United States Patent

Schmidt et al.

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[54] SNAP-IN BULB SOCKET

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[73] Assignee: **Microdot Inc.**

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[52] **U.S. Cl.** ..... **339/99 L,** 339/94 A, 339/127 R

[51] **Int. Cl.** **H01r 9/08**

[58] **Field of Search** 339/95, 94, 97–99, 339/127, 247, 273

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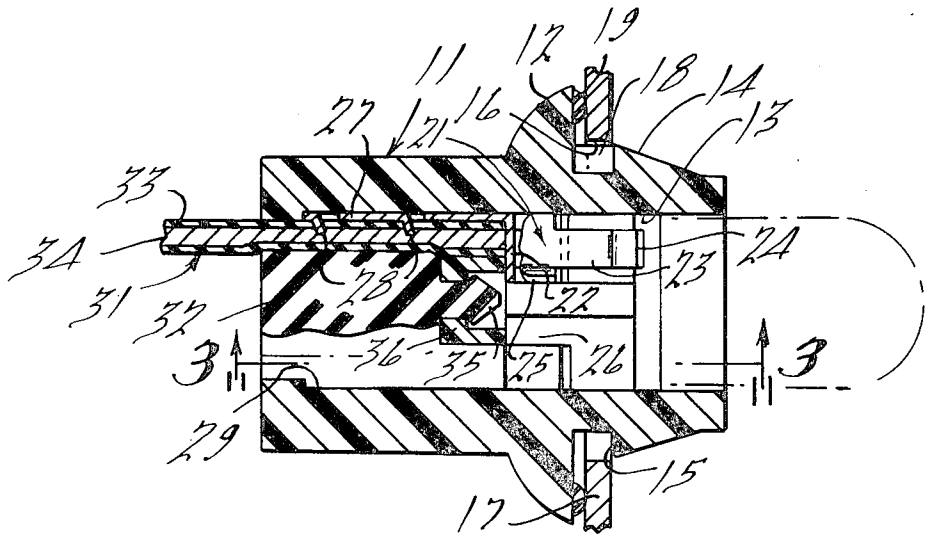
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[57] **ABSTRACT**

The body of the socket is made from a plastic material having a degree of resiliency in a manner to receive and support a pair of terminals located within a recess in which the base of a lamp bulb is insertable. An extension on each terminal projects into the body of the socket and is provided with barbs into which the wires of a pair of conductors are forced by a plug which urges the conductors apart as the plug is anchored within the body. The exterior of the body has securing means which supports the socket in an aperture in a lamp housing or other supporting member.

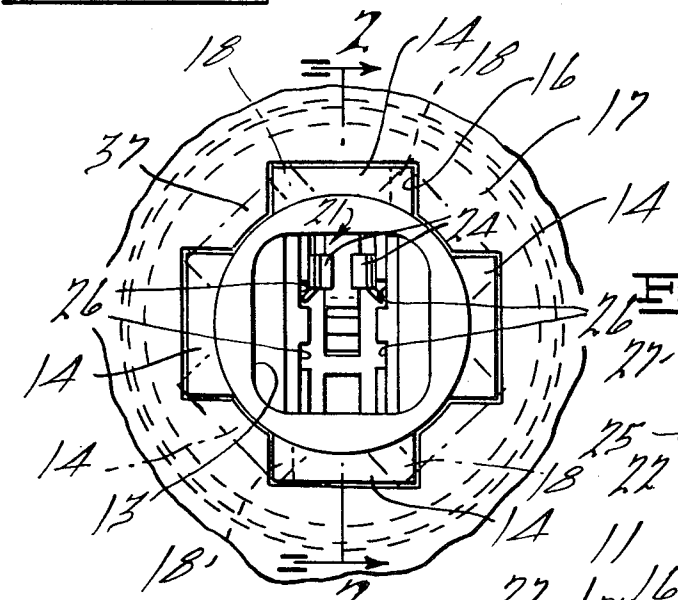
4 Claims, 5 Drawing Figures



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Fig. 1.



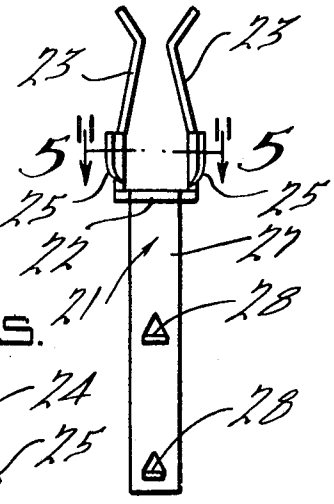


Fig. 5.

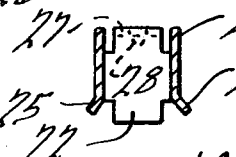


Fig. 4.

