No. 819,702. PATENTED MAY 1, 1906.

J. MURPHY.

LOCKING SOCKET FOR ELECTRIC LIGHTS.

APPLICATION FILED JUNE 11, 1904.

Fig. 1.

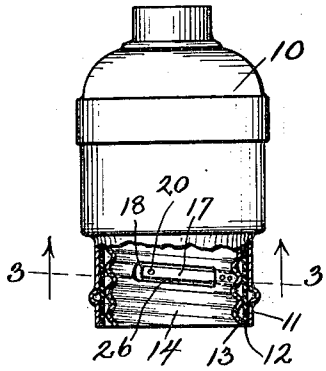


Fig. 3.

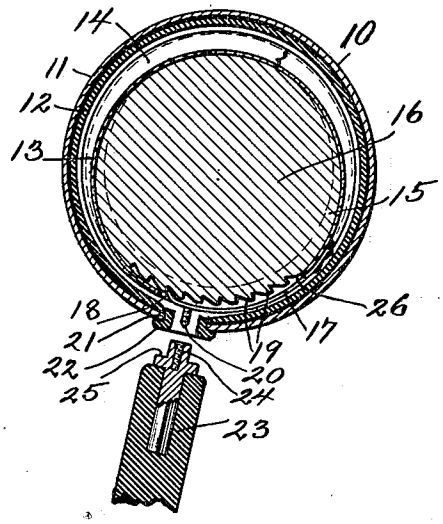


Fig. 2.

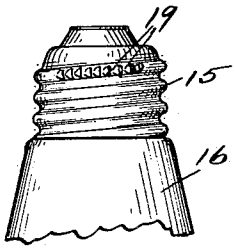


Fig. 4.

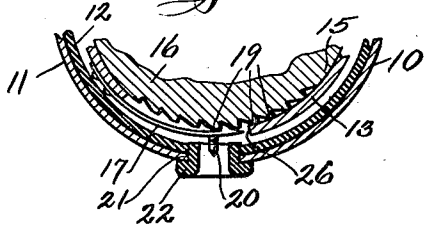


Fig. 5.

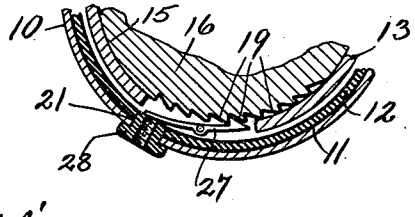
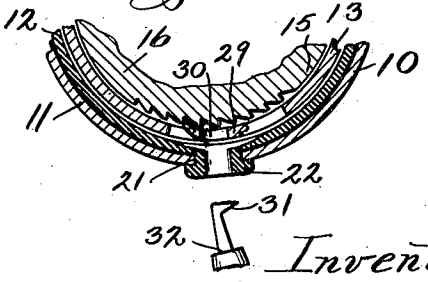


Fig. 6.



Witnesses:

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UNITED STATES PATENT OFFICE.

JEREMIAH MURPHY, OF CHICAGO, ILLINOIS.

LOCKING-SOCKET FOR ELECTRIC LIGHTS.

No. 819,702. Specification of Letters Patent. Patented May 1, 1906.

Application filed June 11, 1904. Serial No. 212,213.

To all whom it may concern:

Be it known that I, JEREMIAH MURPHY, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a new and useful Locking-Socket for Electric Lights, of which the following is a specification.

My invention relates to locking-sockets in which a female thread is provided to receive a male thread provided on the lamp; and the objects of my improvements are, first, to provide a spring-lock on the socket whereby the lamp will be automatically locked when placed in position in the socket; second, to facilitate the easy unlocking of said lock from the exterior by the use of a proper key; third, to provide a simple, durable, and cheap construction, and other objects which will become apparent from the description to follow.

It is a source of considerable annoyance with the present ordinary construction of incandescent-electric-light sockets because the lamps frequently become loose and break the electrical contact and sometimes become disconnected from the socket entirely. This is especially true of lamps located where they are subjected to a continual jar, as on a railroad-coach. Another point worthy of mention here is the fact that a great many lamps are prevented from being taken by some mischievous person when locked into position as provided by this invention.

While I have shown and will describe my invention in connection with a regular Edison socket, it will be understood that it is capable of being used in connection with any kind of a socket with possibly slight modifications necessary.

My invention consists of securing a spring or a spring-pressed catch to the inner lining of the screw-threaded portion of the socket, which is arranged to engage teeth provided on the exterior of the screw-threaded portion of the lamp. The spring or catch normally is held in engagement with said teeth, and some convenient means is provided whereby said spring or catch can be disengaged from said teeth with the use of a specially-designed key.

I have illustrated my invention in the accompanying sheet of drawings, in which—

Figure 1 is an elevation, partly in section, of a lamp-socket embodying my invention. Fig. 2 is an elevation of the screw-threaded end of a lamp. Fig. 3 is a section on 3----3 of Fig. 1. Fig. 4 is a similar view showing a modified form of my invention. Fig. 5 is a similar view showing another modification, and Fig. 6 is a similar view showing still another modification.

Similar reference characters refer to similar parts throughout the several views.

The socket 10 is made in the usual way, having the outer shell 11, the layer of insulation 12, and the inner metal lining 13, which is provided with the customary screw-thread 14, as clearly shown in Fig. 1. The screw-thread 14 is made to receive the screw-thread 15 on the lamp 16, and when the two threads are brought into proper coöperation the desired electrical contact is made between the two. A spring-catch 17 is riveted or otherwise secured to the inner shell 13, so as to have its functional end 18 normally in the same path with the thread 15, which is provided with ratchet-teeth 19, to be engaged by the end 18 of the catch 17.

