March 9, 1943. G. H. BURT 2,313,036

LAMP SOCKET

Filed July 20, 1942

Fig. 1.

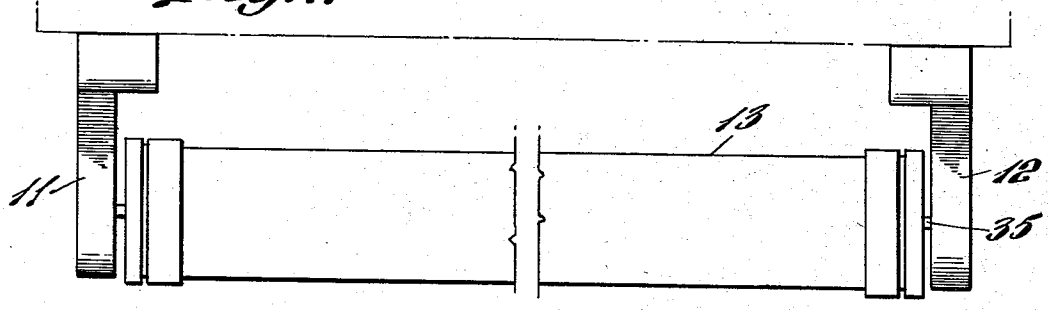


Fig. 2.

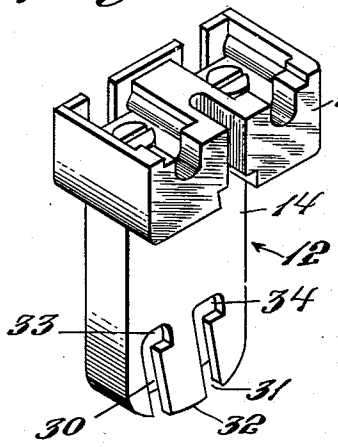


Fig. 3.

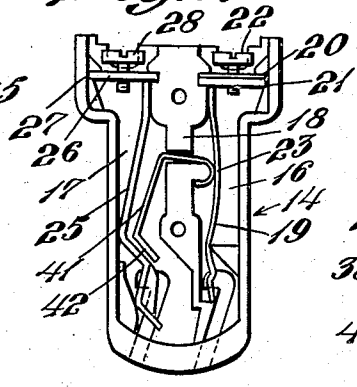


Fig. 4.

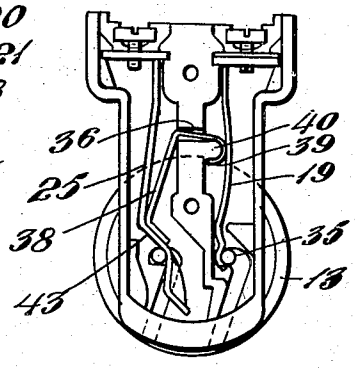


Fig. 5.

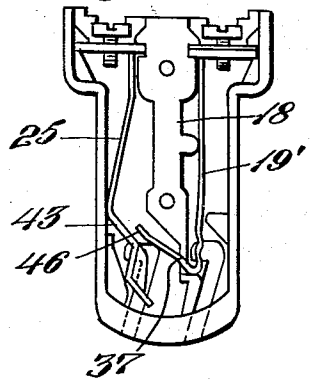


Fig. 6.

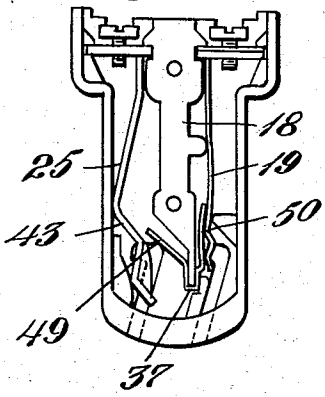


Fig. 7.

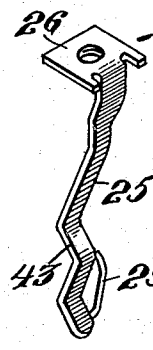


Fig. 8.

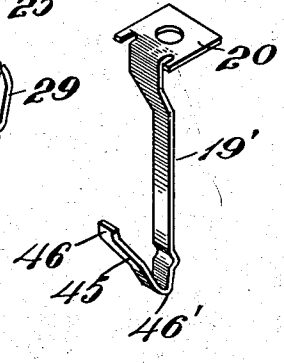


Fig. 9.

