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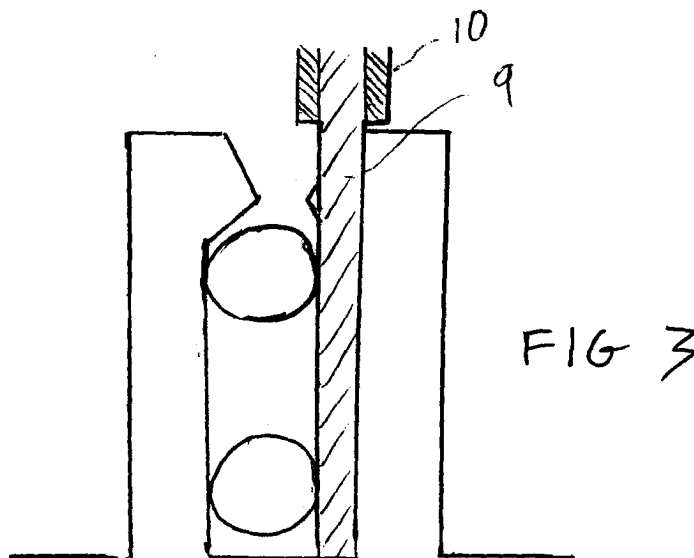
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(54) **Luminaires**

(57) A luminaire is disclosed which comprises a housing having integral lugs (4, 5) which directly support

a lamp (1) in an operative position within the housing. The lugs also serve to connect the lamp to electrical wires (9) for powering the lamp.



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Description

[0001] This invention relates to luminaires. In particular, but not exclusively, it relates to emergency luminaires.

[0002] Emergency luminaires may be of the maintained or non-maintained type. Both types include a battery which is charged by a mains supply but differ in that in a maintained luminaire the lamp is lit either by mains or, when mains fails, by the battery, whereas with the non-maintained type the mains supply is used solely to charge the battery and the lamp is only illuminated upon failure of the mains, i.e. during an emergency situation. For both types, the batteries are generally changed every, say, four to six years. Maintained luminaires require fairly frequent lamp replacement, whereas, for non-maintained luminaires, the lamp replacement interval is considerably longer.

[0003] Up to now, similar mechanical designs have been used for both maintained and non-maintained designs which is wasteful, since lamps require changing much more frequently in maintained designs and so all luminaires are designed for relatively easy replacement of the lamps.

[0004] A luminaire generally comprises some electronics which are held on a PCB assembly, either a 'bare board' or an enclosed module. The lamp is then typically fitted to a commercially available lamp holder which in turn is connected to the PCB via wires. Single core solid wires are commonly used for this connection as they are seldom touched once assembled and the solid wire allows for easy connection to 'push wire' connectors.

[0005] The requirement to provide a separate lamp holder increases the complexity and, more importantly, the cost of the assembly.

[0006] The present invention arose in an attempt to provide a less complex and lower cost emergency luminaire.

[0007] According to the present invention there is provided a luminaire comprising a housing shaped for directly supporting a lamp in an operative position within the housing, whereby a separate lamp holder is not required.

[0008] Most preferably, the means for supporting and holding the lamp is also used for attaching and clamping connection wires to the lamp.

[0009] Embodiments of the invention will now be described, by way of example only, with reference to the accompanying drawings in which:

Figure 1 shows an end view of a lamp;
Figure 2 shows part of a luminaire housing; and
Figure 3 shows a cross-sectional view of a lamp and connecting wire attached to the part of Figure 2.

[0010] An emergency luminaire generally uses a discharge lamp such as a fluorescent lamp. The end of one of these lamps 1 is shown schematically in Figure 1.

Electrical connections are made to the electrodes of the lamp by two pins 2, 3 protruding axially from each end thereof.

[0011] Conventionally, the lamp is held within a housing by a separate lamp holder. However, in embodiments of the present invention, the lamp housing itself is modified by the provision of locating lugs which are preferably moulded into the internal surface of the luminaire housing. These are shown schematically in Figure 2. In the figures shown, a pair of lugs 4, 5 are provided. These comprise a pair of lugs which extend inwardly from the housing wall. The lugs are generally parallel to and spaced from each other. At their remote ends, they are provided with forwardly projecting 'pips' which are generally V-shaped in cross-section, the respective apices of the pips facing one another. One of the pips is provided with a cutaway slot 8, which enables location of a wire.

[0012] The lugs are typically of a plastics material and are therefore generally resilient such that when their ends are displaced outwardly they return again upon removal of the displacing force.

[0013] In use, the respective terminal pins 2 and 3 of a lamp unit 1 are mounted between the lugs. A connecting wire, connecting the pins to an electronic circuit and battery (not shown) of the luminaire is located within slot 8 after the insulation layer 10 of the wire is stripped away from the end part of the wire. The lugs, being resiliently mounted, serve to hold the pins 2 and 3 securely in place and to clamp the wire 9 securely against the pins to effect good electrical contact therewith. The lugs themselves are of plastics material and are thereby insulators. Pips 6 and 7 serve to hold the lamp more securely in place. These may not be necessary in some embodiments, or other moulded in features or projections may be used.

