

C. H. MYERS.
 LIGHT DIFFUSIVE INCLOSURE FOR LIGHT SOURCES.
 APPLICATION FILED MAR. 1, 1912. RENEWED MAR. 8, 1913.

1,065,167.

Patented June 17, 1913.

Fig. 1.

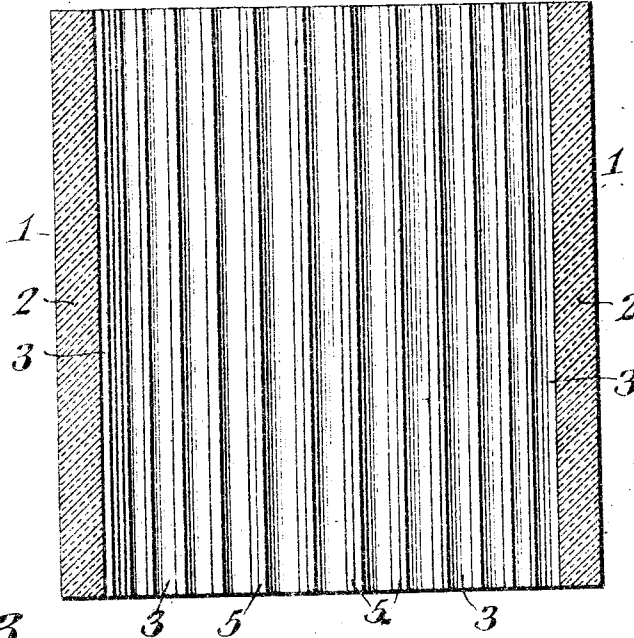


Fig. 3.

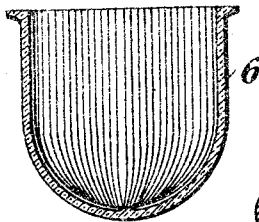


Fig. 2.

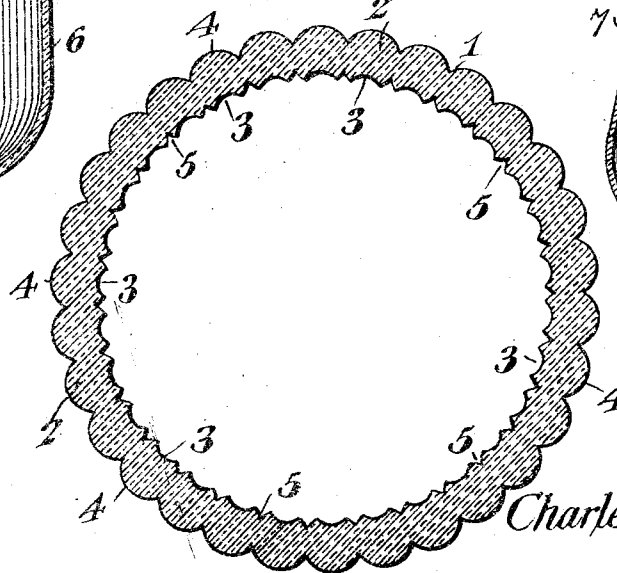
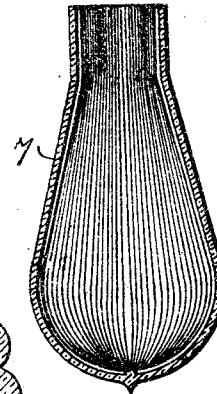


Fig. 4.



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LIGHT-DIFFUSIVE INCLOSURE FOR LIGHT SOURCES.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, CHARLES H. MYERS, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented a new and useful Light-Diffusive Inclosure for Light Sources, of which the following is a specification.

This invention has reference to improvements in light diffusive inclosures for light sources, and its object is to provide a lamp globe or closure for a source of light so constructed that the light source appears as though coextensive with the exterior walls of the globe or closure, thereby producing a marked dispersion of the light rays and greatly enhancing the appearance of the closure, which latter it will be understood is made of glass.

The light inclosing structure is composed of many glass cylinders arranged in a circle or some like arrangement and coalescing where the cylinders if distinct would touch. The outer walls of the cylinders are cylindrical, while the inner walls are in the form of reëntrant curves with the axis of generation of the cylinder and the reëntrant curve in the same radial line with respect to the axis of the closure as a whole, the general arrangement being followed whether the closure be a simple cylinder, a bowl, a bulb, a globe, or of other form. Whatever be the diameter of the closure the reëntrant curve and the exterior companion curve always bear substantially the same relation to the light source, so that light striking the concaved interior surface of any portion of the closure will be refracted to substantially the breadth of the exterior companion portion, and the effect upon the eye is that of a broad band of light from each cylindrical member coalescing with that of others even though one member be viewed at a considerably greater angle than another, each individual convex portion of the exterior wall of the closure being seemingly full of light, wherefore in the case of a cylindrical closure the effect is that of a broad band of light of great intensity equal in extent to the visible portion of the cylinder, and with other shaped closures a similar effect is produced. Moreover, the light is very evenly distributed and besides being attractive is utilizable to the best advantage.

