J. BENNETT.

NON-GLARING HEADLIGHT.

APPLICATION FILED NOV. 7, 1916.

1,245,426. Patented Nov. 6, 1917.

Fig. 1.

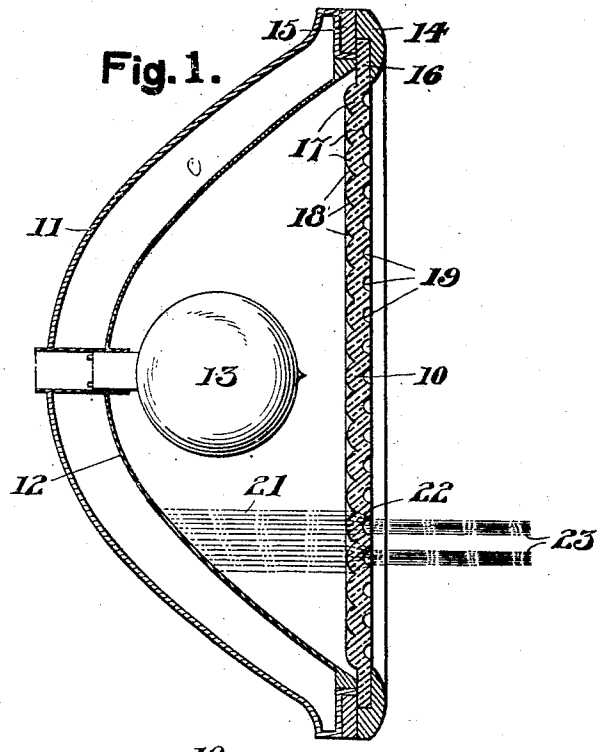


Fig. 2.

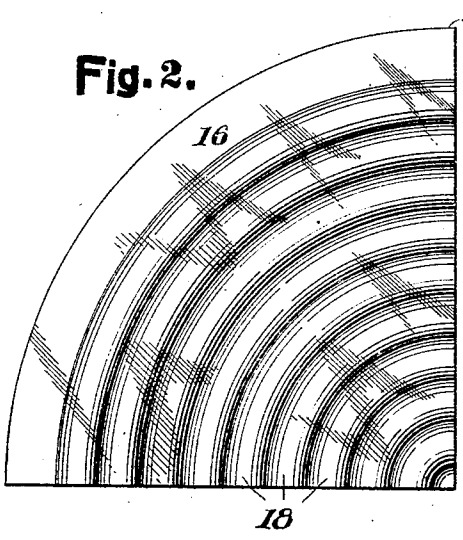
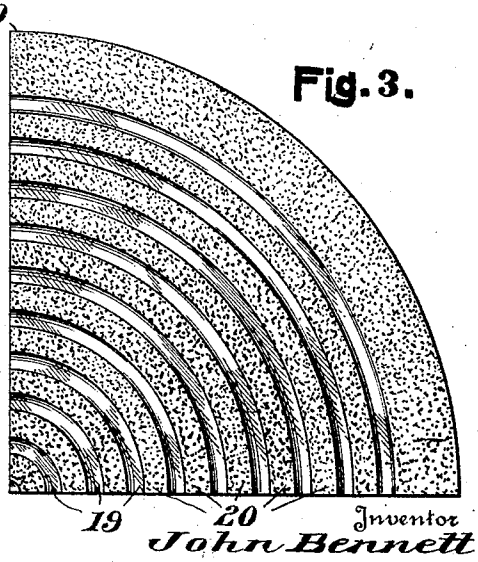


Fig. 3.



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NON-GLARING HEADLIGHT.

1,245,426. Specification of Letters Patent. Patented Nov. 6, 1917.

Application filed November 7, 1916. Serial No. 130,018.

To all whom it may concern:

Be it known that I, JOHN BENNETT, a citizen of the United States, residing at Jeannette, in the county of Westmoreland and State of Pennsylvania, have invented certain new and useful Improvements in Non-Glaring Headlights, of which the following is a specification.

This invention relates to new and useful improvements in non-glaring head-light lens.

The primary object of the invention is the provision of a lens for head lights obviating all glare due to the intensity of the illuminating body employed.

A further object of the invention is to render head-lights upon vehicles such as automobiles less dangerous by directing the rays forwardly of the head-light in concentrated parallel horizontal planes, eliminating the usual glaring effect of the concentrated rays from the parabolic reflector employed.

