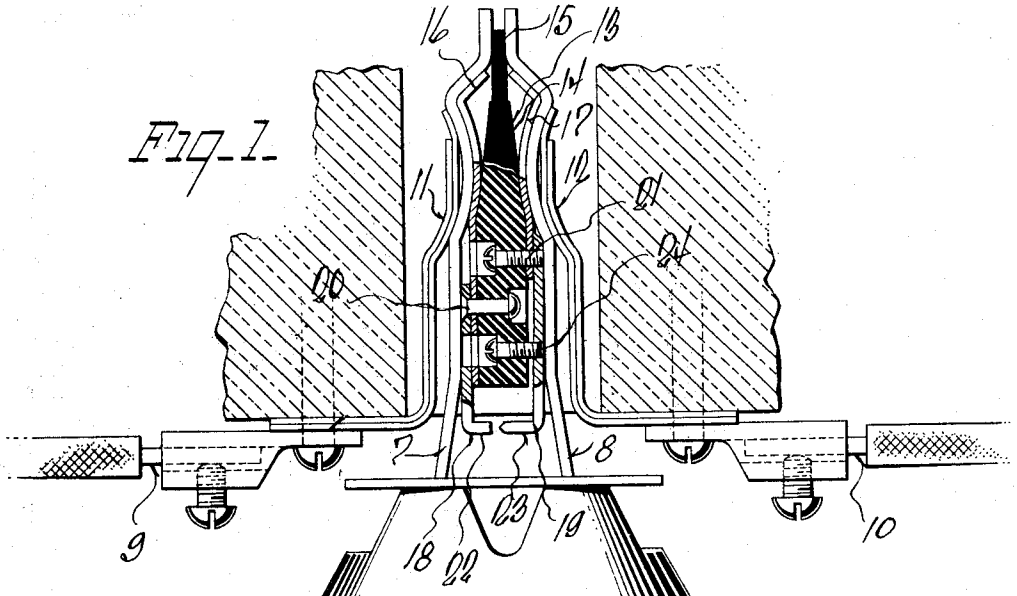
Aug. 23, 1932. A. G. STEINMAYER 1,873,501

LAMP SOCKET

Filed Dec. 28, 1929

Fig. 1.



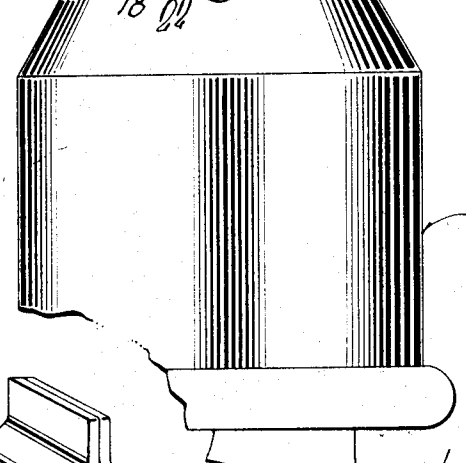
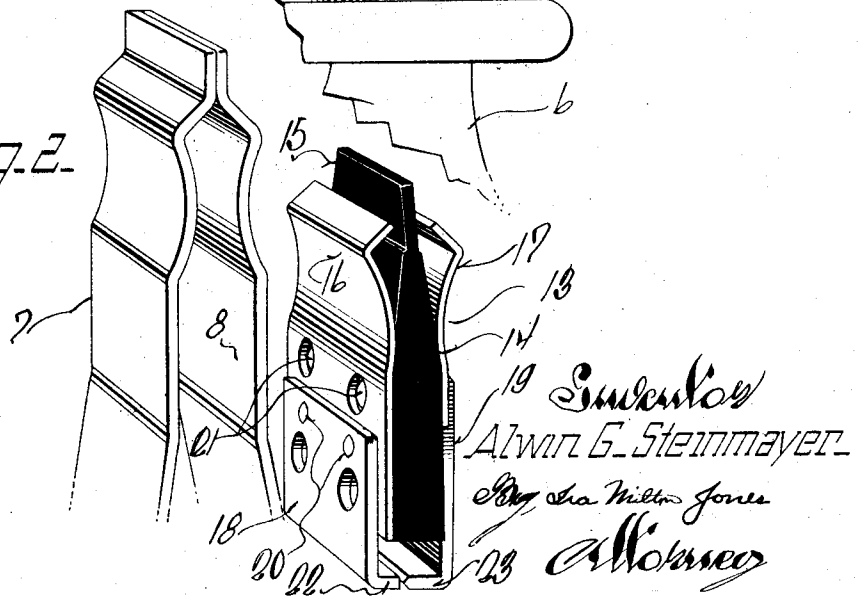


Fig. 2.



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UNITED STATES PATENT OFFICE

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LAMP SOCKET

Application filed December 28, 1929. Serial No. 417,111.

This invention relates to certain new and useful improvements in lamp sockets and refers more particularly to street lighting fixture sockets of the series type.

