

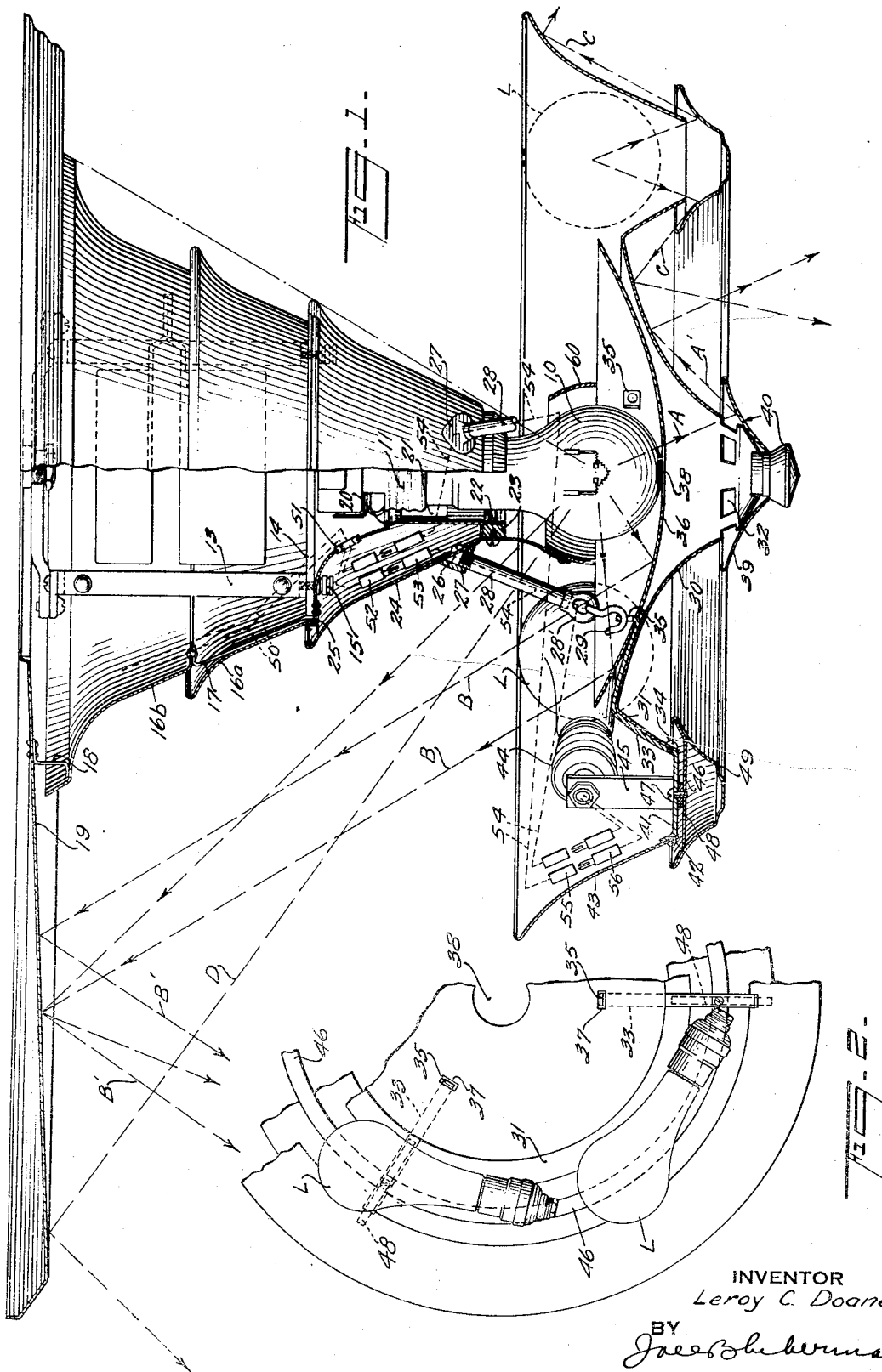
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LIGHTING FIXTURE FOR ULTRA VIOLET AND INCANDESCENT LAMPS

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LIGHTING FIXTURE FOR ULTRA-VIOLET
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The present invention relates to lighting fixtures for ultra-violet and incandescent lamps and is more particularly directed toward fixtures of this type employing indirect lighting both for the ultra-violet light source and the incandescent light source.

