May 4, 1965 R. E. FITZ GERALD 3,182,279

LAMP SOCKET

Filed Aug. 20, 1963

Fig. 1.

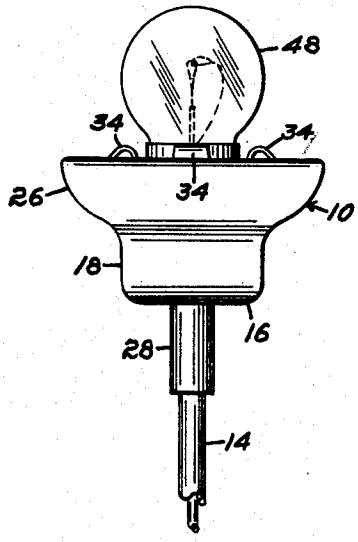


Fig. 2.

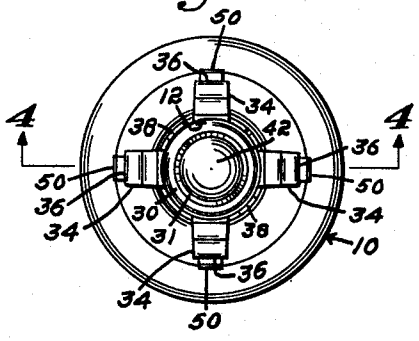


Fig. 3.

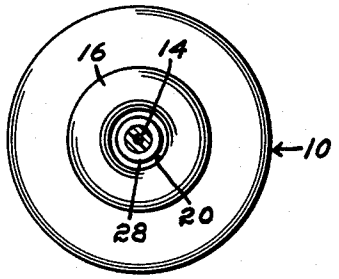
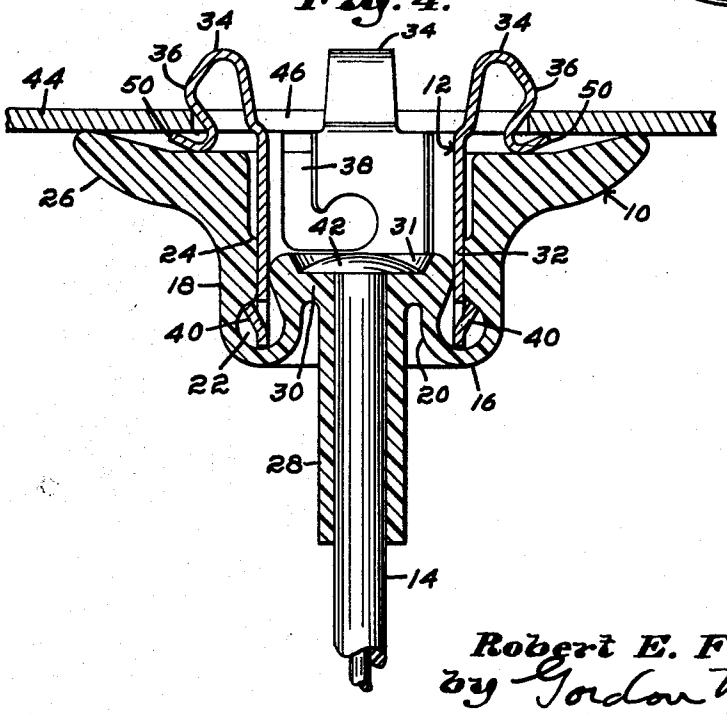


Fig. 4.



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United States Patent Office 3,182,279 Patented May 4, 1965

3,182,279

LAMP SOCKET

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Filed Aug. 20, 1963, Ser. No. 303,385
1 Claim. (Cl. 339—59)

This invention relates generally to electrical lamp sockets and more specifically to a socket for engagement with a support.

An object of the present invention is to provide an insulating housing for a lamp socket or the like having integral spring means and groove means for engaging an inner conductive shell.

Another object of the present invention is to provide a unitary conductive shell for a lamp socket and the like having integral means of engaging the insulated housing and having integral means of engaging a support.

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

In the drawing:

FIG. 1 is a side elevation of the lamp socket assembly with the bulb engaged;

FIG. 2 is a top plan view of the socket shown in FIG. 1 without the bulb;

FIG. 3 is a bottom plan view of the socket shown in FIG. 2; and

FIG. 4 is a section taken on line 4—4 of FIG. 2.

Referring to the drawings there is shown a lamp socket assembly comprising a flexible insulating housing **10**, a conductive shell or liner **12** and a capped wire lead **14**.

