

O. H. MOHR.  
REFLECTOR SHADE.  
APPLICATION FILED JAN. 7, 1920.

1,437,259.

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Fig. 1.

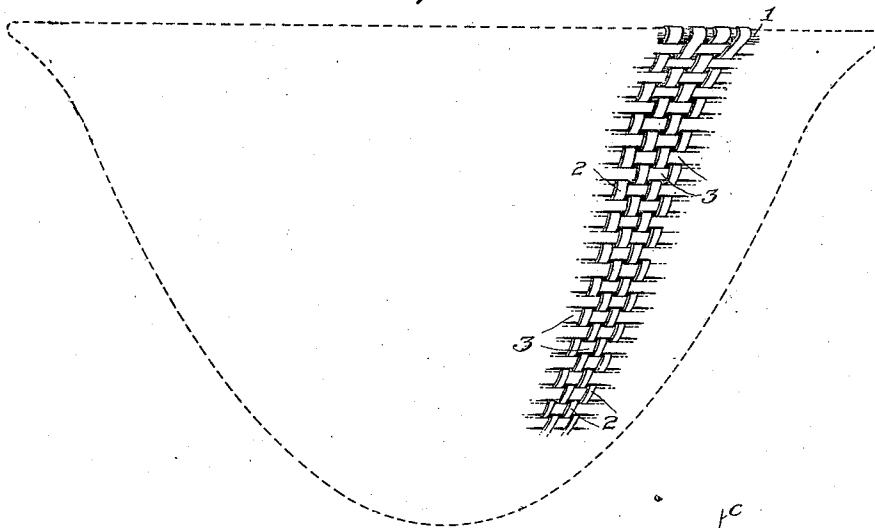
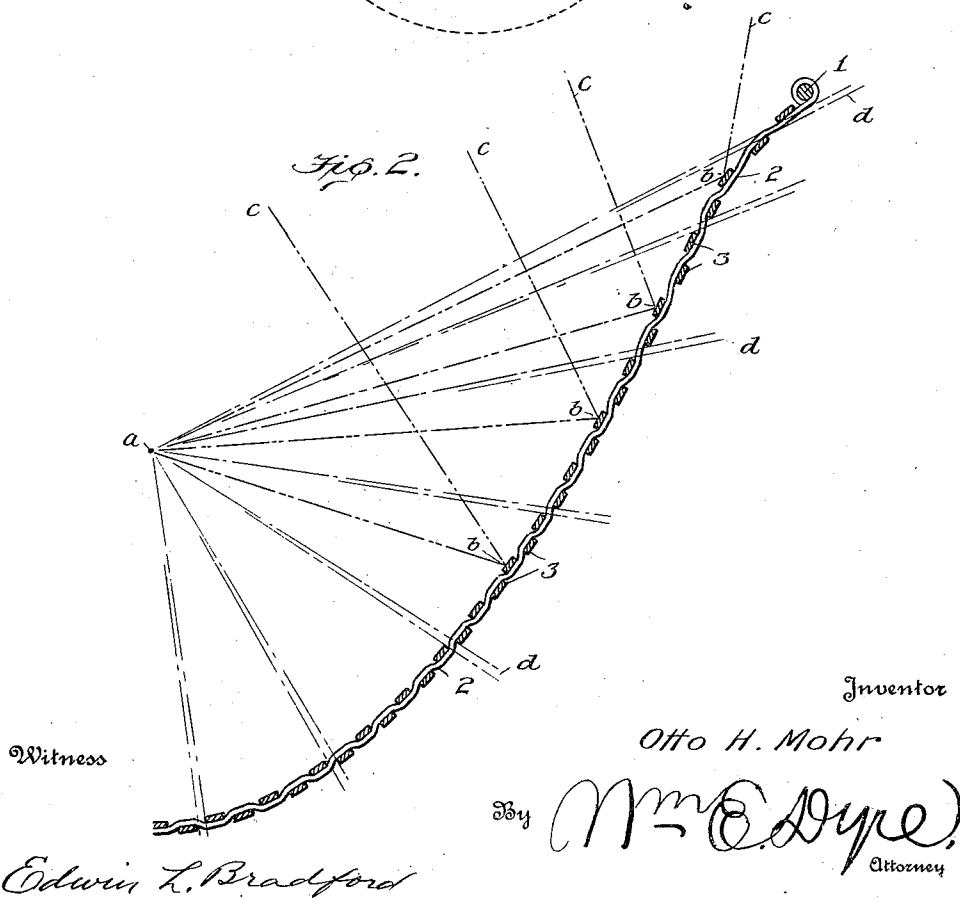


