United States Patent

Breed et al.

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[54] AREA LIGHTING LUMINAIRE

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[52] **U.S. Cl.** .....**240/46.37,** 240/78 LK, 240/93

[51] **Int. Cl.**.....**F21v 11/02,** F21v 13/04

[58] **Field of Search**..240/46.31, 46.37, 46.41, 46.43, 240/92, 93, 103, 104, 106.1, 108, 109, 46.01, 46.33, 46.39, 78 LK

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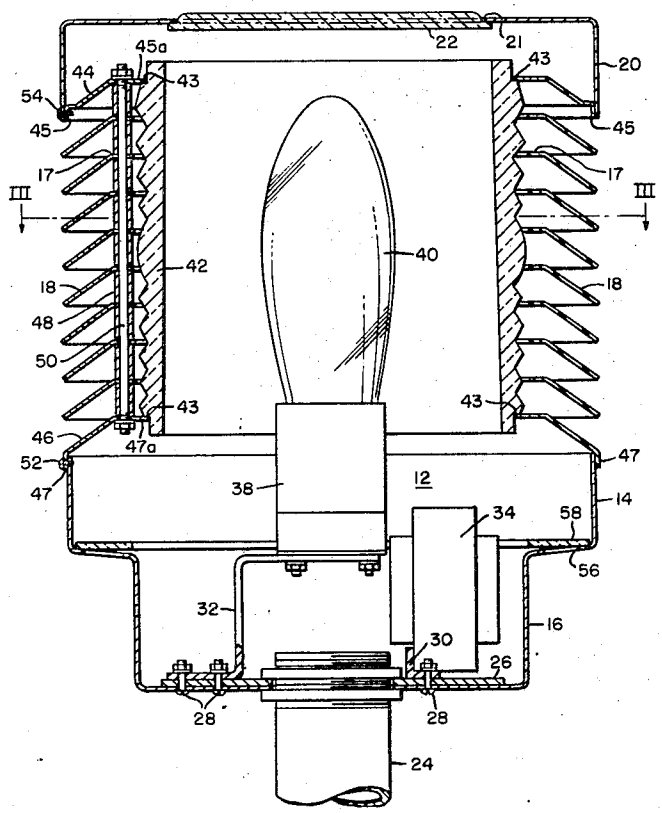
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[57] **ABSTRACT**

An area lighting luminaire which includes a base having a lamp socket and lamp mounted thereon and extending above the base. The lamp and lamp socket are surrounded by a light distributing housing which includes a cylindrical fresnel lens surrounded by a plurality of stacked annular louvers spaced one from the other and extending radially and downwardly to shield the lens and lamp from view at viewing angles of horizontal and above. A cover member closes off the top of the light distributing housing and may include a central lens portion for the vertical release of light.