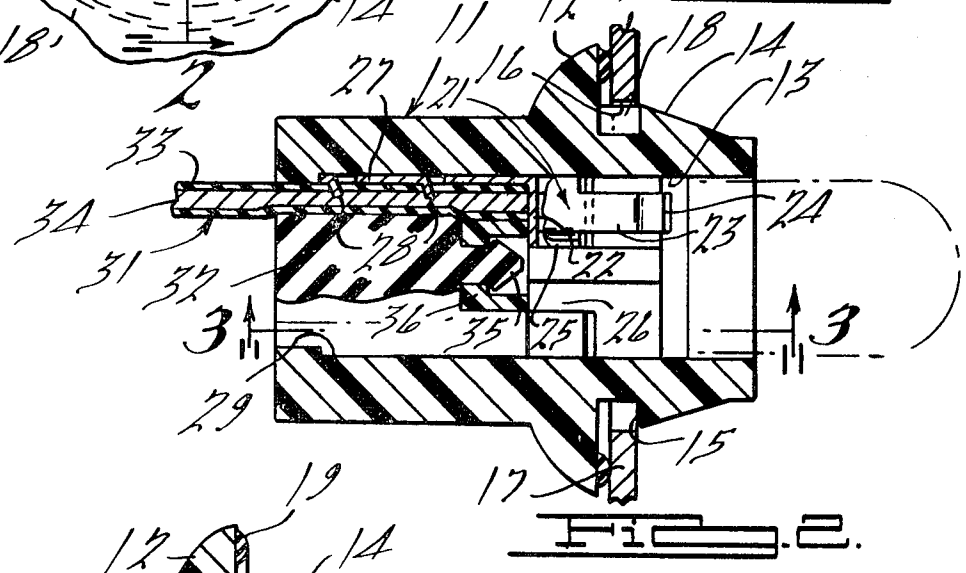


Fig. 2.

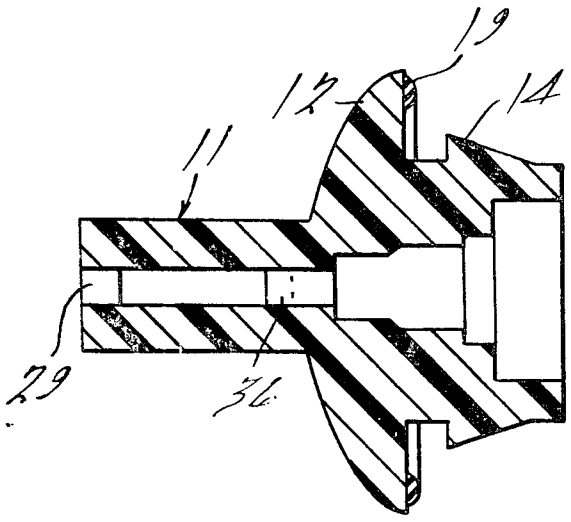


Fig. 3.

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SNAP-IN BULB SOCKET

SUMMARY OF THE INVENTION

The invention pertains to a socket having a body made of plastic material which has a degree of resiliency and which is constructed to have a rectangular portion at one end and an annular portion at the other end. The angular portion contains a recess for a base of a lamp socket and an outwardly extending annular flange spaced from rectangular securing projections to provide an annular slot therebelow. Diametrically disposed webs join the opposite ends of two of the supporting projections to the flange. The projections are herein illustrated as four in number disposed 90° apart and so constructed as to extend through a cruciform aperture in a lamp housing or other supporting member and thereafter when the body is rotated to have the diametrically disposed webs pass from one corner to the other of a pair of oppositely disposed recesses of the cruciform aperture. This limits the rotation of the body to approximately 45° and secures the body against reverse rotation unless a substantial force is applied.

A pair of like contact elements have a pair of spaced fingers extending outwardly from a base section in converging relation to form a terminal for a conductor extending downwardly from the base of the lamp bulb. Each base section has a strip portion extending into the rectangular end of the body which is provided with barbs facing inwardly which pierce the insulating sheath of a pair of conductors which are forced thereagainst by a plug disposed therebetween. The barbs engage the wires within the conductors thereby placing the terminals in conducting relationship with the wires. The central part of the interior of the body has a partition containing an aperture through which the head of the plug is forced and anchored so that the plug and the conductors become a unit part of the body and lock the terminals in fixed relation thereto. The annular flange has a sealing ring of elastomeric material applied thereto or formed thereon during the molding operation which engages the material containing the cruciform aperture to seal the body to the base of a lamp housing or other supporting member.

BRIEF DESCRIPTION OF THE DRAWING

FIG. 1 is a broken plane view of a socket inserted through a cruciform aperture in a lamp housing which is thereafter turned to dot and dash line position to secure the socket to the housing which embodies features of the present invention;

FIG. 2 is a sectional view of the structure illustrated in FIG. 1, taken on the line 2—2 thereof;

FIG. 3 is a sectional view of the structure illustrated in FIG. 2, taken on the line 3—3 thereof;

FIG. 4 is a view in elevation of one of the contact elements, two of which are employed within the body of the socket, and

FIG. 5 is a sectional view of the structure illustrated in FIG. 4, taken on the line 5—5 thereof.

