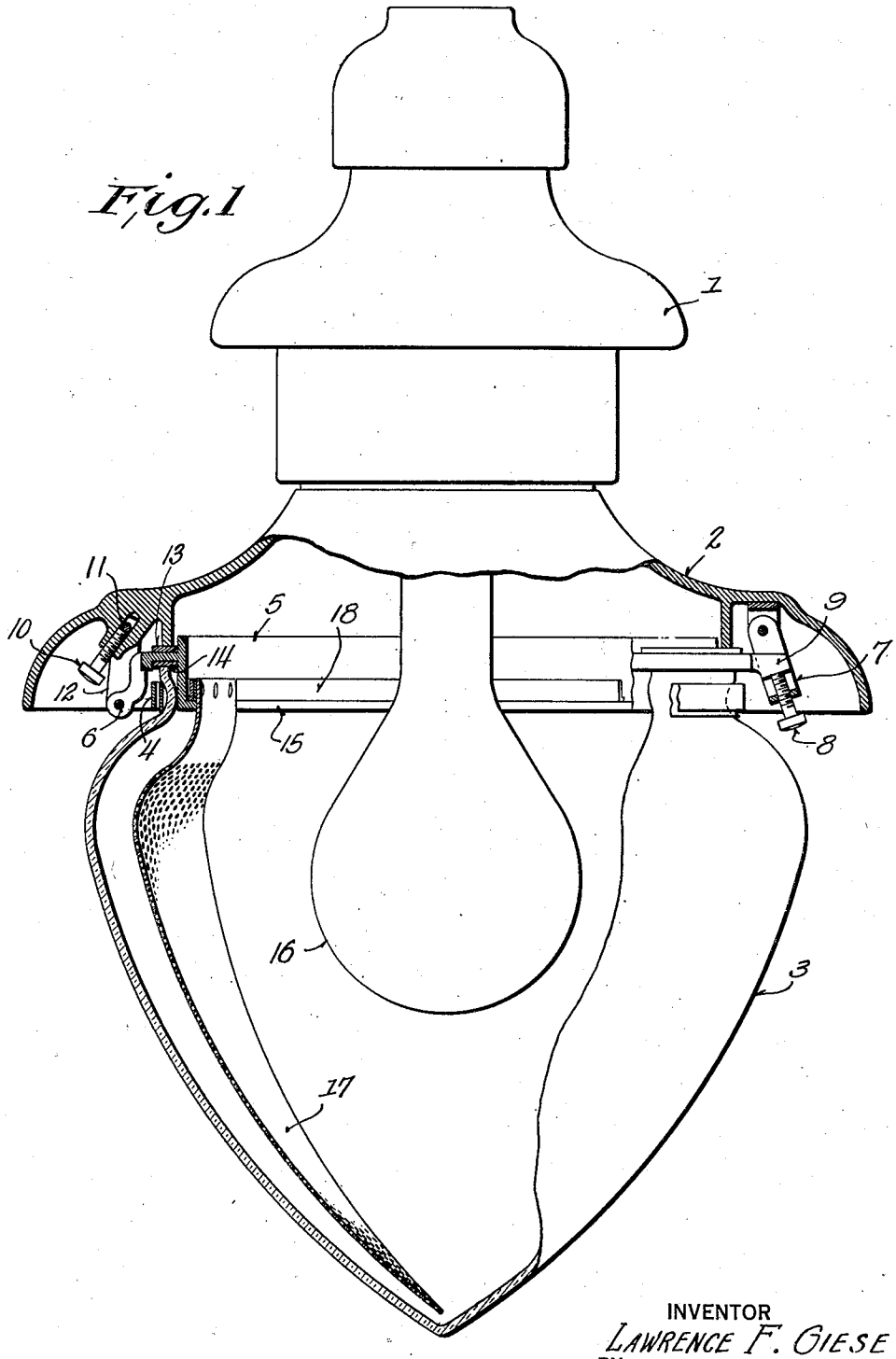
June 13, 1939. L. F. GIESE 2,161,957

LIGHTING UNIT

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Fig. 1



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LIGHTING UNIT

