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N. C. FOSS ET AL
LIGHT REFLECTING SCREEN

2,298,556

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Fig. 1

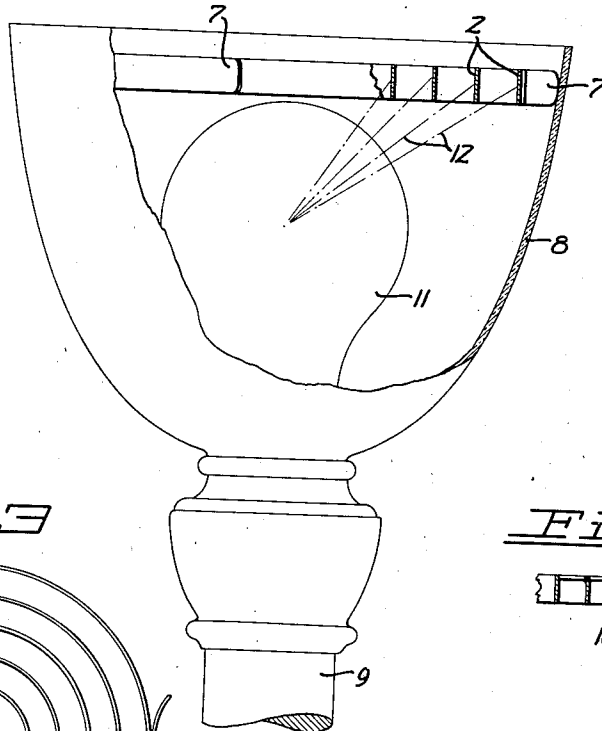


Fig. 3

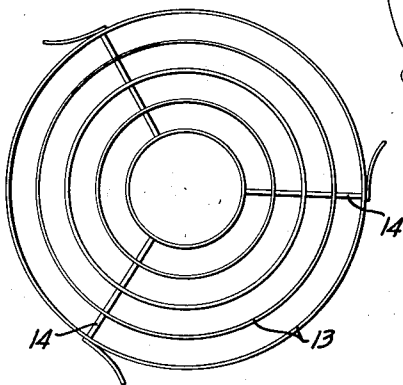


Fig. 5

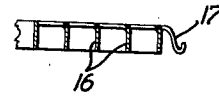


Fig. 2

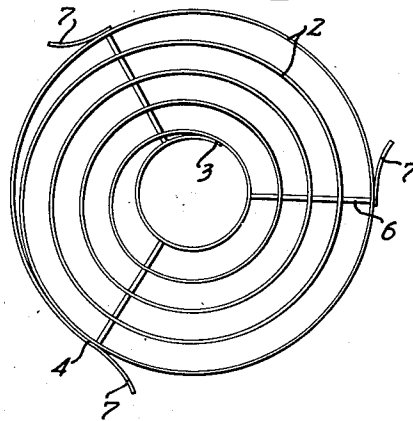
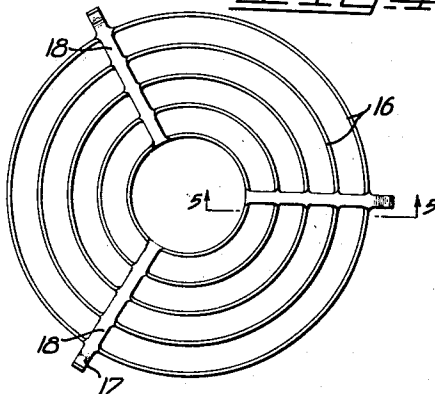


Fig. 4



INVENTORS
NORMAN C. FOSS
LEONARD R. FOSS
BY *Charles S. Evans*
THEIR ATTORNEY

UNITED STATES PATENT OFFICE

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LIGHT REFLECTING SCREEN

Norman C. Foss and Leonard R. Foss,
Oakland, Calif.

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2 Claims. (Cl. 240-81)

Our invention relates to light screens, and particularly to screens for preventing glare.

It is among the objects of our invention to provide a screen which is adapted for use with the diffuser bowl of a reflector type lamp commonly used for indirect lighting, and which prevents spreading of the light rays directly into the eyes of one who is above the level of the diffuser bowl.

Another object of the invention is the provision of a screen of the character described which may be placed in position without fastening it to the bowl and which casts no shadow on the bowl which is visible from the outside.

The invention possesses other objects and features of advantage, some of which, with the foregoing, will be set forth in the following description of our invention. It is to be understood that we do not limit ourselves to this disclosure of species of our invention, as we may adopt variant embodiments thereof within the scope of the claims.

Referring to the drawing:

Figure 1 is an elevation of the upper part of a reflector lamp, a portion of the reflector being broken away to show the device of our invention therein.

Figure 2 is a plan view of our device as shown apart from the reflector lamp.

Figures 3 and 4 are plan views of modified forms of our invention.

