June 5, 1956 A. I. APPLETON 2,749,433

VAPOR-PROOF LIGHTING FIXTURE

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Fig. 1

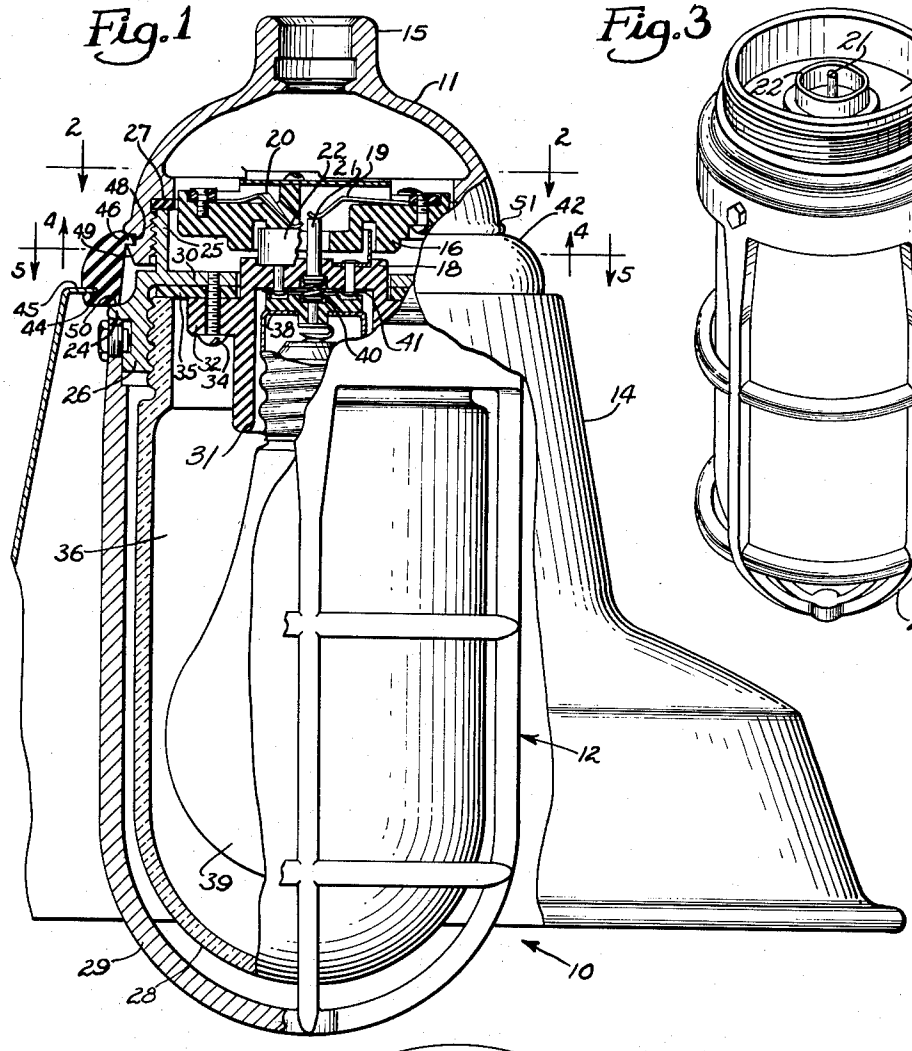
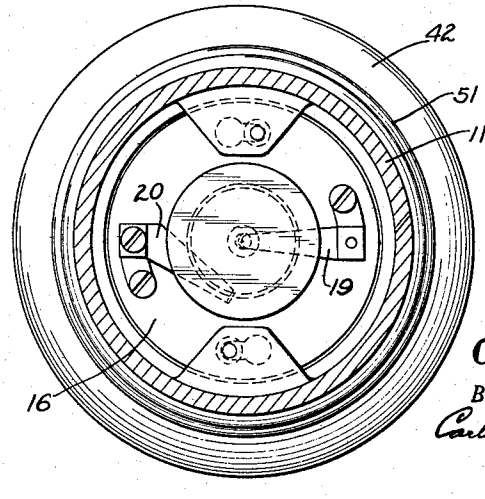


