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LIGHTING FIXTURE

Filed June 8, 1928

Fig. 1.

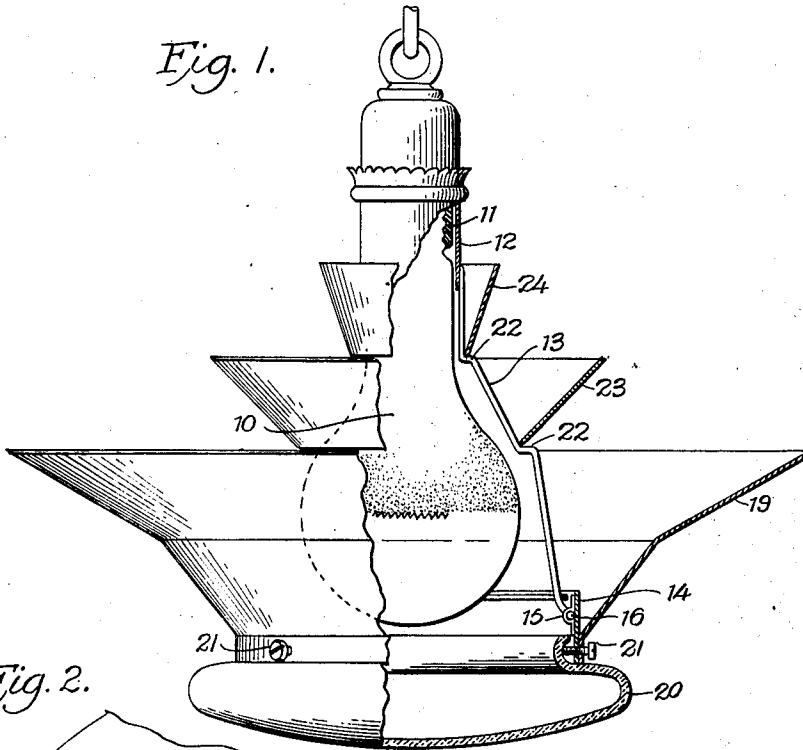
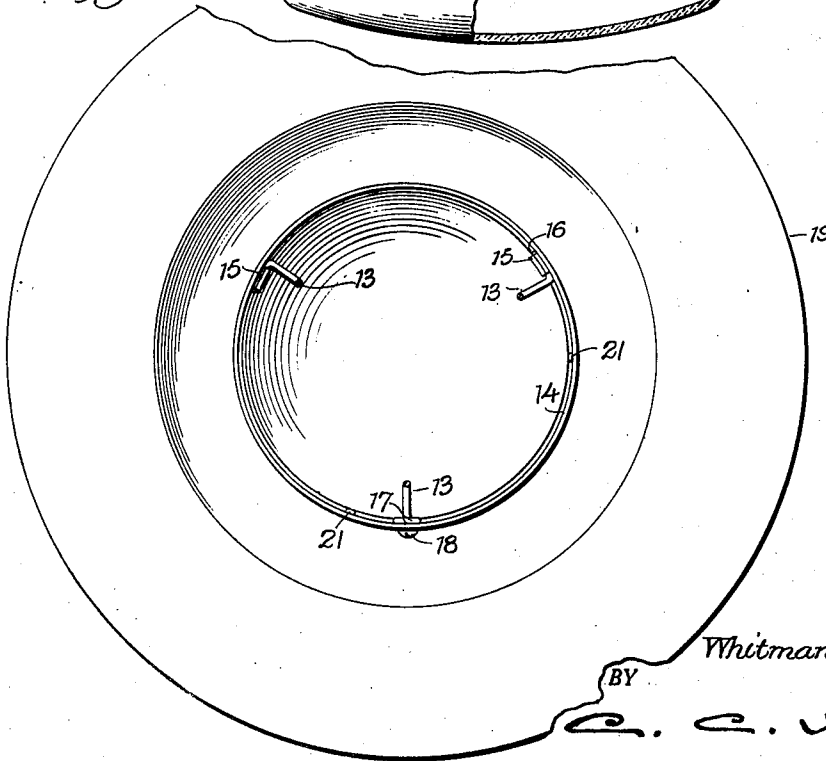


Fig. 2.