1 Claim, 4 Drawing Figures



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SHEET 1 OF 2

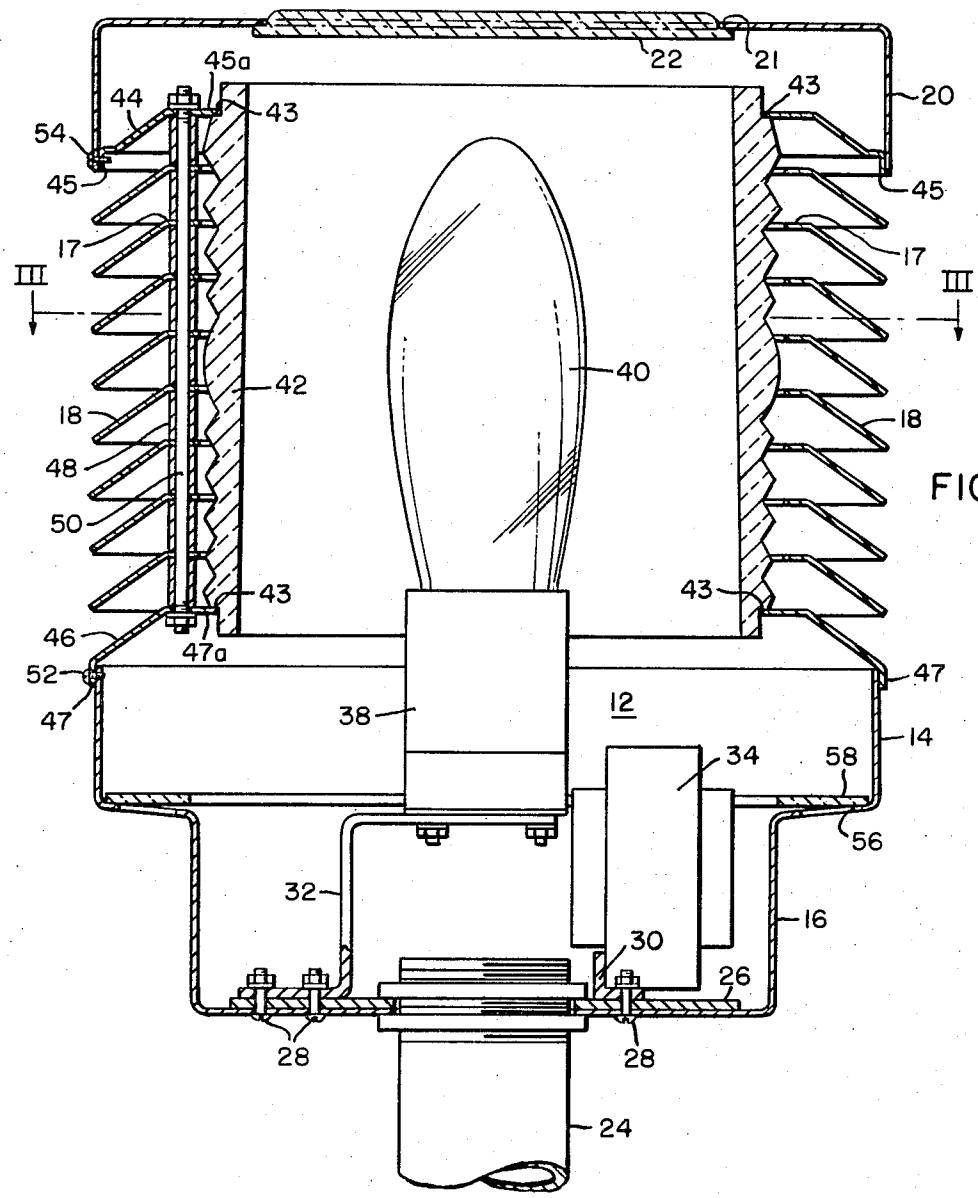


FIG. 2.

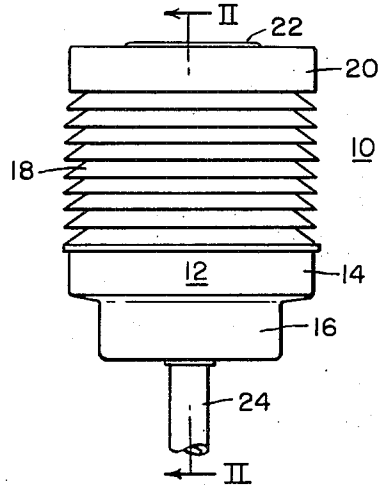


FIG. 1.

