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C. COLE

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ELECTRIC LIGHT FIXTURE

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Fig. 1.

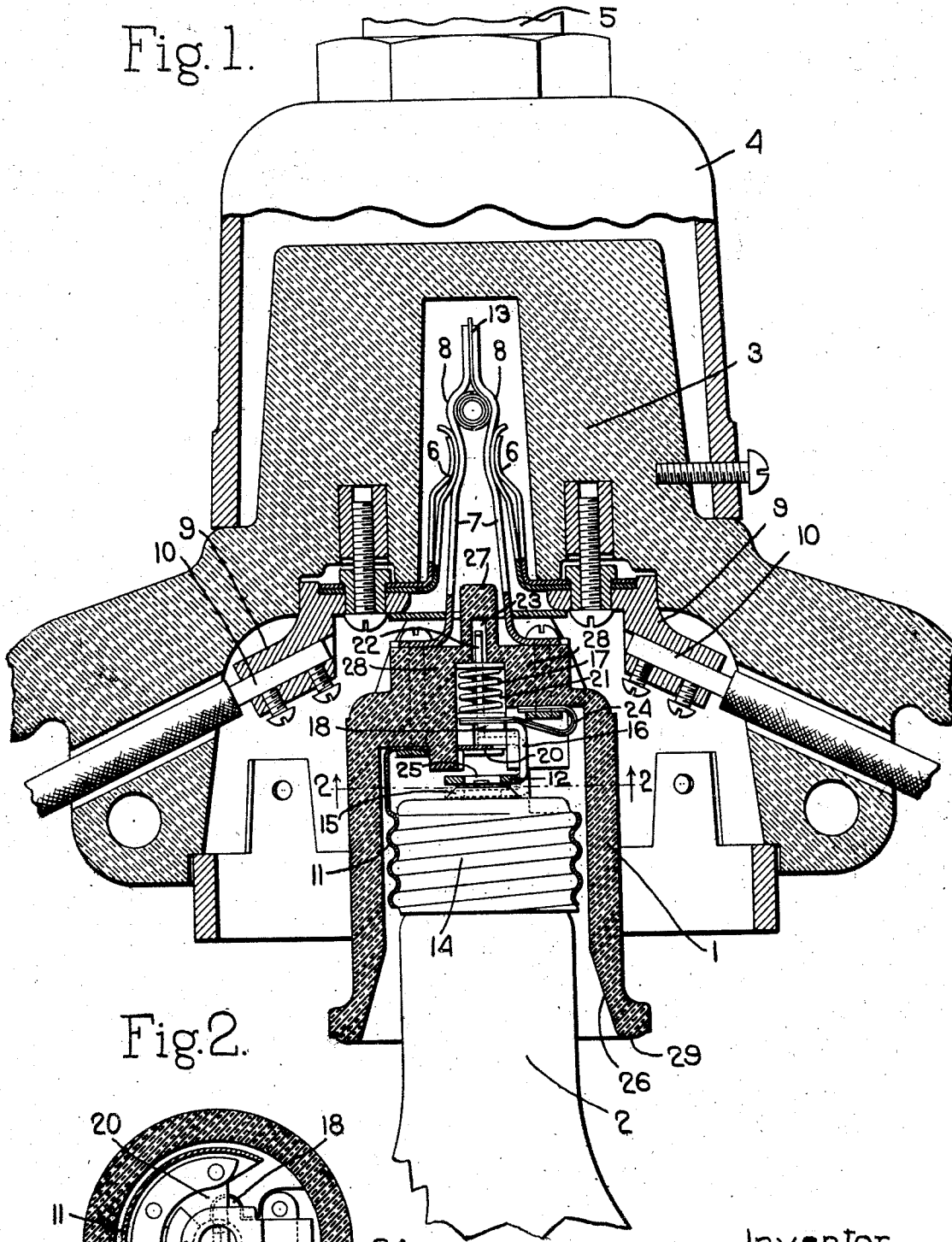
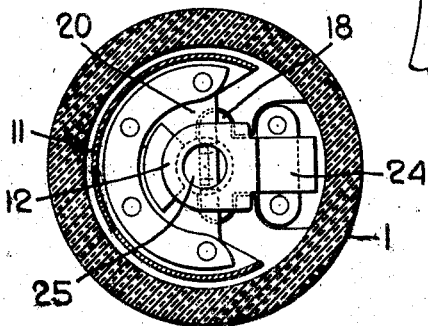


Fig. 2.