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LIGHTING FIXTURE

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My invention relates to the types of indirect and semi-direct fixtures in which a lamp is surrounded by a screen or shade which forms the body of the fixture, the said screen or shade generally acting also to reflect light upward to the ceiling or having a reflector placed therein for that purpose, and it relates particularly to the type in which light is also made to pass downward through an opening in the reflector shade for illumination below the fixture, part of the downward light being reflected upward again for illumination of the fixture body, which otherwise would appear dark and less attractive.

In fixtures of the indirect and semi-direct types heretofore made, the lamp has been screened from view in a horizontal direction by placing it entirely within the reflector shade, or by placing it partly within the reflector shade and extending the socket cover downward to cover the stem of the lamp. The direct light from the lamp which can reach the ceiling and walls of the room is thus necessarily restricted for a given size of reflector shade in proportion to the depth of the lamp below the upper rim of the reflector shade. The socket cover can not be carried far enough down to screen the lower portion of the stem of the lamp or the upper portion of the lamp bulb without cutting off a large proportion of the light, so that when this method of screening the upper portion of the lamp is employed it is found necessary for efficiency to allow a portion of the lamp to be exposed to a horizontal view, which produces an objectionable glare, especially where the room is large and the line of sight may approach the horizontal.

One object of my invention is to provide auxiliary screen means of pleasing appearance around the glaring portion of the lamp which projects above the main reflector shade, and which prevents horizontal glare without materially interfering with the direct passage of the light from the lamp to the ceiling and walls of the room.

Another object of the invention is to provide a construction of main and auxiliary reflector shades or screens whereby shades or

screens of pleasing form may be cut from sheet metal and brazed, soldered, or welded to form, and thereby cheaply manufactured, in contradistinction to stamping which requires expensive dies and limits the variety of designs that can be profitably produced, or of spinning to form which is expensive and prohibitive in cost for fixtures of large size, and which cut shades or reflector shades by reason of their form may be easily stenciled or otherwise decorated in an attractive and economical manner.

Still another object of the invention is to provide a construction and arrangement of the screens, together with a lower translucent diffusing member, whereby a room may be most efficiently lighted without glare, streaks or shadows.

The invention consists of certain novel features of construction and combinations of parts which will be hereinafter described and pointed out in the claims.

In the accompanying drawing:

Figure 1 is a view in side elevation partly in vertical section.

Figure 2 is a horizontal sectional view.

The lamp 10 is fitted in a socket 11, which has a hood 12 surrounding the same and from which the lamp may be supported by any suitable means. Extending downwardly and flaring outwardly, following somewhat the contour of the lamp bulb 10, are a plurality of arms 13, 13, three being shown in the present instance. Two of these arms are provided at their lower ends with right angular extensions 16, adapted to enter ears 15, located on the inner surface of a circular band or ring 16, while the remaining arm is provided with an eye 17, having screw threads for the reception of a screw 18, which passes through the ring 14. It will be readily apparent that this construction permits of ready assembly of the ring upon the arms and removal therefrom, when the screw 18 is released, by rotary movement of the band or ring 16 relatively to the arms.

Mounted upon the band 14 and projecting upwardly therefrom is a main reflector shade or screen 19, which may be of circular, polygonal or other suitable shape in horizontal sec-

