June 13, 1967 H. C. PFAFF, JR., ETAL 3,325,638

UNITIZED VAPOR LAMP

Filed July 23, 1965 3 Sheets-Sheet 1

FIG. 1

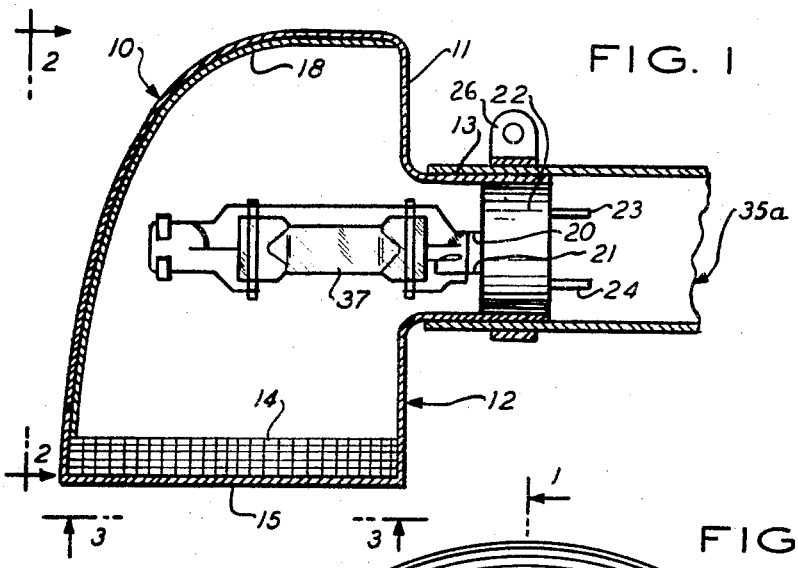


FIG. 2

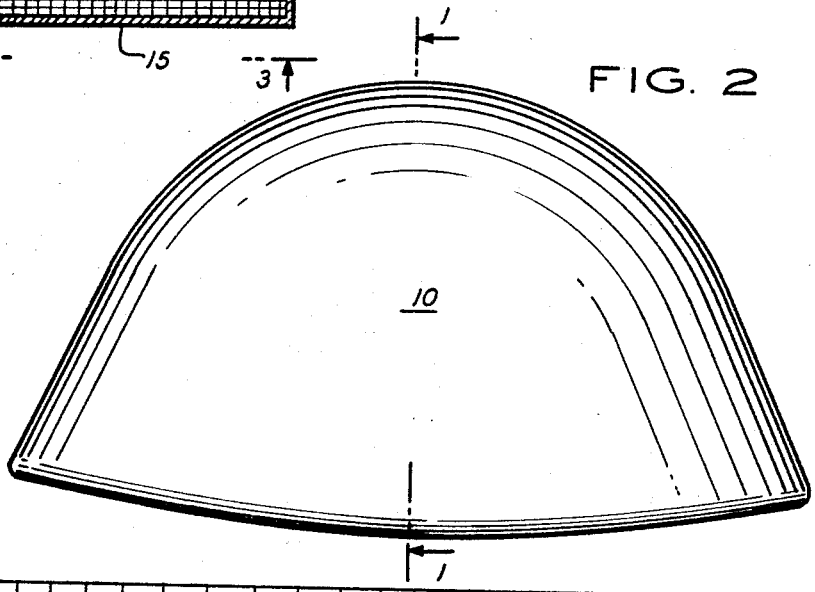
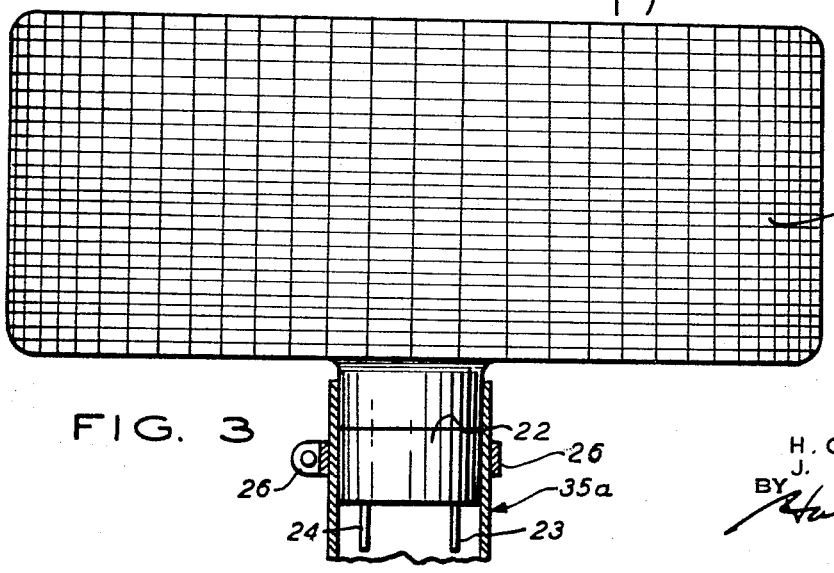


