

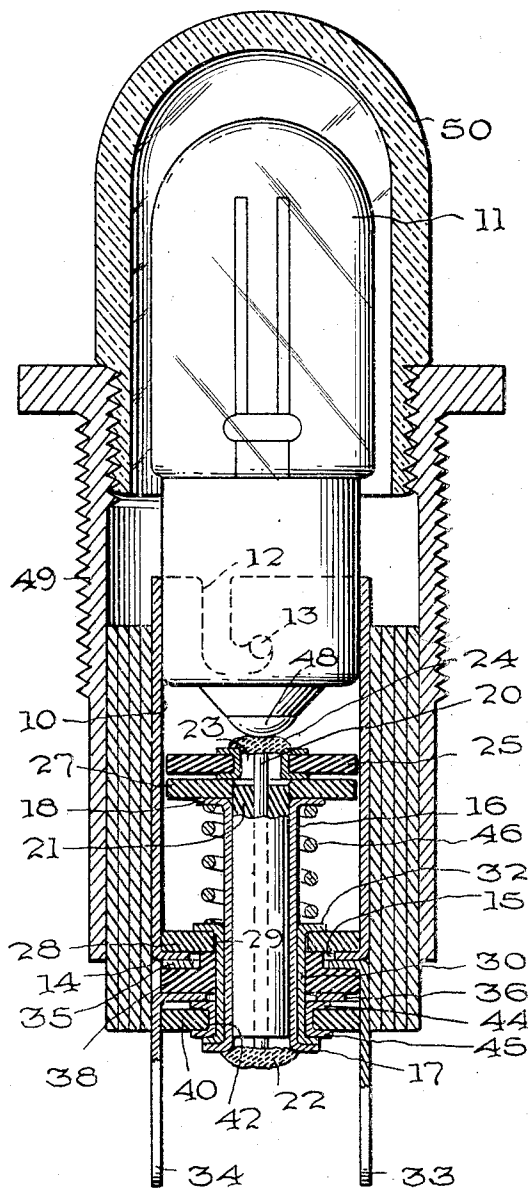
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GASEOUS CONDUCTION LAMP SOCKET

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## UNITED STATES PATENT OFFICE

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## GASEOUS CONDUCTION LAMP SOCKET

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2 Claims. (Cl. 201-49)

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This invention relates to gaseous conduction lamp socket pilot light assembly and more particularly for use with neon pilot lamp of low wattage.

In lamps of the neon type it is desirable to include in the circuit of the lamp a current limiting resistance. This resistance is intended to function for maintaining the current at such a value as will maintain the luminous phenomena taking place within the lamp. With the present invention a simple and practical mounting of the current limiting resistance is provided in the shell of the lamp socket or receptacle.

The invention consists of certain novel features of construction and combinations of parts which will be hereinafter more fully described and pointed out in the claims.

In the accompanying drawing, the figure is an enlarged vertical sectional view with some parts in elevation of the invention.

This invention is primarily intended for use with neon lamps of  $\frac{1}{25}$  watt, and this lamp is used in connection with lamp socket or shell having an inside diameter of .375. In order to use this lamp it is necessary to use a resistor in series with the A. C. line, and this resistor varies in accordance with the voltage on the line. This invention therefore resides in mounting the resistor in the socket or shell.

In the drawing 10 represents the shell or socket which is provided with an open end for the reception of the neon lamp 11, and the wall of the shell is provided with bayonet slots 12 for the reception of lugs or pins 13 on the lamp 11 for attaching the lamp to the socket. Other securing means might be employed, but the foregoing has been adopted for illustration.

The shell 10 is provided with a bottom 14 having a central opening 15 therein for the reception of a tubular plunger 16 adapted for sliding movement within the shell. The plunger 16 is provided with outwardly flaring or flanged ends 17, 18, and mounted within the tube is a resistor wire 20 provided with suitable insulation 21 between the wire and the brass plunger 16. An end of the wire is attached to the outer end of the plunger 16 by means of solder 22 or the like, while the opposite end of the wire is attached to an eyelet 23 by means of solder 24. The eyelet 23 is carried by an insulated washer 25 which is disposed within the shell 10. Another insulated washer 27 is disposed between the inner end 18 of the plunger and the washer 25.

