



# UNITED STATES PATENT OFFICE

2,016,121

## LAMP SOCKET

William H. Rowe, Cliftondale, Mass., assignor to  
General Electric Company, a corporation of  
New York

Application March 23, 1932, Serial No. 600,739

3 Claims. (Cl. 173—344)

The present invention relates to lamp sockets and especially to series lamp sockets, such as are used for street lighting, although it is not limited thereto necessarily.

The object of the invention is to provide an improved construction and arrangement in a lamp socket of this type, and for a consideration of what I believe to be novel and my invention, attention is directed to the accompanying description and the claims appended thereto.

In the drawing, Fig. 1 is a sectional view of a series lamp socket embodying the invention; Fig. 2 is a bottom plan view thereof; and Fig. 3 is a perspective view, partly in section and partly broken away, of the metal parts of the socket.

Referring to the drawing, 1 indicates the socket shell or casing. It may be made of porcelain or other suitable insulating material or compound. It is open at one end 2 for the reception of an incandescent lamp, such end being flared outwardly somewhat, and it is closed at the other end by an integral wall or closure 3, provided with a central rectangular opening 4. In wall 3 on opposite sides of opening 4 are countersunk holes 5, four being shown in the present instance, for the reception of fastening screws, the nuts for the screws occupying the countersunk portions 6 of the holes, such countersunk portions being rectangular so as to hold the nuts from turning. In the inner wall of shell 1 are opposed longitudinal extending grooves or guides 7.

Inside shell 1 is a base 8 of suitable insulating material such as porcelain or compound, or the like. Base 8 carries all the metal parts of the socket comprising the screw shell 9 and the two socket prongs 10 and 11. Screw shell 9 has an inturned flange 12 which rests on base 8 and through which extend pairs of eyelets 13 and 14 for fastening the screw shell to the base. Underlying the heads of the eyelets inside the shell are metal links 15 which serve to reinforce and strengthen the connection between the shell and the base. Prongs 10 and 11 are provided with angular portions 16 and 17 which engage the surface of base 8. Eyelets 13 pass through openings in angular portion 16 for fastening prong 10 to base 8. Prong 11 is fastened to base 8 by eyelets 18. By the foregoing arrangement it will be seen that the screw shell and two socket prongs are all attached to base 8 by means of the six eyelets shown. Base 8 with the screw shell and prongs attached thereto thus form a unitary structure.

Prongs 10 and 11 extend out through opening

4 and are adapted to be inserted into a series receptacle of known construction. The outer ends of prongs 10 and 11 are adapted to receive between them a usual form of film or disk cut out as is well understood. The receptacle and the film or disk cutout are not illustrated as they form no part of the present invention. The use of a socket as illustrated is well understood by those familiar with series lamp circuits. Prong 10 is provided with an extension 19 which extends along the side of screw shell 9 and at its end is provided with an inset portion 20 which projects through an opening 21 in the side of shell 9. When a lamp base is screwed into screw shell 9 it makes direct electrical contact with inset portion 20.

Socket prong 11 is provided with an extension 22 which extends through an opening 23 in the side of screw shell 9 and extends over base 8 to provide a center contact 24 with which the center contact of the lamp engages when a lamp is screwed into the shell. Projecting from center contact 24 is a tongue 25 which projects beneath flange 12. It is housed in a recess 26 in base 8. Extension 22 is somewhat resilient and when a lamp is not in the socket, tongue 25 is held in yielding engagement with flange 12, thus short circuiting the outer ends of the socket prongs 10 and 11. When a lamp is screwed into shell 9 the engagement of the center contact of the lamp with extension 22 forces it downward so as to move tongue 25 from engagement with shell flange 12.

The unitary structure comprising base 8, prongs 10 and 11, and screw shell 9, is fastened in position in shell or casing 1 by means of screws 27 on the ends of which are nuts 28 located in the countersunk portions 6 of opening 5. Screws 27 pass through the eyelets 13 and 18 in base 8 and through the openings 5. By this construction the unitary structure comprising base 8, prongs 10 and 11, and screw shell 9 can be readily attached to or removed from shell or casing 1 by merely removing the holding screws 27 and passing base 8 with the attached parts out through open end 2. The sides of extensions 19 and 22 slide in grooves 7, thus positioning base 8 correctly relatively to casing 1. By this means, either the shell or casing 1, or the unitary structure referred to, can be replaced in case it becomes damaged or broken. This is a thing of substantial advantage, from a practical standpoint in that often a shell or casing 1, which is usually made of porcelain, may be broken. By being enabled to replace readily a damaged shell or casing with a new shell or casing,

the socket can be repaired, thus effecting a substantial saving, since otherwise the entire socket would have to be replaced.

When a lamp is screwed into the socket it will be seen that the base of the lamp makes direct contact with the prong extension 19 and that the center contact of the lamp makes direct engagement with the prong extension 22. By this arrangement, there are no mechanical connections through which the current is carried in passing from the prongs 10 and 11 to the base and center contacts of the lamp, since the extensions 19 and 22 provide a continuous metallic path for the current. This serves to reduce the voltage drop through the lamp socket to a minimum, a feature of substantial importance in connection with a series lamp socket, since ordinarily the voltage drop across each lamp is relatively small and the current is relatively large.

What I claim as new and desire to secure by Letters Patent of the United States is:

1. A lamp socket comprising a casing having an open end, the other end of said casing being provided with a closure having a center opening, a base connected to said closure inside of said casing, a screw shell carried by the base having an opening in its wall, a contact prong carried by the base for transmitting current to the center contact of a lamp and projecting through the said center opening, a second contact prong carried by said base projecting through said opening in the wall of said screw shell for directly engaging the screw base of a lamp and also projecting through

the center opening in said closure, and a conductive connection extending through said base from said screw shell to said second prong for establishing a multiple current path to the lamp screw base.

2. In a lamp socket, the combination of a casing, a base mounted in said casing, a screw shell mounted on said base and provided with openings in its side and bottom walls respectively, a pair of contact prongs mounted on said base and projecting from said casing at one end thereof, an extension on one of said prongs projecting through said side wall opening into said shell and adapted to engage the screw base of a lamp, and an extension on the other of said prongs projecting through said bottom wall and directly engaging the center contact of a lamp.

3. A lamp socket comprising a casing, a base mounted in said casing, a screw shell mounted on said base and provided with a flange and openings through its wall, a pair of contact prongs mounted on said base and projecting from said casing at one end thereof, an extension on one of said prongs projecting through an opening in said shell to engage the screw base of the lamp, and an extension on the other of said prongs for projecting through another of said openings and normally engaging said flange to form a short-circuit through said socket and operable to break said circuit and engage the center contact of a lamp when the lamp is screwed into said shell.

WILLIAM H. ROWE.