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STAND LAMP WITH LIGHT DIFFUSING MEANS

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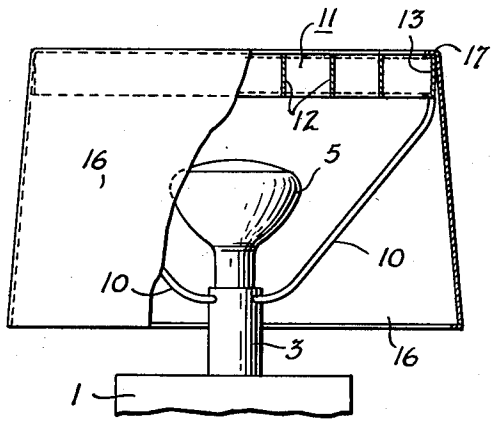


Fig. 1

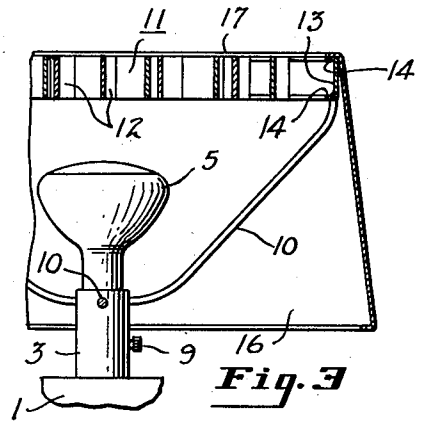


Fig. 3

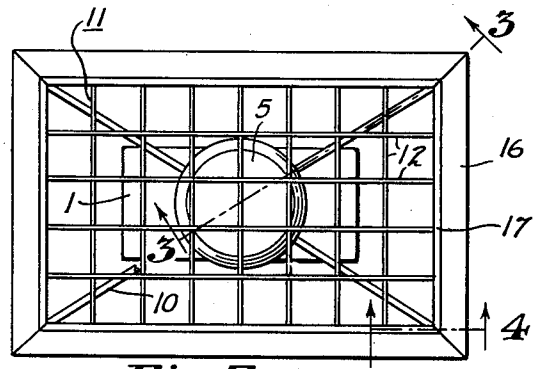


Fig. 2

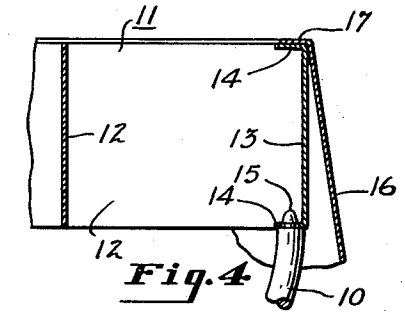


Fig. 4

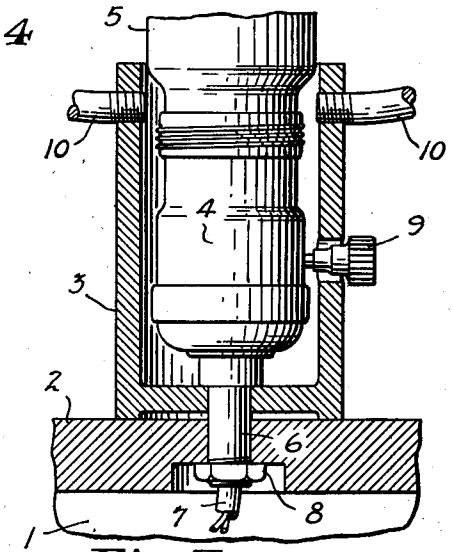


Fig. 5

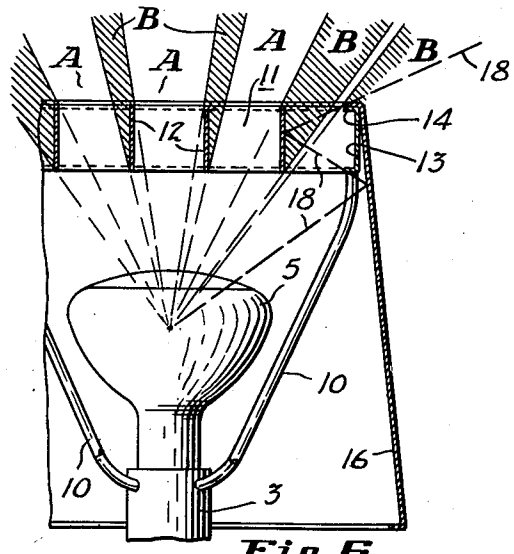


Fig. 6

INVENTORS
Robert D. Pfister
Arthur O. Pfister
BY Evans & McCoy
ATTORNEYS

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STAND LAMP WITH LIGHT-DIFFUSING MEANS

Robert D. Pfister, Rocky River, and Arthur O. Pfister, Cleveland Heights, Ohio

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3 Claims. (Cl. 240—81)

1

This invention relates to a lamp construction, and in particular to a novel construction including a diffusing unit and a lamp shade with mechanism to support them with respect to the lighting unit.

