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G. B. BENANDER

2,620,376

LAMP SOCKET

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Fig. 1.

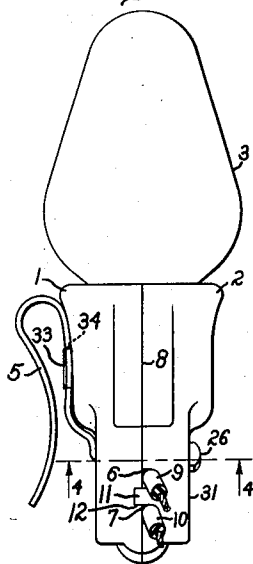


Fig. 2.

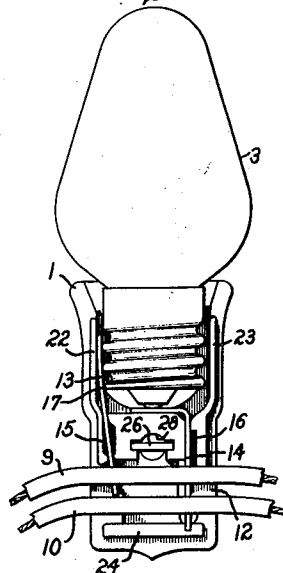


Fig. 3.

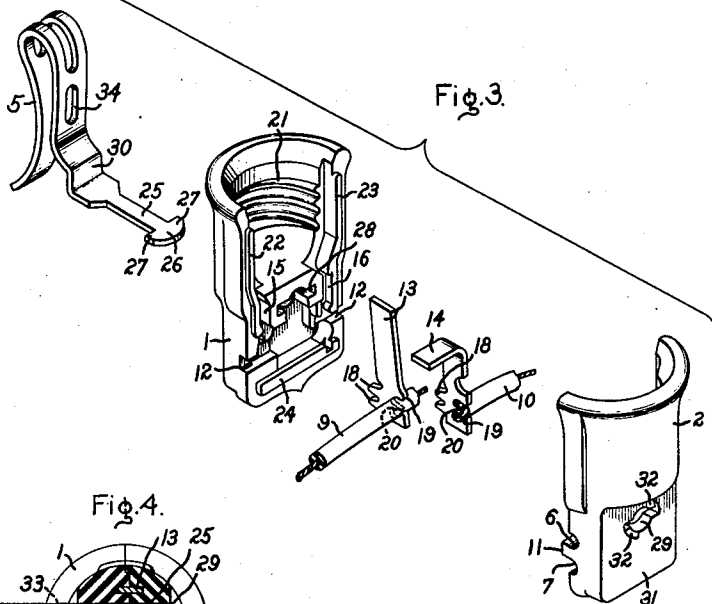
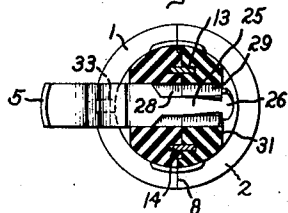


Fig. 4.



Inventor:
George B. Benander,
by *W. H. Knapp*
His Attorney.

UNITED STATES PATENT OFFICE

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LAMP SOCKET

George B. Benander, Oaklawn, R. I., assignor, by
mesne assignments, to General Electric Com-
pany, a corporation of New York

Application July 3, 1950, Serial No. 171,915

4 Claims. (Cl. 173—358)

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This invention relates to electric lamp sockets, and more particularly to lamp sockets of a type adapted for decorative lighting purposes.

In electric lamp sockets of the above description, where utilization is limited to a very brief period in each year and a large investment in decorative equipment is unjustified, the cost of the socket must be kept to a minimum and simplicity in structure is therefore of paramount importance.

An object of this invention is therefore to provide a simple, reliable lamp socket of the above description which may be very economically manufactured.

In prior art devices of the above type, such, for instance, as those disclosed in my Patent No. 2,229,403, issued January 21, 1941, and assigned to the same assignee as the present application, it has been found desirable in the interest of economy to form the body of the lamp socket of a moulded insulating material, having lamp base engaging threads moulded into the insulating material itself, eliminating the usual metal conductive lamp base engaging screw shell within the socket. Contact with the outer threaded portion of the lamp base is then accomplished by means of a conductive strip extending axially into the lamp base receiving cavity and partially recessed in a suitable slot in the inner surface of the cavity. Such strips generally have corrugations in the lamp base thread-engaging portions in order to provide positive engagement with the lamp base threads and an adequate electrical contact with the lamp base. Such a contact structure is shown in my above-mentioned patent, together with an alternative structure employing a lamp base thread-engaging ear. Both of these contact structures are generally satisfactory, although the last-mentioned "ear" structure, relying as it does on a single point of contact, must be carefully manufactured to relatively close tolerances in order to provide a reliable electrical connection. A still simpler and less costly contact structure is obviously desirable.

