May 14, 1929. H. E. BUTLER 1,713,215

SERIES STREET LIGHTING SOCKET

Filed Dec. 11, 1925

Fig. 1.

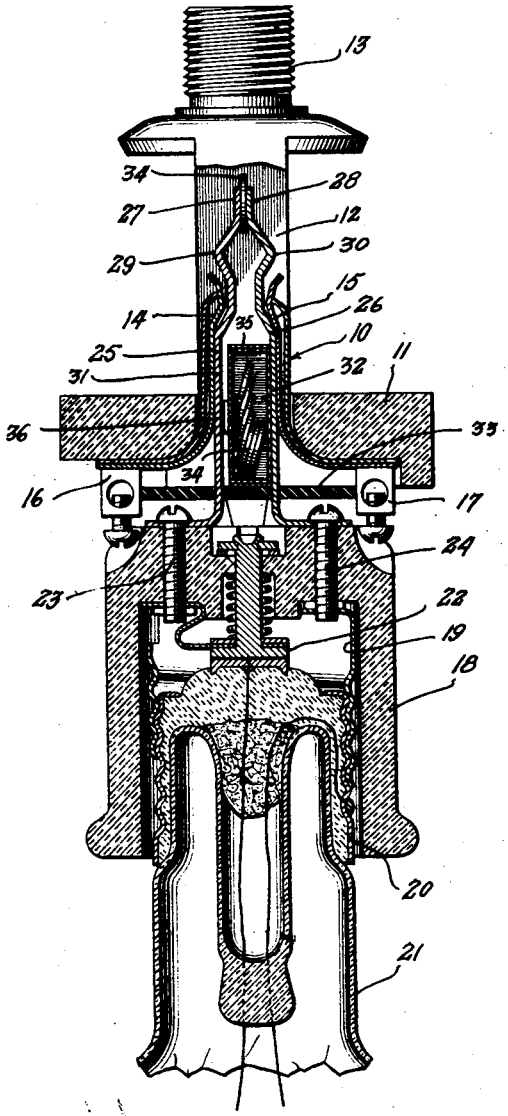
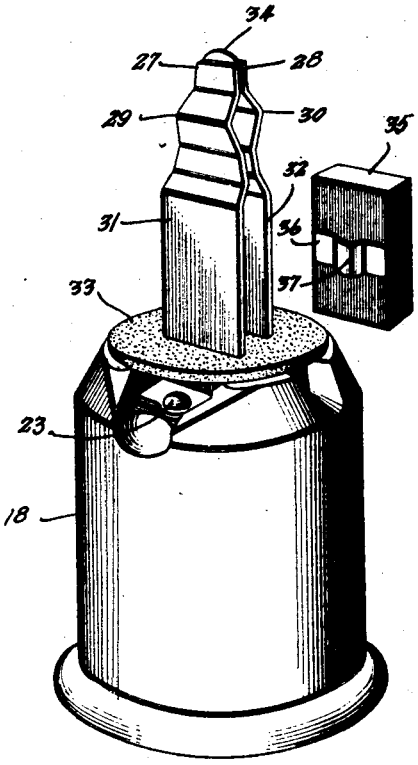


Fig. 2.



Inventor:
Henry E. Butler,
by Alexander S. Lent
His Attorney.

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UNITED STATES PATENT OFFICE.

HENRY E. BUTLER, OF SCOTIA, NEW YORK, ASSIGNOR TO GENERAL ELECTRIC COMPANY, A CORPORATION OF NEW YORK.

SERIES STREET-LIGHTING SOCKET.

Application filed December 11, 1925. Serial No. 74,830.

The present invention relates to series street-lighting sockets, and especially to sockets of the type which comprise a film cut-out.

The object of my invention is to provide an improved arrangement whereby there is provided in connection with series street-lighting sockets, a supply of film cut-outs so that when a film cut-out is punctured, due to the burning of a lamp, a supply of film cut-outs will be present for renewal purposes.

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 street-lighting socket embodying my invention, and Fig. 2 is a detail perspective view thereof.

Referring to the drawing, 10 indicates a receptacle having a base 11 and a bracket 12 provided with a threaded end 13 adapted to be connected to a lamp post bracket. Carried by base 11 are two opposed spring contacts 14 and 15 to which are connected binding posts 16 and 17 which receive the series line terminals. 18 indicates a lamp socket having a threaded shell 19 adapted to receive the threaded end 20 of an incandescent lamp 21. Shell 19 forms one terminal connection for the lamp, the other being formed by a central contact 22. Contact 22 and shell 19 are connected by screws 23 and 24 to terminal spring contacts 25 and 26 which are adapted to be inserted between spring contacts 14 and 15 to form the circuit connections for connecting the lamp into the series circuit, and also to form a supporting means for the lamp socket. Spring contacts 25 and 26 have parallel outer ends as is indicated at 27 and 28, below which are bowed-out portions 29 and 30. Below bowed-out portions 29 and 30 the contacts have long, straight, substantially parallel portions 31 and 32. 33 is an insulating plate which surrounds contacts 25 and 26 at their lower ends. Located between ends 27 and 28 is a film cut-out 34 of suitable construction. As is well known, it may comprise a small disk embodying an insulating film of a nature such that when the voltage impressed upon it exceeds a predetermined amount, it will break down, connecting together terminals 27 and 28.

