

April 18, 1933.

S. W. H. TURNER
AUTOMOBILE HEADLIGHT

1,904,574

Filed May 29, 1931

Fig. 1.

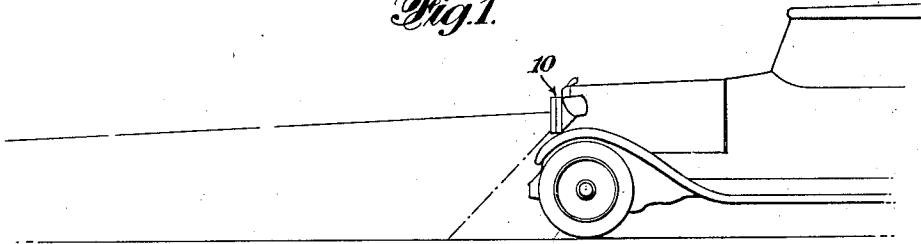


Fig. 2.

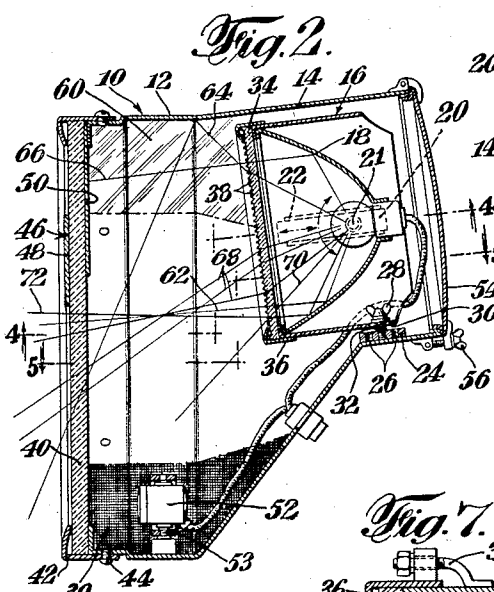


Fig. 6.

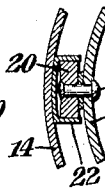


Fig. 3.

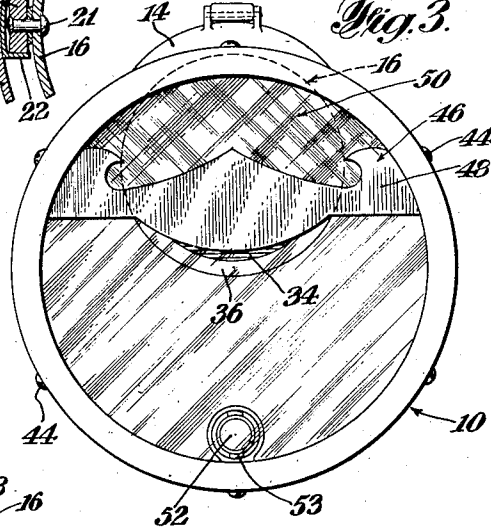


Fig. 7.

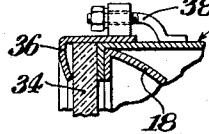


Fig. 4.

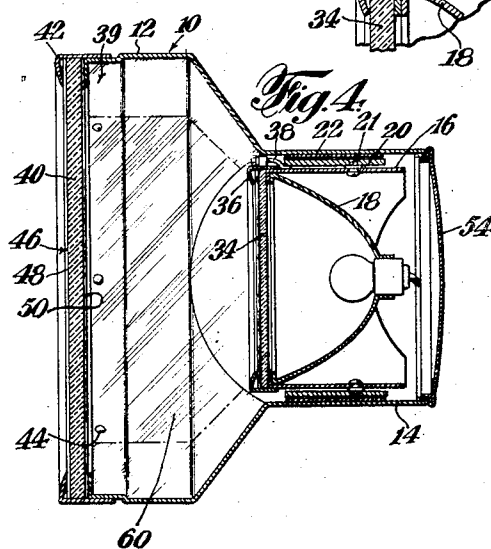
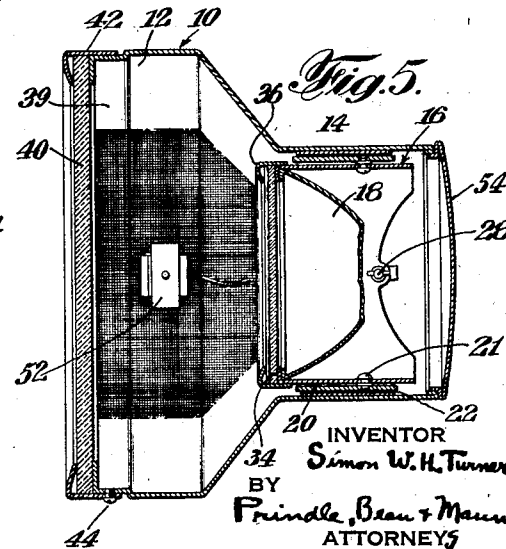


Fig. 5.



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AUTOMOBILE HEADLIGHT

Application filed May 29, 1931. Serial No. 540,870.

This invention relates to glareless headlights generally, and particularly to headlights for automobiles.

Glare is caused by upwardly projecting light rays which strike the eyes of the approaching driver. Various shields and translucent shades for headlights have been devised but practically all either allow some glare or so restrict the light that they fail in their purpose.

