Oct. 19, 1954 P. A. CARSON 2,692,375

ELECTRIC LAMP HAVING A BASE PROVIDED WITH INSULATION PIERCING MEANS TO CONNECT IT TO A TWIN CONDUCTOR

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Fig. 1

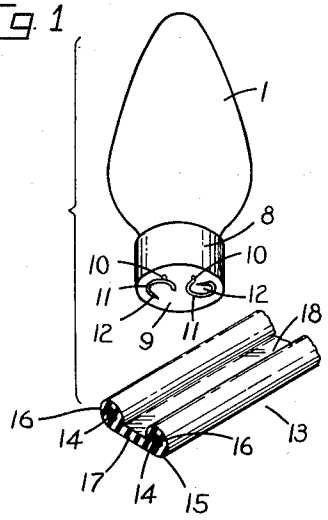


Fig. 2

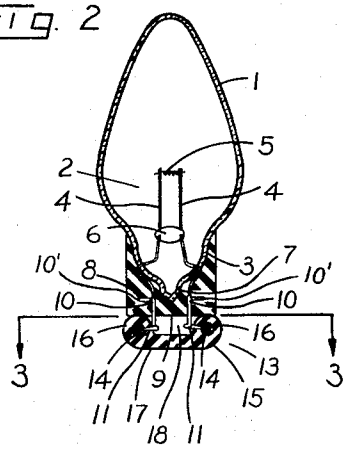


Fig. 3

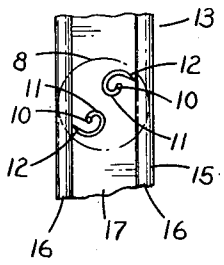
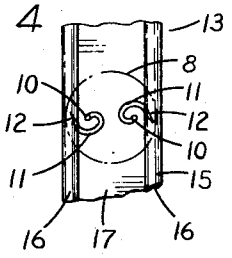


Fig. 4



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ELECTRIC LAMP HAVING A BASE PROVIDED WITH INSULATION PIERCING MEANS TO CONNECT IT TO A TWIN CONDUCTOR

Paul A. Carson, Pittsburgh, Pa., assignor to General Electric Company, a corporation of New York; patent dedicated to the Public insofar as it relates to lamps and lamp parts to the extent stated in document recorded in the United States Patent Office, January 4, 1954, Liber U-238, page 394

Application September 20, 1951, Serial No. 247,494

4 Claims. (Cl. 339—99)

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My invention relates in general to electric lamps and similar devices and to a twin-wire electric cord for connection thereto. More particularly, my invention relates to a base construction for such devices by means of which current supply wires may be connected directly to the lamp without the need of any intermediate socket means. The invention is of particular utility for electric incandescent lamps which are to be wired together in circuit for decorative purposes, such as Christmas tree lamps and the like.

The lamps most commonly used for Christmas tree ornamentation are of relatively small size and are provided with a miniature screw-threaded base adapted to be screwed into a threaded socket. Generally, a number of such sockets are wired together by being permanently fastened to electric current supply wires at regular intervals therealong to form a lamp string. In the use of such a constructed lamp string, however, the fixed position of the sockets on the current supply wires often makes it inconvenient to locate the various lamps at the desired points on the tree to be ornamented, and renders the suitable arranging of the lamp string on the tree difficult of attainment.

To overcome this difficulty, various type lamp or socket clamp-on arrangements have been proposed heretofore whereby either the lamp itself or the lamp socket may be fastened and electrically connected to the current supply wires at any given point therealong. These prior proposals, however, have either been of a rather complicated character involving the use of several parts which are required to be assembled, or have involved constructions which are inconvenient to use.

It is an object of my invention, therefore, to provide an electric lamp having a base of simple construction which can be quickly and conveniently connected directly to insulated current supply conductors at any point therealong even by the most inexperienced user.

Another object of my invention is to provide an electric lamp having a base which is permanently attached to the lamp envelope and formed of a single member only, and which can be directly connected to an insulated parallel pair of electric conductor wires without first having to provide a socket on the wires for the reception of the lamp.

A further object of my invention is to provide a unitary insulated twin-wire electric cord of novel construction for connection to the electrical device of my invention.

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Further objects and advantages of my invention will appear from the following detailed description of a species thereof and from the accompanying drawing.

Fig. 1 is an exploded view of a lamp and cooperating electric service cord according to the invention; Fig. 2 is a transverse sectional view of the assembled lamp and electric cord; Fig. 3 is a sectional view on the line 3—3 of Fig. 2 of the assembled lamp and electric cord but showing the lamp contact pins in position immediately prior to the rotation of the lamp relative to the cord to effect the electrical interconnection thereof; and Fig. 4 is a view similar to Fig. 3 but showing the completed connection between the lamp and cord.

Referring to the drawing, the invention is there shown as applied to an electric incandescent lamp of the conventional butt-seal Christmas tree type comprising a miniature glass envelope or bulb 1 having a mount 2 sealed into the neck end 3 of the envelope. The mount 2 comprises a pair of lead-in wires 4 sealed through the envelope wall, by the well-known butt-seal method, and electrically connected at their inner ends to a filament 5 such as a coiled tungsten wire. The portions of the lead-in wires 4 interiorly of the envelope 1 are held in fixed spaced relation to each other by a bead 6 of suitable insulating material such as glass in which the said wires are embedded. The envelope 1 is exhausted through a glass exhaust tubulation which, after the exhaustion operation, is tipped-off to leave an exhaust tip as indicated at 7.

