Jan. 30, 1962 D. A. ZAFFINA 3,019,357

TRUNK TO BRANCH TREE LIGHTS

Filed March 27, 1959

Fig. 1

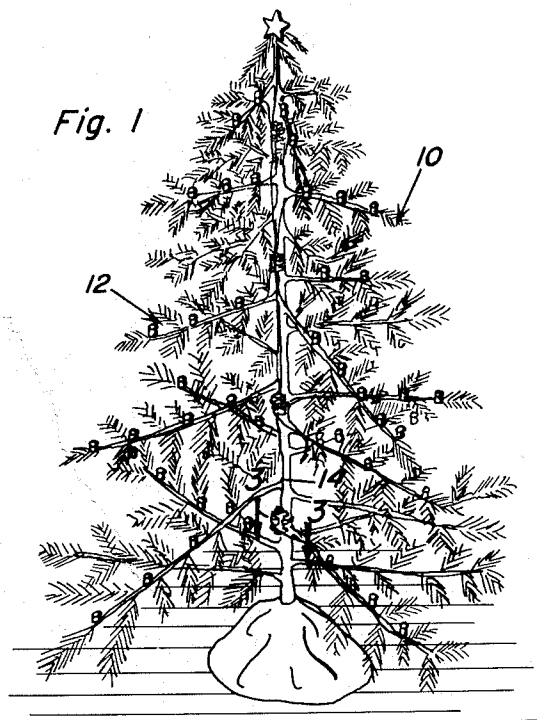


Fig. 3

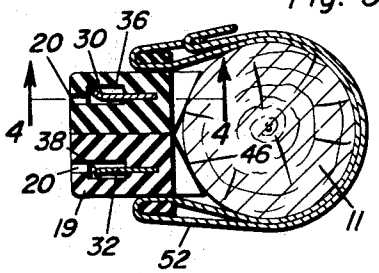


Fig. 4

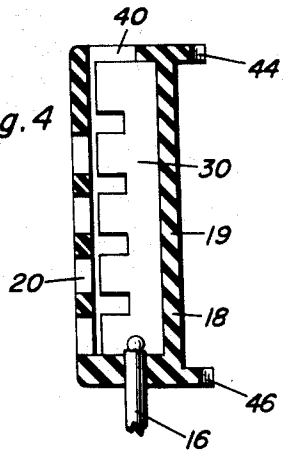


Fig. 2

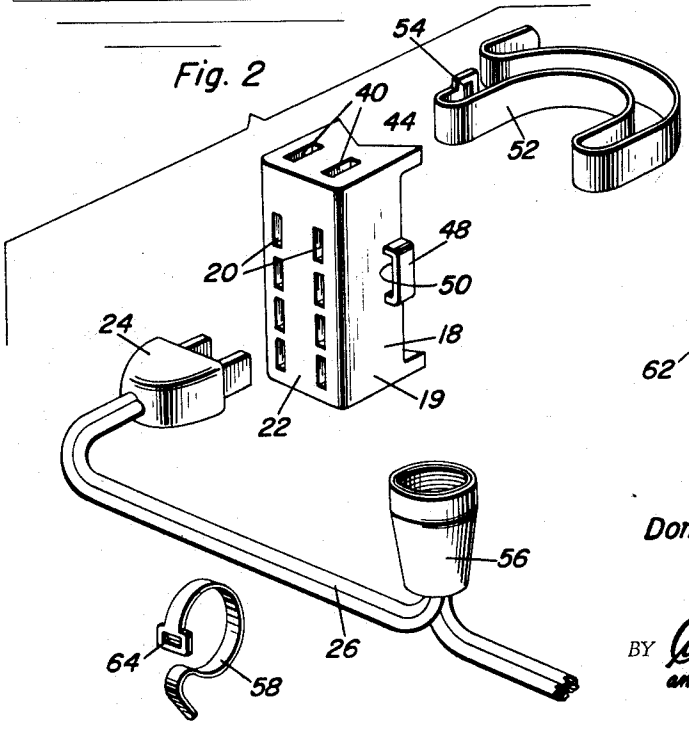
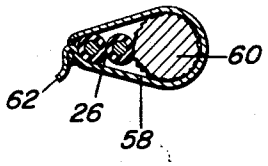


Fig. 5



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TRUNK TO BRANCH TREE LIGHTS

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This invention relates to ornamental lighting and more particularly to a lighting assembly which is particularly useful in connection with the decoration of Christmas trees, although the principles of the invention are applicable in other environments.