Fig. 3

Fig. 2



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Fig. 4

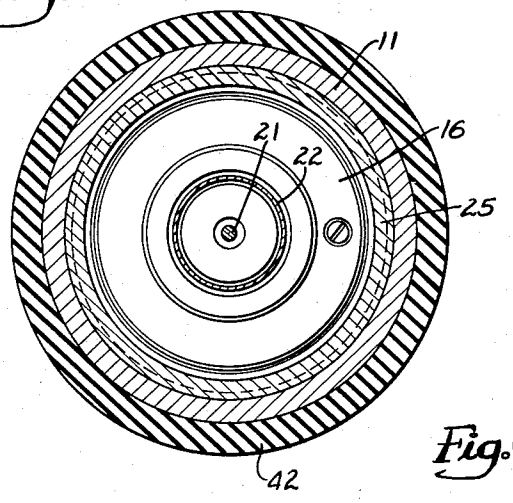


Fig. 6

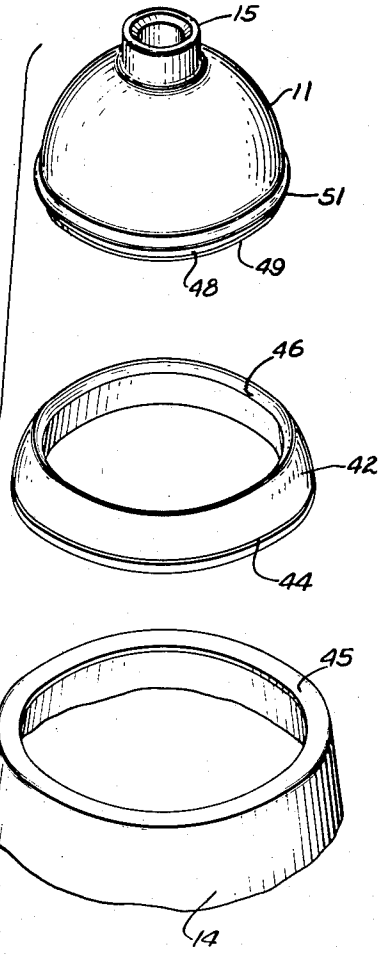
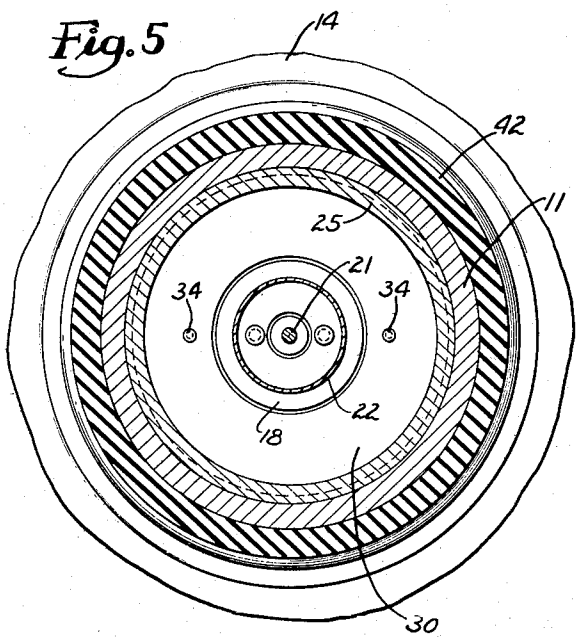


Fig. 5



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VAPOR-PROOF LIGHTING FIXTURE

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Application July 22, 1950, Serial No. 175,420

6 Claims. (Cl. 240—11.2)

The present invention relates generally to electrical lighting units and more specifically to a novel vapor-proof type fixture for housing an electric lamp. Vapor-proof lighting fixtures such as the one described herein find wide utility in industrial applications such as steel mills, power plants, certain chemical plants and the like, where accessibility for relamping, cleaning and other maintenance is an important consideration.

