Feb. 1, 1944. F. R. DIETRICH 2,340,515

REFLECTOR FOR HEADLIGHTS

Filed March 24, 1941

Fig. 1.

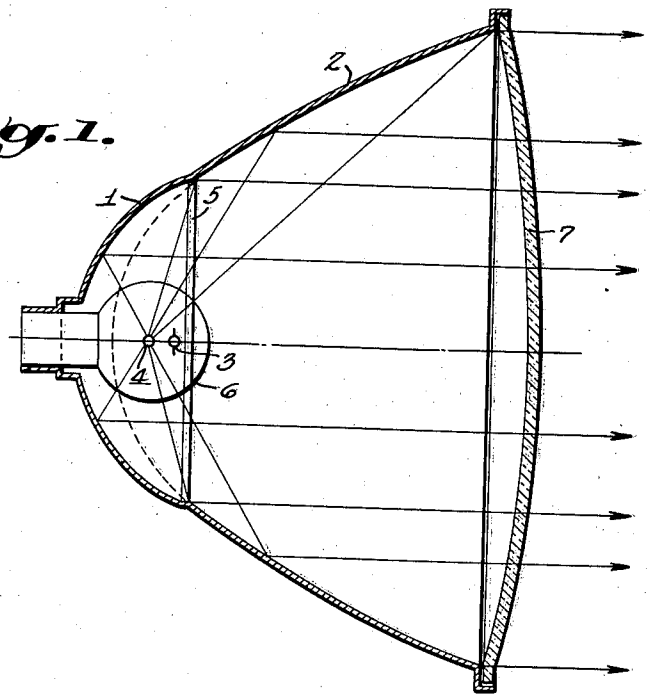
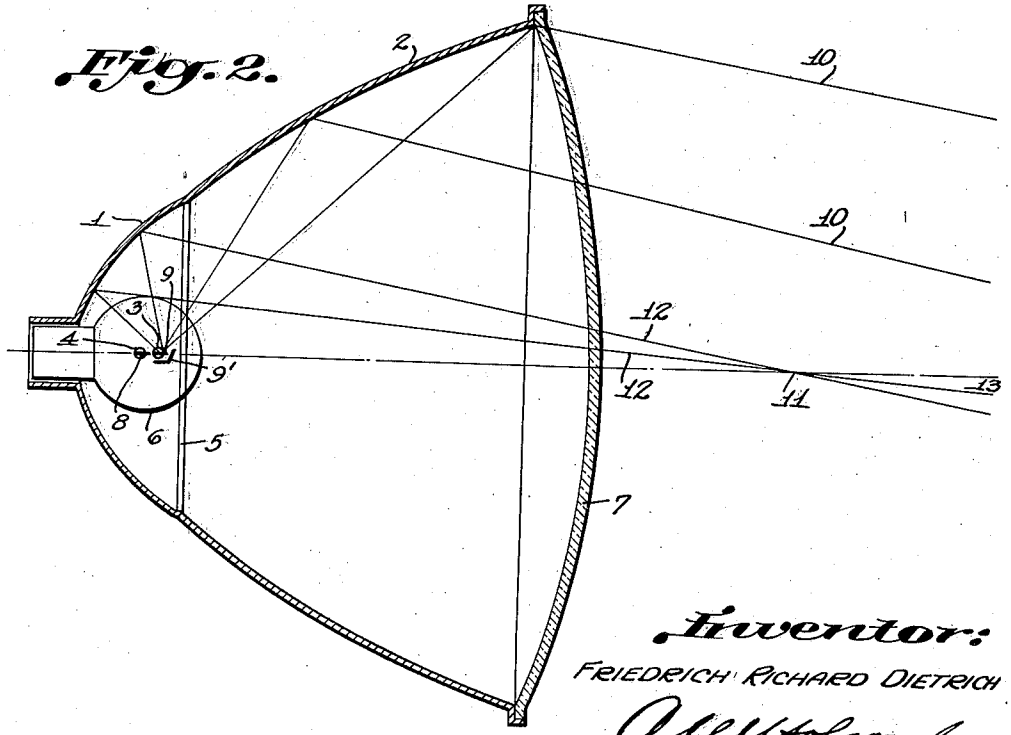


Fig. 2.



