

Jan. 19, 1954

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LIGHTING FIXTURE

2,666,844

Filed July 11, 1951

2 Sheets-Sheet 1

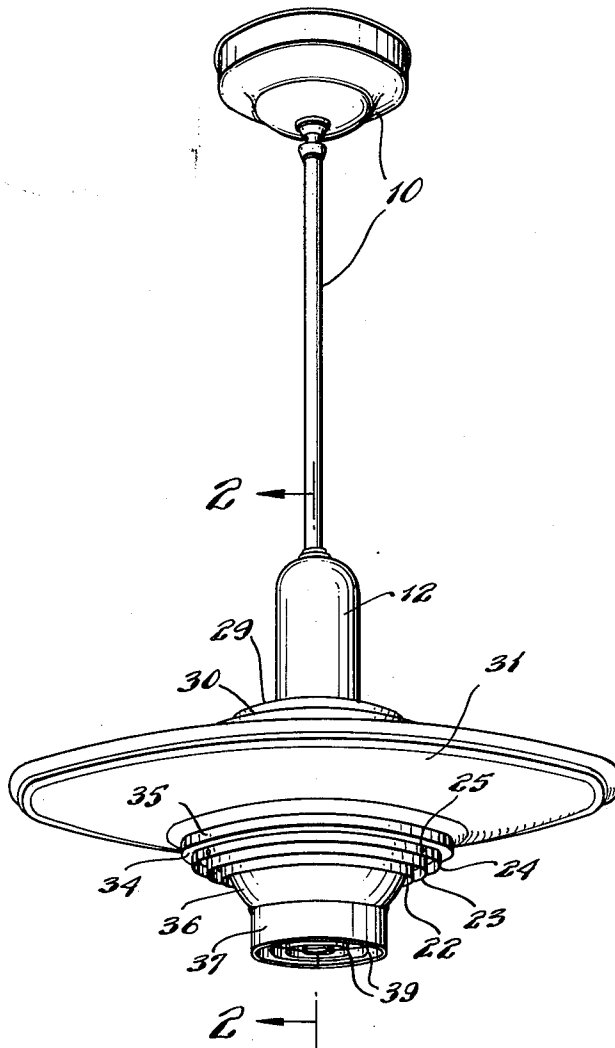


Fig. 1.

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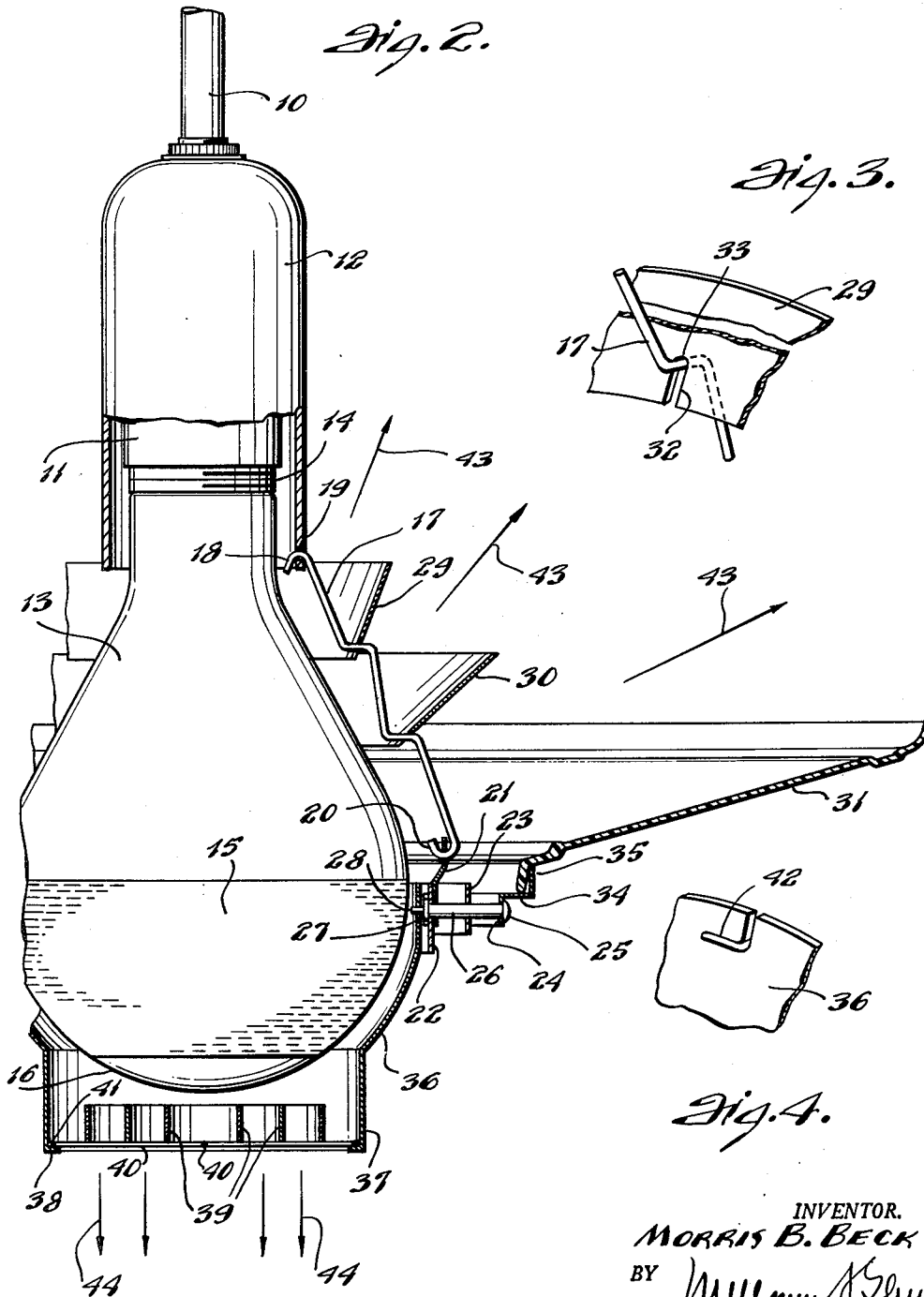
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LIGHTING FIXTURE

