J. O. HELLIWELL.

REFLECTOR.

APPLICATION FILED JUNE 10, 1918.

1,318,205. Patented Oct. 7, 1919.

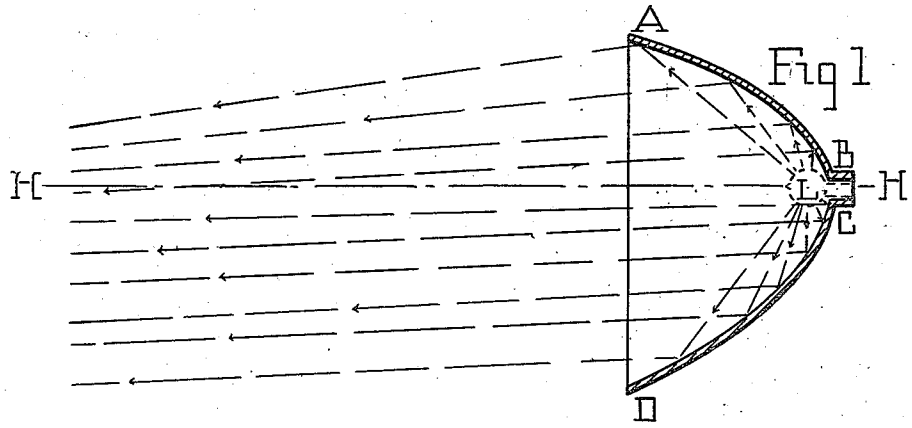


Fig 1

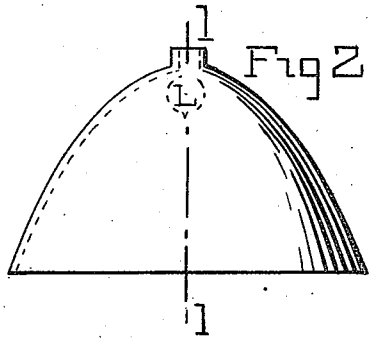


Fig 2

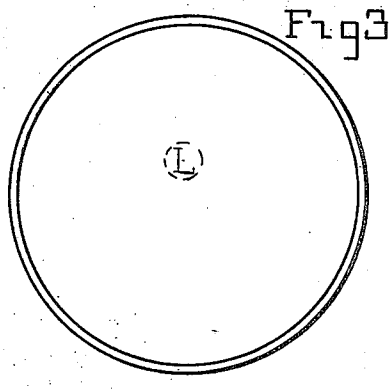


Fig 3

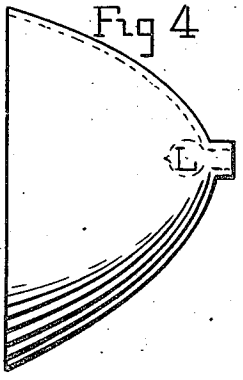


Fig 4

Witnesses

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REFLECTOR.

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To all whom it may concern:

Be it known that I, JOHN O. HELLIWELL, a citizen of the United States, residing at Pasadena, county of Los Angeles, State of California, have invented new and useful Improvements in Reflectors; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to an aberrated reflector;

The object of this invention is to provide a reflector of such conformation that the light rays shall be reflected from it in such manner that the head-light to which it is applied shall conform to the various State anti-glare laws.

It is a further object of this invention to provide a reflector of such conformation that a maximum number of light rays shall be projected on the plane of travel and without sacrificing the distance at which the head light functions.

It is a further object of this invention to provide a reflector of such conformation that the maximum amount of lighting energy be projected along the path of travel rather than be reflected in an upward direction and wasted.

It is a further object of this invention to provide a reflector of such conformation that the light rays projected from the upper part of the reflector shall cross those reflected from the lower part so as to affect a partial diffusion of the light and in this way show any unevenness of the roadway with less exaggeration than with the present reflectors in use.

With these and other objects in view, the invention consists in the construction and novel conformation referred to as an aberrated reflector hereinafter described, illustrated in the accompanying drawing and pointed out in the claims hereto appended; it being understood that various changes in the form, proportion, conformation, size and minor details of construction, within the scope of the claims, may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawing:

Figure 1 is a vertical section of Fig. 2, showing the general shape and conformation of an aberrated reflector constructed in accordance with this invention and the general direction of the reflected light rays.

Fig. 2 is a top view of the reflector.

Fig. 3 is a front elevation.

Fig. 4 is a side elevation.

Like letters of reference designate corresponding parts in the several figures of the drawing.

In the accompanying drawing, in which is illustrated the preferred embodiment of this invention, the reflector comprises a concave body of suitable material and so treated or rendered as to afford a suitable reflecting surface. The opening (B—C) provides an aperture which permits of the introduction of a lighting element, (L). This reflector is designed so as to perform the general functions which is the nature of a reflector to perform, with this specific distinction, which will be noted by reference to (Fig. 1.);—that no light-rays are reflected from the surface of said reflector at an upward angle to any horizontal plane. This result ensues as a consequence of the unique conformation of the reflector, its surface being generated by the axial section of a parabola (of which A—B and C—D of Fig. 1 are segments) in which the axis moves or revolves as well as the generatrix. In the revolution of the axial section of the parabola the generatrix intercepts or defines a circle on a vertical transverse plane (Fig. 3) while the axis generates an oblique cone whose apex is at the focal end of the reflector and the uppermost element of which is substantially horizontal.

What I claim is;—

1. A concave reflector, being paraboliform in conformation, and having a circular vertical transverse section, the inner surface of which is defined by the generatrix of a revolving axial section of a parabola in which the axis revolves as well as the generatrix and in so doing generates an oblique cone with its apex at the focal end of the reflector and the upper element of said cone being substantially horizontal.

2. A concave reflector which is paraboli-

form in conformation and having a circular vertical transverse section, the inner surface of which is defined by the generatrix of a revolving axial section of a parabola in which the axis revolves as well as the generatrix and in so doing generates an oblique cone with its apex at the focal end of the reflector and the upper element of which is substantially horizontal, said reflector having at its inner end an aperture which will permit of the introduction of a lighting element.

JOHN Q. HELLIWELL.