Secured to the neck end 3 of the envelope 1 is a base comprising a cylindrically shaped molded body member 8 of a suitable insulating material, for example, a thermosetting plastic. The body member 8 may be made of the same material and may be molded to the envelope 1 in the same manner as that described in U. S. Patent 2,032,232 to R. F. Strickland, dated February 25, 1936. Embedded in and projecting outwardly from the end 9 of the molded body member 8 are a pair of rigid metal contact or terminal pins 10 which are electrically connected to respective lead-in wires 4 and form continuations thereof. Outwardly of the body member 8 the contact pins 10 are formed with laterally bent portions 11 which lie approximately in a common plane extending parallel to and closely adjacent the end face 9 of the base body member 8, with the extreme outer ends of the pins sharply pointed and extending approximately parallel to each other and in opposite directions approximately

tangent to an imaginary circle concentric with the cylindrical body member 8. Preferably, as shown, the laterally bent portions 11 of the contact pins 10 are of looped or C-shape, with their pointed outer end extremities 12 disposed laterally outward from the embedded portions of the pins but located within the confines of the cylindrical side wall of the body member 8 so as to minimize the likelihood of their causing injury to anyone handling the lamp. The contact pins 10 are further provided with anchor or anti-slip means here illustrated as laterally extending ears 10' embedded in the body member 8.

As shown in Figs. 1 and 2, the electric service cord 13 to which the lamp is adapted to be attached is of the unitary twin-wire type comprising a pair of parallel stranded conductor wires 14 having a common insulation covering 15 of suitable material such as molded rubber for instance. The insulation covering 15 is of general channel-shaped cross section comprising spaced flange portions 16 in which the respective wires 14 are embedded, and an interconnecting web portion 17. The channel-shaped insulation covering 15 thus provides a channelway 18 extending the length of the cord for receiving the projecting portions of the lamp contact pins 10.

To assemble the lamp on the cord 13 the projecting laterally bent portions 11 of the lamp contact pins 10 are simply inserted into the channelway 18 of the cord at the desired point therealong, and the lamp then rotated or turned with respect to the cord to cause the sharp pointed ends 12 of the contact prongs to pierce the flange portions 16 of the rubber insulation covering 15 and contact the conductor wires 14 therein, thus forming an effective electrical connection therewith.

From the above it will be apparent that the base according to the invention is of simple and easily fabricated construction, and that the attachment of the lamp to the electric service cord can be performed quickly and represents a very simple operation requiring a minimum of effort and understanding on the part of the user.

Although a perferred embodiment of my invention has been disclosed, it will be understood that the invention is not to be limited to the specific construction and arrangement of parts shown, but that they may be widely modified within the spirit and scope of my invention as defined by the appended claims.

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

1. An electric lamp comprising a sealed envelope containing a light source, a base permanently secured to said envelope and comprising a body member, and a pair of lead-in wires extending into said envelope and connected to said light source and having rigid outer contact pin portions firmly and insulatively mounted on said body member and projecting from the end thereof, said contact pins having laterally bent leg portions extending approximately in a common plane parallel to and outwardly adjacent the end of said body member, the free end extremities of said lateral leg portions being outermost and sharply pointed and said leg portions being bent approximately in the said plane so that the said pointed end extremities thereof extend approximately parallel and in opposite directions to each other in approximately tangential relationship to diametrically opposite sides of a circle lying within said plane.

2. An electric lamp comprising a sealed envelope containing a light source, a base permanently secured to said envelope and comprising an insulative body, and a pair of lead-in wires extending into said envelope and connected to said light source and having rigid outer contact pin portions embedded in said body and projecting from the end face thereof, the projecting portions of said contact pins having laterally bent leg portions extending approximately in a common plane parallel to and outwardly adjacent the end face of said body, the free end extremities of said lateral leg portions being outermost and sharply pointed and said leg portions being bent approximately in the said plane so that the said pointed end extremities thereof extend approximately parallel and in opposite directions to each other in approximately tangential relationship to diametrically opposite sides of a circle lying with said plane.

3. An electric lamp comprising a sealed envelope containing a light source, a base permanently secured to said envelope and comprising a body member, and a pair of lead-in wires extending into said envelope and connected to said light source and having rigid outer contact pin portions firmly and insulatively mounted on said body member and projecting from the end thereof, said contact pins having laterally bent leg portions of approximately C shape extending approximately in a common plane parallel to and outwardly adjacent the end of said body member, said bent leg portions having their free end extremities outermost and sharply pointed and extending approximately parallel and in opposite directions to each other in approximately tangential relationship to diametrically opposite sides of a circle lying within said plane.

4. An electric lamp substantially as set forth in claim 2 wherein the said contact pins are provided with laterally extending ears embedded in said body to prevent rotation of said pins relative to the said body about their respective axes.

References Cited in the file of this patent

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Number	Name	Date
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2,274,136	Frank	Feb. 24, 1942
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