Oct. 4, 1932. A. C. T. MYERS 1,881,091

LOCKING ARRANGEMENT FOR ELECTRIC LIGHT BULBS

Filed June 25, 1930

Fig. 1.

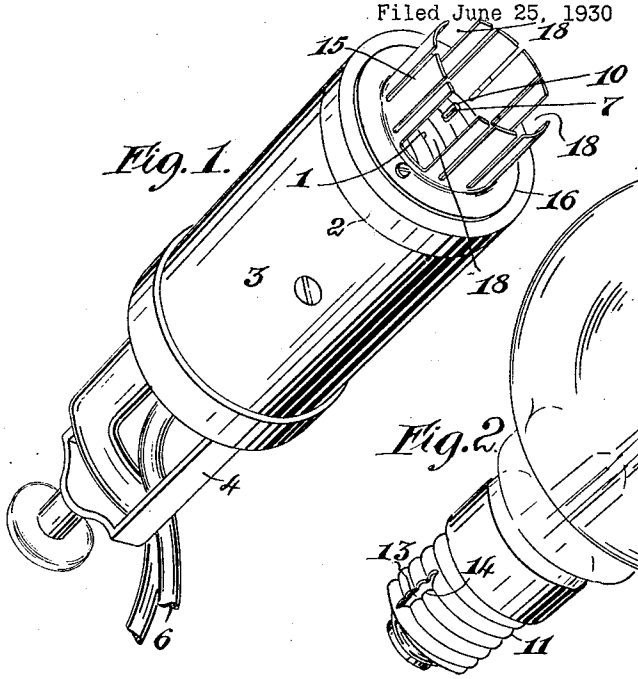


Fig. 2.

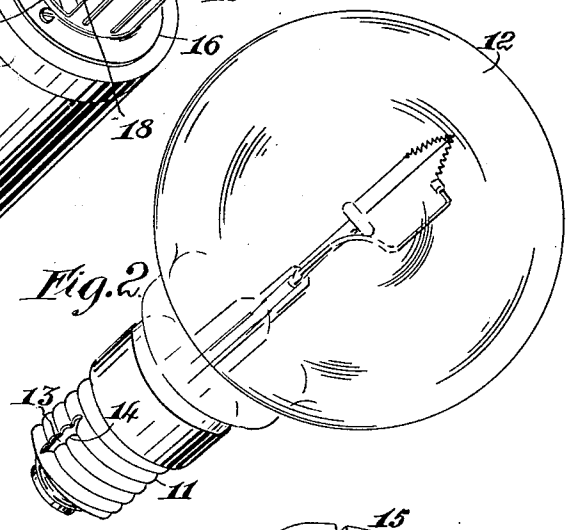
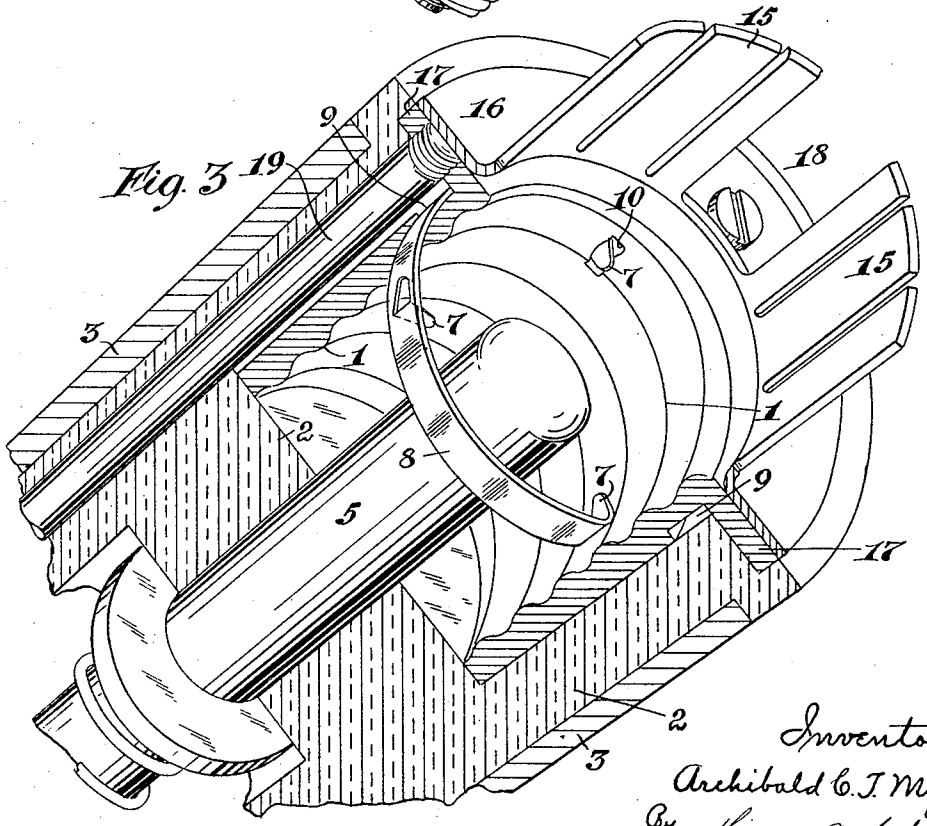


