Aug. 11, 1931. L. C. DOANE 1,818,120

LIGHTING APPLIANCE

Filed July 7, 1928 2 Sheets-Sheet 1

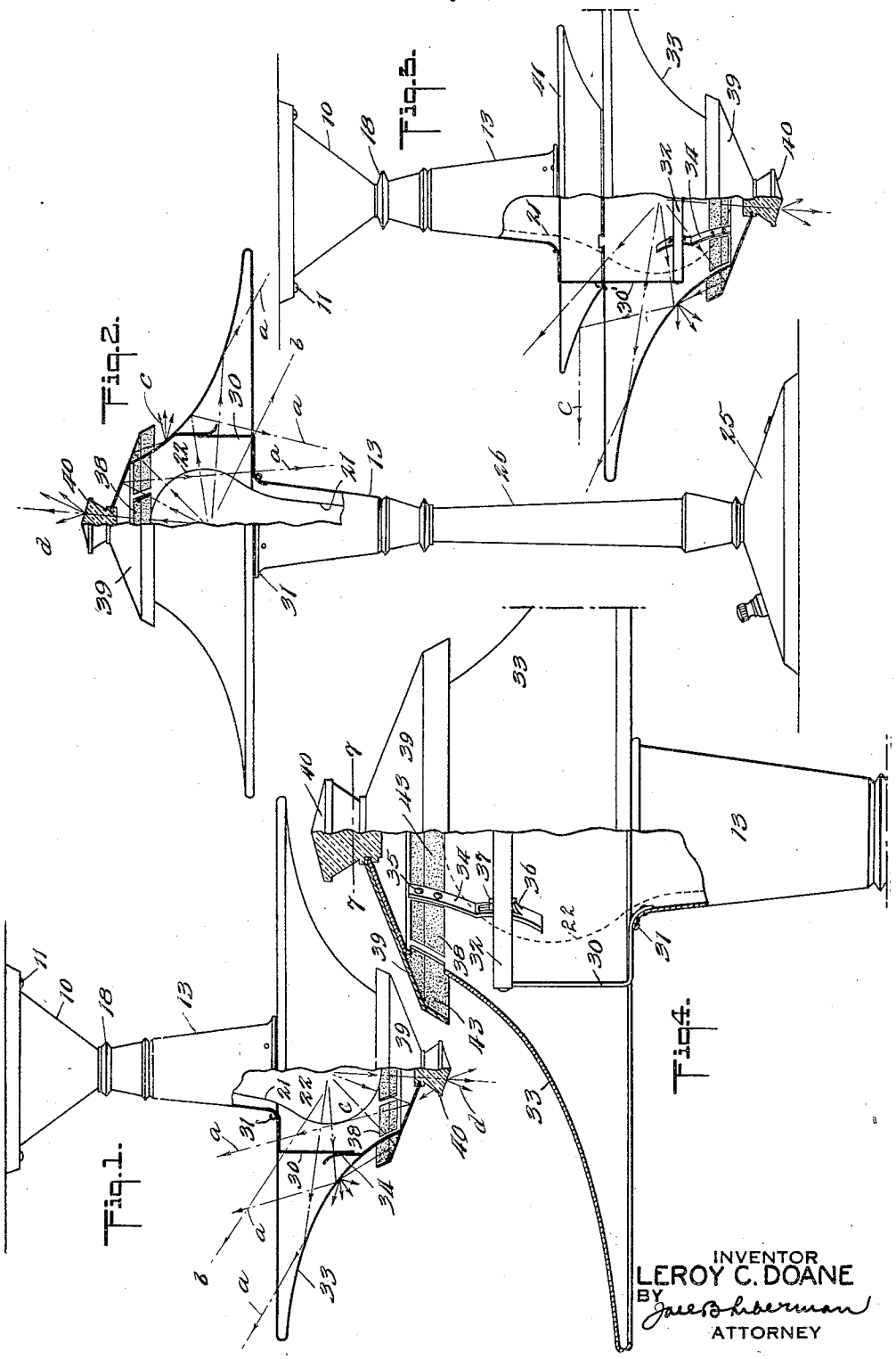


Fig. 1.

