Aug. 7, 1928. 1,680,037

A. R. DE TARTAS

ANTIGLARE ATTACHMENT FOR HEADLIGHTS

Filed Dec. 13, 1926 2 Sheets-Sheet 1

Fig. 1.

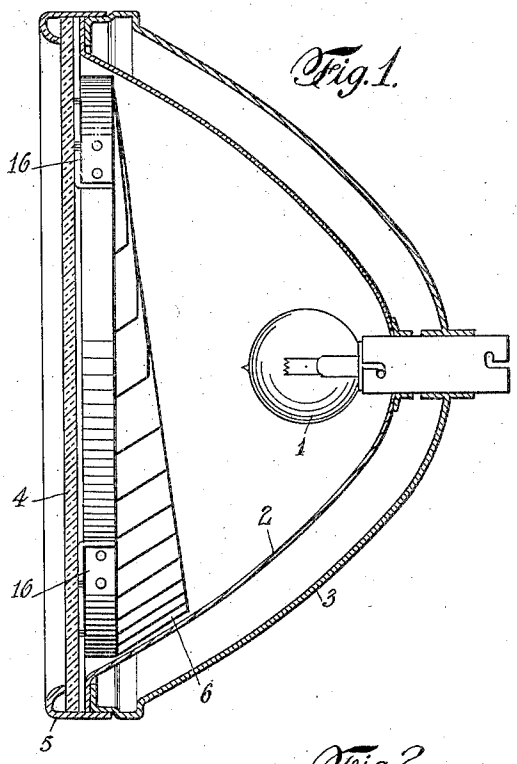


Fig. 3.

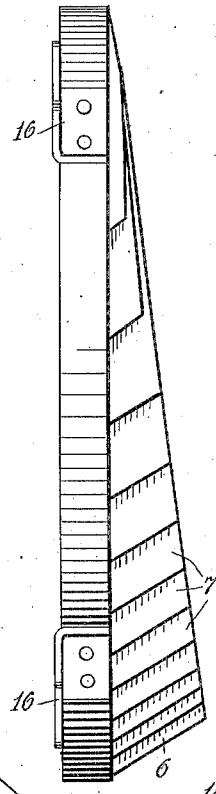


Fig. 4.

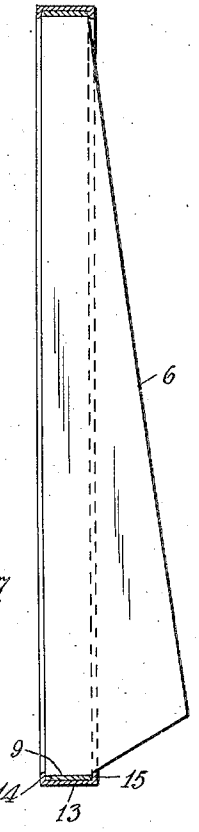


Fig. 2.

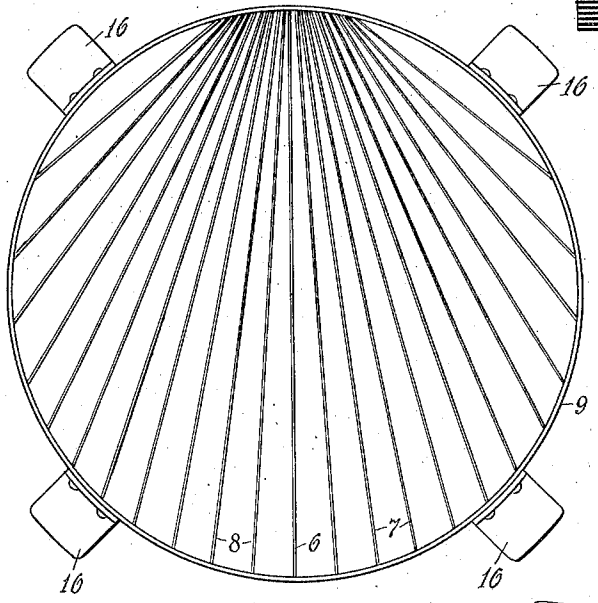
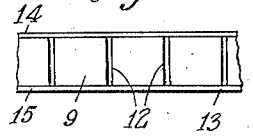


Fig. 5.



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Fig. 6.

