Jan. 8, 1963 A. S. WOODWARD ETAL 3,072,878

ELECTRICAL LAMP SOCKET

Filed May 29, 1961

Fig. 1.

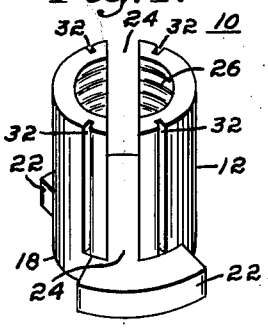


Fig. 3.

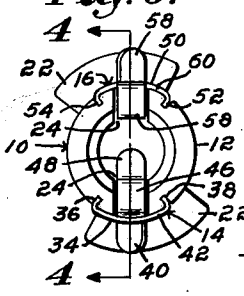


Fig. 5.

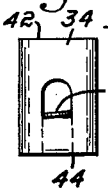


Fig. 6.

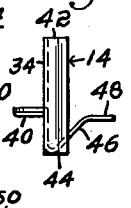


Fig. 7.

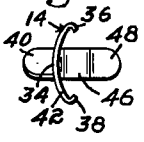


Fig. 8.

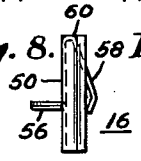


Fig. 9.

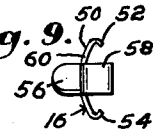


Fig. 2.

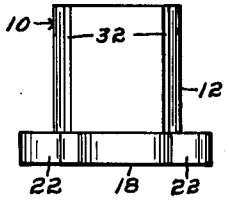


Fig. 4.

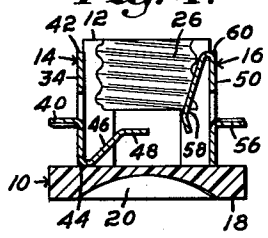


Fig. 10.

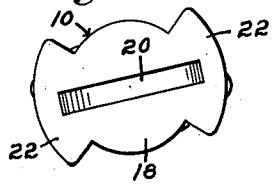


Fig. 11.

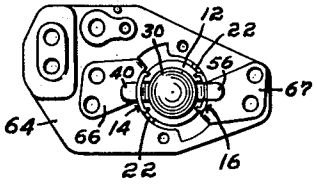


Fig. 13.

Fig. 12.

Fig. 14.

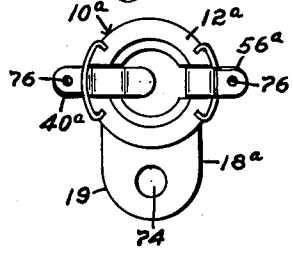
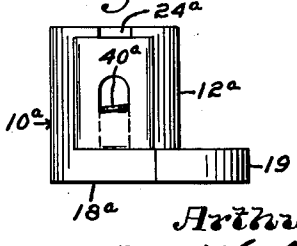


Fig. 15.



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3,072,878

ELECTRICAL LAMP SOCKET

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Filed May 29, 1961, Ser. No. 113,300
2 Claims. (Cl. 339—176)

This invention relates generally to an electrical device and specifically to an electrical lamp socket for use for appliances such as radios, electric clocks, telephones or the like.

An object of this invention is to provide a new and improved lamp socket having terminal members adapted for contact with fixed electrical supply means.

A further object of this invention is to provide a simple 3-piece lamp socket which may be economically manufactured and assembled.

Another object of this invention is to provide a vibration-proof type socket member adapted for axial insertion within a panel and self-retention therein.

Other objects of the invention will, in part, be obvious and will, in part, appear hereinafter.