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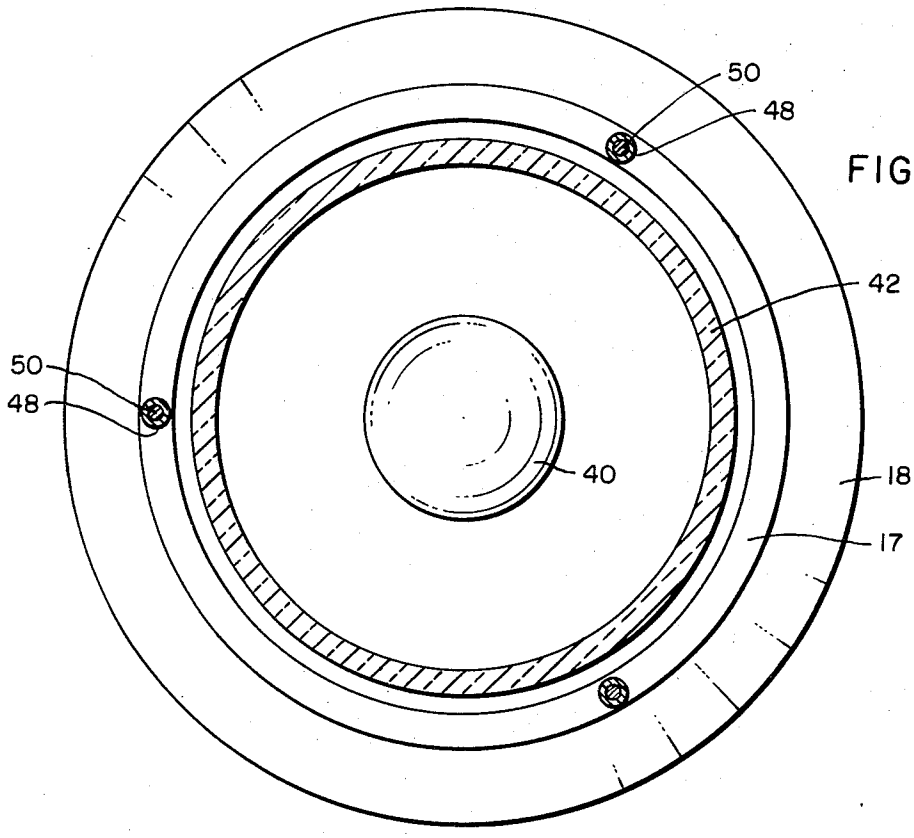


FIG. 3.

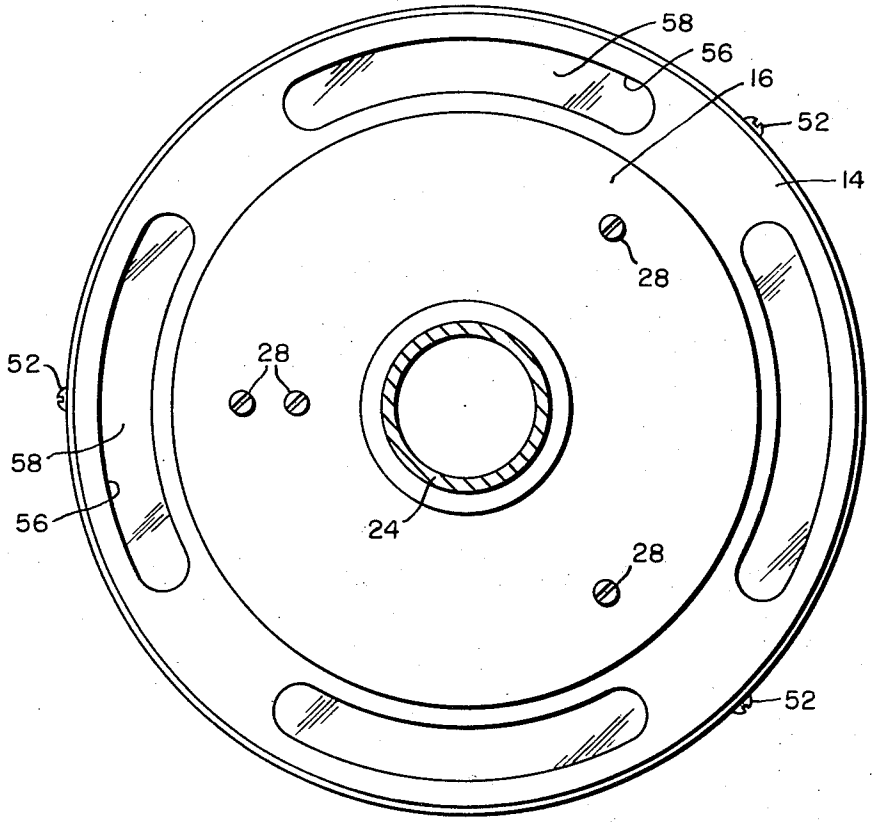


FIG. 4.