Fig. 2.



## UNITED STATES PATENT OFFICE.

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## REFLECTOR SHADE.

Application filed January 7, 1920. Serial No. 349,884.

*To all whom it may concern:*

Be it known that I, OTTO H. MOHR, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Reflector Shades; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My present invention relates to the subject of illumination by agency of artificial light, but more particularly to an even distribution of light from a given source for illuminating purposes; as also to structural means for accomplishing such uniformity of distribution throughout the entire lighted area.

This invention has for an object the production of a combined light shade and reflector arranged and adapted to deliver either directly or indirectly, a flood of soft, reflected, diffused light in a multiplicity of independent rays or beams, to a given working illuminated area, and at the same time to permit the escape directly through said shade and reflector, of a predetermined amount of light, likewise in independent rays or beams of uniform intensity, regardless of the position of the light source.

A further object of this invention is the production of a combined shade and reflector, hereinafter termed a reflector-shade, of opaque material, having upon one side a multiplicity of individual reflecting surfaces, and a suitable number of light emitting apertures therebetween, whereby the aforesaid results are accomplished irrespective of the exterior configuration of the reflector-shade, whether of concave, convex, flat, or other form.

A further object is the production of an opaque reflector-shade having the characteristics aforesaid, made of interwoven or intertwined metallic strips highly polished upon their reflecting sides.

A further object is the production of a simple, durable, non-breakable, light-weight, and comparatively economical reflector-shade for general use and application in place of the fragile glass units ordinarily employed for commercial, industrial and interior lighting, either fixed or portable.

A further object is the production of a

non-breakable, semi-indirect, ventilated reflector-shade of the character indicated, which is at all times self cooling, and at all times capable of breaking up or diffusing both reflected and direct light rays from more or less brilliant sources, thereby insuring an even, uniform and agreeable distribution of light and the elimination of harsh shadows.

With the foregoing and other objects in view, the invention will be hereinafter more particularly pointed out and then set forth by the appended claims.

The accompanying drawings, which form part of this application for Letters Patent, and whereon like numerals, indicate corresponding parts in both views, exemplify an embodiment of my present invention comprising a reflector shade in this instance of concave form, wherein:

Figure 1 is a perspective view showing a bowl or reflector shade by dotted lines, and a small portion only of the all-over woven form of construction; and

Figure 2 is a relatively enlarged fragmentary sectional view, showing in vertical section the woven characteristics of the reflector-shade, a spot indicating a source of light, and a few only of the light rays both reflected and direct.

Reference being had to these drawings and numerals thereon, 1 indicates a wire frame, in the present instance of annular or ring form, serving as a finishing bead or binding for the completed structure. Secured to the ring 1 at points diametrically opposite, are the opposite ends of main body strands 2 each of which may be of uniform width throughout, or of varying widths, according to the required exterior configuration of the particular shade. In the present illustrations, showing a reflector-shade of bowl shape, these main strands 2 are gradually tapered in width toward the center from opposite ends, for the purpose of collectively converging toward the center of the shade structure, and for the purpose also of insuring proper spacing between them.