Sockets of this character usually have upwardly extending adjacent contact arms or bayonets, by which they are connected with their receptacles, to electrically connect their lamps with the line, and heretofore it has been customary to insert a thin film of insulating material between the bayonets to normally maintain them insulated from each other, the film puncturing upon failure of the lamp, to permit the bayonets to be electrically connected and thus maintain the continuity of the circuit.

This method of insuring continuity of a series circuit, while it served its purpose, was objectionable in that different thicknesses and types of film were required for different circuits, and with this and other objections in mind, this invention contemplates as one of its objects the provision of novel means for insuring the continuity of a series circuit upon failure of a lamp which obviates the necessity of an insulating film.

Another object of this invention resides in the provision of a socket of the character described having means for insuring the continuity of the circuit upon failure of its lamp, which is not destroyed in operation and may be used again after being cleaned.

Another object of this invention resides in the provision of a readily removable cut-out unit for insuring continuity of a series circuit upon failure of a lamp whereby the same may be applied to sockets without in any way altering their design or construction by merely substituting it for the usual film.

A further object of this invention resides in the provision of a socket of the character described having means for insuring the continuity of the circuit upon failure of its lamp which means may be readily adjusted to function at different voltages.

And a more specific object resides in the provision of a socket of the character described having a readily removable cut-out unit insertable between its bayonet arms and which is provided with an air gap across which the current jumps upon failure of the lamp, to fuse the metal of the members forming the gap to thus maintain the continuity of the circuit.

With the above and other objects in view which will appear as the description proceeds, my invention resides in the novel construction, combination and arrangement of parts substantially as hereinafter described and more particularly defined by the appended claims, it being understood that such changes in the precise embodiment of the hereindisclosed invention may be made as come within the scope of the claims.

In the accompanying drawing, I have illustrated one complete example of the physical embodiment of my invention constructed according to the best mode I have so far devised for the practical application of the principles thereof, and in which:

Figure 1 is an elevational view of a conventional series type street lighting socket illustrated in its position of mounting within a receptacle and provided with the device of this invention, parts thereof being broken away and in section to illustrate structural details; and

Figure 2 is a fragmentary perspective view of the outer ends of the socket bayonet arms and the cut-out unit which is insertable therebetween.

Referring now more particularly to the accompanying drawing, the numeral 5 represents the body of a series type street lighting socket which is formed of insulating material and is adapted to receive an incandescent lamp 6 a portion of which is illustrated. Inasmuch as the internal construction of the socket is of conventional design and forms no part of this invention it has not been shown in detail and the description will be directed to only those elements entering directly into the combination.

As is customary in sockets of this type, a pair of bayonet arms 7 and 8 extend upwardly therefrom, one of which is connected with the outer terminal or shell of the socket by means, not shown, and the other with the central terminal.

To maintain the continuity of the circuit

whenever the lamp 6 is removed, the socket is so constructed that the outer shell and the center contact are electrically connected by the removal of the lamp and are disconnected by the insertion thereof to permit the lamp to be connected with a line. To effect this connection conductors 9 and 10 leading from the line are connected with terminals 11 and 12 of the socket receptacle, and with which the bayonet arms engage in the customary manner.

The bayonet arms 7 and 8 are formed of resilient spring metal to detachably maintain the socket engaged in its receptacle with its bayonet arms in electrical engagement with the receptacle terminals 11 and 12.

The resilience of the bayonet arms also tends to electrically connect their outer ends, and to maintain the same out of contact it has heretofore been customary to insert a piece of film therebetween. The film was relatively thin and formed of material which punctured at voltages of approximately 300 to 400 volts to which the current builds up upon failure of the lamp. In this manner continuity of the circuit was maintained after failure of the lamp, but the necessity of replacing the punctured film and the fact that different thicknesses and sizes of film were required for different circuits, made this method objectionable.

The present invention eliminates the objectionable insulating film by providing a novel cut-out device, indicated generally by the numeral 13, and which is readily removably insertable between the bayonet arms 7 and 8. The device has a body of insulating material whose upper end 15 is of reduced thickness and whose medial portion tapers outwardly to provide a relatively heavy lower portion.

Secured to the body of insulating material 14 are two spring fingers 16 and 17 the outer ends of which are shaped to conform to the adjacent outer ends of the bayonet arms 7 and 8 to be received therebetween and maintain the unit in its proper position. The finger 16 extends to the bottom of the block of insulating material and the finger 17 terminates at a point spaced from the bottom thereof for a purpose to be later described.

Also carried by the body of insulating material is a pair of L shaped members 18 and 19 mounted directly adjacent and in electrical engagement with the fingers 16 and 17, respectively. The member 18 is shorter than the member 19 and with the finger 16 whose inner portion is disposed between it and the insulating material, is rigidly connected with the insulating material by rivets 20. The other L shaped member 19 and the finger 17 overlap at only their adjacent end portions and are connected with the body of insulating material by screws 21.

The horizontal arms 22 and 23 of the members 18 and 19, respectively, are directed toward each other, but are spaced to provide an air gap, one of the members preferably having its end V shaped to form a knife edge so that accurate adjustment of the gap is facilitated. Adjustment of the gap is afforded by means of screws 24 which pass through counterbored apertures in the insulating body member and are threaded in the lower portion of the member 19 to draw the same inwardly toward the member 18, this movement of the lower end of the member 19 being accommodated by the space provided between the member 19 and the adjacent side of the insulating body beneath the finger 17.

