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C. M. COLE

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FILM SOCKET FILLER

Filed Jan. 13, 1932

Fig. 1.

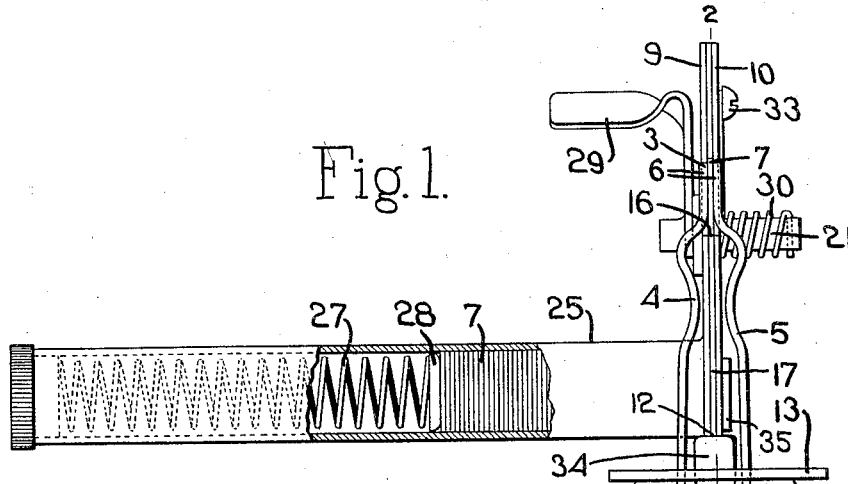


Fig. 2.

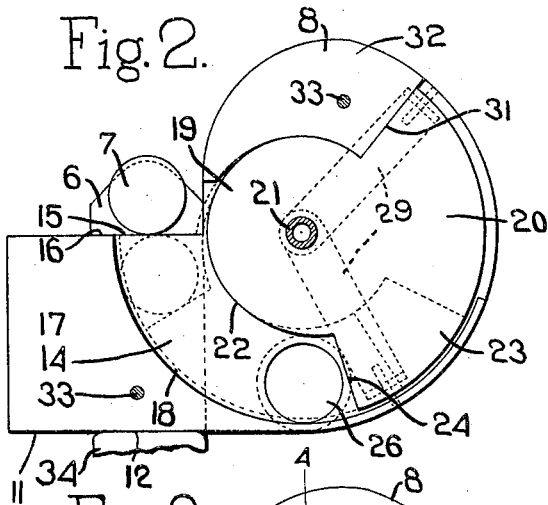


Fig. 3.

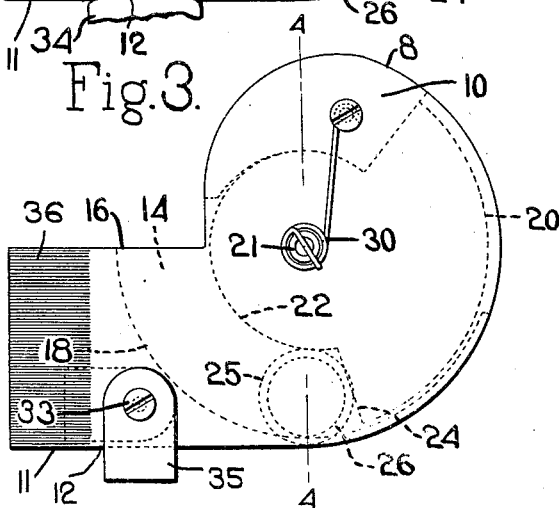
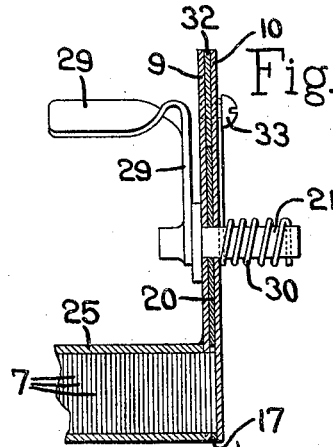


Fig. 4.



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FILM SOCKET FILLER

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This invention relates to a device for inserting insulating films between the contacts of a socket receptacle such as is used in electric lighting fixtures employing series receptacle heads.

One type of electric lighting fixture using incandescent lamps which is now commonly used in connection with a lighting system where the lamps are in series comprises a socket receptacle into which the electric bulb is screwed and which is arranged to be inserted or removed from the receptacle head by a straight line movement. For this purpose the socket receptacle is provided with a bayonet contact element comprising two contact blades which are spaced from each other throughout the major portion of their length but the ends of which are constructed to have engagement with each other. When the socket receptacle is in place in the receptacle head these contact blades have contact with contact elements of the head.

Normally the blades are separated or insulated from each other by means of a so-called film of insulating material which is introduced between the ends thereof and when they are so separated the current will pass through the bulb thus lighting the latter. This insulating film is so constructed that if the bulb burns out the increased current developed at such time will break down the film of insulating material thus allowing the two contact members to close together which will result in establishing a shunt circuit around the burnt out bulb thereby keeping the series circuit unbroken notwithstanding one of the bulbs has burnt out or become inoperative.