FIG. 3



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Filed July 23, 1965 3 Sheets-Sheet 2

FIG. 4

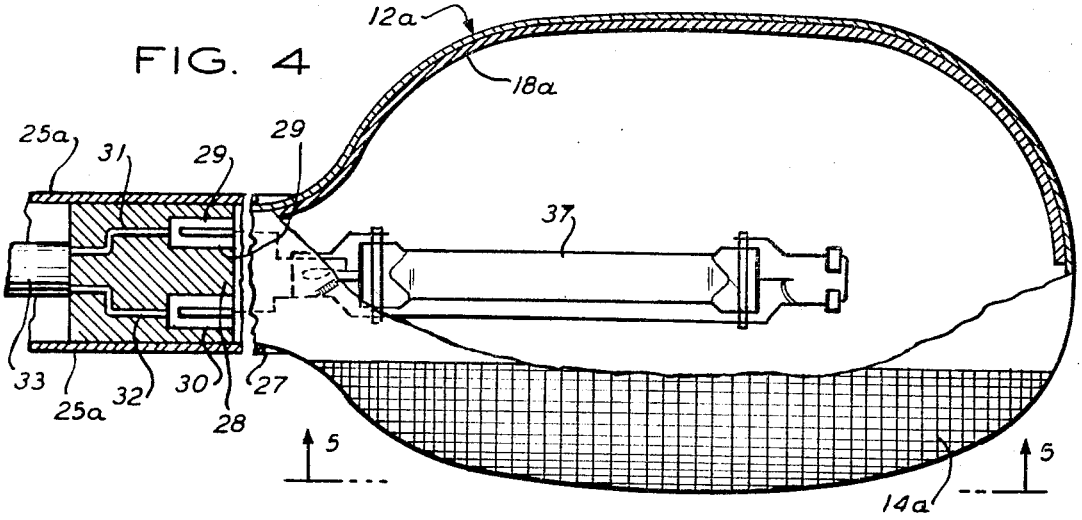
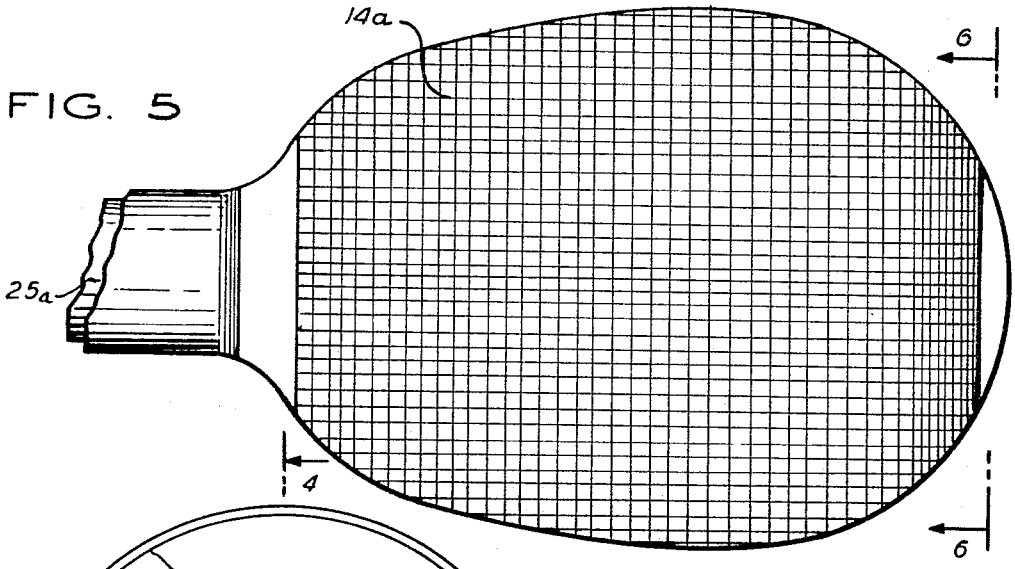


