J. ARMANTAGE & F. ROEHRIG.

ILLUMINATING SIGN.

APPLICATION FILED JULY 22, 1913.

1,139,395. Patented May 11, 1915.

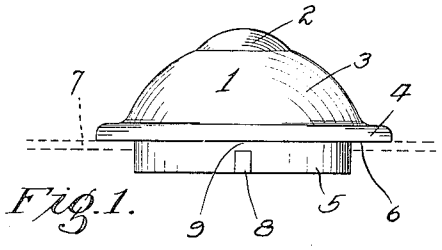


Fig. 1.

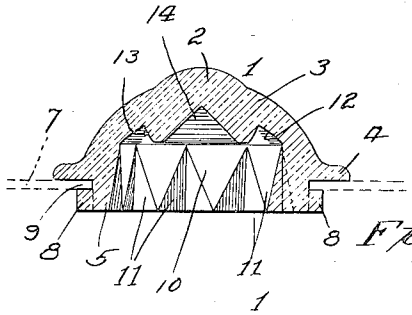


Fig. 2.

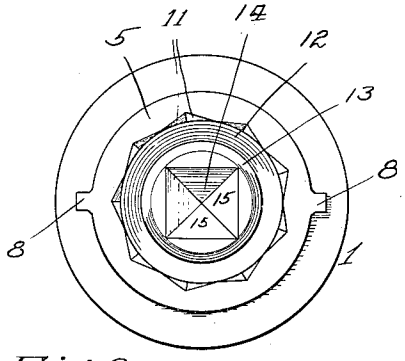


Fig. 3.

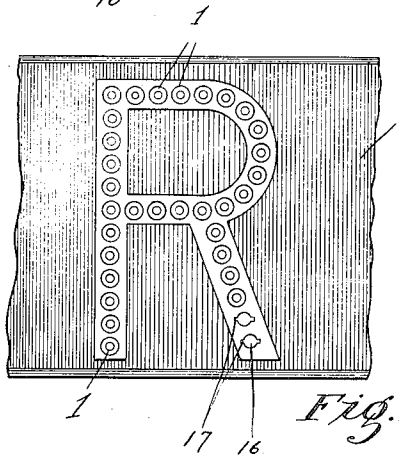


Fig. 4.

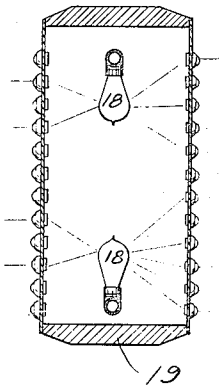


Fig. 5.

WITNESSES:

H. A. Stock

F. P. Schroeder

INVENTORS

John Armantage

Fred Roehrig

BY Harry C. Schroeder

ATTORNEY

UNITED STATES PATENT OFFICE.

JOHN ARMANTAGE AND FREDERICK ROEHRIG, OF OAKLAND, CALIFORNIA, ASSIGNORS OF ONE-HALF TO SAID ROEHRIG, AND ONE-HALF TO WALTON G. PEARSON, OF ALAMEDA, CALIFORNIA.

ILLUMINATING-SIGN.

1,139,395. Specification of Letters Patent. Patented May 11, 1915.

Application filed July 22, 1913. Serial No. 780,561.

To all whom it may concern:

Be it known that we, JOHN ARMANTAGE and FREDERICK ROEHRIG, citizens of the United States, residing at Oakland, in the county of Alameda and State of California, have invented certain new and useful Improvements in Illuminating-Signs, of which the following is a specification.

This invention relates to illuminated signs and more particularly to the type wherein the figures, letters, or characters are composed of a number of transparent lenses, which are illuminated by means of light from behind the sign.

The principal object of our invention is to provide an improved transparent lens which by reflection and refraction will transmit a larger amount of light than such bodies heretofore in use.

Another object is to provide the exterior surface in the shape of superimposed bull-eyes so that the transmitted light will be equally distributed at all angles therefrom.

With these and other objects in view our invention consists in the novel construction and form of parts as herein described and illustrated in the accompanying drawing in which:—

Figure 1 is a view in side elevation of the improved transparent lens used in the construction of the sign. Fig. 2 is a vertical section therethrough. Fig. 3 is a rear face view of the lens shown in Figs. 1 and 2. Fig. 4 is a view in elevation of a portion of the sign having a letter thereon constructed with a plurality of said lenses. Fig. 5 is a view in vertical section showing the manner of constructing the sign and the transmission of light through the lenses.

Denoting similar parts by the same numerals 1 indicates a glass lens having a face composed of two or more superimposed convex surfaces as 2 and 3, a circular laterally extending flange 4 and a rearwardly annular flange 5. Between flanges 4 and 5 is a shoulder 6, which rests on the metal 7 forming the side walls of the sign. Extending laterally from the flange 5 at diametrically opposite points are projections 8 spaced to provide a slot 9 between the same and shoulder 6 of width equal to the thickness of metal 7.

The rear portion of the lens is hollow as at 10 and provided with a plurality of circumferentially spaced facets 11. The bottom of said cavity is concaved as at 12 and provided with a central convex projection which in turn has a cavity 14 having facets 15.

A number of the lenses 1 constructed as above described are mounted in the walls of the sign 7 to form the desired character as for example, the letter R shown in Fig. 4. The annular flange 5 extends through a circular opening 16 formed in wall 7 and on each side of this opening are notches 17 which allow the projections 8 to pass through. After the lens is entered in this opening 16 it is given a quarter turn bringing the projections 8 opposite the uncut portion of the wall 7 thus holding the lens in place.

The manner in which the light from lamp 18 within the closure 19 is transmitted through the lens is shown in Fig. 5. It will be seen that by means of the many reflecting and refracting facets 11 the light is transmitted through the lens in all directions so that viewed from the exterior the outer convex surface will appear uniformly illuminated obtaining an effect as though the illuminating source were directly back of the lens.

Thus it will be seen we have provided an efficient device for the purpose named and while we have shown the preferred embodiment of our invention it will be understood that various changes may be made in form and proportion without departing from the spirit thereof.

What we claim as our invention and wish to cover by Letters Patent is:—

1. A lens formed by a plurality of concentric superimposed convex surfaces integrally formed, a central bulge in said lens having a cavity therein provided with lens facets, and a rearwardly extending ring provided on its inner surface with a plurality of lens facets,

2. A lens formed by a plurality of concentric superimposed convex surfaces integrally formed, a central spherical bulge having a cavity therein provided with lens facets, and a rearwardly extending annular ring provided with a plurality of lens facets angularly disposed with respect to each other.

In testimony whereof we affix our signatures in presence of two witnesses.

JOHN ARMANTAGE.
FREDERICK ROEHRIG.

Witnesses:
F. P. SCHROEDER,
R. M. OYARZO.