Fig. 3



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Patented Oct. 4, 1932 1,881,091

UNITED STATES PATENT OFFICE

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LOCKING ARRANGEMENT FOR ELECTRIC LIGHT BULBS

Application filed June 25, 1930, Serial No. 463,747, and in Great Britain July 2, 1929.

This invention concerns improvements in and connected with arrangements for locking lamps of the screw-in plug type in their sockets. Usually this provision is directed against the theft of the lamp but in the principal application of the present invention the provision of such locking means is also intended to prevent accidental unscrewing of the lamp due to vibration or similar causes. The particular application referred to is locomotive or like vehicle headlight lamps. With such lamps locking is particularly desirable on account firstly of the value of the special high power lamps used and secondly of the danger of the lamps becoming unscrewed owing to the severe vibration to which they are subjected.

The object of the invention is to provide a simple and reliable locking arrangement the adoption of which will not involve considerable expense nor interfere with the use of the lamps or sockets in the normal fashion. With these ends in view a locking arrangement according to this invention comprises inaccessible spring catch means arranged to project inside the socket and engage ratchet-like formations in the screw plugs of lamps inserted in said socket. The catch means are arranged to be normally inaccessible and to disengage the same from the socket it is either necessary to disassemble the mounting or securing means from the socket or to destroy the lamp. The former course involves the expenditure of more or less time and trouble which makes theft difficult and snatch-theft impossible. The latter course will be adopted by an authorized person only when the lamp is useless and is of no advantage to a thief for obvious reasons.

One form of locking arrangement for locomotive headlight lamps will now be described by way of example by reference to the accompanying drawing in which:—

Figure 1 is a perspective view of the lamp holder.

Figure 2 is a similar view of a lamp and

Figure 3 is a sectional perspective view of the socket to a larger scale.

As may be seen more especially from Figure 3 the threaded socket 1 is mounted in an insulating body 2 surrounded by a metal shell 3. Mounting means 4 are attached to the rear end of the insulating body 2. The socket 1 and the usual spring loaded contact plunger 5 are connected to leads 6. The locking means shown comprise three spring tongues 7 bent up from the ends and middle of a spring strip 8. Said spring strip is arranged in an annular groove 9 extending around the exterior of the socket 1, the tongues 7 projecting through holes 10 in the sleeve 1 slightly above a thread thereof. The plug portion 11 of the lamp 12 is made with a longitudinal slot or nick 13 one edge 14 of which is depressed below the other to give a ratchet tooth effect. A supporting guard 15 composed of a plurality of spring tongues bent up from an annulus 16 is secured by screws to a flange 17 on the socket 1. When a lamp is screwed into the socket 1, the guard 15 grips the unthreaded portion of the plug 11 and forms an additional support for the lamp. Gaps 18 are left at intervals between the tongues of the guard 15 for a purpose to be referred to.