Fig. 2.

Fig. 3.

Fig. 4.

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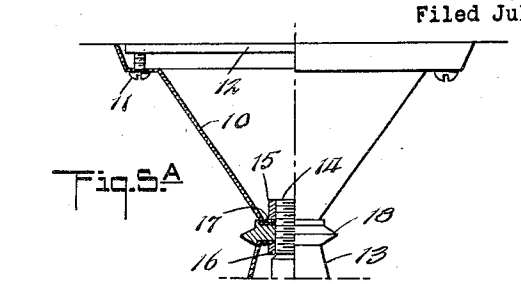


Fig. 5.A

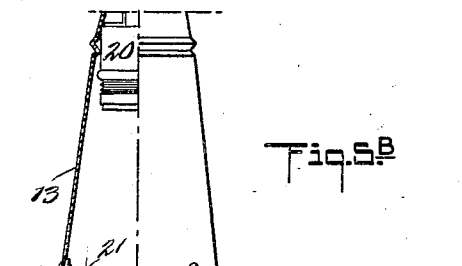


Fig. 5.B

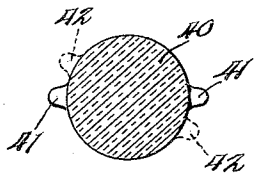


Fig. 7.

Fig. 6.B

Fig. 6.A

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1,818,120

UNITED STATES PATENT OFFICE

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LIGHTING APPLIANCE

Application filed July 7, 1928. Serial No. 290,897.

The present invention relates to lighting appliances and is more particularly directed to lighting appliances such as chandeliers and table lamps having an opaque shade associated with deflecting and reflecting devices so arranged about the light source that the outside surfaces of these parts are illuminated.

According to the present invention an opaque metal shade or deflector is associated with suitable devices whereby the outside of the metal shade is illuminated by a light reflected from a concealed surface preferably carried by an opaque shade cover. Color changing media may be employed, preferably on this concealed surface so that the redirected light is colored, whereby the outside of the metal shade appears colored, according to the arrangement of colors employed. Accordingly these light reflecting devices although opaque appear as a source of light, colored, if desired. They are lighted at a low intensity so they do not product dark spots in the range of vision.

The present invention also contemplates the provision of lighting appliances of this nature wherein substantially all of the light emitted by the light source is under the control of reflecting surfaces so that the light can be directed to the desired direction, colored or not by reflecting surfaces, as desired.

A further object of the invention is to provide a chandelier or table lamp embodying the features above enumerated and wherein the parts may be readily taken apart and separated for cleaning and replacing lamps.

Another object of the invention is to provide such lighting apparatus with an illuminated glass knob which preferably holds certain parts of the apparatus together.

A further object of the invention is to provide a series of chandeliers, table lamps and the like having the various features above referred to and made out of a comparatively small number of different parts. These parts are designed so that they can be expeditiously assembled into various desired forms.

The accompanying drawings show, for purposes of illustrating the present invention, several of the many possible embodiments in which the present invention may take form, it being understood that the drawings are illustrative of the invention rather than limiting the same.

In these drawings:

Figure 1 is a diagrammatic side elevational view, with parts in section, illustrating one form of chandelier more especially designed for smaller lamp bulbs such as 150 watt;

Figure 2 is a view similar to Figure 1 showing a table lamp employing many of the parts shown in Figure 1;

Figure 3 is a view similar to Figure 1 illustrating a form of ceiling fixture suitable for using somewhat larger lamps than the form shown in Figure 1; but employing many identical parts;

Figure 4 is an enlarged sectional view through the upper part of the table lamp of Figure 2 or through the lower part of chandelier of Figure 1;

Figures 5*a* and 5*b* are sectional views with parts in elevation, of a slightly modified form of ceiling fixture suitable for using larger lamps;

Figures 6*a* and 6*b* are sectional views with parts in elevation, of a table lamp more especially arranged for small lamps; and

Figure 7 is a sectional view through a form of glass knob taken on the line 7—7 of Figure 4.

