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(54) Reflector for use with an electric lamp.

(57) There is disclosed a reflector 10 for use with an electric lamp of the type comprising a connector portion for insertion in a lamp socket, a housing portion 19, a cylindrical transparent or translucent envelope 20 containing electrically operated illumination means, and a peripheral groove 21 defined between adjacent edges of the housing portion 19 and the envelope 20. A preferred lamp of the type specified is a so-called energy-saving lamp.

The reflector 10 has a generally parabolic reflecting surface and is intended to snap-fit into engagement with the lamp. The reflector has a generally cylindrical mounting portion 11 which terminates at one end of the reflector in an inclined lip 12, and slots 17 are formed in the cylindrical portion 11 which extend away from said one end of the reflector so as to render the cylindrical portion 11 resiliantly radially outwardly deformable. This enables the reflector to be slid axially along the cylindrical envelope 20 of the lamp until the inturned lip 12 comes in to register with the groove 21 of the lamp and snaps resiliantly into engagement therewith.

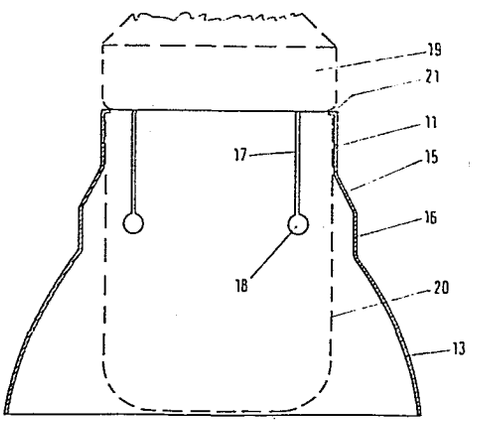

FIG. 4

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"REFLECTOR FOR USE WITH AN ELECTRIC LAMP"

This invention relates to a reflector for use with an electric lamp of the type comprising a connector portion for insertion in a lamp socket, a housing portion, a cylindrical transparent or translucent envelope containing electrically operated illumination means, and a peripheral groove defined between adjacent edges of the housing portion and the envelope. A lamp of the above type will be referred to hereinafter as "a lamp of the type specified".

One example of a lamp of the type specified is an energy-saving lamp made by Philips under the name Philips SL18, which has been designed recently to provide a much more efficient conversion of electricity into light energy than is obtained with conventional filament bulbs. Thus, the energy saving lamp provides equivalent illumination, with an 18 watt input, to that obtained by a 75 watt tungsten filament bulb.

The present invention has been developed primarily, though not exclusively, with a view to providing a reflector which can be snap-fitted onto a lamp of the

type specified, and particularly onto the Philips SL range of energy saving lamps, so as to form a so-called "down light".

According to the invention there is provided a reflector having a generally parabolic reflecting surface and intended for use with a lamp of the type specified, in which the reflector includes a generally cylindrical mounting portion which terminates at one end of the reflector in an inclined lip, and slots are formed in said cylindrical portion which extend away from said one end of the reflector so as to render the cylindrical portion resiliently radially outwardly deformable whereby, to mount the reflector on the lamp, the reflector can be slid axially along the cylindrical envelope of the lamp until said inturned lip comes into register with said groove of the lamp and snaps resiliently into engagement therewith.

Preferably, the slots extend generally axially along the cylindrical portion i.e. parallel to the optical axis of the reflector. Conveniently, four slots are provided, which are distributed uniformly about the periphery of the cylindrical portion.

The reflector may comprise, in addition to the cylindrical mounting portion, a generally parabolic reflective portion which terminates at an opposite end of the reflector, and an intermediate portion interconnecting the cylindrical and parabolic portions. The intermediate portion may be in two parts, namely a parabolic part which extends away from cylindrical mounting portion, and a cylindrical part which merges into the parabolic reflective portion.

In order to enhance the resilient deformability imparted to the reflector by the slots provided in the cylindrical mounting portion, the slots may extend at least

partly through the intermediate portion and preferably each terminate in a respective circular aperture provided in the cylindrical part of the intermediate portion.

