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(11)

EP 1 624 244 A1

(12)

EUROPEAN PATENT APPLICATION

(43) Date of publication:
08.02.2006 Bulletin 2006/06

(51) Int Cl.:
F21V 9/08 (2006.01)

(21) Application number: **05380180.9**

(22) Date of filing: **03.08.2005**

(84) Designated Contracting States:
**AT BE BG CH CY CZ DE DK EE ES FI FR GB GR
HU IE IS IT LI LT LU LV MC NL PL PT RO SE SI
SK TR**
Designated Extension States:
AL BA HR MK YU

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(30) Priority: **04.08.2004 ES 200401905 U**

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(54) Signalling module for vehicle light assembly

(57) A signalling module for vehicle light assemblies comprising a reflector (1) on which a light source (2) is assembled, and in front of it a colour filter (3), and including an optical filter (4) and a trimming (5) arranged between the light source and the colour filter, the optical filter being made up of a series of lenses (6) arranged as

consecutive concentric rings which receive the light from the reflector and distribute it on the trimming, which consists in a disc-shaped part placed in front of the optical filter and having alternating opaque (11) and non-opaque rings (12), the latter being those which allow passage of the light coming from the optical filter.

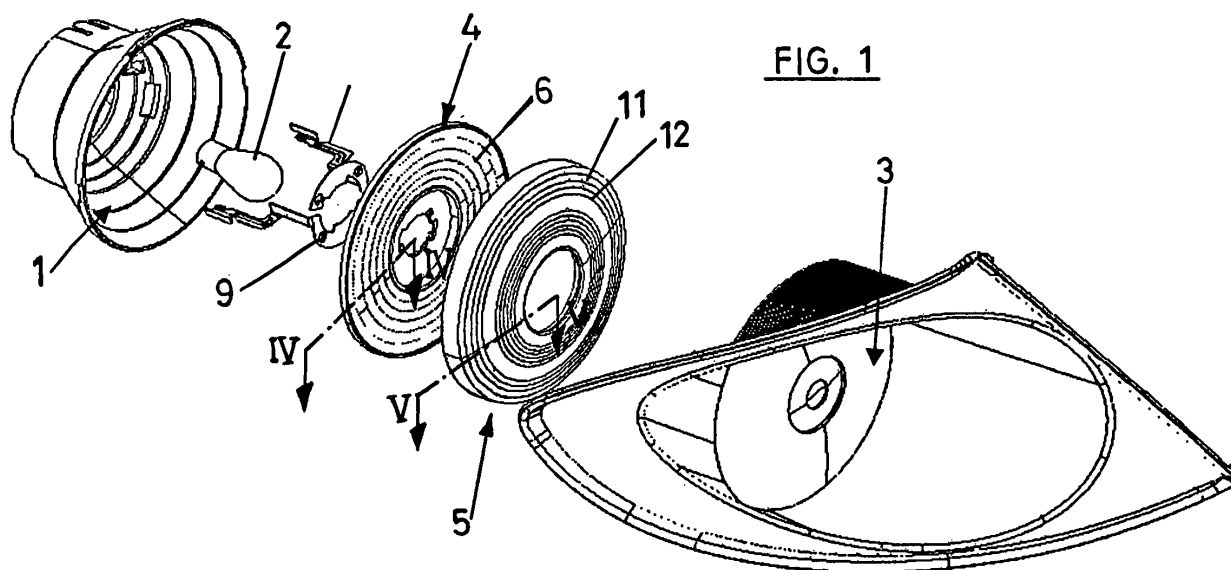


FIG. 1

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Description

[0001] The present invention refers to a signalling module for vehicle light assemblies, especially designed for being assembled inside a tail light and comprising a reflector assembled inside the tail light, a light source assembled inside the reflector, and a colour filter placed in front of the reflector, by means of which a suitable colour is obtained.

[0002] Signalling modules with the described makeup offer practically homogenous lighting through the entire surface of the colour filter, which does not allow achieving variations in intensity or characteristic effects.

[0003] The present invention has as an object a signalling module of the type set forth, including means allowing to offer a new image with respect to traditional solutions, and as new aesthetic possibilities, all this thanks to a lighting distribution obtained by means of an optical system with a novel makeup.