An object of the invention is to provide a Christmas tree lighting assembly which is constructed of a sectional main trunk line adapted to be fastened to the trunk of a Christmas tree, together with branch lines which operatively connect with plug and socket electrical connecting fixtures at the juncture of the sections of the trunk line. In this way branch lines are considerably more easily applied where deemed necessary along the boughs of the tree.

Another object of the invention is to provide a Christmas tree lighting assembly which is considerably more easily applied to a Christmas tree than ordinary light strings and which is easier to handle and manipulate. This is realized by virtue of the sectional nature of the main trunk line and by virtue of the manner in which the lines are connected to the boughs and trunk of the tree.

A further object of the invention is to provide a novel plug-socket electrical fixture connection between sections in the main trunk line of a Christmas lighting assembly. The sockets have essentially V-shaped surfaces adapted to grip a part of the Christmas tree trunk so that the part of the trunk nests within the confines of the V-shaped or otherwise concave surface thereby holding it firmly in place when one of the flexible straps supplied with the assembly is used to hold the plug and socket assembly firmly fastened to the tree trunk.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

FIGURE 1 is a perspective view of a Christmas tree equipped with the lighting assembly in accordance with the invention.

FIGURE 2 is a fragmentary exploded perspective view of a part of the assembly.

FIGURE 3 is an enlarged cross-sectional view taken on the line 3—3 of FIGURE 1.

FIGURE 4 is a sectional view taken on the line 4—4 of FIGURE 3.

FIGURE 5 is an enlarged fragmentary cross-sectional view showing a suggested bendable strip for attaching the branch lines to the boughs of the tree.

In the accompanying drawings there is a Christmas tree **10** having a Christmas tree light assembly **12** thereon. Although the light assembly may be series arranged, it is preferred that a parallel arrangement for the electrical circuit be used. Both series and parallel Christmas tree light circuits have been well known for a number of years and therefore the explicit electrical wiring connections insofar as the circuitry is concerned are not described in detail herein.

The Christmas tree lighting assembly **12** is made of a main trunk line **14** composed of a plurality of sections **16** that are separably connected together by means of plug and socket electrical fixtures. The plugs are conventional. The sockets **18** (FIGURES 2, 3 and 4) are specially designed as a part of the Christmas tree lighting assembly. Socket **18** has a plurality of plug inlets **20** along one wall **22** thereof to receive conventional plugs **24** at the end of each branch line **26**. Socket **18** is made of an essentially rectangular housing **19** having a pair of conductive strips **30** and **32** of metal that are molded or otherwise anchored within the housing **19**. Each pair of entrances **20** registers with a pair of elongate cavities **36** and **38** exposing a portion of the strips **30** and **32**. The ends of the strips are in registry with plug inlet openings **40** in one of the end walls of housing **19** (FIGURE 2). Entrances **40** enable the prongs of a plug inserted therein to come into contact with strips **30** and **32** (FIGURE 4). The strips **30** and **32** are in contact with and adhere to, as by soldering, the individual conductors of the wire which constitute a part of each section of the sectional trunk line **14**.

The rear face of housing **19** has at least one and preferably two concave surfaces **44** and **46** so that a portion of the tree trunk may be nested therein when the socket is applied to the trunk of the tree. The concavity is preferably formed as a V-shaped notch although other configurations may be adopted. There is means cooperating with the surfaces **44** and **46** for holding the socket **18** firmly fastened to the trunk but in a detachable manner. The preferred means consists of a pair of eyes **48** protruding laterally outwardly from the sides of housing **19** and defining apertures **50**. Flexible strip **52**, preferably of an easily bendable metal such as aluminum, is looped through one of the apertures **50**, wound partially around the trunk of the tree and then fastened in the other aperture **50**. Bendable strip **52** may have an eye **54** at one end so that the free opposite end can easily be inserted therethrough to form a buckle connection.

