Jan. 27, 1953 F. S. LAMB 2,627,048

ELECTRIC TERMINAL CONNECTOR

Filed Jan. 3, 1950

Fig. 1.

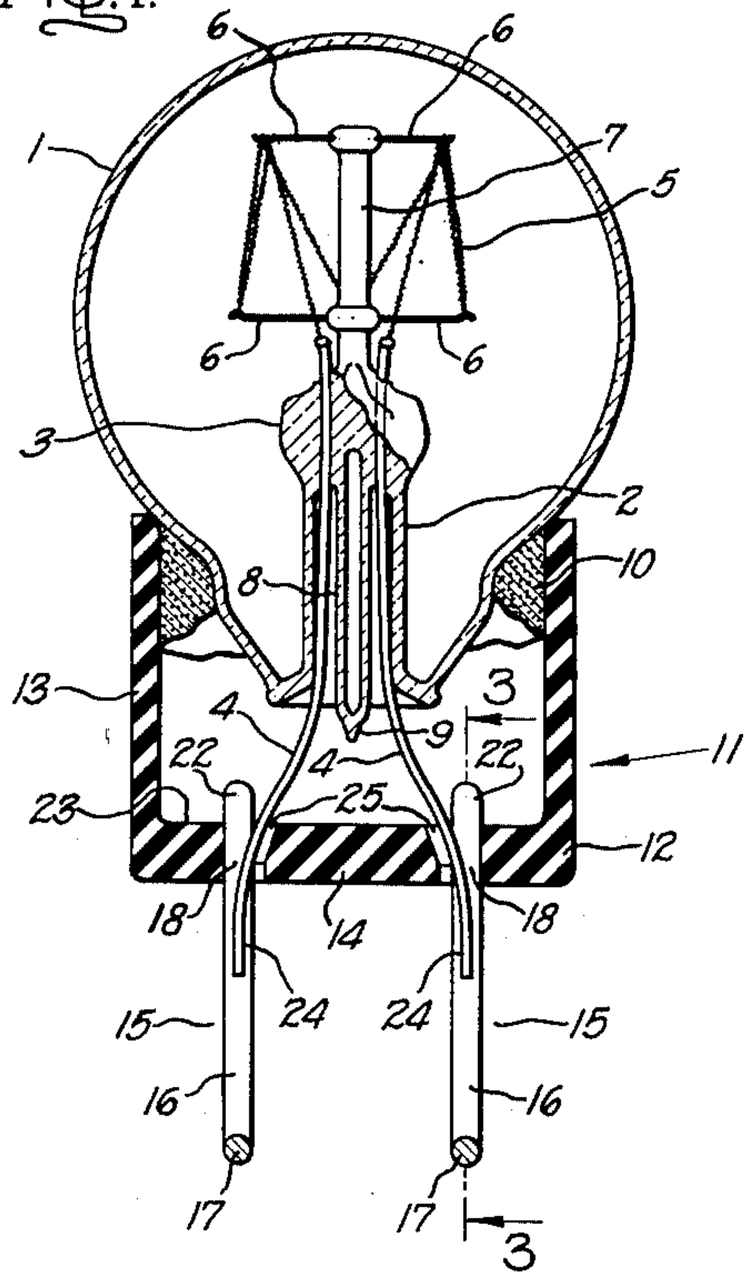


Fig. 2.