It is an object of the present invention to provide a lamp construction in which a large proportion of direct light rays from the light source are permitted to travel in a substantially vertical direction to provide indirect and non-glare lighting.

A further object is to provide a lamp construction which may be incorporated in a table lamp where the top of the lamp is disposed beneath the normal eye level of the standard person and in which the direct light rays emanated in a lateral direction are reduced, thus eliminating the glare of direct light rays from the light source to the eyes of a person until they stand immediately adjacent or over the lamp construction.

A further object is to provide a lamp construction suitable for use as a table lamp or the like incorporating a diffusing unit which allows a large portion of the direct light to pass rays upwardly and which simultaneously causes wider emanation of reflected light in a lateral direction.

Other objects and advantages of the present invention will become apparent from the following detailed description accompanied by the drawings, in which:

Figure 1 is a side elevation of a lamp construction embodying the present invention with parts broken away to illustrate details of the construction;

Fig. 2 is a top plan view of the lamp shown in Fig. 1;

Fig. 3 is a fragmentary sectional view taken substantially on line 3—3 of Fig. 2;

Fig. 4 is an enlarged fragmentary sectional view taken substantially on line 4—4 of Fig. 2;

Fig. 5 is an enlarged view, partly in section, of a portion of the lamp mechanism to show details of construction; and

Fig. 6 is a fragmentary sectional view to diagrammatically illustrate the features of operation of the lamp construction.

The drawings illustrate a preferred embodiment of the present invention which shows a table lamp carried on a suitable stand or base 1, only a portion of which is shown. The base may be of any desired shape or configuration which will enhance the appearance of the lamp. By way of example, the base may comprise a glass or plastic block or mass enclosed by a suitable framing member, a portion of which is

2

indicated by the numeral 2 in Fig. 5 to which the lamp construction may be secured.

A cylindrical supporting member or base 3 may be secured to the base 1 in any desired manner. The supporting member or base 3 is preferably hollow to receive a conventional light socket member 4, in which may be mounted a suitable lighting source or unit 5. The socket member 4 is normally provided with a conduit 6 through which electric wires 7 may pass to carry current to the lighting unit. The lower end of the conduit 6 may be provided on its exterior surfaces with threads so that when the conduit is passed through an aperture in this supporting member 3 and base 1, a nut 8 may be threaded thereon to hold the socket and supporting member 3 to the base 1 of the lamp. The socket member 4 may also be provided with a rotary electrical switch actuatable by a button 9 which extends outwardly through the side wall of the supporting member 3 where it may be readily available for switching the lamp on and off.

Near the top of the supporting member 3 a plurality of upwardly and outwardly extending arms may be mounted. These arms may be secured to the supporting member 3 by a press fit or otherwise. As shown in the drawings, however, the ends of the arms 10 are threaded and are received in threaded apertures in the side walls of the supporting member 3. The arms 10 extend upwardly and outwardly to a point above the top of the lighting unit 5 where they detachably connect with a diffusing unit indicated generally by the numeral 11.

The diffusing unit 11 is shown as a grid member composed of two series of thin spaced slat-like elements 12, one series being disposed at right angles to the other series. The elements 12 of each series are notched to interfit with the elements of the other series and form the grid member. This grid member may be supported and held in its assembled position by a frame member 13. The frame member 13 is shown as a closed rectangular member, channel shaped in cross section, with the flange or leg portions 14 thereof disposed inwardly. The ends of the slat members 12 may be indented so that they will fit within the flanges 14 of the channel shaped frame member 13.

The diffusing unit 11 is preferably detachably connected to the ends of the arms 10 by providing apertures in the lowermost flange 14 of the frame member 13 of the diffusing unit and by providing knobs or projections 15 on the ends of the arms 10 which pass through the aper-

tures to hold the diffusing unit and the arms together. Between the knobs or projections 15 and the ends of the arms 10, necks or undercut grooves may be provided. The arms 10 may be so shaped as to match with the apertures in the flange 14 of the frame 13, or preferably the arms may be shaped so that their normal spacing is slightly larger or smaller than the diffusing unit 11 so that in assembling the diffusing unit to the arms, the arms will be slightly sprung inwardly or outwardly. This will insure secure connection between the arms and diffusing unit since the knobs or projections 15 on the ends of the arms will tend to move outwardly or inwardly in the apertures through the flanges 14 of the frame 13. The necks or undercut grooves between the projections 15 and the ends of the arms 10 will permit such movement and facilitate a secure connection.