It is noted that the apertures in the insulating body through which the rivets 20 and the screws 21 and 24 pass are counterbored so that the heads thereof are disposed within the insulating material to preclude the possibility of short circuiting the members 18 and 19 and consequently the bayonet arms 7 and 8.

With the gap between the members 18 and 19 properly adjusted the unit is inserted between the bayonet arms, as illustrated in Figure 1, and upon failure of the lamp the current quickly builds up to a point at which it jumps across the gap and slightly fuses the edges thereof to maintain the continuity of the circuit.

When the operator replaces the lamp he removes the unit from the socket and with a thin file cleans out the beads of metal which have bridged the gap and re-adjusts its width if necessary. One end of the file may be provided with a feeler or thickness gauge to assist in adjusting the gap. The unit is then in condition for further operation and may be replaced between the bayonet arms of the socket.

From the foregoing description, taken in connection with the accompanying drawing, it will be readily apparent to those skilled in the art to which an invention of the character described appertains, that I provide novel means for insuring the continuity of circuit in a street series lighting socket which obviates the necessity of the usual film of insulating material and which, by being readily removable and insertable between the bayonet arms of the socket, may be used with sockets without in any way altering their design or construction.

What I claim as my invention is:

1. An electric cut-out unit readily insertable between the bayonet arms of a series type lamp socket to maintain the same electrically connected upon failure of a lamp secured in the socket, comprising a block of insulating material, and a pair of contact members carried by the block of insulating material with adjacent portions extended beyond the block of insulating material and spaced slightly from each other to form an air gap across which current may jump to fuse said portions.

2. An electric cut-out unit readily insertable between the bayonet arms of a series type light socket to normally insulate the same from each other and electrically connect the same upon failure of a lamp secured in the socket, comprising an insulating member conforming substantially to the size and shape of the socket member bayonet arms, contact members carried by the block of insulating material and directly engageable with the bayonet arms, said contact members having portions extended beyond one end of the insulating member and slightly spaced from each other to form an air gap, and means for adjusting the width of said air gap.

3. An electric cut-out unit adapted to be mounted between the bayonet arms of a series type light socket to normally insulate the same from each other and electrically connect the same upon failure of a lamp secured in the socket, comprising a body of insulating material, spring terminal members on opposite sides of the body of insulating material and shaped to conform to the shape of the bayonet arms for snug engagement therewith, and contact members carried by the body of insulating material, said contact members being electrically connected with the spring terminal members and having portions projected beyond one end of the body of insulating material and spaced slightly from each other to form an air gap across which current flowing to the lamp jumps upon failure of the lamp.

4. An electric cut-out unit of the character described comprising a body of insulating material having substantially flat sides, a contact member fixed to one side of the body with a portion extended beyond one end thereof, a second contact member, means for securing one end portion of the second contact member to the body, its other end portion being extended beyond said end of the body and directed toward the first mentioned contact member but spaced therefrom to provide an air gap, means whereby the second contact member is spaced from the adjacent side of the body throughout its major portion to permit the same to be moved toward the first mentioned contact member to adjust the width of the gap, and means connecting the body with said spaced portion of the contact member to draw the same toward the body of insulating material.

5. An electric cut-out unit for use with a series type light socket, comprising a block of insulating material, terminal members carried by the block of insulating material with adjacent ends projected beyond the block of insulating material and spaced from each other to form an air gap, the projected end of one of said terminal members being formed with a knife edge, and means for moving one of the members to adjust the width of the gap.

6. An electrical cut-out unit for use with a series type light socket comprising an insulating member, a terminal member fixed to said insulating member, a second terminal member having one end portion fixed to the insulating member and its other end portion adjacent to but spaced from the insulating member and the first mentioned terminal member to provide an air gap, and means connecting the free end of said second mentioned terminal member with the insulating material and operable to move said free end of the second mentioned terminal member toward the insulating member to adjust the width of the air gap.

7. An electrical cut-out unit for use with a series type light socket comprising an insulating member, a terminal member fixed to said insulating member, a second terminal member fixed to the insulating member at one end with its other free end portion spaced from the insulating member and adjacent to but spaced from the first mentioned terminal member to provide an air gap, and means for moving the free end of said second mentioned terminal member toward the insulating member to adjust the width of the air gap.

8. An electrical cut-out unit for use with a series type light socket comprising an insulating member, contact fingers and terminal members, means securing one contact finger and terminal member rigidly to the insulating member, the other contact finger and terminal member overlapping at their adjacent ends whereby the terminal member is spaced from the insulating member throughout its major portion, means securing the over-lapping ends of the second mentioned contact finger and terminal member to the insulating member, the free end of the second mentioned terminal member being adjacent to but spaced from the first mentioned terminal member to provide an air gap, and means for drawing the free end of the second mentioned terminal member toward the insulating member to adjust the width of the air gap.

In testimony whereof I have hereunto affixed my signature.

ALWIN G. STEINMAYER.