May 5, 1925. 1,536,332

H. M. R. DAM

LAMP SOCKET FOR CHRISTMAS TREE LIGHTING

Filed Nov. 22, 1924

Fig. 2

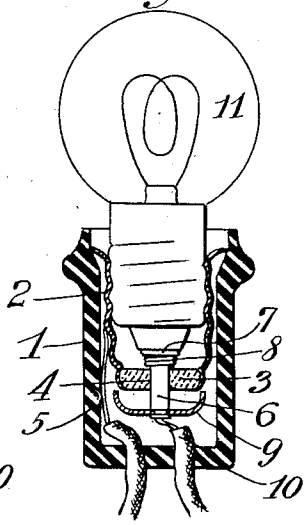



Fig. 1

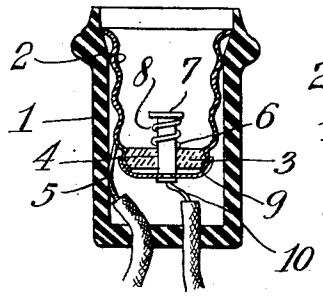
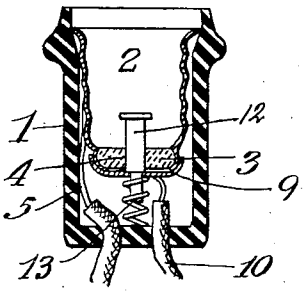



Fig. 3



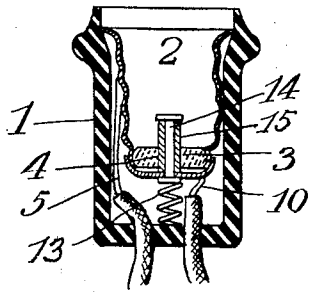




Fig. 4

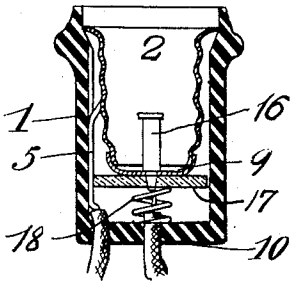



Fig. 5

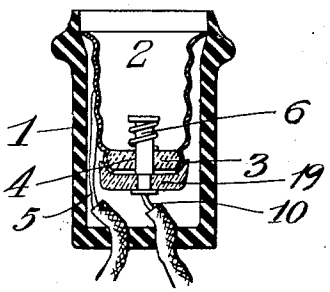



Fig. 6

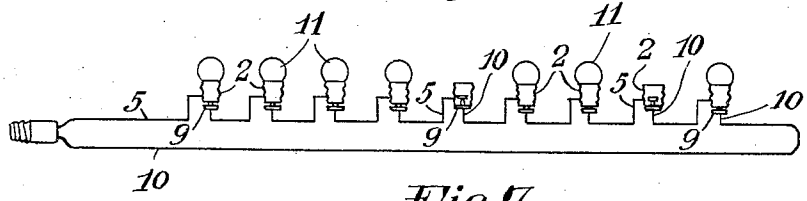



Fig. 7

Henry M. Rosendal Dam Inventor

By his Attorney

Ivan E. A. Konigsberg

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# UNITED STATES PATENT OFFICE.

HENRY M. ROSENDAL DAM, OF ASTORIA, NEW YORK, ASSIGNOR TO MONOWATT ELECTRIC IMPORT CO. INC., OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

## LAMP SOCKET FOR CHRISTMAS-TREE LIGHTING.

Application filed November 22, 1924. Serial No. 751,456.

*To all whom it may concern:*

Be it known that I, HENRY M. ROSENDAL DAM, a citizen of Denmark, and resident of Astoria, in the county of Queens and State of New York, have invented certain new and useful Improvements in Lamp Sockets for Christmas-Tree Lighting, of which the following is a specification.

This invention relates to improvements in electric lamp sockets for Christmas tree electric lighting outfits. The object of the invention is to provide a lamp socket which automatically short circuits itself when the lamp is withdrawn from the socket.

Electric Christmas tree outfits as now known in the art and as commonly manufactured and sold, are arranged in strings of usually eight lamps each and usually three strings are assembled and arranged to burn from a single ordinary light socket or outlet in a common household circuit of 110 to 120 volts. The lamp sockets are accordingly connected in series, and as a consequence, when a lamp burns out or is removed, all the lamps in the particular string are out because the circuit is broken in the socket where the burned out lamp is seated, or the current is broken in the socket from which a lamp has been removed.

This is a constant source of irritation and annoyance, and is a cause of trouble well known to the public.

It is also well known that if it is found that a string of lamps do not light when connected to the source, each lamp must be detached and the string tested with a tested lamp until a burned out lamp is found and replaced.

These disadvantages are eliminated with the use of my improved socket as will hereinafter appear.

Accordingly, my invention is embodied in a lamp socket provided with means whereby the socket becomes automatically short circuited when the lamp is removed or merely partly withdrawn from the socket. In the drawing accompanying this specification—

Fig. 1 is a sectional view of my improved lamp socket showing the same without a lamp and consequently short circuited.

Fig. 2 is a sectional view of my improved lamp showing the socket with a lamp inserted therein.

Figs. 3 to 6 illustrate several modified constructions and embodiments of my invention.