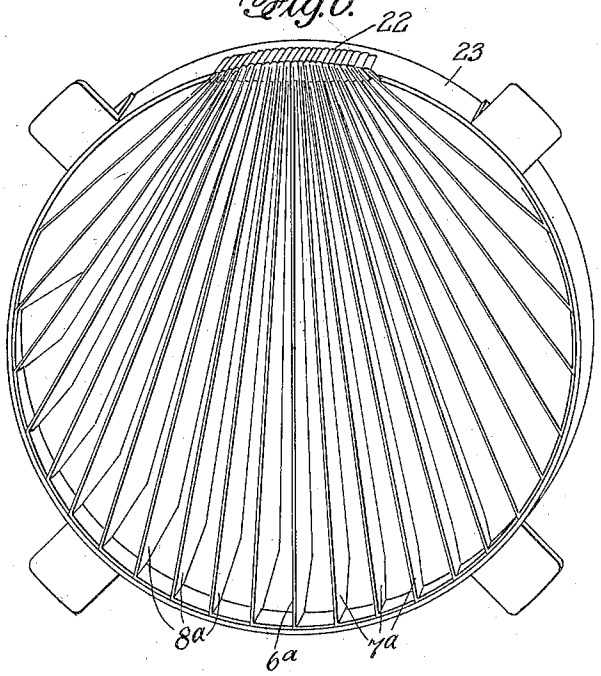


Fig. 7.

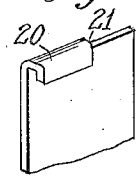


Fig. 9.

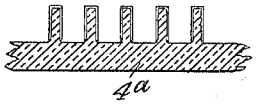


Fig. 10.

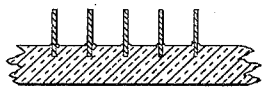
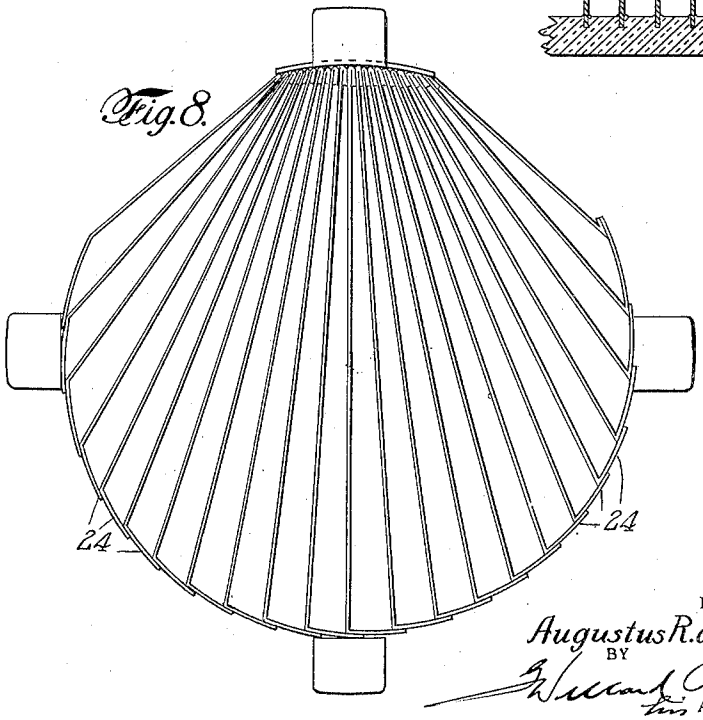


Fig. 8.



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UNITED STATES PATENT OFFICE.

AUGUSTUS R. DE TARTAS, OF LONG ISLAND CITY, NEW YORK, ASSIGNOR TO EMERY C. WELLER AND E. WOODWARD DUKE, BOTH OF NEW YORK, N. Y., AND JOHN B. CORNELL, OF ORANGE, NEW JERSEY.

ANTIGLARE ATTACHMENT FOR HEADLIGHTS.

Application filed December 13, 1926. Serial No. 154,348.

My present invention generally stated has for its object to provide a device adapted to be used in conjunction with a source of illumination for reducing the glare of the beam of light in the eyes of the observer without materially diminishing its effect in the intended field of illumination. More specifically my invention has for its object to provide an anti-glare device which may be used as an attachment for headlights, such as automobile headlights, whereby the blinding effect of a strong beam of light may be obviated without limiting the intensity of the projected beam, either for illumination of objects at a distance and in a direct line with the lamp, or objects in areas at the side and front of the lamp by the laterally dispersed rays intended for this purpose.

To these and other ends my invention consists in certain improvements and combinations of parts all as will be further described and particularly pointed out in the claims at the end of this specification.

In the drawings:

Fig. 1 is a vertical cross sectional view of an automobile headlight illustrating an anti-glare device embodying my invention applied thereto.