The chandelier shown in Figures 1, 3, 5*a* employs a sheet metal canopy 10 adapted to be supported by screws 11 fastened to a cross bar 12. A conical socket cover or stem 13 is carried below the canopy. These parts may be fastened together by a nipple 14, nuts 15 and 16, lock washer 17 and a break ring 18. As more clearly indicated in Figures 5*a* and 5*b*, the nipple supports a downwardly opening lamp socket 20. The socket cover 13 is preferably long and slightly tapered and adapted to receive the neck 21 of the lamp bulb 22. The table lamp of Figure 2 is provided with a base 25, standard 26, which is adapted to support a socket cover 13 which

may be identical with that used in the chandelier.

The remaining structure for making up a chandelier, as shown in Figure 1, or a table lamp as shown in Figures 2 and 4, is identical, the parts being assembled according to the use to which the unit is to be put. For convenience of description, the enlarged figure of the table lamp of Figure 4, will be employed.

A number of slide rods or straps 30 are riveted or otherwise secured to the mouth 31 of the socket cover 13. These side rods or straps support a ring 32 which is somewhat larger than the lamp bulb. This ring is preferably permanently riveted to the straps 30. A metal reflector or shade 33 of desired shape carries a number of interiorly disposed fingers 34 riveted to it, as indicated at 35. These fingers have outwardly struck prongs 36 and 37 adapted to receive the ring 32. These fingers 34 are made of resilient material so that they can be easily caught onto or released from the ring. The two prongs 36 and 37 engage the ring 32 both above and below, so that the shade is held in place whichever side up the structure is mounted.

The shade 33 is provided with a number of windows 38 adapted to be covered by a small outer metal reflecting cover 39. The two metal stampings 33 and 39 are held together by a glass knob 40 having lugs 41 adapted to pass through notches 42 in these metal parts. The inner surface of the metal stamping 39 is adapted to be covered by colored material as indicated by the stippling 43. This colored material may be uniform or splotched or daubed on in any desired manner so as to obtain varied colors. This colored material is placed opposite the windows 38 so that the light passing through these windows will be reflected and colored.

As shown in Figure 1, some of the light from the light source is reflected upwardly from the inside of the deflecting shade 33 as indicated by the rays *a*. This light may be colored or not as desired by applying suitable inside surface of the shade 33. Some of the light is directly emitted as indicated by the ray *b*. A small portion of the light, however, passes through the windows 38 where it is reflected in colors by the coloring material 43 so that the colored beams are directed onto the outside of the reflector 33 which receives the light as indicated by the ray *c*. This portion of the shade 33 is concave to the incident light so that the light is scattering in a pleasing manner.

The same letters are employed in Figure 2 for indicating the similar rays of light emitted from the table lamp. In each case some of the light also passes into the glass knob 40 thereby illuminating this knob and making it glow as indicated by the rays marked *d*. Some light from the knob falls on the outside of the cover 39 so it is illuminated.

In the form of construction illustrated in Figure 3, the shade 33, cover plate 39, knob 40 and spring catches 34 and ring 32 may be the same as has been described and shown in detail in Figure 4. The ring 32, however, is supported by a longer strap as indicated at 30′ to place these parts in the proper position relative to the center of the light source. A supplementary reflector 41 is supported on the straps 30 above the main reflector 33. This supplementary reflector 41 acts on some of the light as indicated by the ray *e* to reflect it in a horizontal direction.