AREA LIGHTING LUMINAIRE

BACKGROUND OF THE INVENTION

This invention relates to area lighting luminaires and more particularly to a low level lighting fixture which distributes the light emanating therefrom toward the ground for lighting walkways and streets of a residential or commercial nature.

In the past, area lighting luminaires have generally included a visible refractor or lens and had associated therewith a degree of glare at least when interposed in a person's line of vision. Generally, the light source itself could not be seen in these fixtures but at least the location of that light source was quite apparent to the viewer. These dots of brightness along a walkway or roadway, when lit, were the principal attention attractor. Area lighting fixtures are of course employed for the purpose of illuminating objects or areas and in many modern applications are primarily employed to direct attention to the objects or areas so illuminated. The present day area lighting luminaires, because of the "bright spot" appearance of the luminaire itself, essentially draws attention to the luminaire since it is the brightest of all the objects illuminated, rather than having the brightest light falling on the object of area desired to be illuminated. Ideally, a luminaire which evidences an improved appearance both in daylight and at night as well as one which rather than attracting attention to the luminaire itself creates a pleasing atmosphere of bright moonlight on the area or object to be illuminated would greatly enhance the asthetic value of the luminaire to an overall landscape or area.

SUMMARY OF THE INVENTION

This invention is directed to a luminaire which provides low angle, glare-free, ground or road level lighting not unlike the pleasing atmosphere of bright moonlight by providing in such luminaire a base which includes means for mounting a lamp socket and lamp therein, a cylindrical lens defining a lamp cavity positioned above the base and arranged to surround the lamp and at least a portion of the lamp socket, a plurality of annular louver members surrounding the cylindrical lens and stacked one above the other, spacer means separating each of the annular louver members from its adjacent louver member; and a cover member overlying the lamp cavity, the upper edge of the cylindrical lens and at least a portion of the uppermost louver to thereby close off the top of the luminaire. The cover member may further include a central lens portion for the vertical release of light.

BRIEF DESCRIPTION OF THE DRAWING

The attendant advantages of this invention will become more readily apparent and better understood as the following detailed description of an exemplary embodiment of this invention is considered in connection with the accompanying drawings, in which:

FIG. 1 is a side elevational view illustrating the external appearance of the luminaire of this invention;

FIG. 2 is a sectional view taken along the line II—II of FIG. 1;

FIG. 3 is a sectional view taken along the line III—III of FIG. 2; and

FIG. 4 is a bottom view of the luminaire of this invention.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now in detail to the drawings wherein like reference characters represent like parts throughout the several views, there is illustrated in FIG. 1 an area lighting luminaire constructed in accordance with this invention and generally designated **10**. The luminaire **10** when viewed externally includes a base generally designated **12** which may comprise an upper annular dish portion **14** and a lower annular dish portion **16**. Situated above the base portion **12** and surrounding the light source and lens are a plurality of radially and downwardly extending louvers **18**. Closing off the top of the luminaire is a top or cover member **20** which may or may not include a central annular disc-like lens **22** which will permit light to be directed vertically from the luminaire.

Referring now to FIG. **2** there is illustrated a sectional view of the luminaire of this invention. As illustrated the luminaire base portion **12** is secured to an upright pole or post **24** when the luminaire is to be mounted as a post top luminaire. Alternatively, for walkway lighting and other applications where a wide spread or light is not indicated the luminaire may be mounted on a pedestal which may for example conform to the diameter of the luminaire base portion **14**. In the embodiment illustrated in FIGS. **1** and **2** the base **12** is shown in a two-part configuration which includes an upper dished portion **14** and a lower deeper dished portion **16**. The portion of the base **16** can be eliminated when an incandescent lamp, not requiring a ballast or large lamp socket, is employed as the source of illumination. As illustrated, however, in the embodiment of FIGS. **1** and **2** the lower base portion **16** includes a mounting plate **26** to which there are secured by for example, bolts **28** mounting brackets **30** and **32** which serve to support a ballast coil **34** and lamp socket **38**, respectively.