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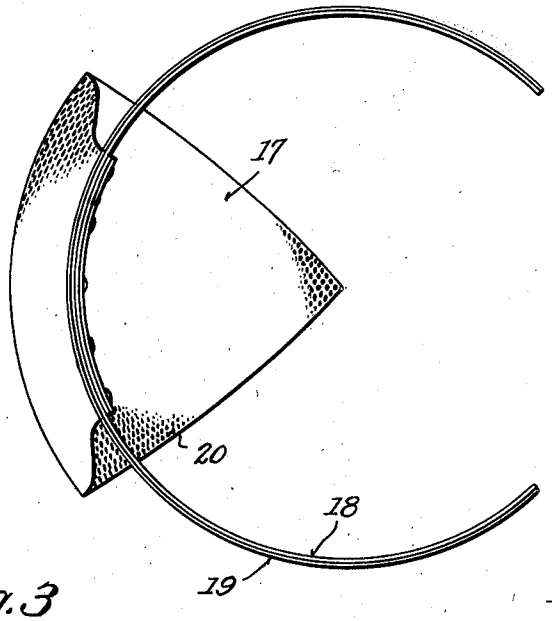


Fig. 2

Fig. 3

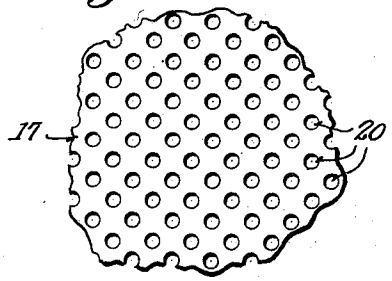


Fig. 4

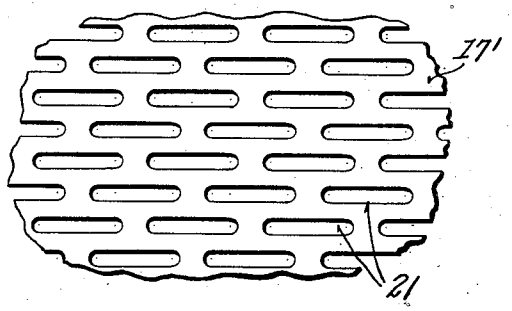
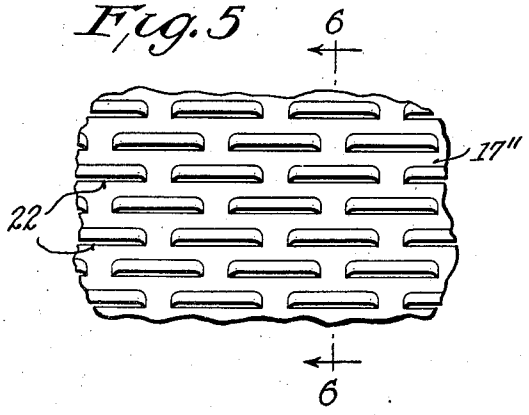


