Dec. 17, 1940. S. M. DEL CAMP 2,225,584

LAMP HOLDER ASSEMBLY

Filed Feb. 26, 1938

Fig. 1.

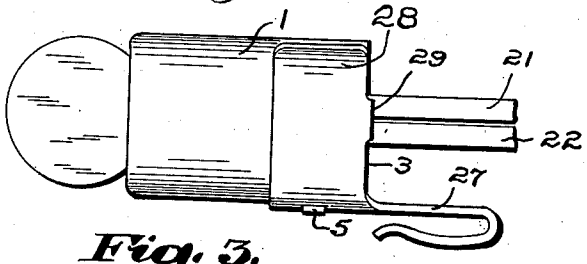


Fig. 2.

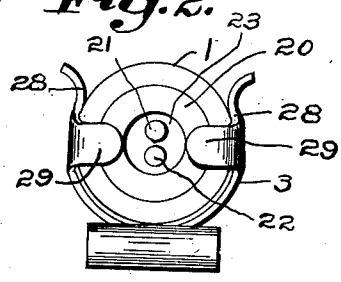


Fig. 3.

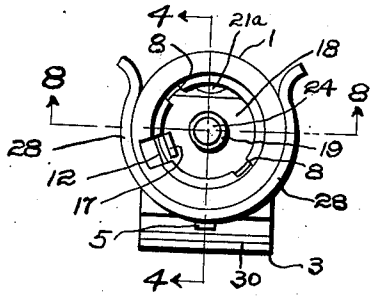


Fig. 4.

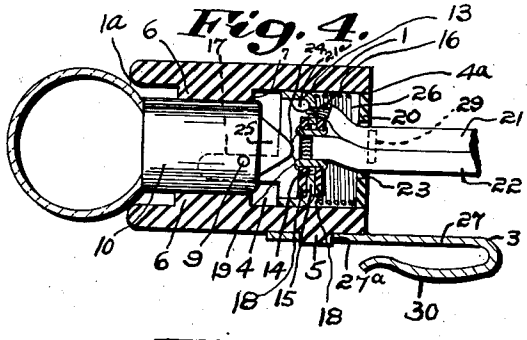


Fig. 6.

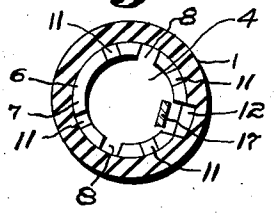


Fig. 5.

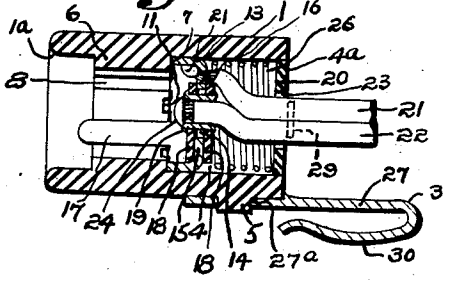


Fig. 7.

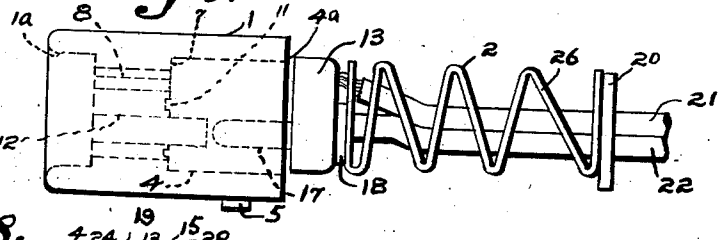
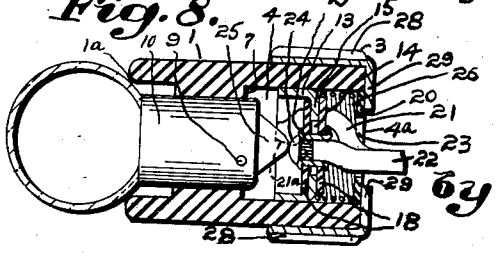


Fig. 8.



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LAMP HOLDER ASSEMBLY

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Application February 26, 1938, Serial No. 192,805

3 Claims. (Cl. 173—328)

This invention relates to improvements in socket devices and more particularly, though not exclusively, to sockets for receiving and holding an incandescent lamp base.

An object of my invention is the provision of a socket member which is completely insulated around its exterior surface so that no metal parts are exposed which carry live leads.

Another object of my invention is a socket device wherein a mounting bracket is assembled with a lamp holder providing means not only for securing the lamp holder to a supporting structure, but also for maintaining a sub-assembly of the lamp holder in proper fixed relation to the housing of the holder.

Another object of my invention is a socket device comprising parts of simple construction capable of quick and efficient hand assembly.

Other objects and purposes of my invention will be apparent from inspection of the drawing and specification herein set forth.