It is therefore an object of this invention to provide a lamp socket employing a strip contact instead of a screw shell, which is reliable yet simpler and more economical to manufacture than prior structures.

In a lamp socket of the above description, where the main body of the socket is most conveniently fabricated in two half sections, a fastening means must be provided for holding the two half-sections in assembled relationship, and means must be provided for fastening the socket

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to a supporting structure such as a Christmas tree which is to be decorated.

It is therefore a further object of this invention to provide a lamp socket employing a simple and economical combined means for holding the two halves of the socket body in assembled relationship and for mounting the socket on a supporting structure.

In carrying out the objects of this invention a lamp socket may be employed comprising two separable halves of a moulded insulating material having lamp base receiving threads moulded into the inner surface thereof. A substantially flat lamp base thread engaging contact is disposed within the threaded portion of the socket so as to be deflected by the lamp base threads to form a resilient spring contact connection therewith. The socket also includes a hook, or hanger, for support of the socket, the hanger having an integral tongue formed at one end thereof extending through suitable apertures in the two socket halves to hold the hanger and the two socket halves in assembled relationship. The tip of the tongue protruding through the two halves is deformed to prevent removal.

For a better understanding of the invention, reference should now be made to the following specification and the accompanying drawings, in which Fig. 1 is a left side view of the lamp socket of this invention showing a lamp assembled therein, Fig. 2 is a front view of the socket with the lamp in place but with the front half of the socket body removed, Fig. 3 is an exploded view of the socket assembly components and Fig. 4 is a bottom sectional view taken at section 4—4 of Fig. 1.

Referring more particularly to Fig. 1 of the drawing, the socket is shown to be comprised of insulating body portions 1 and 2 joined respectively to form the back and front of the socket body. The socket body is adapted to receive a lamp 3 or other screw-plug connected electrical device. A mounting hanger 5, which may preferably be of a suitable spring material, is provided on this socket for fastening the socket to a supporting structure such as a Christmas tree or the like. The socket is adapted, through openings 6 and 7 located at the parting line 8 between the socket halves 1 and 2, to receive suitable insulated conductors 9 and 10 for conveying electrical power to the socket. The front socket body portion 2 includes ribs 11 which serve to separate conductors 9 and 10 and fit into suitable slots 12 in body portion 1 to prevent relative vertical movement between body portions 1 and 2.

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In Fig. 2, which is a front view of the socket with front body portion 2 removed, two strip contact members, including a side contact member 13 and a center contact member 14 are shown assembled in suitable retaining slots at 15 and 16 in the back body portion 1 of the socket. Side contact member 13 is normally substantially straight and flat, but as the lamp 3 is threaded into the socket as shown, this contact is deflected as a lever spring by engagement with the threads of the lamp base at 17. The spring lever contact member 13 therefore firmly mechanically and electrically engages the threads of the base of lamp 3 with a radial pressure.

Further details of the socket structure will be understood by reference to Fig. 3, which is an exploded view of the socket structure components. Contact members 13 and 14 are shown to include tines at 18 which fit into suitable depressions at the bottom of slots 15 and 16 to anchor these contact members within the back body portion 1. Each of the contact members 13 and 14 also includes a conductor receiving slot 19 which may be conveniently located opposite the tines 18, and at the center of each of these slots there is a pointed tongue 20 which pierces the conductor insulation to make electrical contact with the conductor upon insertion into the slot. Member 14 is bent over in an L shape to form the center contact of the socket. Suitable lamp base engaging threads are moulded into the inner surfaces of body portions 1 and 2, as shown for portion 1 at 21 in Fig. 3. As shown in Figs. 2 and 3, the front edges of the back body portion 1 are provided with protruding ribs 22, 23 and 24, which fit into suitable matching openings (not shown) in front body portion 2 to prevent relative rotational or translational movement between the body portions 1 and 2. This interfitting structure is shown in Fig. 4, which is a sectional view of the socket through section 4-4 of Fig. 1.