The foregoing arrangement may be taken as typical of any suitable series circuit arrangement embodying a film cut-out. The specific arrangement shown is a known one and one in extensive use at the present time. It operates as follows:—

With a film cut-out 34 between contact ends 27 and 28 and a lamp in the socket, current enters by way of binding post 16, flows through spring contacts 14 and 25 and socket 23 to central contact 22; thence through the lamp filament to shell 19 and by way of socket 24 and spring contacts 26 and 15 to terminals 17. As long as the lamp is in circuit the potential across spring contact ends 27 and 28 is not sufficient to rupture the film 34 and hence the ends remain insulated from each other. In case the lamp burns out or is removed, the series circuit is interrupted. This builds up a potential across contact ends 27 and 28 sufficiently high to rupture the film and effect a connection between such ends. A circuit is thereby closed around the burned-out lamp as is obvious and the operation of the remaining lamps in the series circuit is not interfered with. In ordinary street-lighting practice, lamps are used until they burn out, which means, of course, that the insulating films are ruptured. The attendant, when he finds a lamp burned out, must, therefore, not only put in a new one but renew the film also. When films of the disk type, such as the film 34 shown in the drawing, are used, it is customary for the attendant to carry a supply of these films in his pocket. In renewing a lamp, the lamp receptacle is removed, the punctured film 34 pulled from between contact ends 27 and 28 and a new one put in its place. These disk films are comparatively delicate in structure and must be handled carefully and kept clean if they are to perform their intended function. In carrying the disk films in the pocket, they often become dirty and also at times they become soiled from the attendant's hands. This means that they do not then perform their function as they should. Also, it happens sometimes that an attendant will not have films with him when fixing a lamp and in this case, he may insert some other kind of insulating material between the contact ends, a thing which is, of course, objectionable.

According to my present invention, I provide in connection with the contact terminals 31 and 32 a suitable receptacle 35 which is in the form of a box and which may be formed of any suitable material. Preferably, a waterproof material is used. Receptacle 35 is of

a size to hold a number of disk films 34 or other suitable devices intended for use between contact ends 27 and 28. In the present instance receptacle 35 comprises two members which telescope one within the other, this being an ordinary type of box. Receptacle 35 is of a width somewhat less than the distance between parallel portions 31 and 32 of contacts 25 and 26 so that it will slip between them readily, and in order to ensure a tight fit for the receptacle, I provide it with a yielding member 36 which is suitably attached to one side of the receptacle. In the present instance this is shown as being fastened to the bottom of the receptacle. It may be formed of metal, for example, and may be provided with a bowed-out portion 37 which forms a part which engages the spring contact. The distance between the parallel portions of the spring contacts in series receptacles varies somewhat and the width of receptacle 35 plus spring 36 is such that the receptacle will be held firmly in position in the case of the most widely separated spring contacts, and such that spring 36 will give sufficiently to permit of the receptacle being inserted between the most closely spaced spring terminals. In this connection, it will be understood that this variation in spacing is due to commercial manufacture and at the most is not very much. As a result, the spring member 36 readily takes care of the variations met with.

With the above described arrangement, a number of the film members 34 are placed in the receptacle 35 and the receptacle is then slid between the parallel portions 31 and 32 of the contact terminals 25 and 26, the dimensions of the receptacle being such, preferably, that it lies entirely within the confines of such parallel portions. With this arrangement, therefore, there is present at the series socket a supply of the film cut-outs and as a result the attendant need not carry them in his pocket. When renewing the lamp, it is necessary only to slide the receptacle 35 from between the parallel portions 31 and 32, remove a film cut-out therefrom and again replace the receptacle. The attendant may carry along with him a package of the receptacles 35 with film cut-outs therein and in case in renewing a lamp, he finds all the film cut-outs in one of the receptacles empty, then he can remove the empty receptacle 35 and substitute a full one for it. By this means, it will be seen that the film cut-outs carried by the attendant are always protected by the receptacle.

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

1. The combination with a series street-lighting socket comprising spring contacts between the ends of which a film cut-out is held, of a receptacle adapted to hold a plurality of extra film cut-outs, and yielding means carried by the receptacle for fastening it between the spring contacts below their outer ends.

2. The combination with a series street lighting socket comprising spring contacts between the ends of which a film cut-out is held, said contacts having spaced, parallel portions, of a receptacle adapted to hold a plurality of extra film cut-outs, said receptacle being of a size to fit between said parallel portions and being at least in part yieldable to adapt it to variations in distances between said parallel portions.

3. The combination with a series street-lighting socket comprising spring contacts between the ends of which a film cut-out is held, said contacts having spaced parallel portions, of a receptacle adapted to hold a plurality of extra film cut-outs, said receptacle being of a size to fit between said parallel portions, and yielding means carried by the receptacle for fastening it between said parallel portions.

4. The combination with a series street-lighting socket comprising spring contacts between the ends of which a film cut-out is held, said contacts having parallel portions, of a receptacle adapted to hold a plurality of extra film cut-outs, said receptacle being of a size to fit between said parallel portions, and a yielding spring member attached to a wall of the receptacle and adapted to engage one of said parallel portions to hold the receptacle in position between said parallel portions.

In witness whereof I have hereunto set my hand this 10th day of December, 1925.

HENRY E. BUTLER.