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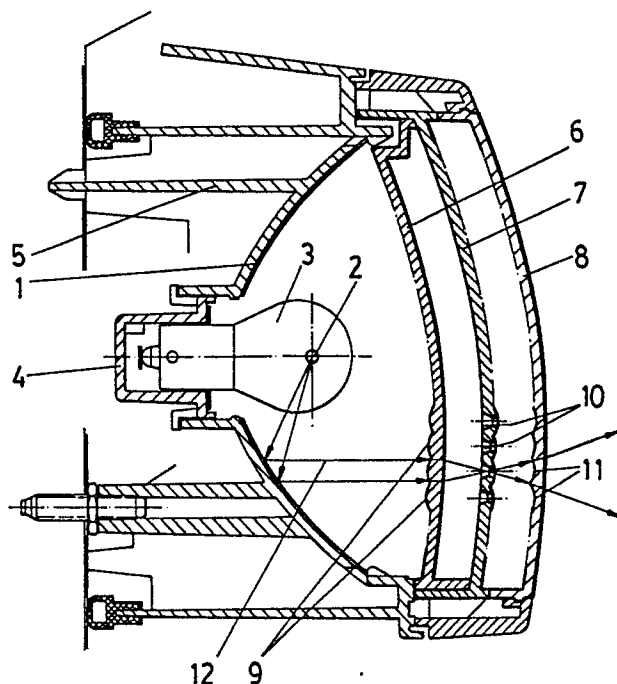
(11) Publication number:

**0 281 719  
A1**

(12)

**EUROPEAN PATENT APPLICATION**(21) Application number: **87500007.7**(51) Int. Cl.4: **F21Q 1/00**(22) Date of filing: **11.03.87**(43) Date of publication of application:  
**14.09.88 Bulletin 88/37**(84) Designated Contracting States:  
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**E-28010 Madrid(ES)**(54) **Improvements in luminous focuses for automobiles.**

(57) The invention concerns the scope of luminous focuses for automobiles, being centered in some improvements introduced in same, consisting in the closing of the classical reflector (1), which houses at its sine (2) the lamp (3) or the very luminous focus, through an inner filter (6), a perforated intermediate screen (7) and an external transparent lens (8), in a parallel disposition and sensibly distanced in between, the inner filter (6) being materialized in a multiple lens and being also multiple the external transparent lens (8), each unitary lens (9) of the internal filter (6) is grouped coaxially with a hole (10) of the intermediate screen (7) and with a unitary lens (11) of the external global lens (8) and being these elements diversely coloured, so that with the inner lamp lit it is obtained a chromatism different from that offered by the luminous focus in its whole when said lamp is off.

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## "IMPROVEMENT IN LUMINOUS FOCUSES FOR AUTOMOBILES"

### DESCRIPTION

#### OBJECT OF THE INVENTION.-

The present invention refers to a series of improvements introduced in the luminous focuses used in the scope of the automobile, which improvements are guided towards the consecution of a different chromatism under the operating situation and under the inoperating situation of the focus itself.

#### ANTECEDENTS OF THE INVENTION.-

As it is known, the luminous focuses used in automobile vehicles, like for instance the ones corresponding to their signalling lights are made up as from a reflector, provided with means for its fastening to the body of the vehicle, reflector in which sine is located a lamp or a very luminous focus, emerging the light to the outside, directly and reflected by said reflector, by means of a coloured filter, which determines the permanent colouring of the light in its while, with no further variation than a greater chromatic intensity when the lamp is lit.

On the other hand and as it is also known, the traffic rules require a certain colouring of the light emitted for each operation.

In many cases, said colouring goes against the harmony of design of the vehicle, for which it would be desirable a colouring to better match the colour of the body or that may even coincide exactly with the latter, in order that the lights in question tend to be unnoticeable, which obviously results impossible with the present technology.

#### DESCRIPTION OF THE INVENTION.-

The improvements which the invention proposes are orientated towards the consecution of this objective, allowing that when the luminous focuses in question are inoperative, that is, their corresponding lamps are off, they may offer to the observer any elected colouring, without practically any limitation to that effect, whilst in the operative situation they pass to adopt the specific colouring determined by the Traffic Standards.

Therefor, and in a more concrete mode, as from any conventional reflector, with its corresponding means of fixation to the body and means of support of the lamp or the very luminous focus, such a reflector is closed by means of an assem-

bly of three elements, concretely an inner filter, coloured, acting as a multiple convergent lens, an intermediate screen provided with perforations for the outlet of the light, which holes or perforations are operatively opposed to the respective unitary lenses of the previously cited filter, and finally, a transparent, divergent or convergent lens.

Complementarily, each of these three elements, inner filter, intermediate screen and lens, external, may be coloured.

By means of the adequate combination of colours for these three elements, it will be attained, in its whole, the obtention of two different colours for the pilot light, one under the on situation and another under the off situation.