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Application July 11, 1951, Serial No. 236,193

3 Claims. (Cl. 240—78)

1 My present invention relates generally to lighting fixtures, and has particular reference to an improved fixture of the type which is suspended from a ceiling.

A general object of the invention is to provide a fixture adapted to be used with, or to include as a part thereof, an electric lamp of the so-called semi-silvered type. Such a lamp has a base which may be mounted in a socket in well-known fashion, and a filament enclosure whose end is hemispherical, this hemisphere being silvered except for the extreme end zone. By the term "silvered" I refer to its well-known significance in this art, whereby the wall is coated exteriorly or interiorly to make it opaque and to adapt it to reflect light rays which emanate from the filament and impinge upon it. In a "semi-silvered" lamp, some light rays pass directly through the unsilvered end zone, others pass laterally through the unsilvered part adjacent to the base. Included among the latter are those rays which have impinged upon the silvered area and been reflected.

A more particular object of the invention is to provide a fixture in which the rays emanating from a lamp of the character mentioned are utilized to best advantage in producing not only an overall indirect illumination of a given area, but also a concentrated illumination of a selected part of the area, such as the region directly beneath the fixture. Illumination of this kind is especially useful and desirable in sales and display areas of merchandising establishments.

The invention aims further to achieve an illuminating effect of this character, viz., having a major component of upwardly directed light for reflection from the ceiling, coupled with a smaller downward component of direct light, by means of a fixture which is attractive and decorative in appearance, economical to manufacture, staunch in structure, easy to install and use, and efficient in operation.

Other advantages of the improved fixture lie in an effective shielding of the light source to prevent undesirable glare, a deflection of the light rays into the desired directions without undue loss in efficiency, and an arrangement of parts which produces a desirable self-ventilation and which makes lamp replacement easy.

I achieve these several objects and advantages, and such other objects and advantages as may appear hereinafter or be pointed out, in the manner illustratively exemplified in the accompanying drawings, in which:

Fig. 1 is a perspective view of a lighting fixture

2 constructed in accordance with the present invention;

Fig. 2 is a fragmentary enlarged cross-sectional view taken substantially along the line 2—2 of Fig. 1; and

Figs. 3 and 4 are fragmentary perspective views illustrating details of construction.

The fixture may be suspended from the ceiling in any suitable manner, and I have illustratively shown structural elements 10 and 11 of usual and well-known character, which terminate in a downwardly-directed lamp socket 11 (Fig. 2). Surrounding the socket 11 is a husk 12 which conceals the socket 11 and which serves to support the mechanical parts of the present fixture.

