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D. K. WRIGHT

2,252,476

BASE FOR ELECTRIC LAMPS

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Fig. 1.

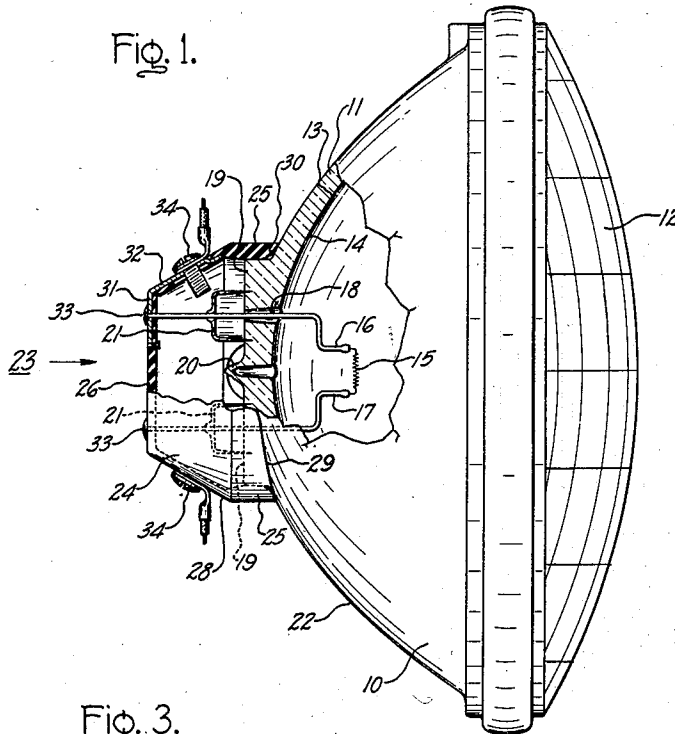


Fig. 3.

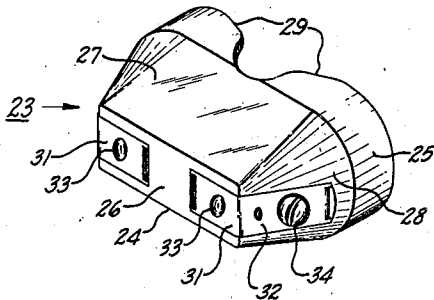
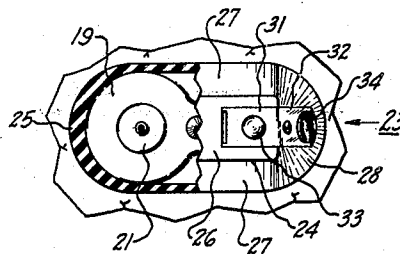


Fig. 2.



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UNITED STATES PATENT OFFICE

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BASE FOR ELECTRIC LAMPS

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4 Claims. (Cl. 176—32)

My invention relates to electric incandescent lamps and similar devices comprising a bulb having an electrical energy translation element sealed therein and a base mounted on said bulb. More particularly, my invention relates to a base or terminal structure especially suitable for devices such as described and claimed in my Patents Nos. 2,148,314 and 2,148,315, issued February 21, 1939.

One object of my invention is to provide a base for electrical devices of the above type which is simple in construction and inexpensive, and which is firmly secured to the envelope of the device without the use of the usual basing cement.

Another object of my invention is to provide an electrical device having a base firmly secured to a curved or convex surface of the envelope of such device and effectively locked against lateral and rotative movement thereon, the base being secured to the envelope by mechanical means.

Further objects and advantages of my invention will appear from the following description of a species thereof and from the accompanying drawing in which:

Fig. 1 is a side elevation, partly in section, of an electric incandescent lamp provided with a base comprising my invention; Fig. 2 is a fragmentary rear elevation, partly in section, of the lamp shown in Fig. 1; and Fig. 3 is a perspective view of the lamp base itself.

Referring to the drawing, the invention is there shown in connection with an electric incandescent projector lamp of the "sealed beam" type such as described and claimed in the above-mentioned patents. The lamp comprises a sealed glass bulb or envelope 10 consisting of a pre-formed pressed glass concave reflector section 11 of heat-resisting glass, and a cover glass or lens section 12, also of heat-resisting pressed glass, sealed together by fusion. The interior surface 13 of the reflector section 11 is of any suitable shape, preferably that of a paraboloid, and is covered with a reflecting metallic coating 14, preferably aluminum, so as to form a reflecting surface. Mounted within the envelope 10, in definite optical relation to the focal point of the reflecting surface thereof, is an electrical energy translation element or filament 15, preferably in the form of a linear coil of suitable metallic refractory material, such as tungsten. The filament is supported within the bulb 10 by, and electrically connected at its ends to, a pair of relatively heavy, rigid leading-in wires 16, 17

having substantially parallel portions extending through openings 18 in the reflector section on opposite sides of the vertex thereof. Glass bosses 19 concentric with said openings 18 are provided on the exterior or rear surface of said reflector section. The envelope 10 is exhausted and filled with a suitable gas by means of an exhaust tube 20 attached to the reflector section 11 at its vertex, i. e., at a point between the openings 18. After the gas filling is introduced into the lamp envelope, the exhaust tube 20 is tipped off, as shown in the drawing.