Fig. 7 is a diagram illustrating the advantage of my invention in a string of Christmas tree lights.

My improved lamp socket has the same appearance as standard lamp sockets and is assembled and manufactured in practically the same manner with slight changes. Referring to Figures 1 and 2 the reference numeral 1 indicates the usual outer lamp socket of composition, wood or other similar material. 2 is the usual inner socket or metal shell for receiving the lamp. In the bottom of the inner shell is clamped or pinched the usual nonconducting member 3 which separates the shell 2 from the usual central contact point which generally is in the form of an eyelet or rivet clinched in position in the central opening or hole 4 in the member 3.

The numeral 5 denotes the usual wire which is connected, as by soldering, to the shall 2 as the one lamp terminal.

My invention consists in providing the socket with a movable terminal in the form of a stem 6 which moves in the hole 4. The stem has a head 7 and a spring 8 surrounded the stem below the said head 7 and urges the stem or contact 6 upwards. Below the shell socket 2, the stem carries a conducting curved disk or cup 9. The other socket wire 10 is connected to the stem as by soldering.

It will be seen, therefore, that in Figure 1, the socket is short circuited in that the current passes from the one wire 5 to the shell 2, hence to the cup 9 and stem 6 and then out by way of the other wire 10. The cup 9 is shaped to make electric contact with the bottom portion of the shell as shown.

Referring now to Figure 2 it will be seen that when the lamp 11 is screwed into the socket, the contact 6 is automatically depressed or moved down, the spring 8 being compressed, hence the current is broken between the shell and the cup 9, and the current now passes from the wire 5 to the shell 2, hence through the lamp in the usual manner and out through movable contact 6 and wire 10.

It will be clear, therefore, that in a string of lights such as shown in Figure 7, the lamps 11 will burn even though two lamps

are absent because in the two sockets from which the lamps have been removed, the current passes from wire 5 to wire 10 via the movable contact cup 9, which is shown closed up in the two empty sockets and the object of the invention has been accomplished.

It will also be apparent that if a string such as equipped in Figure 7 does not light up when connected, it is not necessary to completely remove any one lamp in order to find a burned out lamp. A partial unscrewing of a lamp, sufficient to cause the cup 9 to contact with the shell 2 is sufficient. If a lamp is partially unscrewed, and all the other lamps are good, the string will light because in the loosened lamp, the circuit has been automatically made through the cup 9 and the lamp thus partially removed must be entirely removed as being the cause of the break in the circuit. The number of lamps in a string depends upon the voltage at the source and will be arranged accordingly.

Fig. 3 shows a socket which operates like the one shown in Figure 1. In this case the stem 12 extends below the cup 9 and the spring 13 is interposed between the movable contact member and the outer socket 1.

Fig. 4 shows a stem 14 provided with an insulating sleeve 15 and the spring 13 is below the cup 9 as in Figure 3. In Figure 4 the stem 14 need not extend below the cup to serve as a guide for the spring.

Fig. 5 illustrates a modification in which the shell 2 is without a bottom. The stem 16 carries an insulating disk 17 which fits the socket 1 as a guide and the spring 18 surrounds the wire 10 which is soldered to the stem.

Fig. 6 shows a socket in which the contact member 19 is in the form of a button of carbon resistance composition, the resistance of which is equal to the resistance of the lamp used. In the illustration it will be seen that the socket is short circuited and the current passes out through the button 19. But inasmuch as the latter has a resistance equal to that of the lamp, it is obvious that in a string equipped with sockets of this type it makes no difference how many lamps are removed, the remaining lamps will continue to burn.

Common to all the sockets illustrated is the feature, that when the lamp is removed, the socket is automatically short circuited, and when the lamps are screwed into the sockets, the latter are automatically connected in series in the usual manner.

While I have shown my invention in its preferred form, it is obvious that changes and modifications may be made without departing from the principle of the invention and the scope of the appended claims.

I claim:—

1. A lamp socket of the character described comprising a shell for receiving an electric lamp, a movable central contact member, a short circuiting member carried by the movable contact member, and means for causing said short circuiting member to contact with the said shell when the socket is empty, said short circuiting member having a resistance equal to that of the lamp to be received in the said shell.

2. As a new article of manufacture, a lamp socket for Christmas tree lighting outfits comprising an outer nonconducting socket, a conducting metallic shell within said socket for receiving an electric lamp, a nonconducting bottom member in said shell, a central lamp contact stem slidably carried in said nonconducting bottom member and extending through the latter and disposed within said outer nonconducting socket, a short circuiting member secured to the stem outside of the metallic shell, a head on said slidable contact stem and a spring within said metallic shell interposed between said nonconducting bottom member and the said head for normally moving said stem inwardly in said socket and causing said contact member to contact with the said shell outside thereof.

3. As a new article of manufacture, a lamp socket for Christmas tree lighting outfits comprising an outer nonconducting socket, a conducting metallic shell within said socket for receiving an electric lamp, a nonconducting bottom member in said shell, a central lamp contact stem slidable with respect to said nonconducting bottom member and extending through the latter outside the said metallic shell and within said outer nonconducting socket, a short circuiting member formed to receive and extend around the bottom member, and spring means within said metallic shell for normally moving said stem inwardly in said socket and causing said contact member to contact with the said shell outside thereof.

HENRY M. ROSENDAL DAM.