The threads 14 and 15, the catch 17, the teeth 19, and the electrical contacts of the socket and lamp are so arranged in relation to each other that when the thread 15 is screwed into the thread 14 sufficiently to bring the electrical contacts on the socket and lamp together the end 18 will engage some one of the teeth 19. The catch 17 and the teeth 19 are so arranged that the end 18 will snap over the teeth 19 when the lamp 16 is screwed into the socket 10 and will catch back of one of the teeth 19 when an attempt is made to unscrew the lamp from the socket and prevent its removal.

To remove the lamp 16 from the socket 10 after having been inserted, it is necessary to move the end 18 out of the path of teeth 19, and to accomplish this a small screw-threaded pin 20 is provided on the catch 17, extending through a perforation 21 in the insulation 12 and shell 11. The perforation 21 is preferably lined with insulation 22. A key 23 is provided with a female thread 24 to fit the thread on the pin 20, and when it is desired to unscrew the lamp from the socket the key 23 is screwed over the pin 20, and an outward pull on the key will move the end 18 of the

catch 17 out of the path of the teeth 19, so that the lamp 16 will be free to be unscrewed from the socket 10.

To avoid the necessity of an outward pull on the key 23 to withdraw the catch 17 from the path of the teeth 19, I prefer to provide the key 23 with an offset or shoulder 25, which engages the bushing 22 or other part of the socket 10 as the key is screwed onto the pin 20, and thus automatically pulls the catch 17 out of the path of the teeth 19 and retains it in such position until the key is unscrewed from the pin 20.

A portion of the inner shell 13 is cut away at 26 to accommodate the catch 17.

In Fig. 4 a slight modification is shown in the construction of the spring-catch 17, in which the functional end 18 is in the opposite direction from the fastening-point of the catch 17—*i. e.*, in the construction shown in Figs. 1, 2, and 3 the unscrewing of the lamp from the socket is resisted by a pushing strain on the catch 17, and in the construction shown in Fig. 4 the unscrewing of the lamp from the socket is resisted by a pulling strain on the catch 17.

In Fig. 5 a pivoted catch 27 is shown, and the hole through the bushing 28 is screw-threaded. To release the end of the catch 27 from the teeth, a key threaded on the exterior (not shown) is screwed into the bushing 28 against the tail end of the catch 27.

In Fig. 6 is shown a catch 29, made integral with the inner shell 13 by cutting a rectangular slot in the same and is provided with perforation 30, registering with the hole in the bushing 22. To move the catch 29 out of the path of the teeth 19, the beveled hook 31 on the end of the key 32 is placed through the perforation 30 and pushed along so as to cam the catch out.

While I have shown the catch as being movable radially from the axis of the socket, it will be understood that it is possible to have the movement of the catch be longitudinally of the socket and be within the scope of my invention.

Having fully described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. In a device of the class described, a lamp-socket, a lamp, a screw-thread on the socket to coöperate with a thread on the lamp, a series of teeth on the lamp, each of which is formed with one side inclined and the other side on a radial line, a spring-pressed dog normally held in the path of said teeth to positively prevent turning the lamp in one direction, a detached key, and an extension on said dog to be engaged by said key whereby the latch is moved out of the path of said teeth.

2. In a device of the class described, a lamp-socket, a lamp, a screw-thread on the socket to coöperate with a thread on the lamp, a series of teeth on the lamp, each formed with one side inclined and the other side on a radial line, a spring-pressed dog normally held in the path of said teeth to positively prevent the reverse movement of said lamp, a detached key provided with a screw-thread, and a screw-threaded extension on said latch to be engaged by said key whereby said dog is moved out of the path of said teeth.

3. In a device of the class described, a lamp-socket, a lamp, a screw-thread on the socket to coöperate with a thread on the lamp, a series of teeth on the lamp each formed with one side inclined and the other side on a radial line, a spring-pressed dog secured to the lining of said socket to positively prevent turning the lamp in one direction, a detached key, and means whereby said dog may be moved out of the path of said teeth by said key.

4. In a device of the class described, a lamp-socket, a lamp, a screw-thread on the socket to coöperate with a thread on the lamp, a series of teeth on the thread of the lamp each tooth formed with one side inclined and the other side on a radial line, a spring-pressed dog normally held in the path of said teeth whereby the movement of the lamp in one direction is automatically and positively prevented, a detached key provided with a screw-thread and a shoulder, a perforation radially in said socket, and a screw-threaded extension on said dog extending into said perforation, so that said key may be screwed onto said extension and thereby release said latch from said teeth.

5. In a device of the class described, a lamp-socket, a lamp, a screw-thread on the socket to coöperate with a thread on the lamp, a series of teeth on the lamp, each of said teeth formed with one side inclined and the other side on a radial line, a spring-pressed dog secured to the socket normally held in the path of said teeth, a screw-threaded stem secured to said dog extending radially outward therefrom, a perforation in the outer casing of said socket provided with a bushing of insulation, a detached key having a threaded hole in its end to fit on said screw-threaded stem and a shoulder to fit against said bushing, said parts being so constructed and arranged that when the lamp is screwed into said socket, said dog will without the aid of the key positively lock the same against a reverse movement and said lamp cannot be unscrewed from said socket without the aid of the key.

6. In a device of the class described, a lamp-socket, a lamp, a screw-thread on the socket to coöperate with a thread on the lamp, a series of teeth on the lamp, each tooth formed with one side inclined and the other side on a radial line, a spring-pressed dog secured to

the socket normally held in the path of said teeth, a screw-threaded stem secured to said dog extending radially outward therefrom, a perforation in the outer casing of said socket and a detached key having a threaded end to fit said screw-threaded stem and a shoulder to fit against said socket.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 10th day of November, 1903, at Chicago, Illinois.

JEREMIAH MURPHY.

Witnesses:
C. L. CROSS,
R. J. JACKER.