United States Patent [19]

Moore

[11] **3,873,176**

[45] **Mar. 25, 1975**

[54] **LAMP SOCKET**

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[73] Assignee: **Microdot Inc.,** Troy, Mich.

[22] Filed: **Jan. 2, 1974**

[21] Appl. No.: **430,078**

[52] **U.S. Cl.**..... **339/59 L,** 339/127 R, 339/217 S, 339/258 S

[51] **Int. Cl.**..... **H01r 11/04,** H01r 13/32

[58] **Field of Search**..... 339/17 D, 59 L, 127 R, 339/127 C, 217 S, 221 L, 221 R, 221 M, 256 SP, 258 S

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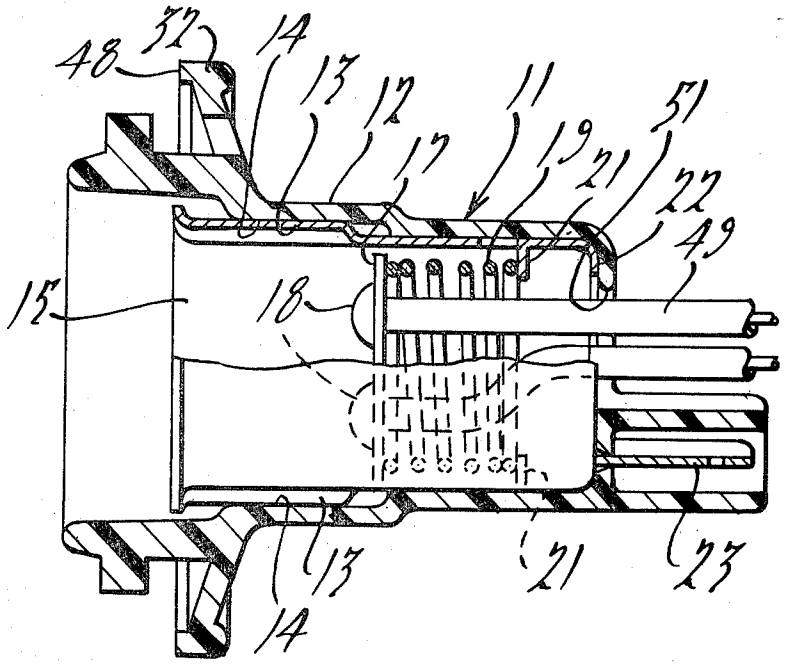
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Primary Examiner—Joseph H. McGlynn
Assistant Examiner—Howard N. Goldberg
Attorney, Agent, or Firm—Harness, Dickey & Pierce

[57] **ABSTRACT**

A vehicle lamp socket has a plastic body in which a metal tube of variable length for a lamp to change the focal point, is supported. The plastic body has annular flange made of the hard plastic material which is slotted near the body to provide a substantial amount of flexibility to the outer edge of the flange. Wings are provided on the body by which the socket is secured in an aperture and these are severed from the flange to eliminate any rigidity thereat. In this manner, a flexible flange is provided to the body which will retain it in locked position in the aperture under pressure.

5 Claims, 10 Drawing Figures



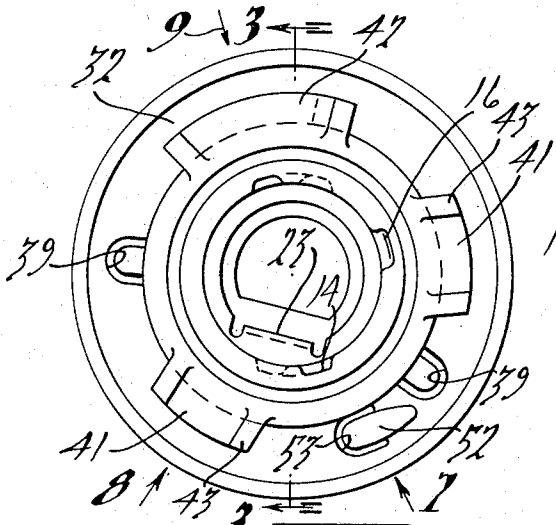


Fig. 1.

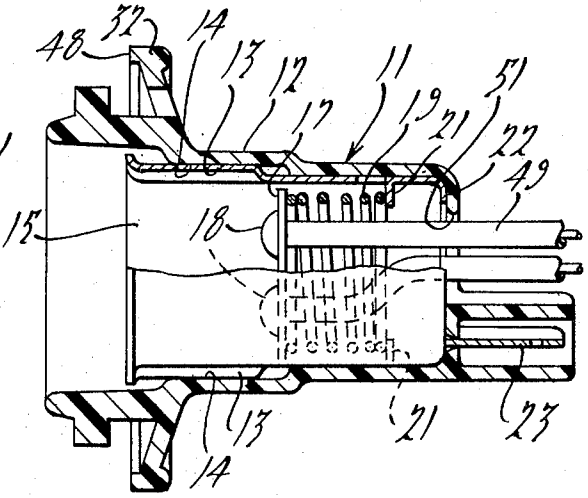


Fig. 3.

