United States Patent

[11] 3,622,947

[72] Inventor **Robert M. Griffin**
C/O Sylvania Electric Products, Salem, Mass. 01970

[21] Appl. No. **68,856**
[22] Filed **Sept. 2, 1970**
[45] Patented **Nov. 23, 1971**

[54] **LAMP BASE EXTENSION**
3 Claims, 3 Drawing Figs.

[52] **U.S. Cl.** **339/146,** 313/318
[51] **Int. Cl.** **H01r 13/30**
[50] **Field of Search** 339/112, 146, 145, 179, 182; 313/318

[56] **References Cited**

UNITED STATES PATENTS

2,091,233	8/1937	Zobel	339/146 X
1,439,471	12/1922	Hohl	339/146 X
2,262,629	11/1941	Wright	339/146 X
3,402,383	9/1968	Hilzen	339/112

Primary Examiner—Richard E. Moore
Attorneys—Norman J. O'Malley and Joseph C. Ryan

ABSTRACT: A lamp base extension for halogen-type lamps where the base to filament length is increased without enlarging the size of the lamp envelope. The extended base comprises a preformed ceramic bridge spaced between an extension skirt and a screw base. The ceramic bridge is formed with reduced end portions and spaced slots about its periphery. The metal base and extension skirt are fitted over each reduced end of the bridge and the edges of the skirt and base are crimped into the slots of the bridge. This forms an extended base that provides an increased light center length for the lamp without enlarging the lamp envelope or the utilization of an expensive glass insulation bridge.