In the drawings:

FIG. 1 is a view in projection of the socket casing without the contacts;

FIG. 2 is a view in side elevation of the casing without the contacts;

FIG. 3 is a top plan view of the socket illustrating the cut-out portion;

FIG. 4 is a view in section taken on line 4—4 of FIG. 3;

FIG. 5 is a view in front elevation of one of the contact members;

FIG. 6 is a view in side elevation of the contact member shown in FIG. 5;

FIG. 7 is a top plan view of the contact member shown in FIG. 5;

FIG. 8 is a view in side elevation of the opposing contact member;

FIG. 9 is a top plan view of the contact member shown in FIG. 8;

FIG. 10 is a bottom plan view of the socket member illustrating the means;

FIG. 11 is a partial bottom plan view of a portion of the assembly shown in FIG. 13;

FIG. 12 is a partial top plan view of the assembly shown in FIG. 13;

FIG. 13 is a sectional view of the socket member assembled within a panel illustrating the fixed contact means;

FIG. 14 is a top plan view of a modified form of the lamp socket; and

FIG. 15 is a view in side elevation of the modified socket nut.

Referring to the drawings, particularly FIG. 1, there is illustrated an electrical lamp socket 10 which may be simply and economically molded from materials such as polystyrene or butadiene styrene, acrylonitrile or any other suitable plastic having insulating properties. The lamp socket proper consists essentially of three basic components, the insulated housing 12 and a pair of contact members 14 and 16.

The insulated housing 12 is a unitary structure having a base 18 with curved means 20 formed therein as a slot engageable with a screwdriver or coin, and a pair of wing members 22 extending radially outward from opposed portions of the base 18. The insulated housing 12 stands substantially normal to the base 18 and is generally tubular in form. A pair of diametrically opposed slots 24 extend downwardly from the open end of said insulated housing 12 so as to bifurcate the said insulated housing 12.

The interior wall of the insulated housing 12 has a plurality of threads 26 which is illustrated in FIGS. 4 and 13, formed to cooperate with the threads 28 on the base of a bulb 30 and retain the bulb 30 in assembly. The depth that the threads 26 are formed into the axial length of the housing 12 is controlled so as to prevent screwing the bulb 30 too deep into the housing 12 thereby preventing any over-stress of the contact 14. On either side of each of the slots 24 and equally spaced therefrom a pair of recesses 32 are formed in the exterior portion of the housing which extends inwardly toward each other at an angle of approximately 45° to a plane tangential to the curvature of the housing for a purpose to be described hereinafter.

Referring to FIGS. 5 through 9, there are illustrated the contacts 14 and 16 which are assembled with the housing. The first of the contacts 14 is formed of a conducting metal such as hard brass or Phosphor bronze and has a side portion 34 having a curvature to conform with the exterior of the housing 12 with the lateral end portions 36 and 38 inclined inwardly toward each other. A tab member 40 is struck out of the medial lateral portion of the member 34 and extends substantially normal thereto at a point between the ends 42 and 44 of said member 34. A second tab member 46 of lesser width than the side portion 34 extends upward from the distal end 44 in the direction of the opposed distal end 42 having a terminal end portion 48 inclined away from the side portion 34 in a direction opposite to the tab 40. The other contact member 16 has a lateral portion 50 with the edges 52 and 54 inclined inwardly generally in the direction of each other having a tab member 56 struck out of the medial lateral portion of the lateral portion 50 and extending substantially normal thereto. A secondary member 58 extends downwardly from the terminal end portion 60 having diverging and converging portions, said diverging portion inclined away from the lateral portion 50. The said converging portion extending substantially toward said lateral portion 50.

If the contacts 14 and 16 are assembled to the insulated housing 12, it will be seen that the distal ends 36 and 38 of the lateral member 34 will longitudinally slide into the grooves 32 positioning the tang portion 46 within the recess 24. The other contact member 16 is positioned similarly at the diametrically opposed side of the insulated housing 12. The said distal ends 36 and 38 have two specific functions when engaged within the slots 32, the first function is to prevent the housing 12 from spreading as the bulb 30 is screwed into position. This action results in the second function which is to provide a "resilient bite" on the bulb 30 to prevent the loosening of the said bulb 30 due to vibration. The complete assembly is shown in FIGS. 3, 4 and 13.