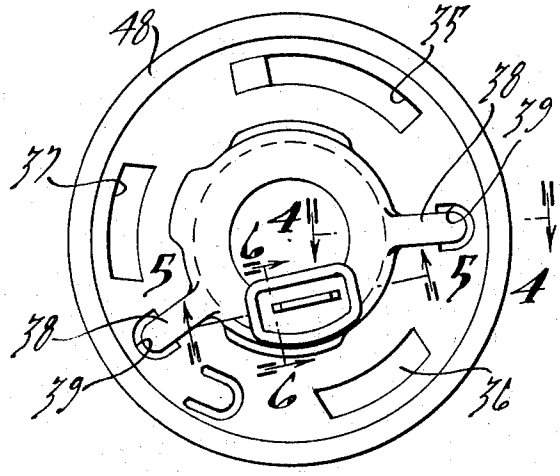


Fig. 2.

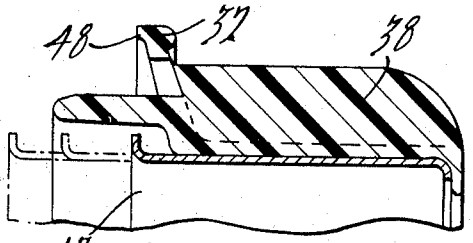


Fig. 4.

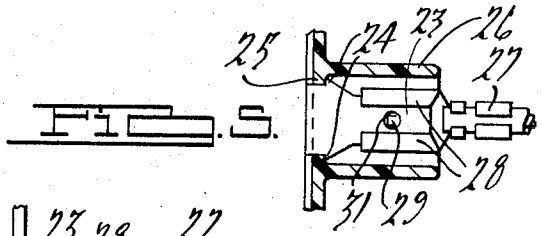


Fig. 5.

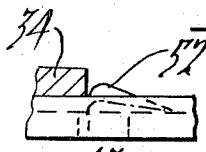


Fig. 7.

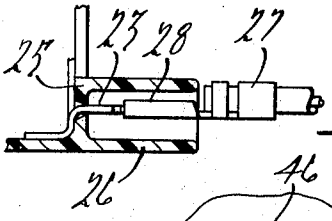


Fig. 6.

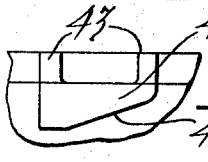


Fig. 8.

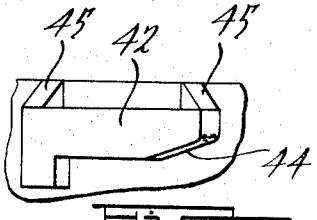


Fig. 9.

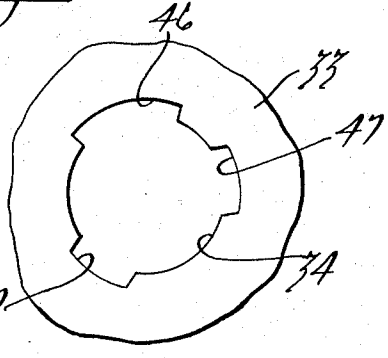


Fig. 10.

LAMP SOCKET

BACKGROUND OF THE INVENTION

Reference may be had to the patent to D. L. De Lano U.S. Pat. No. 3,383,637 which shows a plastic body with a metal lamp supporting tube which employs an elastic ring to provide mounting and sealing pressure to the body when secured in an aperture in a panel.

SUMMARY OF THE INVENTION

The invention pertains to a socket having a body which is made from a hard plastic material such as Nylon or the like with clamping members extending above an outwardly extending annular flange which has spaced slots therethrough near the body to permit the outer edge of the flange to deflect under a predetermined pressure. The body has a pair of wings which permit the sloping cam elements to force the body inwardly within an aperture and deflect the outer edge of the annular flange under a predetermined pressure. The portion of the flange adjacent to the wings are separated therefrom to eliminate the rigidity which would otherwise occur thereat.

The metal tube, supported within the socket body has J-slots for the prongs on the lamp base, a longitudinal extending slot for the projection on the terminal supporting washer for orientation and a pair of struck-out tongues which are engaged by a spring which contacts the terminal supporting washer. By lengthening the inner end of the tube below the tongues, any length tube may be provided which will have the terminals and the J-slots positioned in the same relation for different focal length positions. The body has a rectangular projection molded at one side in which a prong from the base of the metal tube extends which has an aperture therein for receiving a tang extending outwardly from a terminal on a wire which functions as a ground. The prong is anchored within the rectangular extension which secures the tube within the socket body.