One object of the invention is to provide a vapor-proof lighting fixture of the character set forth and having a supporting canopy with a globe assembly detachably mounted thereon, such assembly being adapted to lock the reflector in position as an incident to attachment of the globe assembly to the supporting canopy.

Another object is to provide a vapor-proof lighting fixture of the foregoing type including a detachable globe assembly having a vaportight lamp chamber capable of being sealed in the factory or maintenance shop prior to attachment of the globe assembly to the canopy.

A further object is to provide a lighting fixture of the character set forth and having means for precluding accidental disengagement of the globe assembly from the canopy due to vibration or shock.

Other objects and advantages will become apparent as the detailed description herein proceeds, taken in connection with the accompanying drawings wherein:

Figure 1 is an enlarged fragmentary vertical sectional view through an illustrative lighting fixture embodying the present invention.

Fig. 2 is a transverse sectional view through the illustrative fixture taken in the plane of the line 2—2 in Fig. 1.

Fig. 3 is a perspective view of the globe assembly of the fixture shown in Fig. 1.

Figs. 4 and 5 are transverse sectional views taken in opposite directions through the illustrative fixture shown in Fig. 1 along the common plane of the line 4—4, 5—5.

Fig. 6 is an enlarged fragmentary exploded perspective view detailing the supporting canopy together with a portion of the reflector and its attaching means.

While the invention is susceptible of various modifications and alternative constructions, a preferred embodiment has been shown in the drawings and will be described below in considerable detail. It should be understood, however, that there is no intention to limit the invention to the specific form disclosed, but on the contrary, the intention is to cover all modifications and alternative constructions falling within the spirit and scope of the invention as expressed in the appended claims.

Referring more specifically to the drawing, there is shown an illustrative fixture 10 embodying the present invention and comprising a hollow supporting canopy 11, a globe assembly 12 including a globe and a surrounding guard, and a reflector 14. The canopy 11 is formed with a hollow neck 15 for attachment to a suitable stem (not shown) depending from a ceiling or other overhead support. Power supply wiring (not shown) may be led into the fixture via the neck 15 of the canopy. A detachable terminal means, covered in detail in my copending application Serial No. 175,419, filed July 22, 1950, which issued August 9, 1955 as Pat. No. 2,715,214, is interposed between the canopy 11 and the globe assembly 12. Briefly, such means in this instance comprises

a terminal block 16 fixed to the canopy, together with a terminal block 18 fixed to the globe assembly. These terminal blocks have associated therewith suitable coacting terminal elements. Thus the block 16 in the canopy is provided with a pair of resilient contact prongs 19, 20 which are respectively adapted to make electrical contact with a center contact pin 21 and a surrounding contact ring 22, both fixed to the terminal block 18.

Turning now to the globe assembly 12, it will be observed that the same is organized upon a globe ring 24 which can be detachably secured to the canopy through appropriate fastening means. In the present instance, the globe ring 24 has an upper annular skirt 25 and a depending annular skirt 26. The skirt 25 is provided with external threads for engaging coacting threads inside the canopy 11, the end of the skirt 25 entering into sealing relation with a seating gasket 27 when such threads are fully engaged. The depending annular skirt 26, on the other hand, has suitable internal threads for engaging the threaded end portion of transparent or translucent globe 28. The depending skirt also carries cage-like guard 29 which protectively encloses the globe 28. Between the skirts 25, 26 the globe ring 24 is provided with a transverse partition 30 which in this case happens to be of annular shape. The partition 30 has attached thereto a lamp receptacle 31, the latter being fashioned with a medial flange 32 secured to the partition 30 as by means of one or more screws 34. Interposed between the partition 30, the upper end portion of the globe 28, and the mounting flange 32 is a sealing gasket 35 of cork or the like. The foregoing parts thereby define within the globe assembly 12 a sealed lamp chamber 36 which remains vaportight regardless of whether the globe assembly is attached to or detached from the supporting canopy 11.

