

O. H. PACKER.

JEWEL FOR ILLUMINATED SIGNS, DISPLAY DESIGNS, AND THE LIKE.

APPLICATION FILED JUNE 1, 1909.

964,120.

Patented July 12, 1910.

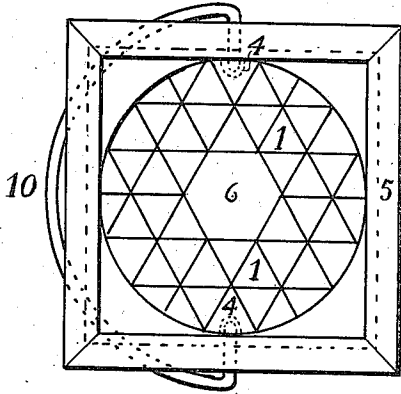


Fig. 1.

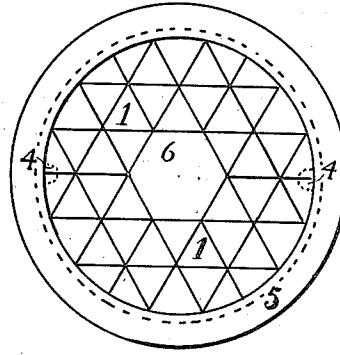


Fig. 4.

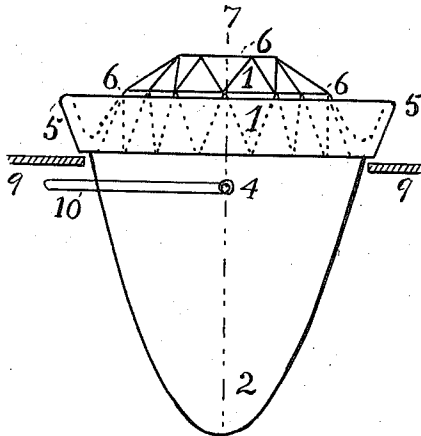


Fig. 2.

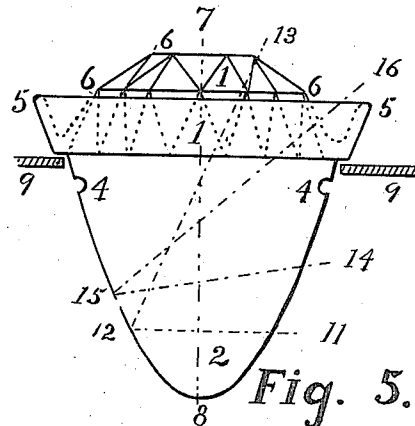


Fig. 5.

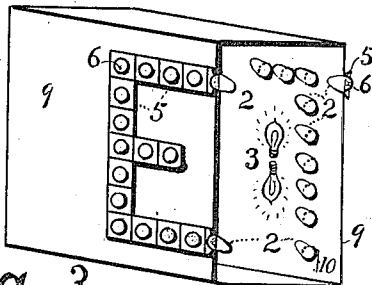


Fig. 3.

WITNESSES:
N. L. Laggard
Wm. C. Colby

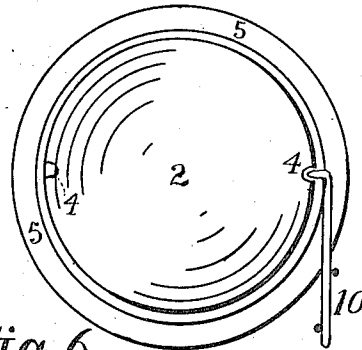


Fig. 6.

INVENTOR
Orville Hugh Packer.

UNITED STATES PATENT OFFICE.

ORVILLE HUGH PACKER, OF OAKLAND, CALIFORNIA.

JEWEL FOR ILLUMINATED SIGNS, DISPLAY DESIGNS, AND THE LIKE.

964,120.

Specification of Letters Patent.

Patented July 12, 1910.

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To all whom it may concern:

Be it known that I, ORVILLE HUGH PACKER, a citizen of the United States, residing at Oakland, in the county of Alameda and State of California, have invented a new and useful Jewel for Illuminated Signs, Display Designs, and the Like, of which the following is a specification.

My invention relates to improvements in light transmitting and refracting devices for illuminated signs, display designs, and the like.

