Sept. 7, 1954 C. J. QUILL 2,688,669

ELECTRIC LIGHT SOCKET

Filed June 15, 1953

Fig. 1.

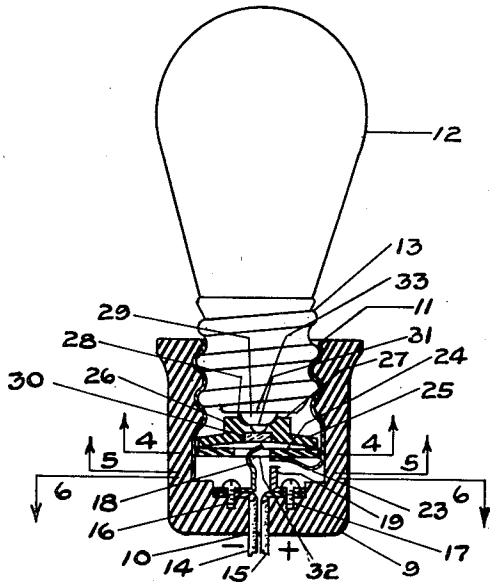


Fig. 2.



Fig. 3.

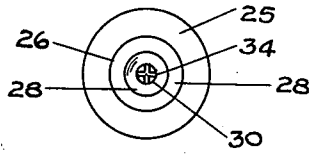


Fig. 4.

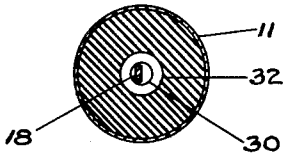


Fig. 5

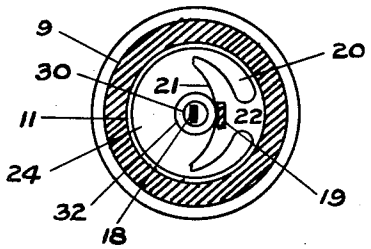


Fig. 6.

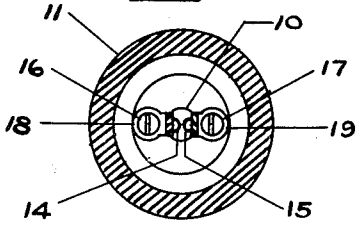
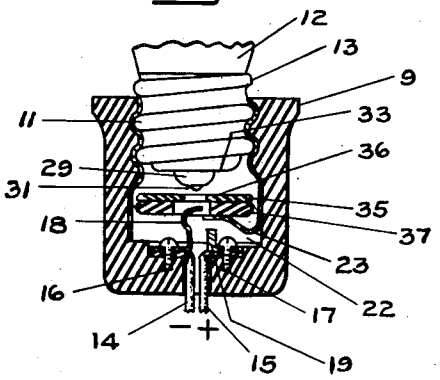


Fig. 7.



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ELECTRIC LIGHT SOCKET

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Application June 15, 1953, Serial No. 361,476

1 Claim. (Cl. 200—51.09)

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This invention relates to electric light sockets and has particular reference to a shock proof socket that positively insulates both of the terminals within the socket when the latter is empty, thereby preventing short circuits between the terminals, and also, reducing to a minimum the possibility of a person getting an electric shock from the socket.

One of the objects of the present invention is the provision of an especially constructed convex disc made of a resilient electric insulation material, such as rubber, and to fix an electric contact in the said disc, which contact is in proximity to but free from the electric terminal contact member in the socket when the socket is empty and will be pressed against the said terminal contact member when an electric light globe or the like is screwed into the said socket.

Another object of the present invention is to form the lower portion of the internally threaded metal shell within the body of the socket with an inwardly extending resilient partially circular contact member which extends directly over one of the terminal contact members in the shell and to provide an electric insulation washer and position the same beneath the said resilient convex disc and onto the said resilient contact member of the shell, whereby the said shell contact member and terminal contact member are closed by the washer when the light globe is screwed into the shell, the second terminal contact member extending through the opening in the washer and against the said electric contact in the convex disc, whereby the electrical circuit is closed.

A further object of the present invention is the forming of the upper portion of the convex disc with a hollow circular projection, which projection provides a shoulder capable of abutting the lower face of the electric light shell, thereby facilitating the pushing of the disc for closing the electric contacts.

A still further object of the present invention is the particular shape of the inner extending partially circular contact member formed on the bottom of the socket shell, which member not only provides a resilient metal contact, but also supports the washer and disc in a manner preventing any possible sticking and assuring.

A still further object of the present invention is the provision of a shock proof electric socket that is durable, simple in construction, economical to manufacture, positive in operation and highly efficient and serviceable in use.

Other objects and advantages will be apparent during the course of the following description.

