

# United States Patent

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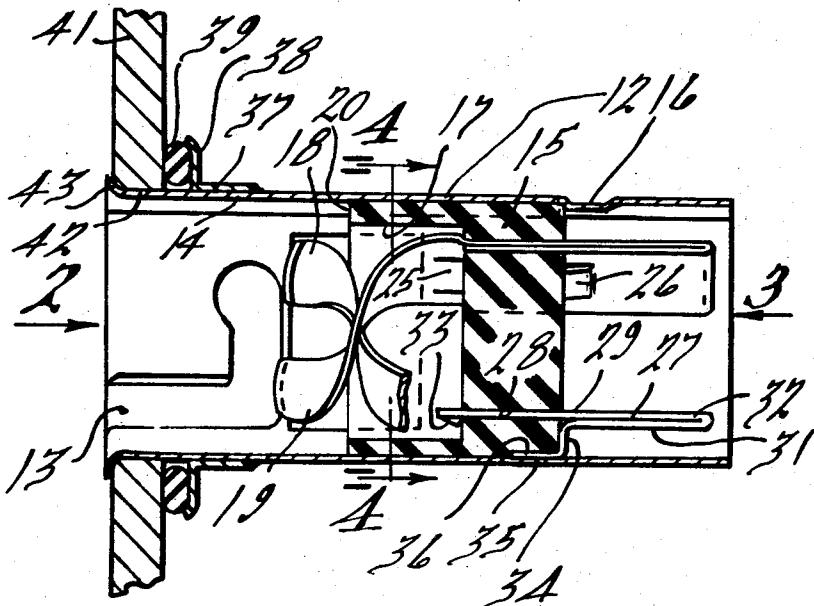
[54] **LAMP SOCKET**  
10 Claims, 8 Drawing Figs.

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[51] Int. Cl.....	<b>H01f 33/48</b>
[50] Field of Search.....	<b>339/188, 217 S, 14</b>

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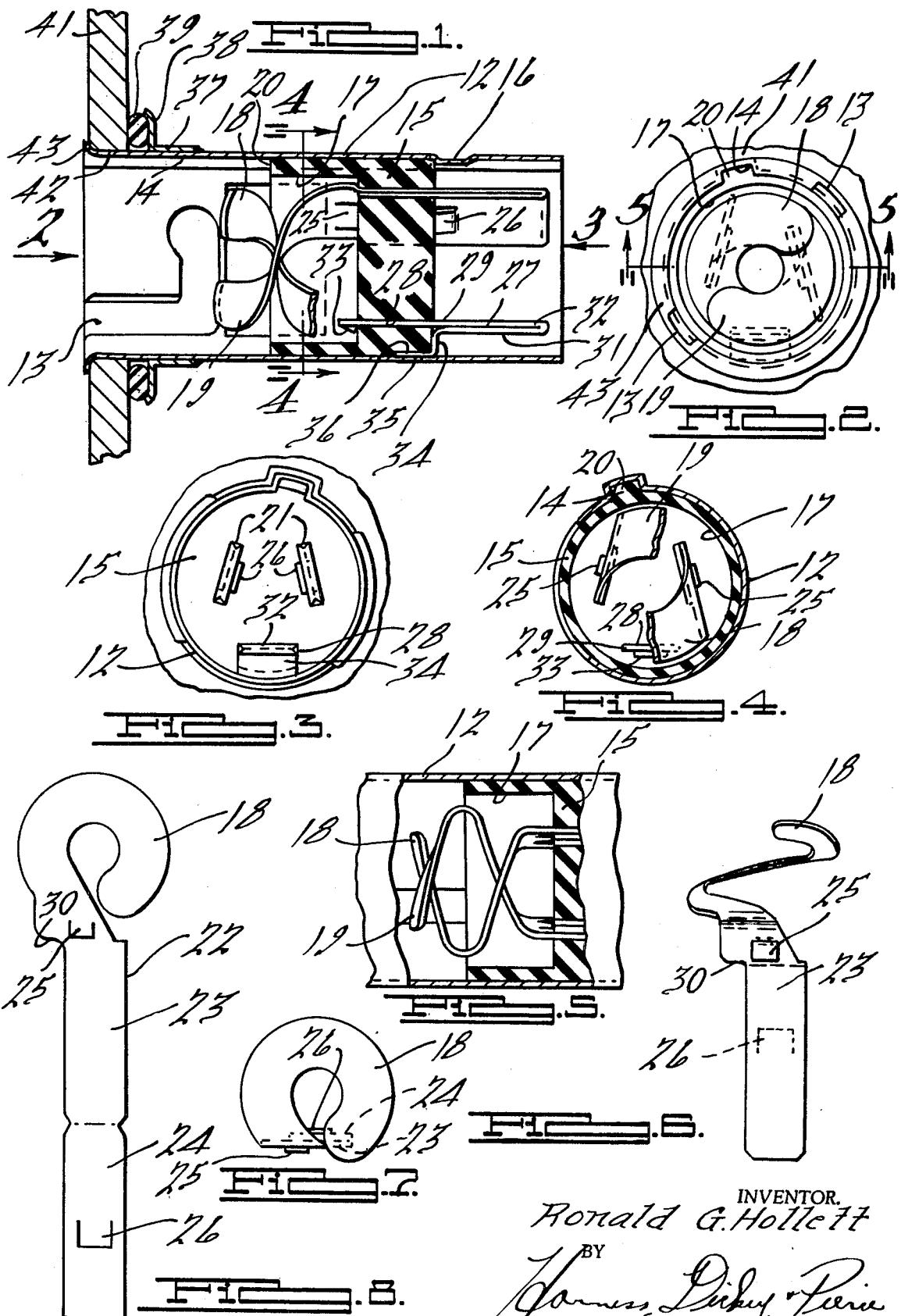
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**ABSTRACT:** The socket is constructed from a tube having a pair of bayonet slots and a locating slot formed outwardly of the tube wall. A cylindrical insulating element has a pair of conductors fixed thereto, the portion extending from the front face being helically formed for engaging the contacts of a two filament light bulb and the portion extending from the rear face forming terminals. A ground terminal is also supported by the insulating element having a portion in contact with the wall of the tube with the terminal end spaced a greater distance from the center of the element for locating the contacts of a plug insertable in the rear end of the tube for properly connecting the three terminals to a circuit.



