C. G. MELANSON.

HEADLIGHT.

APPLICATION FILED JAN. 10, 1921.

1,408,306. Patented Feb. 28, 1922.

Fig. 1

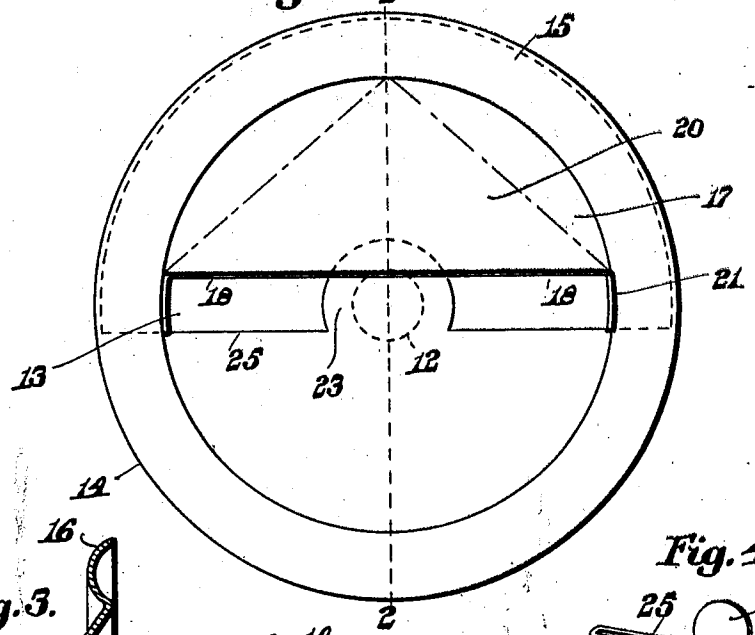


Fig. 3.

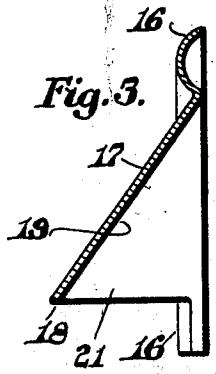
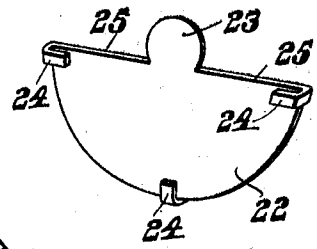


Fig. 2.

Fig. 4.



Inventor:
Charles G. Melanson,
by Walter G. Lombard.
Atty.

UNITED STATES PATENT OFFICE.

CHARLES G. MELANSON, OF LYNN, MASSACHUSETTS.

HEADLIGHT.

1,408,306. Specification of Letters Patent. Patented Feb. 28, 1922.

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To all whom it may concern:

Be it known that I, CHARLES G. MELANSON, a citizen of the United States of America, and a resident of Lynn, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Headlights, of which the following is a specification.

This invention relates to headlights and particularly to devices of this character which are used on motor vehicles to illuminate the road in advance of the moving vehicle.

The main object of the invention is the production of a headlight which will project illuminating rays from a given source directly forward and downward and permit no rays to be projected upwardly into the eyes of approaching pedestrians or onto the windshields of vehicles moving in either direction in front of the headlight.

A further object of the invention is the provision of means for concentrating all the rays of the headlight where they are most required thus conserving and utilizing all the rays from a given illuminating source.

The invention consists primarily in providing the upper part of the usual headlight with a detachable vizor and the lower part thereof with a detachable deflecting plate which is opaque and provided with a bull's-eye extension in front of the illuminating source, both said vizor and plate having their inner faces mirrored to deflect therefrom the rays from the illuminating source backwardly to the reflector within the headlight casing from which reflector the rays are projected forwardly and downwardly through a narrow horizontal space above the deflecting plate and below the vizor.

The invention consists of certain novel features of construction and arrangement of parts which will be understood readily by reference to the description of the drawings and to the claim to be hereinafter given.

For the purpose of illustrating the invention, one preferred form thereof is illustrated in the drawings, this form having been found to give satisfactory and reliable results although it is to be understood that the various instrumentalities of which the invention consists can be variously arranged and organized and the invention is not limited to the precise arrangement and organization of these instrumentalities as herein shown and described, except as required by the scope of the appended claim.

Of the drawings:

Figure 1 represents a front elevation of a headlight embodying the principles of the present invention.

Figure 2 represents a vertical section of the same on line 2, 2, on Fig. 1.

Figure 3 represents a vertical section of a detachable vizor removed from the casing of the headlight, and

Figure 4 represents a perspective view of the detachable reflector plate removed from the casing of the headlight.

Similar characters indicate like parts throughout the several figures of the drawings.

In the drawings, 10 is the casing of a headlight provided with a mirrored inner face 11 and having secured therein the usual lamp or other illuminating device 12.

In the front of the casing 10 is positioned a clear lens 13 which is held against the front edge of the casing 10 by means of the ring 14 extending over the periphery of the casing 10 and secured thereto in any well-known manner.

The front portion 15 of the ring 14 is curved inwardly as shown in the drawings and fitted into this curved portion 15 is the curved flange 16 of a vizor 17, the lower edge 18 of which is substantially in the same horizontal plane with the upper part of the lamp 12.

The rear face 19 of the vizor 17 is mirrored.

By removing the ring 14, the vizor 17 may be readily detached from the casing 10.

The lower edge 18 extends in a straight line directly across the front of the headlight and the main portion of the vizor 17 inclines upwardly and rearwardly therefrom in a flat plane as indicated at 20.

