Feb. 19, 1957 A. E. WALTER 2,782,296

CLAMP ON CHRISTMAS TREE LIGHT

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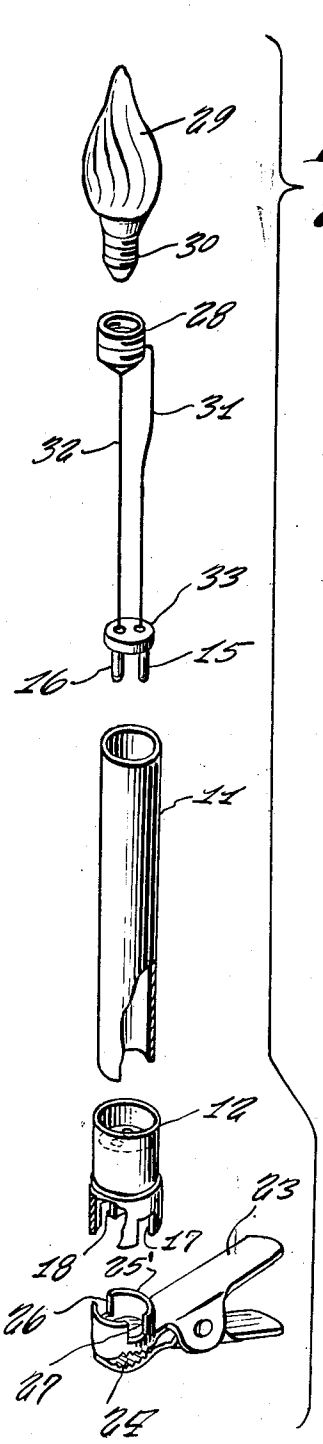


