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LAMP HAVING TWIN FILAMENTS AND INTEGRAL
FILAMENT LEGS MOUNTED IN A BRIDGE
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3,548,244

Fig. 1.

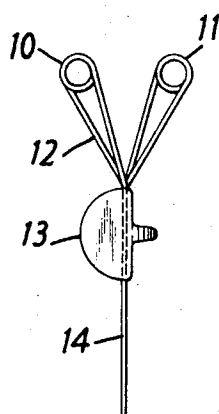


Fig. 2.

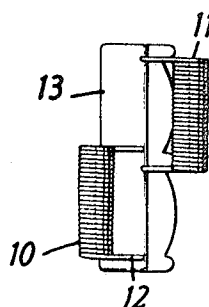


Fig. 3.

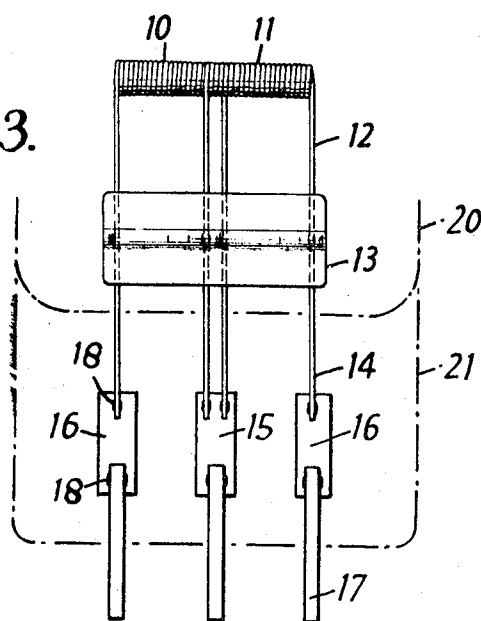
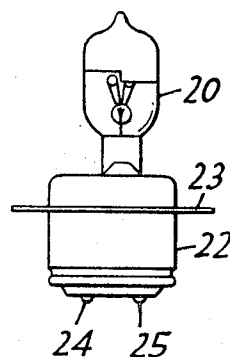


Fig. 4.



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LAMP HAVING TWIN FILAMENTS AND INTEGRAL FILAMENT LEGS MOUNTED IN A BRIDGE

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3 Claims

ABSTRACT OF THE DISCLOSURE

A twin-filament lamp bulb, particularly a quartz-halogen bulb, having a quartz bridge into which the filament legs are moulded, the filaments and the bridge being mounted inside the lamp envelope by means of portions of the filament legs on the further side of the bridge from the filaments, whereby normal filament lead wire materials are not present within the envelope.

This invention relates to twin-filament lamp bulbs.

One lamp bulb of this type comprises an envelope filled with an inert gas to which has been added a small quantity of a halogen. The lamp bulb has two filaments accurately positioned and supported within this envelope, and an end cap secured to the outside of the envelope and connected electrically to the filaments. It is desirable for satisfactory operation of the halogen cycle that normal filament lead wire materials are not present within the envelope. Largely because of this it is difficult to mount the filaments accurately in the desired positions.

According to the invention there is provided a twin-filament lamp bulb comprising two filaments with filament legs, a bridge into which the filament legs are moulded, the filaments and the bridge being mounted inside the lamp envelope by means of portions of the filament legs on the further side of the bridge from the filaments.

Further according to the invention there is provided a method of making a twin-filament lamp bulb comprising the steps of providing two filaments with filament legs, moulding the filament legs into a bridge, and mounting the filaments and the bridge inside the lamp envelope by means of portions of the filament legs on the further side of the bridge from the filaments.

An embodiment of the invention will now be described, by way of example, with reference to the accompanying drawings, in which:

FIG. 1 is a side view of a filament and bridge assembly for a twin-filament halogen lamp bulb embodying the invention;

FIG. 2 is a plan view of the assembly of FIG. 1;

FIG. 3 is a front view of the assembly of FIG. 1; and

FIG. 4 shows a lamp bulb embodying the assembly of FIG. 1.

The filament and bridge assembly illustrated in FIG. 1, consists of two filaments 10 and 11 integral with filament legs 12 and a quartz bridge 13 which holds the filament legs, and hence the filaments, in fixed positions relative to each other. The filaments are made of tungsten wire wound into helical coils, the axes of the coils being parallel and the coils being longitudinally displaced relative to one another along their axes, as best seen in FIG. 2.

As shown in FIG. 3, the two central filament legs are spot welded to a strip 15 of molybdenum foil. Similarly, each of the outer filament legs are welded to two further strips 16 of molybdenum foil. To each of the strips of molybdenum foil there is spot welded a lead pin 17. The spot welding to the strips 15 and 16 is done using platinum welding pieces 18.

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The filament and bridge assembly is sealed into an envelope 20 by means of portions 14 of the legs 12 on the further side of the bridge from the filaments. A pinch seal 21 completely surrounds the molybdenum strips 15 and 16 and is integral with the envelope 20.

A lamp bulb embodying the invention is illustrated in FIG. 4 and comprises a base member 22 carrying the envelope 20. The base member 22 has a flange 23 for fitting the bulb into a reflector assembly, and also carries insulated contacts 24 and 25 for connection to pins in the reflector assembly. The pins 17 pass inside the base member 22. The pin 17 connected to strip 15 is connected to the conductive casing of the member 22, and the two other pins 17 are connected to the two contacts 24 and 25 respectively.

The assembly shown in the figures is made by mounting the two filaments in a jig and fixing them in this position by forming and moulding the filament legs in the quartz bridge. The filament legs are then welded to the strips of molybdenum foil, to which are welded the lead pins. The assembly is then sealed by the pinch seal into an envelope which is filled with an inert gas containing a small amount of a halogen.

In this way the filaments can be accurately positioned with respect to one another, and yet normal filament support or lead wire materials are not present within the envelope of the lamp.

It will be appreciated that many other filament configurations may be made in this manner, and that the number of filaments is not limited to two.

I claim:

1. A lamp bulb comprising:

a base member,
an envelope fixed to said base member,
two metal filaments having integral filament legs of the same metal,
a bridge into which said filament legs are moulded, said filaments and said bridge being mounted within said envelope by means of portions of said filament legs on the further side of said bridge from said filaments.

2. A lamp bulb as claimed in claim 1, wherein said filaments and said bridge are mounted within said envelope by means of a pinch seal.

3. A lamp bulb as claimed in claim 1, wherein said filaments and said integral filament legs are composed of tungsten and said envelope and said bridge are composed of quartz.

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