C. H. MUCKENHIRN.

LIGHT DIFFUSER FOR HEADLIGHTS.

APPLICATION FILED MAR. 7, 1918.

1,288,124. Patented Dec. 17, 1918.

Fig. 1.

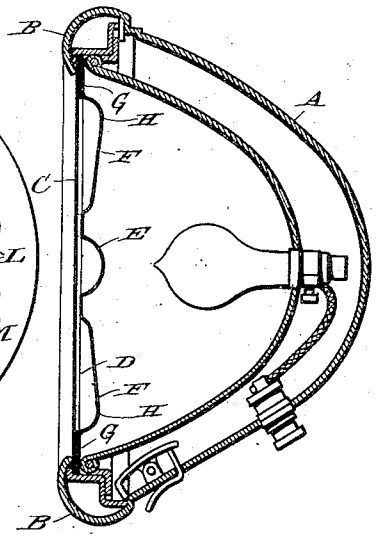


Fig. 5.

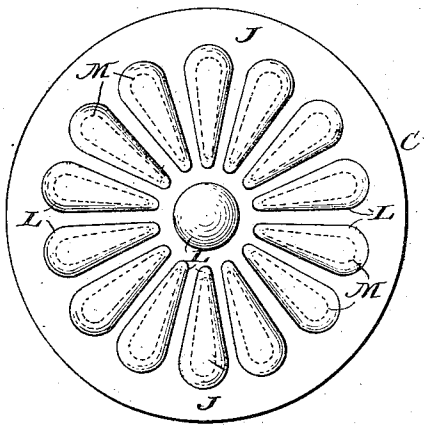


Fig. 6.

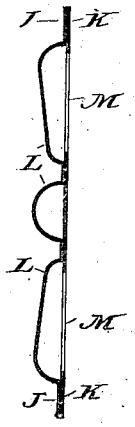


Fig. 3.

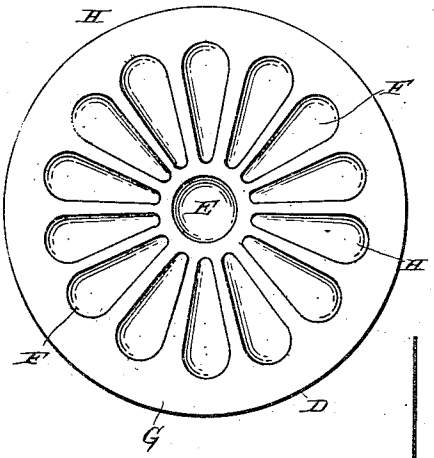


Fig. 4.

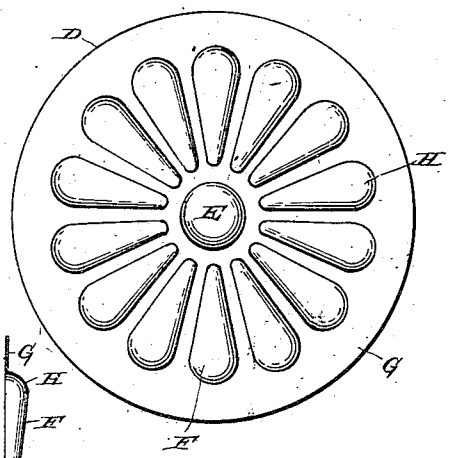




Fig. 2.

Witnesses:

Jas. E. Hutchinson.

Francis D. Thomas

Inventor:

Charles H. Muckenhirn,

by Macmillans

Attys.

UNITED STATES PATENT OFFICE.

CHARLES H. MUCKENHIRN, OF DETROIT, MICHIGAN.

LIGHT-DIFFUSER FOR HEADLIGHTS.

1,288,124. Specification of Letters Patent. Patented Dec. 17, 1918.

Application filed March 7, 1918. Serial No. 221,019.

To all whom it may concern:

Be it known that I, CHARLES H. MUCKENHIRN, citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Light-Diffusers for Headlights, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to lights, and while capable of utilization in many other connections, is especially useful in automobile headlights. The primary object of the invention is the provision of a light diffuser or lens-like member adapted to be secured in front of the light, and in the instance of the head-light preferably through the medium of the customary lens-securing means.

The common practice in the art is to form the front or lens portion of a head light of glass, and whether plane or provided with projecting parts, there is a constant danger of breaking the same both because of vibrations or jars, and the binding action of the clamping means thereagainst, owing to the lack of capability of the glass to inherently yield.

With the foregoing in mind I form my front or diffusing device of a flexible material such as pyroxylin, celluloid, or a celluloid-like material which will be flexible throughout enabling the device to give or yield around its clamping marginal portion, and reinforcing the central portion of the body by what may be variously disposed projections or bulges which will also act as light diffusing elements.

The device will be inexpensive and of inconsequential weight, thus lending itself to the many uses for which it may be formed and where the supporting or mounting thereof before a lamp will not require material consideration.