A suitable shade may then be disposed on and supported by the diffusing unit. The drawings illustrate a shade 16 of frusto pyramidal configuration tapering inwardly from bottom to top and having inwardly turned flange portions 17 at the top thereof which are adapted to engage the top flange 14 of the frame member 13 of the diffusing unit to obtain support for the shade and the shade may be formed of any suitable material, of a translucent or preferably opaque nature. For example, the shade may be fabricated from thin sheet metal such as aluminum or the like, the surface of which may be painted, coated or otherwise treated. To obtain a desired exterior surface the shade may be covered with a decorative material such as cloth, paper, real or artificial leather, etc. Preferably, the interior surfaces of the shade are coated, treated or painted to provide surfaces having good reflecting characteristics. Similarly, the frame 13 and the slat elements 12 of the diffusing unit may be treated to enhance their reflecting surfaces.

It is believed desirable to construct the diffusing unit 11 of aluminum and to treat its surface such as by anodizing to give it a non-corrosive finish which will provide good light reflecting properties. The use of an anodized aluminum diffusing unit is desirable since this assists in permitting the heat created by the lighting unit to be transmitted from within the area enclosed by the shade. Also the design of the diffusing unit illustrated in the drawings is beneficial for this heat transfer, the individual slats 12 having a decreased tendency to restrict the flow of air and heat through the top of the shade.

The particular lighting unit or light source is a matter of choice, with present conventional electric lamps being suitable. The drawings illustrate an electric lamp having a ceramic coating around its side faces which in effect provides a combination electric lamp and bowl type diffuser, directing most of the direct rays upwardly through the top face of the lamp. Excellent results are obtained utilizing higher wattage electric lamps than are normally used in table lamps, thus providing larger quantities of light without glare or objectionable direct light.

Fig. 6 illustrates diagrammatically the effect produced with a lamp constructed in accordance with the present invention. For ease of illustration the light source is indicated as a single point from which rays emanate. The areas of direct light rays transmitted through the diffusing unit are indicated by the letter A and the shaded areas are indicated by the letter B. It will be seen that the diffusing unit tends to allow free passage of the light in a substantially vertical path to the ceiling so that general illumination is obtained by indirect light. Further, the plurality of slat elements of the diffusing unit prevents the transmission of direct light rays in a sidewise direction so that persons standing near the light do not see the glaring direct rays of the light source when looking toward the light source until they are in a position immediately adjacent and above the lamp.

At the same time, however, the diffusing unit acts to spread reflected light to a wider angle than would be possible in a lamp not utilizing such a diffusing unit. The path of a light beam illustrating this feature is shown in dash lines in Fig. 6, identified by the numeral 18.

It will be seen that the present invention provides a lamp construction which may be utilized as a table lamp but which will have the very desirable characteristics of furnishing indirect lighting since a large proportion of the light travels upwardly in a substantially vertical direction. At the same time the lamp will not cause glare due to a direct view of the light source to users sitting or standing near it. Also, as indicated in the drawings, the indirect or reflected light transmitted in a lateral direction at the top of the shade is greater than that transmitted by a conventional table lamp. The construction illustrated in the drawings is of a simple design with a relatively few number of parts which provide a sturdy and rigid construction. The fewness and simplicity of the parts adapts the lamp to manufacture at decreased cost.

Although the lamp is illustrated in the drawings as four-sided, it will be understood that it may be constructed in many other configurations such as triangular, round, irregular, etc.

It will be understood that the foregoing description of preferred embodiments of the invention is for the purpose of explanation and illustration and is not intended to limit the scope of the invention as described and claimed in the following claims.

What we claim is:

1. A lamp construction comprising a base member, an electrical socket carried by the base member, a lighting unit mounted in said socket to direct rays of light predominantly in upward directions and uniformly about a vertical axis, angularly spaced arms extending outwardly and upwardly from said base member and terminating above said lighting unit, a horizontally disposed light diffusing unit supported on said arms directly over and spaced upwardly from said lighting unit, said light diffusing unit having a peripheral frame member engaging said arms and a grid composed of two series of spaced parallel thin flat opaque slats disposed in crossing relation and supported at their ends in said frame members, said slats having flat side faces with reflecting surfaces lying substantially in vertical planes, forming the sides of apertures through the diffusing unit and serving to reflect light upwardly, and a generally tubular opaque shade supported at its upper end on said frame member and surrounding said frame member and lighting unit, said shade extending below said lighting unit and having an internal reflecting surface disposed to reflect a substantial portion of light emitted laterally from said lighting unit upwardly toward said grid.

2. A lamp construction according to claim 1 in which said shade is shaped at its upper end to fit around said peripheral frame member and has

an inwardly projecting flange resting upon the top of said frame member to detachably support the shade thereon.

3. A lamp construction according to claim 1 in which the upper ends of said outwardly and upwardly extending arms have terminal portions of reduced diameter and the peripheral frame member of said light diffusing unit is provided with horizontal flanges having apertures to receive said terminal portions of said arms, said apertures being smaller in area than the transverse section of said arms below said terminal portions whereby said flanges rest on said arms with said projections entering said apertures to removably secure the light diffusing unit in place.

ROBERT D. PFISTER.
ARTHUR O. PFISTER.

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