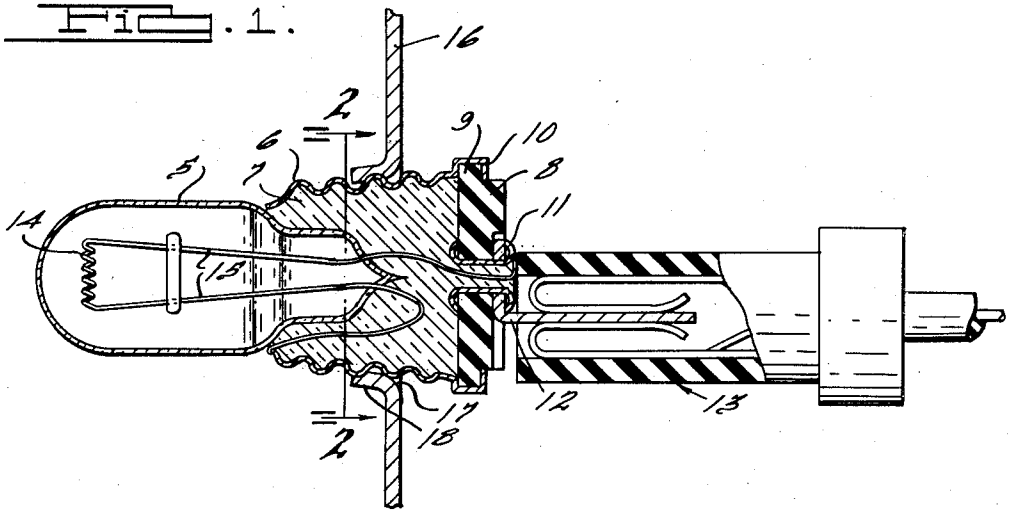
July 14, 1953 J. B. DICKSON 2,645,736

ELECTRIC LIGHT BULB UNIT

Filed May 17, 1952

Fig. 1.



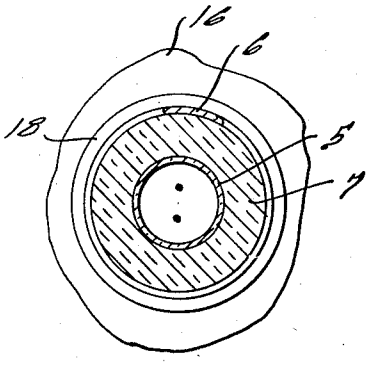


Fig. 2.

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ELECTRIC LIGHT BULB UNIT

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13 Claims. (Cl. 313—318)

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This invention relates to an improved electric light bulb unit.

An object of the invention is to provide an electric light bulb unit comprising a filament containing bulb and a base secured to the unit and detachably securable to a support in such manner as to prevent accidental separation of the unit from the support and to prevent relative movement therebetween tending to produce vibratory rattle. More particularly the invention is directed to suit a unit in which the maximum diameter of the bulb is less than the maximum diameter of the base, and assembly of the unit relative to the support is effected by inserting the bulb through a support opening and detachably engaging the base with the support.

Another object of the invention is the provision of an electric light bulb having the aforesaid components and wherein the unit is mounted relative to a support by threading the base into an opening in the support, and as a preferred embodiment the base has a threaded, frustro-conical external mounting surface which threads into the support opening. The angle of taper of this surface is selected to produce a tight, sealing fit between the support and unit base with a minimum of travel of the base into the opening. For the maximum benefit the support opening is preferably bounded by a threaded, frustro-conical wall having a degree of taper corresponding to that of the base external surface.

A still further object of the invention is to provide an electric light bulb unit which can be applied to a closed body for illuminating the interior thereof and which is also applicable to a panel or wall only one of the opposite faces of which is readily accessible and the illumination is to be provided at the other face. In either application, a wall of the closed body or the panel is provided with an opening dimensioned to permit the bulb to pass therethrough and the base is inserted into the opening and engaged with the support, this engagement mounting the unit relative to its support and preventing the base from passing entirely through the support opening.