FIG. 5



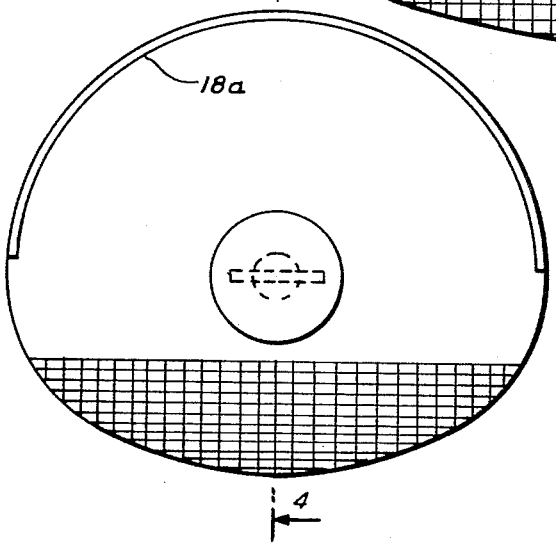


FIG. 6

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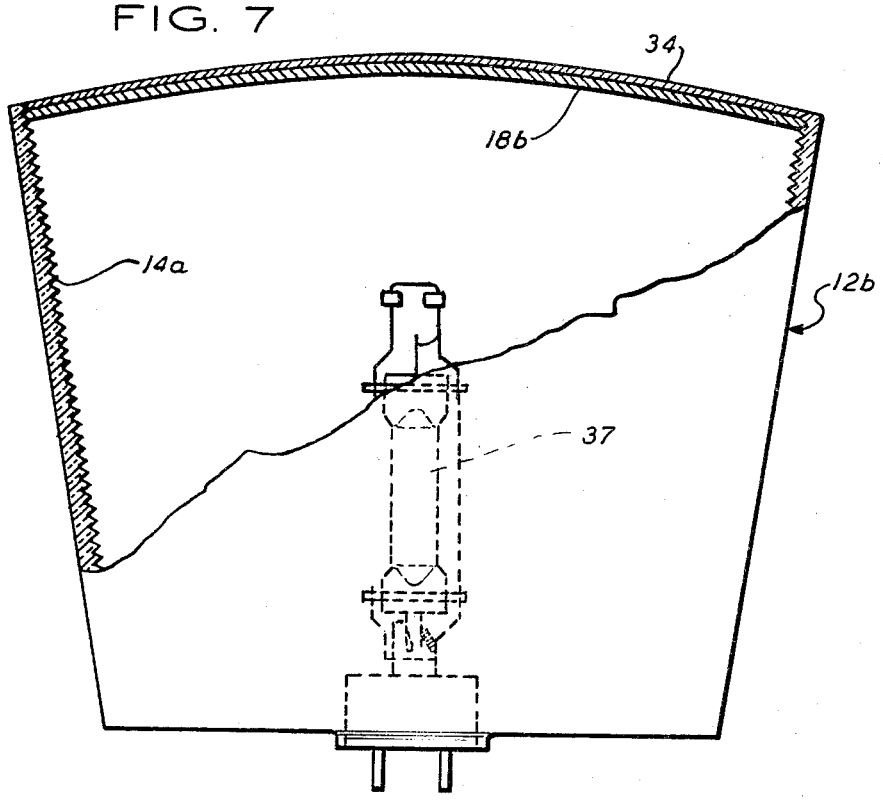
UNITIZED VAPOR LAMP