In a more concrete way, if a coloured lens is used, under the operative situation of the pilot light of the colour obtained, it will be the one resulting from the mixture of the colour of the filter and of the colour of the lens, whilst under the operative or off situation, the colour shown by the pilot light in its whole will be the one obtained as the result of the mixture of the colour of said lens and of the perforated screen.

From the foregoing, it is deducted that for the obtention of a certain colouring of the pilot light under the operative situation, there exists a broad range of possibilities with respect to colouring that said pilot light shows under the inoperative situation, with only using adequate colours in the three basic elements, filter, screen and lens, so that their combination provides the results desired, required under the operative situation of the pilot light.

#### DESCRIPTION OF THE DRAWINGS.-

To complement the description that is being made and in order to help to a better understanding of the characteristics of the invention, it is enclosed to the present specification, as an integral part of same, one only sheet of drawings, in which, with an illustrative but not limitative character, and in its only figure, it has been represented a side elevation view, sectional, of a pilot light for automobile vehicles, made in accordance with the improvements object of the present invention.

#### PREFERENT EMBODIMENT OF THE INVENTION.-

On view of this figure, it can be noted how on a luminous focus made in accordance with the improvements preconized, it is started as from a

reflector 1, of any conventional configuration, over which geometrical focus 2 is located the lamp 3, or the very luminous focus, duly placed in the corresponding lamp-holder 4 and being said reflector 1 provided with means 5, also variable without any limitation to the effect, for their fixation to the body of the vehicle.

As from this basic structuration, the invention is centered in the fact that the cited reflector 1 is closed by means of three complementary elements, concretely an internal filter 6, an intermediate lamp 7 and an external lens 8, arched in correspondence with the practical requirements of design in each case, in a parallel disposition and sensibly distanced.

Concretely the internal filter 6 is materialized in a plurality of convergent lenses 9, in correspondence with which, and more concretely with its focal axes, the intermediate lamp 7 incorporates a plurality of perforations 10, whilst at the same time the external lens 8 is a multiple lens, with inner curved facets 11 which determine the fact that each unitary lens be divergent, or convergent, such as shown by the arrows represented in the figure.

As previously said, the inner filter 6 and the external surface of the perforated screen will be able to adopt different colorations, according to the practical requirements of each case, and the external lens 8, under any transparent case, will be able to adopt as well any colour or be colourless.

In accordance with this structuration and under the operative situation for the lamp or luminous focus 3, in accordance with the arrows represented in the figure, the luminous rays 12 when crossing the filter 6 will adopt the colouring of the latter and after crossing as well the perforated screen 7, with the holes 10 of the latter, will reach the lens 8, where its colour will be mixed with that of the latter, giving as a result a specific chromatism different from the unitary chromatism offered not only by the inner filter 6 but also by the external lens 8.

On the contrary, the lamp 3 is off, that is, when the pilot light is under inoperative situation, the environmental light will cross the lens 8, will be reflected at the external surface of the perforated screen, 7 which to that purpose adopts a lobular structuration, the colouring of the latter, and will cross again the external lens 8, giving as a result a mixture between the basic colours of said lens and of the screen, in the case that the latter be coloured, which chromatism will obviously be different from that generated when the lamp 3 is under activation.

It is, finally, necessary to highlight, and as it has already been previously said, that the configuration and structuration of the reflector 1 may be variable, without it affecting the essence of the invention, and that in a similar way, the means of

fixation for these three basic elements, filter, screen and lens, may also be variable, being merely examples the ones represented in the figure.

It is not considered as necessary to make this description more extensive so that any expert in the subject matter may understand the scope of the invention and the advantages derived from it.

The materials, shape, size and disposition of the elements will be susceptible of variation provided it does not mean an alteration to the essentiality of the invention.

