I. L. JONES.

COMBINED MASK AND LIGHT CONCENTRATOR FOR AUTOMOBILE HEADLIGHTS.

APPLICATION FILED MAR. 4, 1916.

1,186,582. Patented June 13, 1916.

FIG. 1.

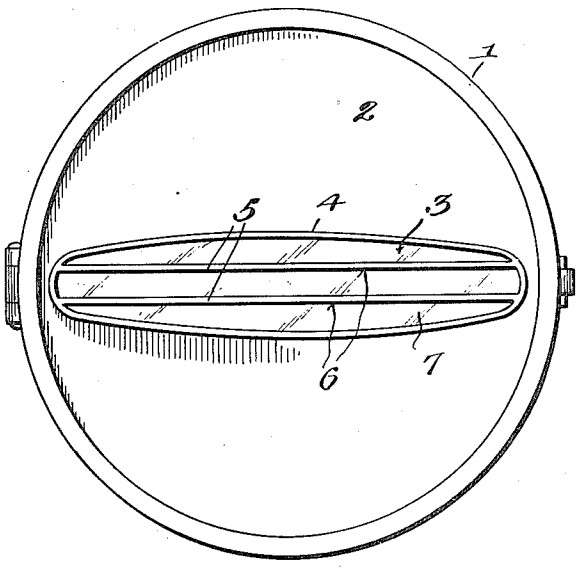


FIG. 2.

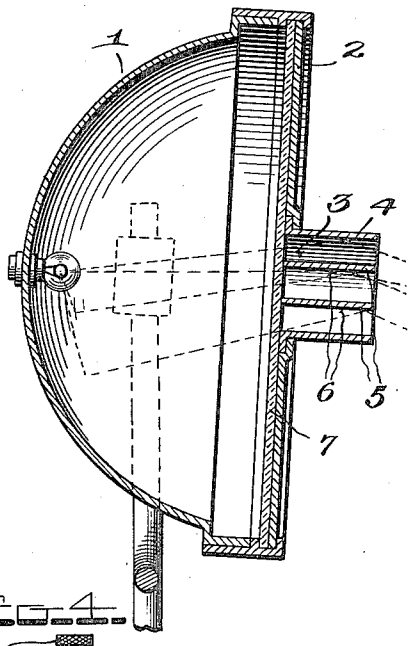


FIG. 3.

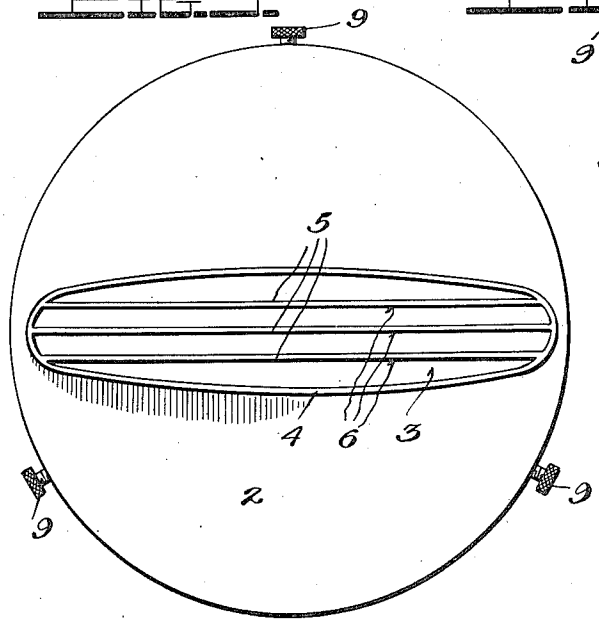
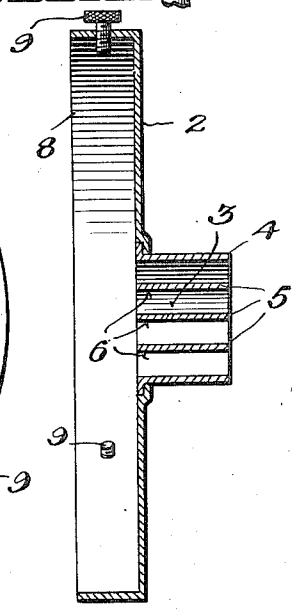


FIG. 4.



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COMBINED MASK AND LIGHT-CONCENTRATOR FOR AUTOMOBILE-HEADLIGHTS.

1,186,582. Specification of Letters Patent. Patented June 13, 1916.

Application filed March 4, 1916. Serial No. 82,027.

To all whom it may concern:

Be it known that I, ISAAC L. JONES, a citizen of the United States, residing at the city of Bridgeport, county of Fairfield, State of Connecticut, have invented certain new and useful Improvements in Combined Masks and Light-Concentrators for Automobile-Headlights; and I do 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 certain new and useful improvements in a combined mask and light concentrator for a head light, and it has for its primary aim to provide such a device which will intercept the upwardly directed light rays and deflect them down onto the roadway, without interfering with the direct rays or the intensity of the light, and without materially affecting the light emitting opening.

The invention further resides in the salient features of construction hereinafter described and claimed reference being had to the accompanying drawing wherein—

Figure 1 is a front view of a head light equipped with a mask embodying the invention; Fig. 2 is a vertical section thereof as it appears when in position for use. Fig. 3 shows a slightly modified form of the invention, and Fig. 4 is a vertical section therethrough.