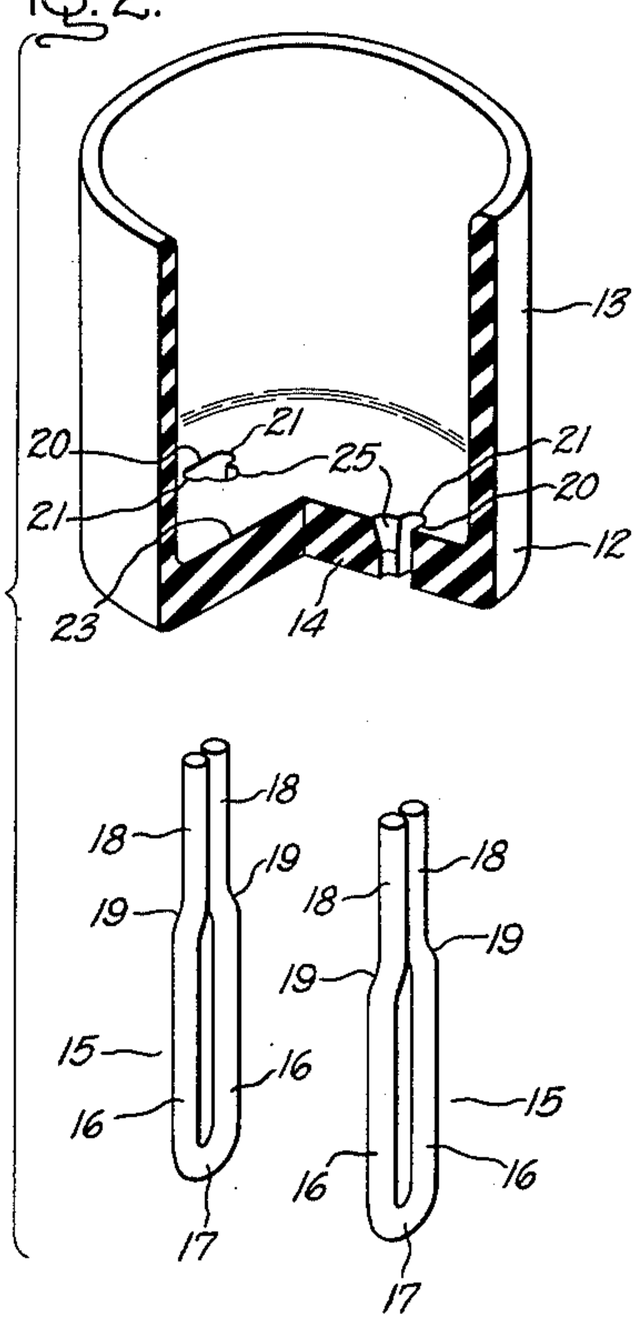
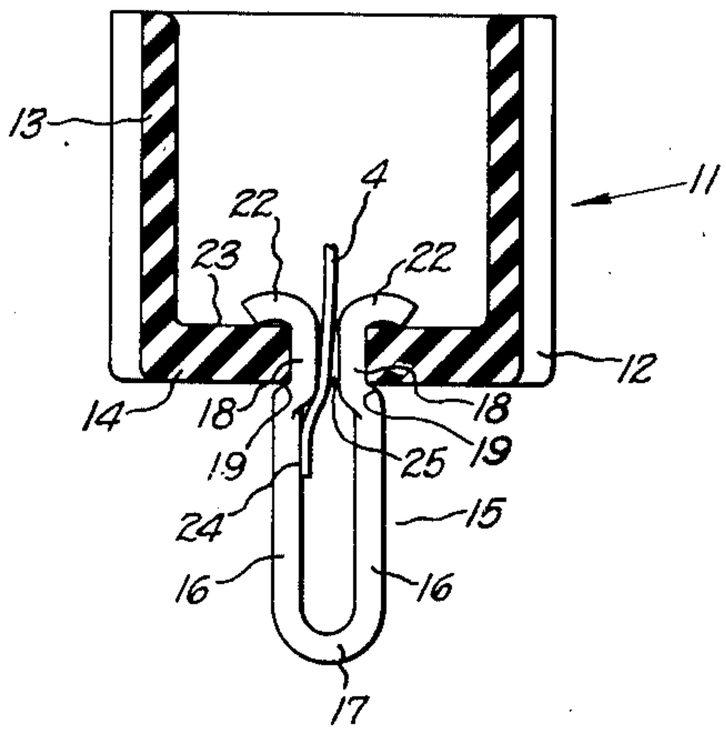


Fig. 3.



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ELECTRIC TERMINAL CONNECTOR

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2 Claims. (Cl. 313—318)

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My invention relates to electrical connectors of the plug type having protruding contact prongs which are adapted to be inserted into the contact openings of an electrical socket or receptacle. Such plug-type connectors may be used, for example, as a base for electric lamps or similar devices, or as an attachment plug for electric cords.

It is an object of my invention to provide a prong-type electric terminal connector of simple and relatively inexpensive construction and which may be easily assembled and connected to the current supply wires of the electric lamp, cord, or other device to which it is attached.

Another object of my invention is to provide an electric terminal connector having contact prongs formed of wire and provided with recesses therein for interfitting with the contacts of a conventional type electric socket to retain the connector in inserted position within the socket.

In accordance with the invention, an electric terminal connector, such as a lamp base or electric cord plug, is provided with projecting contact prongs or blades formed of a length of relatively stiff or rigid wire doubled back upon itself into U-shape and locked in place in apertures in an insulative end wall of the connector body.

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

Fig. 1 is a sectional view, on an enlarged scale, of an electric incandescent lamp provided with a terminal connector or base according to the invention; Fig. 2 is an exploded view of the base shown in Fig. 1 prior to assembly of the parts thereof, with the base shell shown partly broken away; and Fig. 3 is a sectional view on the line 3—3 of Fig. 1.

While the invention is shown in the drawings as employed in a base for an electric incandescent lamp, it will be obvious that it may be applied as well to bases for electric glow lamps or other discharge devices, or to a terminal connector or attachment plug cap for electric cords and the like.

Referring to the drawing, the lamp there shown comprises a hermetically sealed glass envelope or bulb 1 having a reentrant stem 2 provided with a press or seal portion 3 through which are sealed a pair of lead-in or current supply wires 4, 4. Disposed within the bulb 1 is a light source comprising a tungsten filament 5 electrically connected at its ends to the lead-in wires 4 and supported in position within the bulb by a plurality of support wires 6 anchored in a glass arbor 7 extending inwardly of the bulb from the stem press 3. The bulb 1 is exhausted and, if desired, filled with a suitable gas through an exhaust tube 8 communicating with the interior of the bulb, which tube is afterwards sealed or tipped-off, as indicated at 9, to hermetically seal the bulb.