tion, but which, in accordance with my invention, flares upwardly and outwardly between its lower and upper edges along straight lines, that is to say, is not curved in vertical section. This main shade is provided with an inner reflecting surface while its outer surface is preferably made non-reflecting and enameled or otherwise ornamented so as to give a pleasing effect. The object of this straight line flare of the main shade is to cause the direct light rays from the lamp to be projected symmetrically and with a uniformity of effulgence against the ceiling and side walls of a room without the streaks and shadows produced by shades of curved form in vertical section. The flare of the main shade may be uniform and continuous from bottom to top, but, in the present instance, I have shown substantially the lower and upper halves of the main shade flaring acutely to different degrees, the upper half to quite a pronounced degree greater than the lower half, so that a wide spread of the light rays is obtained. Both portions of the main shade, however, flare along straight lines for the purpose stated. The point of juncture of these main shade portions is, as shown, in a horizontal plane close to and just below the horizon of the lamp filament, so that, with the fixture properly hung, the rays reflected more or less directly upward and to a certain degree outward by the lower frusto conical shade portion of smaller size will be so diffused with relation to the rays projected upward and to a greater degree outward by the upper frusto conical screen portion of larger size that a uniform distribution of the direct rays against and throughout the area of the ceiling and down upon the side walls to a level corresponding to the horizontal plane of the lamp will be obtained. While this double frusto conical form of the main shade is preferred and is of great advantage for use in fixtures for use in medium and large size rooms, I desire it understood that I do not limit the invention thereto, as a frusto conical main shade of uniform flare may be used without loss of efficiency, particularly in fixtures for rooms of the smaller sizes. It is essential to my invention, however, whether the shade consists of a single cone frustum or of two cone frustums, that its walls flare upwardly and outwardly on straight lines in order to secure the uniform distribution of the direct rays, without streaks or shadows, as hereinbefore set forth.

Supported from the main reflecting shade and band 14 is a translucent light transmitting member 20. The member 20 is preferably made in the form of a shallow bowl having the wall thereof projecting outwardly beyond the base or bottom of the reflecting shade or screen 19 and its upper edge extending inwardly and upwardly within the confines of the ring or band 14 and the reflect-

ing shade 19. Screws 21 pass through the lower edges of the band or ring 14 and reflecting shade 19 and engage the channeled neck or mouth of the bowl 20 for removably supporting it in position. This shallow translucent member 20 by reason of its shallow form, will allow diffusion of a maximum amount of light from the lamp toward the floor for the purpose of indirectly illuminating the lower portion of the room without causing glare of the light into the eyes of a person standing in the room and looking toward the fixture. At the same time the shallow member 20 reflects the light upward into the main reflecting shade to reduce absorption losses and secure a higher degree of direct ray illumination in the upper part of the room. As the member 20 is of greater diameter than the base of the main reflecting shade the light rays emanating from its peripherally projecting portion will strike the outer surface of the main reflecting shade and illuminate the same in a pleasing manner and prevent the exterior of the screen from appearing as a relatively darkened or shadowed surface. Such exterior illumination of the main reflecting shade will also be found most desirable when such surface is especially ornamented for display purposes.

The arms 13 are each provided at suitable intervals throughout their length with a plurality of shoulders or steps 22, 22, which are formed therein by bending the arms outwardly at certain intervals throughout their length. Mounted upon these shoulders 22 are frusto conical auxiliary reflecting shades or screens 23, 24. The shades or screens 23, 24 are of different diameters and of decreasing diameter with respect to each other and to the main shade or screen reflector 19. In practice, however, the shade or screen 23 may be of greater diameter at its top than the shade or screen 19, provided it is of smaller diameter at its bottom than the diameter of the screen 19 at its top, and the same may apply to the relative proportions of shade 24 with respect to shade 23. The shoulders or steps 22 of the arms 13 for the shade 23 are arranged so that the base or bottom of this shade 23 will be located approximately flush or in alinement with the top of the main shade 19. The smaller shade 24 is mounted upon its shoulders 22 of the arms 13 in a similar manner with respect to the top of the intermediate shade 23, so that there is presented a plurality of superimposed frusto conical or flaring reflecting shades for directing all of the light rays issuing from the lamp upwardly toward the ceiling and side walls of a room. As these several frusto conical reflecting shades encircle or surround the lamp and the auxiliary shades are placed edge on to the lamp it is impossible, or practically impossible, for any light rays to be directed below a horizontal plane passing

through the lamp, thereby eliminating the possibility of shadows and objectionable glare, and providing a more advantageous indirect lighting system.