My present invention is intended more particularly as an improvement on the construction shown and described in Letters Patent No. 1,167,078, issued to me January 4, 1916, this patented construction being more particularly identified with a light emitting box-like structure projecting from the face of the lamp and slightly inclined downwardly, and while said construction has been found to be effective, nevertheless the present improvement, to be hereinafter described, greatly increases the efficiency of an automobile head light in that there is no interception of the full parabola of the reflecting surfaces, while at the same time the rays of light are so controlled and directed that they cannot possibly create any glare in the faces of those approaching the front of the light.

Briefly stated, the present invention consists of an opaque disk-like body arranged over the face of the head light and formed with a horizontal opening through which the light rays are directed. Surrounding this opening and extending forwardly from the mask is a box-like structure, preferably of an ovoidal shape, which confines the rays to a large degree, which structure, in the present invention, extends preferably at right angles to such mask. Parallel slats or plates, in horizontal disposition, are arranged in this box-like structure in spaced relation and in such proximity as to intercept the upwardly directed light rays and deflect them toward the road, the under faces of these plates being highly polished or glazed to more readily bend the light rays.

In the drawings, the numeral 1 designates a well known type of head light across the face of which the present invention is disposed.

2 is a disk body of wood, metal, or other opaque substance which is formed with a horizontally disposed light emitting opening 3, preferably of ovoidal contour, and fixed to this body 2 about the opening 3 is a forwardly extending box-like structure 4 which follows the contour of the opening 3 to confine the projected light rays into more or less of a comparatively narrow sheet formation. When this structure has been of certain heights it has been found that the rays travel upwardly to a certain degree so as to create more or less glare. To overcome this defect and without appreciably reducing the emitting rays, a series of slats or plates 5 is arranged in horizontal, parallel and vertical spaced relation within the box 4 and extending the full horizontal width and depth thereof, said plates obstructing the upwardly directed rays, as is depicted in Fig. 2. The under faces 6 of these plates are glazed or highly polished to provide reflective surfaces for bending the rays downwardly.

Thus it will be impossible for the rays to pass upwardly from the light emitting opening, and since the plates or slats are preferably metallic the highly polished under faces will greatly aid in deflecting the rays.

The body 2 affords a mask which is preferably disposed interiorly of the lamp but in advance of the protective glass 7, as illustrated in Figs. 1 and 2, or other suitable means may be provided for mounting the mask such as forming a flange 8 on the latter, as depicted in Figs. 3 and 4, to em-

brace exteriorly the lamp. In the latter form, set screws 9 may be embodied for securing the flange 8 to the lamp. By the provision of these slats 5 it is readily apparent that the box 4 may be made shallower, shorter and of a greater height, and that a greater or lesser number of slats may be used as is required to eliminate the upwardly extending rays.

In utilizing my improvement, the lamp is preferably secured to the automobile in a slightly tilted condition, which, while not to a degree that is noticeable, is nevertheless sufficient to primarily better direct the light rays in the general direction of the roadway.

In my patented structure aforesaid the light was directed toward the roadway by downwardly inclining the forwardly projecting box-like structure, but this inclining of the light emitting box independent of the source of light, caused the direct rays of light to be broken and their intensity impaired. But by providing a light emitting box which projects at right angles to the body 2, and utilizing the deflector plates 5 as aforesaid, the direct rays of light pass straight out through the box unbroken and at full intensity, while the upwardly directed rays are intercepted and deflected toward the roadway by the bottom faces of the plates 5, and this effect will be enhanced by installing the whole structure, including the lamp body and the source of light which is fixed to said body, in slightly tilted condition. The number of these plates used depends on the size of the lamp and the distance between the top and bottom walls of the light emitting opening. In Figs. 1 and 2, the opening is of such size that only two of these plates are used, while, in the larger opening shown at Figs. 3 and 4, I have shown three plates, and, of course, I can use only a single plate if desired.

I do not wish to be understood as claiming any construction in which deflector plates are employed which are themselves inclined downwardly so as to deflect the rays of light upon the roadway and cut off entirely the direct rays of light. For instance, lamps have heretofore been constructed in which a series of curved downwardly deflected plates were employed throughout the upper area of the light, for the purpose of shutting off all direct rays from such area and deflecting them wholly upon the roadway, the remainder or lower area of the lamp having no deflector plates whatever. But in my improvement all the deflector plates extend through the full width of the box-like structure and are parallel with the top and bottom walls of such structure, so that the direct rays will shoot far ahead of the lamp before they reach the roadway, while at the same time the upwardly extending rays will be deflected, so that there can be no glare whatever, and these plates are provided in uniformed spaced relation and in horizontal disposition throughout the distance between the top and bottom walls of the box-like structure.

What is claimed is:—

A device of the character described comprising, an opaque body having an elongated horizontally disposed light emitting opening, a source of light fixed to said body in direct line with said opening, a box surrounding said opening and projecting from said body, deflector plates each of which is horizontally disposed throughout its area and has reflecting bottom surfaces and is immovably fixed within said box, said plates being parallel with each other and extending substantially throughout the width and depth of said box while the spaces between said plates are unbroken throughout their horizontal extent.

In testimony whereof I affix my signature in presence of two witnesses.

ISAAC L. JONES.

Witnesses:
F. W. SMITH, Jr.,
M. T. LONGDEN.