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In the accompanying drawing forming a part of the specification, wherein for the purpose of illustration, like numerals designate like parts throughout the same,

Fig. 1 is a central vertical sectional view of an electric light socket showing the light in elevation,

Fig. 2 is a vertical sectional detail of the convex washer employed in the invention,

Fig. 3 is a top plan view of the convex disc,

Fig. 4 is a horizontal sectional view taken through the socket shell and insulating washer, the body of the socket being removed,

Fig. 5 is a horizontal sectional view taken on line 5—5 of Fig. 1, looking in direction of the arrows, and

Fig. 6 is a horizontal sectional view taken on line 6—6 of Fig. 1, looking in direction of the arrows, and

Fig. 7 is a vertical sectional view of an electric light socket and illustrating a modified form of the invention.

Referring in detail to the drawing and to the numerals designating the different parts thereof, the numeral 9 designates the body of an electric light socket, apertured in the bottom portion as at 10 and provided with an internally threaded copper shell 11, which shell is substantially fixed into the said body and is capable of receiving a conventional electric light 12 having an externally threaded outer copper shell 13 as shown to advantage in Fig. 1. The numerals 14 and 15 designate conventional insulated electrical conductors, the terminal portions thereof being stripped and the copper wires thereof secured to the bottom of the socket by suitable metal screws 16 and 17, respectively. The numeral 18 designates a resilient electric contact member connected to the conductor 14 by the said screw 16 and the numeral 19 designates a rigid electric conductor connected to the conductor 15 by the said screw 17, which screws also secure the said contact members to the bottom of the socket body. The said terminals and contact members can also be soldered one to the other if desired. The lower portion of the said socket shell is bent inwardly providing an electric contact member 20 and is preferably formed with an enlarged horizontally curved portion 21 and a narrow resilient portion 22 as shown in Fig. 5, which narrow portion preferably curves downwardly from the socket shell 11 as indicated at 23 in Fig. 1.

The said resilient contact member 20 provides a seat for supporting the insulation washer 24, the said washer resting on the said contact member

as illustrated in Fig. 1, and a convex resilient insulation disc **25**, made of rubber or any other suitable material, is positioned on the said washer, thus positively shielding the electric contacts in the lower portion of the socket. The said convex disc **25** is preferably formed with an upwardly extending projection **26**, which projection provides a horizontal shoulder **27** and is formed with a concave recessed portion **28** for receiving the lower rounded end **29** of the electric light shell **13**. A metal rivet **30**, or the like, is fixed in the center of the said disc **25** and is adapted to have contact with the electric light contact point **31** as shown in Fig. 1. The insulation washer **24** is apertured as at **32** to provide a passageway for the contact member **18** to extend and be in proximity to the said rivet **30** provided in the convex disc. From the foregoing description taken in conjunction with the accompanying drawing it will be readily observed that when the light globe is screwed into the socket against the convex disc **25**, the metal rivet **30** in the said disc will be brought against the upper extremity of the resilient contact member **18**, which contact member **18** is connected to the negative conductor **14**. A continued turning of the globe will cause the bottom flat portion **33** of the light globe shell **13** to press against the horizontal shoulder **27** of the disc **25** and will push the washer **24** and resilient contact member **20** downwardly to a point where the said resilient contact member **20** will press against the metal contact **23** connected to the positive conductor **15**, thus closing the circuit for lighting the globe **12**. The said washer **20** and disc **25** is screwed into the socket and cannot come out accidentally when the socket is empty. The rivet **30** can be cross slotted as indicated at **34** in Fig. 3 for accommodating a screw driver if desired.

In the modified form of the invention a flat disc **35** having a metal rivet **36** therein is substituted for the convex disc and rests upon an insulation washer **37**. The closing of the electric contacts is accomplished by the globe in the same manner as set forth in the foregoing description.

Having thus described my invention, I claim:

A device of the character described for use with electric plugs and the like, comprising a body forming a socket made of electric insulation material, and an internally threaded metal shell positioned therein and secured thereto, an electric contact member in the bottom portion of the socket and connected to the positive side of the line, a second electric contact member positioned in the bottom portion of the socket and connected to the negative side of the line, a resilient electric contact member formed on the lower end portion of the socket shell and extending over and above the said positive electric contact member in the bottom portion of the socket, a washer made of electric insulating material positioned on the said contact member leading from the socket shell, the said second mentioned contact member connected to the negative side of the line being formed of a resilient electric conducting material and extending toward the opening in the said washer, a disc made of electric insulating material positioned on the outer face of the said washer, whereby the said electric contact members in the lower portion of the socket are covered, an electric contact member fixed in the said disc and adapted to extend over the said opening in the washer, whereby the said electric contacts are closed completing an electric circuit when the plug is screwed into the socket, the said disc being convexly formed and made of a resilient electric insulating material, a boss formed on the upper portion of the said disc, the said boss being recessed for receiving the central protuberance of the plug, whereby a shoulder is formed capable of abutting the base of the plug to facilitate the closing of the electric contacts.

References Cited in the file of this patent

UNITED STATES PATENTS

Number	Name	Date
2,158,851	Ceader	May 16, 1939
2,158,852	Ceader	May 16, 1939
2,158,862	Phelps	May 16, 1939
2,158,884	Mueller	May 16, 1939
2,161,774	Cooke	June 6, 1939