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# UNITED STATES PATENT OFFICE

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## ELECTRIC LIGHT FIXTURE

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2 Claims. (Cl. 173-358)

This invention relates to electric light fixtures and has for its object to provide an improved electric light fixture which has the various novel features that will be more fully hereinafter set forth and then pointed out in the appended claims.

In the drawing wherein I have illustrated a selected embodiment of my invention, Fig. 1 is a vertical sectional view through an electric light fixture embodying my invention;

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

The electric light fixture herein shown is of the type which is more or less commonly used for street lighting purposes and it comprises a socket member 1 adapted to receive the electric light bulb 2, a porcelain body member 3 to which the socket member is detachably secured and which carries the wiring terminals and a metal canopy 4 that encloses the upper end of the porcelain body 3 and from which the latter is supported, said metal canopy 4 being carried at the end of a supporting pipe 5.

The detachable connection between the socket member 1 and the porcelain body 3 is of that familiar type which permits the socket member to be replaced from or connected to the porcelain body 3 by a push and pull movement in the axial line of the socket member. The porcelain body 3 is provided with two spring contact members 6 adapted to receive between them two arms or bayonet members 7 that are secured to the socket member 1.

The socket member is retained in its operative position by the frictional engagement of the contact members 6 with the arms 7. These arms are shown as bulged outwardly slightly at 8 so that when the arms 7 have been inserted between the contact members 6 sufficiently to carry the bulged portions 8 beyond said members the resiliency of the arms 6 will provide sufficient frictional engagement with the bayonet members to hold the socket member in place.

The two contact members 6 are electrically connected with the wiring terminals 9 to which the circuit wires 10 are secured. The two arms 7 are connected to the two lamp terminals of the socket, to wit, the screw shell terminal 11 and the center terminal 12. The upper ends of said arms 7 are normally insulated from each other by means of insulating material 13 which is confined between the arms. When the lamp bulb 2 is in place its screw terminal 14 and center terminal 15 engage the screw shell terminal 11 and center terminal 12 of the socket as usual.

Electric light fixtures of this type are common-

ly used for street-lighting where a plurality of lights are connected in series and each socket member is constructed so that when any lamp 2 is removed the circuit will be automatically closed through the socket so as not to interfere with the operations of the other lights of the series.

The center contact 12 of the socket has an angular-shaped stem or extension 16 which is acted on by a spring 17 that normally tends to move said contact outwardly thereby to seat the portion 18 of the extension against the flange portion 20 of the screw shell 11.

The spring 17 is retained in position by being confined in a spring-receiving recess 21 formed in the socket member and the stem 16 is formed with the projection 22 which extends through the spring and into a guiding recess 23 formed in the socket. The stem 16 is electrically connected to one of the arms 7 through the medium of a flexible conductor strip 24.

When the lamp 2 is properly placed in the socket its center terminal 15 engages the center socket terminal 12 and when the lamp is screwed firmly into the socket the center socket terminal 12 will be forced backwardly against the action of the spring 17 into the position shown in Fig. 1. In this position the portion 18 of the stem is separated from the flange 20 of the screw shell terminal and the circuit through the lamp is through the wire terminals 9, contacts 6, arms 7 and terminals 11 and 12 of the socket and 14 and 15 of the lamp. When, however, a lamp 2 is removed the expanding action of the spring 17 seats the portion 18 of the stem 16 against the flange 20 of the screw shell 11 thereby closing the circuit so that there will be no interruption of current to the other lights of the series.

The parts thus far described are such as are more or less common in street-lighting lamp fixtures and form no part of my present invention.

One feature of the invention relates to a novel construction which is intended to obviate any danger that the center contacts of the lamp and the socket will become welded together when any lamp blows out. In this type of street lighting the main line generally carries a voltage equal to the combined voltage of all the lamps of the series which are connected in series. If any one of these lamps should burn out, as sometimes happens, there is momentarily set up a heavy load on the particular socket containing the burnt-out lamp just before the film cut out or fuse blows out and allows the circuit to close and thus continue its normal operation. During this brief period of heavy load there is apt to be an

arcing between the center contact 15 of the lamp base and the center contact 12 of the socket which produces a sufficiently high temperature to weld together these two center contacts.