The purpose of my improvement is to transmit more light through the opening in which it is placed, than would pass through the opening if my improvement were not used; to enable illuminated letters or designs to be seen from many view-points on the opposite side from a source of light; to reduce the cost of illuminating a sign or display design; to produce attractive appearing letters or designs; and to render illuminated signs or display designs discernible at a greater distance than heretofore, equal sizes being considered. I attain these objects by means of the device (which I will call a jewel for lack of a more descriptive term) shown in the accompanying drawing, in which,—

Figure 1 is a front view; Fig. 2, a side view; Fig. 3, a view, part in perspective and part in vertical section, of a double advertising sign showing a number of my jewels in use; Fig. 4, a front view of a modified form of my jewel; Fig. 5, a side view of this modification; and Fig. 6, the rear view of this same modification.

Similar figures refer to similar parts throughout the drawing.

My jewel is made of any transparent or translucent material, as glass, and may be colorless or colored. It is used by placing it in any opening of suitable size with its rear end 2 projecting into either a specially lighted compartment, or into a lighted room, store, car or other illuminated space. Any source of light may be used. It may also be used in any suitable framework where it can be illuminated by natural light, or by street lights. Usually a number of my jewels are arranged together for the purpose of forming letters, words or designs, as shown in Fig. 3.

The rear portion Fig. 2 of my jewel is either spherical, paraboloidal, ellipsoidal, or conical, or a combination of the segments,

or sections, of any two or more of these forms, but at all times preserving a symmetry with respect to the axis 7—8. That is, it is a solid of revolution about the axis 7—8. The purpose of this rear portion 2 is to collect, refract and reflect light rays emanating from a source of light on the rear side of the partition or wall 9, in which wall the jewel is placed, and bring them out to the front side of the said partition or wall through the facets 1 and border 5. The form of this rear portion 2, being a solid of revolution about axis 7—8, is exceptionally efficient for this purpose, especially when of the paraboloidal form, because some portion of each beam of light that enters it is brought out through the front facets 1 or the border 5, in accordance with the principles of optics. The course of a ray of light is indicated in Fig. 5 by line 11—12—13, and another ray by line 14—15—16.

The front portion of my jewel comprises a central, convex portion 6, covered with facets 1, similar to the top of a cut diamond, and a border 5, surrounding the said convex faceted portion. The facets 1, operating in conjunction with the rear portion 2, disperse the light over a wide angle so that the jewel appears illuminated when seen from any view point on front side of the wall or partition 9. The border 5 may be either square, as shown in Figs. 1, 2 and 3, or round, as shown in Figs. 4, 5 and 6, or it may be a regular or irregular polygon (not shown). The round form of border 5 may be used when the jewels are not placed adjacent to each other.

By using a combination of jewels, some with square and others with trapezium shaped borders practically continuous letters and designs may be formed, attractive in appearance, and distinguishable at a greater distance than with any other kind of illuminating or illuminated device known to me. The hexagonal, pentagonal, and octagonal forms of borders are also especially useful in forming letters or designs. The border also throws out a limited amount of light, reflected from and refracted through the portion 2, and serves to keep the jewel in place in the hole in which it is placed. In rare cases it is desirable to omit the border and enlarge the central portion 6.

One or more small indentations or cavities 4, made in the rear end 2, are for the purpose of securing the jewel in the opening.

in a wall or partition 9 by means of a spring 10, adapted to fit in the said cavity or cavities. This spring may snap around approximately half of the jewel, as shown in Fig. 1, or it may be secured to the wall or partition 9, as shown in Fig. 6.

The form of the rear portion 2 is especially efficient in collecting light and in refracting and reflecting it out through the facets 1. For this reason several jewels may be illuminated by means of one light. For example, one light may be used for each letter, the letters being made up by arranging a number of jewels in the form of the desired letter. Letters thus made of my jewels will be more legible at a distance than letters made of jewels as heretofore designed, for the reason that my jewels transmit more light and may be arranged so as to form a more perfect letter.

Jewels as heretofore designed for illuminated signs and the like permit much more light to pass horizontally through them, that is, parallel to the wall or partition in which they are placed, than my jewels do. This fact may be demonstrated by the principles

of optics. Therefore, my jewels will require less light for illumination than other jewels as heretofore designed, in order to produce a certain amount of front illumination.

I do not confine myself to the precise proportions shown in the drawings.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. A jewel for illuminated and display signs, comprising a rear portion of the form of a solid of revolution, a front portion forming a convex faceted center, and a retaining spring and means for holding said spring in engagement with the said rear portion.

2. A jewel for illuminated and display signs, comprising a rear portion of the form of a solid of revolution, a front portion in the form of a convex faceted center, a border formed around said center, a retaining spring, and means for holding said spring in engagement with the said rear portion.

ORVILLE HUGH PACKER.

Witnesses:

N. L. TAGGARD,
Wm. E. COLBY.