

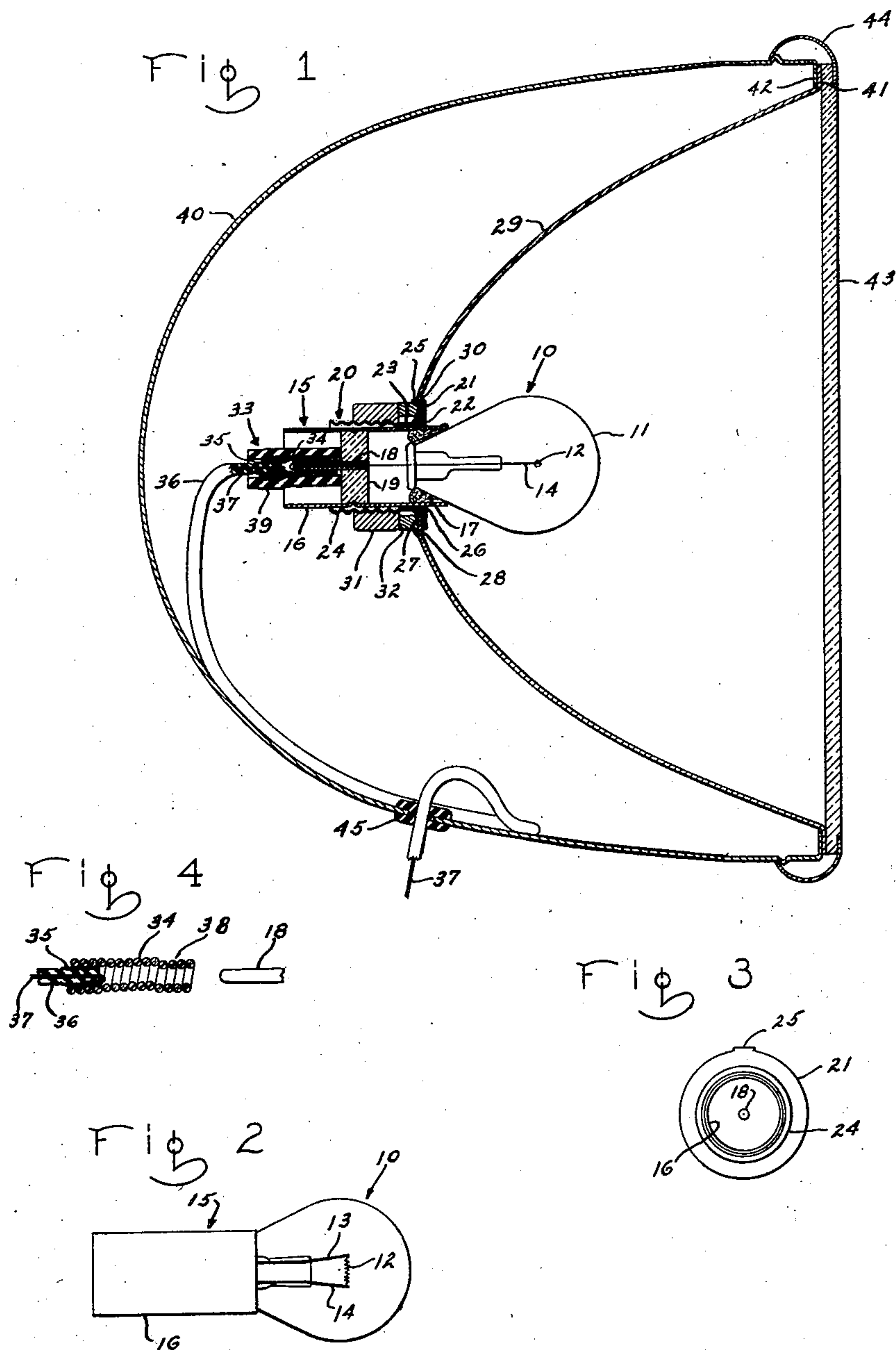
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ELECTRIC LAMP MOUNTING FOR REFLECTORS AND THE LIKE

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ELECTRIC LAMP MOUNTING FOR REFLECTORS AND THE LIKE

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My invention relates to mountings for electric lamps in cases where the filament or other light source should bear a definite relation to some associated part or structure, such as a reflector or a lens. The invention is particularly adaptable to vehicle headlamps in which a lamp is mounted in a reflector such as the well-known paraboloid reflector. The mountings in use at the present time consist of a tubular socket mounted in an opening in the apex of the reflector, the socket having J-shaped slots therein for receiving a pair of radially extending pins mounted on the base of the lamp. The said socket is adjustably mounted in said reflector so that the light source of said lamp may be adjusted to the focal point of the said reflector—which requires a comparatively expensive construction, that sometimes fails to hold the filament permanently in the right position.

According to my invention, an adapter is mounted on the base of the lamp so that a portion thereof bears a definite relation to the light source of said lamp, said adapter comprising a screw thread portion which protrudes through an opening in the apex of the reflector. The lamp is held in said reflector by means of a nut drawn up on said screw portion of said adapter against the back of the reflector, and provision is preferably made for assuring and maintaining a definite angular relation of the lamp and its filament to the reflector. The prefocused adapter with the screw and nut holding arrangement provides a simple, accurate, and rigid means of mounting a lamp in a reflector, obviating the use of the conventional form of socket. Further features and advantages of the invention will appear from the following description of a species thereof and from the drawing.