The present invention has for its object to provide a simple implement by which the so-called "films" of insulating material can be easily and quickly inserted between the contact blades of the bayonet member.

The novel features of the invention will be fully hereinafter described and then pointed out in the appended claims.

In the drawing:

Fig. 1 is a side view of a device embodying my invention and illustrating it in use;

Fig. 2 is a section on the line 2—2, Fig. 1;

Fig. 3 is an end view looking toward the left Fig. 1;

Fig. 4 is a section on the line 4—4, Fig. 3;

In the drawing 1 indicates a socket receptacle such as is used in electric lighting fixtures above referred to. This socket receptacle comprises a body member 2 into which the lamp base is screwed and it is also provided with the bayonet member 3 which is formed by two contact blades 4 and 5 that are suitably secured to the body 1 and connected to the wiring connections thereof. These contact blades 4 and 5 are spaced from each other throughout the greater portion of their length but at the ends 6 they are shaped to have engagement with each other and when they do thus have engagement with each other they form a shunt circuit around the lamp terminals of the socket receptacle as will be understood by those familiar with electric light fixtures of this type.

When a socket receptacle of this type is in use the ends 6 of the contact blades 4 and 5 are normally separated by some suitable insulating medium, such for instance as the member 7, which is commonly referred to as an insulating film. This insulating film has sufficient insulating properties to maintain the contacts 4 and 5 insulated from each other while the normal current is flowing through the lighting circuit; but if an abnormal current is developed such as might result from burning out of a lamp the insulation 7 will break down thus allowing the ends 6 of the blades to contact with each other. This will establish a shunt circuit around the lamp terminals of the socket receptacle thereby providing for maintaining the circuit unbroken even though the lamp carried by the socket receptacle may be burnt out.

One type of insulating film which is used between the contacts 4 and 5 is in the form of a thin disk such as indicated at 7 and as will be understood it is necessary to introduce such a disk or insulating film between the contact blades 4 and 5 before the socket receptacle 6 is inserted into the receptacle head.

The device herein shown is designed to facilitate the insertion of these insulating

films into position between the ends 6 of the contact blades. Said device comprises a body member adapted to be introduced into the space between the separated portions of the blades 4 and 5, which body member has a film-delivery passage that terminates adjacent the ends 6, means for feeding films separately into said passage, and means to eject the film from the passage and force it between the ends 6 of the blades.

The body portion of the device is indicated generally at 8 and it is illustrated as formed of two side plates 9 and 10 which are secured together in such a way as to form a film-delivery passage between them. These plates 9 and 10 are made with the extension 11 which is of a size to be placed between the separated portions of the blades.

The two plates 9 and 10 provide between them a film-delivery passage 14 through which the individual films are delivered and which has an exit opening 15 in the upper face 16 of the extension 11. This passage is defined on two opposite sides by the plates 9 and 10, and on one edge by a filler plate 17 which is received between the plates 9 and 10 and is provided with the curved edge 18 which forms one edge of the passage 14, and on the other edge by the circular hub portion 19 of a film ejector member 20 that is received between the plates 9 and 10. This film ejector member 20 is carried by a shaft 21 that is journaled in the side plates 9 and 10 and the hub portion 19 has the curved edge 22 which forms the opposite edge of the passage 14 from that formed by the curved edge 18. This film ejector member 20 is constructed with the wing portion 23 having the radial edge 24 that is adapted to engage a film 7 in the passage 14 and force the latter out through the open end 15 of the passage 14 as the ejector member 20 is turned about its axis in a clockwise direction Fig. 2 from the full to the dotted line position.

Means are provided for supplying films individually to the passage 14 and for this purpose there is provided a magazine 25 having a cross-sectional shape of a size to receive the films 7. This magazine is secured to the side plate 9 and the latter has an opening 26 therethrough through which the films are moved into the passage 14. The stack of films in the magazine is urged toward the opening 26 by means of a spring 27 which is confined in the magazine and which acts against a follower 28 that bears against the stack of films.

Suitable means is provided for actuating the ejector 20. This comprises a handle or thumb piece 29 which is rigid with the shaft 21 and by which the latter may be turned. The shaft 21 is acted on by a spring 30 which tends normally to hold the ejector in the position shown in Fig. 2 and in this position the face 24 is just withdrawn from or beyond the

opening 26 and the end face 31 of the wing 23 rests against the end of a filler member 32 which is situated between the plates 9 and 10.