Fig. 2

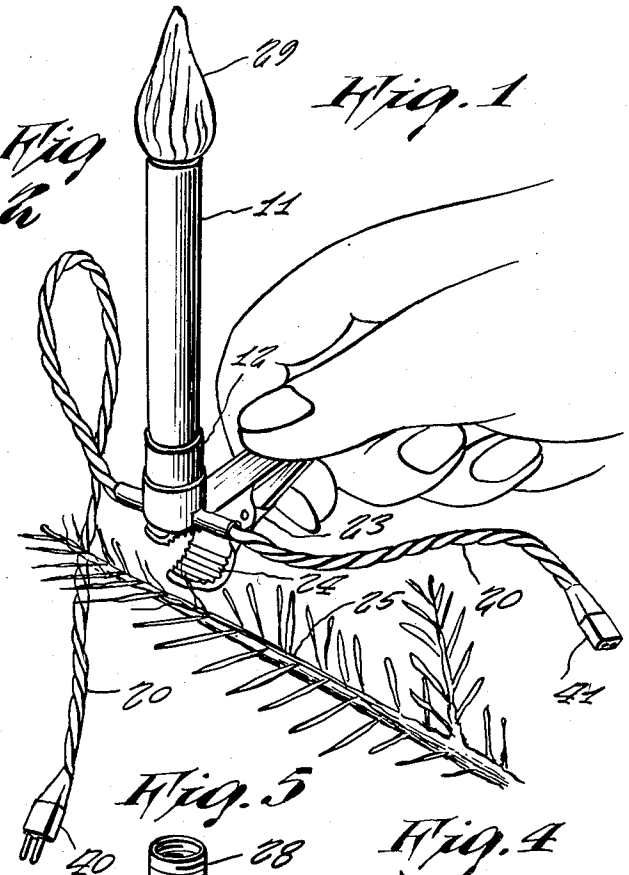


Fig. 1

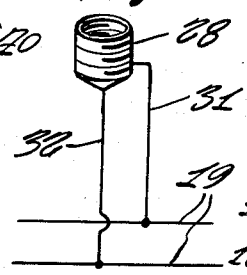


Fig. 5

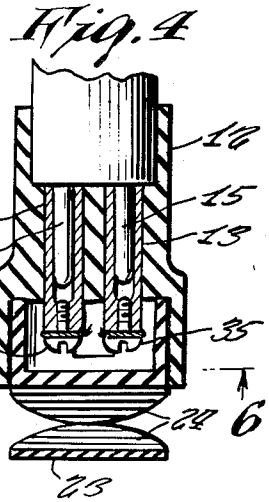


Fig. 4

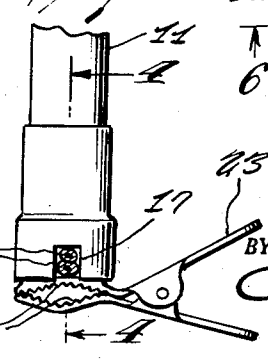


Fig. 3

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Fig. 10

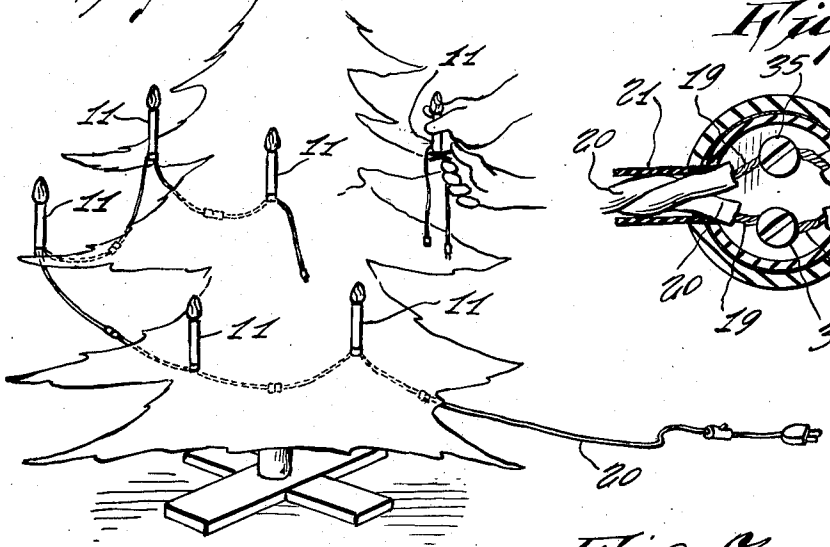


Fig. 6

Fig. 7

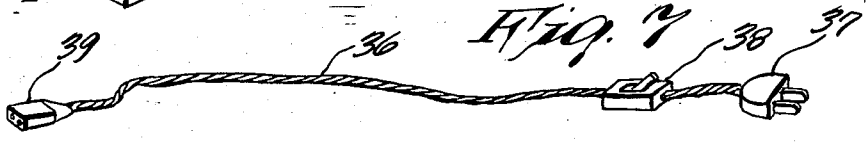


Fig. 8

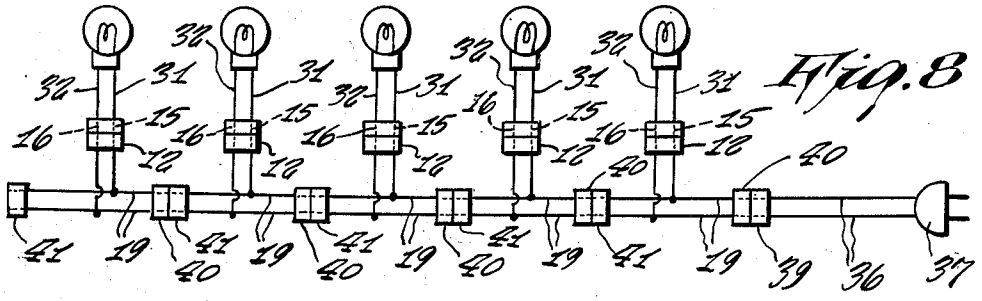
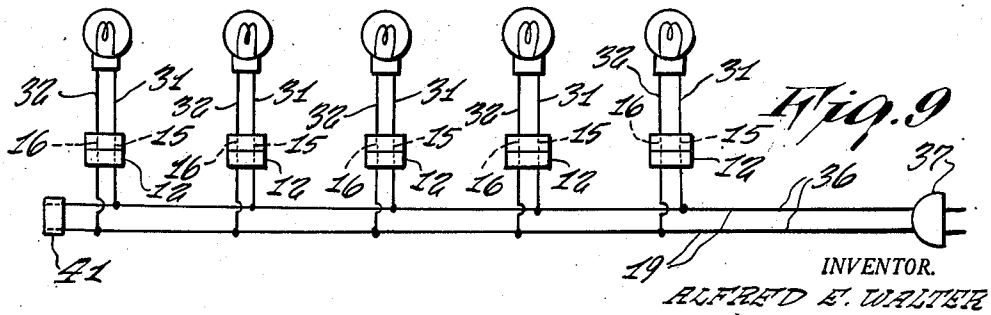


Fig. 9



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CLAMP ON CHRISTMAS TREE LIGHT

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3 Claims. (Cl. 240—10)

This invention relates to electric candle lights and more particularly to electric candle lights used for Christmas decoration purposes.

It is an object of this invention to provide an improved electric candle light which may be easily attached to the branches of a Christmas tree.

Another object of the present invention is to provide an improved electric candle light utilizing a push-pull type electric bulb.

A further object of the invention is to provide electric candle lights which can be electrically connected to each other so that a failure of one of the said candle lights will not result in a failure of the remaining lights.

