Dec. 20, 1966 S. GRUNNING ETAL 3,293,475

MULTIFILAMENT LAMP WITH A FULL SHIELD FOR ONE FILAMENT

Filed Feb. 13, 1964

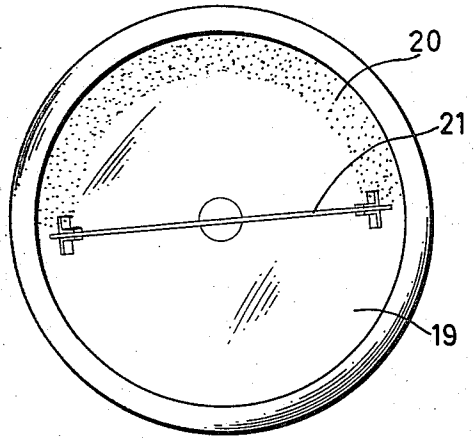


Fig.3

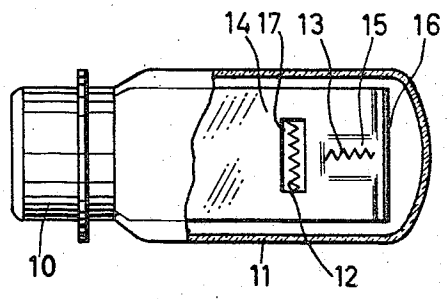


Fig.1

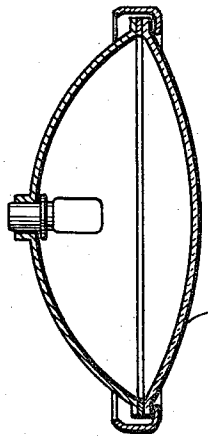


Fig.4

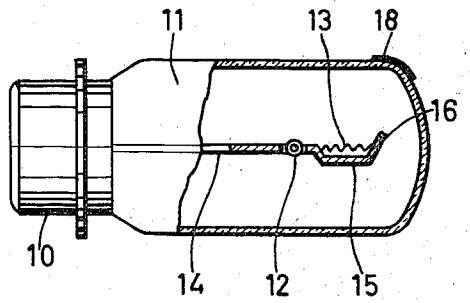


Fig. 2

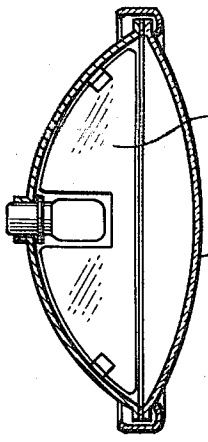


Fig.5

Sven Gunning and
Erling Nordmark inventors
By Wenderoth, Lind & Ponack, attys

United States Patent Office 3,293,475
Patented Dec. 20, 1966

3,293,475

MULTIFILAMENT LAMP WITH A FULL SHIELD FOR ONE FILAMENT

Sven Grunning, Furugvagen 48, Sandviken, Sweden, and Erling Nordmark, P.O. Box 179, Kungsgarden, Sweden

Filed Feb. 13, 1964, Ser. No. 344,593
Claims priority, application Sweden, May 8, 1963, 5,036/63
4 Claims. (Cl. 313—117)

In automobile headlights there has been existing for a long time a demand for a more satisfying light in connection with cars approaching each other. Hitherto, it has been a trouble that a light beam, which is directed low enough not to blind the driver of an approaching car has too short a reach to give a satisfying illumination of the road. If the reach is increased, then the light becomes blinding.

To a large extent the blinding effect of the light is due to the fact that rays of light from the lowermost portion of the headlight reflector are thrown upwardly against the approaching person. Such light rays have no useful effect for the illumination of the road, for which reason they may advantageously be eliminated.

One object of the present invention is to provide a shielding of the dim light by means of a shield disposed within the light bulb, which shield is adapted to shield off such light rays that would otherwise be reflected against the lowermost portion of the headlight reflector. Thereby, such light rays which would otherwise be reflected against the inner surface of the uppermost portion of the bulb glass and would have a strongly blinding effect are shielded off.

The invention will now be described more in detail, reference being had to the accompanying drawing.

FIG. 1 is a plan view of a glow lamp according to the invention, partly in section;

FIG. 2 is a side view of the glow lamp in FIG. 1, partly in section;

FIGS. 3 and 4 show the entire headlight in front view and a vertical, axial section, respectively;

FIG. 5 is a horizontal, axial section of the headlight in FIG. 3 for illustrating the arrangement of a secondary shield plate around the glow lamp.

