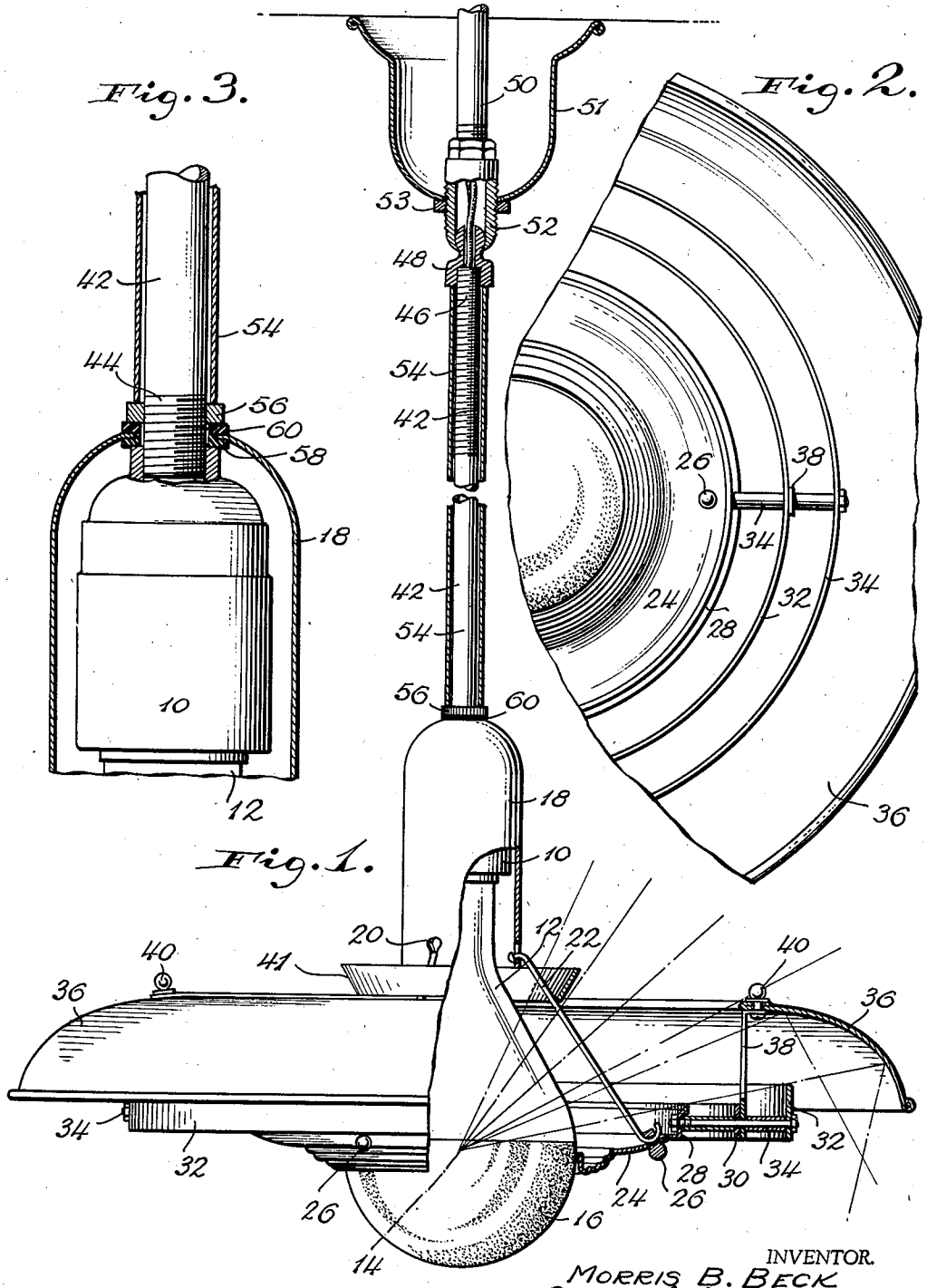
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LIGHTING FIXTURE

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LIGHTING FIXTURE

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This invention relates in general to lighting fixtures, and in particular to lighting fixtures of the indirect type. More specifically it relates to lighting fixtures of the indirect type in which a portion of the light is diverted to intensify the illumination of particular areas.