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## LAMP SOCKET

## BACKGROUND OF THE INVENTION

There is no known art which teaches the construction of the lamp socket in accordance with the present invention and the structure is believed to be new and patentable.

## SUMMARY OF THE INVENTION

The invention pertains to a lamp socket which is rugged of construction, which is simple of manufacture and assembly and which positively locates the filaments of a light bulb in a desired position. The socket is of tubular construction having bayonet slots and a locating slot pressed outwardly from the tube wall for locating a light bulb relative to the socket and the contact fingers relative thereto. A cylindrically formed insulating element has three apertures therethrough, two for receiving the bodies of conducting elements which are fixed thereto having nested fingers of helical shape at the forward or bulb receiving end with the portions extending from the rear face forming terminals. The third aperture receives a ground terminal which is secured to the insulating element and which contacts the wall of the tube. The ground terminal extends rearwardly from the insulating element and is spaced a greater distance from the center thereof for locating corresponding contacts in a plug which are to engage the terminals. The outwardly extending locating slot positions the socket within an aperture of a receptacle, panel or other supporting element for locating the pair of filaments within the lamp bulb in predetermined position relative thereto. Various known means may be provided for securing the socket in sealed relation to the receptacle or other support and retaining it in fixed or releasable relation therewith.

## BRIEF DESCRIPTION OF THE DRAWING

FIG. 1 is a sectional view of a socket mounted in a receptacle embodying features of the present invention;

FIG. 2 is a broken end view of the socket illustrated in FIG. 1, as viewed from the point 2 thereof;

FIG. 3 is a broken end view of the socket illustrated in FIG. 1, as viewed from the point 3 thereof;

FIG. 4 is a sectional view of the structure illustrated in FIG. 1, taken on the line 4—4 thereof;

FIG. 5 is a sectional view of the structure illustrated in FIG. 2, taken on the line 5—5 thereof with parts in elevation;

FIG. 6 is a view in elevation of one of the terminal elements illustrated in FIG. 1;

FIG. 7 is a view of the structure illustrated in FIG. 6, as viewed from the lamp bulb-engaging end thereof; and

FIG. 8 is a view of the structure illustrated in FIG. 6 after the stamping and before the forming operation thereof.

## DESCRIPTION OF THE PREFERRED EMBODIMENT

The socket 11 has a tubular body 12 containing a pair of oppositely disposed bayonet slots 13 and a locating slot 14 pressed outwardly of the wall thereof. A cylindrical insulating element 15 is insertable within the tubular body having an outwardly extending rib 20 engaged in the locating slot 14. The insulating element 15 is retained against further inward movement by a section 16 of the tubular wall which is deflected inwardly therefrom to form a stop against which the bottom of the insulating element abuts when urged inwardly by the lamp bulb. The front face of the insulating element has a cylindrical recess 17 extending therein from which flat helical fingers 18 and 19 extend in a position to engage the two contacts of a double filament lamp bulb. A pair of rectangular slots 21 extend through the body of the insulating member 15 spaced equidistantly from the center thereof and in angular relation to each other.