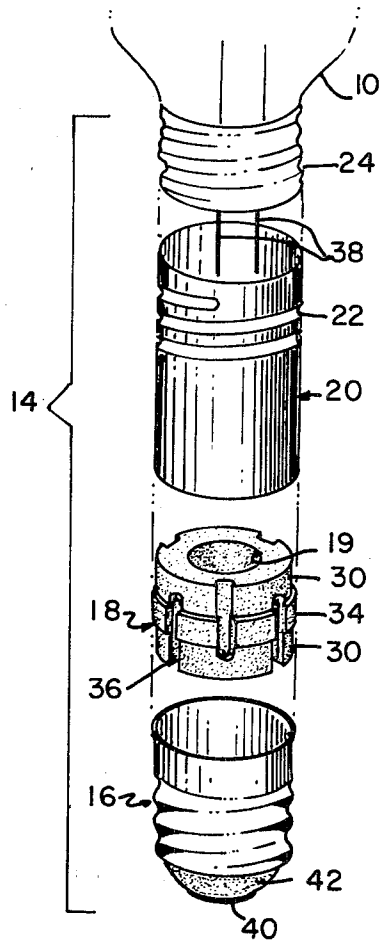


FIG. 1

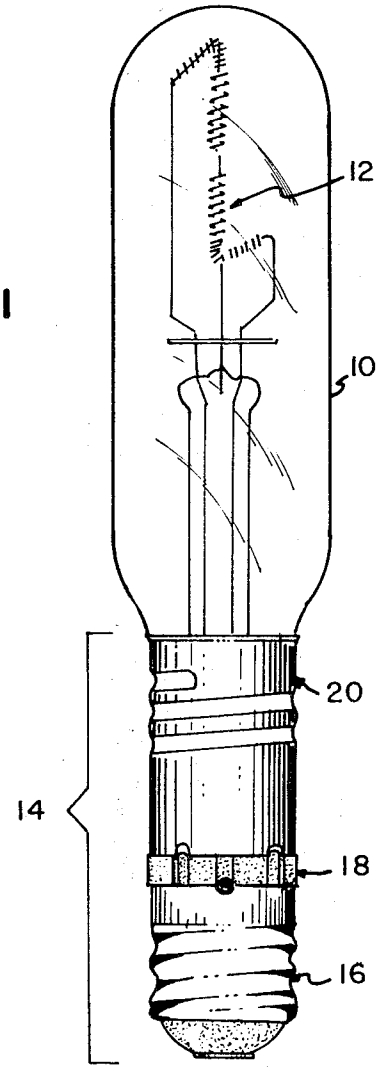


FIG. 2

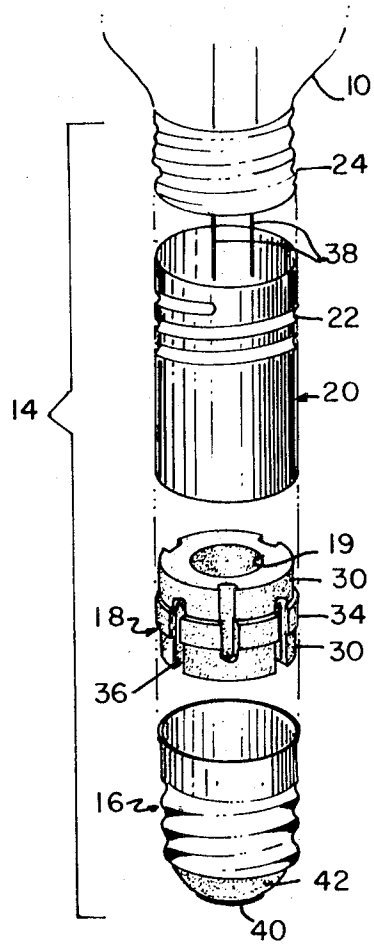
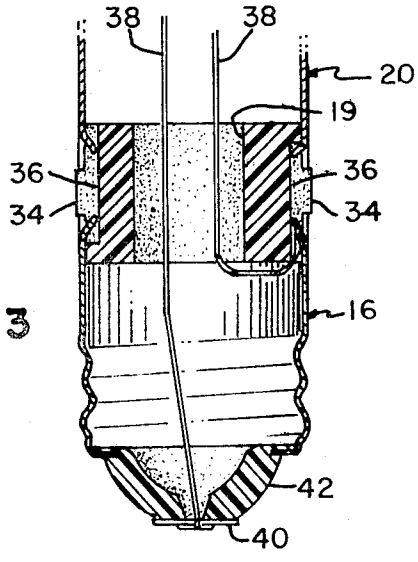


FIG. 3



ROBERT M. GRIFFIN
INVENTOR

BY Joseph C. Ryan
ATTORNEY

LAMP BASE EXTENSION

BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention pertains to an extension for a lamp from that of a normal light center to one that can be utilized in large fixtures. The light center length of a lamp is determined by the distance from the center of the filament to the bottom edge of the base. In most larger reflectorized fixtures the center of the filament should be at the proper focal point of the reflector, that is, where the optimum lumen efficiency of the lamp is realized. In recent years more efficient halogen-type lamps have been utilized. In this type of lamp a regenerative cycle is established producing a longer lasting and a more efficient lamp. The temperatures of the lamp wall and its distance from the filament are two critical factors for proper operation of the regenerative cycle. Therefore, larger spherical lamp envelopes would be prohibitive, mainly because of the relative distance of the wall of the lamp to the filament. With demand for larger fixtures, increased filament to base length adapters for standard lamps have become a necessity.

DESCRIPTION OF PRIOR ART

Lamps requiring increased light center lengths have been made involving expensive molten glass operations to form the insulation between the standard metal base and the metal extension skirt. Briefly, the shell or metal base and the metal skirt are coaxial, with the bottom of the skirt adjacent to the open end of the shell but spaced axially from the skirt. During fabrication the skirt and shell are mechanically held in this way while a molten flow of glass is applied to the interior of the shell and skirt so that the glass completely covers the inside of the shell and also fills the space between the edges of the shell and skirt. The glass also flows to the bottom end of the base shell and forms a hemispherical insulator where a flat brass cap is then anchored and thus insulated from the base.

On lamps of low production the setting up of this type of glass operation became very expensive.

SUMMARY OF THE INVENTION

This invention relates to an improved base where the light center length of a lamp can be increased so that it can be used with larger reflectors without increasing the size of the lamp envelope or requiring expensive glass insulating operation. The size of the envelope is critical to the regenerative cycle of the newer halogen-type lamps. A minimum distance must be maintained between the filament and the bulb wall to produce the desired temperature for the regenerative cycle to function. In high wattage studio lamps the tubular-shape envelope is extensively used because the wall to filament distance is constant along the length of the filament. Therefore, in designing a particular filament for a desired wattage, the distance between the filament and the bulb wall is one of the critical factors. With our preformed ceramic bridge that requires no glass operation, low production volume lamps can be inexpensively fabricated.

