0033] Finally, numerous other variants can obviously be applied to the lighting appliance in question, all included in the novelty principles inherent in the inventive idea. It is also evident that, in the practical embodiment of the invention, the materials, forms and dimensions of the details illustrated can vary according to demands and can be substituted with other technically equivalent alternatives.

Claims

1. A built-in lighting appliance, of the type consisting of at least one lighting body, comprising a reflecting body (1), on which at least one transparent screen (2) is assembled, at least one light source or lamp (3) electrically charged, at least one buffer battery (4) and possible electronic control circuits (5) of the functioning of the lamp (3), **characterized in that** said lighting body is inserted inside a shaped casing (7) and embedded inside certain supporting surfaces (6).
2. The lighting appliance according to claim 1, **characterized in that** said transparent screen (2) and said light source or lamp (3) of the appliance are positioned inside floating bulkheads (12), present in front of said shaped casing (7) and whose opening and closing can be automatically activated.
3. The lighting appliance according to claim 1, **charac-**

terized in that said floating bulkheads (12) are activated by an electric motor (11) and move from a first closing position, perpendicular to the reflecting body (1), to a second opening position, parallel to the reflecting body (1).

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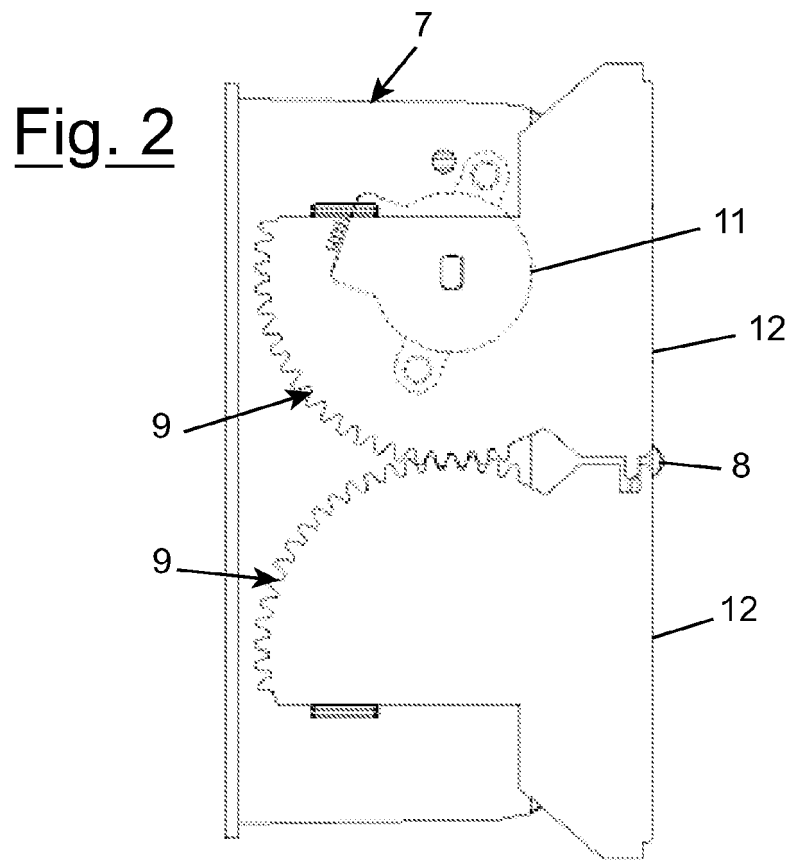
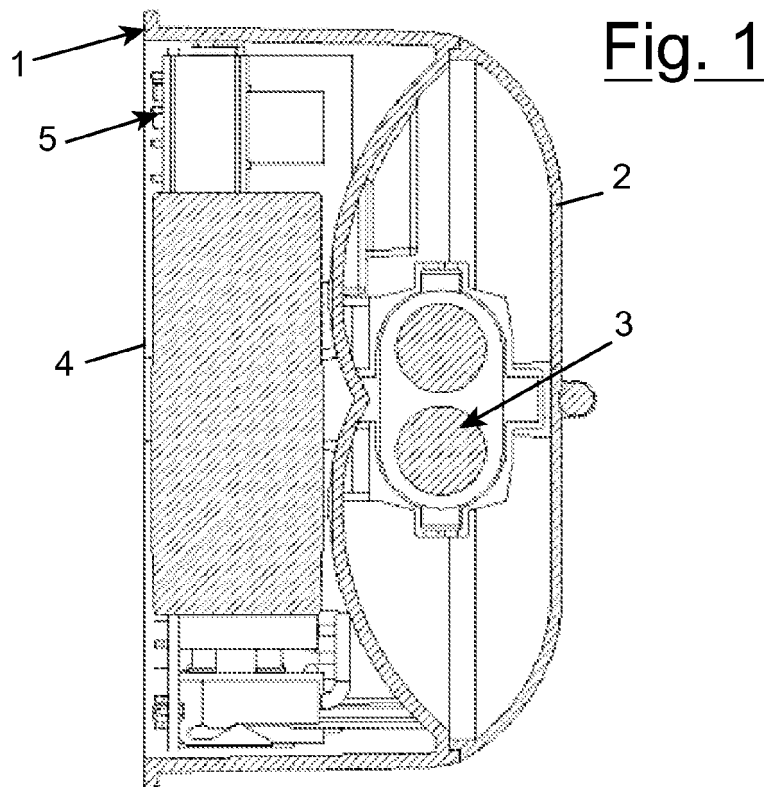
4. The lighting appliance according to claim 1, **characterized in that**, when said light source is switched off, said floating bulkheads (12), in a closed position, completely hide the lighting body and are in line with said supporting surfaces (6). 10
5. The lighting appliance according to claim 4, **characterized in that** said floating bulkheads (12) can be produced with the same colour shade as the surrounding wall, in order to completely hide the product. 15
6. The lighting appliance according to claim 1, **characterized in that** between said floating bulkheads (12) there is at least one guide light (8), in order to maintain the visibility of the lighting body of the appliance. 20
7. The lighting appliance according to claim 3, **characterized in that**, when said light source (3) is switched on, said buffer battery (4) automatically activates said electric motor (11) which, in turn, causes a rotation of the bulkheads (12), in order to open the shaped casing (7) and allow the visibility of the lighting body of the appliance. 25
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8. The lighting appliance according to claim 7, **characterized in that**, once the casing (7) has been opened, said floating bulkheads (12) disappear completely inside said supporting surfaces (6). 35

