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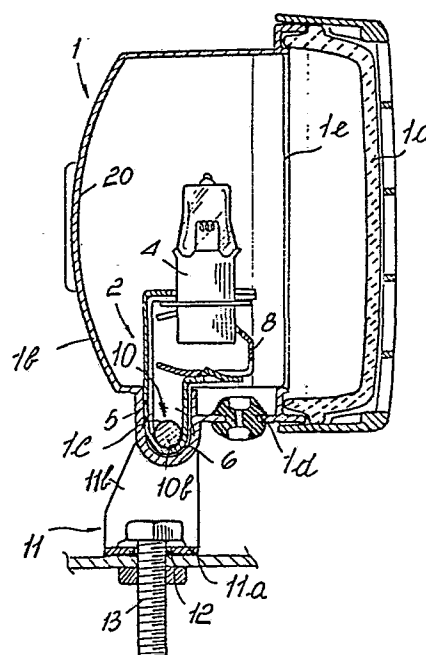
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54 **Device for dissipating heat, particularly, in motor vehicle headlights, searchlights, and the like.**

57 The device comprises, on the interior of a parabolic reflector (1), a lamp holder bracket (2) made of a thermally conductive material and having at least one portion (5) thereof in contact with at least one portion (10b) of a connection element (10) formed from a thermally conductive material and another portion (10a, 10c) thereof on the reflector (1) exterior which may be placed in thermal conduction contact with the body of a motor vehicle and the like.



EP 0 193 631 A1

"DEVICE FOR DISSIPATING HEAT, PARTICULARLY, IN MOTOR
VEHICLE HEADLIGHTS, SEARCHLIGHTS, AND THE LIKE"

This invention relates to a device for dissipating
heat particularly in motor vehicle headlights, search-
lights, and the like.

5 As is known, foglights, headlights, and other
comparable lighting fixtures carried on motor vehicles
and having a parabolic reflector body formed from some
plastic material incur the serious problem of how to
dissipate the heat, generated by incandescent lamps,
when lit inside the reflector body towards the outside
10 thereof.

In fact, the heat produced is, in some cases quite
substantial and may result in deformation of a lamp
holder body made of plastics.

15 In an attempt to solve this problem, a conventional
approach is that of installing, on the interior of the
parabolic reflector body, reflective metal surfaces which
practically form a protective shield against the heat
for the parabolic reflector. This prior approach, whilst
providing a surface having good light reflecting proper-
20 ties, is less than fully satisfactory from a functional
standpoint of heat dissipation, because such a protective
shield is only effective to protect the surfaces from
heat generated by an incandescent lamp, lit inside the
reflector body, instead of dissipating the heat to the
25 exterior thereof, and has the additional disadvantage of
increasing the manufacturing and assembling costs for
the parabolic reflector.

It is, therefore, the aim of this invention to

obviate the above problem by providing a device for dissipating heat particularly in motor vehicle headlights, foglights, and the like, which includes means for encouraging the dissipation of heat, generated by a lit incandescent lamp from the interior to the exterior of a parabolic reflector.

Within the above aim, it is a particular object of the invention to provide such a device which is simple to assemble, and, while affording greatly improved performance, requires no additional component elements over and above those which are normally comprised in a motor vehicle headlight, searchlight or the like, by adapting elements which are normally included in any such headlight or searchlight to dissipate heat.

It is a further object of this invention to provide such a device which is simple to manufacture and can give full assurance of being reliable and safe to use.

The above aim, as well as these and other objects such as will be apparent hereinafter, are achieved by a device for dissipating heat particularly in motor vehicle headlights, searchlights, and the like, according to the invention, characterised in that it comprises, on the interior of a parabolic reflector, a lamp holder bracket made of a thermally conductive material and having at least one portion thereof in contact with at least one portion of a connection element formed from a thermally conductive material and having at least one other portion thereof, located on the exterior of said parabolic reflector, adapted for thermal conduction contact with the body of a motor vehicle or the like.

