

April 23, 1946.

G. C. SINGER

2,398,968

ELECTRIC LAMP

Filed Sept. 15, 1944

FIGURE 1.

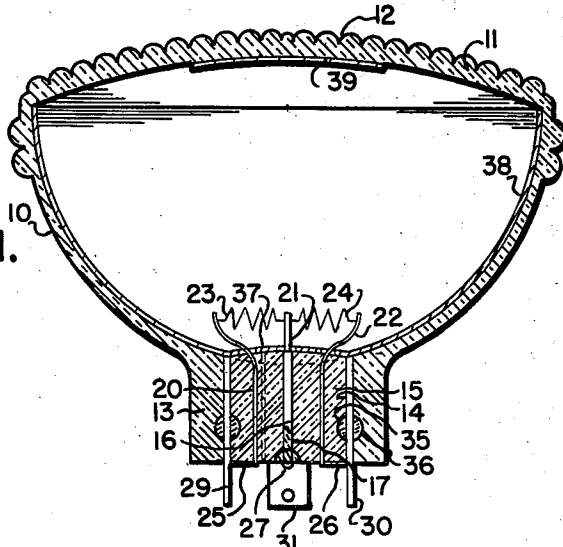


FIGURE 2.

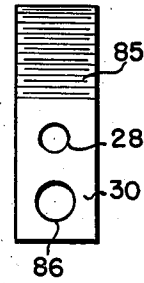


FIGURE 3.

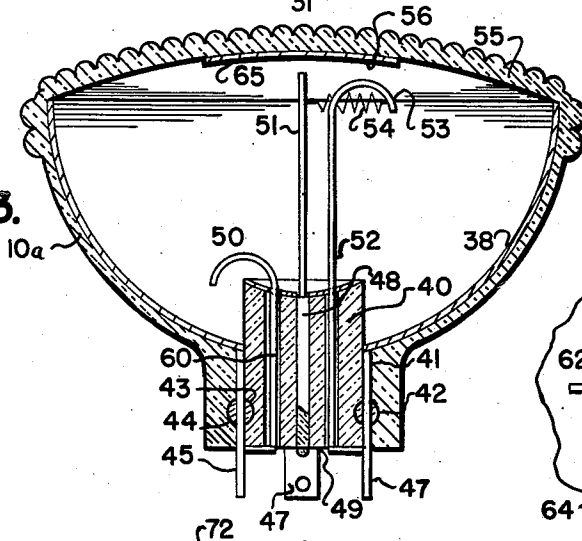


FIGURE 4.

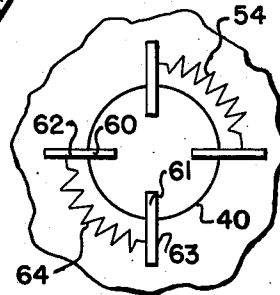
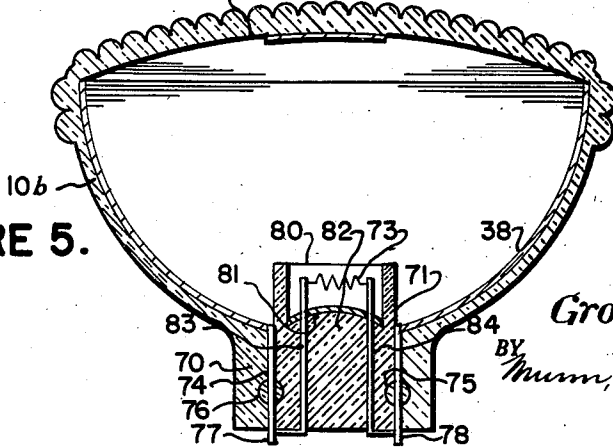


FIGURE 5.



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UNITED STATES PATENT OFFICE

2,398,968

ELECTRIC LAMP

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Application September 15, 1944, Serial No. 554,247

2 Claims. (Cl. 176-37)

This invention relates to electric lamps.

An object of the invention is the provision of an electric lamp having a bulb formed integrally with the base and composed of transparent materials, the base being provided with an axial passage connecting the interior of the bulb with the exterior, a plug sealed within the passage and carrying embedded lead-in wires with filaments attached thereto forming an insertible unit.