Another object of the present invention is to provide electric candle lights which are rigidly connected, fire-resistant, and illuminable regardless of the polarity of their connection.

A still further object of this invention is to provide electric candle lights which may be economically manufactured and marketed at a comparatively low price.

Other and more specific objects of the present invention will be apparent from the following description as read in connection with the accompanying drawing, the novel features of this invention being pointed out in the claims at the end of the specification.

Figure 1 is a perspective view of one embodiment of the invention illustrating how it may be attached to a branch of a Christmas tree.

Figure 2 is an exploded view of the candle utilized in the said embodiment of the invention.

Figure 3 is a fragmentary side view of the base of the said candle showing a pair of wires passing therethrough.

Figure 4 is a cross-sectional elevation taken about the line 4—4 of Figure 3 and looking in the direction of the arrows located at the end of the said line.

Figure 5 is a diagrammatic view illustrating the electrical connections to the socket of the aforementioned candle.

Figure 6 is a cross-sectional view taken about the line 6—6 of Figure 4 and looking in the direction of the arrows located at the ends of the said line 6—6.

Figure 7 is a perspective view of one form of outlet cord which may be used in the present invention.

Figure 8 is a circuit diagram showing the electrical connections to a plurality of candle lights used in this invention.

Figure 9 is a view similar to that of Figure 8 where, however, the main wires are all in one piece rather than in small parts fastened together by plug and socket connections.

Figure 10 is a perspective view illustrating the operative use of one form of the invention upon a Christmas tree.

Referring in detail to the drawing, the embodiment of the invention therein shown comprises a cylindrical tube 11 composed of any substantially hard material such as Bakelite or a fire resistant plastic, such material being either plain white or any other desired color and, where so desired, having candle drippings molded thereon so as

to impart a realistic appearance. Affixed upon the said cylindrical tube 11 is a candle socket 12 having two connecting receptacles 13, 14 in its lower portion adapted to receive a pair of prongs 15, 16 and hold them firmly in position. It is also to be noted, as shown in Figure 4, that the said candle socket 12 fully encases the said receptacles 13, 14, and also receives the lower portion of the aforementioned cylindrical tube 11 so as to provide a rigid support therefor. At the base of the said candle socket 12, there is also located two oppositely positioned cutouts 17, 18 through which wires 19, carrying suitable insulation 20 may be passed so as to bring a source of electric current within the said socket 12, and to allow an outlet for such wires 19. For the purpose of protecting these wires 19 against wear at the points where they enter and leave the socket 12, there is located a pair of short, tapered rubber sleeves 21, 22, as illustrated in Figure 6.

The candle socket 12 hereinabove referred to is also adapted to receive and retain a manually operable clamp 23 having serrated faces 24 engageable with a branch 25 of a Christmas tree. The upper portion of the said clamp 23 consists of a short cylinder 25' receivable and retainable within the base of the candle socket 12 and having cutouts 26, 27 to match those contained within the said candle socket 12. The assembly of the aforementioned clamp 23 and candle socket 12 is illustrated in Figures 3 and 4 of the drawing.

There is also contained within the upper portion of the cylindrical tube 11 a bulb socket 28 of conventional screw type design adapted for reception of a candle type bulb 29 with a standard screw type connection 30. As an alternative to this arrangement, a push-pull type of bulb can be manufactured and used in conjunction with a plug-in type socket, this being a more convenient bulb reception arrangement.

The wiring from the said bulb socket 28 may consist of buss wire such as is commonly used in the manufacture of electronic equipment and will comprise a pair of wires 31, 32 leading from the bulb socket 28 to the lugs on the soldering disc 33 where they will connect with the above-mentioned prongs 15, 16. It is to be noted that buss wire is used in this arrangement of the invention so as to impart a substantial degree of rigidity to the unit and thereby prevent any undesirable buckling of the wiring. It would also be well to point out here that where the plug-in type of socket is used, as mentioned above, the wires may be soldered directly to the connections thereon.

Suitable insulation, such as "spaghetti" should be used to cover the bare buss wires 31, 32. Moreover, all exposed connections are to be covered with a good fireproof cement. The soldering disc 33 is also to be composed of a non-conductive material so as to substantially reduce the risk of fire in the vicinity of the Christmas tree.

The electrical connections within the above described unit also include the wiring to and from the receptacles 13, 14 which receive the prongs 15, 16. These receptacles 13, 14 may consist of a tubing of very small diameter wherein the four wires 19, two of which enter and two of which leave the socket 12, may be tightly clamped instead of soldered, said clamping being effected by a pair of screws 34, 35. One alternative to this clamping unit consists in using split receptacles to receive the prongs 15, 16 and in utilizing only two wires to connect to the screws 34, 35, as illustrated in Figure 6, these wires having their insulation removed in the vicinity of the said screws 34, 35 and accomplishing a substantially neater arrangement.