The fingers 18 and 19 are located on the end of a stamping 22 which have a pair of rectangular sections 23 and 24 extending therefrom with a lanced-out finger 25 adjacent to the

75 finger 18 or 19 and a finger 26 lanced from the section 24 and extending in the same direction as the finger 25. The fingers 18 and 19 are helically formed as illustrated in FIG. 6, and the section 24 is bent backward onto the section 23. In this form the fingers 25 and 26 are oppositely presented and located a distance apart such as to have the finger 25 engage the front face of the body portion of the insulating element 15 and the finger 26 engage the rear face thereof when both of the sections are inserted through slots 21 to form terminal blades. It

10 will be noted that a shoulder 30 is provided at the upper end of the section 23 in position to engage the front face of the body portion of the insulating element in which case the finger 25 can be eliminated. When both of the apertures 21 support the sections 23 and 24, the helical finger 18 and 19 are in nested 15 out of contact relation to each other with the extended fingers 18 and 19 so located as to engage a pair of contacts on the base of the lamp bulb forming a live contact with one end of each of the filaments. The other end of the filaments engages the sleeve of the lamp bulb which contacts the wall of the tubular body 12.

20 A ground terminal 27 is secured in a third aperture 28 through the body of the insulating element 15 spaced a greater distance from the center thereof than that of the slots 21 to form a locating relation therewith. The ground terminal 27 is 25 made from a strip of conductive material which is bent backward on itself to form a terminal blade and have a section 29 in engagement with a section 31 to form the ground terminal 27. The free end of the section 29 extends through the aperture 28 and has a lanced-out finger 33 at the upper end 30 which engages the front face of the body portion of the insulating element 13. The section 31 is bent outwardly at 34 and formed forwardly at 35 and shaped on an arc struck from the center of the tubular body 12 to engage the wall thereof.

35 When disposed in position as illustrated in FIG. 1, a slight recess 36 in the wall of the insulating element 15 receives the formed end 35 and maintains it in conductive relationship with the tubular body wall. The ground terminal 27 being eccentrically located relative to the terminals formed by the 40 abutting sections 23 and 24 locates the plug of a wiring circuit when being inserted in the rear end of the tubular body 12 for properly connecting the positive and negative leads of a circuit thereto.

45 It is to be understood that a wall of the tubular body may be staked on the forward side of the insulating element 15 to prevent it from moving forwardly when the lamp bulb is removed. A flanged collar 37 is illustrated as being secured to the outer surface of the wall of the tubular body 12, with a flange 38 thereon to which a ring of elastomeric material 39 is 50 secured for the purpose of sealing the body against the bottom of a receptacle or other support 41. In the structure illustrated, after the insertion of the front end of the tubular body within an aperture 42 in a receptacle 41 with a predetermined sealing pressure applied thereto the forward end is spun over 55 at 43 to permanently secure the body 12 to the receptacle. It is to be understood that this permanent attachment is by way of example and that there are other types of attaching means of the permanent or releasable types known in the art to be suitable which may be substituted therefor. It is to be understood 60 that when the aperture 42 is provided through the receptacle or support 41 a notch is cut in the edge to receive the wall of the locating slot 14 to thereby orient the socket and therefore the pair of filaments relative to the support.

What is claimed is:

1. In a socket, a cylindrical body having lamp bulb securing and locating slots in the wall thereof, a unit insulating element within the body having a rib extending in said locating slot, said element having a pair of rectangular apertures therethrough extending from the front to the rear face thereof, 70 a pair of conducting members having a rectangular body portion extending through said slots forming rigid terminal blades at the rear and deflectable contacts at the front for engaging the terminals of a lamp bulb, and means for securing said members against axial movement to the front and rear faces of said insulating element.

2. In a socket as recited in claim 1, wherein said unit insulating element has a cylindrical recess in the front end thereof in which said contacts can be deflected out of engagement with said cylindrical body.

3. In a socket as recited in claim 1, wherein the means for securing said members to said insulating element are lanced-out fingers one of which engages the front face and the other the rear face of said insulating element.

4. In a socket as recited in claim 3, wherein the said insulating element has a third slot therethrough, and a ground terminal blade secured to and extending from the rear face of the insulating element and having a portion engaging the inner surface of said cylindrical body.

5. In a socket as recited in claim 4, wherein said ground terminal blade is spaced a greater radial distance from the center of said insulating element than said contact terminal blades for locating a plug of a circuit when inserted into the rear end of said cylindrical body.

6. In a socket as recited in claim 5, wherein a support for said socket has an aperture with a slot in the edge which receives the locating slot on the cylindrical body for locating the socket and therefore the filaments of the lamp relative to

said support.

7. In a socket as recited in claim 6, wherein the insulating element has a recess in its front face to enclose the lower portion of the lamp bulb engaging fingers and provide length to the peripheral wall for stabilizing the element within the cylindrical body.

8. In a socket as recited in claim 5, wherein said lamp bulb engaging terminals are of double wall thickness one section being bent backwardly upon another section each section containing a lanced-out finger which extends in the same direction before the bending operation.

9. In a socket as recited in claim 8, wherein the ground terminal is of double wall thickness one section extending through the insulating element, the other section engaging the cylindrical body.

10. In a socket as recited in claim 9, wherein the section extending through said body has a lanced-out finger which engages the front face of the insulating element, the other section having an offset portion engaging the rear face of the element.