Fig. 5



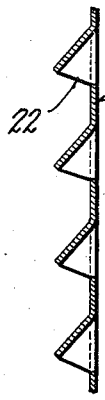


Fig. 6

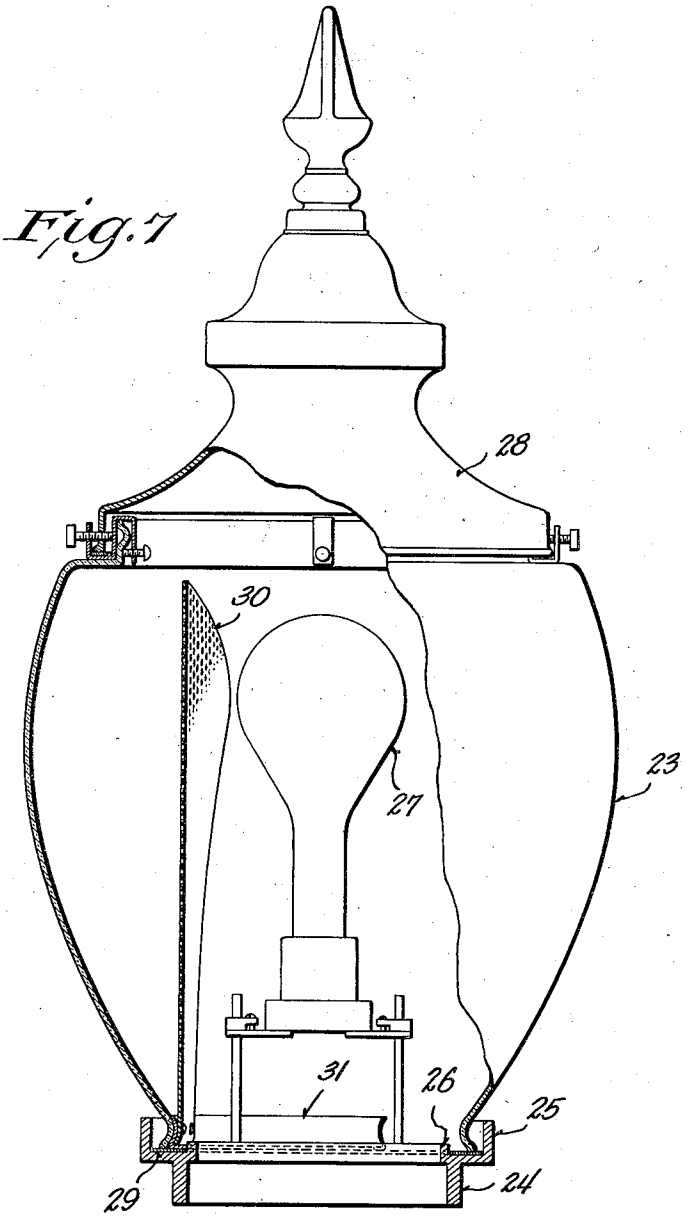
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Fig. 7



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Patented June 13, 1939 2,161,957

UNITED STATES PATENT OFFICE

2,161,957

LIGHTING UNIT

Lawrence F. Giese, Hales Corners, Wis., assignor to Line Material Company, South Milwaukee, Wis., a corporation of Delaware

Application December 21, 1936, Serial No. 116,976

2 Claims. (Cl. 240—25)

This invention relates to a lighting unit and is particularly directed to a partially shielded lighting unit.

In lighting units where a lamp is used inside of a light transmitting member, such as the glass globe the light projected from the lighting unit is usually of the same intensity in all directions, particularly for the common types of suspension fixtures or ornamental street fixtures. It therefore results that where these lights are positioned along the edge of a highway, a good portion of the light is transmitted along the edge of the road and into the ditch. Similarly in ornamental installations in a residential section a good portion of the light is transmitted onto people's lawns and into their bedroom windows.

Various attempts have been made to obviate these defects and solid reflectors have been employed as a shield for shielding a portion of the globe or other light transmitting member. This results in an unsightly appearance, however, due to the fact that one side of the fixture is almost totally dark.

This invention is designed to overcome the above noted defects and objects of this invention are to provide a novel form of lighting unit which retains its ornamental or attractive appearance when lighted although shielding means are provided for preventing the objectionable lighting of lawns, bedroom windows, or unused sides of the road, for example, but which nevertheless does not put one side of the fixture in total darkness but provides at one and the same time a shield for a portion of the globe or other member while lighting to a materially reduced degree the shielded portion of such globe or member so that the objectionable light from the fixture is eliminated while the entire fixture is nevertheless maintained in an illuminated condition, thus avoiding any unsightly and inartistic appearance of the fixture while insuring comfort for residents in the vicinity of the fixture.

Further objects are to provide a shield which has light transmitting characteristics to lessen the light transmitted to the globe or other surrounding member from the lamp and which has a reflecting surface presented towards the lamp so that the light obstructed by the shield is not wasted but is re-directed and is utilized.

