Oct. 27, 1942. G. B. BENANDER 2,299,733

ELECTRICAL CONNECTOR

Filed Jan. 10, 1941

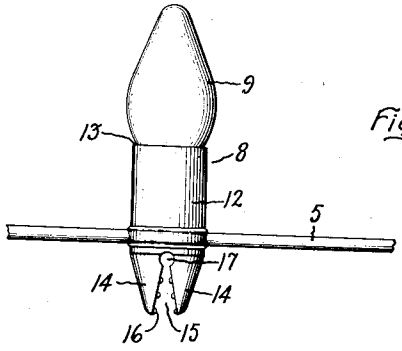
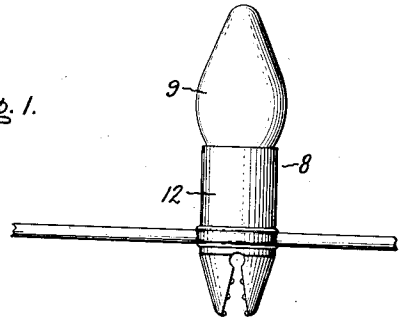


Fig. 1.



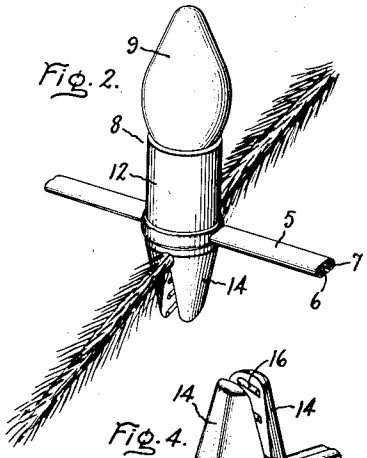


Fig. 2.

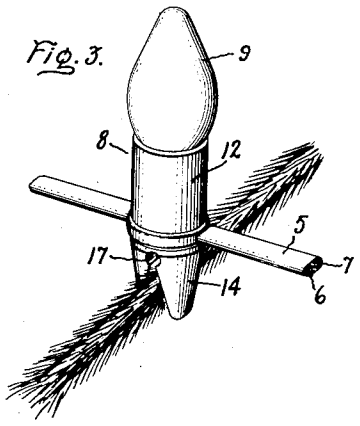


Fig. 3.

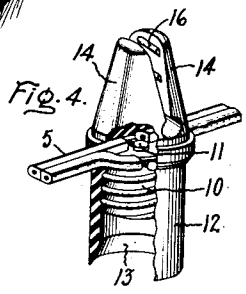


Fig. 4.

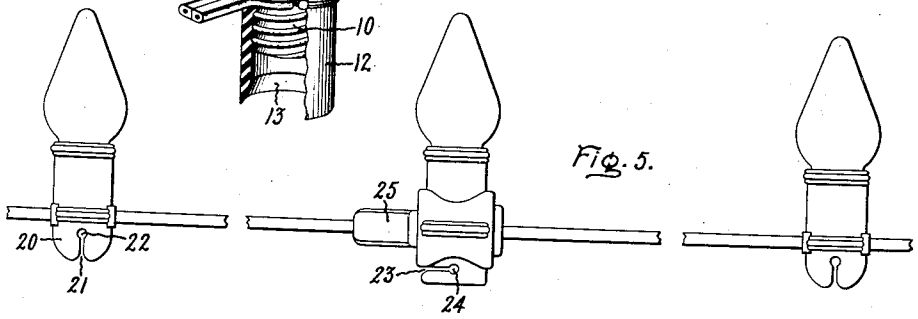


Fig. 5.

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George B. Benander,
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His Attorney.

Patented Oct. 27, 1942

2,299,733

UNITED STATES PATENT OFFICE

2,299,733

ELECTRICAL CONNECTOR

George B. Benander, Oaklawn, R. I., assignor to The Monowatt Electric Corporation, Providence, R. I., a corporation of Connecticut

Application January 10, 1941, Serial No. 373,978

3 Claims. (Cl. 173—358)

This application is a continuation in part of my application, Serial No. 320,959, filed February 26, 1940, which in turn is a division of my application, Serial No. 254,057, filed February 1, 1939 now Patent No. 2,253,164, issued August 19, 1941.

The invention relates to electrical connectors and more particularly to lamp sockets or combined lamp sockets and plug receptacles. It is especially well adapted for use in decorative lighting sets, such as strings of lights for Christmas tree decoration and it is this application of my invention which I have elected to specifically illustrate and describe.

There has developed a demand for decorative lighting sets for outdoor use. Such sets must be weatherproof and should provide a means whereby the individual sockets may be supported readily in a desired position on the limb of a tree or other support. Also, to find a wide market, they must be capable of being manufactured at low cost.

The object of my invention is to provide an improved construction and arrangement in a set of this kind which meets the foregoing requirements in a satisfactory manner, and for a consideration of what I believe to be novel and my invention, attention is directed to the following specification and the claims appended thereto.

In the drawing, Fig. 1 is a side elevation of a portion of a decorative lighting set embodying my invention; Fig. 2 is a perspective view of one of the sockets shown in Fig. 1 mounted on the limb of a tree; Fig. 3 is a perspective view similar to Fig. 2; Fig. 4 is a perspective view of one of the sockets with the casing partly broken away, and Fig. 5 is a side elevation similar to Fig. 1 showing a modification.