Among the general objects of my invention is the provision of a lighting fixture of the indirect type that is simple, effective in operation, low in cost of manufacture, operation and maintenance and readily installed.

Among the more particular objects of my invention may be mentioned the provision in a lighting fixture of the indirect type of means for diverting a portion of the light that would ordinarily contribute to the general illumination and utilizing it in localized areas to augment the illumination thereof, and the provision in a lighting fixture of the indirect type, of reflecting means for intercepting a portion of the upwardly directed light rays proceeding from the luminous source and directing them downward.

Among the more particular objects of my invention are further the provision in a lighting fixture of the indirect type of a reflector for directing a portion of the light rays downwardly together with louvers or baffles for shielding the lamp, yet permitting the free downward passage of rays, particularly those proceeding from said reflector.

The more particular objects of my invention also include the provision in an indirect lighting fixture of means whereby the level at which the fixture is hung may be conveniently adjusted by alteration of parts of the fixture in the field, and without the necessity for special tools not ordinarily carried by persons installing the fixtures, and the provision in a lighting fixture of the indirect type, using a silvered bowl incandescent bulb, of means for preventing electrolytic deterioration of the metallic reflecting coating of such a bulb.

These objects and such other objects as will hereinafter appear or be pointed out, are attained in the illustrative embodiment of my invention shown in the drawing, in which:

Figure 1 is a fragmentary front elevational view of my improved lighting fixture with portions in section to expose the interior construction;

Figure 2 is a fragmentary bottom plan view of the fixture; and

Figure 3 is a fragmentary sectional view on an enlarged scale of a detail.

Referring now to the drawing in detail, the numeral 10 designates a socket adapted to receive the base of an incandescent bulb 12, the filament of which is designated by the numeral 14, and which is provided with an inwardly reflecting coating spread over the lower hemispherical or bowl portion of the bulb to a level slightly above that of the filament. Such a bulb is commonly known as a silvered bowl bulb.

The socket 10 is hung from the ceiling by an arrangement that will be described hereinafter and it is shown as surrounded by a socket cover or husk 18, which performs the treble function of ornamentation, of shielding the neck of the bulb from direct observation, and of supporting a system of shields and baffles whereby the light from the bulb 12 is distributed in the desired manner.

The socket cover 18 is mounted over the socket in a manner to be described in detail hereinafter. At its lower end it is provided with openings 20, shown as of bayonet type and adapted to receive the upper portions of supporting wires or rods 22 from the lower edge of which is hung a shield or reflector 24 that is of annular form and is positioned around the bulb 12, which has its silvered portion extending through and below the opening therein. For this purpose the rods 22 may have their lower hook-shaped portions extend through openings in the neck portions of the ball fittings 26 on the ball portions of which the reflector 24 rests.

Carried on the peripheral portions 28 of the shield or reflector 24 is shown a system of ring louvers or baffles that serve to shield the bulb from the direct gaze of an observer, while at the same time they permit the passage of light in a vertical direction. These louvers are shown as comprising an inner ring 30 and an outer ring 32, and they are united at spaced intervals in any suitable or preferred manner, as by the spacing bolts 34.

At 36 is shown an annular reflector so contoured and positioned as to intercept and reflect downwardly a portion of the light rays that would normally travel upwardly toward the ceiling. As clearly appears from Figure 1, because of its concavely contoured inner surface light rays striking it are distributed in the areas underneath and adjacent the fixture and these rays thereby serve to augment the light received by these areas from the ceiling, resulting in an illumination intensity thereon that is greater than the average illumination intensity for the room.

The reflector 36 may be supported in any suit-

able or preferred manner. By way of example, I have shown it supported at spaced intervals by brackets 38 extending upwardly from the ring 32. The reflector is shown as fastened to the upper ends of these brackets by bolts 40.

At 41 I have shown a baffle of inverted frustoconical form and this supplements the louvers 30 and 32 in shielding the bulb 12 from the direct gaze of an observer. It will be observed that the walls of the baffle are so disposed that they lie in the direction of the light rays coming from the source and therefore do not interfere with the passage of these rays toward the ceiling. The baffle 41 is conveniently mounted on the support rods 22.