5 Since also these auxiliary shades 23 and 24 present only a thin edge to the major portion of the light rays emanating from the lamp, there is very little obstruction of light rays in the direction of the ceiling and upper
10 part of the walls, and at the same time the lamp is screened from view in a horizontal direction. The illumination of the ceiling is therefore entirely devoid of shadows and the light spread over the ceiling more evenly and
15 over a larger area than with other fixtures of corresponding size, and without bright spots or accentuated illumination above the fixture.

20 The nearer the lamp filament is positioned to the plane of the upper periphery of the main shade or 19, the greater will be the distribution of light on the ceiling and walls of the room, since it is limited by the upper periphery of the main screen, and
25 therefore the exterior angle of the sides of the auxiliary shades or screens 23 and 24 with respect to the horizontal are preferably made correspondingly more acute than the angle of the sides of the main screen portions to
30 agree with the direction of the light rays.

As each frusto conical reflecting shade or screen flares on straight lines between its bottom and top edges there is no intermingling of the direct rays, such as occurs in curved
35 reflectors, to cause streaks or shadows. The form of the shades or screens also adapts them to be cut out of sheet metal and the meeting edges united by soldering, brazing or welding, so that pleasing designs of all sizes
40 may be more cheaply made than by stamping or spinning. Such form of the shades or screens further adapts them to be economically decorated by stenciling at a low cost, as will be readily understood.

45 Having thus described my invention, I claim:—

1. In a lighting fixture, a lamp having an upper stem portion and a lower bulb portion, the latter containing a filament, a frusto-conical main reflecting shade surrounding the bulb portion of the lamp and projecting above and below the horizon of the filament, a globe at the base of the shade, and a plurality of frusto-conical auxiliary reflecting shades arranged above the main shade and in spaced and superposed relation about the stem of the lamp, said auxiliary reflecting shades being of successively smaller diameters.
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60 2. In a lighting fixture, a lamp having a stem portion and a bulb portion, the latter containing a filament, a main frusto-conical reflecting shade surrounding the bulb portion of the lamp, and a plurality of superposed
65 frusto-conical auxiliary reflecting shades sur-

rounding the stem portion of the lamp, all of said reflecting shades having their walls inclined on straight lines to direct the light rays from the lamp at upward and outward angles, and the auxiliary reflecting shades being of successively smaller diameters and having their walls disposed at successively increasing angles. 70

3. In a lighting fixture, the combination with an electric lamp having a stem portion and a bulb portion, the latter containing a filament, of a hollow reflecting shade surrounding the bulb of said lamp for directing the light rays from such portion of the lamp upwardly and outwardly, said shade extending above and below the horizon of the lamp filament, a translucent bowl at the bottom of the reflecting shade, and screening means surrounding the stem of the said lamp and having spaced portions arranged for reflecting the rays of light from such portion of the lamp upwardly and outwardly. 75

4. In a lighting fixture, the combination with a lamp having a stem portion and a bulb portion, of a main frusto-conical reflecting shade surrounding the bowl portion of said lamp and having the walls thereof extending at acute angles upwardly and outwardly on straight lines for directing the light rays in an upward and outward direction, a bowl at the base of said screen member, and a plurality of reflecting shades of similar form surrounding the stem portion of the lamp above the main reflecting shade for directing the light rays therefrom in an upward and outward direction. 80

5. In a lighting fixture, the combination with a lamp having a stem portion and a bulb portion, of a main reflecting shade surrounding the bulb of the lamp for directing rays of light in an upward and outward direction, and a plurality of auxiliary reflecting shades of successively smaller diameters arranged above the main reflecting shade and surrounding the stem of the lamp for directing the rays of light therefrom in an upward and outward direction. 85

6. In a lighting fixture, the combination with a lamp having a hood, of a plurality of arms mounted on the hood and extending at an angle outwardly and downwardly therefrom about the lamp and provided with a plurality of outwardly bent lateral supporting shoulders, a main reflecting shade supported by said arms and arranged for directing the rays of light emanating from the lamp in an upward and outward direction, and auxiliary reflecting shades of different diameters mounted on the lateral shoulders of the arms above the main reflecting shade for directing the rays of light from the lamp in an upward and outward direction. 90

7. In a lighting fixture, the combination with a lamp having a stem portion and a bulb portion, the latter containing a filament, 95

of a main frusto-conical reflecting shade surrounding the bulb portion of the lamp and extending above and below the horizon of the filament, and a plurality of superposed frusto-conical auxiliary reflecting shades surrounding the stem of the lamp in spaced relationship for the passage between them of light rays from the stem, all of said shades having their walls inclined on straight lines to direct the light rays from the lamp at corresponding upward and outward angles.