One embodiment of reflector according to the invention for use with an electric lamp will now be described in detail, by way of example only, with reference to the accompanying drawings in which:-

Figure 1 is a view from one end of the reflector;

Figure 2 is a side view of the reflector;

Figure 3 is a view from an opposite end of the reflector;

Figure 4 is a longitudinal sectional view, illustrating the reflector mounted in position on a lamp of the type specified; and

Figure 5 is a plan view of half of the reflector.

Referring now to the drawings, the reflector is designated generally by reference numeral 10 and is intended for use with an electric lamp of the type comprising a connector portion for insertion in a lamp socket, a housing portion, a cylindrical transparent or translucent envelope containing electrically operated illumination means, and a peripheral groove defined between adjacent edges of the housing portion and the envelope. The reflector 10 has been specifically designed for snap-fitting engagement with energy saving lamps made under the name of Philips SL range one of which is the SL 18 shown in more detail in Figure 4.

Referring to Figures 1 to 3, the reflector 10 has a generally parabolic reflective surface which serves, when the reflector is mounted on the lamp, to direct the light rays from the lamp generally parallel to each other so that the assembly of lamp and reflector may constitute a so-called "downlight". The reflector comprises a generally cylindrical mounting portion 11

which terminates at one end of the reflector in an inturned lip 12, a generally parabolic reflective portion 13 which terminates at an opposite end of the reflector, and an intermediate portion 14 which interconnects the cylindrical mounting portion 11 and the parabolic portion 13. The intermediate portion 14 is in two parts, namely a generally parabolic part 15 which extends away from the cylindrical mounting portion 11, and a cylindrical part 16 which merges into the parabolic reflective portion 13.

Slots 17 are formed in the cylindrical mounting portion 11 which extend away from the end of the reflector provided with lip 12, and the purpose of the slots 17 is to render the cylindrical portion 12 resiliently radially outwardly deformable. In the illustrated embodiment, the slots 17 extend axially of the cylindrical mounting portion 11 and parallel to the optical axis of the reflector, though other arrangements of the slots 17 may be provided so as to render the cylindrical portion resiliently and radially outwardly deformable. The slots 17 extend throughout the length of the cylindrical mounting portion 11 and through the parabolic part 15 of the intermediate portion 14 and partly into the cylindrical part 16 of intermediate portion 14. Each slot 17 terminates in cylindrical part 16 in a respective circular aperture 18.

Referring now to Figure 4 of the drawings, the reflector 10 is illustrated in snap-fitting engagement with a lamp of the type specified, having a connector portion (not shown) for insertion in a lamp socket, a cylindrical diecast housing portion 19, a cylindrical transparent or translucent glass envelope, 20 containing electrically operated illumination means, and a peripheral groove 21 defined between adjacent edges of the housing portion 19 and the envelope 20. The cylindric al mounting portion 11

of the reflector 10 has a shape generally conforming with that of the cylindrical envelope 20 of the lamp, and the provision of the slots 17 enable the cylindrical portion to be resiliently and radially outwardly deformed in order that the reflector can be slid axially along the cylindrical envelope 20 of the lamp until the inturned lip 12 of the reflector comes into register with the peripheral groove 21 of the lamp and snaps resiliently into engagement therewith.

Accordingly, the reflector can be readily slid into a firm mounting engagement with the lamp in order to provide a visually pleasing assembly which is functionally equivalent to a spotlight. When, as is preferred, the slots extend not only throughout the cylindrival mounting portion 11, but also at least partly through the intermediate portion 14, such extension of the slots, in combination with the provision of the circular apertures 18, further enhance the resilient deformability imparted to the reflector.

Conveniently, the reflector is made of anodised aluminium having a super purity anodised finish to provide the requisite reflective properties.

CLAIMS

1. A reflector having a generally parabolic reflecting surface and intended for use with a lamp of the type specified, in which the reflector includes a generally cylindrical mounting portion which terminates at one end of the reflector in an inclined lip, and slots are formed in said cylindrical portion which extend away from said one end of the reflector so as to render the cylindrical portion resiliently radially outwardly deformable whereby, to mount the reflector on the lamp, the reflector can be slid axially along the cylindrical envelope of the lamp until said inturned lip comes into register with said groove of the lamp and snaps resiliently into engagement therewith.