Branch lines **26** are each identical. They are made of a twin conductor having parallel connected sockets **56** spaced along the length thereof to accept conventional Christmas tree light bulbs of any type. Plug **24** at the inner end of branch line **26** is simply inserted in one of the pairs of plug inlets **20** in typical socket **18** thereby energizing all of the lamps in sockets **56**. Branch line **26** may be applied to the bough of a tree by simply wraping it, although it is suggested that bendable strip **58** which is similar to strip **52** but smaller, be used The strip is used as shown in FIGURE 5. It is looped around twin conductor **26** on a typical bough **60** of the tree **10**, and the free end **62** of strip **58** is inserted in an aperture at the opposite end of the strip **58**.

In use, any number of sections **16** of trunk line **14** may be used depending on the capacity of the electrical system, safety and similar engineering limitations. The sections of the trunk line are attached to the tree trunk **11** as shown in FIGURE 3 and as previously described. The individual sections are connected in end-to-end relationship by the plug and socket electrical fixtures thereby providing an elongate trunk line at the tree trunk from which electrical energy for the branch lines **26** may be obtained by simply plugging them into the sockets **18**.

Should it be desired, the trunk line may be made continuous by eliminating the plugs and sockets in the trunk line. In such a situation the trunk line may be made of any suitable length. Another possibility is that the trunk line and bough lines may be permanently joined instead of having separable electrical connections as described herein.

Numerous modifications and changes will readily occur to those skilled in the art, and it is not desired to limit the invention to the exact construction shown and described. Accordingly all modifications and equivalents falling within the scope of the invention as claimed may be restored to.

What is claimed as new is as follows:

1. A Christmas tree light assembly comprising a trunk

line composed of a plurality of sections, plug and socket electrical fixtures connecting confronting ends of said sections, each socket having plug inlets at one end into which one of the section plugs are adapted to fit and additional plug inlets, branch lines separably connected with said trunk line, each branch line having a plug at one end separably disposed in one of said additional plug inlets, said trunk line section sockets each having spaced apertures, and a bendable strip extending through said apertures and adapted to girdle a part of the tree trunk to hold the socket fastened to the tree trunk.

2. A Christmas tree light assembly comprising a trunk line composed of a plurality of sections, plug and socket electrical fixtures connecting confronting ends of said sections, each socket having plug inlets at one end into which one of the section plugs are adapted to fit and additional plug inlets, branch lines separable connected with said trunk line, each branch line having a plug at one end separably disposed in one of said additional plug inlets, said trunk line section sockets each having spaced apertures, and a bendable strip extending through said apertures and adapted to girdle a part of the tree trunk to hold the socket fastened to the tree trunk, and each of said sockets having an essentially V-shaped rear surface to receive a portion of the tree trunk.

3. A Christmas tree light assembly comprising a trunk line composed of a plurality of sections, said sections having plug and socket fixtures connecting confronting ends of said sections, each socket comprising an electrically insulating housing having side walls, a front wall, a top end wall and a bottom end wall together with a rear wall, one of said end walls provided with inlet openings to receive the prongs of the plug of an adjacent section, said front wall provided with a plurality of pairs of plug prong inlet openings to receive the plugs of branch lines, a pair of conductive strips in said housing and spaced

from each other and having portions opposing all of said inlet openings, said conductive strips being secured to one of said sections for electrical conduction thereto, at least a portion of the rear surface of said housing engageable with the trunk of the Christmas tree, and flexible means secured to said housing and adapted to girdle the tree trunk to hold said housing fastened to the tree trunk.

4. The Christmas tree light assembly of claim 3 wherein said conductive strips are flat and elongate and extend lengthwise of said housing and wherein portions of said strips are engaged with said housing on the interior thereof to mechanically hold said strips in a fixed parallel and spaced position with respect to each other

5. The Christmas tree light assembly of claim 4 wherein said portion of said rear surface is V-shaped and wherein said means for securing the housing to the tree trunk include means defining openings in said housing, and a bendable strip extending through said openings.

6. A Christmas tree light assembly comprising an electric socket for abutting engagement with the trunk of a tree and including side walls, loops on said side walls, and a clamp for securing the socket on the tree trunk, said clamp including a bendable strip adapted to girdle the trunk, said strip being bent on itself at an intermediate point and inserted through one of the loops, a hook on one end of the strip engaged in the other loop and terminating in an eye, and a hook on the other end of the strip engaged in the eye for anchoring the first named hook in said other loop.

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