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(11) **EP 1 079 410 A2**

(12) **EUROPEAN PATENT APPLICATION**

(43) Date of publication:
28.02.2001 Bulletin 2001/09

(51) Int. Cl.⁷: **H01J 5/56, H01J 9/30**

(21) Application number: **00118503.2**

(22) Date of filing: **25.08.2000**

(84) Designated Contracting States:
**AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU
MC NL PT SE**
Designated Extension States:
AL LT LV MK RO SI

(30) Priority: **26.08.1999 US 383909**

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(54) **Lamp base**

(57) A base 10 for a light emitting bulb comprises an electrically insulating body 12 formed from a thermoplastic organic material, for example, polyethylene, and having a first surface 14, a second surface 16 spaced therefrom, and a sidewall 18 separating the first and second surfaces. The sidewall is formed to provide a first area 20, such as flange 21, for initially receiving an electrically conducting element 22 and a second area 24 for subsequently fixing the electrically conductive

element 22 to the insulating body 12. The area 24 is provided with a deformable protrusion 25. An electrically conductive eyelet 26 is affixed to the first surface 14 and the electrically conductive element 22 extends beyond the second surface 16. This base eliminates the need for using and maintaining glass furnaces and provides cost savings thereby.

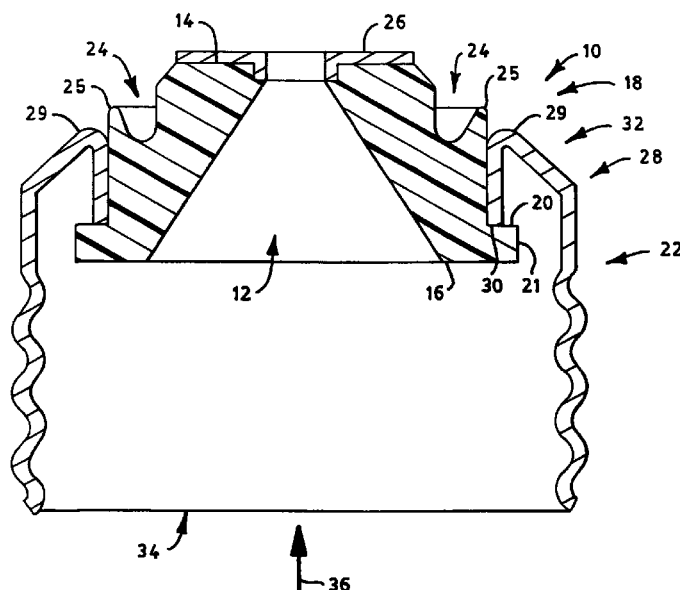


FIG. 1

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Description

[0001] This invention relates to electric bulbs and more particularly to bases therefore.

BACKGROUND ART

[0002] Electric bulbs, particularly those of the kind employing any of various sizes of Edison bases, i.e., the common threaded base, have a three-part base comprising an electrically conductive eyelet portion and an electrically conductive threaded portion separated and held together by a glass insulator. Such bases are manufactured on automatic equipment that utilizes a glass furnace for forming the insulator and connecting the separate electrically conductive pieces. These bases are made literally by the billions each year and provide a substantial part of the cost of many light bulbs. The cost of heating and melting the glass, as well as the cost of maintaining the glass furnace, contributes to the cost of the bases. Accordingly, it would be an advance in the art if a base could be produced at a lesser cost.

DISCLOSURE OF INVENTION

[0003] It is therefore, an object of the invention to obviate the disadvantages of the prior art.

[0004] It is yet another object of the invention to enhance the manufacture of bulb bases.

[0005] Still another object of the invention is the provision of a new method of making bulb bases.

[0006] Yet another object is the elimination of the glass insulator from the base.

[0007] These objects are accomplished, in one aspect of the invention, by providing an insulating member for a base for a light emitting bulb which comprises an electrically insulating body formed from a thermoplastic plastic material and having a first surface, a second surface spaced therefrom, and a sidewall separating the first and second surfaces. The sidewall is formed to provide a first area for initially receiving an electrically conducting member and a second area for subsequently fixing the electrically conductive member to the insulating member.