Fig. 2 is a front elevation of a commercial form of the device.

Fig. 3 is a side elevation of the structure shown in Fig. 2, slightly enlarged.

Fig. 4 is a vertical central sectional view.

Fig. 5 is a detail illustration showing the slots formed in the inner surface of the blade supporting ring.

Fig. 6 is a perspective view showing a modification of the means employed for mounting the blades.

Fig. 7 is a detail view of the upper end of one of the blades as they are used in the form shown in Fig. 6.

Fig. 8 is a view similar to Fig. 2 illustrating the manner in which the blades may be formed and assembled to obviate the use of a separate supporting ring.

Fig. 9 is a horizontal sectional view illustrating a modification of the invention in which the blades are molded integrally on the face of a cover glass or headlight lens, and Fig. 10 is a similar view showing metal ribs secured to the face of the cover glass.

Similar reference characters in the several figures indicate similar parts.

In carrying out my invention, I employ a plurality of thin blades arranged side by side with their planes parallel to the axis of the light beam so that the direct or forwardly projected rays are not diverted. These blades are disposed sufficiently far apart so as not to diminish the intensity of the light beam, but are of such a depth that rays which would otherwise be reflected into the eyes of an observer, located slightly at one side of the axis of the light beam and at a distance from the lamp, will be cut off. Further the blades are disposed relatively to each other as by arranging them in fan shape or in substantially radial position, from a point at one side of the light beam so that a given portion or sector of the beam will be diminished in intensity to such a point that the otherwise blinding effect of that portion of the beam, or pencil of rays, may be eliminated. In connection with automobile headlights the portion of the beam which causes most inconvenience to observers, especially the drivers of approaching cars, is that formed by the upwardly and laterally reflected rays, hence I converge the blades toward a point or points disposed vertically above the axis of the beam.

In illustrating my present invention I have shown the device in use with an automobile type of headlight comprising a source of illumination such as an incandescent electric lamp 1 located in the focal point of a parabolic reflector 2 enclosed in the usual lamp housing or casing 3. The latter also encloses a glass front piece or lens 4 removably held in place by a bezel 5. Lamps of this character are usually constructed, either by shaping the reflector specially, or providing the lens with special curvatures, so that a certain amount of side illumination is obtained at a given distance in front of the lamp by dispersion of a portion of the light rays, while the maximum illumination is obtained directly forward. The height of the beam may be regulated by the set position of the lamp, or by the shape of the lens surface and in many localities of the country the intensity of the light beam and its height is governed by State laws, or municipal regulations. These factors, however, are not susceptible to exact control as the height of a projected light beam may vary in accordance with the load carried by a vehicle at dif-

ferent times. Likewise the intensity of the light may be varied by such simple matters as the age of the lamp filament or the voltage of the storage battery supplying the current. It will be seen therefore, that in an anti-glare device, it is desirable to provide a structure that is adapted for use universally under all conditions of operation and may be quickly and easily attached to any type of head light.

I accomplish these desired results by utilizing a series of blades, preferably of thin metal disposed with their planes parallel to the axis of the light beam. The central blade 6 extends vertically and at the right and left hand sides thereof are a series of similar blades 7 and 8. Each of these series of blades extends in converging lines toward the top of the blade 6, but preferably not to a common center or point disposed vertically above the center of the axis of the light beam. The arrangement adapted is one which provides a slight spacing between the converging ends of adjacent blades, and consists in disposing the blades at opposite sides of the center in pairs with their lower ends spaced equidistantly and their upper ends converging at such angles that at the points where they meet the arc of the circle formed by the supporting band 9, these ends will be equally spaced.

The light beam emitted from an automobile headlight is theoretically circular in cross section and the lamp reflector together with the lens, is designed to afford maximum illumination with a lamp of given candle power. Moreover on automobiles there are provided two headlights which are spaced apart and at a fixed distance above the roadbed and these facts influence slightly the design adapted for the anti-glare attachment. The arrangement of the parts described renders the devices capable of use upon both right and left hand automobile headlights. The angular convergence of the blades is such that a person viewing either of such light beams, from the normal position of elevation, either as a pedestrian at the roadside, or as a driver of another approaching automobile, will have the light rays which would normally be directly reflected into his line of vision from a portion of the reflector, intercepted. The depth of the blades and their spacing is so arranged that the desired effect is accomplished when the observer comes within the effective range of the light beam and of course it will be seen that closer he approaches the lamp on a line which will enable him to pass to one side of it the more effectively the glare is diminished.