Figure 5 is a fragmental sectional view taken in a plane indicated by the line 5-5 of Figure 4.

In indoor lighting it has been a problem to efficiently illuminate a room without subjecting the eyes of an occupant to objectionable glare in different positions within the room. Some reflector type lamps now in use have the upper open end of the reflector slightly below the line of vision of a person standing near the lamp. This condition permits the eye to come within the cone of light emanating from the reflector and thus intercept some of the direct rays thereof. A similar condition obtains when a lamp is positioned near a stairway. Glare from the lamp may be very annoying to one on the stairs.

Broadly, the device of our invention comprises means readily placed at the top of a diffuser bowl, to eliminate glare due to direct light rays, by providing a plurality of light intercepting and/or reflecting surfaces positioned in the cone of light. The surfaces are so arranged with reference to the light source that the rays of light passing out over the edge of the bowl in the most nearly horizontal positions are intercepted. Means are provided for holding the device in po-

sition so that no shadow is cast upon the diffuser bowl. Preferably the intercepting surfaces act also as reflectors for the rays striking them, so that they are directed upwardly against the ceiling.

In terms of greater detail, and referring to Figures 1 and 2 of the drawing, our light intercepting and/or reflecting screen comprises a strip of suitable material wound in an involute curve to form a plurality of preferably reflecting surfaces 2. We may use a light strip of aluminum or brass, or any of the many metal plated surfaces. Synthetic resins or other suitable material may be utilized. As illustrated in the drawing, the reflecting surfaces are substantially regularly spaced apart, the distance between adjacent turns of the strip being approximately equal to the width of the strip material.

After being wound, the strip is preferably united at points 3 and 4 by welding. Stiffening arms 6 are also provided and are preferably welded to each convolution of the strip to hold them in their proper position.

A plurality of spring fingers 7, three being shown, are welded to the outside convolution of the strip to form resilient supports. The fingers are preferably positioned adjacent the ends of the stiffening arms, as best shown in Figures 2 and 3 of the drawing.

The circular screen thus formed is placed within the diffuser bowl 8, of a lamp stand 9, as shown in Figure 1, with the spring fingers 7 frictionally engaging the inner surface of the bowl in substantially a point contact therewith. Because the fingers 7 support the outer convolution at a distance from the wall of the bowl, there is no shadow on the bowl.

The screen overlies a source of light 11 within the bowl, and intercepts and reflects some of the light rays 12 which would otherwise pass directly over the upper rim of the bowl. The eyes of a person standing near the lamp or even above the level thereof, are thus shielded from the direct rays of light.

Our screen may be formed as an involute, as in Figure 2, but without either welds at points 3 and 4, reinforcing rods 6, or supporting members 7. The result is a free coil similar to a watch spring but materially differing in size. In this case, the outside convolution is made slightly larger than the inside diameter of the diffusing bowl of the lamp so as to frictionally engage the latter when the screen is slightly compressed to position it within the reflector. If desired the

free coil may be provided with fingers 7 to support the coil away from the wall of the bowl.

Figure 3 illustrates another form of our screen wherein the light intercepting surfaces 13 are formed as concentric circles held in their respective positions by radial arms 14 fastened thereto.

Figures 4 and 5 show our screen as a stamping made from a single flat sheet of material. The downturned bands 16 provide the light intercepting and/or reflecting surfaces, while resilient supporting fingers 17 are formed from portions of the sheet.

Narrow, ribs 18, formed as a part of the parent sheet, provide stiffening and spacing means for the downturned bands. This latter construction of our screen is inherently cheaper to manufacture as the entire screen can be formed in one operation of a stamping die from a single sheet of relatively thin material.

Preferably our screen is mounted as an independent element supported within the upper portion of the bowl of a reflector lamp. However, instead of mounting the screen as a separate element, it may be incorporated in a lamp shade 21 in any suitable manner.

We claim:

1. The combination with a lamp having an up-

wardly faced bowl for reflecting and diffusing light from a source within the bowl, of a screen comprising a band of flat strip material wound in spiral convolutions about a central axis, spacing means secured to the convolutions for holding the same in substantially uniformly spaced relation, and spring supporting fingers secured upon the outer faces of the outer convolution adjacent the outer ends of the spacing means, said fingers being positioned tangentially to said outer convolution for yieldably engaging the inner surface of the bowl.

2. The combination with a lamp having an upwardly faced bowl for reflecting and diffusing light from a source within the bowl, of a screen comprising a plurality of light intercepting baffles radially spaced about a central axis, spacer rods secured to the baffles for holding the same in regularly spaced relation, and spring fingers secured to the outer surface of the outer baffle in approximately tangential relation thereto, said fingers being positioned adjacent the outer ends of the spacer rods and engaging the upper portion of the bowl and loosely supporting the screen thereon above the source of light with the outermost baffle spaced from the wall of the bowl.

NORMAN C. FOSS.
LEONARD R. FOSS.