Further objects are to provide a novel form of shield for lighting units which may be formed of metal or other material, which has a reflecting surface adapted for presentation towards the lamp, and which is provided with a plurality of apertures to allow a certain definite or predetermined amount of light to pass through the shield to thus rather faintly illuminate the shielded portion of the globe or similar member surrounding the lamp.

Embodiments of the invention are shown in the accompanying drawings, in which:

Figure 1 is a view of a suspension type of lighting unit, with parts broken away and in section, showing the shield in place.

Figure 2 is a plan view of the shielding member.

Figure 3 is a detail showing a fragment of one form that the shielding member may take drawn to an exaggerated scale.

Figure 4 is a view of a fragment of a further form of shielding member.

Figure 5 is a fragment of a further form of shielding member.

Figure 6 is a sectional view, much enlarged, taken on the line 6—6 of Figure 5.

Figure 7 is a view of an ornamental type of street fixture, with parts broken away and in section, showing the shield in place.

Referring to Figure 1, it will be seen that a conventional form of suspension lighting unit has been illustrated as having a head 1, a hood 2, and a globe 3, the globe being held in any suitable manner, as by means of the globe ring 4 carried by means, not shown, from the supporting ring 5. This supporting ring may be pivotally mounted, as indicated at 6, and may be removably held in place by means of the U-shaped link 7 carrying the clamping screw 8. The clamping screw 8 preferably bears against a lug 9 projecting from the supporting ring 5 and if desired, an adjusting screw or clamping screw 10 may be provided and may bear against a pin 11 carried by the suspension link 12 upon which the ring 5 is pivoted. In accordance with the usual practice, gaskets 13 and 14 may be positioned on opposite sides of the flange of the ring 5 between such flange and the hood 2 and globe 3 respectively. The ring 5 may be provided with an inwardly directed bottom flange portion 15 and the fixture is provided with a lamp 16 positioned within the globe or light transmitting member 3.

The shield is indicated at 17 and may be of roughly triangular shape and is positioned between the lamp 16 and the globe 3, preferably out of contact with both the lamp and the globe. It may be provided with an annular split ring 18 formed of resilient material and adapted to expand against the inner face of the supporting ring 5. This supporting member or spring member 18 is riveted or otherwise secured to the

shield 17 and rests upon the flange 15 of the ring 5, as shown in Figure 1.

If desired, the split ring 18 may be provided with a small outwardly directed flange 19 to thus permit a lighter stock to be used in forming the spring.

The shield 17 is preferably formed of polished sheet metal, at least one side, namely, that presented towards the lamp being polished and forming a reflecting surface for re-directing the light. The shield may be of any suitable material, though metal is preferred, such, for instance, as aluminum with a high reflecting finish thereon, copper preferably chromium plated, or of any other material with a long-lasting luster and high polish. The shield is provided with a plurality of holes which may be formed by drilling or otherwise perforating the member. One form employs roughly 400 holes to the square inch. Obviously the amount of light reflected by the shield and the amount transmitted may be made any value desired. A value that has been found satisfactory is to re-direct approximately 60% of the light from the shield by reflection and to transmit approximately 40% through the apertures. Very clearly the relative area of the openings and the remaining body of the shield would determine the proportion of light reflected to that transmitted.

Figure 3 shows the perforated shield of Figure 2 drawn to a very much enlarged scale, the holes being indicated by the reference character 20. The perforations preferably cover the entire area of the screen, though they have been partly omitted from Figure 2 for the sake of clearness. Obviously the small perforations cannot be indicated in their proper proportions relative to the screen in Figure 2.

Obviously larger perforations could be used than those described and the figures given above are intended merely as illustrative. It is within the realm of this invention to use larger size holes which may be, if desired, similarly shaped to that shown in Figure 3 or may be differently shaped. For example in Figure 4 roughly rectangular or oval-shaped holes or slots 21 may be provided in the shield 17'.