Further features and advantages will be apparent from the following detailed description of a device for dissipating heat particularly in motor vehicle headlights, searchlights, and the like, with reference to
5 the accompanying illustrative but not limitative drawings, where:

Figure 1 is an exploded perspective view of a headlight incorporating the device of this invention;

10 Figure 2 is a cross-sectional view of the headlight;

Figure 3 is a view of the parabolic reflector body showing the exterior thereof; and

Figure 4 is a rear view of the headlight of figure 1, in an assembled condition thereof.

15 Making reference to the cited drawing figures, a device for dissipating heat particularly in motor vehicle headlights, searchlights, and the like, according to this invention, comprises a lamp holder bracket 2 located on the interior of a parabolic reflector 1
20 having a body 1b, formed with a mounting hole 1c and a through hole 1d, and closed at the front open end 1e thereof by a glass panel 1a and may have any suitable configuration. Advantageously, the parabolic reflector 1 includes a plastics body which is coated internally
25 with a reflective layer 20.

The lamp holder bracket 2 defines, in a conventional manner a substantially U-shaped configuration formed at an upper portion 2a thereof, with a yoke 3 for engagement with an incandescent lamp 4, and is formed
30 at the bottom portion 2b thereof with a deep hollow 5

adapted to fit into a seat 6 defined in the bottom portion of the body 1b of the reflector 1 at the area where a mounting bracket 11 is located.

5 The lamp holder bracket 2, which is engaged by a lamp retaining spring, indicated at 8, is formed from a thermally conductive material, such as steel or the like.

10 At the lower portion of the hollow 5 there engages as by contact with the hollow itself a connection element which comprises, in this case, a pin 10, including a mid portion 10b and a head 10c, at least an end part of said pin 10 opposite to said head 10c being threaded, for engagement, with a threaded nut 10a, also being made of steel, for securing the body of the reflector 1 to a mounting bracket 11, comprising a pair of
15 mutually parallel legs 11b, each having a through hole 11c, 11d formed therein and extending orthogonally from a plane containing a centre portion 11a formed therebetween, said mounting bracket 11 advantageously defining a U-like
20 shape.

The mounting bracket 11 is formed at its center portion 11a with a throughgoing hole 12 adapted for engagement by a bolt 13 for fastening to the body of the motor vehicle or the like, whilst said through
25 holes 11c, 11d are adapted for engagement by said pin 10.

Thus, with the arrangement just discussed, the pin 10 and its respective locknut 10a practically form a heat bridge between the mounting bracket 11 and lamp
30 holder bracket 2, which bridge is effective to transfer

to the outside of the lamp holder most of the heat generated by the incandescent lamp 4 when lit.

5 In fact, the pin 10 has its mid-portion 10b in close thermal conduction contact with the lower portion 2b of the lamp holder bracket 2, whilst its outer portion of the pin 10 - including the head 10c and the nut 10a threadedly mounted thereon - is in contact relationship with the legs 11b of the bracket 11, which is located on the exterior of the reflector body, and accordingly is effective to dissipate to the outside thereof any heat generated by the incandescent lamp 4, being assisted also by virtue of the fact that the mid-portion 11a is adapted for contacting a motor vehicle body.

15 It may be appreciated from the foregoing description that the invention achieves its objects, and in particular the fact is outstanding that without employing any added elements but merely altering and rationalising the configuration of the lamp holder bracket, the important advantage is afforded of establishing an internal to external thermal bridge, whilst introducing no risk of water or the like getting into the lamp holding body.

25 Another important advantage stems from that by providing a device for dissipating heat, the parabolic reflector no longer requires to be made of a metal material separately from the reflector body, but may be simply provided by the reflective coating, indicated at 20, on the inner surface of the reflector body 1 of plastics.

In practicing the invention, any materials, dimensions and contingent shapes, may be any selected to meet individual requirements, providing that they are compatible with the intended application.