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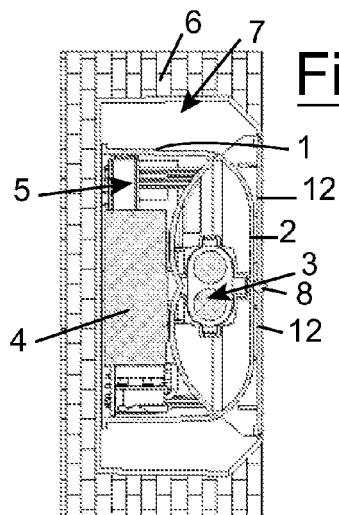


Fig. 3A

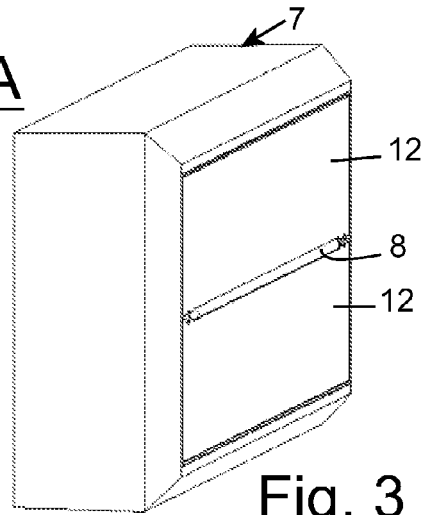


Fig. 3

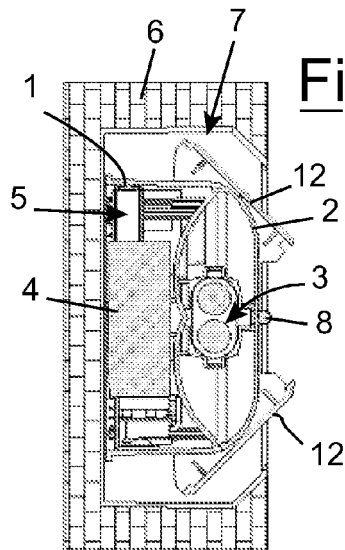


Fig. 4A

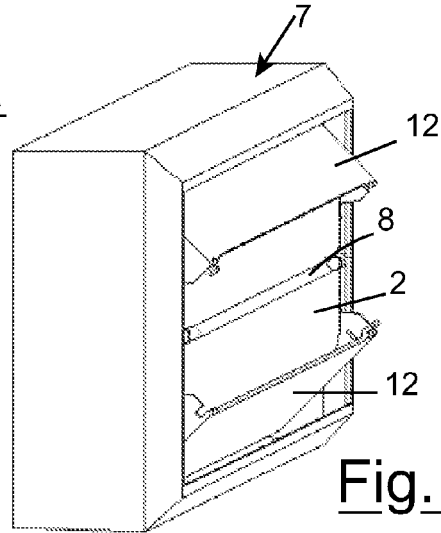


Fig. 4

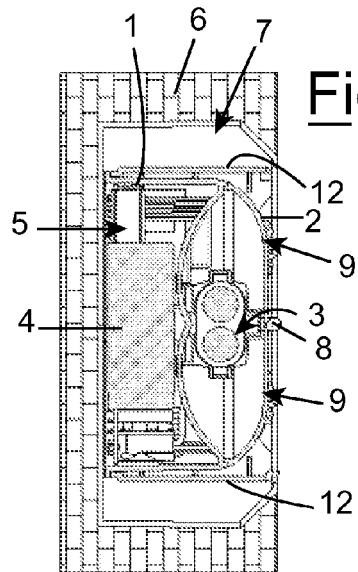


Fig. 5A

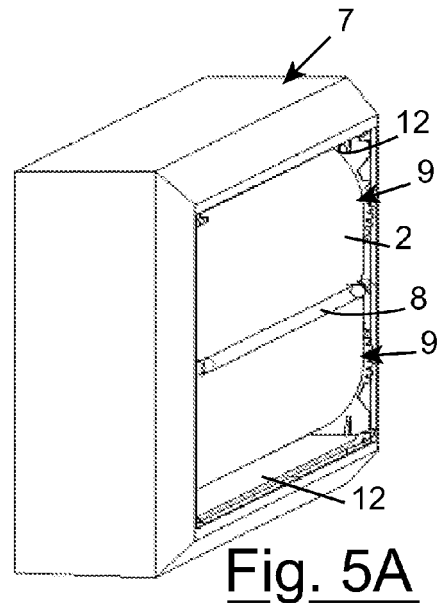


Fig. 5A



DOCUMENTS CONSIDERED TO BE RELEVANT			
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The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (IPC) F21S F21V
Place of search The Hague		Date of completion of the search 11 January 2007	Examiner Lange, Christian
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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**ANNEX TO THE EUROPEAN SEARCH REPORT
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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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