Interwoven with said main strands 2 is a series of circular horizontally positioned body strands 3 in parallel arrangement, thus constituting a woven pattern of pleasing design. The vertical and horizontal strands 2 and 3, respectively, may of course, be made of any approved materials, but an

opaque material is desirable, and to this end flat ribbon-like strips of metal, preferably copper, are employed. Upon one side at least, namely the reflector side, of the completed structure, strands 2 and 3 are highly polished and finally silver plated to constitute reflecting surfaces. And, because of the over and under interwoven relation of all strands 2 and 3, it will be obvious that a multiplicity of small independent substantially convex reflecting surfaces or mirrors are produced, which, while giving back light from a common source, thoroughly soften and diffuse that light, dividing it into an almost innumerable number of reflected rays, a few of which, the direct ones only, being indicated diagrammatically by Figure 2 of the drawings, wherein *a* indicates a source of light, and *a, b, c*, the reflected rays aforesaid.

Obviously all reflected rays, thus softened and diffused, are returned into the illuminated area, of a room for example, by reflection from a ceiling above, or from a superimposed reflecting unit, not shown, in the usual and well understood manner. It will be particularly noted however, that direct rays, a few of which are indicated on Figure 2 by the lines *a, d*, are filtered directly through interstices formed between the interwoven strands 2 and 3, into the room or other illuminated area, with a peculiarly uniform and even distribution, due to the prearranged spacing of the said woven strands 2 and 3, with relation to the position of the light source *a*. If such position is as indicated by Figure 2 it will be apparent that the spacing of these strands from the lowermost to the uppermost portions of said figure must be gradually increased in order to insure the escape of an equal amount of light from each.

In this manner the comparatively small volume of light escaping directly from a reflector-shade may be regulated and determined by the relative closeness or looseness of the weaving, so as to meet varying requirements. A very small quantity being necessary to relieve the outer surface of a reflector-shade from shadow, or to sufficiently illuminate the surrounding silk shade of a portable or floor lamp; and a relatively increased quantity being required to light the side walls of a room.

Having thus described my present invention, it should be understood that I do not consider myself restricted to the form and arrangement of parts shown and described, since these may be varied indefinitely without in the least departing from the spirit of

this invention involving broadly the idea of a combined reflector and shade unit, made of woven material with light-emitting openings of a size and location proportionate to the position of the light source. And I consider it entirely within the scope of this invention to include reflector-shades having the characteristics aforesaid, regardless of what materials or of how formed, as for example of pressed steel in imitation of basket work, or of expanded metal.

What I claim therefore and desire to secure by Letters Patent is:

1. An interwoven reflector-shade broken by light emitting openings varying in size proportionally to the distance of each from the relatively fixed location of a light source.

2. An interwoven reflector-shade broken by light emitting openings varying in size proportionally to the distance of each from the relatively fixed location of a light source, and provided with a multiplicity of reflecting surfaces.

3. A reflector-shade broken by light emitting openings varying in size proportionally to the distance of each from the relatively fixed location of a light source, and formed of interwoven opaque strips having reflecting surfaces upon one side.

4. A reflector-shade of the character described having a multiplicity of convex reflecting mirrors upon its interior, and formed of interwoven strips flanked by a multiplicity of light emitting openings, varying in size proportionally to their distance from the light source.

5. A reflector-shade of the character described having a multiplicity of independent reflecting mirrors upon its light side, and perforated by a multiplicity of light emitting openings proportionate in size to the relatively fixed location of a light source whereby each of said openings permits passage of an equal amount of light.

6. A reflector-shade of the character described having a multiplicity of convex reflecting mirrors upon its light side, and perforated by a multiplicity of variable light emitting openings proportionate in size to the relatively fixed location of a light source whereby uniform distribution of both the reflected and direct light is obtained.

In testimony whereof I affix my signature, in presence of two subscribing witnesses.

OTTO H. MOHR.

Witnesses:

H. E. RICHARDSON,  
RICHD. YATES HOFFMAN.