A still further object is the provision of a lens for head-lights arranged with annular portions concentrically disposed for paralleling and concentrating the horizontal reflected rays, the intervening portions of the lens being provided with means for dimming and diffusing the angular rays from the reflector.

In the drawing forming a part of this application and in which like reference characters correspond to like parts throughout the several views.

Figure 1. is a central diametrical sectional view through a head-light provided with the present form of lens,

Fig. 2. is a rear elevation of a quarter section of the lens and

Fig. 3. is a front elevation of a quadrant thereof.

This invention relating to lenses for head-lights, the same is herein illustrated as a glass disk 10 arranged in the usual manner in a head-light casing 11 provided with a parabolic reflector 12 and an electric lamp or bulb 13 centrally positioned therein, while a securing ring 14 is carried by the casing overlying the lens with a connecting strip 15 positioned therebetween.

The lens 10 has an annular marginal portion 16, while the remainder of the lens is formed of a plurality of annular concentric waves 17 forming concentrating lens portions.

The lens 10 is so positioned in the head-light as to arrange the convex faces 18 of the lens portion 17 inwardly of the head-light adjacent the reflector 12 while the annular concave faces 19 of said portion 17 are arranged outwardly and forwardly of the head-light as is illustrated in Fig. 1 of the drawing.

This arrangement of the waved portion of the lens provides annular flat faces 20 between the concave portions 19 and such faces 20 are upon the forward outer side of the lens 10 all arranged in the same plane as the outer face of the marginal portion 16. The exposed outer face of said marginal portion 16 and all of the flat faces 20 are preferably ground or suitably roughened or coated as shown in Fig. 3 of the drawing for diffusing all light reflected thereon emanating from the lamp 13 whereby such rays will be dimmed and while affording light upon the roadway will have no glaring effect to endanger traffic.

In Fig. 1 of the drawing a plurality of parallel horizontal rays reflected from the reflector 10 which have emanated from the lamp 13 are indicated at 21. Substantially the entire inner face of the lens 10 consists of the convex annular lens portions 18 and the rays 21 passing through such portions 18 are refracted convergently as at 22, passing outwardly forwardly of the lens 10 in concentrated parallel horizontal rays as shown at 23. The horizontal rays striking intermediate the convex faces 18 of the lens 10 and all angular rays from the reflector 20 which are not horizontally arranged pass through the flat ground faces at the forward side of the lens 10 being diffused as heretofore noted.

It will be understood that the parallel rays 21 and 23 are arranged in what might be termed bundles of tubular formation by reason of the concentric arrangement of the lens portion 17, such concentric tubular bundles of the rays 23 forwardly of the head-light resulting in furnishing a brighter light for illuminating the roadway without glaring or dazzling the eyes of a beholder, all of which is by reason of the fact that the rays 23 are horizontal rays and are not convergent uniting rays producing the usual blinding effect.

While the form of the lens as herein illustrated and described is believed to be the preferable embodiment thereof, it is never-

theless understood that the gist of the invention is the production of concentrated parallel rays by means of a lens and that changes may be made in the structure without in any manner departing from the spirit and scope of the invention as hereinafter claimed.

What I claim as new is:—

1. A lens formed of a disk of vitreous material having concentric convex lens portions at one side thereof and concentric concave portions at the opposite side, the concave portions lying opposite and centrally of the convex portions and being of lesser width than the corresponding convex portions.

2. A lens consisting of a glass disk having concentrically arranged wavy portions forming concentric convex lens faces on one side thereof and concentric concave portions on the opposite side, flat annular faces between the said concave portions, and light diffusing means provided upon said annular faces.

3. A lens consisting of a glass disk having on one side concentrically-arranged wavy portions forming concentric convex lens faces, and on the other side having alternating concentric concave portions and concentric flat lens faces.

4. A lens consisting of a disk of transparent material having on one face annular concentric convex lens faces and on the other face having annular concentric concave portions and flat lens faces.

5. A lens consisting of a disk of transparent material having on one face abutting annular concentric convex lens faces and on the other side having spaced annular concentric concave portions, the spaces between the concave portions provided with light diffusing means.

In testimony whereof I affix my signature.

JOHN BENNETT.

Witnesses:
H. O. ROWAN,
E. C. CURRY.