[0008] In another aspect of the invention, a base for a light emitting bulb comprises an electrically insulating body formed from a thermoplastic plastic material and having a first surface, a second surface spaced therefrom, and a sidewall separating the first and second surfaces. The sidewall is formed to provide a first area for initially receiving an electrically conducting element and a second area for subsequently fixing the electrically conductive element to the insulating member. An electrically conductive eyelet is affixed to the first surface while the electrically conductive element extends beyond the second surface. The electrically conductive element has a first end formed with a reentrant portion having a terminal end in contact with the first area and a

second end in contact with the second area.

BRIEF DESCRIPTION OF THE DRAWINGS

5 [0009]

Fig. 1 is an elevational sectional view of an embodiment of the invention;

10 Fig. 2 is an enlarged portion of an element of the invention; and

15 Fig. 3 is an elevational sectional view, similar to Fig. 1, of a finished bulb employing an embodiment of the invention.

[0010] BEST MODE FOR CARRYING OUT THE INVENTION

20 [0011] For a better understanding of the present invention, together with other and further objects, advantages and capabilities thereof, reference is made to the following disclosure and appended claims in conjunction with the above-described drawings.

25 [0012] Referring now to the drawings with greater particularity, there is shown in Fig. 1 a base 10 for a light emitting bulb that comprises an electrically insulating body 12 formed from a thermoplastic plastic material, for example, polyethylene, and having a first surface 14, a second surface 16 spaced therefrom, and a sidewall 18 separating the first and second surfaces. The sidewall is formed to provide a first area 20, such as flange 21, for initially receiving an electrically conducting element 22 and a second area 24 for subsequently fixing the electrically conductive element 22 to the insulating body 12. The area 24 is provided with a deformable protrusion 25. An electrically conductive eyelet 26 is affixed to the first surface 14 and the electrically conductive element 22 extends beyond the second surface 16.

30 [0013] The electrically conductive element 22, which is preferably formed from brass or aluminum, has a first end 28 formed with a reentrant portion 29 having a terminal end 30 in contact with the first area 20 and a second end 32 in contact with the second area 24. As illustrated, element 22 is provided with screw threads.

35 [0014] In assembly, insulating body 12, with eyelet 26 attached, is mated with element 22 in one of two ways. The first end 28 thereof can be flexible and can be snap-fitted over the flange 21; however, the preferred method is to fit the insulating body 12 into element 22 from the open end, as indicated by the direction arrow 36. Frictional forces can hold the body 12 in position until final assembly, which occurs when deformable protrusion 25 is bent over reentrant portion 29. Deformation of protrusion 25 is best accomplished by the application of heat to achieve softening and, while the application of heat can be by direct or open flame or directed infrared radiation, ultrasonic heating is preferred. To avoid unwanted rotation of the element 22 with the body 12,

the surface 29a of reentrant portion 29 is provided with grooves or teeth 29b, as is shown in Fig. 2.

[0015] Upon completion of the base 10 it is fitted to a glass envelope 40 containing the light source, which can be an incandescent filament, an arc tube, a light emitting diode array, an electroluminescent device or other source of illumination. Generally, a first electrical lead-in 42 will be electrically connected to the eyelet 26 and a second electrical lead-in 44 will be connected to the element 22, as by welding or soldering. Thus there is provided a new base for light sources which base is less expensive to manufacture and which provides energy savings by eliminating the need for operating and maintaining glass melting furnaces.

[0016] While there have been shown and described what are at present considered the preferred embodiments of the invention, it will be apparent to those skilled in the art that various changes and modifications can be made herein without departing from the scope of the invention as defined by the appended claims.