In the drawing, Fig. 1 is a side view in section of a vehicle headlamp employing my invention; Fig. 2 is a side view of a light source comprising an electric incandescent lamp; Fig. 3 is a rear view of the lamp and adapter; and Fig. 4 is a side view in section of a portion of means of electrical connection to the lamp.

Referring to Figs. 1 and 2, the light source consists of an electric incandescent lamp 10 which comprises a bulb 11 having a filament 12 therein mounted on leading-in wires 13—14. The base 15 of said lamp comprises a tubular shell 16 sealed to the bulb 11 by cement 17. A tubular terminal pin 18 is mounted within said shell 16 in insulating material 19, preferably glass. The leading-in wire 13 is connected to the base shell 16 while the wire 14 extends through

the pin 18 and is soldered to the outer end thereof.

The filament 12 of the lamp 10 is accurately located with respect to an adapter 20 mounted on the base shell 16. The said adapter 20 comprises a flange or collar portion 21 formed at the forward edge of a shoulder portion 22. A reduced neck portion 23, surrounding the base shell 16, is located immediately behind said shoulder 22, the adapter terminating in a threaded sleeve portion 24. The adapter 20 is preferably made of sheet metal, with screw threads rolled in the shell or sleeve portion 24, which may be thin enough to give the threads some resilience. The neck portion 23 is of slightly larger diameter than the base 15 to permit the lamp to be rocked therein as well as to be shifted axially relative thereto; and thus the rear surface or shoulder afforded by the flange 21 is accurately located with respect to the filament. The adapter 20 can also be so turned on the base 15 that a rearwardly extending key projection or lug 25 on the periphery of the flange 21 bears a definite angular relation to the filament 12. When the correct relative positions of filament 12 and adapter 20 to give the proper position of the filament in the reflector (as explained hereinafter) have thus been obtained, the said adapter is fixed on the shell 16 in this "focus adjustment," preferably by solder 26.

The lamp 10, with the adapter 20 affixed thereto, is inserted in a hole 27 in a plane portion 28 at the apex of a reflector 29, the neck portion 22 fitting snugly in said hole. The inside surface of said plane portion 28 is definitely located with respect to the focal point of the reflector, so that when the back surface of the flange 21 is held thereagainst, the filament 12 is located at or near the said focal point—as may be required to give the light distribution desired. The filament 12 is also set in a definite angular position by the insertion and engagement of lug 25 in a key seat 30, formed as a hole in the portion 28 of the reflector 29. The lamp 10 is held in place in the reflector 29 by means of a nut 31 which is screwed onto the threaded portion 24 of the adapter 20, said nut being run up against a washer 32 which may be mounted on the back of the plane portion 28 of the reflector, preferably by solder.

Electrical connection is made to the pin 18 of the lamp by a helical spring connector 33. Said connector comprises a helical spring 34, one end of which is clamped on a metal sleeve 35 mounted on the end of the insulating covering 36 of a flexible stranded conductor 37. The ends of the stranded conductor 37 are bent back over the

covering 36 before the metal sleeve 35 is mounted thereon, thus effecting an electrical connection from the conductor 37, through the sleeve 35, to the spring 34. The spring 34 is deformed so that its internal surface does not lie in a continuous straight line, preferably by offsetting a number of turns 38 (Fig. 4) at the end thereof. Thus when said spring 34 is slipped onto the pin 18, the axis of the spring is brought back to a straight line by elastic flexure of the spring, thus causing the spring to firmly grip the pin. The spring 34 is covered by an insulating tube 39, preferably of soft rubber.

The reflector 29 is mounted in a housing 40 by means of a flange 41 at the outer edge thereof, which may be secured to a flange 42 at the front of said housing by screws (not shown). A lens 43 is held over the reflector 29 by a retaining ring 44. The conductor 37 extends through an insulating washer 45, mounted in a hole in the housing 40, to the battery and switching mechanism.

What I claim as new and desire to secure by Letters Patent of the United States is:

1. The combination of a reflector having a lamp base opening and a key seat; a lamp with its base; a sheet metal adapter shell fixed around said base in focus-adjustment, having a screw thread rolled therein and having its forward end flanged outward to afford a shoulder which seats directly in the reflector opening, and having a

rearward key projection from the flange; and means screwed on said adapter behind the reflector for holding the adapter shoulder directly against the reflector with its projection engaged in said seat.

2. An electric lamp for a vehicle headlamp comprising a bulb having a filament sealed therein and a base mounted on said bulb, and an externally screw-threaded cylindrical adapter fixed on said base and having an outward flange thereon adjacent said bulb and a key projection extending rearwardly from said flange, said adapter being mounted in focus adjustment on said base so that the flange thereon is located a predetermined distance from said filament and said key projection is located in a predetermined angular position with respect to said filament.

3. An electric lamp for a vehicle headlamp comprising a bulb having a filament sealed therein and a base mounted on said bulb, and an adapter fixed on said base comprising a cylindrical screw-threaded metal shell having an outward flange formed thereon adjacent said bulb and a key projection extending rearwardly from said flange, said adapter being mounted in focus adjustment on said base so that the flange thereon is located a predetermined distance from said filament and said key projection is located in a predetermined angular position with respect to said filament.

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