In using the device the operator holds it by the magazine 25 which constitutes a handle 70 for this purpose and introduces the extension 11 of the head into the space between the blades 4 and 5, and if the socket receptacle is of the type which is formed with the extension 34 which projects through the insulating disk 13 then the device will be placed between the blades 4 and 5 with the lower edge 12 of the extension 11 resting on the socket receptacle extension 34 as illustrated in the drawing. This brings the open end 15 of the passage 14 directly underneath and in close proximity to the meeting faces of the ends 6 of the blades 4 and 5. Assuming that the magazine contains a stack of films it will be understood that the action of the spring 27 will have forced the end film through the opening 26 into the passage 14 and such end film will thus stand directly in front of the edge 24 of the ejector member. The operator then presses on the handle or thumb piece 29 with his thumb which operates to swing said handle 29 from the upper to the lower dotted line position Fig. 2 and this will carry the ejector 20 from the full around through the dotted line position into a position in which the edge 24 of the ejector comes substantially flush with the edge 16 of the extension 11. During this movement of the ejector 20 from the full to the dotted line position the end film will be forced through the passage 14 and as the film is ejected from the end 15 of the passage it will be forced between the ends 6 of the blades 4 and 5 as illustrated in Fig. 1. The operator then releases the pressure on the thumb piece 29 and the spring 30 will return the ejector to the full line position Fig. 2. As soon as this occurs the spring 17 will force another film through the opening 26 into the passage 4, it being understood that during the operation of the ejector and until it has returned to its initial position the wing portion 23 thereof closes the opening 26.

The operation of inserting the film between the ends 6 of the blades, therefore, involves simply the act of placing the extension 11 between the blades 4 and 5 and pressing on the thumb piece 29.

There are some types of socket receptacles which are made without the extension 34 that projects through the insulating disk 13 and in order that the device may be used with this type of receptacle I have provided it with a leg member 35 which is shown as pivotally mounted upon one of the screws 33 by which the two side plates 9 and 10 are connected. When the device is being used with a socket receptacle having the extension 34 then the leg 35 will be thrown into the dotted line position shown in the drawing where it will be

out of the way. If, however, the device is being used with a socket receptacle which has no extension then the leg 35 will be swung down into its full line position Fig. 3 and will thus rest against the insulating disk 13 or the top of the receptacle and will function to position the discharge end 15 of the passage 14 in close adjacency to the portions 6 of the blades 4 and 5.

In the use of these socket receptacles it is desirable that the contacting faces of the ends 6 of the contact blades should have good contact surfaces. When the film is fused or burnt it sometimes happens that a deposit will be left between the contacting faces which it is desirable to remove or sometimes these faces become corroded slightly. In order to clean the faces and provide clean contacting surfaces the side faces of the extremity of the extension 11 may be roughened or constructed to have abrasive qualities as indicated at 36. With this construction the cleaning of the contact surfaces of the ends 6 of the blades can be accomplished by passing the portion of the extension 11 which has the abrasive surfaces between the contacts one or more times.

After these surfaces are properly cleaned then the device may be inserted in operative position between the blades 4 and 5 and manipulated to place the filler in position as above described.

I claim:

1. A device for inserting insulating films between the bayonet blades of a socket receptacle, said device having a body adapted to be placed between the separated portions of said blades and provided with a delivery passage having its discharge end adjacent the portions of the blades between which the film is to be inserted, means for supplying insulating films to said passage, and means to eject each film separately from the passage and introduce it between the blades.

2. A device of the class described comprising a body member having an extension adapted to be inserted between the separated portions of bayonet blades, said body member having a delivery passage with its discharge end at said extension, means for supplying insulating films individually to said passage, and means to eject each film from the passage and force it between the bayonet blades.

3. A device of the class described comprising a body member having an extension adapted to be inserted between the separated portions of bayonet blades and provided with an edge portion to rest against the socket receptacle, said body having a delivery passage, the discharge end of which is situated adjacent the portions of the blades between which a film is to be inserted when said body member is resting against the socket receptacle, means to supply insulating films to said passage and an ejector for ejecting each film

from the passage and force it between the bayonet blades.

4. A device of the class described comprising a body member formed of two side plates spaced from each other and forming between them a delivery passage having a discharge opening situated adjacent the portions of blades between which a film is to be inserted when the body member is placed in position between the separated portions of said blades, a film magazine from which insulating films are supplied to said passage, and an ejector operating between said plates to deliver each film from the passage and into position between the bayonet blades.

5. A device of the class described comprising a body member having two side plates spaced from each other, an ejector member situated between said plates and mounted for rotative movement, said ejector member forming with the side plates a delivery passage having a discharge opening which is situated adjacent the portions of bayonet blades between which a film is to be inserted when the body member is in operative position with relation to said blades, means to supply films to said passage, and means for actuating the ejector to force insulating films from the passage into position between the blades.

6. A device of the class described comprising a body member having an extension adapted to be inserted between the separated portions of bayonet blades, said body member having a delivery passage with its discharge end at said extension, means for supplying insulating films individually to said passage, and means to eject each film from the passage and force it between the bayonet blades, the side faces of said extension having abrasive qualities, whereby the contacting faces of the bayonet blades may be cleaned by passing the extension between them.

In testimony whereof, I have signed my name to this specification.

CHARLES M. COLE.

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