The insulating housing **10** comprises an annular base portion **16** of substantially arcuate cross section having an integral, upstanding, circumferential wall **18** extending therefrom and an inner circumferential wall **20** also extending from said base portion **16** toward the same plane as said circumferential wall **18** and spaced from said circumferential wall **18**. The inner surface of the circumferential wall **18** is thickened at a fixed distance from its juncture with the arcuate base portion **16**. The inner wall **20** forms a continuation of the base portion **16** and forms a circumferential groove **22** with the wall **18**. The thickening of the wall **18** is continued for approximately half its height and the wall **18** is then angled away from the axis of the housing **10** to provide an enlarged internal diameter as shown at FIG. 4, and an inner circumferential shoulder **24**. Integral with and extending radially outward from the circumferential wall **18** at the opposite end from its connection with the base portion **16** is a flange **26** which is arced or dished slightly in a direction away from the base portion **16**. A tubular stem **28** is formed integral with a connector portion **30** which is integral with the inner wall **20** and which bridges a part of the open area created by the inner wall **20** as shown in FIG. 4. A portion of the upper surface of the connector portion **30** is formed to provide a circular cavity **31**. The opening formed through the stem **28** is continued through the connector portion **30** into the cavity **31** and a portion of the stem **28** is spaced from and circumscribed by the inner wall **20**.

The conductive shell **12** comprises a tubular body portion **32** open at both ends and having a vertical slot formed throughout its height for flexibility. Extending from one terminal end of the body portion **32** is a series of four arms **34** placed around the circumference of the body portion at 0, 90, 180, and 270 degree positions. These integral arms **34** are bent to provide a great degree of flexibility and are hooked at their terminal ends **50** to provide one engagement means for engagement with an apertured support in co-operation with a knuckle **36**

formed on the arms **34** as shown in FIG. 4. Two J-slots **38** are formed in the body portion **32** in opposed relation to each other and having an opening at the same edge as that to which the arms **34** are connected. A series of tangs **40** are formed in the body portion **32** extending radially away from the body portion **32** in acute angular relation thereto and having terminal ends directed generally toward the arms **34**. The tangs **40** are formed a fixed distance from the end of the body portion **32** opposite from that from which the arms **34** extend, as shown in FIG. 4. The distance the tangs **40** are formed from the end of the body portion **32** will depend to some extent on the dimensions of the groove **22**. The wire lead **14** comprises an insulated wire to which a flanged cap **42** is engaged. The engagement of the cap **42** is made on the bared wire of the lead **14**.

The conductive shell **12** is engaged to the insulating housing **10**, by passing the body portion **32** into the recess formed by the housing **10** until the terminal end of the body portion **32** engages the groove **22** and the terminal ends of the tangs **40** butt against the inner surface of the circumferential wall **18** slightly below the point at which it is thickened or angled. The volume formed by the inner wall of the housing **10** may have a diameter slightly greater than the diameter of the body portion **32**. It is possible that the inner diameter of the housing **10** may be slightly less than the external diameter of the body portion **32** if the circumferential wall **18** is of sufficient flexibility to allow the tangs **40** to pass through the narrow channel formed by the inner surface of the wall **18** where it is thickened and thus angled toward the axis of the housing **10**. Prior to this last-mentioned operation, the wire lead **14** with its engaged flanged cap **42** have been passed into the cavity **31** of the connector portion **30** and the remaining portion of the wire lead **14** has been passed through the tube formed by the stem **28**. In this position the flanged cap **42** is in superposed abutting relationship to the connector portion **30** partially within the cavity **31** and is in spaced relationship with the body portion **32** of the conductor shell **12**. The hooked terminal ends **50** of the arms **34** will be in spaced relationship with the arced surface of the flange **26** of the housing **10**.

The lamp socket assembly can now be engaged to an apertured support **44** whose aperture **46** has a diameter slightly less than the diameter of a circle defined by the knuckles **36** and of a circle defined by the hooked terminal ends **50** of the arms **34**. The diameter defined by the hooked terminal ends **50** may be greater than that of the one defined by the knuckles **36**. The lamp socket assembly is pressed into the aperture **46** until the knuckles **36** engage on one side of the support and the hooked terminal ends **50** of the arms **34** engaged on the opposite side of the support **44**. At the same time that the aforementioned is taking place, the flange **26** of the housing **10** is pressed against and flexes away from the lower surface of the support **44**. The total assembly is now ready to receive a bulb **48** of the type having a pair of studs formed for engagement with the J-slots **38** in the usual manner well known in the art.

While there has been illustrated and described a preferred embodiment of the invention, it should be understood that the invention is best described by the following claim.

I claim:

An electrical bulb socket comprising a flexible insulating housing, a conductive shell having means of engaging a bulb or the like and at least one wire lead, said insulating housing having a base portion, an inner circumferential wall extending from said base portion and an outer circumferential wall extending from said inner

circumferential wall and spaced from said inner circumferential wall, said outer circumferential wall having an inner surface a portion of which is angled toward the axis of said socket to form an annular groove with said inner wall and a stem portion integral with said insulating housing and circumscribed, for a portion of its length, in spaced relation, by said inner wall and said conductive shell open at both ends and having a series of tangs formed from and around the circumference of said conductive shell proximate one open end and a series of arms extending from the other end for engagement with an apertured support, said tangs having engagement edges directed toward said arms and engaging the inner surface of said outer circumferential wall.

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