Feb. 11, 1941. T. I. MASLIN 2,231,585

LAMP SOCKET

Filed Aug. 28, 1939

Fig. 1

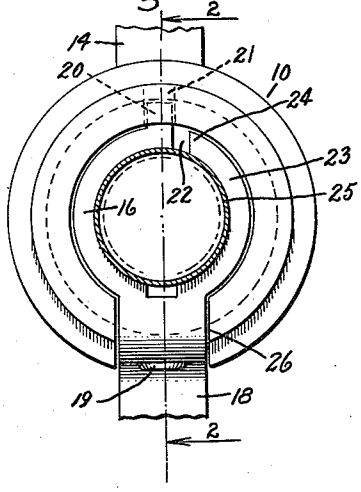


Fig. 2.

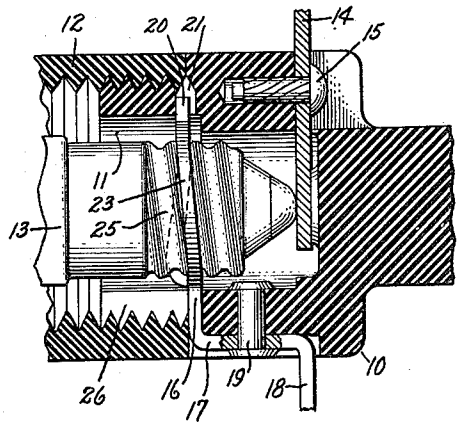
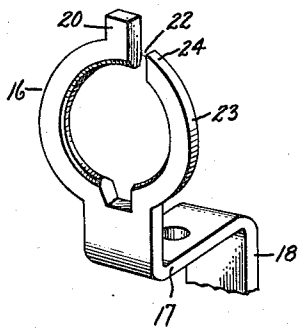


Fig. 3.



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LAMP SOCKET

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2 Claims. (Cl. 173—358)

My invention relates to sockets for incandescent lamps of the screw base type and has for its object a simple and reliable socket which is self-locking to secure the lamp in place.

In carrying out my invention, I utilize a screw contact providing a single turn in the form of a helical ring, the ring being discontinuous to provide for flexure of one side to lock the lamp when the lamp base is screwed tightly into position.

For a more complete understanding of my invention, reference should be had to the accompanying drawing, Fig. 1 of which is a plan view of an elongated push button having a lamp socket embodying my invention; Fig. 2 is a sectional view taken along the line 2—2 of Fig. 1 looking in the direction of the arrows, while Fig. 3 is a perspective view of the ring-shaped self-locking contact.

Referring to the drawing, I have shown my invention in one form as applied to the movable button 10 of an electric push button switch which button, it will be understood, cooperates with suitable electric contacts (not shown) so that when the button is depressed, the contacts are engaged or disengaged to control an electric circuit. It is desirable at times to provide such buttons with illumination which is conveniently effected by mounting a small incandescent lamp in the button itself together with auxiliary contacts leading to the lamp base and cooperating with auxiliary stationary contacts when the button is pressed to light the lamp, or contacts so arranged that the lamp circuit will be opened when the button is pressed.

The button 10 is made from a suitable electrically insulating material such as a molded compound. It is provided with a central bore 11 forming a socket to receive the lamp socket which is closed by a screw cap 12 extending over the lamp. Parts only of the cap 12 and the lamp 13 are shown for purposes of clarity. In the center and at the bottom of the socket 11 is the usual central rigid electrically conducting contact 14 which leads out of the push button and is secured to the push button by means of a suitable rivet 15.

The screw terminal 16 for the socket, into which terminal the lamp is screwed into engagement with the central contact 14, is in the form of a ring shaped into a single turn helix as shown clearly in Fig. 3. This ring has a strap extension 17, the ring and strap being preferably made of a suitable electrically conducting spring material such as bronze, which extends outside of the button and then has a lateral extension 18 in parallel relation with the button and secured to the button by a rivet 19.

At a point diametrically opposite the strap 17 is a second supporting projection 20 on the ring 16 which extends into a recess or notch 21 in the wall of the socket. As shown in Fig. 2, this projection 20 normally engages the outer side of this recess, i. e., the left-hand side, as seen in Fig. 2. The recess however is larger than the projection to provide for ease of assembly.

The ring 16, furthermore, is discontinuous at a point adjacent the projection 20, a slot 22 being provided whereby one-half or section 23 of the ring is provided with an end 24 which is free to move in response to flexure of that side.

With this arrangement, when the threaded lamp base 25 is screwed into the socket and engages the central contact 14 and thereafter is turned still further to tighten it, the unsecured section 23 of the ring flexes and is forced outward somewhat in a direction away from the central contact, the other half or section being held or anchored by the projection 20. As a result of this action, the section 23 is forced out of true thread mating relation with the lamp base. This produces a frictional locking effect whereby the lamp is secured against any tendency to rotate in a direction to loosen it, such as might be caused by vibration or jars. The lamp however can be forcibly turned to remove it without difficulty.

It will be understood that, as shown in Fig. 3, the spring ring member 16 normally has its two oppositely disposed adjacent ends formed by the slot 22 in helical alignment with each other: i. e., the two ends are not displaced from the single turn helix in a lateral direction parallel with the axis of the helix. Consequently, the lamp base can be screwed loosely into the ring without interference from either one of the spaced ends of the ring. When the end 24 is flexed in a direction away from the central contact, it engages the other one of the two adjacent threads of the lamp base, between which threads the ring is held. This produces a frictional locking action and the end 24 may be sharp enough to dig into the metal of the other adjacent thread.

To facilitate assembly, the base 10 is provided with a recess or slot 26 extending from the end of the socket to the strap 17 and somewhat wider than the strap. This provides for insertion of the ring terminal 16 in place in the socket after which it is secured by means of the rivet 19.

While I have shown a particular embodiment of my invention, it will be understood, of course,

that I do not wish to be limited thereto, since many modifications may be made and I, therefore, contemplate by the appended claims to cover any such modifications as fall within the true spirit and scope of my invention.

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

1. A lamp socket comprising a supporting socket member made of electrically insulating material, a central electrically conducting contact on said supporting member, a discontinuous helical member having a diameter and thickness to fit loosely between two adjacent threads on the lamp base, said helical member being discontinuous to form two oppositely disposed adjacent ends normally in helical alignment with each other, means securing said helical member to said supporting member so that one of said ends and one portion of said helical member are secured against flexure away from said central contact and the other end is free to flex away from said central contact when the lamp base is screwed into said helical member against said central contact with a thread of the base wedged against said portion of said helical member, said other end being flexed by said thread away from said central contact into engagement with the adjacent thread on the lamp base thereby frictionally to lock the lamp base in the socket.

2. A lamp socket comprising a supporting socket member made of electrically insulating material, a central electrically conducting contact on said supporting member, a discontinuous single turn helical spring member forming a second electrically conducting contact having a diameter and thickness to fit loosely between two adjacent threads on the lamp base, said spring member being discontinuous to form two oppositely disposed adjacent ends normally in helical alignment with each other, means securing said spring member to said supporting member at a point substantially diametrically opposite said adjacent ends, means securing one of said ends to said supporting member so that said end and one half of said spring member are secured against flexure away from said central contact and the other end is free to flex away from said central contact when the lamp base is screwed into said spring member tightly against said central contact with a thread of the base wedged against said half of said spring member, said other end being flexed by said thread away from said central contact into engagement with the adjacent thread on the lamp base thereby frictionally to lock the lamp base in the socket.

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