The present invention contemplates an indirect lighting unit or luminair having a plurality of incandescent lamps disposed behind opaque, or substantially opaque, screens and a glow lamp, such as a mercury vapor lamp disposed behind an opaque reflector capable of acting on both visible and invisible light to upwardly reflect it.

The light unit contemplated by the present invention is generally provided with an artificial ceiling adapted to receive direct light from the glow lamp and the incandescent lamps and reflect light from both these light sources. This artificial ceiling is either made of material capable of reflecting the ultra-violet light, or such material is applied to the ceiling of the room. The artificial ceiling or specially treated ceiling is arranged so as to downwardly reflect the visible and invisible light from the glow lamp and the incandescent lamps in a divergent manner but concentrating it to such an extent as to hold most of the ultra-violet radiation to a comparatively small area underneath the lighting unit.

The invention also contemplates lighting units of the above nature wherein both light sources are carried behind opaque screens rendered self-luminating by reflected light from the principal light sources.

The accompanying drawing shows, for purposes of illustrating the present invention, one form in which it may be embodied, it being understood that the drawing is illustrative of the invention rather than limiting the same.

In the drawing:

Figure 1 is a sectional view with parts in elevation showing a complete luminair embodying the present invention; and

Figure 2 is a top plan view of the lower reflectors of the luminair.

The mercury glow lamp is illustrated at 10, this lamp being of the well known type which emits both ultra-violet and visible light. The glow lamp is carried in a socket 11 of a conventional type, mounted under a transformer generally indicated at 12, the transformer being supported from above in any convenient manner. The transformer carries four straps 13, two of which, not shown, support an asbestos plate 14, while the other two support a socket cover or shell 15, barrel nuts 15' being employed to facilitate as-

sembly. Shells 16a and 16b are supported from the outer edge of the socket cover stamping, the shell 16b being carried by straps 17 to facilitate ventilation. The upper stamping 16b supports, by means of straps 18, a ceiling reflector 19, preferably made with an oxidized aluminum surface. It may slope somewhat as indicated in order to reduce the spread or divergence of the light rays reflected by it.

The stamping 15 also supports a tubular extension 20, apertured as indicated at 21 for ventilation and threaded at its lower end as indicated at 22, to receive an annular threaded ring 23. This ring supports an outer stamping 24 which extends upwardly as indicated, and spacer straps 25 hold it separated from the stamping 15 to provide ventilation for the glow lamp. The stamping is apertured at 26 and carries a number of tubular anchorages 27 secured opposite these apertures. Tubes 28 are carried by these anchorages and these tubes carry loops 28' which in turn support hooks indicated at 29. The lower reflecting units are supported from these hooks.

A comparatively large dish shaped stamping 30 is provided with a downwardly and outwardly extending flared portion 31 and with a number of windows indicated at 32. This stamping 30 carries a number of radially extending straps 33 secured to it by screws 34. The inner ends of these straps are bent up and apertured, as indicated at 35, to receive the hooks 29. A dish shaped reflector 36, capable of acting on both forms of light, is supported above the stamping 30, the reflector being apertured to receive the extensions 35 on the straps.

The reflector 36 has a central aperture indicated at 38 to permit light to pass downwardly from the glow lamp so as to pass through the windows indicated at 32. These light rays are indicated at A. They are intercepted by a metal cover plate 39 secured to the stamping 30 by a glass knob indicated at 40. The light rays A are reflected and scattered as indicated at A' to illuminate the under surface of the stamping 30. The reflector 36 is arranged to intercept substantially all of the light emitted from the lower hemisphere of the glow lamp and to reflect all this light upwardly and outwardly, as indicated by the rays B, B. It is designed so that all this reflected light falls onto the ceiling reflector 19 to be reflected downwardly, as indicated at B', B'.