Mounted in the socket 11 is a lamp 13 of the "semi-silvered" type. The lamp is provided with a base 14 which establishes suitable electrical connections with the socket 11, and with a glass filament enclosing bulb whose lower end is hemispherical. This hemi-spherical end is entirely silvered, as indicated at 15, except for the extreme end zone 16. Light rays from the filament (not shown) can pass directly through the unsilvered end zone 16 and they can also pass directly through the upper part of the bulb. The latter rays include some which have impinged upon the silvered area 15 and been reflected thereby.

Extending divergently downwardly from the lower end of the husk 12 are a series of circumferentially spaced rods. One of these rods is shown at 17. Any number of rods may be employed, but three rods arranged at 120° intervals have been found satisfactory. Since the construction associated with each of the rods is the same, a description of the single rod 17 shown in the present drawings will be deemed sufficient.

The upper end of the rod 17 has a hook 18 by means of which it passes through a suitable hole 19 in the husk 12, for support thereby. At the lower end of the rod 17 it is provided with a hook 20 which extends through a bracket 21, the latter being secured to the inner element 22 of an annular structure. This structure consists of spaced concentric cylindrical louvers. The element 22 is the innermost of these louvers. Surrounding it is the louver 23, and surrounding the latter is the louver 24. These cylinders are held together by a series of studs, one of which is shown in Fig. 2. The stud shown has a head 25, a shank 26 which extends through suitable aligned openings in the cylindrical louvers, and a threaded inner end with which a nut 27 engages. The stud is also provided with an in-

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wardly projecting pin 28, the function of which will be presently described.

Any number of studs may be employed to hold the louvers 22, 23 and 24 in rigid association as a single annular structure. Usually, three studs arranged at 120° intervals are satisfactory. This annular structure surrounds the lamp 13 at its widest part.

Supported on this annular structure, and on the rods 17, so as to surround the unsilvered part of the lamp, are a series of spaced light baffles. Each baffle conforms to a truncated cone diverging upward. I have illustratively shown three such baffles, designated 29, 30 and 31. It will be noticed that the baffles are of successively steeper angularity to the horizontal, the lowest baffle being the least steep; and that the baffles from the bottom to the top of the set are of successively smaller average diameter. Thus, the uppermost baffle 29 is of the smallest average diameter, and has the steepest angularity to the horizontal. It is supported on the rods 17, in the manner indicated in Fig. 3. It is provided at suitable circumferentially spaced intervals, with notches 32 which fit over the rods 17, respectively, as shown. To facilitate this support of the baffle on the rods, each of the rods may if desired be provided with bends defining a shelf-like part 33. However, this is not absolutely essential, since the downward convergence of the baffle, and the downward divergence of the rods, define a relationship of the parts which is sufficient to hold them together.

In a similar fashion, the baffle 30 is provided with notches in its lower edge (not shown) which fit over the rods 17, respectively, at a lower level.

The lowest baffle 31 has an outer diameter which is considerably greater than that of the other baffles. In this way, it serves to conceal the rods 17, and the upper baffles, from a view from underneath. The baffle 31 may thus be shaped and configured to form an ornamental part of the fixture as a whole. I have illustratively shown this baffle in the form of a translucent bowl-like element which may be composed of glass, plastic, or the like; but, if desired, this baffle may be composed of opaque material such as metal.

The lowest baffle 31 is supported on the annular structure which hangs from the rods 17. To achieve this, the outermost louver 24 is provided with an annular extension which defines a supporting surface 34 and a surrounding rim 35. The lower edge of the baffle 31 is angled downwardly, as shown, and rests on the surface 34.

The lighting fixture includes also an opaque shield which is removably supported upon the annular structure. This shield has an upper part 36 of spherical contour, and a lower part 37 which is cylindrical. The cylindrical part 37 defines a tubular aperture in axial alignment with the lamp 13 and lying directly beneath the unsilvered end zone 16.

The lower rim of the part 37 is turned in as shown at 38, thus defining a shelf upon which a series of spaced louvers 39 may be supported. These louvers preferably consist of a series of spaced concentric rings, and they may be held together by radially arranged wires 40 and a circumferential wire 41, the latter resting upon the shelf 38.