DESCRIPTION OF THE PREFERRED EMBODIMENT

The invention pertains to a socket having a body **11** made from a plastic material having a degree of resiliency so that it is slightly deflectable. The body **11** is of substantially rectangular form at one end and of cylindrical form at the other with an outer annular flange **12** therebetween. A recess **13** for a lamp bulb extends inwardly from the end of the body which is of cylindrical form. Securing projections **14**, herein illustrated as four in number disposed 90° apart, extend outwardly from the recessed end to be positioned above and in space relation to the annular flange **12** forming a slot **15** therewith. A cruciform aperture **16** is provided in a base **17** of a lamp housing or other supporting member through which the securing projections **14** are insertable. A pair of oppositely disposed securing projections have opposite edges provided with a web **18** which bridges the slot **15** and joins the securing projections to the annular flange **12**. A sealing ring **19** is secured to the annular flange **12** on the side facing the base **17** against which it is compressed upon the insertion of the securing projections **14** through the cruciform aperture **16** and the rotation of the body **11** thereafter. The webs **18** deform slightly during the rotation of approximately 45° until they strike the edge of opposite recesses of the aperture to extend into a corner thereof and secure the body in locked position from which a positive force is required to rotate the body to released position. When in locked position, the sealing ring **19** seals the socket to the base **17** of the lamp housing.

Two like conducting elements **21** are supported within the body **11** in spaced facing relation to each other. Each conducting element has a base section **22** from which two fingers **23** extend upwardly converging toward each other and outwardly deflected at the ends. The bottom of the fingers **23** are extended rearwardly at **24** and forwardly at **25**, the latter being bent outwardly to engage the side walls of the hollow interior **26** of the body. The rear end of the base section **22** has a conducting strip **27** extending downwardly at right angles thereto and provided with a pair of barbs **28** which extend inwardly into the hollow interior **26** of the body. A recess **29** is provided in the facing end walls of the hollow interior **26** of the body which receive the conducting strip **27**, as clearly illustrated in FIG. **2**.

A pair of spaced conductors **31** extend within the hollow interior **26** of the body and are urged against the conducting strips **27** by a plug **32** which forces the conductors apart and onto the barbs **28** which pierce through an insulating sheath **33** thereof into conducting wires **34** therewithin. The inner end of the plug **32** has a head **35** which passes through an opening in a partition **36** within the body and locks the plug therein. This secures the conductors **31** to the conducting strips **27** and maintains a conducting relation between the wires **34**, the barbs **28**, the conducting strips **27** and the fingers **23** forming the terminals.

The body is mounted on the base **17** of the lamp housing or other supporting member having the cruciform slot **16** therein. The end of the body having the recess **13** for the lamp base is inserted through the cruciform slot **16** and rotated substantially 45° to move the securing projections **14** onto the portions **37** between the notches forming the slot. The webs **18** pass along the edge of the pair of oppositely disposed notches into an opposite corner thereof which stops the further rotation of the socket body **11** and retains the socket in mounted position upon the base **17** of the lamp housing or supporting member. This not only retains the socket on the base **17** but also retains the sealing ring **19** in sealed engagement therewith. The material of the body **11** has sufficient resiliency to permit the webs **18** to pass along the edge of the pair of notches of the cruciform aperture and to stop the rotation of the socket which is retained in secured position requiring a positive force to be applied to rotate the socket in the opposite direction so that it can be removed.

We claim:

1. In a socket, a body having a recess at one end for supporting a base of a lamp bulb in engagement with a contact, a conducting strip extending from said contact into the end of the socket opposite to that having the lamp bulb receiving recess, said strip having barbs extending therefrom and projecting inwardly of the body, a plug having anchoring means thereon insertable in said opposite end and of a dimension to engage and force the end sections of a pair of insulated wire conductors toward said strip and the insulation of said conductors over said barbs sufficiently to cause said wire conductors to move into conducting relation with said barbs, and anchoring means within the socket engageable with the anchoring means on the plug for locking the plug in firm fixed relation therein and the end sections of the wire conductors in conducting relation with the barbs.

2. In a socket as recited in claim 1, wherein a pair of spaced contacts are disposed within the bulb receiving recess having conducting strips extending downwardly therefrom into said opposite end of the socket with the barbs thereon presenting inwardly toward each other, and wherein said plug is insertable between said strips and the end sections of the pair of insu-

lated wire conductors for forcing the conductors toward the strips and onto said barbs which pass through the insulation and engage the end sections of the wire conductors.

3. In a socket as recited in claim 2, wherein the insulated wire conductors on opposite sides of the locking plug secure the conducting strips in fixed relation within the socket body.

4. In a socket as recited in claim 2, wherein the body portion

is made of plastic material having an annular flange adjacent to the end having the lamp bulb receiving recess, and four securing projections molded with the body portion and located above said annular flange providing a slot therebetween.

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