In our invention, a metal extension skirt is attached to a lamp screw adapter fixed to the bottom of the lamp. The skirt is then fitted over one end of a ceramic bridge while a standard screw base is fitted over the other end of the bridge. Prior to the fitting of the screw base to the bridge the lead wires of the lamp are directed and soldered to the screw base. With the skirt and screw base positioned on the bridges, the edges of the skirt and screw base are crimped into slots located on the periphery of the bridge. The crimping operation completes the forming of the base of the lamp.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is an elevational view of the completed lamp and base.

FIG. 2 is an exploded view of the base components of the lamp.

FIG. 3 is an enlarged cross-sectional view of the base.

DESCRIPTION OF THE PREFERRED EMBODIMENT

In FIG. 1 of the drawing, the complete lamp structure is shown. The main components are an elongated tubular-shaped envelope **10**, having a conventional vertical filament structure **12** sealed within the envelope and a base assembly **14** fixed to its lower end. In FIG. **2** each component is clearly shown in an exploded view. The base assembly **14** comprises a standard screw base **16** and a ceramic bridge **18** positioned between the base **16** and an extension skirt **20**. The skirt is provided with a formed screw impression **22** so that it can be fitted to a metal screw adapter **24** fixed to the lower end of the envelope **10**. The ceramic bridge **18** has a central orifice **19** and two reduced steps **30** separated by a central portion **34** that is equal in diameter to that of the skirt **20** over the base **16**. With this arrangement the base can be fitted over one of the steps **30** and the skirt **20** is fitted over the other step. The central portion **34**, being of larger diameter than the steps **30**, forms a ridge that insulates the base from the skirt. As viewed in FIG. **2**, a series of slots **36** are positioned about the periphery of the bridge **18**. Each alternate slot terminates just short of the length of the bridge providing a stop in both directions.

As viewed in FIG. **1**, the extended base is shown in a fully assembled position. The skirt **20** is first fitted to one of the reduced steps **30** of the bridge **18** and then screwed onto the screw adapter **24** that is fixed on the lamp envelope **10**.

The lead wires **38** are directed through the orifice **19** of the bridge **18**, one of the lead wires being directed back into one of the slots **36** and the other lead wire being directed to a central contact button **40** of screw base **16**. The base **16** is fitted over the other reduced end of the ceramic bridge **18**. As can be seen in FIG. **3**, the lead wire that is directed back into one of the slots **36** is in contact with the edge of the screw base **16**. The distal end of each of the lead wires **38** are then soldered in place providing electrical continuity for the filament structure **12**.

The final phase of the assembly of the base is accomplished by a staking or deforming operation where the edges of the skirt **20** and the base **16** are alternately deformed into the slots **36**. As mentioned above, the edges of the skirt and the base are deformed into the slots that are aligned to the stop part of the slot. This will lock the skirt **20** and the base **16** permanently to the bridge **18**.

This particular base fabrication allows low production volume lamps to be produced without the expensive cost of setting up glass-forming machinery that was usually used in forming the bridging between the skirt and the base.

We claim:

1. A base assembly for a lamp having an hermetically sealed lamp envelope with a screw adapter fitted to an end thereof, a filament structure including a filament disposed in said lamp envelope and a pair of lead-in wires extending from said lamp envelope, said base assembly comprising: a preformed ceramic bridge, said bridge having reduced end portions, a central orifice and spaced slots about its periphery; a metal screw base having a contact button insulated from its main body portion; a metal extension skirt provided with the screw impressions at one end; said metal extension skirt is fitted over one of the reduced portions of said bridge and its edges are deformed into the slots of said bridge, the other end of said skirt is fitted to said screw adapter of said envelope; said lead-in wires of said envelope extend through the said orifice of said bridge; said metal screw base is fitted over the other reduced end of said ceramic bridge, wherein the ends of said lead-in wires are directed to their conductive points on said base, the edges of said base are deformed into said slots of said bridge thereby forming an extended length between the center of the said filament structure and the bottom of said screw base.

2. The base assembly according to claim **1** wherein said ceramic bridge is provided with a raised portion that separates and insulates said skirt from said base.

3. The base assembly according to claim **1** wherein said lead-in wires of said lamp are directed through the orifice of said ceramic bridge to said base.