H. W. HESS.

REFLECTOR.

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1,258,007. Patented Mar. 5, 1918.

Fig. 1.

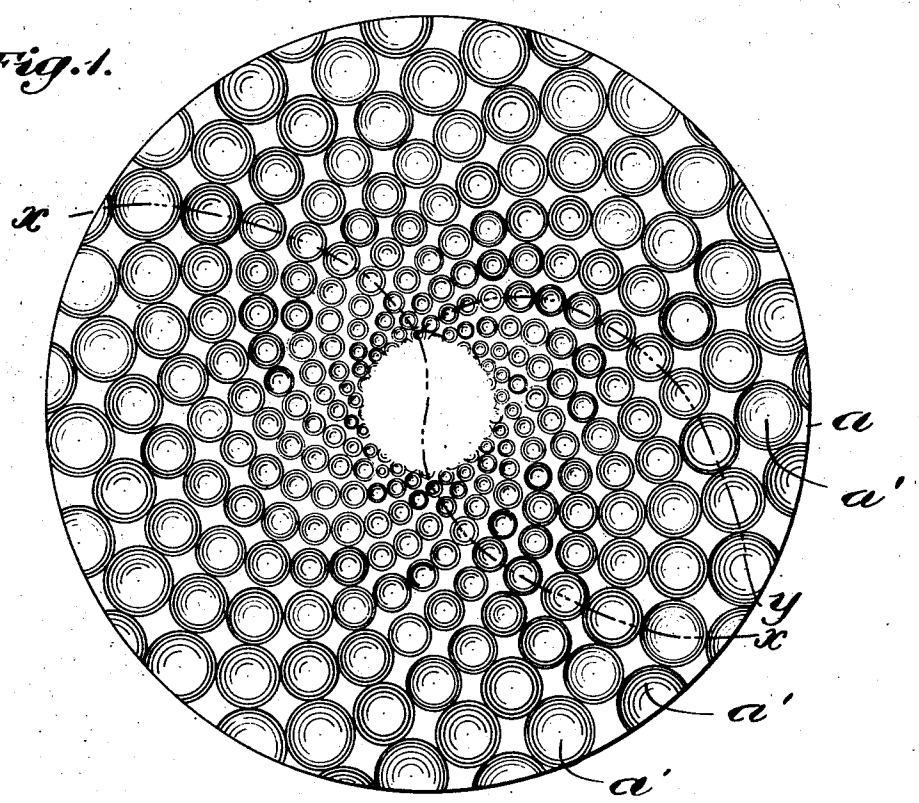
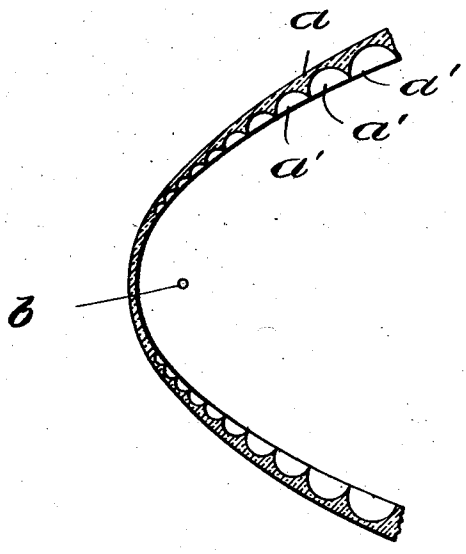


Fig. 2.



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REFLECTOR.

1,258,007. Specification of Letters Patent. Patented Mar. 5, 1918.

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To all whom it may concern:

Be it known that I, HARRY W. HESS, citizen of the United States, and resident of Providence, Rhode Island, have invented certain new and useful Improvements in Reflectors, of which the following is a specification.

This invention relates to reflectors to be used for illuminating purposes and is intended to provide a reflector of this class which shall combine the maximum of illumination with the minimum of glare or dazzling effect, this result being accomplished by a combination or arrangement of a number of closely and orderly arranged reflecting elements so related as to secure an internal diffusion within the reflector and a forward projection of the mass of light rays.

Generally speaking, the invention consists in a hollow or concave reflector whose inner or light reflecting surface is formed with a large number of closely arranged hollow or concave reflecting elements arranged to secure a high degree of diffusion within the reflector together with a forward projection of a completely blended mass of light rays affording a very effective illumination without a correspondingly high degree of glare or dazzling effect.

In the accompanying drawings I have illustrated the preferred form embodying the principles of this invention in which,

Figure 1 is a view of the inner surface of the reflector as seen from a point in the central axis somewhat in advance of the focal point of the reflector.

Fig. 2 is a cross-sectional view on a section indicated by the line x—x of Fig. 1.

The reflector a is made of any suitable material for reflecting light but for reasons of economy a material capable of being molded such as glass is most easily adapted to this purpose.

The general shape or contour of the reflector is concavo-convex with the radial lines extending from the apex to the perimeter, preferably having a parabolic curvature.

The interior or reflecting face of the device is formed with a series of concavities or recesses arranged as closely as possible together to form individual light reflecting elements. These cavities or light reflecting elements increase progressively by a constant ratio from the apex or central portion of the reflector to its perimeter.

In order to get the maximum number of rows of recesses within the surface available I prefer to arrange the numerous reflecting elements in such a manner that they form radiating rows on curved lines approximating a logarithmic spiral form.

In the form of reflector illustrated in the drawings the spiral curvature of the individual radiating rows of elements curving in a contra-clockwise direction have a more gradual curvature than the radiating rows of elements curved from the center outwardly in the reverse or clockwise direction, that is to say, the number of elements in each of the left-hand radiating spirals is smaller than the number of elements contained in each row of reversely curved spirals. The effect of this arrangement is twofold. It makes possible the utilization of the largest available portion of the interior surface of the reflector for the light reflecting elements and it also makes possible a finer graduation in the different sizes of the elements employed, the concave elements a, a being preferably so arranged that their central axes intersect the main central axis of the reflector at points progressively forward of the focal center b of the reflector. The individual elements themselves are preferably formed with a parabolic curvature or contour from their centers to their perimeters, their perimeters being of circular contour.

As a consequence of the construction described there is a high degree of diffusion of light within the deflector and a very efficient forward projection of the light rays for illumination purposes with a relatively diminished glaring or dazzling effect.

What I claim is:

1. A light reflector comprising a concave or hollow member whose main interior contour is formed on parabolic curves from apex to circumference, and whose inner radiating surface is formed with closely arranged circular concavities gradually increasing in size from the central portion to the edge of the reflector, said concavities extending in radiating spiral rows, substantially as described.

2. A light reflector comprising a concave

bowl having an interior contour of parabolic form, the interior reflecting surface being formed of closely arranged rows of circular concavities gradually increasing in size from the central portion to the periphery, the rows of such concavities being arranged in oppositely curved spirals, substantially as described.

3. A hollow reflector of parabolic form whose interior reflecting surface is formed with a series of closely arranged cavities or reflecting elements arranged in oppositely curved spiral rows radiating from the central portion to the perimeter and arranged so that the individual axes of the individual cavities intersect the main axis of the reflector, substantially as described.

4. A reflector comprising a hollow member whose interior curved surface is formed with closely arranged circular concavities or reflecting elements arranged in radiating spiral rows of unequal curvature curving in opposite directions from the central portion to the perimeter, the individual elements increasing progressively in size from the center to the circumference, substantially as described.

In witness whereof, I have subscribed the above specification.

HARRY W. HESS.