Another object of the invention is the provision of an electric lamp having a bulb formed integrally with the base member and composed of transparent materials, the base being provided with an axial passage adapted to receive a plug which is hermetically sealed to the walls of the passage, the inner end of the plug being provided with a reflector with lead-in wires embedded in the plug and having their inner ends projecting into the interior of the bulb, filaments being connected to pairs of the lead-in wires with one filament being located outwardly of the other filament, the plug, lead-in wires and filaments forming a unit which is received within the bulb and passage in the base member.

A further object of the invention is the provision of an electric lamp having a bulb and base member formed integrally and composed of transparent materials, the base member being provided with a wide axial passage to receive a plug which is hermetically sealed to the walls of the passage said plug having a pocket at its inner end with filaments disposed in the pocket, said filaments being carried by lead-in wires which are embedded in the plug, the bottom of the pocket being curved and provided with a reflecting surface.

This invention will be best understood from a consideration of the following detailed description, in view of the accompanying drawing forming a part of the specification; nevertheless, it is to be understood that the invention is not confined to the disclosure, being susceptible of such changes and modifications as define no material departure from the salient features of the invention as expressed in the appended claims.

In the drawing:

Fig. 1 is a vertical section of one form of an electric lamp constructed according to the principles of my invention.

Fig. 2 is an enlarged view in elevation of a prong which projects from the base of the lamp.

Fig. 3 is a vertical section of a modified form of the lamp shown in Fig. 1.

Fig. 4 is a fragmentary plan view of the fila-

ments and removable plug mounted within the bulb and base of the lamp, shown in Fig. 3.

Fig. 5 is a vertical section of another form of the lamp.

Referring more particularly to the drawing (Fig. 1), 10 designates a bulb which is formed of glass. The bulb is provided with a front wall 11, which has the outer face corrugated as shown at 12. A base member 13 is also formed of transparent materials and is cast integrally with the bulb 10.

The base 13 is provided with a central passage 14 which connects the interior of the bulb with the exterior. It will be noted that the passage 14 has a relatively large diameter.

A plug 15 is received within the passage 14 and is adapted to be sealed to the walls of the passage for hermetically closing the bulb 10 to the atmosphere. The plug 15 is provided with an axial passage 16 and this passage is employed for exhausting the air from the bulb 10 after which the outer end of the passage is closed by any suitable form of cement as shown at 17.

Three lead-in wires, 20, 21 and 22 are embedded in the plug 15 with the inner ends of the wires projecting into the bulb 10. Filaments 23 and 24 are connected to the inner ends of the lead-in wires in any approved manner. The outer ends of the lead-in wires as shown at 25, 26 and 27 are bent flat against the outer end of the base 13 and these ends are secured within the openings 28 (Fig. 2), in an associated prong. In other words, the portion 25 of the lead-in wire 20 is connected to a prong 29 while the bent end of the wire 22 is connected to a prong 30. The outer end of the wire 23 is connected to the prong 31. Any number of lead-in wires may be employed for supporting more than two filaments. In other words, lead-in wires 20, 21 and 22 may support the filaments 23 and 24 at one side of a vertical plane passing through the longitudinal axis of the plug 15 while a similar number of lead-in wires for filaments may be mounted at the other side of said vertical plane.

The plug 15 is provided with an annular groove 35 which is semi-circular in cross-section and this groove faces an annular groove 36 in the wall of the passage 14 in the base 13. It will also be noted from the figures that the prongs extend between the grooves 35 and 36. These prongs may extend beyond the grooves inwardly toward the interior of the globe 10 or they may terminate at the inner periphery of the circular passage formed by the grooves 35 and 36.

It will be noted that the outer wall of the plug

15 is spaced slightly from the wall of the passage 14 and the space between the plug and the wall of the passage 14 is sealed with any form of cement or plastic.

It will also be noted that the grooves 35 and 36 are likewise sealed with plastic and this plastic when hardened not only cements the prongs in position but hermetically seals the plug in position.

The inner end of the plug 15 is curved and is covered with a reflecting material 37. The inner side walls of the bulb 10 are also covered with reflecting material as shown at 38. A patch of reflecting material 39 is located on the inner face of the member 11 directly above the filaments 23 and 24 in order to cut down the glare from the headlight since the rays from the filaments are reflected back into the bulb and against the reflecting surface 38 and these rays are modified before they are projected from the bulb.

It will be noted from this construction that the plug 15 together with the lead-in wires and the filaments form a unit so that the plug may be inserted into the passage 14 and hermetically sealed thereto.