Filed July 23, 1965 3 Sheets-Sheet 3

FIG. 7



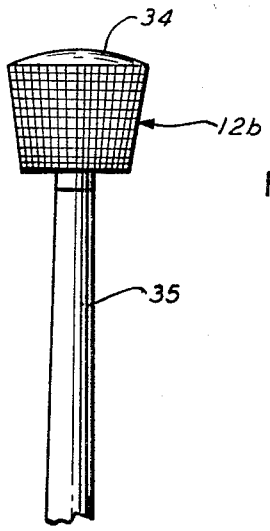


FIG. 8

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UNITIZED VAPOR LAMP

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Filed July 23, 1965, Ser. No. 474,233
2 Claims. (Cl. 240—11.4)

ABSTRACT OF THE DISCLOSURE

A light source, such as a vapor lamp, and an outer envelope structure are sealed to one another and provided with a protruding end having electrical connector elements detachably coupled into a support. The support has an end telescoped over the protruding end of the integrated lamp and envelope and is held to the integrated structure by a ring clamp.

This invention relates to lighting devices, and more particularly to a unitized vapor lamp which may be manufactured as a self-contained, highly efficient, vapor-light-emitting sealed unit, with terminals extending from one end thereof, to be readily plugged into an outlet or socket for connection to an electrical source and to be removed and replaced when required.

The invention is intended for, but not limited to, use in applications such as outdoor lighting, for ready application to and replacement on a pole, shaft or other support, in a simple and effective manner, thus simplifying service requirements and assuring continuity of lighting.

The unitized vapor lamp of this invention is sturdy and rugged, and may be relatively simply manufactured in an infinite variety of shapes, to conform to esthetic and utilitarian requirements. The structure of the device is such that it may be readily connected to and disconnected from a current source at the end of a shaft.

The drawings, illustrating procedures and devices useful in carrying out the invention, and the description below, are exemplary only of the invention, which shall be deemed to cover all other devices and procedures coming within the scope and purview of the appended claims.

In the drawings, wherein similar reference characters indicate like parts:

FIG. 1 is a vertical, longitudinal, sectional view of a unitized vapor lamp embodying the invention, taken at line 1—1 of FIG. 2,

FIG. 2 is a front elevational view thereof, taken at line 2—2 of FIG. 1,

FIG. 3 is a bottom plan view thereof, taken at line 3—3 of FIG. 1,

FIG. 4 is a longitudinal, partly fragmentary, side elevational view of another form of unitized vapor lamp embodying the invention, taken at line 4—4 of FIG. 6, shown secured by a clamp to a lighting fixture shaft,

FIG. 5 is a bottom plan view thereof, taken at line 5—5 of FIG. 4,

FIG. 6 is an end elevational view thereof, taken at line 6—6 of FIG. 5,

FIG. 7 is a partly fragmentary elevational view of a further form of unitized lamp embodying the invention, shown before application to a lighting shaft, and

FIG. 8 is an elevational view, showing the same secured to a lighting shaft.

As shown in the drawings, wherein corresponding parts are similarly numbered (FIG. 1), the unitized vapor lamp **10** of this invention comprises an outer light-

permeable shell member **11** which may be made of glass or other light permeable material, blown, molded or otherwise fabricated to define a body portion **12** of substantial cross section, formed unitarily with an open, constricted, tubular end or neck portion **13** extending therefrom (FIG. 1). A portion **14** is formed in the body member **12** of any cross sectional configuration suitable for light refractive purposes, for example, as indicated by serrations **14***a* in FIG. 7, or a grilled pattern may be provided for the purpose as indicated at **14** in FIGS. 1 and 3, forming the light-emitting face **15**. The light-refractor portion **14** of the lamp **10** may be formed separately and fused or otherwise secured to the remainder of the body portion, or formed unitarily therewith, as desired. A reflectorized portion **18** is formed in the body member **12** opposite the refractor portion, and a vapor light-generating unit **37**, such as a vapor lamp having leads **20**, **21** connected interiorly of the base or terminal portion **22**, has contact terminal fingers or pins **23**, **24** extending from the terminal portion **22**. The reflectorized portion **18** may be a coating such as silver, reflecting paint, or a sheet of reflecting material secured to the unitized vapor lamp **10** opposite the light refractor portion **14**, with the vapor light generating member **37** intermediate the same.