Preferably the device is formed of two thicknesses superposed and securely fastened together so that one layer or thickness will additionally strengthen and support the other, all giving an increased thickness or body to the whole, and also, in motor vehicle service, giving a backing to the layer or thickness used as the exposed front.

In some cases, where desirable for ornamental or color effect the layers may be different and for example, one layer may be perforated to permit of a variegated color effect, as differentiated from a solid color where but one layer is colored, or where both are colored and merge to combine to produce a third ultimate solid effect or color.

The details in construction and arrangement of parts will be more apparent from the specific description hereinafter contained when read in connection with the accompanying drawings, forming part hereof, and wherein the preferred embodiment of the invention is illustrated.

In the drawings:

Figure 1 is a vertical sectional view showing my device applied to an ordinary automobile head light.

Fig. 2 is a sectional view of the device showing the layers before they are secured together as a unit.

Figs. 3 and 4 are respectively front and rear views of the bulged or reinforced layer of the device, and

Figs. 5 and 6 are respectively front and vertical sectional views of another embodiment of the invention.

Referring more specifically to the drawings, and for the present with reference to the first four views, wherein like reference letters refer to the same parts in the several views, A represents an ordinary head light and B the lens clamping means thereof which may be of any well known type, not necessary to be particularly defined herein.

C represents the outer layer and D the inner layer of my improved lens or light diffusing device, the same being entirely formed of a flexible material such as pyroxylin, celluloid or celluloid-like material. The two layers are secured together, by appropriate cementitious material such as amylacetate, or otherwise, to constitute a firmly united whole or entity. The outer sheet or layer, in this instance intended to serve as the exposed outer face of the lamp is smooth so as to afford no obstruction for the accumulation of snow, dirt, or similar obscuring elements, but the inner layer is provided with a central bulge E and a series of, as here shown, radial elongated pear shaped bulges F extending entirely around the center and converging toward the center, to serve the double function of diffusing the light, and of strengthening the flexible relatively light and thin material. Other shapes and designs may, however, obviously be employed. These elongated pear shape bulges increase in depth toward the surrounding

marginal portion G which is left smooth for engaging within the clamping means, the outer terminal portion of said bulges, represented at H, rounding laterally in both directions as well as longitudinally.

The inner layer constitutes an efficient backing for the forward layer to resist inward bending pressures or strains, and the outer tapering of the bulged portions near the securing marginal portions, considered in connection with the flexible, yieldable nature thereof, will give without breakage should clamping means or other obstructions contact the same.

From the foregoing it will be clear that in a simple and highly inexpensive manner I have provided a front or light diffusing element for head lights capable of ttachment in the usual manner and securing many advantages not possessed by the standard or customary inflexible fragile glass lenses.

In Figs. 5 and 6 the layers are reversed. J represents the front and K the inner layer. The bulges are here shown at L. The layers in either instance may be of the same color or of different color, in the form of Figs. 5 and 6, the layers being of different colors and the inner layer K being cut away or apertured, as at M, opposite the bulges so that the lamp rays may pass directly to the bulges L and the solid portions of the body of said layer K imparting its color influence to the layer J in advance thereof. If the front layer is white the same will, between the bulges, take the color of the back layer and if the front is of a different color from the back the two colors will commingle, as will be readily understood.

While I have herein disclosed two special embodiments of the invention, it will be understood by persons skilled in the art to which the invention relates, that the invention is capable of embodiment in still other forms and devices, as may be embraced within the scope of the hereto appended claims.

What I claim is:

1. A front for lights composed of superposed members both of transparent flexible material permanently secured together, one of said members being plane and the other provided with light diffusing projections, substantially as described.

2. A light diffusing means for lamps composed of superposed transparent flexible members permanently secured together shaped to provide a bulge portion in one of said members, both of said members being of flexible material, substantially as described.

3. A front for lights, composed of superposed layers permanently secured together at their marginal portions to constitute a single portable entity when detached, and spaced apart at their central portion, by a light diffusing portion formed on the face of one of the members.

4. A front for lights composed of superposed members both of transparent flexible material permanently secured together to constitute a single portable entity when detached, one of said layers being colored.

5. A front for lights composed of superposed members of transparent flexible material, one of said layers being colored, and one of said layers being cut away for the purpose set forth.

6. A front for lights composed of superposed members of transparent flexible material, one of said layers being colored, and one of said layers being both colored and apertured.

7. A front for lights composed of superposed members of transparent flexible material, one of said layers having light-diffusing projections, and the other being colored and cut away opposite said projections.

8. A front for lights composed of superposed members both of transparent flexible material permanently secured together to constitute a single portable entity when detached, said layers being differently colored relative to each other.

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

CHARLES H. MUCKENHIRN.

Witnesses:
JOS. H. MILANS,
CARRIE LINKINS.