BRIEF DESCRIPTION OF THE DRAWING

FIG. 1 is a view of a socket taken from the end in which the light bulb is supported;

FIG. 2 is a view of the socket illustrated in FIG. 1, taken from the opposite end thereof;

FIG. 3 is a sectional view of the structure illustrated in FIG. 1, taken on the line 3—3 thereof;

FIG. 4 is a sectional view of the structure illustrated in FIG. 2, taken on the line 4—4 thereof;

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

FIG. 6 is a sectional view of the structure illustrated in FIG. 5, taken on the line 6—6 thereof;

FIG. 7 is a side view of the structure illustrated in FIG. 1, as viewed from the point 7 thereof;

FIG. 8 is a view of the structure illustrated in FIG. 1, as viewed from the point 8 thereof;

FIG. 9 is a view of the structure illustrated in FIG. 1, as viewed from the point 9 thereof, and

FIG. 10 shows a supporting panel having an aperture therein in which the socket of the present invention may be supported.

DESCRIPTION OF THE PREFERRED EMBODIMENT

A socket **11** has a body **12** made of hard plastic material such as Nylon which is deflectable when pressure is applied thereto. The body has recesses **13** on opposite sides for receiving the J-slot **14** in opposite sides of a conducting tube **15** which receives and supports the base of a lamp. The body has a third inwardly facing recess **16** for receiving the longitudinal offset portion of the tube **15** in which a tab on an insulating washer **17** is received for orienting the terminals **18** mounted thereon. The washer **17** is urged outwardly by a spring **19** which rests upon oppositely disposed struck-out tongues **21** extending inwardly of the tube **15.** The bottom of the tube is drawn inwardly at **22** and a tab **23** is formed outwardly to function a ground for the tube. The tab **23,** as illustrated in FIG. **5,** has shoulder portions **24** which, when passed through a slot in the base portion **25** of the body, extends thereover and locks the tube **15** therein against removal. The tab extends outwardly into a rectangular extension **26** of the base and a terminal **27,** to which a wire may be connected, has reversely bent flanges **28** which slide over the tab **23** until a spring tab **29** passes into an aperture **31** in the tang to lock the terminal against removal.

The body **12** has an outwardly extending annular flange **32** which engages the face of a panel **33,** illustrated in FIG. **10,** against which it is secured when the terminal is mounted on the panel in the aperture **34** thereover. The flange **32,** as illustrated more specifically in FIG. **2,** has slots **35, 36** and **37** provided therethrough with the mounting wings **38** having the flange portion cut therefrom at **39** to provide flexibility to the continuous rim of the flange **32.** Positioning and locking flanges **41** and **42** are molded on the body between the flange **32** and the lamp end of the body. Two of the flanges **41** are alike and, as illustrated in FIG. **8,** have reinforcing ribs **43** and a sloping cam face **44.** The locking flange **42** has a sloping face **44** as well as reinforcing ribs **45** which are radially disposed. The locking flange **42** is longer than the two flanges **41** and pass through a notch **46** in the panel **33** which is longer than the notches **47** which receives the locking flanges **41.** This orients the socket within the aperture **34** and when forced against the panel **33** and rotated upon gripping the wings **38,** the cam faces **44** of the flanges **41** and **42** will draw the socket inwardly of the aperture thereby deflecting the rim **48** of the flange **32** in pressure relation with the panel **33.** The slots **36, 37** and **38** and the cutout portion **39** of the flange material provide resiliency to the rim **48** of the flange which is free to deflect when drawn tightly against the face of the panel **33** by the cam surfaces **44** as hereinabove pointed out.

The terminals **18** have wires **49** secured thereto and extending from the aperture **51** in the bottom of the body **12.** These are retained in predetermined relation to the body in the conventional manner. After the socket has been rotated within the aperture **34,** a projecting finger **52** has the flange cut away by a U-shape slot **53.** The finger **52,** as illustrated in dotted line in FIG. **7,** deflects below the panel **34** until after the end passes thereover at which time the finger returns to its original position to engage the end of the panel and lock the socket against rotation until a positive turning force is applied thereto.

I claim:

1. In a socket, a body made of a hard plastic material having an internal recess, a metal tube within said recess for supporting a lamp bulb, an outwardly extending annular flange about the lamp bulb end of the body

having slotted areas within the flange to provide resiliency to the continuous outer edge of the flange, and cam means between the flange and lamp end having cam faces thereon which when disposed through notches in the edge of an aperture through a panel draws the socket thereinto and deflects the edge of the flange into pressure engagement with the panel.

2. In a socket as recited in claim **1,** wherein a pair of wings are molded with the flange of the body with the ends of the wings separated from the flange to retain the resiliency of the flange edge.

3. In a socket as recited in claim **2,** wherein the body has a slotted rectangular extension at the rear end, a tab on the rear end of the metal tube which is forced through the slot in the rectangular extension, and projections on the side of the tab which deflects the material at the sides of the slot and extends thereover to lock the tube to the body.

4. In a socket as recited in claim **3,** wherein the tab has an aperture therethrough, a terminal having a web and reversely formed side walls forming facing channels which slide over the tab, and a prong on said web engageable in the aperture of the tab to lock the terminal thereon.

5. In a socket as recited in claim **1,** wherein a locking finger molded with the flange has the material thereof removed about an end which extends outwardly thereof toward the cam means, the removed material permits the finger to deflect relative to the flange for releasably locking the tubular body to the panel.

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