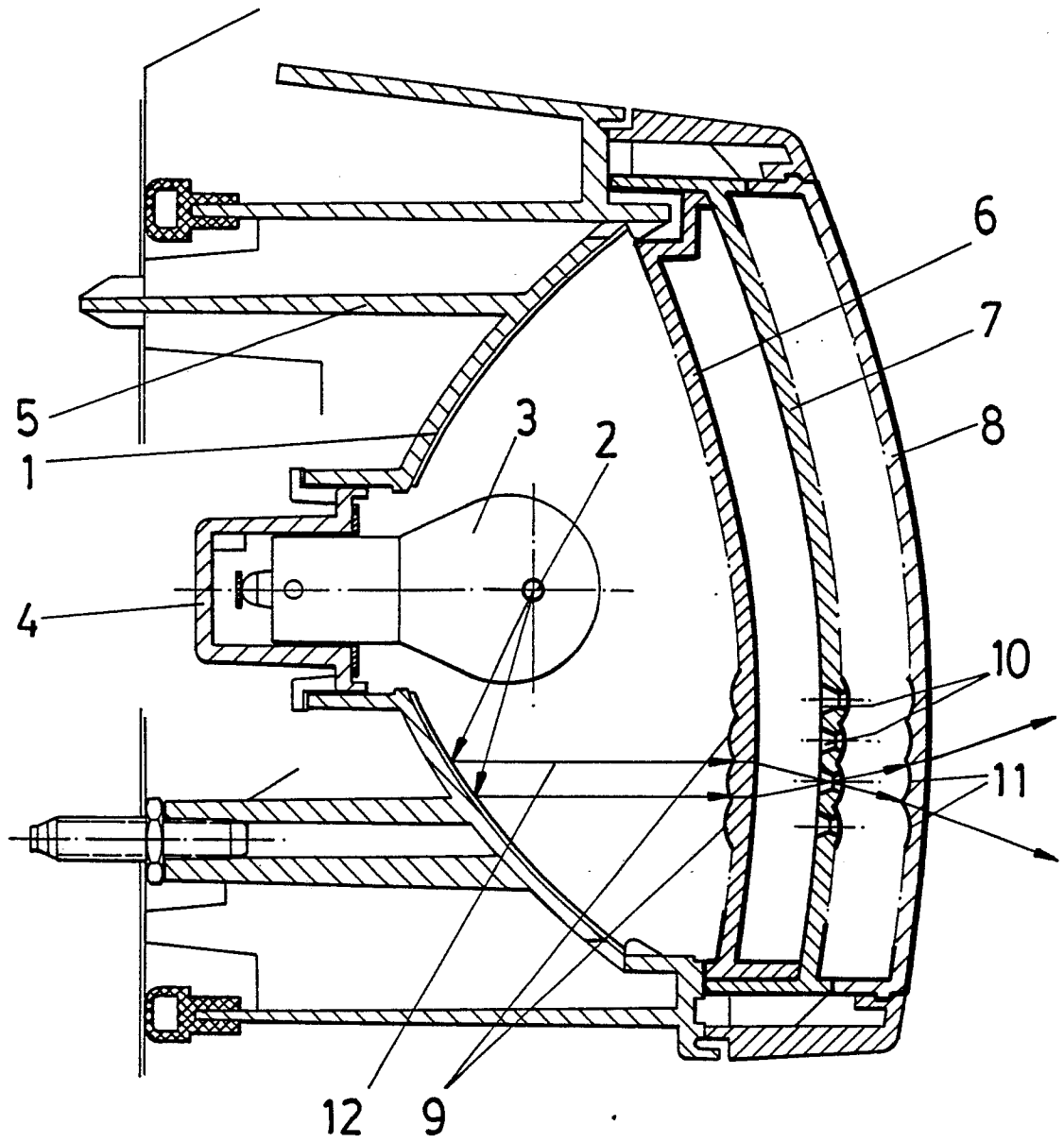
The terms under which this specification has been described should be always taken in a broad and not limitative sense.

## Claims

1.-Improvements in luminous focuses for automobiles, concretely in focuses provided with a reflector, provided with means for its fixation to the body of the vehicle, at which sine is established a lamp or the very luminous focus, essentially characterized in that they consist in the coupling to the outlet of the cited parabole, of an internal filter, a perforated intermediate screen and an external transparent lens, which elements, with any curvature, adopt a disposition of parallelism having it been provided that these elements be duly coloured, the external lens being able to even be colourless, so that under the operative situation of the lamp, the resulting chromatism be the one derived from the mixture of the colour of the filter, internal, and of the external transparent lens, whilst in the inoperative situation said chromatism is the one derived from the combination of the colour existing at the external surface of the opaque intermediate screen and of the external transparent lens.

2.-Improvements in luminous focuses for automobiles, as per claim 1, characterized in that the inner filter is materialized in a multiple lens, in which each unitary lens is convergent, the holes of the perforated screen coincide numerically and positionally with the unitary lenses of the filter, regarding which they are coaxially located, and the external transparent lens is also multiple, configuring a plurality of unitary, convergent or divergent, lenses.

3.-IMPROVEMENTS IN LUMINOUS FOCUSES FOR AUTOMOBILES, as described and claimed in the present specification, made up of eight pages, all of them typewritten, at only one of their faces, and is represented in the drawings herewith enclosed.





EP 87 50 0007

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	EP-A-0 138 588 (LUCAS INDUSTRIES) * Pages 5,6 *	1,2	F 21 Q 1/00
X	FR-A-2 517 804 (ROBERT BOSCH) * Whole document *	1,2	
X	FR-A-2 427 549 (LUCAS INDUSTRIES) * Whole document *	1,2	
X	FR-A-2 530 781 (CIBIE PROJECTEURS) * Page 14, lines 1-18 *	1	
			TECHNICAL FIELDS SEARCHED (Int. Cl. 4)
			F 21 Q
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 20-10-1987	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	