[0004] According to the present invention, the signalling module includes an optical filter and a trimming between the light source and the colour filter.

[0005] The optical filter is made up of a series of lenses in the shape of consecutive concentric rings which receive the light from the reflector and distribute it on the trimming.

[0006] For its part, the trimming is made up of a disc-shaped part arranged immediately in front of the optical filter and made up of opaque rings and non-opaque rings, located in alternating positions. The light coming from the optical filter passes through the non-opaque rings, reaching the trimming filter.

[0007] With the makeup set forth lighting is achieved distributed in concentric rings, which is homogenous in the entire surface for each one of the latter.

[0008] The filter lenses have a suitable section for distributing the light received from the reflector and the light source towards the transparent concentric rings of the trimming located immediately in front of them.

[0009] If necessary, the optical filter may incorporate some type of surface finishing on the ring-shaped lenses, for example moulding, sand blasting, chemical treatment, etc., in order to achieve greater homogeneity in light output or a new effect for such output. The colour filter will be placed in front of the trimming in order to achieve the desired colour, for example a red colour.

[0010] The optical filter may consist in a disc-shaped part made from a transparent plastic material in which the concentric ring-shaped lenses are formed.

[0011] The trimming may be of a plastic or metallic nature. In the first case it will be made from a transparent plastic on which an opaque coating or treatment will be applied, coinciding with the areas corresponding to the non-transparent rings, for example by a metallised coating. In the case that the trimming is metallic or made from any other opaque material, it will have ring-shaped openings coinciding with the non-transparent rings.

[0012] The part forming the optical filter has, on the

surface facing the reflector and inside the ring-shaped lens assembly, lugs on which anchoring tabs are fixed for anchoring to the reflector and which may, for example, be clipped into sockets made to that effect in said reflector.

[0013] The trimming will be fixed to the front part of the reflector by any suitable system, for example by means of clipping or by means of a bayonet system.

[0014] The makeup, lighting possibilities and effects achieved with the module of the invention shall be better understood with the following description, made in reference to the attached drawings in which a non limiting embodiment is shown.

[0015] In the drawings:

Figure 1 shows a perspective exploded view of a signalling module made up according to the invention.

Figure 2 shows a rear perspective view of the optical filter, showing the anchoring system of the same to the reflector.

Figure 3 shows a schematic diametral cross sectional view of the assembled module.

Figure 4 shows a cross sectional view of the optical filter, according to section line IV-IV of Figure 1, at a greater magnification.

Figure 5 shows a cross sectional view of the trimming, taken according to section line V-V of Figure 1.

[0016] Figures 1 and 3 show a signalling module including a reflector 1 in which a light source 2 is assembled, made up, for example, by an electric lamp. The module will be closed by a colour filter 3 through which the light coming from the light source 2 will pass with the desired colour.

[0017] An optical filter 4 and a trimming 5 are arranged between the light source 2 and the filter 3.

[0018] In the example shown in Figure 4, the ring-shaped lenses 6 have a curved concave cross section with decreasing thickness towards the centre.

[0019] The optical filter 4 is transparent and is made up of a series of continuous concentric ring-shaped lenses 6 with a suitable section for distributing the light received from the reflector 1 and the source 2, directing it towards the trimming 5.

[0020] As can be observed in Figure 2, the filter 4 can have on its rear side, opposite the reflector 1, lugs 7 on which tabs 8 are anchored through an anchoring plate 9 provided with openings 10 for fixing the lugs 7, which tabs 8 are fixed to the reflector 1 by means of clipping in sockets made to that effect, or by any other system.

[0021] Coming back to Figure 1, the trimming 5 comprises opaque concentric rings 11 and non-opaque concentric rings 12 arranged in alternating positions. These rings may be achieved, for example, from the same material as the trimmer or by metallising those areas that are to be opaque. In the example of Figure 5, the entire trimming 5 is made of a transparent material and it in-

cludes rings 11 of an opaque material on its outer surface within the transparent material, thus determining the alternating opaque rings 11 and transparent rings. The trimming 5 is fixed to the front part of the reflector 1 by means of a suitable system, such as by clipping or by means of a bayonet system. Finally, the light passing through the non-opaque rings of the trimming 5 will be seen through the colour filter 3, thus achieving the desired colour.