Claims

1. An insulating member for a base for a light emitting bulb comprising: an electrically insulating body formed from a thermoplastic plastic material and having a first surface, a second surface spaced therefrom, and a sidewall separating the first and second surfaces, said sidewall being formed to provide a first area for initially receiving an electrically conducting member and a second area for subsequently fixing said electrically conductive member to said insulating member.
2. The insulating member of Claim 1 wherein said first area is formed as a flange.
3. The insulating member of Claim 1 wherein said second area is formed as a deformable protrusion.
4. The insulating member of Claim 3 wherein said deformable protrusion is heat deformable.
5. A base for a light emitting bulb comprising: an insulating member in accordance with Claim 1; an electrically conductive eyelet affixed to said first surface; and an electrically conductive element extending beyond said second surface, said electrically conductive element having a first end formed with a reentrant portion having a terminal end in contact with said first area and a second end in contact with said second area.
6. The base of Claim 5 wherein said second end of said reentrant portion has at least one anti-rotation feature.
7. The base of Claim 5 wherein said second end of

said reentrant portion has a plurality of anti-rotation features.

8. The base of Claim 5 wherein said second end of said reentrant portion has a continuous toothed surface.

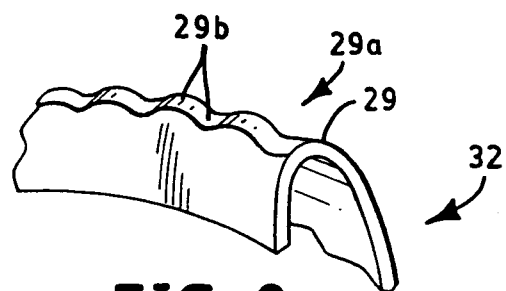


FIG. 2

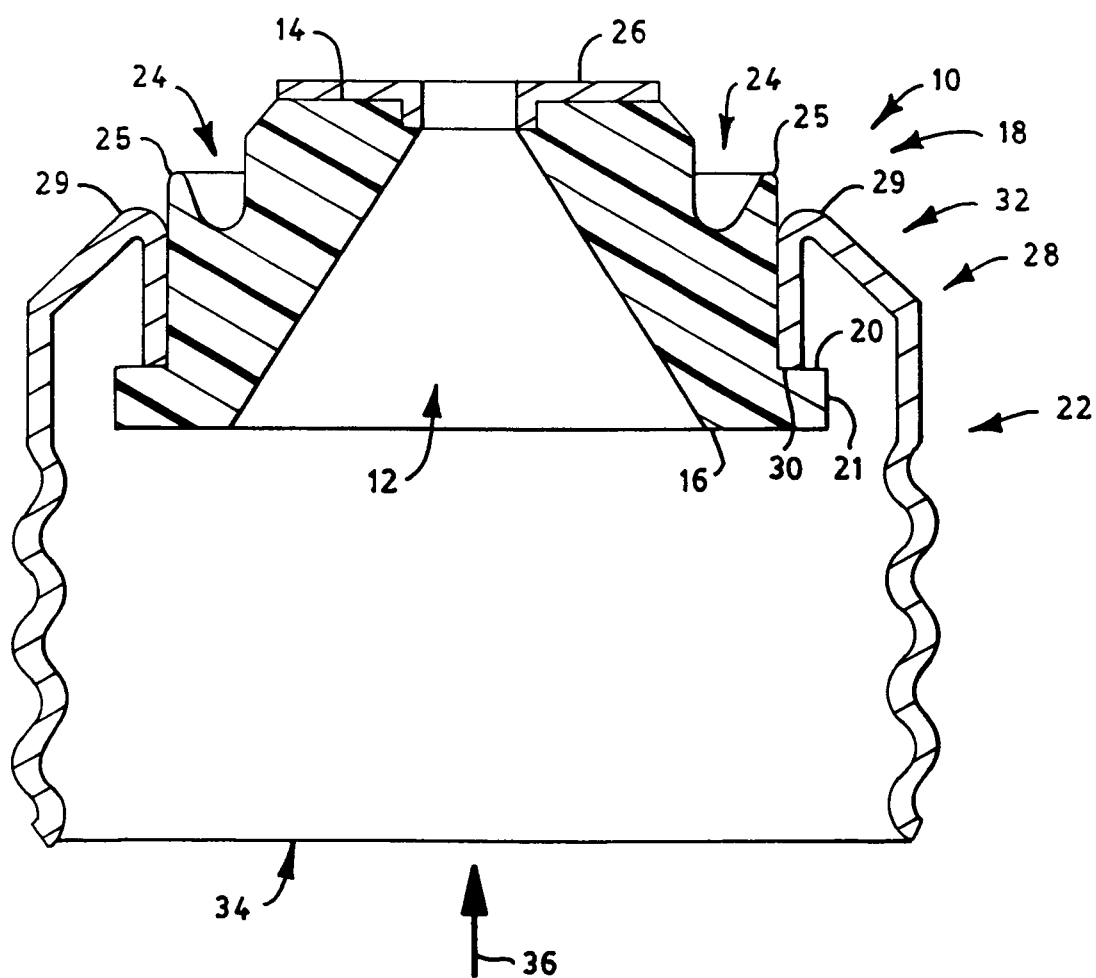


FIG. 1

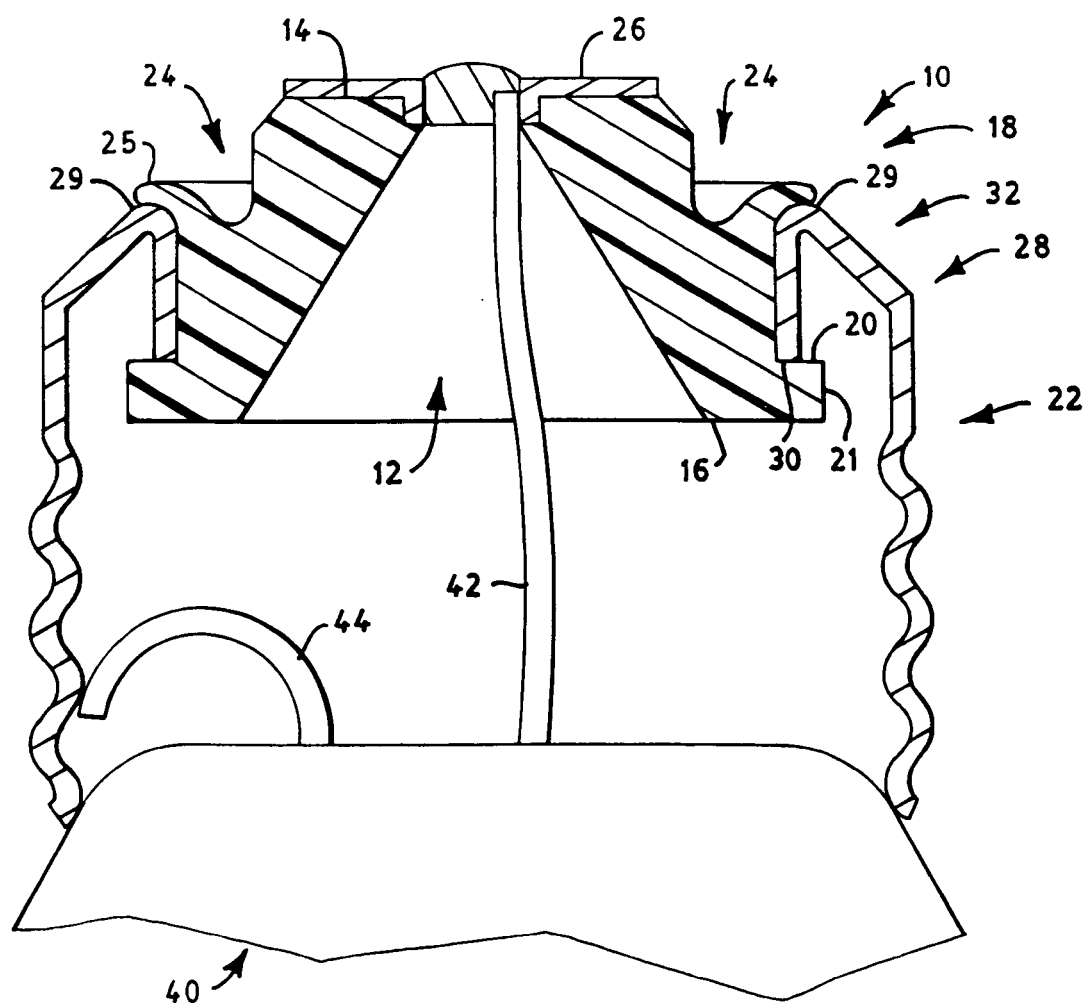


FIG. 3