The light-generating unit **37** may be a so-called multi-vapor lamp, as illustrated and described by General Electric Co. lamp letter No. 64–23, dated Nov. 11, 1964; the construction of the parts inside the bulb **37** may be changed, as well as the manner of ballasting and supporting the inner bulb **37** in which the discharge takes place. The base-adjacent end of the bulb **37** is supported from the shell member **11** as by snugly fitting and sealing it thereinto, as shown in FIG. 1. The shell member **11** is supported thereabout by snugly fitting inside support **35***a*, (below described) and said support clamp thereabout by tightening the clamping device **26**, as shown in FIGS. 1 and 3. As an alternative, a mercury lamp, may be substituted.

In the manufacture of the unit, the light permeable shell member **11** may be initially formed of any desired contour; for example, as shown in FIGS. 1–3 inclusive, of generally semi-circular, longitudinal outline, and generally rectangular bottom profile.

In manufacture, the unitary terminal portion **22**, with the vapor lamp light generating member **37** assembled thereon, may be inserted into a neck portion of the shell member **11** and the latter evacuated and sealed to the terminal portion **22**. The lamp **10** may then be readily mounted on a support such as a vertical lighting shaft or pedestal **35**, FIG. 8, or to a horizontal light shaft or support such at **35***a* in FIG. 1, by any suitable clamp means such as the adjustable sleeve **26** (FIG. 1). The lighting shaft **35***a* is provided adjacent the end thereof (FIG. 4) with a socket **28** having electric contact elements **29**, **30** with which the terminal fingers **23**, **24** of the lamp base are adapted to make electrical engagement on assembly of the parts as illustrated. The contact elements **29**, **30** are thus connected to the wires **31**, **32** of the cable **33** which may be connected to a suitable power source, with auxiliary and/or intervening auxiliary equipment such as ballasts, transformers, etc. which, if desired, may be built into the lamp body **12** and cut into leads **20**, **21** (FIG. 1) connecting with the terminal fingers or pins **23**, **24**.

The form of invention shown in FIGS. 4–6 differs from FIG. 1 essentially in the generally ellipsoidal contour of the body portion **12***a* of FIG. 4 having a light refractor portion **14***a* and reflectorized portion **18***a* opposite the same and an intermediate vapor light generating member **37** extending in generally parallel spaced rela-

tion with respect thereto. The body member **12***a* may likewise be of glass or other transparent or translucent material as above noted. In the form shown in FIGS. 7 and 8 the body portion **12***b* is generally circular and tapered downwardly with a convex top end **34** and a reflectorized portion **18***b* and a light refractor portion **14***a*; the other parts correspond to those similarly numbered in FIG. 1.

While the foregoing disclosure of exemplary embodiments is made in accordance with the patent statutes, it is to be understood that the invention is not limited thereto or thereby, the inventive scope being defined in the appended claims.

We claim:

1. A lamp comprising a light giving unit enclosed within an inner envelope and an outer envelope surrounding the inner envelope, the outer envelope being provided with a neck within which is a terminal portion sealed to the neck of the outer envelope, electrodes extending from the exterior of the inner envelope, through the terminal portion and into the outer envelope and connected within the inner envelope to the light giving unit, a support having a socket with contact elements therein, said socket receiving the extending electrodes and said contacts engaging the extending electrodes associated with said lamp wherein the support comprises an end portion telescoped over the neck of the outer envelope, and a sleeve about the telescoped parts clamping the lamp to the support.

2. The structure of claim **1** wherein the light giving unit enclosed within an inner envelope is a vapor lamp.

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