As an illustrated embodiment for carrying out the foregoing the base has a threaded, frustro-conical external surface and the unit is mounted by inserting the bulb through the opening in the support from the accessible side and threading the base into the threaded surface of the wall bounding the support opening. The base is in the form of a sleeve which is the frustum of a cone, and the bulb projects from that end portion of the sleeve having the smaller diameter. The degree of taper of the base is selected to provide a tight, sealing fit between the base and support with a maximum of travel of the base into the opening.

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Other objects and advantages of the invention will be more apparent from the following description taken in connection with the accompanying drawing in which:

Fig. 1 is an elevational view, mainly in section, showing the bulb unit mounted on its support.

Fig. 2 is a transverse section taken on the line 2—2 of Fig. 1.

The electric bulb unit includes a bulb part 5 and a metallic base part 6 secured together by a body of basing cement 7 of insulating material. The bulb part 5 has a relatively small end extending into the base part 6, and while the latter part is shown as filled with the basing cement 7, it will be understood that the body of cement used can be confined to the telescoping portions of parts 5 and 6 in securing the latter together. The end of base 6 opposite the bulb receiving end has a closure 8, an edge portion 9 of which is held in a channel section at 10 of the base. A hollow rivet 11 extends through an opening in the base and has its inner and outer ends respectively flanged over the inner and outer faces of the closure 8, the outer flange securing a conducting prong 12 to the closure. The prong 12 is adapted to be connected with a source of electrical energy by a well known type of conductor 13.

The bulb 5 is provided with a filament 14 supported by a pair of conventional conductors 15 one of which is connected with the rivet 11 and the other with the metallic base 6.

The base 6 is a metallic sleeve in the form of a frustum of a cone and has a threaded, frustro-conical external surface and increases in diameter from a minimum at its bulb receiving end to a maximum in the direction of its other end or base, the projected apex of the base being in the direction of the free end of bulb 5. The maximum diameter of the bulb 5 is less than the minimum threaded diameter of the base 6 and less than that of all portions of the base except that portion of the latter at its smaller end.

The light bulb unit is adapted to be secured to a support 16, which may be a portion of the wall of a space enclosing structure the interior of which is to be illuminated, or the support 16 may be a panel or the like access to which is available only from the right side thereof as viewed in Fig. 1. The support has an opening

17, the metal being extruded to form an axially extending flange 18 although it will be understood that the wall bounding the support opening may be merely the thickness of the wall 16. Preferably the wall surface bounding the opening 17 is frustro-conical and is threaded for threaded engagement with the threaded, frustro-conical external surface of the base 6 for mounting the unit relative to the base. The diameter of the bulb 5 is sufficiently less than the diameter of the opening 17 to permit the bulb to be inserted therethrough.

The taper of the threaded base is selected to give a tight, sealing fit in the opening and by way of example but not limitation such taper may be in the order of 10°. The base may have 10 or 14 threads per inch although 14 such threads insures sufficient convolutions in the panel without too deep threaded draw and approximately two revolutions of the base will result in the desired tight, sealing fit and maintain the travel of the base into the opening at a minimum in the face of maximum tolerances.

In assembly, the bulb 5 is inserted through the opening 17 from the right side of the support 16 as viewed in Fig. 1 and the base threaded into the opening until the tapered threaded surfaces lock or wedge together and thus limit travel of the base into the opening, it being understood that the maximum diameter of the base is such that the base will not pass through the opening 17.

I claim:

1. An electric light bulb unit adapted to be mounted on a support having an opening bounded by a threaded frustro-conical wall, the unit including a sleeve-like base, a filament containing bulb extending into one end of the base and secured thereto, the bulb being dimensioned to accommodate its insertion through the opening, and said base having a threaded frustro-conical external surface adapted to be inserted into said support opening in threaded engagement with the threaded wall thereof.

