Aug. 12, 1969 R. HAHN 3,461,283

VANDAL-PROOF LUMINARY

Original Filed Nov. 25, 1966

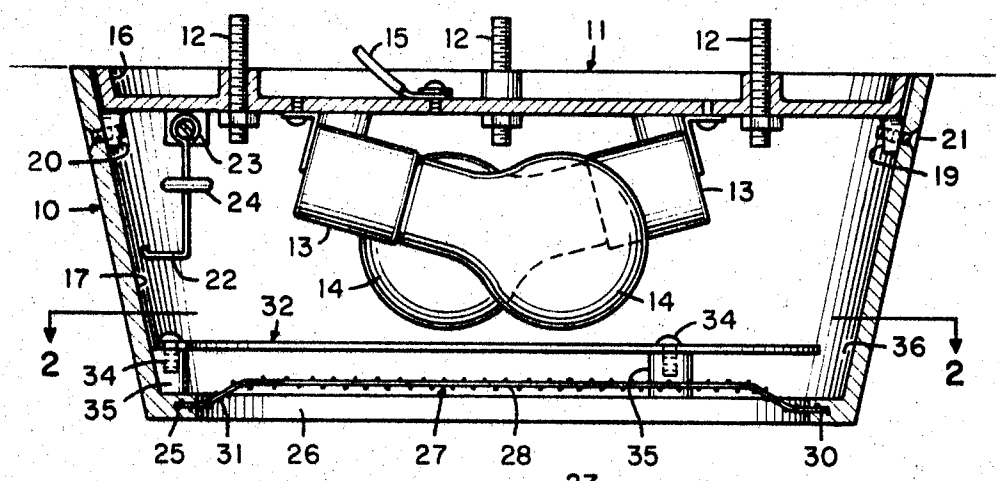


FIG. 1

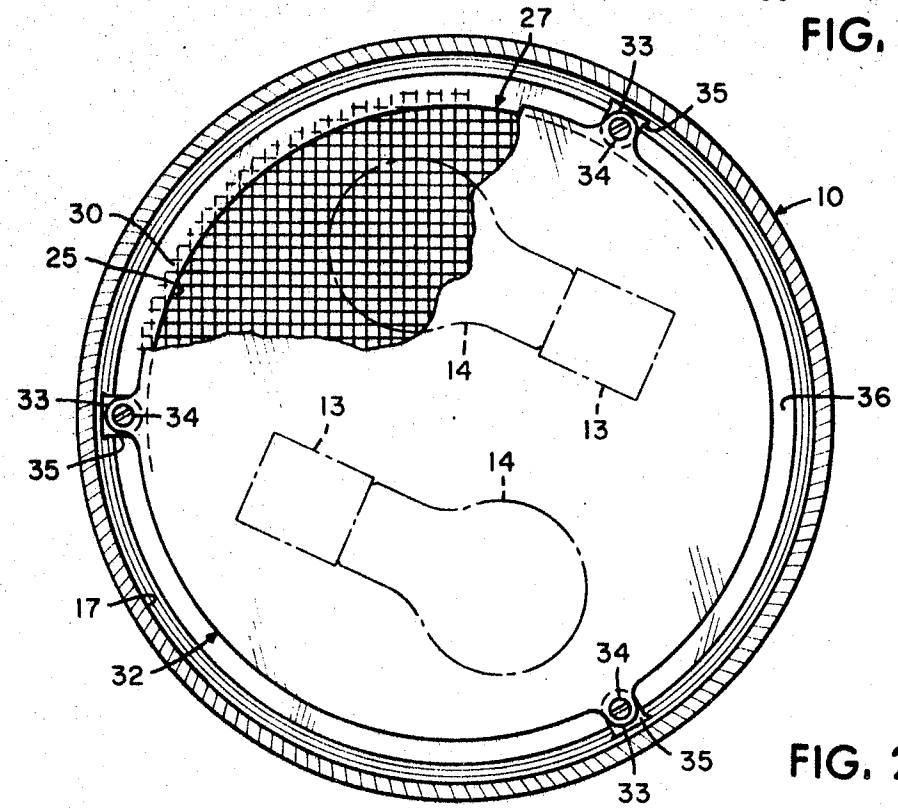


FIG. 2

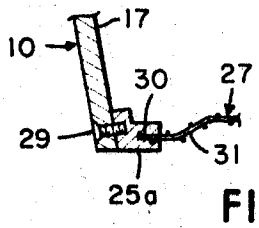


FIG. 3

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VANDAL-PROOF LUMINARY

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Continuation of application Ser. No. 596,888, Nov. 25, 1966. This application May 9, 1968, Ser. No. 728,085

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U.S. Cl. 240—78 2 Claims

ABSTRACT OF THE DISCLOSURE

The vandal-proof luminary includes a housing having an inwardly facing rim defining the margin of an illumination aperture. A grid, having a dome-shaped configuration with an outwardly projecting skirt portion embedded in the margin of the aperture, projects inwardly of the housing. The grid is structurally integral with the housing to provide a protective guard for the light source. A luminary screen is disposed in the housing between the grid and the light source. The screen is spaced laterally to provide a substantially peripheral vent for the passage of air, but has a greater diameter than the aperture.