Referring to the drawing, in which I have illustrated a preferred embodiment of my invention—

Figure 1 is a front plan view of my improved lamp socket device showing a housing, an incandescent lamp secured within one end of the housing, a pair of wires leading to a sub-assembly disposed within an opposite end of the housing, and a mounting bracket assembled with the housing;

Fig. 2 is an end view of the assembly shown in Fig. 1 looking from the right of Fig. 1;

Fig. 3 is an end view of the assembly shown in Fig. 1 looking from the left of Fig. 1 with the lamp omitted;

Fig. 4 is a section taken along the line 4—4 of Fig. 3 with an incandescent lamp electrically connected to the socket member;

Fig. 5 is a section similar to that of Fig. 4, but showing the position of the parts when the lamp has been removed from the socket member;

Fig. 6 is a section taken along the line 6—6 of Fig. 5;

Fig. 7 is a plan view showing a method of assembling the sub-assembly with the socket housing; and

Fig. 8 is a section taken along the line 8—8 of Fig. 3 with an incandescent lamp in electrical engagement with the socket member.

Referring to the preferred form of my invention as illustrated by the accompanying drawing, I have shown a socket device or pilot lamp holder assembly of the type commonly used in radio apparatus to illuminate the tuning dial. The lamp holder assembly is made up of three main divisions; namely, a housing 1, a sub-assembly 2 (Fig. 7) adapted to be disposed within the housing and having two spring compressed contact terminals in electrical connection with conductor wires, and a mounting bracket 3 (Figs. 1-4) resiliently engaged with the housing and having a spring clip for securing the socket member to a supporting structure (not shown) and means serving to maintain the sub-assembly in operating position within the housing.

The housing 1 is formed of insulating material and is preferably of an elongated tubular shape with a longitudinal opening 4 extending entirely therethrough. A projection 5 (Figs. 4 and 5) extends outwardly from the exterior surface of the housing for a purpose to be described. An annular ring 6 projects into the opening 4 of the housing near an end 1a, as most clearly shown in Figs. 4, 5 and 8, providing a substantially circular shoulder 7 facing away from the end 1a. The ring 6 has a pair of oppositely-disposed slots 8—8 extending from one end of the ring to the other, as most clearly shown in Figs. 5 and 6. The slots 8—8 are adapted to receive projecting pins 9—9 of a lamp base 10 wherein the lamp base may be secured to the socket member by extending the pins 9—9 through the slots 8—8 and then turning the base to dispose the pins behind the shoulder 7 of the ring 6. Notches 11—11 (Fig. 6) may be formed in the shoulder 7 for receiving the pins 9—9 of the lamp base whereby the pins are maintained in engagement with the shoulder against a spring tension provided by the sub-assembly. The housing 1 also has an internal slot 12 which preferably extends from the edge of the ring 6 at the end 1a of the housing through the annular ring 6 and a predetermined distance toward an opposite end 4a of the housing (Figs. 3, 6 and 7). The slot 12 is adapted to receive a contact terminal of the sub-assembly when the lamp base is engaged with the housing, as will be hereinafter more fully described.

The sub-assembly 2 comprises a dish-shaped lamp-contacting metal member 13 having an opening 14 substantially in the center of a bottom 15 thereof and an opening 16 offset from the center. The metal member 13 has a narrow contact terminal 17 integral with its peripheral free edge and adapted for sliding engagement with a side of the lamp base 10. Insulating disks 18—18 are disposed on opposite sides of the bottom 15 of the dish-shaped member 13 and are secured to the bottom 15 by a rivet 19 extending through

the parts, as most clearly shown in Figs. 4, 5 and 8. Peripheral edges of the disks 18—18 may be cut away adjacent the opening 16 of the bottom 15 to enable a wire to be passed through the bottom and soldered to the metal member. It will be noticed that the wall of the bottom 15 adjacent the aperture 14 is spaced from the rivet 19 whereby the rivet is insulated from the dish-shaped member (Figs. 4, 5 and 8). The sub-assembly has an insulating washer 20 having a diameter slightly less than the diameter of the opening 4 of the housing 1 at the end 4a whereby the disk may be disposed within the opening to substantially close the same. Wire conductors 21 and 22 extend through an opening 23 in the insulating washer 20 for electrical engagement with appropriate parts of the sub-assembly. The wire conductor 21 extends through the opening 16 of the dish-shaped member 13 and is soldered to the dish-shaped member at a point 21a, as most clearly shown in Figs. 4 and 5. The wire conductor 22 extends through the rivet 19 and has a contact terminal 24 preferably formed of solder at its free end extending beyond one end of the rivet member thus being carried by the lamp-contacting member, as most clearly shown in Figs. 4 and 5. The contact 24 is larger than the bore of the rivet 19 so that it is impossible for the contact to enter into the rivet. The contact 24 is adapted for electrical engagement with a central contact 25 of the lamp base, as shown in Figs. 4 and 8. A compression spring 26 is disposed between the dish-shaped member 13 and the insulating washer 20 for pressing the contact terminals 17 and 24 against proper terminals of the lamp base, as will be understood by those skilled in the art.

