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2,398,971

ELECTRIC LAMP

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Fig. 1.

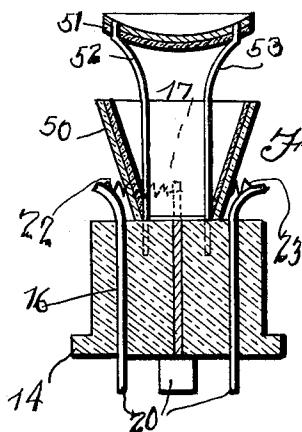
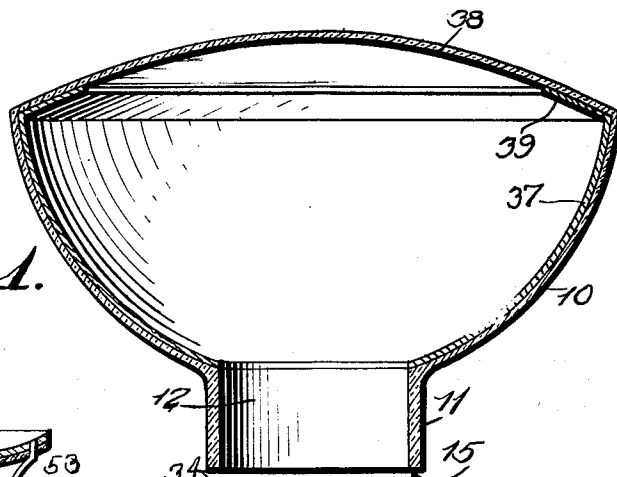


Fig. 5.

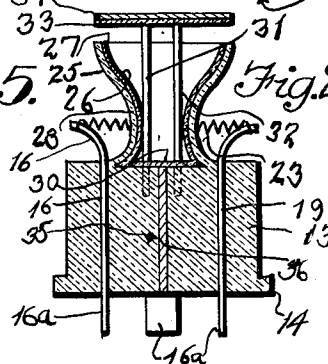


Fig. 2.

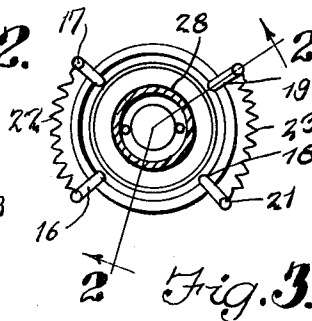
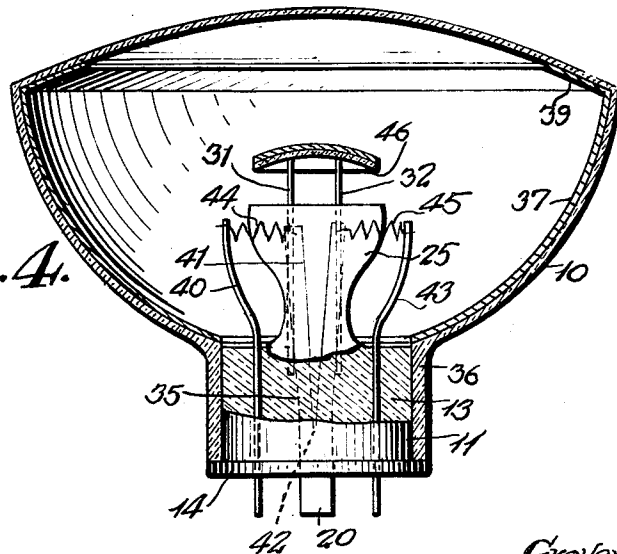


Fig. 3.

Fig. 4.



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ELECTRIC LAMP

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9 Claims. (Cl. 176—34)

This invention relates to electric lamps.

An object of the invention is the provision of a lamp in which a glass base has a wide central passage to receive a plug which carries the filaments, lead in wires and an integrally formed hollow reflector open at its outer end with reflecting materials applied to the inner surface, the filaments surrounding the hollow reflector.

Another object of the invention is the provision of an electric lamp having a glass globe formed integrally with a hollow base, a plug received by the base and carrying as a unit filaments, a hollow reflector, lead-in wires and an outwardly projecting prong, said plug being formed of glass and fused into the hollow base so that the reflector and filaments will be disposed in the globe.

A further object of the invention is the provision of a plug carrying filaments, lead-in wires, and integrally formed hollow and open-ended reflector which is narrow where it joins the inner end of the plug but is flared outwardly as it extends from said end, a second reflector supported by rods mounted in the plug being disposed in spaced relation over the outer open end of the first reflector, said plug with its accessories being insertible as a unit into a hollow glass base formed integrally with a globe.