A lamp **40** is mounted in the lamp socket **38** and is surrounded by an integral louver and lens assembly which forms a unitary central light distributing housing for the luminaire **10**.

The integral louver and lens assembly includes a cylindrical refractor or lens **42** which may preferably be of the fresnel type, a plurality of identical louver rings **16**, upper and lower louver rings **44** and **46**, respectively, tubular spacers **48** and threaded rods **50**. The integral louver and lens assembly is assembled by placing alternately on a plurality of rods **50**, a plurality of louvers **16** with spacers **48** interposed between each of the louvers **16**. The louvers **16** have a flat ring portion **17** which includes a plurality of apertures therein to receive the rods **50** therethrough. The remainder of the louver **16** extends outwardly or radially and downwardly from the flat ring portion **17**. The spacers **48** are so dimensioned that when interposed between a pair of louver members **16** on the rod **50**, the outward, lowermost portion of an upper louver lies in approximately the same horizontal plane as the flat ring portion **17** of the next lower louver **16**. This construction shields direct light from the lamp **40** from a viewer's horizontal or higher than horizontal line of sight with

the luminaire. The upper and lower louvers differ from the remaining louvers **16** in that they each have a downwardly projecting flange **45** and **47**, respectively, to facilitate the attaching of the central light distributing housing to the base **12** and the top cover **20**. In addition, the upper and lower end louvers **44** and **46** include an inwardly projecting flange which is essentially an extension of the ring portion **17** of the remaining louvers. These inwardly projecting flanges **45***a* and **47***a* serve to retain the refractor or lens **42** in the integral louver and lens assembly by coacting with indentations **43** on the upper and lower ends of the lens **42**.

The louver and lens assembly forming the central light distributing housing is secured to the base **12** by a plurality of screws **52** and the top cover member **20** is secured to the upper louver **44** at its flange **45** by similar screws **54**.

The top cover member **20** may be completely closed as illustrated in phantom through the lens **22** or when it is desired to light a tree or sign or some similar object situated above the luminaire, the lens **22** may be sealed into an annular opening **21** in the top of cover member **20**. Additional downlighting may also be provided by providing apertures **56** in the bottom wall of the upper base portion **14**, an annular ring in the form of, for example a plastic lens **58**, may be then positioned within the upper housing **14** to overlie the apertures **56** to refract light exiting through the apertures **56**.

The interior surface of the louvers **16** are preferably painted white to reflect light transmitted through refractor or lens **42** downwardly with as little loss as possible. The angles of the louvers **16** and their spacing along the rods **50**, are such that no illumination can be seen through the sides of the luminaire at viewing angles at the horizontal or above and all light is essentially directed downwardly upon the area to be illuminated. It should be readily apparent that the area lighting luminaire of this invention has many applications with respect to the asthetic illumination of objects due to its ability to eliminate the bright source which will normally attract the viewer's attention.

What is claimed is:

1. An area lighting luminaire comprising:

a base including means for mounting a lamp socket and lamp therein;

a cylindrical lens defining a lamp cavity positioned above said base and arranged to surround said lamp and at least a portion of said lamp socket;

a plurality of annular louver members surrounding said cylindrical lens and stacked one above the other;

spacer means separating each of said annular louver members from its adjacent louver member, said annular louver members including an annular ring portion and a radially and downwardly extending louver portion, said spacer means separating each of said louver members from its adjacent louver member a distance such that the downwardly extending outer end of each louver portion lies in substantially the same plane as the ring portion of its adjacent lower louver member, the top and bottom annular louver members including inwardly directed flanges serving to mount said cylindrical lens therebetween; and

a cover member overlying said lamp cavity, the upper edge of said cylindrical lens and at least a portion of the uppermost louver, said cover member including a central disc-shaped lens portion overlying the cavity defined by said cylindrical lens.

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