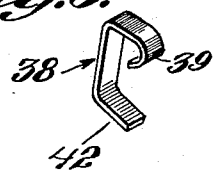
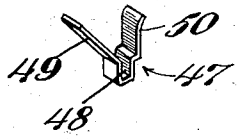


Fig. 10.



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UNITED STATES PATENT OFFICE

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LAMP SOCKET

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Application July 20, 1942, Serial No. 451,523

3 Claims. (Cl. 173—328)

This invention relates to a lamp socket of the type for receiving an elongated tube having two contact pins extending to the ends of a filament within the tube and protruding from the end of the tube substantially parallel to the axis of the tube.

In the use of certain gaseous discharge tubes where a transformer type of ballast is utilized for stepping up the voltage beyond that usually used in order to light the lamp instantaneously, it is desirable to have one of the lamp sockets arranged so as to provide a short circuit between the terminals thereof, when the lamp is in position in the socket. Heretofore the provision of a short circuit of this character has been provided by some external exposed arrangement placed upon the socket.

One of the objects of this invention is to provide a lamp socket in which a short-circuiting mechanism will be enclosed within the socket and not exposed thereon.

Another object of the invention is to provide a means for directly engaging the contact arms of the socket for providing an electrical connection between them directly and not through the contact pins of the lamp.

Another object of the invention is to provide for an electrical connection between the contact arms of the socket by a movement of one of the arms effected by a positioning of the lamp with its contact pin into the socket.

Another object of the invention is to provide a construction which will enable sockets which are now in use to be modified by a simple alteration to effect a short circuiting of their contacts when the lamp is placed in position.

With these and other objects in view, the invention consists of certain novel features of construction, as will be more fully described and particularly pointed out in the appended claims.

In the accompanying drawing:

Fig. 1 is a side elevation of a gaseous discharge tube mounted in a socket of the type utilized in this invention;

Fig. 2 is a perspective view of a socket equipped with this invention;

Fig. 3 is a rear view of this socket with the back plate removed and illustrating the socket when the gaseous discharge tube is removed therefrom;

Fig. 4 is a view similar to Fig. 3 but showing the position of the parts when the gaseous discharge tube is positioned in the socket;

Fig. 5 is a view similar to Figs. 3 and 4 but illustrating a modified form of socket;

Fig. 6 is a rear view illustrating a still different modified form of the socket;

Fig. 7 is a perspective view of one of the contact arms;

Fig. 8 is a perspective view of another of the contact arms;

Fig. 9 is a perspective view of one bridging element shown in Figs. 3 and 4; and

Fig. 10 is a perspective view of another bridging element used in the modified form of the invention shown in Fig. 6.

In certain high-voltage types of hook-ups for gaseous discharge tubes one of the tube sockets 11 (see Fig. 1) is the regular form utilized while the other socket, although similar in appearance thereto and designated 12 has a short-circuiting means therein so that when the gaseous discharge tube 13 is put in position with its pin 35 in the socket 12 the contact arms of the socket will be short-circuited. This type socket, with the short-circuiting arrangement in it, is the subject of this invention.

In Fig. 2 I have shown in perspective a body part 14 having a base 15 recessed at one portion to receive the end portions of the contact arm which is arranged to secure a wire to one of the arms as will later more fully appear. The body 14 is hollowed out to provide recesses 16 and 17 with a dividing or separating wall 18 between these recesses which extend generally longitudinally of the body. Within the recess 16 I have located a contact arm 19 which has a plate portion 20 fitting within notches 21 located in the base with a set screw 22 in the plate portion 20 for the securing of some wire thereto for electrical connection. The arm 19 extends generally longitudinally of the body in the recess 16 and from the point 23 to its free end has a certain amount of inherent resilience for flexing about the point 23 as a fulcrum.

A contact arm 25 is located in the recess 17 and has a plate 26 fitted in the notches 27 in the base and equipped with a set screw 28 for holding a wire electrically connected to this arm. This arm is zigzag in shape so as to perform the function of limiting its movement and of providing an advantageous contact portion, and is provided with a lip 29 to restrict the entrance of a pin in its insertion in the socket. This arm has a certain amount of inherent resilience permitting it to flex throughout substantially its entire length when suitably engaged to be moved laterally of its extent.

J-shaped slots 30 and 31 are provided in the body 14 extending from the end 32 thereof gener-

ally longitudinally of the body with openings as at 33 and 34 in a location to communicate with the ends of the contact arms 19 and 25 which extend across the openings 33 and 34.

