April 26, 1927. 1,626,498

P. S. BAILEY

REFLECTOR

Filed Sept. 23, 1924

Fig. 1

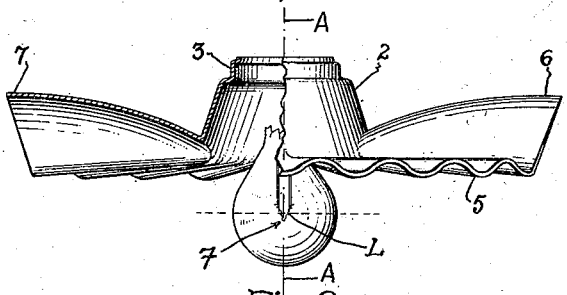


Fig. 2.

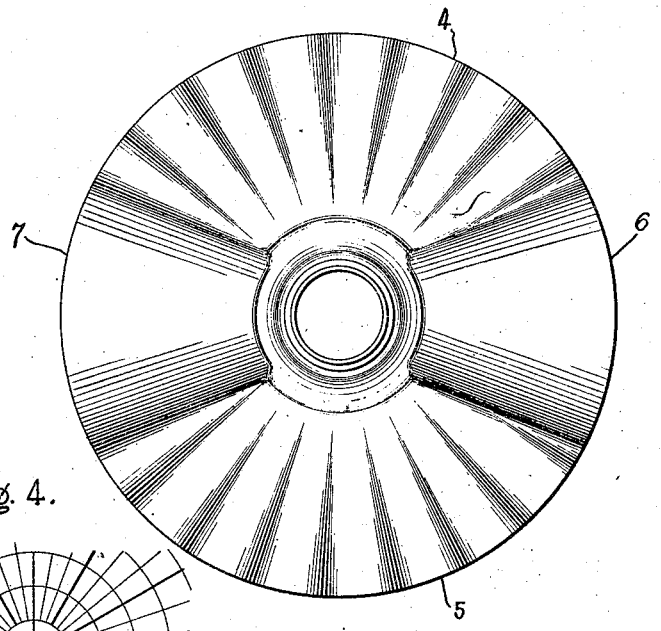


Fig. 4.

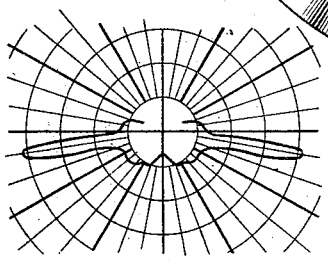
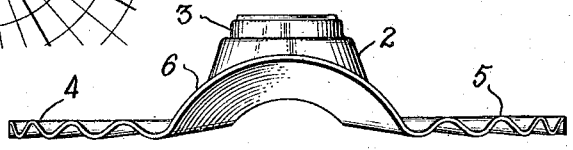


Fig. 3.



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UNITED STATES PATENT OFFICE.

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REFLECTOR.

Application filed September 23, 1924. Serial No. 739,429.

My invention relates to reflectors and in particular to a type which is especially adapted for street lighting.

Reflectors for street lighting are very often made round so that they spread out wheel-like. These reflectors are sometimes provided with radial wave-like convolutions for the purpose of diffusing the light.

Reflectors of this type give a general uniform distribution of light about the axis of the reflector. Sometimes, however, it is desirable to construct the reflector so as to intensify the light in one or more zones or areas. I have found that this can be very effectively done by forming sections on opposite sides of the reflector into paraboloidal or ellipsoidal surfaces the axes of which may be at right angles to or sloping with respect to the axis of the reflector. If asymmetric light distribution is desired the paraboloidal or ellipsoidal surfaces may be confined to one side of the reflectors or these surfaces may be asymmetrically distributed with respect to the axis of the reflector.

The character of the invention, however, will be more clearly understood by referring to the accompanying drawing in which Fig. 1 shows one form of the reflector in elevation and partly in section; Fig. 2 is a plan view of the reflector of Fig. 1; Fig. 3 is a side view of the reflector of Fig. 2; Fig. 4 is a diagrammatic illustration of the light distribution with a form of reflector in which the axes of the major corrugations, such as shown in Fig. 1, slope with respect to each other. In this figure the curve represents the distribution of the initial candle power in a maximum vertical plane.

Referring more in detail to the drawings, it will be seen that the reflector has a central hood or dome section 2 with a collar 3 about which collar the reflector may be held by means of any suitable support. From the lower point of the hood the reflector flares out to form the webs 4 and 5. As shown in the drawings these webs are provided with radial waves. These waves may be conical focalizing surfaces. However, these may also be plain flat surfaces. In between the sections 4 and 5 the reflector is formed into paraboloidal surfaces 6 and 7 having a common focal point F at which the light source L is located. These paraboloidal sections may be located in any suitable position. For example, the axes may lie in a common line across the central axis A—A of the reflector. On the other hand, the axes of these paraboloidal sections may slope with respect to the central axis as indicated in Fig. 1. Therefore the axes may lie in a plane through the central axis A or one may lie in one plane through the central axis A and another may lie in a different plane through the axis A. In Fig. 1 the axes of the two paraboloidal sections are represented as being in a common vertical plane but sloping with respect to the axis A. It is also possible to have the axis of one paraboloidal section inclined to the A axis at a different angle from the axis of the other paraboloidal section. It will be seen therefore that each of the paraboloidal surfaces intercepts a comparatively large zone about the central axis A—A of the unit while each of the undulations between the paraboloidal surfaces intercepts a very narrow zone.

It will be understood therefore that the principle of my invention shown and described is not to be confined to the specific forms shown inasmuch as many variations are contemplated which fall within the scope of the claims herein.

What I claim as new and desire to secure by Letters Patent of the United States, is:—

1. A reflector having a pair of surfaces of revolution, each surface produced by rotating a conic about an axis crossing the central axis of the reflector, said surfaces connected on one side by a reflector having a series of corrugations each in the form of a focalizing surface generated about an axis, the axes of such corrugations making each the same angle with the axis of the reflector, said surfaces being also connected on the opposite side by a reflector having a series of corrugations similar to those on the opposite side, the axes of said last corrugations also making each the same angle with the axis of the reflector.

2. A reflector having a pair of surfaces of revolution, each surface produced by rotating a conic about an axis crossing the central axis of the reflector, said surfaces connected by corrugated reflectors, one located between the surfaces of revolution, and on one side of their axis and the other on the

other side of the surfaces of revolution, the projection of the reflector upon a plane at right angles to the axis of the reflector covering a circular area, each connecting surface having a multiplicity of corrugations in the form of a focalizing surface about an axis, all of said axes lying in a cone surface the axis of the cone and the axis of the reflector being co-incident.

3. A reflector formed with a series of corrugations, said corrugations each being in the form of a focalizing surface generated about an axis, all of said axes radiating from a common point in the axis of the reflector, only two of said surfaces being of major proportions and the remainder of said surfaces being of minor proportions, the axes of all of the corrugations being located in a cone surface, the axis of which is coincident with the axis of the reflector.

4. A reflector formed with a series of corrugations, said corrugations each being in the form of a focalizing surface generated about an axis, all of said axes radiating from a common point in the axis of the reflector, only two of said surfaces being of major proportions and the remainder of said surfaces being of minor proportions, the axes of all of the corrugations being located in a cone surface, the axis of which is coincident with the axis of the reflector, the axes of the major corrugations sloping with respect to each other.

In witness whereof, I have hereunto set my hand this 20th day of September, 1924.

PERCY S. BAILEY.