The invention will be best understood from a consideration of the following detailed description, taken in connection with

the accompanying drawings forming a part of this specification, but it will be further understood that the invention is susceptible of other practical forms than shown in the drawings, wherefore the invention is not limited to any exact conformity with the showing of the drawings, but may be variously changed and modified so long as such changes mark no material departure from the salient features of the invention.

In the drawings:—Figure 1 is a longitudinal diametric section of a closure of cylindrical form constructed in accordance with the present invention. Fig. 2 is a cross section thereof. Fig. 3 is a diametric longitudinal section of a bowl-shaped globe constructed in accordance with the present invention. Fig. 4 is a longitudinal section of an incandescent electric light bulb constructed in accordance with the present invention.

Referring to the drawings there is shown in Figs. 1 and 2 a closure 1 made up of a circular series of coalescing elements 2, each of which may be considered as a rod cylindrical in cross section with a reëntrant curved portion 3 on one side and an arc-shaped portion 4 opposite the curve 3. The arc 4 may be considered as struck from an axis coinciding with the longitudinal central axis of the rod 2 and hence within its bounds, while the curve or arc 3 is struck from a shorter radius than the arc 4, and the center of curvature of the curved portion 3 is outside the bounds of the cylinder 2, while the bisector of the arc 4 if continued becomes also the bisector of the arc 3 constituting the reëntrant curve or arc in the member 2. The arc 3 is also less extensive than the arc 4 and its degree of curvature is greater. The arc 4 if continued into a complete circle would embrace the reëntrant arc 3, and in the structure shown in the drawings each arc 3 is divided from the adjacent arc 3 by a notch 5, the walls of which are curved on sections coinciding with the centers of generation of the corresponding arcs 4. All the cylindrical elements 2 coalesce so that if produced the meeting portions would overlap, wherefore the arcs 4 are each less than one hundred and eighty degrees, and the arcs 3 are still shorter.

An effect similar to that produced by the structure just described when interior to the cylinder 1 there is placed a source of light, would be produced were the elements 2 sep-

arate and distinct one from the other and simply brought into contact, but there would be so much interference with the transmission of light at the points of contact that dark lines would be formed interfering with the effect which it is desired should be produced, and these dark lines are eliminated by causing an apparent overlapping of the cylindrical elements 2 as though fused and pressed together. The structure is also easily produced by means of a mold of suitable shape permitting the formation of the continuous series of coalescing cylinders 2 with the arcs 3 and 4, at one operation.

No definite instructions can be given for the particular curvatures of the arcs 3 and 4 and the sizes of the cylindrical elements 2, since such features would vary with different qualities of glass and different sizes and shapes of closures. The result aimed at is that a light source, say an incandescent gas mantle, placed centrally within the cylinder 1 will be so related to the reëntrant arcs 3 that the light refracted by the curved surfaces represented by the arcs 3 will spread to the edges of the surfaces represented by the arcs 4, and pass therefrom in such lines that each whole cylindrical member 2 is apparently filled with light and the visible portion of the cylinder 1 appears to glow as would an incandescent body of like extent.

The invention may be applied to a bowl 6 like that shown in Fig. 3, or an incandescent lamp bulb 7 shown in Fig. 4, and these two forms, as well as the form shown in Figs. 1 and 2, may be taken as indicative of any suitable configuration of the closure where the principle of the invention may be applied.

The cross sectional area of the elements 2 varies directly with the diameter of the closure, these elements being small in a closure of small diameter and proportionately large

in a closure of large diameter, while the length of the arcs 3 and 4 maintain a like direct proportion to the diameter of the closure and the size of the source of light.

What is claimed is:—

1. A diffusive inclosure for a light source having an exterior wall formed of a succession of arcs and the interior wall formed of a succession of arcs in reëntrant relation to the first named arcs, the second named arcs being of shorter length and curved on a shorter radius than the first named arcs.

2. A light diffusive inclosure for a source of light comprising a series of elongated lens-like elements arranged successively and integrally connected, the outer wall of the structure being composed of a succession of arcs each curved on a radius within the confines of the thickness of the structure and the inner wall being formed as a series of reëntrant arcs shorter than the first named arcs and each curved on a radius shorter than the first named arcs and outside the confines of the thickness of the structure.

3. A light diffusive inclosure for a light source comprising a circular series of lens-like elements integrally connected to form a hollow structure made up of elongated parts, the outer wall of the structure being formed of a connected series of arcs each curved on a radius within the confines of the inner and outer walls of the connected series, and the inner wall containing a like series of reëntrant arcs shorter than the first named arcs and spaced one from the other and also curved on a shorter radius than the first named arcs.

In testimony, that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

CHAS. H. MYERS.

Witnesses:

JOHN H. SIGGERS,
DAVID R. WAGNER.