My preferred form of mounting bracket 3 comprises a base 27 having an aperture 27a therein near one end for receiving the projection 5 of the housing 1 (Figs. 4 and 5). A pair of spaced spring arms 28—28 extend from opposed edges of the base 27 near that end having the aperture 27a adapted to resiliently embrace the exterior surface of the housing 1 adjacent the end 4a for attaching the bracket to the housing. Integral with the arms 28—28 I have provided a pair of inwardly-extending ears 29—29 disposed outside the housing and intersecting the opening 4 at that end of the housing having the washer 20. The ears 29—29 are adapted to engage the insulating washer 20 (Fig. 8) so as to limit movement of the washer 20 in one direction relative to the opening 4 of the housing and thus maintain the sub-assembly 2 in operating position within the housing. At an opposite end of the base 27 of the mounting bracket from that from which the arms 28—28 extend I have provided a spring clip-like portion 30 for securing the socket member to a supporting panel (not shown).

Assembly of the main divisions of my socket device is a relatively simple matter and may be carried out by first moving the sub-assembly 2 of the device into the opening 4 with the contact terminal 17 disposed opposite the slot 12 of the housing. The washer 20 may be held by a finger of the operator within the opening 4 of the housing adjacent the end 4a and the arms 28—28 of the mounting bracket 3 snapped into engagement with the housing. When the mounting bracket is assembled with the housing the projection 5 of the housing extends into the opening 27a of the base 27 of the bracket and cooperates with the bracket to prevent any rotative or lateral movement thereof relative to the housing 1. At the same time the fingers 29—29 intersect the opening 4 of the housing at the end 4a to maintain the washer 20 in proper position within the housing. When the divisions of the device have been finally assembled together the peripheral free edge of the metal member 17 abuts the shoulder 7 of the housing under the action of the spring 26, as most clearly shown in Fig. 5. Upon insertion of the lamp base 15 into the housing, the terminal 17 is engaged by a side of the base and moved into the slot 12. However, the terminal 17 has sufficient resiliency to engage the base after the base has been finally engaged with the housing to provide an electrical connection between the base and the wire conductor 21 through the metal member 13.

Thus it will be seen that my socket device is completely insulated on its exterior surface. Furthermore, the divisions of my device are easily assembled by hand and capable of efficient use as a pilot lamp holder or the like.

Although I have illustrated and described a preferred embodiment of my invention, I do not wish to be limited thereby because the scope of my invention is best defined by the following claims.

I claim:

1. A socket assembly comprising a tubular housing having openings at opposite ends, a projection on the outer surface of said housing, a contact sub-assembly disposed within said housing and a mounting bracket for securing said housing to a supporting structure, said bracket having a base which has an aperture and spaced spring arms projecting from said base embracing the outer surface of said housing whereby said bracket may be quickly assembled with and disassembled from said housing, said projection extending into the aperture of said bracket base and cooperating with said base for maintaining the bracket in proper position relative to the housing, and said bracket having portions intersecting the opening at one end of said housing preventing movement of said sub-assembly out of said opening.

2. A socket member comprising an elongated housing of insulating material having a longitudinal opening therethrough, said housing having an annular ring projecting into said opening near one end providing a shoulder facing away from said end, said ring having a pair of slots extending longitudinally of said housing for receiving lateral pins of the base of a cooperating electrical member, said housing having a terminal-receiving slot extending longitudinally thereof, a dish-shaped metal member disposed within said housing having an integral yieldable elongated terminal for electrical engagement with the base of said lamp, said terminal normally disposed substantially opposite said terminal-receiving slot and receivable by said slot when said lamp base is inserted into said housing, an insulating washer at an opposite end of said housing from said first-mentioned end, a compression spring between said metal member and said washer, a pair of wire conductors entering said housing at said end opposed to that having said annular ring, one of said conductors terminating in a contact secured to said metal member, means insulating said contact from said metal member, the other of said conductors being in electrical engagement with said metal member, and means at the end of said housing having said insulating washer limiting movement of said washer relative to said housing.

3. A socket assembly comprising an elongated tubular housing of insulating material having an opening therethrough and a contact sub-assembly in said opening at one end of the housing, said housing having means at one end for receiving and holding a lamp with a tubular base, a metal member disposed within and slidably engaging the wall of said opening in said housing, said metal member having a finger-like means for electrically engaging the side of the lamp base and a washer of insulating material seated within said housing adjacent the end opposed to that end receiving said lamp base, a compression spring located between said metal member and said washer, means limiting movement of said metal member in one direction relative to said housing, a pair of wire conductors entering said housing and one terminating in a contact extending through an aperture in said metal member and insulated from said metal member, the other of said conductors being in electrical engagement with said metal member and means at that end of said housing having said washer for limiting movement of said washer thereby holding the contact assembly in the housing.

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