By reason of the construction just described, it will be appreciated that relamping of the fixture 10 is greatly simplified and facilitated so that it can be accomplished with great rapidity. Thus in an actual installation where it becomes necessary to replace a lamp, the servicer need only perform the simple task of unscrewing the globe assembly 12 from the canopy, replacing such assembly with a spare having a new lamp already installed therein. This can easily be done by gripping the guard 29 with the hand and turning the guard so as to unscrew the assembly 12. The removed globe assembly may then be carried by the servicer to his shop for dismantling and reassembly under comfortable and proper working conditions. Thus there is little, if any, likelihood that relamping will result in a defectively sealed globe assembly.

For the purpose of conserving the longevity of lamps used in the fixture 10 not only during their period of use but also during the time that the globe assembly 12 might be handled and carried about by the servicer, the receptacle 31 is fitted with a vibration-proof socket 38 which dependably supports a lamp 39 within the sealed lamp chamber. The terminals of the socket 38 are in this instance connected to the respecive terminal elements 21, 22 as by means of a central spring 40 and surrounding resilient plate 41.

Provision is made for attaching the reflector 14 to the fixture 10 in a remarkably simple and economical manner. This is accomplished by the use of a resilient collar 42 of rubber or the like. The latter, in the present instance, is fashioned with a relatively deep and narrow peripheral groove 44 which engages a surrounding annular flange 45 at the smaller or tapered end of the reflector 14. Adjacent its upper end, the collar 42 is also fashioned with an inturned annular flange 46 of appropriate diameter to engage a corresponding peripheral groove 48 in the canopy 11. To facilitate entry of the flange 46 into the groove 48, the depending end of the canopy 11 is pref-

erably tapered at at 49, such tapered portion actually stretching the collar 42 circumferentially until the flange 46 snaps into the groove 48. With the structure thus far described, it will be appreciated that the reflector 14 may be readily attached to the canopy 11 in the absence of the globe assembly 12. By making the inside diameter of the collar 42 substantially less than the largest diameter of the globe assembly 12 abutting against the collar 42, the reflector 14 may be securely held in place with little likelihood of its becoming disengaged.

In order to preclude accidental disengagement of the globe assembly 12 from the canopy 11 due to vibration or shock, resort is had to the resilient collar 42 regardless of whether or not a reflector is used with the fixture 10. In furtherance of such objective, the globe assembly 12 is provided with appropriate abutment means adapted to coact with corresponding abutment means on the canopy 11 so as to compress the collar 42 therebetween as an incident to attachment of the assembly 12 to the canopy 11. In the illustraive fixture 10, the globe ring 24 is formed with an external transverse shoulder 50 somewhat greater in diameter than the inside diameter of the resilient collar 42. By the same token, canopy 11 is provided with a peripheral bead 51 adjacent the upper side of the groove 48. Thus upon threading of the globe assembly 12 into the canopy 11, the shoulder 50, on the one hand, and the peripheral bead 51 and the upper edge of the groove 48, on the other hand, serve as coacting peripheral abutments and squeeze the resilient collar 42 therebetween. In this compressed condition, the collar 42 sets up a large frictional force which resists turning of the globe assembly 12 relative to the canopy 11. In a fixture where the reflector 14 is used, this compression of the resilient collar 42 stiffens the same and holds the reflector more securely. At the same time, the abutment 50 serves as a positive means for preventing the dropping away of the reflector 14 from the fixture 10.

The foregoing arrangement not only simplifies the initial installation of the reflector 14 but also greatly simplifies its removal for cleaning. The use of small fastening screws, clamps, or the like which are apt to become corroded or rusted after a comparatively short period of time is completely eliminated. As in the case of the globe assembly 12, the reflector 14 may be attached or removed directly by hand without the use of tools of any kind.

