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ELECTRICAL CONNECTOR APPARATUS

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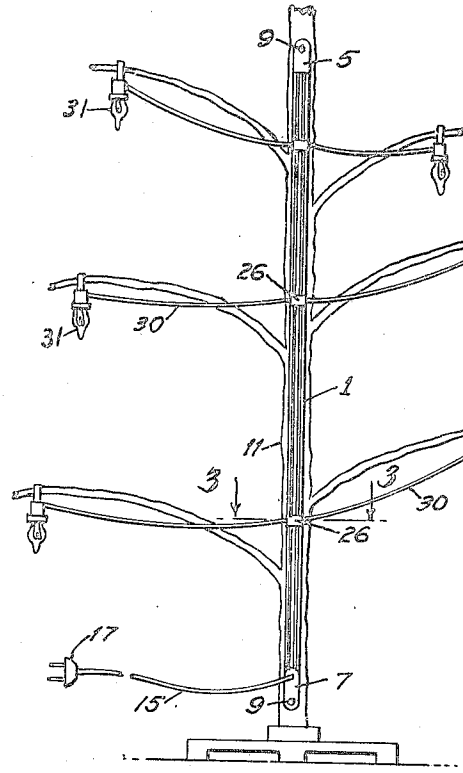
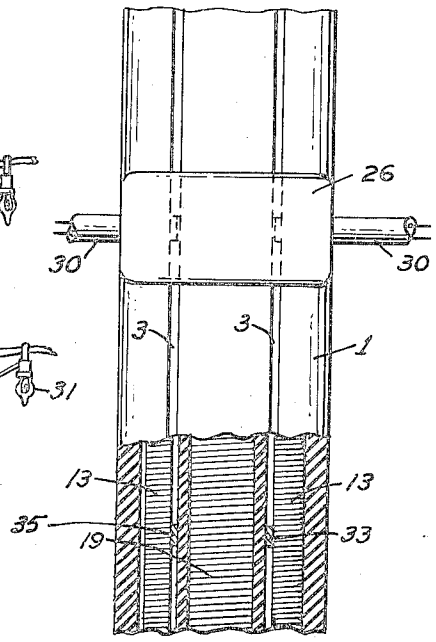


Fig. 1.

Fig. 2.



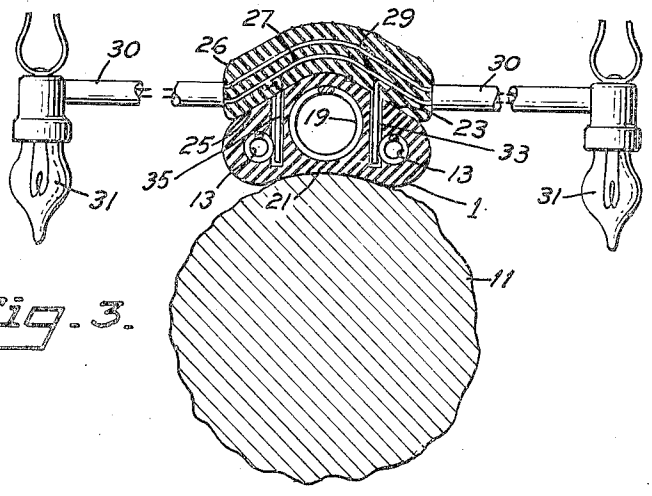


Fig. 3.

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ELECTRICAL CONNECTOR APPARATUS

Laurence Walter, Albany, Calif.

Application January 18, 1947, Serial No. 722,827

2 Claims. (Cl. 173—334.1)

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My invention relates in general to electrical connector apparatus and more particularly to a lighting assembly adapted for use on Christmas trees.

Among the objects of my invention are:

(1) To provide a novel and improved electrical connector apparatus;

(2) To provide a novel and improved electrical connector apparatus which is adjustable in length;

(3) To provide a novel and improved electrical connector apparatus adaptable for use in a lighting assembly on Christmas trees;

(4) To provide a novel and improved electrical connector apparatus adjustable in length and adaptable for use in lighting assemblies on Christmas trees of varying heights.

Additional objects of my invention will be brought out in the following description of a preferred embodiment of the same taken in conjunction with the accompanying drawing wherein—

Figure 1 is a view in elevation depicting the application of my invention in a lighting assembly as installed on a Christmas tree;

Figure 2 is a fragmentary view of the invention in its preferred form with a portion thereof in section to illustrate details of construction;

Figure 3 is a view section taken in the plane 3—3 of Figure 1.