This invention will be best understood from a consideration of the following detailed description, in 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 a glass globe or envelope and an integrally formed hollow base;

Fig. 2 is a vertical section taken along the line 2*—2* of Fig. 3 of a plug carrying the filaments, reflectors and lead-in wires, the plug being insertible into the hollow base shown in Fig. 1.

Fig. 3 is a top plan view of the plug shown in Fig. 2 with the outer flat reflector removed.

Fig. 4 is a vertical section of an electric lamp showing a modified form of insertible plug and accessories, and

Fig. 5 is a vertical section of a further modified form of the plugs shown in Figs. 2 and 4.

Referring more particularly to Figs. 1 and 2, 10 designates an envelope formed of glass or other transparent material having a neck 11 which provides the passage 12 to receive a plug 13 which

may be either cemented to the walls of the passage or fused thereon.

The plug 13 has an annular rim 14 at its outer end for engagement with the extremity 15 of the neck 11. Since the plug is formed of glass or other fusible materials the lead-in wires 16, 17, 18 and 19 are embedded in the molten material with prongs 20 extending downwardly or outwardly from its bottom face, and are adopted to engage the usual contacts in an electric socket for completing the circuits to the filaments 22—23 or 44—45. I prefer to use a three contact socket and for this reason I bifurcate one of the prongs 20, as shown in Figure 4, and connect one of each of these back to one end of the different filaments. The lead-in wires at their inner ends are reduced in width and are split as shown at 21 to receive filaments. Two of these lead-in wires, 16 and 17 carry the filament 22 while the other pair of wires 18 and 19 carry the filament 23.

A central hollow vase shaped reflector 25 (see Fig. 4) has its lower end formed integrally with the plug 13, and has its inner wall coated with reflecting materials 26. The upper or inner end 27 of the reflector is cup shaped and relatively wide with an open top. It is progressively reduced in diameter as it approaches the narrowest portion 28. From this point the reflector is flared slightly to a point where it joins the inner end of the plug 13.

The inner face of the plug within the flared base of the reflector is coated with reflecting materials as shown at 30.

Another flat reflector 33 is disposed above the open ended reflector 25 and is supported on rods 31 and 32 which extend downwardly through the reflector 25 and are embedded in the base 13. Reflecting materials are applied to the outer face of the number 13 as indicated at 34. However, the reflecting materials may be applied to either face or to both faces, if desired. The member 33 may be made of transparent materials, such as glass or it may be made of metal.

The plug 13 has an axial passage 35 through which air may be exhausted from the envelope 10 when the lamp has been assembled after which the passage is sealed by fusing its extremity or by the introduction of a suitable cement 36.

The inner side walls of the globe 10 are coated with reflecting materials 37. The top 38 of the globe has a ring 39 of reflective materials applied either to the outer or inner surface thereof.

The plug 13 and the reflector 25 are formed as a unit. At this time the rods 31, 32 and the

lead-in elements 16 to 19 inclusive are positioned therein.

The reflector 33 is secured to the outer ends of its supporting rods after the plug has cooled.

The ends of the filaments 22 and 23 are then clamped to the inner ends of the respective pairs of lead-in wires 16—17 and 18—19. It will be noted that the ends of the lead-in wires are split so that when an end of a filament is inserted into said ends the split portions may be pressed together to securely hold the filaments in place.

In Fig. 4, it will be seen that the plug and its accessories are substantially similar to the plug 13 of Fig. 2; therefore, the same reference numerals have been applied to like elements. The differences to be pointed out between Fig. 2 on the one hand and Fig. 4 and Fig. 5 on the other are as follows.

In Fig. 4, the lead-in wires 40 to 43 inclusive are longer than lead-in wires 16 to 19 inclusive so that the filaments 44 and 45 surround the wider top or cup shaped portion of the reflector 25 for varying the reflection of the light rays from the filaments. Also in this modification the element 46, supported by the rods 31 and 32, is curved to form a concave reflector.

In Fig. 5, a further modified form of lamp is shown in which the reflector 50 is frusto-conically shaped. Above it is arranged a convex reflector which is supported by the rods 52 and 53. The outer ends of said rods are bent outwardly and their extremities are received in perforations in the member 51.

The reflectors 33, 46 and 51 aid in eliminating the more intensive or blinding rays emanating from the centers of the lamps. The ring 39 in cooperation with said reflectors confine the projection of the reflected and direct rays from the filaments to a circle defined by its inner periphery and the periphery of a circle at the center of the top 38 of the globe 10. The area of this circle is controlled by the position of the reflectors 33, 46 or 51.