It is to be noted from reference to Figures 5 and 6 that the louver like portions of the shield adjacent the apertures serve as reflecting members to reflect a portion of the light transmitted through the apertures of the shield and to thus cause a further diffusion of the light by reflecting it from a multitude of different points so that the shielded portion of the globe is uniformly illuminated.

This uniform illumination of the globe is also greater where the shield conforms approximately to the contour of the globe, as, for example, shown in Figures 1 and 2, and this is readily accomplished, the shield also being held so that it is substantially uniformly spaced from the globe throughout the major portion of its extent. This form of the invention, therefore, gives a better shielding effect and a more uniform illumination of the shielded portion of the globe.

In the form shown in Figure 5 small louvers 22 may be formed in the shield 17''.

It is obvious that the perforations may take other shapes than those specifically illustrated.

Referring to the form of the invention shown in Figure 7, an ornamental street lighting unit has been illustrated as comprising a globe 23 supported from the annular supporting member 24, which latter is usually provided with an outer upwardly projecting flange 25 and an inner, relatively smaller, upwardly projecting flange 26. Within the globe a lamp 27 is carried in any suitable or usual manner. The globe has its upper portion closed by means of the ornamental top 28. The cover 28 may be secured to the globe in any suitable manner, for example as illustrated, and the globe may be locked to the support 24 in any of the usual ways, not shown. If desired, a gasket 29 may be positioned between the base of the globe 23 and the support 24.

Within the globe or light transmitting member 23 a shield 30 is positioned and is preferably held by means of an outwardly expanding split ring 31 formed of resilient material and preferably curved or contoured to fit the inwardly projecting bend adjacent the base of the globe, thus automatically and removably holding the shield in place in a manner similar to the action of the spring ring 18 of Figure 2. Only half of the shield has been shown in Figure 7, the remaining half being sectioned off.

The shield is preferably formed in exactly the same manner as that described in detail in connection with Figures 2 to 6.

In each form of the invention the shield is intended to transmit only a portion of the light falling thereon. Preferably it is so made as to reflect the unused light. For instance as described, the major portion of the light is preferably reflected and a smaller portions transmitted so that the shielded portion of the globe or other light transmitting member will be illuminated and will not appear dark when the fixture is lighted, thus retaining the attractive appearance of the fixture but nevertheless materially reducing the intensity of illumination of that portion of the globe or other member shielded by the shield.

It will be seen that this invention provides a very simple remedy for the annoying and relatively undesired light from a fixture while at the same time maintaining the entire globe or other member lighted up and thus avoiding inartistic or unpleasant effects that would result from the use of a solid opaque shield.

It is to noted particularly that the shields may be very cheaply manufactured and may be easily applied to existing types of fixtures without in any way marring their attractiveness either when lighted or unlighted and yet fulfilling the objects hereinabove enumerated.

Although this invention has been described in considerable detail, it is to be understood that such description is intended as illustrative rather than limiting, as the invention may be variously embodied and is to be interpreted as claimed.

I claim:

1. In a lighting unit, the combination of a globe, a lamp for illuminating said globe, a metal shield interposed between said lamp and said globe for shielding a portion only of said globe, said shield having a polished reflecting surface presented towards said lamp and having a plurality of apertures for transmitting light to illuminate the shielded portion of said globe and having slanting louver like portions adjacent said apertures for causing reflection of a part of the light transmitted through said apertures, whereby the shielded portion of said globe is illuminated with a diffused illumination and to a lesser extent than the unshielded portion of said globe thereby avoiding unsightly contrast between the shielded and unshielded portions of said globe.

2. In a lighting unit, the combination of a globe, a lamp located within said globe for il-

luminating said globe, and a metal shield interposed between said lamp and said globe for shielding a portion only of said globe, said lighting unit having an annular portion provided with an inwardly projecting flange, and a resilient split ring carried by said shield and seated upon said flange, said split ring expanding and bearing against said annular portion, whereby said shield is supported by the engagement of said split ring with said flange and is prevented from shifting by the resiliency of said split ring, said split ring being out of contact with said globe.

LAWRENCE F. GIESE.