2. A reflector according to Claim 1, in which the slots extend generally axially along the cylindrical portion.

3. A reflector according to Claim 2, in which four slots are provided, which are distributed uniformally about the periphery of the cylindrical portion.

4. A reflector according to any one of the preceding claims, including a generally parabolic reflective portion which terminates at an opposite end of the reflector, and an intermediate portion interconnecting the cylindrical and parabolic portions.

5. A reflector according to claim 4, in which the intermediate portion is in two parts, the first part comprising a parabolic part which extends away from said cylindrical mounting portion, and the second part comprising a cylindrical part which merges into said parabolic reflective portion.

6. A reflector according to claim 4 or 5, in which

the slots extend at least partly through said intermediate portion.

7. A reflector according to claim 6, in which the slots each terminate in a respective circular aperture provided in the cylindrical part of the intermediate portion.

8. A reflector according to claim 1 and substantially as hereinbefore described with reference to, and as shown in the accompanying drawing.

9. A lamp of the type specified having fitted thereon a reflector according to any one of the preceding claims.

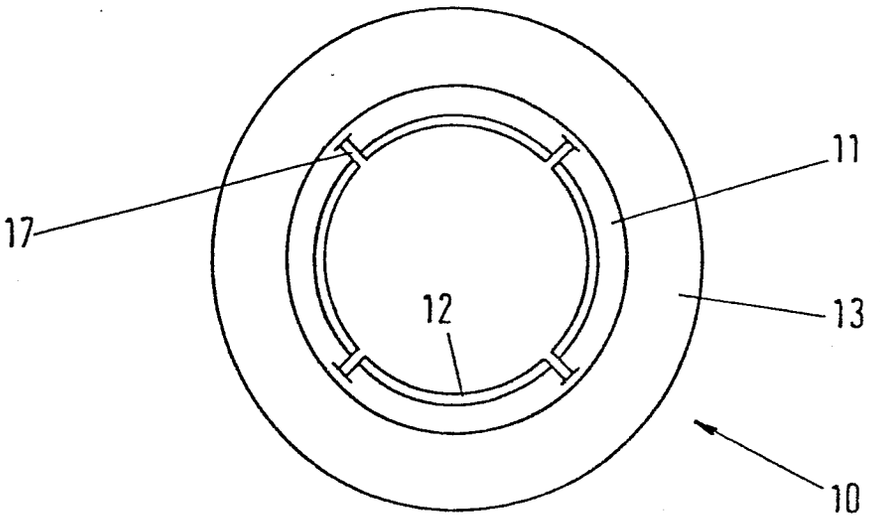

FIG. 1

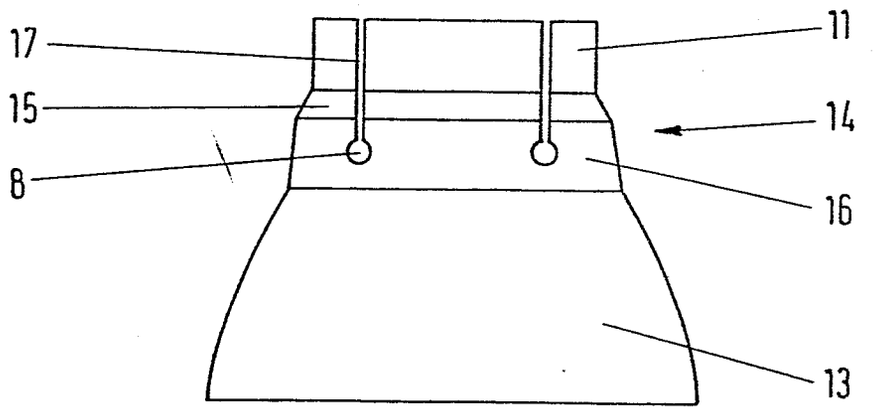

FIG. 2

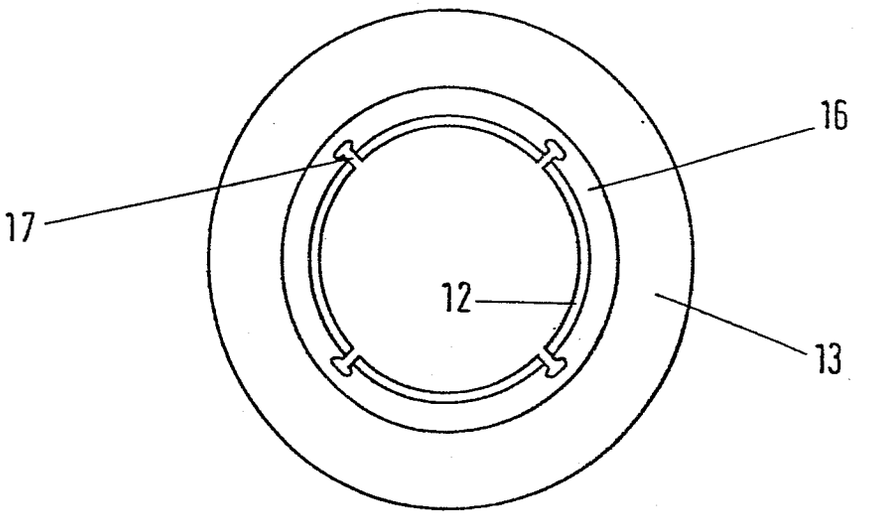

FIG. 3

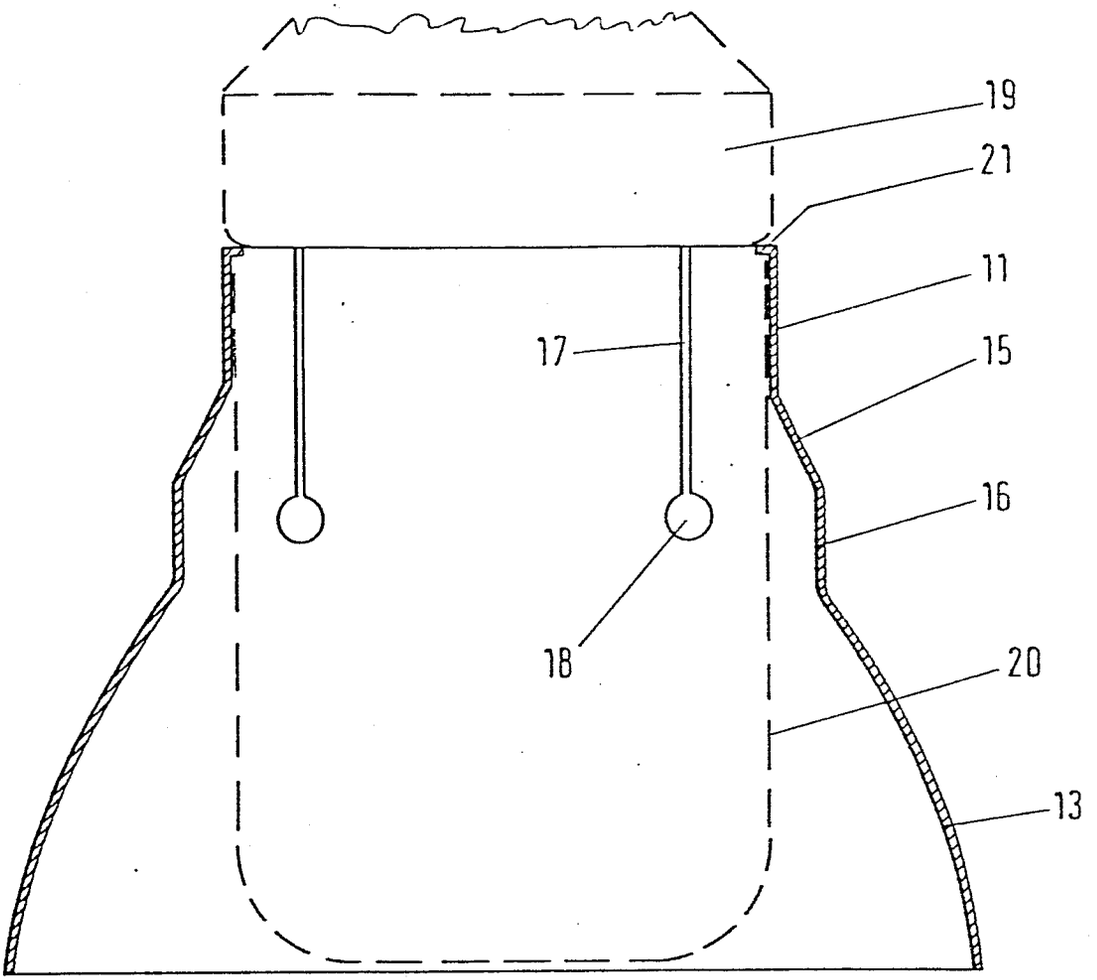

FIG. 4

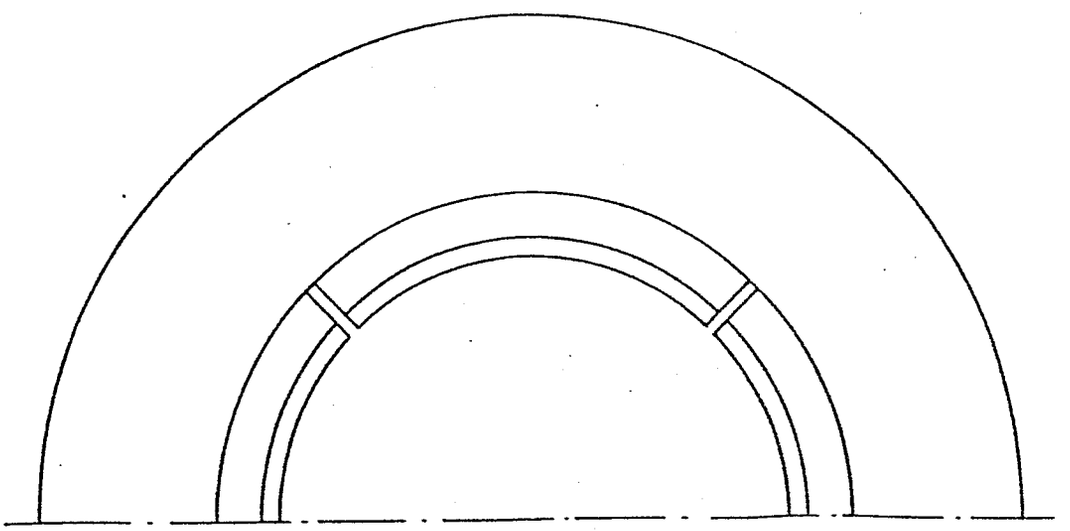

FIG. 5

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EUROPEAN SEARCH REPORT

0122983
Application number

EP 83 30 2242

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl. ³)
Y	US-A-2 134 356 (CLEMENCE) * Figures 1-6 *	1,2,8,9	F 21 V 17/04
Y	US-A-2 088 544 (BRASELTON) * Figures 10,13 *	1	
A	FR-A-2 221 813 (CLAUDE) * Page 2, lines 22-27 *	1	
A	US-A-1 643 697 (CHRISTY) * Figure 2 *	1-3	
A	GB-A- 730 829 (FLUOREL) * Page 1, lines 63-70 *	4,5	
A	GB-A- 782 198 (LUMITRON) * Figures 1,2 *	5	TECHNICAL FIELDS SEARCHED (Int. Cl. ³) F 21 V F 21 S H 01 K
A	GB-A- 832 613 (DOBSON) * Figure 1 *	6,7	
A	FR-A-2 484 607 (DAVID) * Figure 2 *	6	
A	GB-A- 950 (SIEMENS)(A.D. 1911) * Figures 2,3 *	7	

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The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	09-12-1983	FOUCRAY R.B.F.

CATEGORY OF CITED DOCUMENTS

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EUROPEAN SEARCH REPORT

Application number

EP 83 30 2242

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl. ³)
E	GB-A-2 107 036 (BETA) * Whole document * -----	1-9	

TECHNICAL FIELDS SEARCHED (Int. Cl. ³)

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