In the form of construction shown in Figure 5*b*, which is also adapted for larger lamps, the longer straps 30″ are employed for supporting a ring 32 similar to the ring 32 employed in the construction shown in Figures 1 to 4, inclusive. In this case, however, the lower reflector 50 is smaller than reflector 33 and an upper reflector 51 is employed above this lower reflector. The lower reflector 50 is substantially the same construction as the reflector 33 and is provided with the windows 38, cover 39, glass knob 40 and color reflecting surface 43 as above described in detail. The reflector 51 may be illuminated on the outside by light reflected from the lower reflector 50. This light may be colored or not if desired by coloring the reflecting surface.

The form of construction shown in Figures 6*a* and 6*b* is more particularly adapted for a small table lamp. This lamp employs a cast iron base 60, a sheet metal cover plate 61, a break 62 and tubular socket cover 63. These parts are fastened together by a length of pipe 64, nuts 65 and 66 as indicated in Figure 6*a*. The upper end of the pipe 64 supports the lamp socket 67 in the customary manner. This lamp socket is adapted to support an upright bulb 68. The shade 69, cover plate 70 and glass knob 71 may be substantially the same as that shown and described in detail in Figure 4 except that these parts are of smaller size. They act on the light in the same manner as heretofore described.

Instead of supporting these reflector devices from the socket cover, they are, as shown in Figure 6*b*, supported by a shade support 72 having spring fingers 73 which engage the lamp bulb. This shade holder may be of the type shown in Patent No. 1,682,918, September 4, 1928, and permanently secured to the upper part of the shade 60.

It will be noted from the foregoing that the various types of lighting apparatus above described are such that the outside of the metal reflectors are illuminated by a soft

light, colored as desired, so that no dark spots appear even though opaque reflectors are used around the light source. No glare whatsoever is produced. Substantially all of the light is under the control of the reflecting surfaces so that it may be directed in the desired manner to produce either ceiling illumination or table illumination. The apparatus may be readily taken apart for relamping and for cleaning. Inasmuch as the parts are all made of metal, except the glass knob, they are strong and substantial, capable of accurate manufacture in an inexpensive manner so that a satisfactory lighting apparatus may be produced by economical manufacturing methods.

It is obvious that the invention may be embodied in many forms and constructions within the scope of the claims, and I wish it to be understood that the particular forms shown are but a few of the many forms. Various modifications and changes being possible, I do not otherwise limit myself in any way with respect thereto.

I claim:

1. A lighting appliance having a single centrally located lamp bulb, an opaque shade about the lamp, the shade having window openings, a shade cover spaced outside the openings and adapted to redirect light received through the openings onto the outer surface of the shade, and a light distributing glass knob which secures the shade and cover together, the knob acting to redirect light onto the outer surface of the cover.

2. A lighting appliance having a single centrally located lamp bulb, an opaque shade about the lamp, the shade having window openings, separated by narrow strips which support the central portion of the opaque shade, a shade cover secured to the central portion and spaced outside the openings and adapted to redirect light received through the openings onto the outside of the shade, a shade support adjacent the lamp bulb, and quick detachable means for releasing the shade from the shade support.

3. A lighting appliance having a single centrally located lamp bulb, an opaque shade about the lamp, the shade having window openings, a shade cover spaced outside the openings and adapted to redirect light received through the openings onto the outside of the shade, a shade support adjacent the lamp bulb, and quick detachable means for releasing the shade from the shade support, said means being adapted to support the shade about a depending lamp to provide upward illumination or to support the shade about an upright lamp to provide downward illumination.

4. A lighting appliance having a single centrally located lamp socket, a lamp bulb carried in the socket, a socket cover outside the socket and the neck of the lamp bulb, a sheet metal shade disposed close to the lamp bulb and substantially closed near the axis thereof so that the bulb is not removable when the shade is in position, quick detachable, means to support the shade in fixed relation to the bulb and socket cover irrespective of whether the socket is upwardly opening or downwardly opening, the shade having window openings, and an opaque shade cover spaced outside the openings and detachably secured to the sheet metal shade, the cover being adapted to redirect light toward the outer surface of the shade.