In Figs. 4 and 5, I have shown in detail a manner in which the blades may be effectively secured in position. A supporting ring 9 is provided having formed upon its inner periphery, before it is formed into a circle, shallow slots 12 into which the opposite ends of the blades are inserted and which are of such width that the blades are temporarily held in position by frictional engagement. The blades are permanently secured by surrounding the ring 9 with a locking ring 13, the edges 14 and 15 of which are crimped over, to completely enclose the ring 9 and to extend sufficiently within the area thereof to engage both the front and rear edges of the blades, thus preventing their removal from the slots.

The anti-glare device is secured in a headlight in the position shown in Fig. 1 by any suitable means and in the several figures I have shown a plurality of radially extending ears 16 which fit within a space between the rear face of the lens 4, and the rim of the lamp which is provided when the bezel is removed and replaced with the parts in their operative position.

In Fig. 6, I have disclosed another way in which the blades may be assembled. In this figure the blades, indicated by 6^a, 7^a and 8^a have their upper ends formed with a lip portion 20 which is bent over, as shown in Fig. 7, and acts as a spacer for the adjacent leaf. These lips are only about one half the width of the blades for the purpose of providing a shoulder 21. The several blades when assembled fit within a recess 22 formed in the upper edge of the supporting ring 23.

If desired the outer supporting ring may be omitted as illustrated in the modification shown in Fig. 8. In this structure the blades are preferably made with their upper ends as described in connection with 7 and with laterally extending lower ends 24, those on adjacent blades projecting over the shoulder on the preceding blade and secured thereto. The structures shown in Figs. 6 and 8 are particularly adapted to a method of manufacture in which the blades in one instance are united together and in the other where they are held in a supporting ring, by dipping the assembled parts in solder while held in a suitable spacing form.

While I have described my anti-glare device as being made of metal, it will be understood that the same results can be accomplished by the arrangement of the blades in the manner described and formed of other materials. Fig. 9 illustrates the blades as being formed by molding them integrally with one face of the cover glass or lens 4^a. The results obtained with such a lens will be quite satisfactory due to the breaking up of the reflected rays by the refraction occurring in the several converging ribs or blades of the glass. If desired these blades may be rendered opaque by coating either one or both of their sides with a suitable paint.

It will be understood that as an alternative the ribs may also be composed of thin metal pieces and secured by embedding their edges in the face of the cover glass or lens when the latter is molded, as indicated in Fig. 10.

What I claim is:—

1. An anti-glare device for headlights comprising a plurality of blades arranged parallel to the plane of the axis of the beam of light emitted from a headlight, and disposed in fan shape relation to each other, converging substantially at a point other than a point located in the axis of said light beam.

2. An anti-glare device for headlights comprising a plurality of blades arranged parallel to the plane of the axis of the beam of light emitted from a headlight, and disposed in fan shape relation to each other and substantially converging at one side of the light beam.

3. An anti-glare device for use in conjunction with a reflected beam of light comprising a plurality of thin blades of varying lengths disposed in substantially fan shaped relation to each other and located with their planes parallel to the axis of said light beam.

4. An anti-glade device for use in conjunction with a reflected beam of light comprising a plurality of blades disposed with their planes parallel to the axis of the light beam and in substantially fan shaped relation to each other, the points of conversion of the several blades being located at one side of and beyond the edge of said light beam.

5. The combination with a headlight embodying an illuminating element, a reflector, and a lens in front of the latter, of a plurality of blades located in rear of the lens and disposed in planes parallel to the axis of the reflector which converge toward the top of the lens.

6. The combination with a headlight embodying a lamp, a reflector and a lens, of a plurality of wedge shaped blades located in rear of the lens with their forward edges parallel thereto, said blades being disposed with their narrower ends uppermost and in planes parallel to the axis of the reflector which converge toward a point located vertically above said axis.

7. An anti-glare device for light rays emitted from head lights comprising a band ring of a diameter to encircle the pencil of rays and provided with transverse slots, a plurality of thin blades extending substantially in fan shaped relation across the ring and having their ends entering the slots, and means for securing the blades in the slots.

8. A device of the character described comprising a ring having transverse slots formed in its inner circumference, a plurality of blades having their ends held in slots at opposite sides of the ring and a second ring surrounding the first ring and having inwardly extending edges overlying the ends of said slots.

9. An anti-glare device for a beam of light emitted from a head light comprising a plurality of blades in the form of irregular quadrilaterals, their width tapering from a point toward the two ends, the longer tapering portions converging at one side of the light beam axis, said blades also being disposed with their straight edges in a plane substantially at right angles to the light beam.

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