Inventor:
FRIEDRICH RICHARD DIETRICH
By Allstolcombe
Attorney.

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REFLECTOR FOR HEADLIGHTS

Friedrich Richard Dietrich, Munich, Germany; vested in the Alien Property Custodian

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1 Claim. (Cl. 240—41.35)

The present invention relates to headlights and more particularly to headlights with reflectors having an ellipsoidal vertex part combined with a paraboloidal rim part.

One object of the present invention is to provide a headlight of the type mentioned which is capable of producing a substantially parallel beam of light without requiring any parallelizing lens for the light rays reflected from the ellipsoidal vertex part of the reflector.

Another object of the invention is to design a headlight capable of producing a dimmed light of substantially uniform density over the whole area illuminated, said dimmed light having a sharply defined outline and being free of dazzling effects.

These objects are accomplished by the arrangement and combination of parts set forth in the following detailed specification, defined in the appended claim and illustratively exemplified in the accompanying drawing, in which:

Fig. 1 is a longitudinal section of a headlight according to the invention showing the paths of the light rays emanating from a main source of light, and

Fig. 2 is a longitudinal section of a modified headlight showing a screened auxiliary source of light and the path of the light rays emanating from the latter.

Referring now to the drawing and first to Fig. 1, the headlight includes a reflector comprising an ellipsoidal vertex part 1 having a focus 3 and a paraboloidal rim part 2 having a focus 4 disposed between the focus 3 and the vertex of the reflector. The plane 5, containing the front edge of the ellipsoidal vertex part 1 of the reflector, lies, in the example illustrated, in front of both foci 3 and 4.

That filament of the bulb 6, which forms the main source of light for the head light is disposed in or substantially in the focus 4 of the paraboloidal rim part 2 and rearwardly of the focus 3 of the ellipsoidal vertex part 1. The rays emanating from this filament are thus reflected approximately parallel by both parts 1 and 2 of the reflector, as shown in Fig. 1 so that no parallelizing lens need be provided. A slight diffusion of the light reflected by the part 1 will occur at a considerable distance in front of the reflector. The aperture of the reflector may be covered by a simple glass pane 7.

According to Fig. 2, the bulb 6 comprises in addition to the main filament 8 disposed in the focus 4, an auxiliary downwardly screened filament 9 for dimmed light, disposed substantially in the focus 3 of the ellipsoidal vertex part 1. A suitable screen 9' is used for screening the filament 9. The auxiliary filament 9 is thus defocussed forwardly in the usual manner relative to the paraboloidal rim part 2, which latter thus produces the downwardly directed rays 10, whereas the rays emanating from the auxiliary filament 9 which strike the ellipsoidal reflector part 1, are reflected as a pencil of rays 12 converging at the point 11 and leaving in front of the point 11 a dark zone 13, which is illuminated by the downwardly inclined rays reflected from the paraboloidal rim part 2. A uniform light distribution is obtained in this manner with the outline of the illuminated area being sharply defined and dazzling effects practically eliminated.

What I claim is:

A headlight comprising a reflector having an ellipsoidal vertex part and a paraboloidal rim part; said parts joining in a plane in front of and close to the rear focal plane of the ellipsoidal part; the focus of the paraboloidal part being disposed between the rear focus of said ellipsoidal part and the vertex of the reflector; a light source at the focus of the paraboloidal part, whereby when said light source is energized a parallel beam of light from both reflector parts is produced; a second light source at the rear focus of said ellipsoidal part, and a screen below said second light source, whereby a downward beam of light is produced from both reflector parts when said second light source is energized.

FRIEDRICH RICHARD DIETRICH.