In carrying out one of the objects of my invention, viz, the projection of a forward beam of light for highway illumination at a considerable distance in advance of a vehicle yet which is soft and non-blinding to approaching traffic, I modify the intensity of the interiorly reflected rays by incorporating a suitable color in the reflectors. Thus the flat reflector (Fig. 2) and the curved reflectors of Figs. 4 and 5 as well as the vase shaped reflector 25 and the plug 13 may be made of colored glass so that in all cases the light rays reflected from these parts to the side walls of the envelope will be considerably softened in their intensity.

I claim:

1. An electric lamp comprising a globe, a base having an axial passage, a plug in the hollow base and sealed thereto, said plug having two separate lead-in wires a single lead embedded therein, the latter having two separated ends, filaments carried by the pair of lead-in wires and said ends of the third lead, and a hollow reflector mounted on the base, said plug, reflector, lead-in wires and filament forming a unit, the side wall of the globe having reflecting materials thereon.

2. In an electric lamp, a based formed integrally with the usual globe and provided with an axial passage leading into the globe, a plug received by the passage, a hollow transparent member formed integrally with the inner end of the plug and projecting into the globe, reflecting materials on the inner surface of said member, lead-

in wires embedded in the plug and having one and each projecting ends of a pair of lead-in wires.

3. In an electric lamp having a base provided with an axial passage, a plug fitted into said passage, lead-in wires embedded in the plug, a filament connected between a pair of lead-in wires, a hollow transparent member extending from the inner end of the plug with reflecting material on the inner surface thereof, rods having an end embedded in the plug extending through the hollow member and terminating beyond said member, and a reflector carried by the free ends of the rods in spaced relation with the free end of the hollow member.

4. In an electric lamp having a base provided with an axial passage, a plug fitted into said passage, lead-in wires embedded in the plug, a filament connected between a pair of lead-in wires, a hollow transparent member extending from the inner end of the plug with reflecting material on the inner surface thereof, rods having an end embedded in the plug extending through the hollow member and terminating beyond said member, and a flat reflector carried by the free ends of the rods in spaced relation with the free end of the hollow member, said flat reflector being of colored glass to reflect light rays to the side walls of the bulb, then forwardly.

5. In an electric lamp having a base provided with an axial passage, a plug fitted into said passage, lead-in wires embedded in the plug, a filament connected between a pair of lead-in wires, a hollow transparent member extending from the inner end of the plug with reflecting material on the inner surface thereof, rods having an end embedded in the plug extending through the hollow member and terminating beyond said member, and a convex reflector carried by the free ends of the rods in spaced relation with the free end of the hollow member, said convex reflector being of colored glass to reflect light rays to the side walls of the bulb, then forwardly.

6. In an electric lamp having a base provided with an axial passage, a plug fitted into said passage, lead-in wires embedded in the plug, a filament connected between a pair of lead-in wires, a hollow transparent member extending from the inner end of the plug with reflecting material on the inner surface thereof, rods having an end embedded in the plug extending through the hollow member and terminating beyond said member, and a concave reflector carried by the free ends of the rods in spaced relation with the free end of the hollow member, said concave reflector being of colored glass to reflect light rays to the side walls of the bulb, then forwardly.

7. In an electric lamp having a base provided with an axial passage, a plug fitted into said passage, lead-in wires embedded in the plug, a filament connected between a pair of lead-in wires, a hollow transparent member extending from the inner end of the plug with reflecting material on the inner surface thereof, rods having an end embedded in the plug extending through the hollow member and terminating beyond said member, and a reflector carried by the free ends of the rods in spaced relation with the free end of the hollow member, the reflectors being formed of colored glass.

8. An electric lamp comprising a globe having a tubular base, the side wall of the globe having reflecting materials thereon, a plug in the hollow base and sealed thereto, said plug having pairs of lead-in wires embedded therein, a filament car-

ried by each pair of lead-in wires, and a hollow reflector mounted on the plug, said plug, reflector, lead-in wires and filament forming a unit, said unit being made of colored glass whereby rays of light reflected therefrom to the reflecting surface of the side walls of the globe and which in turn are reflected through the face of the globe make a clear soft light that will not blind meeting traffic.

9. In an electric lamp having a base provided with an axial passage, a plug fitted into the pas-

5 sage, a hollow transparent member formed integrally with the plug and projecting into the usual globe said hollow member having a narrow portion where connected to the plug, said member being flared outwardly from the narrow portion to the outer end thereof, reflecting materials on the inner surface of the hollow member, lead-in wires embedded in the plug, and a filament connected between each pair of the lead-in wires.

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