I claim as my invention:

1. A lighting fixture comprising the combination of a supporting canopy and peripheral abutment means thereon, a globe assembly also having peripheral abutment means thereon but spaced apart from the abutment means of said canopy, said globe assembly being detachably connectable to said canopy, a reflector disposable in surrounding relation with said globe assembly, a resilient collar adapted for attachment to said reflector, said collar being of a size rendering the same susceptible of rigid clamping between the respective abutment means of said canopy and said globe assembly, interfitting groove and flange means on said collar and said canopy for maintaining said collar in assembled relation with said canopy upon removal of said globe assembly, and interfitting groove and flange means on said reflector and said resilient collar for permitting removal of said reflector without detachment of said globe assembly from said canopy.

2. A lighting fixture comprising, in combination, a supporting canopy having a peripheral groove, therein, a tapered portion on said canopy decreasing in diameter from the peripheral groove toward the depending end of said canopy, a globe assembly having a shoulder thereon spaced apart from said peripheral groove, a reflector disposable in surrounding relation with said globe assembly, a resilient collar having means for attachment to said reflector, and an inside flange integral with said resilient collar and having an inner diameter of a size adapting said flange for snap-in engagement with the peripheral groove of said canopy after expansion by said tapered portion, said collar being disposed in clamped relation between the peripheral groove of said canopy and the shoulder of said globe assembly and being susceptible of stiffening in response to clamping pressure so as to effect positive retention of said reflector.

3. A lighting fixture comprising the combination of a supporting canopy having a peripheral groove thereon, a bead on said canopy adjacent the upper edge of the peripheral groove, an inwardly tapered portion on said canopy adjacent the lower edge of the peripheral groove, a reflector having an inturned flange at one end thereof, a resilient collar having an outer diameter greater than the inner diameter of said inturned flange but having a narrow peripheral groove engageable by said inturned flange, an inside flange integral with said resilient collar and adapted for snap engagement with the peripheral groove of said canopy, and a globe assembly having a transverse shoulder thereon of greater diameter than the inside diameter of said resilient collar, said transverse shoulder being adapted to squeeze said resilient collar against said bead as an incident to attaching said globe assembly to said canopy.

4. In a lighting fixture, the combination with a supporting canopy, a globe assembly and a reflector, of a detachable resilient supporting collar for said reflector, said collar having a diameter rendering the same engageable between said canopy and said globe assembly and being lockable in position in response to compression therebetween, and interfitting groove and flange means on said collar and said canopy cooperating to hold the former to the latter to thereby maintain said reflector in assembled relation with said canopy upon removal of said globe assembly from said canopy.

5. In a vapor-proof lighting fixture, the combination comprising a supporting canopy, a globe assembly including means defining a sealed lamp chamber therein, axially interfitting means for attaching said globe assembly to said canopy or detaching it from the same without violating the integrity of said sealed lamp chamber, a reflector having an inturned flange, a resilient collar having an external annular groove therein adapted to receive said reflector flange by snap-action deformation of the collar, said collar being interposed between said globe assembly and canopy to be compressed upon axial movement of the globe assembly toward the canopy, whereupon said collar is stiffened to prevent snap-out of said reflector flange from said groove.

6. A lighting fixture comprising the combination of a threaded supporting canopy, an outer peripheral abutment on said canopy, a globe assembly having a threaded portion susceptible of attachment to said canopy, an outer peripheral abutment on said globe assembly spaced axially from the abutment of said canopy, a compressible resilient collar having an inner portion interposed between said peripheral abutments and adapted when compressed to preclude accidental unscrewing of said globe assembly from said canopy, said collar also having a free outer portion which stiffens upon compression of said inner portion, a reflector, and interfitting groove and flange formations on said outer portion and said reflector for detachably suspending the latter from said free outer portion of said collar.

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