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Suitably secured to the neck end of the bulb 1, as by basing cement 10 for instance, is an electric terminal connector or base 11 according to the invention and comprising a cup-shaped body member 12 having a cylindrical shell portion 13 and an insulative end wall portion 14 which may be made of any suitable insulating material such as glass, porcelain, molded plastic, or the like. Projecting endwise from the end wall 14 and securely fastened thereto is a pair of contact prongs 15, 15. In accordance with the invention, the said prongs 15 are formed of relatively stiff or rigid wire such as, for example, round wire of around .060 inch diameter, preferably made of Phosphor bronze, spring brass or other good electrically conductive material.

As shown in Fig. 2, each prong 15 is formed of a length of wire which is doubled back upon itself or looped into a U-shape to form two separated and approximately parallel leg portions 16 joined by a curved outer end portion 17. The prongs 15 are securely fastened to the base end wall 14 in any suitable manner, with their curved ends 17 outward. In the particular form of attachment shown, however, the inner end portions 18 of the legs 16 of each prong 15 are offset toward but slightly spaced from each other to form locking shoulders 19 on the prong. The offset inner end leg portions 18 of the prongs extend through and fit snugly within respective slots 20 in the base end wall 14, if desired, so as to press outwardly against the opposite ends 21 of the slot. For this latter purpose, the legs 16 of each prong may be made slightly divergent so that they have to be sprung together slightly before they can be inserted into the slot 20. The slots 20 are of a width approximately the same as the diameter of the wire of which the prongs are made and, as shown, they preferably extend parallel to one another so that the planes of the legs 16 of the prongs 15 will extend approximately parallel to each other.

Inwardly of the base end wall 14, the projecting inner ends 22 of the prong legs 16 of each prong are bent outwardly over the inner side 23 of the end wall 14 to firmly clamp the latter

between the shoulders 19 and the said bent inner ends 22, thus securely fastening the prongs 15 to the end wall 14 against movement in the plane of the prong legs 16 as well as in a direction inwardly or outwardly of the wall 14. To hold the prongs firmly in place against movement laterally of the planes of the prong legs, the wall 14 in which the prongs are fastened, or at least the portions thereof bordering the slots 20, are made of appreciable thickness (preferably at least around ⅛ inch or so) to provide the necessary extent of bearing surface for such prong-holding purpose.

The lead-in wires 4 of the lamp extend through the slots 20 to the exterior of the base end wall where they are suitably connected to the prongs 15, for instance, by soldering or welding as indicated at 24. To permit easy insertion or threading of the lead-in wires 4 through the slots 20 in the wall 14 and between the prong leg portions 18 during the assembly of the base on the bulb, the said slots 20 are preferably provided with inwardly beveled enlargements or side notches 25 formed in the inward sides of the slots and located at points midway of their length, thus producing with the slots T-shaped apertures in the base end wall 14. The beveled surfaces of the notches 25 serve to guide the lead-in wires into the slots and between the legs of the prongs therein.

The assembly of the contact prongs 15 and the base body 12 is easily performed simply by inserting the offset inner leg portions 18 of the prongs into the slots 20 and then bending the projecting inner ends of the prong legs over the inner side of the base end wall 14 so as to firmly clamp the end wall between the prong shoulders 19 and the bent inner ends 22. The separation between the outer legs of the prongs provides the necessary space for the accommodation therein of the protuberances or dimples which are normally present on the spring contact blades of conventional type sockets or receptacles into which the base or terminal connector according to the invention is adapted to be plugged. In addition, the rounded cross section of the wire of which the prongs 15 are made, inherently provides beveled or rounded outer end surfaces on the prongs which therefore serve to facilitate insertion of the prongs between as well as removal from the spring contacts of the socket or receptacle.

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 a bulb, a light source in said bulb, a pair of lead-in wires electrically connected to said light source and sealed through the wall of said bulb, and a base secured to said bulb and comprising an insulative wall portion having a pair of slots therethrough, a pair of contact prongs electrically connected respectively to said lead-in wires and extending through and locked within respective ones of said slots and projecting outwardly from said wall portion in approximately parallel relation, said prongs each comprising a length of rigid wire having a diameter approximately corresponding to the width of its respective slot and doubled back upon itself to form two separated and approximately parallel leg portions having inner end portions offset toward but slightly spaced from each other to provide locking shoulders thereon, said offset inner end portions extending through and snugly fitting within and engaging the ends of said slot and having their innermost free end portions bent over the inner side of said wall to clamp the latter between the said bent inner ends of the prongs and the said shoulders thereon.

2. An electric lamp as set forth in claim 1 wherein the said slot is of T-shaped cross section in the plane of said wall to thereby provide a side passageway extending through the wall, alongside the prong in said slot, for passage of a current supply wire through said wall.

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