It will be apparent by viewing FIG. 13 that the terminal anode button 62 of the bulb base 30 makes a contact with the tab portion 48 when the bulb is screwed into the insulated housing 12 and the secondary member 58 effectively makes contact with the conductive casing of the bulb base 30. FIG. 13 illustrates a practical application of this type of lamp socket, and there is shown a broken-away portion of a telephone housing 64 of insulating material having a pair of fixed terminal members 66 and 67 secured by means of screw member 68 to the housing 64. Upon insertion of the socket 10 into an apertured telephone housing 64 or other apertured support, the tabs 40 and 56 fit into mating keyholes so as to position the said tabs 40 and 56 above the installation in abutting relationship with the fixed terminal members 66 and 67. This engagement occurs when the socket 10 is rotated counter-clockwise (looking down on the FIG. 13) engaging tab members 40 and 56 in a sliding contact

into the abutting engagement mentioned heretofore. The sliding engagement is facilitated by chamfering the fixed terminal members **66** and **67** (as shown in FIG. 11) at the point of their original engagement with the tab members **40** and **56**. This engagement provides electrical contact for external leads **70**, which supply electrical energy from an external source, as well as providing a retention means securing the socket **10** to the said telephone housing **64** or other apertured support.

A modification of the socket **10** is illustrated at FIGS. 14 and 15 and bears identification number **10***a*. This socket **10***a* does not use the two wings **22** as disclosed in the original embodiment **10**. The socket **10***a* has a base portion **18***a* having an extension **19** generally arcuate in form and extended beyond the area encompassed by the insulated housing **12***a*. The said extension **19** has an aperture **74** formed therethrough. The said socket **10***a* may be fastened to any support by using a screw, eyelet or rivet engaging the portion of the extension **19** adjacent the aperture **74** in a manner well-known in the art. The tab members **40***a* and **56***a* have apertures **76** formed therethrough which are used to provide support for solder to connect the tab members to conductive elements which are not illustrated. The remaining parts of the socket **10***a* are similar in all respects to the parts described hereinbefore.

Since certain other obvious modifications may be made in this device without departing from the scope of the invention, it is intended that all matters contained herein be interpreted in an illustrative and not in a limiting sense.

We claim:

1. A lamp socket including an insulating housing and a pair of contacts, said insulating housing having a substantially tubular body open at one end, a pair of wing members extending radially outward from opposed sides of said body, said body having a pair of diametrically opposed slots formed therein, a pair of recesses formed on each side of each of said slots, one of said contacts having a side portion having distal ends and arced to conform to the external configuration of a portion of said insulating housing, said side portion having lateral end portions bent to incline toward each other, a tab member extending substantially normal to said side portion, and a second tab member in integral angular relationship with one of said distal ends extending in a direction substantially opposite from said first tab, the other of said contacts having a lateral portion with its distal ends inclined toward each other, a third tab member extending substantially normal to said lateral portion and a fourth tab member extending from a terminal end of said lateral portion in angular relationship with said lateral portion, said contacts engaging said insulating housing in such a manner that said fourth tab member and said second tab member extend within the cavity formed by said tubular body.

2. A lamp socket including an insulating housing open at one end, and a pair of contacts, said insulating housing having a base and an upstanding wall extending substantially normal to said base, said upstanding wall having means of engaging a bulb and slot means extending from said open end to said base, a series of grooved walls forming recesses on the external surface of said upstanding wall, each of said contacts having a pair of tab members and means for engaging said grooved walls, said contacts engaging said insulating housing in substantially abutting relation with said external surface of said upstanding wall and in spaced relation with each other, each of said contacts having tab members extending into the area encompassed by said upstanding wall thereby providing electrical continuity between a lamp bulb and an external circuit.

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UNITED STATES PATENT OFFICE

CERTIFICATE OF CORRECTION

Patent No. 3,072,878 January 8, 1963

Arthur Stanley Woodward et al.

It is hereby certified that error appears in the above numbered patent requiring correction and that the said Letters Patent should read as corrected below.

Column 1, line 44, for "bottom" read -- top --; line 46, for "top" read -- bottom --.

Signed and sealed this 2nd day of July 1963.

(SEAL)
Attest:

ERNEST W. SWIDER
Attesting Officer

DAVID L. LADD
Commissioner of Patents