To permit the opaque shield to be removed from the fixture, it is supported on the pins 28 by a bayonet-slot engagement. This is best

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shown in Fig. 4, in which one of the bayonet slots is indicated at 42. In applying the shield, it is pushed upward so that the vertical part of each bayonet slot passes over one of the pins 28, whereupon a slight angular movement brings the pin to the end of the horizontal part of the bayonet slot 42.

In assembling the present structure, the louvers 22, 23 and 24 are secured together, and the lower ends of the rods 17 are engaged with the brackets 21. These rods are then secured to the husk 12, the angular structure at the bottom serving to hold the rods in downwardly-divergent relationship. The several louvers are then applied from the top, the louver 31 being lowered into position first, and the louvers 30 and 29 being then lowered until their respective notches engage with the rods 17. After the lamp 13 has been inserted into the socket 11, the opaque shield at the bottom of the fixture is applied to the pins 28. For lamp replacement purposes, this shield may be readily lowered and replaced.

From the standpoint of illumination, it will be noted that the baffles 29, 30 and 31 are arranged to intercept the substantially horizontal rays which emanate from the lamp 13. Thus, it will be observed that the upper edge of the baffle 29 lies above the lower edge of the husk 12; the upper edge of the baffle 30 lies above the level of the lower edge of the baffle 29; and the upper edge of the baffle 31 lies above the level of the lower edge of the baffle 30. The intercepted horizontal rays are thus deflected into an upward direction, joining other rays which are travelling directly through the spaces between the baffles, as indicated by the rays 45. These upwardly-moving rays of light impinge ultimately upon the ceiling, where they are reflected downwardly, thus providing an indirect over-all illumination for the area beneath the fixture. At the same time, rays passing downwardly through the unsilvered end zone 16 of the lamp can continue a generally downward direction as indicated by the arrows 44. This "raw" light produces a sort of spotlight effect upon the area directly beneath the fixture. The baffles 39 restrict this effect to a limited circular zone, so that there is no glare unless the observer happens to look directly upwardly into the fixture.

Except for the rays which travel upwardly and reflect from the ceiling, and those which travel directly downwardly from the lamp, as described, none of the rays pass downwardly through the fixture. The louvers 22, 23 and 24 effectively prevent any direct rays from the lamp to pass downwardly at this part of the fixture. At the same time, these louvers afford ventilation spaces between them, allowing air to pass upwardly into the region above the baffle 31.

A similar and highly effective ventilation is achieved by the shield which surrounds the lower part of the bulb. Air can pass freely upward through the louvers 39 and the cylindrical part of the shield, thence upwardly through the spaces between the lamp and the spherical part 36 of the shield.

Obviously, those skilled in the art will realize that many of the details herein described and illustrated are purely illustrative, and that changes in these details may be effected in many respects without necessarily departing from the spirit and scope of the invention as expressed in the appended claims.

Having thus described my invention and illus-

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trated its use, what I claim as new and desire to secure by Letters Patent is:

1. A semi-indirect lighting fixture utilizing ceiling reflection; said fixture comprising an incandescent bulb having a hemispherical bowl provided with an upwardly light reflecting circumferential silvered band thereabout extending from a circular cut-off line approximately at the level of the filament to a circular cut-off line in the polar region of the hemisphere to leave that region transparent, whereby the light from said bulb has an upwardly directed component whose spread is approximately 180° and a downwardly directed component, a mounting for said bulb whereby it is supported with its base uppermost and its silvered bowl lowermost and in spaced relation to the ceiling, lamp shielding means comprising a bowl shielding member having its top and bottom portions contoured cylindrically and its intermediate section contoured spherically, the radius of curvature of the intermediate portion being greater than that of the hemispherical lower wall portion of the lamp to provide a space therebetween, the height of the top and intermediate portions of the shielding member corresponding approximately to that of the silvered zone of the lamp, and means for suspending said shielding member from said ceiling

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suspension means to locate said top and intermediate portions of said shielding member in spaced and laterally registered relation to the silvered zone of the lamp.

2. A light fixture of the character set forth in claim 1 wherein the shielding means comprises a series of ring-like concentric shields of increasing diameter outwardly and whose tops are substantially at the level of the upper cut-off line of the silvering.

3. A device as set forth in claim 2 wherein the shielding means comprises a disk-like upwardly angled diametered member to serve as a glare shield.

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