The straps 33 extend outwardly beyond the stamping 30, as indicated at 41. Screens 42 secure a reflector 43 to the straps. This reflector is preferably in the form of an opaque sheet metal

band spaced sufficiently from the downward flange 31 to accommodate the bulbs of the incandescent lamps, as indicated at L. The sockets for carrying these incandescent lamps are indicated at 44, and these sockets are supported by straps indicated at 45 secured to a band or ring 46 fastened to the straps 41 by screws 47. The screws 47 also carry short cross straps 48 adapted to engage underneath the beads of stamping indicated at 49, this stamping being adapted to conceal the straps and band and to receive downwardly emitted light from the lamp bulbs L and reflect it upwardly, part of it illuminating the outer surface of the reflector 43 and the under surface of the stamping 31, as indicated, by the rays C, C.

The circuit connections for the transformer and glow lamp may be made as usual. The current for the incandescent lamp circuit may be controlled by an independent switch, not shown. Leads indicated at 50 extend through an eyelet 51 in the socket cover 15 and terminate in receptacles 52. Cooperative plugs 53 are carried within the stamping 24 and connected to jumper leads 54 extending down through the tubes 28. These leads are then connected to receptacles 55 adapted to receive plugs 56 carried inside the band 43 and connected to the respective sockets.

If one desires to concentrate all the light from the glow lamp onto the upper annular reflector and avoid the absorption of the ultra-violet light by the ceiling outside the upper reflector, a supplemental reflector 60 may be placed to intercept this light. This reflector is preferably substantially spherical and will return both forms of light to the lower reflector. It may be supported from the ring 23, as indicated, and is screened off by the large lower screens.

The cut off line of light for the ring 23 and the upper edge of the stampings 24, 16a and 16b is indicated at the right hand side of Figure 1. This cut off line is such that practically no upward light from the glow lamp is interfered with. A large portion of the upward direct light from the glow lamp is intercepted by the ceiling reflector, such rays being indicated at D.

When the glow lamp alone is lighted, one receives both ultra-violet and visible light reflected downwardly as indicated at B', and the under surface of the unit is illuminated at low intensity by reason of the light scattered at A'. When the incandescent lamps only are lighted, one receives indirect illumination from these lights and the ceiling reflector, and the entire outer surface of the luminair is illuminated by the light rays indicated at C.

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 form shown and described is but one of the many forms. Various modifications and changes being possible, I do not otherwise limit myself with respect thereto.

I claim:

1. A luminair comprising a light source in the form of a pendant glow lamp adapted to emit both ultra-violet and visible light, an upwardly acting shallow concave reflector close to the glow lamp, said reflector intercepting substantially all the light emitted by said lamp in the lower hemisphere and upwardly and outwardly reflecting both forms of light at angles sufficiently low to clear the bulb of the lamp and forming it into an annular band of light, a downwardly acting

annular reflector spaced a substantial distance above the glow lamp and substantially larger than the lower reflector for intercepting and downwardly reflecting at useful angles substantially all said band of light reflected upwardly by the first reflector, as well as a portion of the upwardly directed light, an opaque screen below the reflector for concealing the same and means for self-illuminating the opaque screen when the glow lamp is operated.

2. In a luminair for ultra-violet lighting, a transformer, a pendant lamp socket below the transformer, a pendant mercury arc glow lamp in the socket, a tubular socket cover supported from the transformer and surrounding the neck of the glow lamp, and outwardly flaring screens extending upwardly from the lower end of the socket cover for concealing the transformer and socket, the screens extending substantially out to the cut-off line of the socket cover and having ventilation openings for ventilating the socket and transformer.

3. In an indirect lighting luminair, a light source, a downwardly concaved dished reflector underneath the light source, an opaque screen underneath the reflector and having a peripheral portion which slopes downwardly and outwardly at a diameter greater than the diameter of the reflector, an outwardly and upwardly flaring band supported from the outer edge of the screen, and a plurality of incandescent lamps supported between the band and outer portion of the screen.

4. In an indirect lighting luminair, a light source, a downwardly concaved dished reflector underneath the light source, an opaque screen underneath the reflector and having a peripheral portion which slopes downwardly and outwardly at a diameter greater than the diameter of the reflector, an outwardly and upwardly flaring band supported from the outer edge of the screen, a plurality of incandescent lamps supported between the band and outer portion of the screen, the reflector and inner portion of the screen being provided with light transmitting windows, and a supplemental screen intercepting such light and reflecting it onto the outside of the screen.