The leading-in wires 16, 17, exteriorly of the envelope 10, are hermetically united, preferably by brazing, to metal cups or thimbles 21, 21 having their edges or rims fused to and sunk and embedded in the thickness of the glass bosses 19 surrounding the openings 18. A hermetic seal is thus provided between the leading-in wires and lamp envelope similar to that described and claimed in my Patent No. 2,098,080, issued November 2, 1937. The cups or thimbles 21 are made of a metal to which the glass of the lamp envelope will "wet" or stick, and should preferably have the same expansion as the glass, as near as may be. For heat-resistant glass of the type known as "Pyrex," the cups 21 are preferably made of an iron-nickel-cobalt alloy known as "Fenico."

Mounted on the curved rear surface 22 of the reflector section 11, at the apex thereof, is a base 23 according to the invention comprising a molded hollow body member or shell 24 of suitable insulating material, such as Bakelite. The shell is open at its inner end and is formed with a flattened oval portion 25 having semi-circular curved ends fitting snugly over the bosses 19 on the reflector section 11, as shown particularly in Fig. 2. The outer end of the shell is closed by an end wall 26 which is connected to the oval shaped wall portion 25 by tapering flat and curved side wall portions 27 and 28 respectively. The rim or edge 29 of the base shell 24 is suitably curved, as shown in Fig. 1, to conform to the curvature of the rear surface 22 of the envelope. In addition, the rim or edge is beveled or rounded inwardly, as shown at 30 in Fig. 1, to provide clearance for the fillets at the bases of the glass bosses 19 and thus permit the base shell to fit down onto the curved rear surface 22 of the lamp envelope.

Molded in the outer surface of the base shell 24, so as to be flush therewith, are a pair of metal strips 31 forming the terminals of the base. The strips 31 are molded in the opposite ends of

the end wall 26 and have bent portions 32 extending along and molded in the tapering curved side walls 28. The leading-in wires 16, 17 are electrically connected to the metal terminal strips 31, the said wires extending through suitable openings in the end wall 26 and the strip itself, and being bent, while held taut, over the outer surface of the strips 31 where they are securely fastened to the strips by solder 33 or other suitable means. Suitable fastening screws 34 are threaded into the bent portions 32 of the metal strips to provide attachment means for the electrical connections.

The base 23 is secured to the lamp envelope 10 solely by the relatively heavy leading-in wires 16, 17, no basing cement being used for attachment purposes. The said wires are stretched tightly between the metal cups 21 and the end wall 26 of the lamp base, thereby securely holding the base on the curved apical portion of the lamp envelope 10. Lateral and rotative shifting of the base on the lamp envelope is entirely prevented by the engagement between the semi-circular ends of the oval shaped base shell portion 25 and the glass bosses 19 on the lamp envelope.

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

1. An electrical device comprising a sealed bulb having a convex outer wall portion provided with spaced bosses on the surface thereof, a base comprising a hollow body member of insulating material provided with metal contacts and having an open end fitting snugly around said bosses to thereby lock said member against lateral and rotational displacement on said bulb, and leading-in wires hermetically sealed in said bulb and fixedly secured at their outer ends to said base contacts, said leading-in wires being tightly stretched between said bulb and base and constituting the sole means for securing said base firmly to said bulb.

2. An electrical device comprising a sealed bulb having a convex outer wall portion provided with spaced bosses on the surface thereof, a base comprising a hollow body member of insulating material provided with metal contacts and having an open end shaped to conform to and engage said convex bulb wall and fit snugly around said

bosses to thereby lock said member against lateral and rotational displacement on said bulb, and leading-in wires hermetically sealed in said bulb and fixedly secured at their outer ends to said base contacts, said leading-in wires being tightly stretched between said bulb and base and constituting the sole means for securing said base firmly to said bulb against the said convex wall thereof.

3. An electrical device comprising a sealed bulb having a concave reflector portion formed as a surface of revolution and provided with spaced bosses on its outer convex surface adjacent the apex thereof, an electrical energy translation element mounted within said bulb in definite optical relation to said reflector portion, a base mounted on the apical portion of said bulb, said base comprising a hollow body member of insulating material provided with metal contacts and having its inner end open and shaped to conform to and engage the convex outer surface of said bulb at the apex thereof and to fit snugly around said bosses to thereby lock said member against lateral and rotational displacement on said bulb, and leading-in wires hermetically sealed in said bulb and electrically connected at their inner ends to said translation element and at their outer ends to said base contacts, said leading-in wires being tightly stretched between said bulb and base and constituting the sole means for securing said base firmly to said bulb against the convex outer surface at the apex thereof.

4. A base for attachment to the envelope of an electrical device comprising a molded hollow body member of insulating material closed at one end by an end wall, and metal terminal elements molded into the outer surface of said end wall and each having an opening in alignment with openings in said end wall so as to communicate with the interior of said body member, the wall of said body member adjacent the open end thereof being formed in the shape of a flattened oval with substantially semi-circular ends and the rim of said body member being shaped to conform to the curvature of the wall of said envelope.

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