8. In a lighting fixture, the combination with a lamp having a stem portion and a bulb portion, the latter containing a filament, of a main frusto-conical reflecting shade surrounding the bulb portion of the lamp and extending above and below the horizon of the filament, and a plurality of superposed frusto-conical auxiliary reflecting shades surrounding the stem of the lamp in spaced relationship for the passage between them of light rays from the stem.

9. In a lighting fixture, a lamp having an upper stem portion and a lower bulb portion, the latter containing a filament, a frusto-conical main reflecting shade surrounding the bulb portion of the lamp and projecting above and below the horizon of the filament, a globe at the base of the shade, and a plurality of frusto-conical auxiliary reflecting shades arranged above the main shade and in spaced and superposed relation about the stem of the lamp.

10. In a lighting fixture, a lamp having a stem portion and a bulb portion, the latter containing a filament, a main frusto-conical reflecting shade surrounding the bulb portion of the lamp and extending above and below the horizon of the filament, and a plurality of frusto-conical auxiliary reflecting shades arranged above the main shade and in spaced and superposed relation about the stem portion of the lamp, all of said reflecting shades having their walls inclined on straight lines to direct the light rays from the lamp at upward and outward angles.

11. In a lighting fixture, a lamp having a stem portion and a bulb portion, the latter containing a filament, a main frusto-conical reflecting shade surrounding the bulb portion of the lamp and extending above and below the horizon of the filament, and a plurality of frusto-conical auxiliary reflecting shades arranged above the main shade and in spaced and superposed relation about the stem portion of the lamp, all of said reflecting shades having their walls inclined on straight lines to direct the light rays from the lamp at upward and outward angles, said walls of the shades being disposed at successively increasing angles.

12. In a lighting fixture, a lamp having a stem portion and a bulb portion, the latter containing a filament, a main frusto-conical reflecting shade surrounding the bulb por-

tion of the lamp and extending above and below the horizon of the filament, and a plurality of frusto-conical auxiliary reflecting shades arranged above the main shade and in spaced and superposed relation about the stem portion of the lamp, all of said reflecting shades having their walls inclined on straight lines to direct the light rays from the lamp at upward and outward angles, and the auxiliary reflecting shades being of successively smaller diameters.

13. In a lighting fixture, the combination with a lamp having a stem portion and a bulb portion, the latter containing a filament, of a unitary double main reflecting shade surrounding the bulb portion of the lamp and extending above and below the horizon of the filament and having a lower frusto-conical portion whose walls incline on straight lines at a certain upward and outward angle and an upper frusto-conical portion whose walls incline on straight lines at a greater upward and outward angle, and a plurality of superposed frusto-conical auxiliary reflecting shades surrounding the stem of the lamp in spaced relationship for the passage between them of light rays from the stem.

14. In a lighting fixture, the combination with a lamp having a stem portion and a bulb portion, the latter containing a filament, of a unitary double main reflecting shade surrounding the bulb portion of the lamp and extending above and below the horizon of the filament and having a lower frusto-conical portion whose walls are inclined on straight lines at a certain upward and outward angle and an upper frusto-conical portion whose walls incline on straight lines at a greater upward and outward angle, and a plurality of superposed frusto-conical auxiliary reflecting shades surrounding the stem of the lamp in spaced relationship for the passage between them of light rays from the stem, said auxiliary reflecting shades also having their walls inclined on straight lines to direct the light rays at corresponding upward and outward angles.

In testimony whereof, I affix my signature.
WHITMAN SYMMES.

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