5. In an indirect lighting luminair, a light source, a downwardly concaved dished reflector underneath the light source, an opaque screen underneath the reflector and having a peripheral portion which slopes downwardly and outwardly at a diameter greater than the diameter of the reflector, an outwardly and upwardly flaring opaque band supported from the outer edge of the screen, a plurality of incandescent lamps supported between the band and outer portion of the screen, and a supplemental annular screen below the band and outer edge of the first screen for concealing the incandescent lamps and reflecting light therefrom onto the band and first mentioned screen to illuminate the same.

6. An indirect lighting luminair comprising a centrally disposed light source, a reflector below the light source for intercepting substantially all the light emitted in the lower hemisphere and directing it upwardly and outwardly for indirect lighting, a plurality of independent light sources mounted outside of the said reflector, an outer screen in the form of an opaque upwardly flaring band about the outer light sources, an opaque screen inside the outer light sources, said screens forming an annular opening for upwardly reflecting light from the outer lamps, and a supplemental screen underneath the lower edges of the first two screens and concealing the outer

lamps and reflecting light onto the outer surfaces of the screens.

7. An indirect lighting luminaire comprising a centrally disposed light source, a reflector below the light source for intercepting substantially all the light emitted in the lower hemisphere and directing it upwardly and outwardly for indirect lighting, a plurality of independent light sources mounted outside of the said reflector, an outer screen in the form of an opaque upwardly flaring band about the outer light sources, an opaque screen inside the outer light sources, said screens forming an annular trough for upwardly reflecting light from the outer lamps, bridging members secured to the inner screen and outer band, lamp sockets for the outer light sources supported from the bridging members, and a supplemental screen secured to the bridging members, and disposed underneath the lower edges of the first two screens for concealing the outer lamps and reflecting light onto the outer surfaces of the screens.

8. An indirect lighting luminaire comprising a centrally disposed light source, a reflector below the light source for intercepting substantially all the light emitted in the lower hemisphere and directing it upwardly and outwardly for indirect lighting, a plurality of independent light sources mounted outside of the said reflector, an outer screen in the form of an opaque upwardly flaring band about the outer light sources, an opaque screen inside the outer light sources, said screens forming an annular trough for upwardly reflecting light from the outer lamps, said inner screen extending downwardly and inwardly to the axis of the luminaire and concealing the entire reflector, and a supplemental screen underneath the lower edges of the first two screens and concealing the outer lamps and reflecting light onto the outer surfaces of the screens.

9. In an indirect lighting luminaire, a central light source, a downwardly concaved dish reflector for intercepting substantially all the downwardly directed light and redirecting it upwardly and outwardly, the reflector having a

central aperture to permit a small amount of light to escape downwardly, an opaque screening member underneath the reflector, said screening member having windows to transmit light received through said aperture, a small opaque screen to receive said light and redirect it onto the outer surface of the screening member to illuminate the same, an upwardly flaring opaque band outside the outer edge of the screening member, incandescent lamps interposed between the band of the screening member, said band and screening member acting to upwardly direct light from said lamps, and a supplemental annular reflector for concealing the incandescent lamps and directing light upwardly onto the outer surfaces of the band and screening member.

10. In an indirect lighting luminaire, a central light source, a downwardly concaved dish reflector for intercepting substantially all the downwardly directed light and redirecting it upwardly and outwardly, the reflector having a central aperture to permit a small amount of light to escape downwardly, an opaque screening member underneath the reflector, said screening member having windows to transmit light received through said aperture, a small opaque screen to receive said light and redirect it onto the outer surface of the screening member to illuminate the same, the outer portion of said screening member extending downwardly, bridging members extending outwardly from the edge of the screening member, an upwardly flaring opaque band supported from the outer ends of the bridging members, incandescent lamps supported from said bridging members and interposed between the band and downwardly extending portion of the screening member, said band and downwardly extending portion of the screening member acting to upwardly direct light from said lamps, and a supplemental reflector carried by the bridging members for concealing the incandescent lamps and directing light upwardly onto the outer surfaces of the band and screening member.

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