[0022] The described assembly makes up a signalling module for the stop, position, turning and intermittence functions offering a novel image with respect to traditional solutions and new aesthetic possibilities, achieving light distribution by means of an optical system providing homogenous lighting of concentric rings or circles.

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Claims

1. A signalling module for vehicle light assemblies comprising a reflector (1) on which a light source (2) is assembled, and a colour filter (3) located in front of the light source (2), by means of which the desired colour is obtained, **characterised in that** between the light source (2) and the colour filter (3) there are arranged an optical filter (4) and a trimming (5); which optical filter (4) is made up of a series of continuous concentric and consecutive ring-shaped lenses (6) which receive the light from the reflector (1) and distribute it over the trimming (5), and which trimming (5) consists in a disc-shaped part arranged immediately in front of the optical filter (4) and made up of alternating opaque rings (11) and non-opaque rings (12) through which non-opaque rings (12) the light coming from the optical filter passes.
2. A module according to claim 1, **characterised in that** the optical filter (4) is made up of a disc-shaped part made from a transparent plastic material in which the concentric ring-shaped lenses are formed.
3. A module according to the previous claims, **characterised in that** the optical filter (4) has, on the surface opposite the reflector and inside the ring-shaped lens assembly, lugs (7) on which anchoring tabs (8) for anchoring to the reflector (1) are fixed.
4. A module according to claim 1, **characterised in that** the trimming (5) is made up of a transparent material, on which an opaque coating or treatment is applied coinciding with the areas corresponding to the opaque rings (11).
5. A module according to claim 4, **characterised in that** the trimming (5) is made from a transparent plastic material including an opaque metallised coating coinciding with the non-transparent rings (11)

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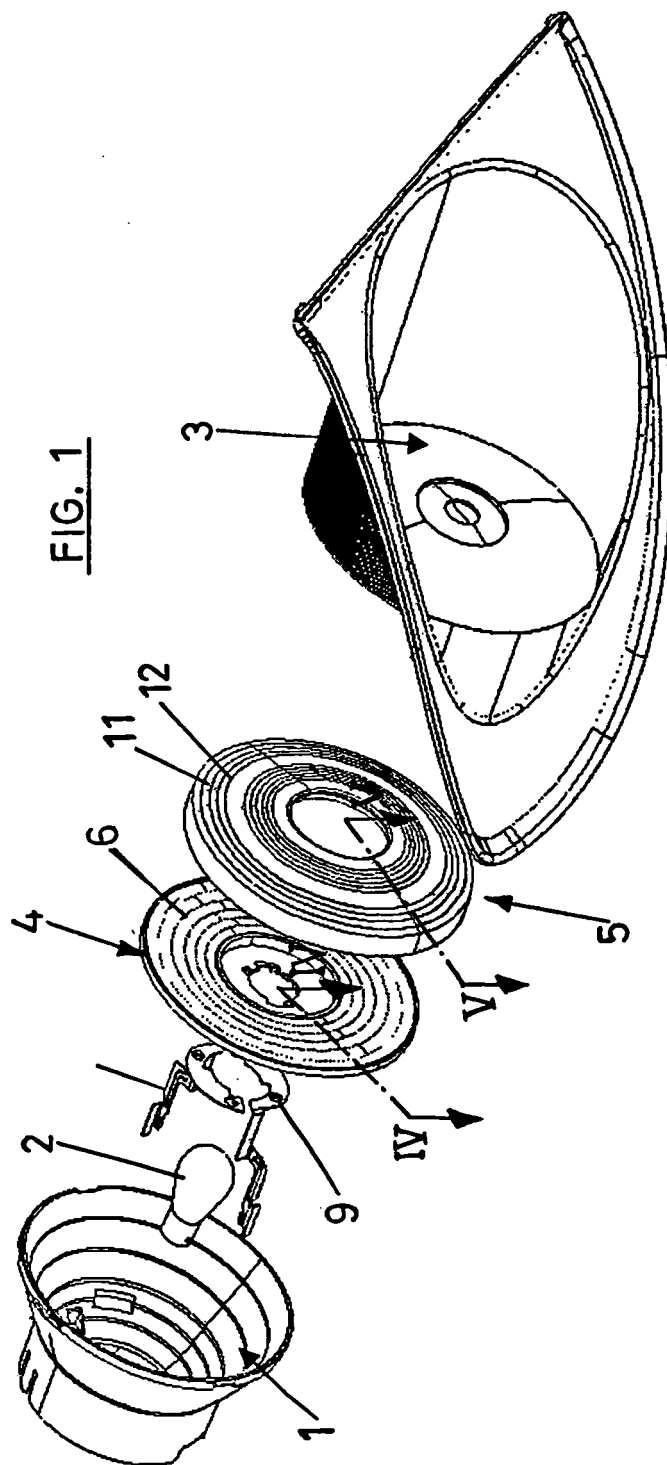
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6. A module according to claim 1, **characterised in that** the trimming (5) is made up of an opaque material having openings in the shape of rings coinciding with the opaque rings.