This application is a continuation of application Ser. No. 596,888, filed Nov. 25, 1966, now abandoned.

This invention relates generally to improvements in a light fixture and more particularly to a luminary having a construction such as to render it proof against acts of vandalism.

It is well known that lighting fixtures, particularly those provided in relatively unguarded public places, such as schools and government housing projects, are often destroyed or damaged by acts of hooliganism and vandalism. Such acts as rock-throwing, poking or ramming the fixtures with poles, and squirting water at them in an effort to destroy bulbs or short out the electrical fittings, cause a loss running into millions of dollars each year. In public housing in particular, the wanton and deliberate destruction of the lighting systems in corridors and basements renders these places extremely dangerous and facilitates the perpetration of robbery, assault and other heinous crimes.

At the present time, luminaries which are most effective against the onslaught of vandals suffer from several serious deficiencies. Some tend to be so heavy as to be cumbersome to install. Others have the lamps completely contained or nearly so such that they are susceptible of overheating. In others, the protecting material of the light diffuser or window is so thick as to render the lighting inefficient. It is the principal object of the present invention to provide a luminary which overcomes these and other deficiencies.

An important object is realized by providing a high strength aluminum housing having an illumination aperture at the lower end, the aperture being defined by an inwardly facing rim.

Another important object is the provision of a high strength, stainless steel, woven wire grid marginally embedded in the rim and extending across the aperture to provide a guard which prevents the entry of missiles into the housing.

A further important object is achieved in that a heavy duty translucent, imperforate screen is provided, situated above the grid guard and constructed of a plastic material, such as polycarbonate.

It is an important object to provide the screen with a plurality of lugs disposed in spaced relation around the margin of the screen for connection of the screen to

the interior of the housing. The screen, exclusive of lugs, has a diameter less than the corresponding diameter of the interior of the housing, thereby providing arcuate vents between the screen and the housing which allow the free circulation of air around the lamps within the housing.

Yet another important object is the provision of a translucent screen having its diameter, exclusive of lugs, preferably greater than the diameter of the aperture so that the arcuate vents are hidden.

Still another important object is realized by providing a housing having an inverted frustum configuration to facilitate the installation and arrangement of the wire grid guard and the screen.

Another important object is to provide a wire grid having a dome-shaped configuration with a flattened center portion extended inwardly of the housing and providing a resilient rebounding surface.

It is important to provide a luminary that is simple and durable in construction, economical to manufacture, and efficient in operation.

The foregoing and numerous other objects and advantages of the invention will more clearly appear from the following detailed description of a preferred embodiment, particularly when considered in connection with the accompanying drawing, in which:

FIG. 1 is a fragmentary sectional elevation through the luminary;

FIG. 2 is a fragmentary sectional plan taken on line 2—2 of FIG. 1; and

FIG. 3 is a fragmentary sectional view, illustrating an alternative arrangement of a wire grid embedded into a detachable rim.

Referring now by characters of reference to the drawings and first to FIG. 1, it will be understood that the luminary includes a cast housing **10** preferably of high tensile aluminum and inverted frustum configuration, peripherally attached to and depending from a ceiling mounted hollow bedplate **11**, the bedplate **11** being removably attached to the ceiling by a plurality of fasteners **12**.

Attached to and depending from the under side of the bedplate **11** are two socket connectors **13** which hold lamps **14** in fixed inclined and opposed relation. A grounding connection **15** is provided within the hollow portion of bedplate **11**.

The hollow bedplate **11** is provided with a stub wall **16**, the outer face of which is sloped to conform to the slope of the circular side wall **17** of the housing **10**, in order that the housing **10** may be fitted over the hollow bedplate **11** in the manner of a socket and plug. A plurality of depending lugs **20** is rigidly attached to and disposed in spaced relation around the periphery of the hollow bedplate **11**. The cooperating faces **19** of lugs **20** are also sloped to conform to the slope of the circular side wall **17** of housing **10**. The housing **10** is removably attached to the hollow bedplate **11** by fasteners **21** and lugs **20**, the fasteners **21** being disposed around the housing **10** in matching spaced relation to the lugs **20**.

A hook **22** is pivotally attached at its upper end to a lug **23** depending from the under side of the hollow bedplate **11**. The hook **22** cooperates with an eye **24** rigidly attached to the inside face of the circular side wall **17** of housing **10** to form a drop hinge, which, by holding the housing in position temporarily when fasteners **21** are removed, facilitates the replacement of lamps **14**.