The glow lamp in FIG. 1 comprises a socket **10** with a glass bulb **11**. In the usual way the glow lamp has one long range filament **12** and another dim light filament **13**. As in conventional headlight bulbs the dim light filament is disposed in a recess **15** in a shield plate **14** which prevents light rays from passing to the lowermost portion of the reflector. Furthermore, an upwardly directed lug **16** of the shield plate prevents direct light rays from the dim filament from blinding the approaching. Preferably, this lug should extend upwardly for a distance long enough to prevent such direct light beams also from reaching any part of headlight lens, so as to eliminate any unnecessary glare at the uppermost lens portion.

In conventional headlight bulbs the shield plate ends immediately rear of the dim filament **13**, and the long distance filament **12** is disposed to the rear of the plate edge. This has the drawback that an essential quantity of the light from the dim filament is reflected against the inner surface of the uppermost portion of the bulb glass, and then against the lowermost portion of the headlight reflector, so that the boundary-line between the lightened and unlightened zones becomes blurred and blinding occurs. Thus, there arises a secondary light spreading via the bulb glass, which secondary spreading counteracts the shielding as intended by means of the plate around the dim filament.

The invention remedies this drawback and improves the shielding of the dim filament by extending the shield plate rearwardly and widening the same laterally, so that no portion of the light reflected against the bulb glass is allowed to pass on downwardly to the lowermost portion of the headlight reflector. To obtain the full effect from the long distance filament **12** in a glow lamp of this construction it is necesary to dispose this filament in an aperture **17** in the shield plate, so that the long distance filament is allowed to spread its light unobstructed both upwardly and downwardly. The shield plate is preferably light reflecting.

To improve the shielding of the direct light rays from the dim filament the glow lamp may advantageously be provided with a non-translucent layer **18** on the uppermost front portion. This layer may be reflecting, so as to minimize the losses.

As is illustrated in FIGS. 3 and 4 the uppermost portion of the headlight lens **19** may have a frosted zone **20** to spread blinding edge light rays.

In FIG. 5 there is shown a secondary shield plate **21**, which is disposed around the glow lamp within the headlight so as to effectively shield off all the secondary light rays that would otherwise be reflected against various parts of the headlight, such as the lens fitting or the inner surface of the lens. This secondary shield plate has also been shown in FIG. 3 and, as shown in this figure, this plate may be slightly inclined to the horizontal so as to bring about an asymmetrical effect from the dim light. Advantageously, the secondary shield plate is light reflecting.

The invention is of great importance in connection with the elimination of disturbing secondary reflections from e.g. the inner surface of the bulb glass and the headlight lens, and it ensures in a simple manner an effective shielding of such undesirable reflexions. In this manner the limitation of the uppermost portion of the beam of light becomes sharp, so that said limitation may be laid comparatively flat to enable lightening of a long road portion without blinding effects. Inasmuch as upwardly directed secondary light rays are eliminated the sight is improved also in that the eyes are no longer compelled to penetrate a zone of lightened particles of dust, water drops and the like. Instead the eyes see the lightened road surface directly through a well darkened zone.

What we claim is:

1. A glow lamp for automobile headlights and the like, having a long distance filament and a dim filament and a shield below said dim filament, said shield extending from the lamp base forwardly along a substantially horizontal plane level with the center of the lamp, said shield covering the major part of the space within the glass envelope along said plane, the lateral edges and the front edge of the shield being only slightly spaced from the inner side of the glass envelope, the long distance filament being situated in an aperture in said shield at the rear of said dim filament.

2. A glow lamp for automobile headlights and the like, having a long distance filament and a dim filament and a shield below said dim filament, said shield extending from the lamp base forwardly along a substantially horizontal plane level with the center of the lamp, said shield covering the major part of the space within the glass envelope along said plane, the lateral edges and the fore edge of the shield being only slightly spaced from the inner side of the glass envelope, the front of said shield being bent so as to form a front shield for the dim filament, the long distance filament being situated in an aperture in said shield at the rear of said dim filament.

3. An automobile headlight having a glow lamp as claimed in claim 2, and further having between the outer

surface of the glow lamp and the inner surface of the headlight a non-translucent, secondary shield plate, which is slightly inclined to the horizontal.

4. A glow lamp for automobile headlights and the like, having a long distance filament and a dim filament and a shield below said dim filament, said shield extending from the lamp base forwardly along a substantially horizontal plane level with the center of the lamp, said shield covering the major part of the space within the glass envelope along said plane, the lateral edges and the fore edge of the shield being only slightly spaced from the inner side of the glass envelope, the long distance filament being situated in an aperture in said shield rear to said dim filament, said two filaments being arranged in the same plane and at right angle to each other.

References Cited by the Examiner

UNITED STATES PATENTS

2,071,979	2/1937	Honing et al.	313—117
2,277,685	3/1942	Bergstrom	240—41.25
2,843,779	7/1958	Darsie	313—114

JAMES W. LAWRENCE, *Primary Examiner.*

C. R. CAMPBELL, *Assistant Examiner.*