5. A lighting appliance having a single centrally located lamp socket, a lamp bulb carried in the socket, a socket cover outside the socket and the neck of the lamp bulb, a sheet metal shade disposed close to the lamp bulb and substantially closed near the axis thereof so that the bulb is not removable when the shade is in position, quick detachable means to support the shade in fixed relation to the bulb and socket cover irrespective of whether the socket is upwardly opening or downwardly opening, the shade having window openings, and an opaque shade cover spaced outside the openings and detachably secured to the sheet metal shade, the cover being adapted to redirect light toward the outer surface of the shade, there being colored media through which the light passes whereby the opaque shade appears to be colored when illuminated, the shade presenting a concave surface to the incident light reflected by the shade cover.

6. A lighting appliance having a single centrally located lamp socket, a lamp bulb carried in the socket, a socket cover outside the socket and the neck of the lamp bulb, struts attached to the socket cover and extending outwardly along the lamp bulb, a narrow ring carried by the struts, an opaque shade carrying spring clips engageable with both sides of the ring to support the shade from the ring, the shade having window openings, and an opaque shade cover spaced outside the openings and adapted to redirect light toward the outside of the shade, there being colored media through which the light passes whereby the opaque shade appears to be colored when illuminated, the shade presenting a concave surface to the incident light reflected by the shade cover.

7. A lighting appliance having a single centrally located lamp socket, a lamp bulb carried in the socket, a socket cover outside the socket and the neck of the lamp bulb, struts attached to the socket cover and extending outwardly along the lamp bulb, a narrow ring carried by the struts, an opaque shade carrying spring clips engageable with

the ring to support the shade from the ring, the shade having window openings, an opaque shade cover spaced outside the openings and adapted to redirect light toward the outer surface of the shade, there being colored media through which the light passes whereby the opaque shade appears to be colored when illuminated, the shade presenting a concave surface to the incident light reflected by the shade cover, and a light transmitting glass knob for securing the shade cover onto the shade.

8. In a luminair having a normally vertical axis and a light source adjacent said axis, an outwardly flaring, opaque reflector about the light source, and symmetrical about the axis of the luminair and intercepting a major portion of the emitted light and returning it in a direction away from the reflector for upward or downward illumination, depending upon whether the flare of the reflector is up or down, the reflector having a plurality of light transmitting openings disposed in a narrow horizontal zone near the axis, the material between the openings supporting a central portion and a small supplemental opaque reflector carried outside the first reflector and secured to the central portion thereof for intercepting light passing through the windows and reflecting it onto the outside of the opaque reflector.

9. In a luminair having a normally vertical axis and a light source adjacent said axis, an outwardly flaring, opaque reflector about the light source, and symmetrical about the axis of the luminair and intercepting a major portion of the emitted light and returning it in a direction away from the reflector for upward or downward illumination, depending upon whether the flare of the reflector is up or down, the reflector having a plurality of light transmitting openings disposed in a narrow horizontal zone near the axis, the material between the openings supporting a central portion and a small supplemental opaque reflector carried outside the first reflector and secured to the central portion thereof for intercepting light passing through the windows and reflecting it onto the outside of the opaque reflector, the reflecting surface of the supplemental reflector carrying colored media whereby the opaque reflector appears colored when illuminated, the outside surface of the opaque reflector presenting a concave surface of sufficient extent to receive all the light from the supplemental reflector.

10. In a lighting fixture, a dished sheet metal reflector substantially closed at the center and symmetrical about a normally vertical axis, the reflector having an outwardly convex zone extending from the periphery nearly to the center and a plurality of windows in the inner margin of the convex zone, and a supplemental opaque cover carried outside the reflector and adapted to receive light through the windows and reflect it onto the outside concave surface of the reflector.

Signed at Meriden, in the county of New Haven and State of Connecticut, this 5th day of July, 1928.

LEROY C. DOANE.