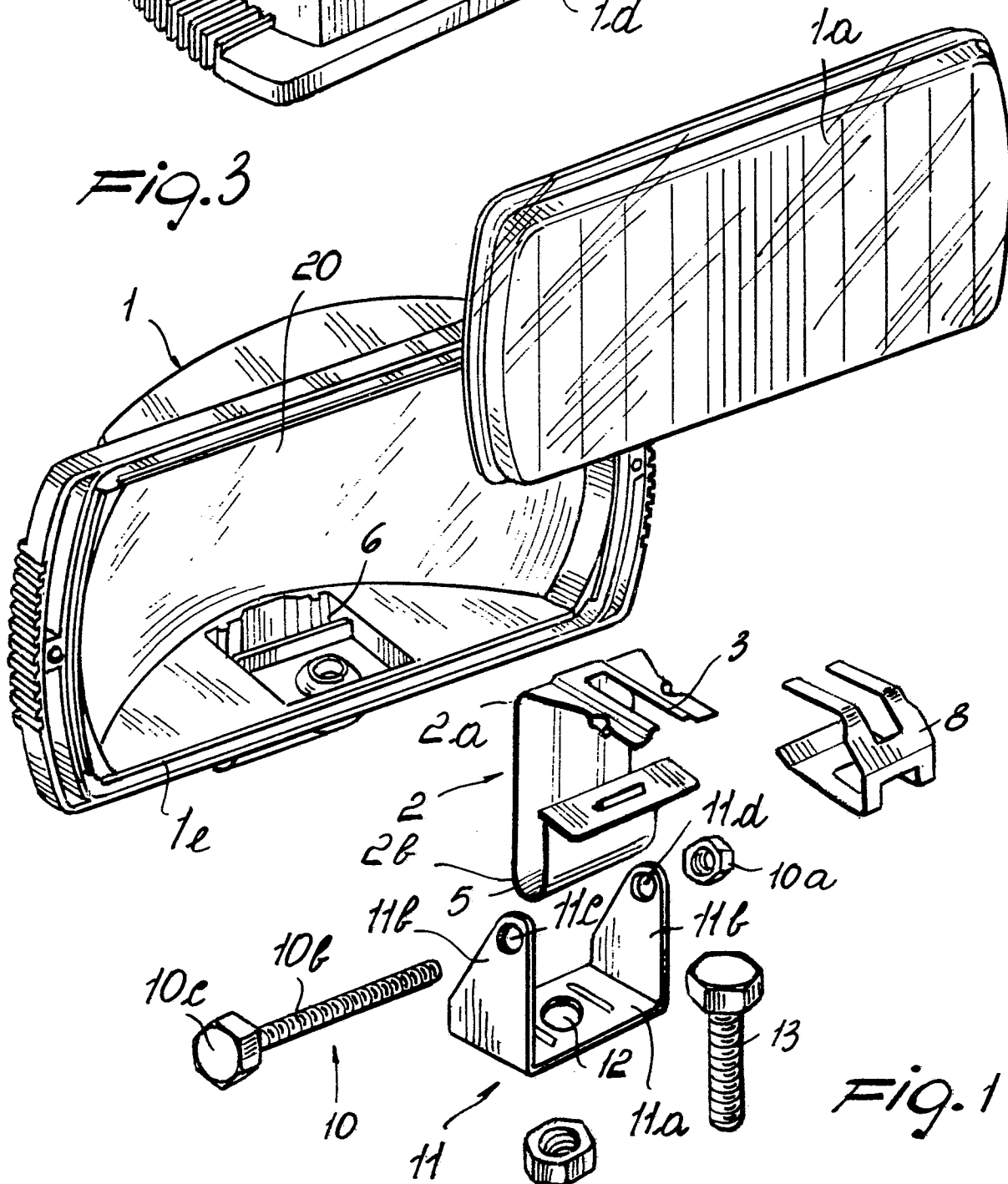
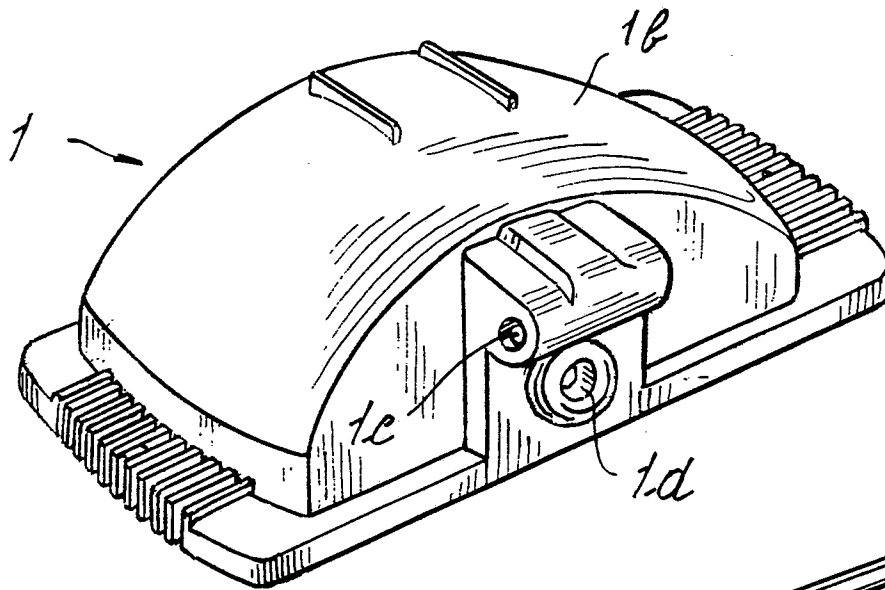
CLAIMS