Referring more particularly to Fig. 3, a plug 40 is sealed within the passage 41 by a cement or a plastic with the plastic 42 in the grooves 43 and 44 not only aiding in securing the plug 40 in position but for securing prongs 45, 46 and 47 in position. The plug 40 is provided with a central passage 48 through which the air may be withdrawn from the bulb 10a when the lamp has been completed. The outer end of the passage is closed by the usual form of cement 49.

The inner end of the plug 40 extends into the bulb 10a with the inner end of the plug having a concave reflecting surface 50.

A pair of lead-in wires 51 and 52 have their outer ends embedded in the base 40 while the inner ends extend upwardly and are curved outwardly as shown at 53 to form supports for a filament 54. This filament is located near the closed ends 55 of the bulb 10a and below the reflecting surfaces 56 at the inner face of the closed end.

A pair of lead-in wires 60 and 61 are likewise embedded in the base 40 but the outwardly curved ends 62 and 63 respectively of the wires 60 and 61 are disposed adjacent the inner end of the plug 40 and carrying a filament 64. When the filaments 54 and 64 are illuminated a strong light is projected from the bulb. On the other hand the filament 64 may be dimmed or cut out so that the filament 54 will supply the illumination which provides a safer driving light. A patch of reflecting material 65 is secured to the inner face of the closure 55 and is located directly above the filament 64 so that rays from the filament will be reflected back before said rays are projected into the atmosphere in order to prevent too great a diffusion of the light from the filaments.

Referring more particularly to Fig. 5 it will be seen that the bulb 10b and the base 70 are substantially the same as the bulb and base shown in Figs. 1 and 3. The only distinction is the different type of plug 71 which is employed. The inner face of the bulb is provided with substantially the same reflecting surface as shown in Figs. 1 and 3, although the patch of reflecting

surface indicated at 72 has less area than the patch of reflecting surface shown in Fig. 1. This is due to the fact that the filament 73 and the plug 71 are confined in a smaller area.

The plug 71 is inserted in the passage 74 and sealed to the walls of the passage as are the plugs 15 and 40. The annular groove 75 in the base 70 is identical in construction as that shown in Figs. 1 and 2, but the groove 76 has a substantially smaller cross-sectional area. Prongs 77 and 78 are likewise employed and secured in place by a cement or plastic which is applied to the grooves 75 and 76 and to the outer wall of the plug 71.

The inner end of the plug 71 extends into the bulb 10b and is provided with a pocket 80 which has a convex bottom wall 81 which is covered with reflecting material as shown at 82.

Lead-in wires 83 and 84 are embedded in the plug 71 and project into the pocket 80 for supporting the filament 73. While two lead-in wires only are shown it will be appreciated that any number may be employed for the purpose to support a plurality of filaments. The outer ends of the lead-in wires 83 and 84 are bent flat against the outer end of the plug 71 and are connected with the respective prongs 77 and 78 in the same manner as has been described above.

In Fig. 2 is shown an enlarged view of a prong detached from the base member 13. It will be noted that the inner end 85 of this prong is roughened so that when the cement or plastic is applied to the same the roughness will aid in preventing ready release of the prongs.

The outer end of the prongs is not only provided with a small opening 28 but with a larger opening 86 in which is connected a wire or other connection to the usual source of current.

I claim:

1. An electric lamp comprising a bulb, a base formed integrally with the bulb and composed of transparent materials, the base having an axial passage, a plug fitted into the passage, lead-in wires embedded in the plug and projecting into the bulb, filaments attached to the inner ends of the lead-in wires, the walls of the passage and the plug being provided with facing grooves, metal prongs located between the plug and walls of said passage and extending from the grooves to points outwardly of the plug, and a sealing means filling the grooves for not only hermetically attaching the plug to the base but for securing the prongs in position.

2. An electric lamp comprising a bulb, a base formed integrally with the bulb and composed of transparent materials, the base having an axial passage, a plug fitted into the passage, lead-in wires embedded in the plug and projecting into the bulb, filaments attached to the inner ends of the lead-in wires, the walls of the passage and the plug being provided with facing grooves, metal prongs located between the plug and walls of said passage and extending from the grooves to points outwardly of the plug, and a sealing means filling the grooves for not only hermetically attaching the plug to the base but for securing the prongs in position, the inner end of the plug being curved projecting into the bulb and provided with a reflecting surface thereon.

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