The tongues 7 present no obstacle to the screwing of a lamp into the socket 12, said tongues being simply depressed into the groove 9 until they come opposite the slot 13 into which they snap in turn. This does not prevent further screwing in of the lamp, however, because in the direction of rotation for such screwing-in, the tongues encounter a depressed slot edge. On the other hand, if an attempt is made to unscrew the lamp, the first tongue 7 to engage the slot 13 encounters a sharp ratchet edge 14 whereby further unscrewing of the lamp is prevented. As the slot 13 extends over the pitch of two. three or more threads and may be engaged by any one of three tongues 7, the lamp can be locked in any one of a number of positions. This enables the spring-loaded contact plunger 5 to be depressed to the degree requisite to obtain a proper contact with the centre contact of the plug 11. Alternatively for the same purpose use might be made of a single spring tongue 7 adapted to co-operate with two, three or more uniformly spaced slots 13 in the lamp plug 11. It will be seen

that the socket 1, makes a tight fit with the latter. As, moreover, the flange 17 is secured tightly in a recess in the insulating body 2, the catch tongue or tongues 7 are inaccessible unless the plug is destroyed.

The means for securing the socket 1 in the insulating body 2 are accessible only at the rear end of said insulating body and are relatively inconvenient to unfasten. In the present instance said means comprise three long screws 19 (one is shown in Figure 3), engaging in tapped holes in the flange 7 on the socket 1 and bearing by means of screw driver-slotted heads on the rear end surface of the insulating body 2. The trouble and time involved in dismantling the mounting will deter the snatch-theft from removing the lamp. Naturally if the lamp is broken or defective there is no essential need to dismantle the mounting to remove said lamp. All that is necessary is to destroy the lamp bulb 12 and collapse or deform the plug 11 by pliers or a special pinching tool to disengage it from the catch, thus permitting removal of the useless plug. It will be seen that the gaps 18 in the guard support 15 facilitate the gripping of the plug 11 by the pliers or other tool. The use of a socket 1 modified for the purpose of the invention does not preclude the use of normal lamps in said socket.

I claim:—

1. A locking arrangement for preventing snatch-theft of screw-in lamps having ratchet-like formations in the screw-plugs, comprising a holder, a lamp screw socket removably mounted in said holder, spring-catch means accommodated inaccessibly between said holder and socket and arranged to project within the socket for engaging in the ratchet-like formations in the lamp plugs screwed into said socket, and a releasable connection for securing said socket in said holder, and adapted to release a locked lamp plug from its socket by removing the socket from said holder.

2. A locking arrangement for preventing snatch-theft of screw-in lamps having ratchet-like formations in the screw-plugs, comprising a holder, a flanged lamp screw socket removably mounted in one end of said holder, an arcuate spring-strip inaccessibly accommodated in an annular space between said socket and holder, tongues on said strip arranged to project inwardly through slots in the socket for engaging in the ratchet-like formations in lamp plugs screwed into said socket, and long studs extending from the other and remote end of the holder and entering into the flange on the socket for securing the latter in the holder.

3. A locking arrangement as claimed in claim 1, wherein the spring catch means comprises an arcuate spring strip accommodated in an annular groove formed around the outside of the socket, said strip having at least one tongue bent inwardly to project through a slot in the socket and adapted to engage in the ratchet-like formation in the screw plug.

4. A locking arrangement for preventing snatch-theft of screw-in lamps having ratchet-like formations in the screw-plugs, comprising a holder, a lamp screw-socket mounted in said holder, spring-catch means accommodated inaccessibly between said holder and socket and arranged to project within the socket for engaging in the ratchet-like formations in the lamp plugs screwed into said socket, and a guard device forming an extension of the socket for closely embracing the portion of the lamp plug which projects from said socket.

5. A locking arrangement as claimed in claim 4, wherein the guard device has longitudinally extending slots permitting of the gripping of the plug of a broken and defective lamp by the jaws of a tool.

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