Mounted within the shell 10 and resting on the bottom thereof is an insulated washer 28

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having a central opening 29 registering with the opening 19 in the bottom of the shell 10. Extending through the openings 15 and 29 of the bottom 14 and washer 28 is a tubular sleeve 30 with which the plunger 16 has a sliding fit. The inner end of the sleeve 30 is flared outwardly in the form of a flange 32 into engagement with the outer surface of the washer 28.

Resilient contact fingers 33-34 are provided with lateral extensions 35, 36 at one end and the extensions are provided with openings for the reception of the sleeve 30. The extension 35 is disposed against the bottom 14 of the shell 10 and suitable insulation 38 is disposed between the extensions 35-36 and between the sleeve 30 and extension 35. An insulated washer 40 is provided with a central opening in which a metal eyelet 42 is fitted. The eyelet 42 surrounds the sleeve 30 and establishes a metallic contact between the flanged end 44 of the sleeve and lateral extension 36 of the finger 34.

The sleeve 30 forms the connecting means for securing the fingers 33, 34 to the shell in a suitably insulated manner also establishing an electrical connection between the finger 34 with the sleeve 30 and plunger 16.

Surrounding the plunger 16 is a coiled spring 46, having one end bearing against the inner face of the flange 18 of the plunger and the opposite end of the spring engaging the inner end 32 of the sleeve 30, and tends to urge the plunger outwardly so that the flanged end 17 of the plunger 16 will be in contact with the eyelet 42 and the outer flanged portion 45 thereof.

In mounting the lamp 11 in the shell 10, the lamp will be forced inwardly of the shell for causing the lugs 13 to enter the slots 12 for securing the lamp to the shell, and this inward movement of the lamp will cause the contact 48 of the lamp to engage the eyelet contact 23 and move the plunger 16 outwardly against the action or tension of the spring 46. Upon securing the lamp 11 in position the spring will return the plunger 16 to its normal position and the contacts 23 and 48 will be in good electrical engagement.

With this construction the brass plunger 16 is insulated from the shell 10 and the contact terminal 23-24 of the resistor 20 is disposed above the plunger and insulated therefrom by the insulation carried by the resistor 20 and the two insulated washers 25 and 27, which latter further insulate the plunger from the shell 10. With this construction we have a built-in resistor which is so disposed that it is in

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circuit whenever the lamp is brought into contact with the terminal contact 23—24 of the plunger.

The shell 10 may be enclosed in a housing 49 and suitably insulated therefrom, and the housing can be provided with a lens 50.

While the disclosure and description have been predicated to a single plunger carrying the resistor, it is possible that in lamps of greater wattage more than one plunger might be employed and therefore one at least of these plungers would carry the resistor.

What I claim is:

1. In a socket, the combination with a shell, a hollow plunger slidably mounted in said shell and insulated therefrom, contact means carried by and having electrical contact with said shell and another contact means carried by and insulated with respect to said shell and having electrical contact with said plunger, an insulated resistor mounted in said plunger and having an end thereof secured to said plunger, and contact means disposed in said shell and insulated from said shell and plunger, and secured to said resistor and movable therewith.

2. In a socket, the combination with a shell having a bottom, a tubular sleeve disposed

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through the bottom of the shell and insulated therefrom, contact fingers carried by the sleeve and insulated from each other, one finger having electrical contact with said sleeve and the other finger with the shell, a tubular plunger slidably mounted in said sleeve, a spring surrounding said plunger and urging an end thereof in engagement with an end of said sleeve, an insulated resistor mounted in said plunger and having an end thereof secured to said plunger, and contact means disposed above said plunger and insulated therefrom and said shell, and secured to said resistor.

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