1 1. A device for dissipating heat particularly in
2 motor vehicle headlights, searchlights, and the like,
3 characterised in that it comprises, on the interior of a
4 parabolic reflector (1), a lamp holder bracket (2) made
5 of a thermally conductive material and having at least
6 one portion (5) thereof in contact with at least one
7 portion (10b) of a connection element (10) formed from
8 a thermally conductive material and having at least one
9 other portion (10a,10c) thereof, located on the exterior
10 of said parabolic reflector (1), adapted for thermal
11 conduction contact with the body of a motor vehicle or
12 the like.

1 2. A device for dissipating heat particularly in
2 motor vehicle headlights, searchlights, and the like,
3 according to Claim 1, characterised in that said lamp
4 holder bracket (2) has at its bottom portion (2b) a
5 hollow (5) fitting in a seat (6) defined in the bottom
6 portion of said parabolic reflector (1).

1 3. A device for dissipating heat particularly in
2 motor vehicle headlights, searchlights, and the like,
3 according to Claim 1, characterised in that said connec-
4 tion element includes a threaded pin (10) for connecting
5 said parabolic reflector (1) to a mounting bracket (11)
6 for attachment to the body of a motor vehicle.

1 4. A device for dissipating heat particularly in
2 motor vehicle headlights, searchlights, and the like,
3 according to Claim 1, 2, or 3, characterised in that
4 said parabolic reflector (1) has a layer (20) of a
5 reflective material coated over the plastics body of
6 said parabolic reflector (1).