The housing **10** is provided with an inwardly facing rim **25** defining the margin of an aperture **26** at its lower end. The rim **25** provides a frame for an aperture cover formed from a wire grid **27**, the grid **27** having a peripheral portion **30** cast-embedded into the rim **25**. The configuration of the woven wire grid **27** is substantially that

of a dome having a flattened center portion **28** extending inwardly of the housing **10** and having an outwardly projecting embedded skirt portion **30**. The merger of the flat center portion **28** into the embedded skirt portion **30** is accomplished by a transition portion **31** having an ogee configuration. This combined configuration renders the grid **27** better able to withstand shock since the force from a missile will be distributed to the embedded skirt portion **30** by bending and direct forces rather than by direct forces alone because of the inherent resilience in the flat center portion **28**. The wire grid **27** is preferably formed from heavy gauge, stainless steel piono wire.

FIG. 3 discloses a modification in which the rim **25***a* is a separate part into which the skirt portion **30** of the grid **27** is cast-embedded. The rim **25***a* is fastened to the lower end of the housing **10** by a plurality of screws **29**, one of which is illustrated. This structure provides a smaller unit into which the grid **27** is cast-embedded.

An imperforate luminary screen **32** is mounted inside the housing **10**. The screen **32** is symmetrically situated above the aperture **26** and is formed from a tough, translucent plastic material, such as polycarbonate. The screen **32** is provided with a plurality of lugs **33** by which the screen **32** is removably attached by means of fasteners **34** to the cooperating upper face of projecting abutment portions **35**. The screen **32** is smaller in diameter than the internal diameter of the housing **10** at the horizontal plane defined by the under side of the screen **32**, thus providing a plurality of arcuate air vents **36** which allow air freely to circulate around the lamps **14**, thus avoiding overheating of the luminary. The diameter of the screen **32**, exclusive of lugs **33**, is somewhat greater than the diameter of the guarded aperture **26** so that the arcuate vents **36** will tend to the hidden from the view of an observer stationed below the luminary.

It is thought that the functional advantages of this luminary have become fully apparent from the foregoing description of parts, but for completeness of disclosure, the installation and usage of the luminary will be briefly described.

The hollow bedplate **11** is attached to a ceiling, or other flat surface, by means of fasteners **12**. A plurality of lugs **20** depending from the bedplate **11** provide means whereby the housing **10** may be attached to the hollow bedplate **11**.

The grid **27**, which is cast-embedded into the rim **25**, which forms the margin around the light emission aperture **26**, forms a guard to protect the lamps **14** and the screen **32**. The flattened center portion **28** of this grid guard, in cooperation with the ogee transition portion **31** between the flattened center portion **28** and the embedded skirt portion **30**, provide the grid **27** with great flexibility and shock resistance. An impact on the grid **27** by an impinging missile will be partly taken up by the resilience of the grid **27** rather than being immediately translated as a pull on the embedded skirt portion **30** which would tend to dislodge the grid **27** or fracture the wires at the point of embedment.

The translucent screen **32** mounted above the grid **27** is symmetrically situated within the housing **10** and is somewhat larger than the aperture **26**. Consequently, the arcuate air vents **36** are hidden from the view of an observer stationed below the luminary. This structure provides an additional advantage in that the hidden vents **36** do not readily provide access to the inner lamp chamber of the housing **10**, the lamps **14** thereby being protected from the discharge of squirt guns, one method by which vandals attempt to damage luminaries.

Although the invention has been described by making detailed reference to a single preferred embodiment, such detail is to be understood in an instructive rather than in any restrictive sense, many variations being possible within the scope of the claims hereunto appended.

I claim as my invention:

1. A vandal-proof luminary comprising:

(a) a housing having an illumination aperture at one end,

(b) a source of light in the housing,

(c) a grid extending across the aperture and embedded in the margin of the aperture whereby the grid is structurally integral with the housing to form a protective guard for the light source,

(d) a luminary screen disposed in the housing,

(e) means mounting the screen in spaced relation between the grid and the light source,

(f) the screen being spaced laterally to provide a substantially peripheral vent for the passage of air, and

(g) the screen being situated above and superimposedly overlapping the margin of the aperture to substantially hide the vent from view through the aperture.

2. A vandal-proof luminary comprising:

(a) a housing having an illumination aperture at one end,

(b) a source of light in the housing,

(c) a grid extending across the aperture and embedded in the margin of the aperture forming a protective guard for the light source,

(d) a luminary screen disposed in the housing,

(e) means mounting the screen in spaced relation between the grid and the light source,

(f) the screen being spaced laterally to provide a peripheral vent for the passage of air,

(g) the housing having an inverted frustum configuration formed by casting and including an inwardly facing rim defining the margin of the aperture,

(h) the grid having a dome-shaped configuration and having an outwardly projecting skirt portion embedded in the rim, the grid having a flattened center portion extending inwardly of the housing, the transition between the flattened center portion and the skirt portion having an ogee shape,

(i) the screen being situated above and superimposedly overlapping the rim to substantially hide the vent from view through the aperture, and

(j) the means mounting the screen including a plurality of lugs peripherally disposed in spaced relation around and on the screen and a plurality of shoulder portions, carried by the housing and cooperatively attached to the lugs.

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