[0014] In embodiments of the invention a single assembly, which is most preferably integral with the housing, is used both to hold the lamp (obviating the need for a separate lamp holder), and to effect electrical connection of the lamp with the other electrical or electronic components of the luminaire).

[0015] Fluorescent lamps are operated at high voltage and low current. They also do not generate significant heat during operation. Accordingly, the connection from lamp to lamp wire is not critical and can be achieved by relatively low connection forces as long as the metals used are not subject to extreme conditions or corrosive atmospheres. Methods of holding the wires according to the present invention are therefore perfectly satisfactory and a cheap and effective method of holding and electrically connecting lamp is achieved.

Claims

1. A luminaire comprising a housing shaped for directly supporting a lamp in an operative position within

the housing.

2. A luminaire as claimed in Claim 1, wherein the housing includes integral lugs for supporting the lamp. 5
3. A luminaire as claimed in Claim 2, wherein the lugs are shaped to support electric terminals at each end of the lamp, and thereby support the lamp. 10
4. A luminaire as claimed in any Claims 2 or 3 wherein the lugs are resilient.
5. A luminaire as claimed in any one of Claims 2 to 4, wherein the lugs include projections for further holding a lamp in place. 15
6. A luminaire as claimed in any preceding claim, wherein the shape of the housing also serves to clamp one or more electrical connection wires to make electrical connection with the lamp. 20
7. A luminaire as claimed in Claim 6 when dependent upon Claim 2, wherein one or more of the lugs includes a slot for receiving a wire. 25
8. A luminaire as claimed in Claim 7, wherein the wire received in the slot is clamped against electric terminals of the lamp. 30

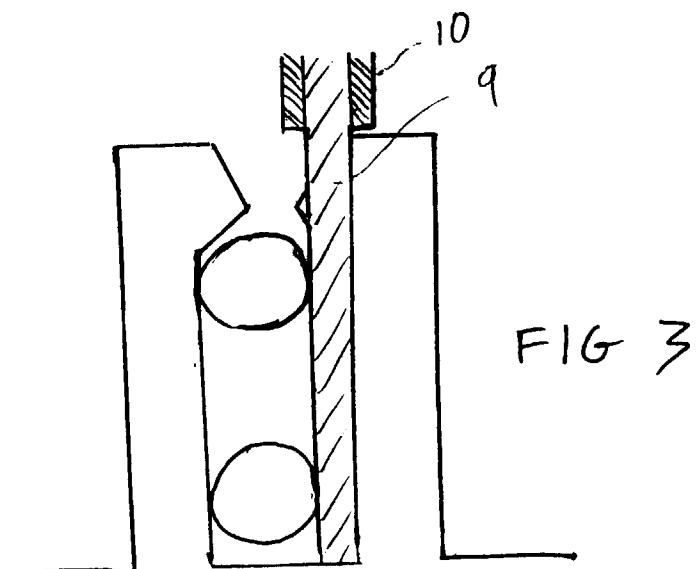
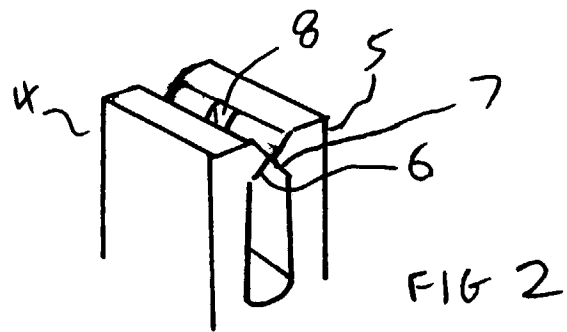
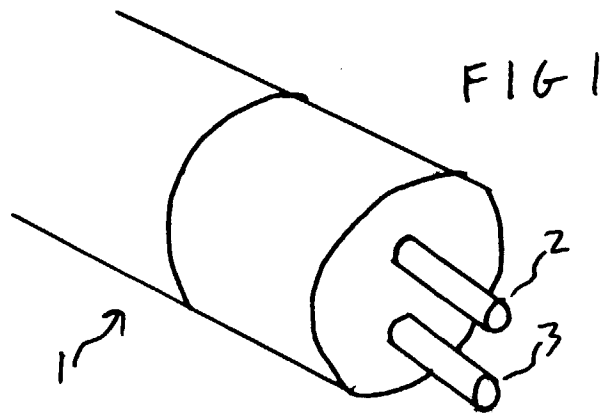
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EUROPEAN SEARCH REPORT

Application Number
EP 99 31 0170

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.CI.7)
X	US 4 969 070 A (COSTA LARRY J) 6 November 1990 (1990-11-06) * column 3, line 24 - line 34 * * column 3, line 55 - line 61 * * column 4, line 14 - line 32 * * figures 1,2 * ---	1-3,6	F21V19/00 F21V15/00 H01R33/08
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			TECHNICAL FIELDS SEARCHED (Int.CI.7)
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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 10 March 2000	Examiner De Mas, A
<p>CATEGORY OF CITED DOCUMENTS</p> <p>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</p> <p>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</p>			

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**ANNEX TO THE EUROPEAN SEARCH REPORT
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EP 99 31 0170

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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