In order to avoid this I propose to make the center contact 12 of the socket 7 with a central aperture 25 which is shown as of a size nearly equal to the center terminal 15 of the lamp. This center terminal 12 of the socket is made of sufficiently heavy gauge metal so that it will have the requisite strength notwithstanding the provision of the central aperture 25.

With this construction there will be an annular contact between the two center terminals 15 and 12 and because of this construction some of the heavy current which is generated at the time any lamp of the series blows out will jump to other metal parts of the socket instead of piling up at one point at the center terminal as it tends to do when both center contacts are solid. This dissipation of the current reduces the temperature resulting from arcing to such an extent that no welding of the lamp and socket occurs.

Another feature of the construction relates to the shape of the socket shell 1. This shell is made of insulating material as usual and the walls 7 thereof are made thinner near the lower or open end. This is produced by making the interior of the socket with the outwardly-flared mouth 26. By having the wall of the socket shell thinner adjacent the lower open edge 29 the danger that any crack which may develop at the lower edge of the socket due to the socket having received a blow or to dropping of the socket will run up to the upper part of the socket shell where the terminals are connected is reduced. With the construction herein shown when any such crack starts it will tend to revert to the thinner part of the wall thus resulting in a U or V shaped piece along the edge breaking off. If any such crack which is accidentally made in the socket shell 1 should extend to the upper part where the terminals are connected it might render the socket useless.

Another feature of the invention relates to the shape and construction of the socket shell at its upper end by which added strength is given to said shell. Socket shells as heretofore made have usually been provided with an opening in the end through which the stem 22 extends and the end wall of the shell member has been relatively thin.

The socket member herein shown is formed with the extension 27 in which the recess 23 for the stem 22 is formed. Said extension acts as a reinforcement to tie together the two sides of the shell end to which the arms 7 are secured and thus strengthens the shell and prevents cracks passing through at this point. Furthermore, the shell is made with the relatively thick portion 28 at each end where the arms 7 are secured thereby furnishing added strength.

The screw shell 1 is also made of extra length so that the open end 29 extends some distance below any parts which carry current. An ad-

vantage of this construction is that it provides a socket which can be readily connected to the porcelain body 3 or disconnected therefrom without danger of contacting with any parts carrying current.

In the operation of removing these socket members a lineman frequently uses a puller or a pair of pliers especially made for this purpose. By having a relatively long socket member 1 these pliers can be manipulated to withdraw the socket from the porcelain body 3 or insert the socket into the body without danger that the pliers will come into contact with any "live" parts, such as the wire terminals 10.

I claim.

1. An electric light fixture comprising a cup-shaped socket member of insulating material having a terminal-receiving chamber completely closed at one end and also having a spring-receiving chamber of smaller dimensions than said terminal-receiving chamber and situated in the closed end of the socket member and communicating with the terminal-receiving chamber, a screw shell terminal in the terminal-receiving chamber adapted to engage the screw terminal of a lamp base, an annular movable center terminal also situated in said terminal-receiving chamber and adapted to engage the center terminal of a lamp base, said center terminal having a portion overlying a portion of the shell terminal, a spring in said spring-receiving chamber forming a resilient backing for the movable center terminal, said socket being of generous thickness at its closed end to provide added strength and the walls of the socket member at the open end being thinner at the open end than in the body thereof, whereby any crack which may develop in the edge of said member at the open end will tend to revert to said edge.

2. An electric light fixture comprising a cup-shaped socket member of insulating material having a terminal-receiving chamber completely closed at one end and also having a spring-receiving chamber of smaller dimensions than said terminal-receiving chamber and situated in the closed end of the socket member and communicating with the terminal-receiving chamber, a screw shell terminal in the terminal-receiving chamber, said terminal having a screw-threaded portion to engage the screw terminal of a lamp base and also having a contact portion, an annular movable center terminal situated in said terminal-receiving chamber and adapted to engage the center terminal of a lamp base, said annular center terminal having a stem rising therefrom and provided with a laterally-extending contact portion overlying the contact portion of the screw shell terminal, a spring in the spring-receiving chamber forming a resilient backing for the movable center terminal, the contact portion of the shell terminal being normally held separated against the action of said spring by a lamp base which is screwed into the screw shell terminal.

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