As will be seen particularly in Figs. 3 and 4, the hanger 5 is provided with a tongue portion 25, which may preferably include a T-shaped terminal end 26, having transversely extending ears 27. The tongue 25 may be threaded through a slotted opening 23 in back body portion 1 and through a similar opening 29 in front body portion 2, so that the surface 30 of hanger 5 adjacent the tongue 25 fits snugly against the back surface of body portion 1 as shown in Fig. 1. The protruding end 26 of tongue 25 may then be deformed, such as by twisting, to prevent subsequent removal and to fasten the hanger 5 and the two body portions 1 and 2 securely together. For this purpose, the front surface 31 of front body portion 2 adjacent to the tongue opening 29 may be provided with cam surfaces 32, which serve to tighten the assembly as the end 26 is twisted. A simpler tongue 25 may be employed, omitting the T-shaped tip 26 and avoiding the necessity for cam surfaces 32, by merely bending over the end of the tongue or deforming it in some other way to prevent disassembly. A similar alternative structure is disclosed in my copending patent application, Serial No. 108,535, filed August 4, 1949, for an Electric Socket and Receptacle, and assigned to the same assignee as this application, but the presently disclosed embodiment, employing a T-shaped tongue, is preferred.

As will be seen from the drawings, the hanger 5 with the tongue 25 is formed from a single strip of metal, and the openings 28 and 29 are narrow slots to conform to the cross-section of tongue 25. The tongue 25 therefore cannot be rotated

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within slot 28, so that hanger 5 cannot be rotated appreciably relative to body portion 1 and the socket. However, in order that these parts may be easily manufactured with generous tolerances, rotation of hanger 5 is further prevented by means of a small integral rib 33 protruding from the back surface of body portion 1 shown in Fig. 1, which extends into a suitable slotted opening 34 in hanger 5 which is clearly shown in Fig. 3. It will be seen from the above description that the hanger tongue 25 performs the dual function of fastening the hanger 5 to the other parts of the socket and at the same time acting as a fastener for holding body portions 1 and 2 in assembled relationship.

It is believed that the above-described structure provides a lamp socket having greater simplicity and economy in manufacture than prior sockets of this type, while at the same time being rugged and dependable and very suitable for the intended purpose.

While a particular embodiment has been shown and described above, changes and modifications will occur to those skilled in the art. The appended claims are therefore intended to cover any such modifications within the true spirit and scope of this invention.

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

1. A lamp socket comprising at least two perforated main body portions and a combine securing device and hanger member which comprises an integral tongue protruding transversely through said body portion perforations and an inverted U-shaped resilient clip member, the protruding end of said tongue having a tip including transversely extending ears, said tip being twisted to prevent removal of said tongue, the outer surfaces of the body portion in cooperation with said twisted tongue tip including cam surfaces for tightening the assembly of said combined member and said body members as said tongue tip is twisted, said combined member including a perforation therein, and a rib protruding outwardly from one of said body portions through said perforation to prevent relative rotation between said hanger and said body portions.

2. In a lamp socket, complementary back and front body members which form a lamp socket housing divided along a plane which extends longitudinally of the socket, and structure forming a hanging means for the lamp socket and a clamping means for fastening together said body members comprising walls which define a rectangular passage which extends transversely through said body members in a plane at right angles to said dividing plane between the body members, and a combined hanger and fastening member comprising a rectangular tongue which extends through said rectangular passage to a point beyond the housing to provide a projecting end, and a reversely bent strip integral with the end of said tongue remote from said projecting end which forms a supporting hook for the socket, said reversely bent strip having a clamping portion which engages the housing wall adjacent said passage, the projecting end of said tongue being deformed to engage the outer surface of the housing whereby the body members are clamped between said clamping portion and said deformed end.

3. A lamp socket structure as defined by claim 2 wherein the hanger strip is provided with an opening spaced from said tongue and the hous-

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ing is provided with a rib which is positioned in the opening to prevent relative rotation between said hanger strip and the housing.

4. A lamp socket structure as defined by claim 2 wherein the deformed tongue end comprises projecting ears integral with the tongue which are twisted out of the plane of the tongue.

GEORGE B. BENANDER.

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