In its preferred form as illustrated in the drawings, the invention comprises a strip 1 of stretchable material such as rubber or the like which constitutes the connector body. This strip is formed with a pair of spaced longitudinal grooves 3 therein extending from a point adjacent one end of the strip to a point adjacent the other end of the strip, leaving sufficient end portions 5 and 7 for the provision of a nail hole 9 to facilitate the application of such strip to the trunk 11 of a Christmas tree, or such other support to which the connector apparatus is to be applied.

Embedded in this strip alongside each such groove and extending practically the entire length thereof, is a stretchable conductor of electricity, preferably in the form of a coil spring 13 of relatively small diameter, each of such springs being exposed to its associated groove through a side wall thereof.

At one end of the strip, electrical connections are brought out from the springs in the form of an electric cord 15 such as the conventional type lamp cord, to the exposed end of which is connected the conventional type of plug 17 for connection to a wall socket or the like.

The spacing between the grooves 3 is preferably

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such as to permit insertion of a conventional type plug whereby connection to the springs may be readily effected. As many connections may thus be taken off from the connector as there is room for plugs, and it will be appreciated that the capacity of the connector may be readily increased by stretching the same before anchoring it at its ends to a support.

When stretching the connector to thus increase its capacity, it is recognized that the cross section of the strip will tend to decrease and thus narrow the distance between the grooves as well as the distance between the contact springs. While for short increases in the length of the connector, such phenomena will not appreciably affect the utility of the connector for its intended purpose, an appreciable stretching of the connector may render it quite difficult to insert a plug to effect connection to the contact springs.

This problem is overcome by embedding in the strip along its longitudinal axis, a core capable of stretching along with the rest of the connector but whose cross section will not decrease anywhere near that of the strip itself. Such core will thus serve as a spacer between the grooves and tend to keep them from being drawn toward each other as the connector is elongated.

For such core, I prefer to use a coil spring 19 which is closely wound and of a diameter approaching the distance between the grooves. Such coil is preferably molded into the body of the connector and, being well insulated by the material of the strip, no electrical problems will be raised by its presence.

When designed for use in a lighting assembly for Christmas trees or the like, stretchability of the connector strip adapts it for use with trees of varying heights whereby connections for electric lights to be hung on the tree branches may be taken off at any branch level.

The connector body will preferably be molded with a shallow concave base 21 to conform to the curvature of the tree trunk, and this will facilitate its application to the tree trunk as a support therefor.

The face 23 of the strip will preferably be generally convex to more efficiently receive and hold a special type plug 26 designed to feed a pair of branch circuits. Such plug will be of shallow construction having a generally concave base 25 providing a complementary fit with the convex face of the connector, and will have molded therein, a pair of conductors 27 and 29 extending transversely of the plug and emerging through both sides thereof as branch circuit leads 30

adapted for connection to electric lights 31 on opposite sides of the tree. A pair of prongs 33 and 35, each connecting to one of the transverse conductors in the plug, emerge through the base of the plug, with both prongs spaced a distance approximating the spacing between the grooves in the connector strip.

With an arrangement for tree lighting as thus described, the application of lights and their distribution among the branches of the tree becomes a simplified matter. It is no longer necessary to entangle the wires in and out among the branches of the tree as is necessary with prior assemblies where all the lamps are connected to a single pair of leads plugged into a light socket.

While I have described my invention in its preferred form and in considerable detail, the same is subject to minor changes and alterations without departing from the fundamental principles thereof. I, accordingly, do not desire to be limited in my protection to such details, except as may be necessitated by the appended claims.

I claim:

1. Electrical connector apparatus comprising a strip of stretchable material having a pair of spaced longitudinal grooves therein, a core intermediate said grooves, said core being stretchable and maintaining substantially its cross section with stretch, and a stretchable conductor of electricity embedded in said strip alongside of and exposed through a wall of each of said grooves.

2. Electrical connector apparatus comprising a strip of stretchable material having a pair of spaced longitudinal grooves therein terminating short of the ends of said strip to leave end sections for the application of said strip to a support, a stretchable conductor of electricity embedded in said strip alongside of and exposed through a wall of each of said grooves, a stretchable core extending longitudinally of said strip, said core constituting a closely wound coil spring of a diameter approaching the spacing between said grooves to maintain approximately the initial spacing of said grooves during stretching of said strip.

LAURENCE WALTER.

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