As the contact pins 35 of the gaseous discharge tube 13 are moved through the J-slots 30 and 31 to the openings 33 and 34, these pins 35 will engage and rub along the contact arms 19 and 25 and move the contact arm 19 toward the left as shown in Fig. 4 and the contact arm 25 toward the right as shown in Fig. 4 so as to provide a good wiping electrical connection therewith. I utilize the movement of these contact arms to provide an electrical connection between the contact arms in several or various ways as will now appear.

I have provided an opening 36 in the wall 18 in the showing of Figs. 3 and 4, or an opening 37 in this wall 18 as shown in Figs. 5 and 6, thus enabling communication to be established between the contacts 19 and 25 located in the recess which this wall 18 separates. In the showings in Figs. 3 and 4, the bridging element 38 is provided with a hook 39 which engages the enlargement 40 of the wall 18 heretofore contacted by the arm 19 and thus forces the arm to the right so that the arm will exert a pressure upon this hook-shaped end 39 to assure a good electrical contact therewith. The bridging element 38 then extends through the opening 36 and upwardly converging toward contact 25 at the portion 41, and then extends inwardly as at 42 parallel to a portion 43 of the contact arm 25. The arrangement is such that when the contact arm 25 is moved inwardly by the pin 35 of the gaseous discharge tube the portions 43 and 42 will engage, providing good electrical communication between them and a short circuit of the contact arms 19 and 25 as shown in Fig. 4.

In the modification shown in Fig. 5 the contact arm now designated 19' and shown in perspective in Fig. 8, is equipped with an extension portion 45 bent as at 46' at the location which heretofore has been the free end thereof, so as to extend through the opening 37 in the wall 18 and into a position whereby its end 46 (see Fig. 5) is located along the angle portion 43 of the contact arm 25. Thus when this arm 25 is moved inwardly by the pin 35 this end portion 46 will contact with the portion 43 of the contact arm and provide a good electrical connection between the contact arms 25 and 19.

In Fig. 6 I have illustrated a supplemental bridging element designated generally 47 consisting of a generally U-shaped piece with a restricted portion 48 to fit closely over the end of the wall 18 formed by the opening 37 and provide a leg 49 extending to a position to be engaged by the contact arm 25 or the portion 43 thereof when moved inwardly while the other leg 50 is positioned to be engaged by the contact arm 19 when it is moved inwardly by the contact pin 35 of the gaseous discharge tube. Thus it will be apparent that both contact arms may be free from the bridging element and flexed toward it in the form shown in Fig. 6.

In the form shown in Figs. 5 and 6 the flexing of both of the contact arms is utilized to establish a short-circuiting connection between the arms, while in the forms shown in Figs. 3 and 4 I have utilized merely the movement of one of the contact arms in order to effect this short circuiting result.

By the arrangement heretofore described it will be apparent that when the gaseous discharge tube with the two pins 35 thereof is inserted into the socket the contact arms of the socket will establish a short-circuiting between these arms so that no electrical connection will depend upon passage of energy through the contact pins. Further, it will be apparent that due to the resilient action of the arms when the gaseous discharge tube is withdrawn from the socket, the short circuiting relations no longer exist, as the contact arms return to their position spaced from each other.

I claim:

1. A lamp socket for the reception of a lamp having two contact pins comprising a body of insulating material, a pair of contact arms in said body, said body being provided with slots for the reception of the lamp contact pins therein to contact said arms, one of said arms being resilient and moved by the insertion of the lamp contact pins into said slots, and means engaged by the movement of said resilient contact arm for electrically connecting said arms.

2. A lamp socket for the reception of a lamp having two contact pins comprising a body of insulating material, a pair of contact arms in said body, said body being provided with slots for the reception of the lamp contact pins therein to contact said arms, one of said arms being resilient and moved by the insertion of the lamp contact pins into said slots, and bridging means engaged by the movement of said movable contact arm and in electrical engagement with the other contact arm for electrically connecting said arms upon insertion of the lamp into said socket.

3. A socket for the reception of a lamp having two contact pins comprising a body of insulating material having recesses therein with a separating wall between said recesses and an opening through said wall, contact arms in said recesses, a bridging element extending through said opening and in electrical connection with one of said arms and spaced from the other of said contact arms, the said other of the contact arms being movable, said body having slots therein communicating with said contacts for the reception of the contact pins of a lamp, said movable contact arm being moved by the insertion of the lamp into the socket to cause engagement of the movable contact arm with the bridging element to establish electrical connection between said contact arms.

GUY H. BURT.