It will now be clear that my improved fixture provides illumination of the indirect type. Whereas however indirect illumination as heretofore practiced provides for the directing of all the light against the ceiling and upper wall portions, in my improved fixture a portion of the light is diverted before it reaches the upper portion of the room, and is directed downwardly and into areas below the fixture. For this reason it is particularly useful in stores, where increased illumination intensity is desired on show cases. This end is attained with my improved fixtures by hanging them over the show cases.

Another advantage residing in my invention may here be pointed out. Most of the light intercepted by the annular reflector 36 and reflected downwardly thereby is light that in the conventional type of indirect fixture would ordinarily strike the shield thereof and be reflected to the ceiling therefrom. The proportion of this light that is utilized is therefore dependent on the reflective efficiency of the shield. Due to the fact that its reflecting surface faces upwardy and that consequently dust readily accumulates thereon, this reflective efficiency is apt to be relatively low. The reflecting surface of the annular reflector 36, on the other hand, faces downwardly, so that dust can settle thereon only with difficulty and consequently reflection therefrom is apt to be more efficient. The net result is consequently an increase in the illuminating efficiency of the fixture.

While I have described my improved lighting fixture in its illustrative embodiment as adapted for use with an incandescent bulb of the silvered bowl type, it will be obvious that it will perform its function in the same manner if a reflecting surface other than that on the bulb itself is used. For example the shield 24 might be extended underneath a clear incandescent bulb, and a reflecting surface formed thereon that would be equivalent in function to the reflecting surface of the silvered bowl lamp, or a reflecting cap might be used on the bulb.

When installing lighting fixtures it is often found that the fixture as furnished by the manufacturer will bring the light source either too high or too low for the best results. Where this height is determined by the length of a pipe or tube threaded at one or both ends as in fixtures of ordinary type, it is a troublesome matter for the electrician to shorten the pipe or tube, as rethreading of the same is necessary and electricians are not ordinarily equipped with tools for this purpose. By the construction that will now be described, the fixture can be readily modified so that it will give off light at the proper level.

Another feature of my improved construction is directed to the prevention of electrolysis in the metallic reflecting coating 16 of the bulb 10 which is highly destructive of the same and is of frequent occurrence in fixtures in which metallic shields, such as the shield 24, are positioned closely adjacent to the reflecting coating of the lamp. Where such shields are in electrical contact with the grounded portions of the fixture, such as the stem, portions of the electrical circuit of the lamp are at higher potentials than the grounded portions, resulting in electrical currents between such portions and the grounded shield, and such currents pass through the intermediate glass, air and reflector coating. While these currents are small they are of sufficient magnitude to destroy the reflecting coating.

Referring now to the drawing for the constructional features of my improved lighting fixture relating to the points just discussed, it will be observed that at 42 I have shown a pipe threaded at one end, as at 44, to fit into the socket 10, and threaded at its other end, as at 46, to fit into a part connecting it to the conventional stem 50 carried by the outlet box or other device, and extending downwardly from the ceiling, this part being illustratively shown as the ball fitting 48 of a ball-and-socket joint 52 that is carried by the stem 50. It will be understood that these parts besides serving for the support of the fixture, serve also to surround the wiring by which the electric current is conducted into the socket 10.

For the sake of completeness I have also shown a canopy 51 of conventional type, held in place against the ceiling by a nut 53 in threaded relation to the ball joint 52.

Surrounding the pipe 42 is shown a casing 54, which is held in place between the shoulder of the ball fitting 50 and a nut 56 on the threaded end 44 of the pipe 42. It is to be understood that this casing is purely ornamental, enabling the use therefor of material that while lacking in strength is adapted for ornamental effects such as a beautiful finish, while the pipe 42 furnishes the necessary strength. For certain types of fixtures the casing 54 may therefore be omitted.

It will be observed that the threading on the end 46 of the pipe is shown as extending a substantial distance along the pipe. If it is desired to shorten the stem of the lamp, it is therefore merely necessary to cut off the excess portion at this threaded end and the resulting pipe will still be threaded at both ends (provided of course the cut was made within the limits of the threading, which is made of a length so as to provide for any normal adjustment). The casing 54, where one is used, is of course correspondingly reduced in length.