The wiring within the upper portion of the cylindrical tube 11 and its connections with the wire entering and

leaving the candle socket **12** are diagrammatically illustrated in Figure 5. In practice, it has been found convenient to use a number of the above described units in conjunction with an outlet cord **36**, having a conventional type plug **37**, a switch **38**, and a plug-in socket **39**, as illustrated in Figure 7. Thus a plurality of units may be connected together as shown in Figure 10 and as illustrated diagrammatically in Figures 8 and 9. In Figure 8 the outlet cord **36** is connected by its plug-in socket **39** to a suitable plug **40** which leads to one candle unit and also to a similar plug-in type socket **41** which may be utilized to connect to additional candle units as desired, said additional connections being effected in the same manner. It is to be noted that the candle sockets **12**, and the lower portion of the cylindrical tube **11** containing the prongs **15**, **16** are indicated diagrammatically in Figures 8 and 9. Figure 9, however is designed to illustrate more clearly the wiring connections to the various candle units. Thus each individual unit employs a series connection but is arranged in a parallel connection with respect to the main source of current as carried in wires **19**.

All of the wiring employed in this invention may be of the conventional variety of wire used in the manufacture of Christmas tree lights, with the exception, however, of the buss wires, as hereinabove described. Miniature or standard size plugs may be used as desired, suitable plug-in type sockets being provided therefor. Where miniature plugs are used, however, an extension cord having one standard size plug and one miniature plug-in socket should be used.

With the wiring arrangement described above, it is to be emphasized that, unlike conventional Christmas tree lighting sets, the polarity of the connections of the candle units is immaterial, the units being operable regardless of the polarity of their connections.

The candle units may be manually clamped to branches at various points on the Christmas tree, as illustrated in Figure 1. With the arrangement described hereinabove, it is clear that the risk of damage to light bulbs is materially decreased since the bulbs may be left in their sockets; and due to the convenient arrangement for connecting the various units, entanglement of wires is avoided and the possibility of tripping over portions thereof is minimized. The lights may be mounted quickly and more easily than with conventional type Christmas tree lights and involve no undesirable injury to the appearance of the tree. Moreover, since the unit is away from the inflammable foliage of the Christmas tree, it is substantially safer than conventional units.

Due to the wiring used, damage to one light will not affect the lighting in the remaining units. Furthermore, since the individual units are separable, and operable in any desired number, they may be purchased in any desired quantity and more conveniently stored when not in use. Of course, the utility of the units which are the subject of this invention is not limited to Christmas decoration purposes but may also be used for other types of decoration as well.

The embodiment of the invention illustrated and described hereinabove have been selected for the purpose of clearly setting forth the principles involved. It will be apparent, however, that the present invention is susceptible of being modified in respect to details of construction, combination and arrangement of parts which may be resorted to without departure from the spirit and scope of the invention as claimed.

Having thus described my invention, I claim as new and desire to secure by Letters Patent of the United States:

1. An improved electric Christmas tree candle light including a socket having an upstanding peripheral flange and a closed bottom, a manually operated clamp having two clamping elements pivoted together intermediate the ends thereof with both elements having interior mutually facing serrated jaws at one end and finger pieces for manipulating the clamp at the other end, with the bottom of the socket fixed upon the upper exterior portion of one jaw of one of said clamping elements, a candle socket member having a hollow lower end fitting externally upon the first mentioned socket and an upper hollow end with a solid intermediate section between the lower and upper hollow ends, electrical receptacle means supported in the solid intermediate section and extending downwardly therethrough into said first mentioned socket, means for connecting said receptacle means in the latter socket to a current source, an upwardly extending tube fitting in the upper hollow end of the candle socket member, a lamp socket adapted to fit into the upper end of the tube and having a pronged plug means connected thereto within the tube and adapted to be plugged into the first mentioned electrical receptacle means within the upper hollow end of said candle socket member.

2. A Christmas tree candle light according to claim 1, in which the means for connecting the receptacle means to an electric current source includes a two-conductor cord section having a male plug-in means at one end and a corresponding female plug-in means at the other end, and an intermediate section adapted to be connected to electrical terminals or binding posts such as the lower ends of the electrical receptacle means below the intermediate solid section of the candle socket member.

3. A Christmas tree candle light according to claim 2, in which the upstanding peripheral flange upon the first mentioned socket has a pair of diamertically opposite clearance cutout portions for admitting the two-conductor cord section to allow the same to extending transversely through said socket, and the lower hollow end of the candle socket member likewise has corresponding opposite cutout clearance portions for the same cord section allowing said cord section to extend through the assembled socket portions while allowing the plug-in means at the ends of said cord section free for connection with further plug-in means or outlets.

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