Therefore, I have devised a glareless adjustable headlight characterized by the fact that a tilted reflector for the bulb directs the light downwardly through a diffusing plate, and that some distance in front of the diffusing plate there is placed a vertical shield, the lower edge of which is not substantially above the lower edge of the plate. The whole assembly is contained in a metal casing. By using a powerful bulb, a brilliant flood of light results directly in front of the vehicle and certain beams are cast a good distance in front thereof. I may make the shield partly translucent because a driver approaching a car equipped with a headlight embodying my invention would otherwise have difficulty in placing the vehicle, inasmuch as the emitted light rays, almost without exception, are directed downwardly against the ground, and no light rays of any appreciable intensity are directed upwardly.

My invention can be readily comprehended from the accompanying drawing which is for the purposes of illustration only, it being understood that my invention is capable of many embodiments and is not to be restricted solely to the form shown.

In the drawing:

Fig. 1 is a side elevation of a car with a headlight embodying my invention; Fig. 2 is a vertical cross section of the headlight; Fig. 3 is a front view of the headlight; Fig. 4 is a plan view looking upwardly on the line 4—4 of Fig. 2; Fig. 5 is a plan view taken on line 5—5 of Fig. 2; Fig. 6 is a section showing a slide for adjustably positioning a reflector and Fig. 7 is a section showing the positioning means for the diffusing plate.

A headlight casing 10 is formed with a main housing 12 and the reflector housing

14 which latter is slightly tilted downwardly. Housings 12 and 14 are preferably made integral. An inner casing 16 has preferably a parabolic reflector 18 spot welded in it, and is positioned within the housing 14 by slides 20, which are constructed to rock about pivots 21. Slides 20 slide lengthwise in grooves 22 mounted upon housing 14. A plate 24 with a plurality of holes 26 is also mounted upon housing 14. A wing screw 28 projects through slot 30 in casing 16 and runs through a spring 32 and may be positioned in any of the holes 26. Tightening or loosening the screw 28 rocks the casing about the pivots 21. Therefore, reflector 18 may be adjusted both horizontally and vertically by varying the positioning of slides 20 and the screw 28.

A diffusing plate 34, mounted in a metallic rim 36 is removably positioned upon casing 16 by lugs 38 (Fig. 7) so that it is directly in front of reflector 18. Any standard light distributing plate may be used, but it is preferable to utilize a diffusing plate as shown which is provided, preferably on its front face, with a series of prisms 38 which, while permitting some light rays to pass through directly, will bend the greater proportion of the light rays either up or down.

Mounted in the opening 39 of main housing 12 and a substantial distance in front of plate 34, is a transparent pane of glass 40 held by rim 42 which latter is removably positioned by screws 44.

To prevent the upwardly directed rays from escaping from the housing through the glass 40, a shield 46 is positioned so that it runs from the top of glass 40 downwardly, preferably in a vertical plane as shown. It will be noted that the lower edge of the shield 46 is curvilinear and conforms substantially in shape with and is only slightly above the lower edge of diffusing plate 34. If desired, the shield may be made in two parts as shown; a metal strip such as 48 running from side to side of rim 42, and a translucent shade as at 50 which may for example be made of yellow tinted mica.

If desired, a powerful auxiliary light such as 52 may be positioned in the lower portion

of housing 12, as shown, and this may be mounted upon a pivot such as 53 so that the light can be cast to one side of the vehicle. The details of such an auxiliary light form no part of the present invention and so are not described fully.

Casing 16 is made readily available for adjustment by hinged door 54, which latter may be held in place by such means as wing nut 56. By releasing wing screw 28, the entire reflector and plate assembly can be withdrawn through door 54.

The interior of the lower portion of the housing 12 should be colored with a light absorbent color, such as black so that no rays will be reflected upwardly and the upper portion may be made highly reflective as at 60 so that certain rays of light will be reflected downwardly in front of the vehicle.

The headlight is mounted and wired in the usual manner, and this is, therefore, not illustrated.

For general operation the casing 16 is adjusted vertically and horizontally so that certain rays such as 62 are cast in front of the car parallel to the horizontal axis of the reflector. When the casing and the reflector are tilted slightly downwardly, rays 62 are projected at a substantial distance in front of the car. Other rays such as 64 will be refracted as they pass through plate 34 so that they strike the highly reflective surface at 60 and are projected downwardly in front of the vehicle. With a powerful bulb, a strong flood of light results in front of the car. Other rays such as 66 illuminate in an attractive manner the translucent shade 50. Such rays as 68 are refracted so that they will project a good distance in front of the vehicle.

It is here important to state that the lower edge of shield 48 may be positioned slightly above the lower edge of plate 34 because the direct rays such as 70 are beyond the critical angle of upward refraction and the few reflective rays such as 72 capable by their position of passing upwardly past shield 48 are negligible in quantity and effect. Also if the headlight is used for city driving alone, the angle of the casing 16 as contrasted with the housing 12 can be decreased so that there is no upwardly projecting light whatsoever.

What I claim is:

1. In combination, a casing for a headlight having a substantial part of the upper front portion thereof covered by a shield adapted largely to interrupt the passage of light rays, a second casing within the first casing so positioned as to be substantially covered by said shield when viewed from a point horizontally in front of the first casing, a downwardly tilted reflector and a light source in said second casing, and a plate mounted at the front of said second casing a substan-

tial distance in front of said light source provided with prisms adapted to bend a substantial proportion of the light rays from said light source either upwardly or downwardly.

2. A structure as specified in claim 1 in which the interior of said first casing is light reflective on its upper portion and light absorptive on its lower portion.

In testimony that I claim the foregoing, I have hereunto set my hand this 28th day of May, 1931.

SIMON W. H. TURNER.