Obviously if desired the pipe 42 might be threaded throughout its length instead of merely at its end, as shown.

In order to prevent the aforementioned electrolytic effects I have provided electrically insulating means between the pipe 42 and the parts hung from it, and the socket cover 18, which is in electrically conducting relationship with the system of baffles and reflectors of the fixture. For this purpose I have shown, by way of illustration, a bushing 58 of any suitable electrical insulating material, having a neck portion extending between the socket cover 18 and the pipe end 44, and a base portion separating the socket cover from the socket 10. A washer 60, also of suitable insulating material is shown as interposed between the socket cover 18 and the nut 56.

By this construction the socket cover 18 and

the reflectors and shields dependent therefrom, are completely insulated from the portions of the fixture that are electrically active or are associated with electrically active parts, and the aforementioned undesirable electrolytic action is prevented.

While I have herein disclosed one illustrative embodiment of my invention, it will be understood that it may be embodied in many other forms, as will be obvious to those skilled in the art, and that the disclosure herein is by way of illustration merely and is not to be interpreted in a limiting sense, and that I do not limit myself other than as called for by the language of the appended claims.

Having thus described my invention and illustrated its use, what I claim as new and desire to secure by Letters Patent is:

1. An indirect lighting fixture comprising an incandescent bulb of the silvered bowl type, means for supporting said bulb in a base up position, an annular shield, a mounting for supporting said shield in a position surrounding said bulb substantially at the level of the upper edge of the silvered bowl thereof, an annular reflector for reflecting light from the bulb downwardly and inwardly, a mounting for said reflector whereby it is supported in a position coaxial with the vertical longitudinal axis of the bulb at a level above the upper edge of the silvered bowl thereof, and the inner rim of the reflector being spaced in a radial direction from the outer rim of the shield, and glare shielding means surrounding the annular shield and preventing direct view of the unsilvered portions of the bulb from below the fixture while permitting light rays and air to pass therethrough in a vertical direction, whereby a portion of the light from the bulb will pass without obstruction to the ceiling, while another portion will be directed underneath the fixture by the annular reflector, and whereby substantially vertical light rays from the ceiling and from said reflector may pass through said glare shielding means.

2. In an indirect lighting fixture, an incandescent bulb of the silvered bowl type, a socket for supporting said bulb in a base up position, an annular shield, means for supporting said shield in a position surrounding the silvered bowl of the bulb near its upper edge, at least two cylindrical louvers supported from said shield, said louvers being coaxial with the vertical longitudinal axis of said bulb, and being spaced from each other in a radial direction so as to permit the passage of light between them in a vertical direction, and an annular reflector supported on said louvers, the inner rim portions of said annular reflector being positioned above the outermost pair of louvers, and said reflector being of concave transverse section, the concavity of said reflector being directed downwardly and inwardly and the inner rim of the reflector constituting its highest portion, whereby light from the bulb will be directed against the ceiling and against the said annular reflector, and whereby light from the ceiling will pass downwardly between the louvers, and reflected light from the reflector will pass downwardly between the louvers and will be thrown into the area underneath the fixture.

3. In an indirect lighting fixture, an incandescent bulb of the silvered bowl type, a socket for supporting said bulb in a base up position, an annular shield, means for supporting said shield in a position surrounding the silvered bowl of the bulb near its upper edge, at least two cylindrical louvers supported from said shield, said louvers being coaxial with the vertical longitudinal axis of said bulb, and being spaced from each other in a radial direction so as to permit the passage of light between them in a vertical direction, an inverted frusto-conical shield surrounding the neck portion of the bulb, said shield having its surface elements disposed so as to offer the minimum obstruction to the light proceeding from the bulb, and an annular reflector supported on said louvers, the inner rim portions of said annular reflector being positioned above the outermost pair of louvers, and said reflector being of concave transverse section, the concavity of said reflector being directed downwardly and inwardly and the inner rim of the reflector constituting its highest portion, whereby light from the bulb will be directed against the ceiling and against the said annular reflector, and whereby light from the ceiling will pass downwardly between the louvers, and reflected light from the reflector will pass downwardly between the louvers and will be thrown into the area underneath the fixture.

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