Referring to the drawing, 5 indicates a length of electric cord, a flat type of cord having two conductors 6 and 7 being illustrated. Usually, the outer insulating covering is rubber but it may comprise any other suitable weather-proof insulating material. At spaced intervals along the cord are mounted lamp sockets 8, each adapted to receive a lamp 9. Each lamp socket comprises a screw shell 10 and a center contact 11 to which bared portions of conductors 6 and 7 are suitably connected as by soldering, and a molded casing 12 of suitable weather-proof material. Preferably, casing 12 is formed from rubber, the screw shell and connection being embedded therein and the rubber being molded on the insulation on the cord to form a tight connection. At the open end of the screw shell, the casing wall projects well beyond the edge of the shell to provide a portion to engage firmly with the lamp as is indicated at 13 to provide a weather-proof joint between the two. On the side opposite the open end of the screw shell the casing is extended to provide supporting jaws 14 which define a slot 15. The jaws are shaped to form an outwardly tapering wedge shaped slot and on such walls are spaced transversely extending ribs or ridges 16. At its inner end, slot 15 communicates with a transversely extending opening 17 which is larger than the space between the walls of the slot at its inner end. Or, otherwise considered, the inner end of slot 15 is enlarged to form the transversely extending opening 17. The supporting jaws form resilient members adapted to straddle the limb of a tree or other member for supporting the lamp socket. If the limb or other member is relatively small, the jaws may be pushed down over it until the limb or other member lies in opening 17 as shown in Fig. 2. If the limb or other member is larger then it may be wedged between the jaws as shown in Fig. 3, the transversely extending ribs or ridges serving to grip the limb or other member to firmly hold the socket in place. Thus, the arrangement may be attached readily to limbs or other members of various sizes and shapes.

It will be noted that the cord 5 extends transversely through the socket, that the lamp holder portion of the socket is on one side of the cord, and that the clamping jaws are on the other side of the cord. This arrangement is of substantial importance in a molded construction of this kind as it enables the socket to be molded most advantageously and at low cost. For example, it enables the socket to be molded after the manner disclosed in the copending application of Clifford N. Benander, Serial No. 373,977 filed on even date herewith, and assigned to the same assignee as the present application. As disclosed therein, the socket may be molded complete in a vertical cavity mold employing relatively simple molding forms and requiring the use of only a single piece of molding material.

In Fig. 5 is shown a modification wherein, at the right-hand and left-hand sides of the figure, the socket is provided with a portion 20 opposite the open side of the shell in which is provided a slot 21 terminating in an opening 22. Otherwise, the construction may be the same as that shown in Figs. 1 to 4. At the central portion of Fig. 5, the socket is shown provided with a slot 23 which extends at right angles to the axis of the socket

and terminates in a round opening 24. Also, this socket is of a form provided with a receptacle adapted to receive a plug 25 on the cord. The specific structure of the socket and receptacle is not shown herein as it forms the subject matter of my parent application, Serial No. 254,057, now Patent 2,253,164, and is claimed in such application.

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

1. An electric cord having a socket molded directly thereon comprising a shell and center contact to which the wires of the cord are connected, the cord extending transversely of the shell, and a casing molded thereon in which the shell, center contact and adjacent cord portions are embedded, said casing surrounding the shell on one side of the cord and having jaws projecting beyond the other side of the cord, said jaws having walls formed to provide an outwardly tapering wedge shape slot of substantial length, and transversely extending projections on the opposite surfaces of said walls, whereby the jaws are adapted to be forced over and to grip supports of varying diameters.

2. An electric socket comprising a terminal shell, a central terminal insulated from said terminal shell, a pair of insulated conductors each having a bared portion connected to one of said terminals, a casing of insulating material surrounding said terminal shell and said conductors and having an opening therein in alignment with one end of said terminal shell, said conductors extending from said casing in a direction transverse to the axis of said terminal shell, said casing having a portion of resilient insulating material opposite the open end thereof extending beyond the plane of said conductors and slotted to provide a transversely extending opening at the inner end of the slot and elongated spaced jaws at the outer end of the slot, the space between said jaws being adapted to engage supports of varying diameters to hold the socket in mounted relationship therewith, and said transversely extending opening being adapted to engage a support forced thereinto through the space between said jaws.

3. A weather-proof electric socket comprising a terminal shell, a central terminal insulated from said terminal shell, a pair of insulated conductors each having a bared portion connected to one of said terminals, a casing of resilient insulating material molded directly on said terminal shell and said conductors and having an opening therein in alignment with one end of said terminal shell, said conductors extending from said casing in a direction substantially perpendicular to the axis of said terminal shell, said casing having a portion opposite the open end thereof extending beyond the plane of said conductors and slotted to form resilient jaws for engaging a support received in said slot to mount said socket opposite faces of said jaws being provided with transversely extending projections and said portion having a transversely extending opening with which the inner end of slot communicates, which is of greated extent than the inner end of said slot, and which is adapted to receive a support wedged thereinto through said slot.

GEORGE B. BENANDER.