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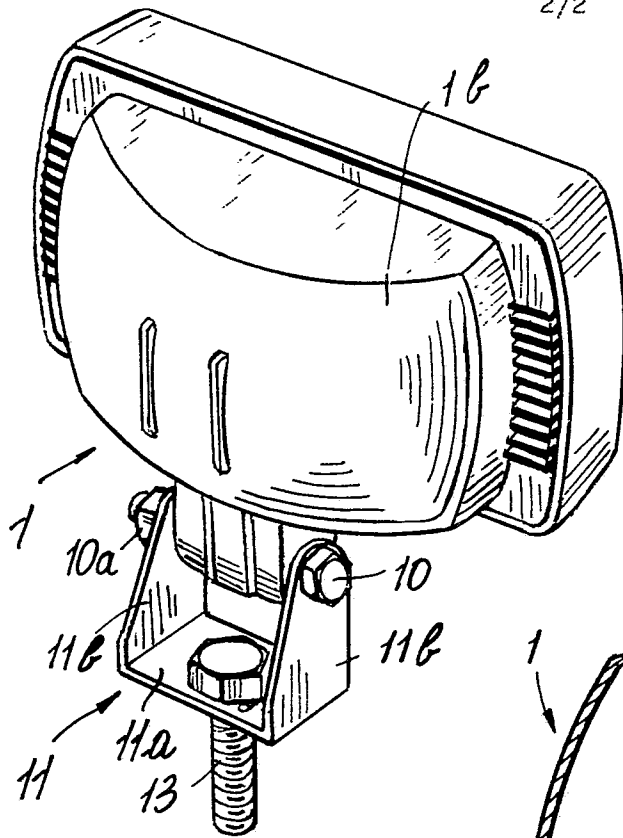
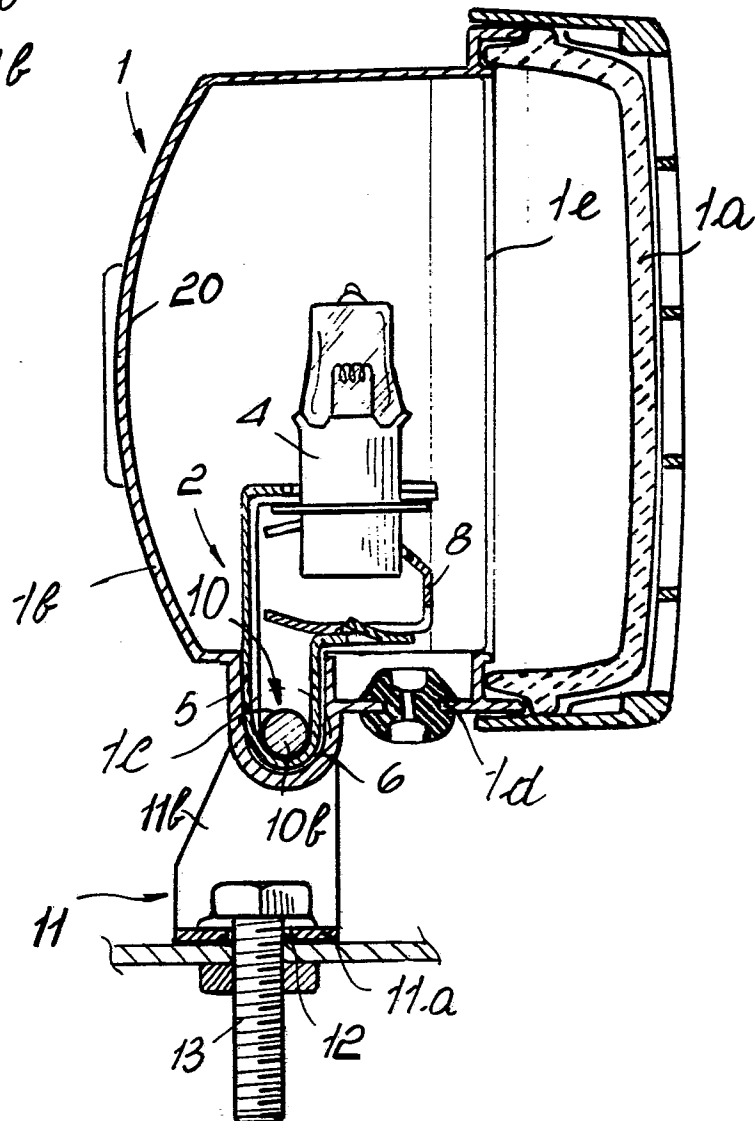


Fig. 4

Fig. 2





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.4)
X	GB-A-2 022 234 (SCHUSTER) * Whole document *	1,3	F 21 M 7/00
X	FR-A-1 494 768 (S.E.V.-MARCHAL) * Whole document *	1	
A	EP-A-0 071 585 (BELLU) * Page 4, lines 25-29 *	1,4	
			TECHNICAL FIELDS SEARCHED (Int. Cl.4)
			F 21 M F 21 V
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 22-10-1985	Examiner FOUCRAY R.B.F.
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	