The vizor 17 has one side wall 21 the lower edge of which extends downwardly and rearwardly to the front face of the lens 13, this side wall 21 being on the side of the vizor furthest away from the curb of the street over which the vehicle is moving.

The other side wall 21 has its lower edge horizontal thereby permitting the rays of light to be deflected outwardly towards the sidewalk.

It has been found in practice that in order to attain the desired result the vizor 17 must

be positioned in front of the lens 13 at an angle thereto so that a portion of the rays from the lamp 12 and a portion of the rays reflected from the mirrored surface 11 striking the mirrored inner surface of the vizor 17 will be reflected backwardly against the mirrored inner surface of the casing 10 from which said rays will again be reflected forwardly. As a consequence of this duplex reflection, the rays which are finally projected beyond the vizor 17, are greatly intensified.

Positioned against the rear face of the lower half of the lens 13 is an opaque plate 22 having a bull's-eye extension 23 extending above its upper edge, this bull's-eye extension being larger than and in alinement with the lamp 12.

The opaque plate 22 is provided with a plurality of ears 24 which extend over the edge of the lens 13 and retain the plate 22 in position.

It is obvious however, that by the removal of the ring 14 the opaque plate 22 may be quickly detached from the lens when desired.

The rear face of the plate 22 and bull's-eye disk 23 is mirrored and adapted to deflect the illuminating rays of the lamp 12 rearwardly against the reflecting inner face 11 of the casing 10.

The upper edge 25 of the plate 22 is substantially in the same horizontal plane with the lower part of the lamp 12 thus leaving a clear space between the edge 25 and the lower edge 18 of the vizor 17 on either side of the bull's-eye disk 23.

This disk extension 23 prevents the lamp 12 from being seen by the drivers of approaching vehicles.

The dotted line A, (see Fig. 2) indicates the area of the unobstructed illuminating rays as projected ahead from the improved headlight.

The dotted line B, (see Fig. 2) indicates the area of the unobstructed concentrated reflected rays projected from the rear face of the vizor 17 and the mirrored upper portion of the reflector 11 on the casing 10.

By constructing the headlight in the manner herein described, it will be understood that when in use a portion of the rays from the lamp 12 will strike the mirrored surface of the opaque plate 22 including the bull's-eye extension 23 and these rays will be deflected to the mirrored surface 11 on the interior of the casing.

Some of the rays will be deflected to the upper portion of the mirrored surface 11 from which they will be deflected to the lower portion of the mirrored surface 11 of the casing 10 and will then be deflected to the mirrored surface 19 on the rear face of the vizor 17 where in turn these rays will be projected to that portion of the area B which is nearest to the headlight.

Other rays will be deflected to the center portion of the mirrored surface 11 and thence in turn will be projected to the area indicated by the dotted line A.

Still other rays will be deflected to the upper portion of the mirrored surface 11 on the inside of the casing 10 and in turn will be projected to the portion of the area indicated by the dotted line B furthest removed from the headlight.

A portion of the rays from the lamp 12 which strike the mirrored surface of the vizor 17 are projected to the portion of the area B nearest the headlight while another portion of said rays are deflected to the lower portion of the mirrored surface 11 on the interior of the casing 10 and these rays are in turn deflected to the mirrored portion of the opaque plate 22 from which they are again deflected to that portion of the mirrored surface 11 which projects them to the area indicated by the dotted line A.

Some of these rays from the lamp 12 are deflected from the opaque plate 22 to the upper portion of the mirrored surface 11 on the interior of the casing 10 and from thence are projected to the area indicated by the dotted line B.

This description of the means provided for deflecting and reflecting the illuminating rays by this improved invention may be carried on indefinitely to disclose the fact that all of the available illuminating rays are multiplied and concentrated within a confined and limited horizontal area.

By the arrangement of the reflecting and deflecting mirrored surfaces, the candle power of the lamp is greatly multiplied and the rays therefrom are all concentrated where they are most required. At the same time the opaque barriers provided in the headlight eliminate all illuminating rays from the area outside of the specific area it is desired to illuminate.

The bull's-eye extension 23 eliminates the direct glare of the lamp 12 as its rays are projected ahead into the area A.

By providing a mirrored surface on the rear of the extension 23 an increased efficiency is produced just as if the illuminating rays were being projected from two different lamps.

In order to illuminate the side of the road nearest the curb or walk, the lower portion of one side 21 of the vizor 17 is cut away so that the rays from the mirrored surface on the opposite side 21 will be projected toward the curb or walk.

When this improved headlight is in use the illuminating rays therefrom are never thrown upon an approaching windshield or in the eyes of pedestrians or at any point above the normal waist line of an ordinary person standing in front of the light.

This is even true when the object which is

illuminated is stationed at a considerable distance ahead of the source of illumination.

The rays of the light are at no time elevated by the distance projected.

It is believed that the operation and its many advantages will be readily understood without further description.

Having thus described my invention, I claim—

The combination with a casing having a reflecting interior surface; a lamp therein; a clear lens in front of said lamp; a vizor in front of the upper part of the lens adapted to reflect a portion of the lamp rays into the interior of the casing; and an opaque plate positioned against the inner face of the lower half of said lens and having a mirrored surface, the upper edge of said plate being substantially in the same horizontal plane with the bottom of said lamp and below the lower edge of the vizor whereby an unobstructed space is provided through which intensified illuminating rays may be projected.

Signed by me at 746–7 Old South Bldg., Boston, Mass., this 8th day of January, 1921.

CHARLES G. MELANSON.

Witnesses:

WALTER E. LOMBARD,

NATHAN C. LOMBARD.