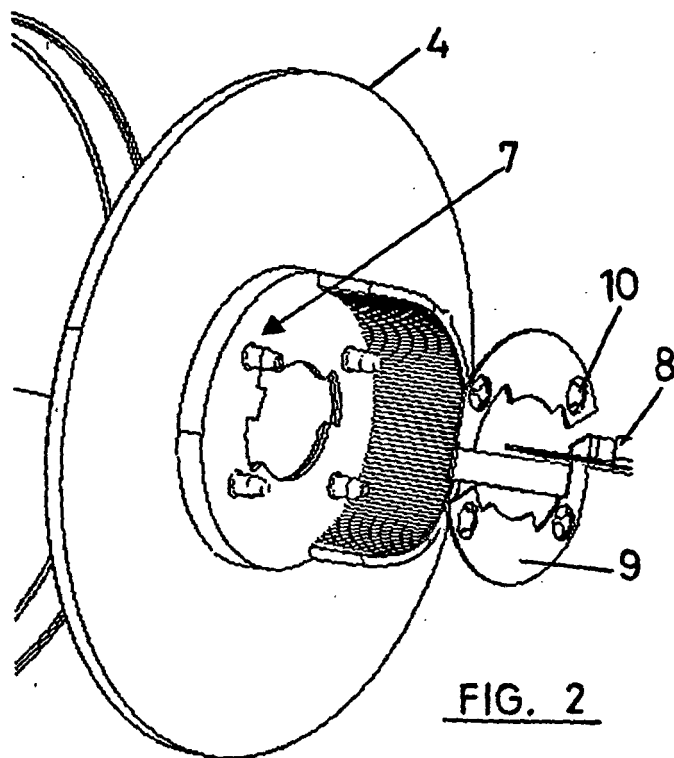


FIG. 2

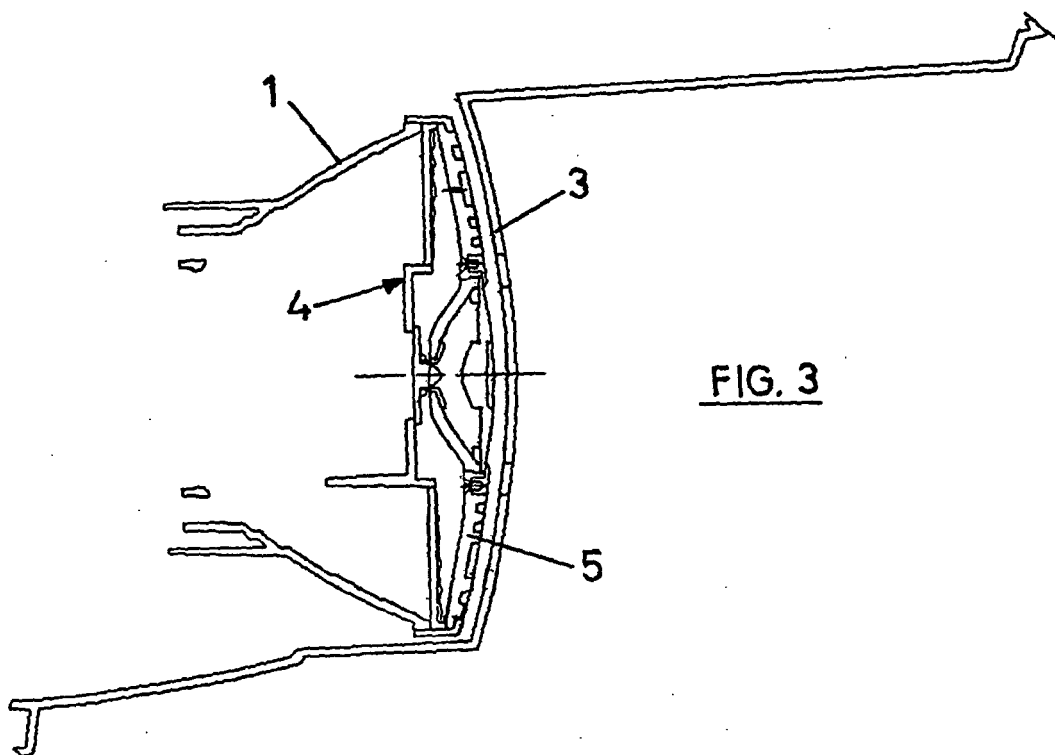


FIG. 3

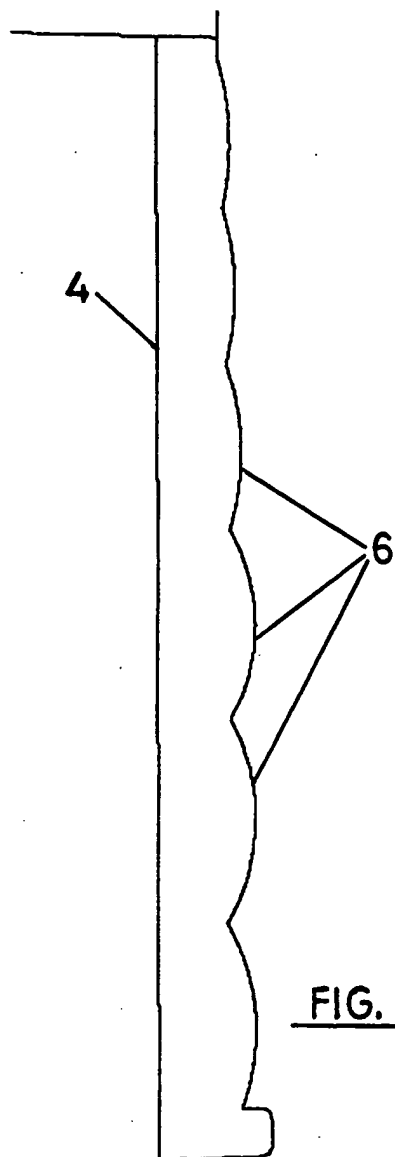


FIG. 4

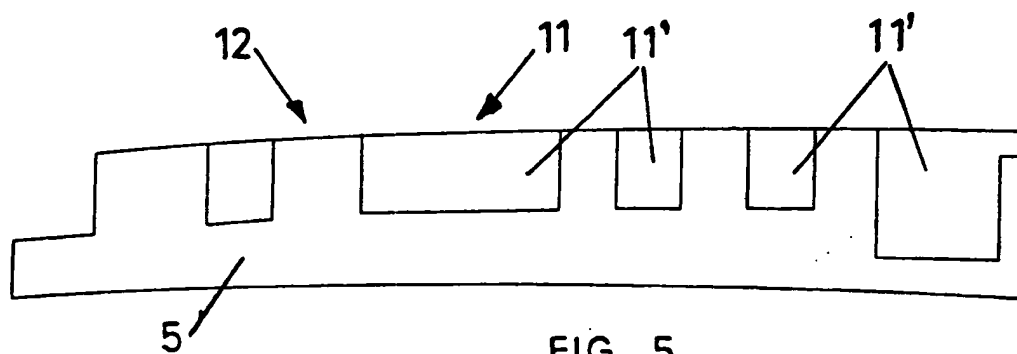


FIG. 5



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EUROPEAN SEARCH REPORT

Application Number
EP 05 38 0180

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The present search report has been drawn up for all claims			TECHNICAL FIELDS SEARCHED (IPC) F21V F21S B60Q
Place of search Munich		Date of completion of the search 14 November 2005	Examiner Arsac England, S
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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EPO FORM 1503 03.82 (P04C01)

**ANNEX TO THE EUROPEAN SEARCH REPORT
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