2. An electric light bulb unit adapted to be mounted on a support having an opening bounded by a threaded wall, the unit including a base and a filament containing bulb secured thereto, the bulb being dimensioned to accommodate its insertion through the opening, and the base having a threaded frustro-conical external surface adapted to be inserted into said support opening in threaded engagement with the threaded wall thereof.

3. An electric light bulb unit for illuminating the interior of a substantially closed structure provided with a unit receiving opening bounded by a frustro-conical wall, the unit including a base part and a filament containing bulb part secured to the base part and so dimensioned relative to the opening as to be inserted through the same into the interior of the closed structure, the base part including an annular mounting portion having a threaded frustro-conical external surface adapted to be inserted into said opening in threaded engagement with the wall thereof, the minimum threaded diameter of the annular mounting portion being greater than the maximum diameter of the bulb part.

4. An electric light bulb unit including a sleeve-like frustro-conical base and a bulb secured thereto and projecting from the end thereof having the smaller diameter, a filament mounted in the bulb, a closure for the other end of the base, an electrical conductor secured to the closure, electrically connected with the filament and adapted to be connected with a source of electrical energy, the base having a threaded external surface adapted for threaded engagement with a support for the unit.

5. An electric light bulb unit including a base part and a filament containing bulb part secured to the base part and projecting from one end thereof, the base part including an annular mounting portion progressively increasing in diameter in an axial direction toward the other end of the base part and having a threaded external surface adapted for threaded engagement with a support for the unit.

6. An electric light bulb unit including a base part and a filament containing bulb part secured thereto, the base part including an annular mounting portion having a threaded frustro-conical external surface adapted for threaded engagement with a support.

7. An electric light bulb unit including a base part and a filament containing bulb part secured thereto, the base part including an annular mounting portion having a threaded frustro-conical external surface adapted for threaded engagement with a support, the maximum diameter of said annular mounting portion being greater than the maximum diameter of the bulb part.

8. An electric light bulb unit comprising a base portion and a filament containing bulb portion projecting therefrom, the base portion having a threaded frustro-conical mounting surface the projected apex of which lies in the direction of the projection of the bulb portion from the base portion, the maximum diameter of the bulb portion being less than that of said threaded mounting surface.

9. An electric light bulb unit according to claim 6, the projected apex of said frustro-conical surface being in the direction of said bulb part.

10. An electric light bulb unit including a base part and a filament containing bulb part secured to the base part and projecting from one end thereof, the base part having a threaded mounting surface for threaded engagement with the wall bounding an opening in a support for the unit, at least a portion of the groove of said threaded mounting surface engageable with said wall increasing in diameter in the direction of the other end of the base part for wedging engagement with said wall thereby limiting travel of the base part into the opening.

11. An electric light bulb unit according to claim 10, said bulb part and a portion of said base part adjacent its said one end each having a diameter so dimensioned relative to the diameter of the support opening as to accommodate insertion of said bulb part through said opening and travel of said base portion into said opening to establish said threaded engagement.

12. An electric light bulb unit including a base part and a filament containing bulb part secured to the base part and projecting from one end thereof, the base part having a threaded mounting surface for threaded engagement with the wall bounding an opening in a support for the unit, a portion of said threaded surface providing threaded wedging engagement with said wall producing binding of the base part in said opening thereby limiting travel of said base part into said opening.

13. In combination, a support having a threaded opening therein, an electric light bulb unit detachably secured to the support and including

a base part having a threaded external surface in threaded engagement with a wall bounding the support opening, and a filament containing bulb part secured to the base part and projecting from one end thereof, the diameter of the bulb part being sufficiently less than the diameter of the support opening to permit assembly of said unit and support by insertion of the bulb part through said opening and subsequent travel of the base part into said opening by threading of

said threaded surface into said opening, said threaded surface including a portion thereof providing threaded wedging engagement with said wall producing binding of the base part in said opening thereby limiting travel of said base part into said opening.

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No references cited.