Oct. 19, 1954 P. A. CARSON 2,692,374

ELECTRIC LAMP

Filed Sept. 20, 1951

Fig. 1

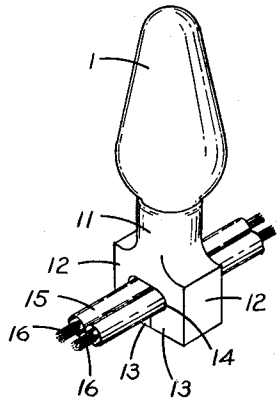


Fig. 2

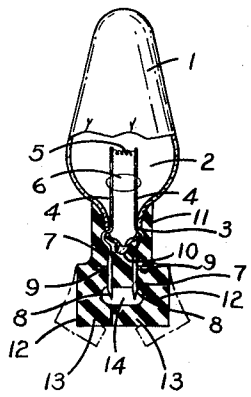
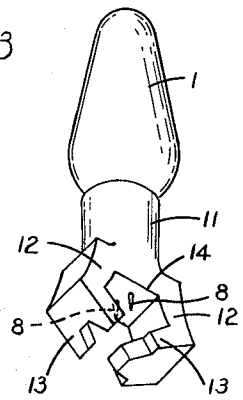


Fig. 3



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2,692,374

ELECTRIC LAMP

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. 247,493

4 Claims. (Cl. 339—99)

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My invention relates in general to electric lamps and similar devices and more particularly to a base construction therefor 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.

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

In the drawing, Fig. 1 is a perspective view of a lamp comprising my invention assembled on an electric service cord; Fig. 2 is an elevation of the lamp with the base thereof shown in section and the lamp envelope partly broken away and shown in section; and Fig. 3 is a perspective view of the lamp with the yieldable arms of the lamp base shown spread apart for the reception of the electric cord therebetween.

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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. Outwardly of the envelope 1 the lead-in wires 4 are provided with rigid metal contact or terminal pin portions 7 having pointed ends 8, and are further provided with anchor or anti-slip means here illustrated as laterally extending ears 9 located intermediate the ends of the pins. 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 10.

Secured to the neck end 3 of the envelope 1 is a base 11 comprising a molded body member of yieldable material such as rubber. The body member 11 may be attached to the envelope 1 by being molded thereonto, as in the manner disclosed in U. S. Patent 2,032,232 to R. F. Strickland, dated February 25, 1936. The molded body 11 is formed with a pair of projecting opposed L-shaped arm portions 12 having their free legs 13 inturned toward and approximately abutting each other so as to define a channel 14 of approximately oval cross-sectional shape through the body member for snugly receiving therein a conventional type twin-wire molded rubber insulated service cord 15. The contact pin portions 7, including their laterally extending ear portions 9, are embedded in the molded body member 11 during the molding of the latter so that their pointed ends 8 project into the channel 14 in spaced relation approximately corresponding to the spacing of the current conducting stranded wires 16 of the electric service cord 15.

Being made of yieldable rubber material, the

two arms 12 of the body member 11 are therefore flexible and capable of being spread apart or separated, as shown in Fig. 3, to permit insertion of the electric cord 15 between the separated arms and into the channel 14 so as to lie flatwise against the pointed ends 8 of the contact pins 7. With the cord 15 thus inserted in place in and resting flatwise against the pointed contact pins 7 in the channel 14, with the respective conductor wires 16 of the cord located opposite the respective contact pins 7, the spreaded arms 12 of the base body member 11 are then allowed to spring back toward their normally closed position and additional closing pressure manually applied to the said arms to force the electric cord against the pointed ends 8 of the contact pins 7 and cause the latter to pierce the rubber insulation on the cord so as to contact the conductor wires 16 therein, thus forming an effective electrical connection therewith. During this piercing operation the lateral ears 9 on the contact pins 7 prevent the latter from being pushed through the body member 11. In their closed position the arms 12 tightly grip the cord 15 therearound, thus locking the cord in the channel 14 and securely fastening the lamp in place on the cord.

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 preferred 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 an envelope having a light source therein, a base permanently secured to said envelope and comprising an insulative body of resilient material having a channel therethrough for receiving insulated conductor wires, and lead-in wires extending into said envelope and having rigid outer portions embedded in said body and projecting into said channel, said body being slit lengthwise of and between said channel and an outside face of said body to form resiliently flexible outer arm portions normally abutting each other to completely close off the channel at said slit and capable of being spread apart at the said slit for permitting insertion of the conductor wires into said channel, the outer ends of said lead-in wires being sharply pointed for piercing the insulation on the conductor wires when inserted in said channel and making electrical contact with respective ones of said wires.

2. An electric lamp comprising an envelope having a light source therein, a base permanently secured to said envelope and comprising an insulative body having a pair of opposed resiliently flexible arm portions extending therefrom in spaced relation with their outer ends turned toward and normally engaging each other to define a channel through said body for receiving and completely enveloping insulated conductor wires, said arm portions being yieldingly separable transversely of said channel to provide a passageway therebetween opening into said channel for passage of the insulated conductor wires into position within said channel, and lead-in wires extending into said envelope and having rigid outer portions embedded in said insulative body and projecting into said channel with their outer extremities terminating within said channel and sharply pointed for piercing the insulation on the conductor wires when inserted in said channel and making electrical contact with respective ones of said wires.

3. An electric lamp comprising an envelope having a light source therein, a base permanently secured to said envelope and comprising an insulative body of yieldable material having a pair of protruding L-shaped arms in opposed inturned relation to each other and normally abutting one another at their free leg ends to define a channel through said body for receiving and completely enveloping insulated conductor wires, said arms being yieldable transversely of said channel so as to spread their abutting ends apart to provide a passageway therebetween and opening into said channel for passage of the conductor wires therethrough into position within said channel, and lead-in wires extending into said envelope and having rigid outer portions embedded in said insulative body and projecting into said channel with their outer extremities terminating within said channel and sharply pointed for piercing the insulation on the conductor wires when inserted in said channel and making electrical contact with respective ones of said wires.

4. An electric lamp comprising a sealed glass bulb having a neck portion, a filament in said bulb, a pair of lead-in wires extending from said filament exteriorly of said bulb through said neck portion and terminating in rigid parallel prongs having sharply pointed extremities and extending longitudinally outward from the end of said neck portion, a base member of resilient insulative material molded directly about said bulb neck and embedding therein the external portions of said lead-in wires other than the said pointed extremities thereof, said base member being provided with a channel extending therethrough in a direction normal to the plane including said prongs and with said prongs projecting into and terminating within said channel, said base member being slit lengthwise of said channel and between said channel and the face of the base member remote from the bulb neck to provide thereat arm members normally abutting each other to completely close off the channel at said slit and yieldingly separable transversely of the channel for reception of conductor wires.

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