

[54] **ELECTRIC FILAMENT LAMP**

[75] Inventor: **Dirk Jules Remi De Fraeye**,
Emmasingel, Eindhoven,
Netherlands

[73] Assignee: **U.S. Philips Corporation**, New
York, N.Y.

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2,218,346 10/1940 Spaeth 313/273 X
3,590,305 6/1971 Decaro 313/272

Primary Examiner—David Schonberg
Assistant Examiner—Paul A. Sacher
Attorney—Frank R. Trifari

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313/279

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[58] Field of Search 313/272, 273, 278,
313/279, 275, 277

[56] **References Cited**

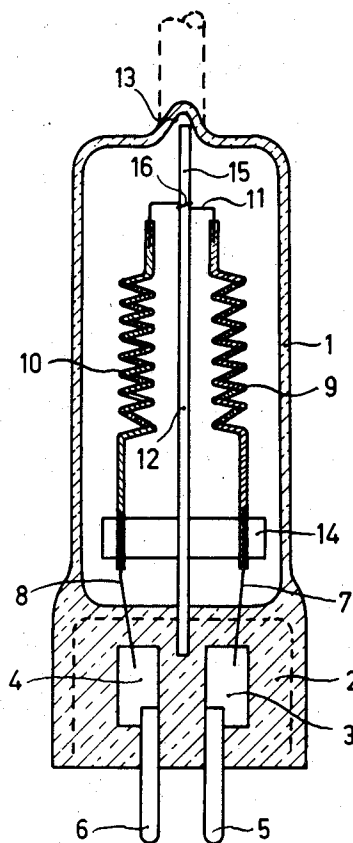
UNITED STATES PATENTS

2,037,217 4/1936 Eitel et al. 313/273

[57] **ABSTRACT**

The invention relates to an electric filament lamp having a tubular lamp envelope provided with a pinch seal in which two series-arranged filaments are incorporated which are coupled by a brace. The brace comprises a loop in which a supporting wire is inserted. The shape of the loop and the cross-section of the brace are non-circular, for example, elongate, so as to limit the mutual rotatability.

4 Claims, 2 Drawing Figures



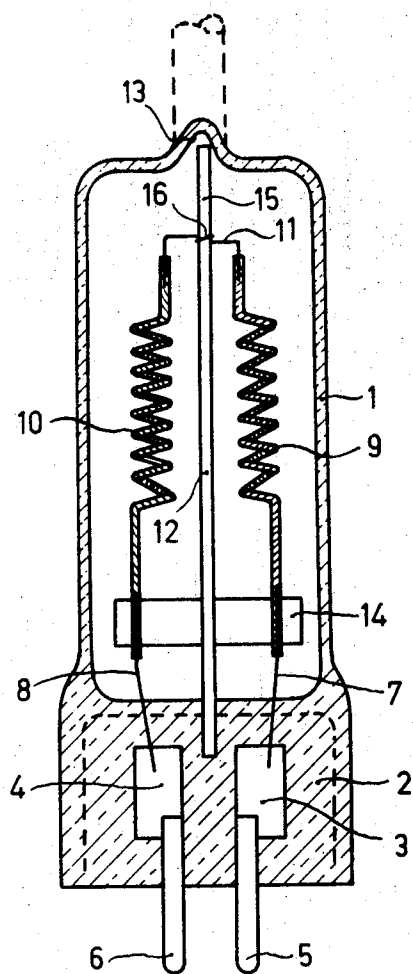


Fig.1

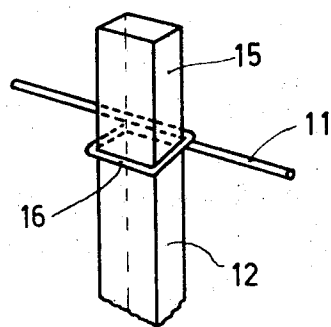


Fig.2

ELECTRIC FILAMENT LAMP

The invention relates to an electric filament lamp, in particular a halogen filament lamp, which comprises a tubular lamp envelope having on at least one end a pinch seal with current conductors incorporated therein, two series-arranged filaments being stretched in the longitudinal direction of the lamp envelope, said filaments being connected electrically at one of their ends to the current conductors and, at their ends most remote from the pinch seal, being coupled by means of a brace which in or near the centre of its length comprises at least one loop in which the end of a supporting wire fixed in the lamp envelope is secured, the loop being secured to the supporting wire so as to be non-rotatable in the plane in which the loop is located. Such a filament lamp is known, inter alia, from the Dutch published Pat. application No. 6,902,879.

The lamp described in the said Dutch patent application comprises a supporting wire of which the end inserted in the loop extends coaxially with the lamp envelope, the supporting wire being formed from a circular wire. As a result of this it is achieved that the filaments permanently assume a prescribed position in the lamp envelope. In the known construction, the loop of the brace is secured to the end of the supporting wire by means of a spot weld. As a result of this the brace is prevented from pivoting about the supporting wire. Any pivoting of the brace relative to the supporting wire would actually have for its result that the filaments do not assume the prescribed position in the lamp envelope.

It is the object of the invention to provide a lamp construction in which the spot welding of the loop to the supporting wire becomes superfluous.

For that purpose, the electric filament lamp according to the invention is characterized in that the loop and the cross-section of the supporting wire have non-circular shapes which have been chosen to be so that in the assembled condition of the loop and the supporting wire they limit the mutual rotatability thereof.

As a result of the cooperation of the non-circular shape of the end of the supporting wire and the likewise non-circular shape of the loop in the brace, pivoting of the brace relative to the supporting wire is prevented. As a result of this the filament will permanently assume the prescribed position in the lamp envelope.

A favourable embodiment of the electric filament lamp according to the invention is characterized in that at least at the area of the connection to the loop, the supporting wire comprises at least one flat side against which a part of the loop bears. Preferably, the supporting wire has an elongate cross-section at least at the area of the connection to the loop.

The invention will be described in greater detail with reference to the drawing.

In the drawing,

FIG. 1 shows an embodiment of the lamp according to the invention and

FIG. 2 shows the brace used therein with the end of the supporting wire incorporated in the loop.

The filament lamp shown in FIG. 1 comprises a lamp envelope 1 which is closed at its base by a pinch 2. Incorporated in the pinch are foils 3, 4 to which the contact members 5, 6 projecting from the lamp and the mandrils 7, 8 are secured. The helically wound filaments 9, 10 are stretched in the lamp envelope 1 and are slid with their one end over the mandrils 7 and 8, respectively, and are secured to the wire brace 11 with their other end. The filaments 9 and 10 are connected in series by the brace 11. Furthermore incorporated in the lamp envelope 1 is a supporting wire 12 which at its one end is sealed in the pinch 2 and at its other end supports in the space 13 which remains after sealing the exhaust tube. On the side of the pinch, the filaments 9, 10 and the supporting wire 12 are supported by a quartz beam 14.

In this embodiment the supporting wire is formed from a molybdenum wire having a square cross-section (FIG. 2). The brace 11 is wound around the end 15 of the supporting wire 12, as a result of which a loop 16 is formed which is present in the centre of the brace. As a result of the square shape of the loop 16, pivoting of the brace around the lamp axis is prevented. The filaments 9, 10 will thus assume the desirable position in the lamp envelope also when the lamp has been in operation for some time.

Of course, a circular supporting wire may also be used, which has a non-circular, for example flattened, cross-section only at the area of the loop.

Furthermore it is possible to wind the brace more than once around the supporting wire, so that a number of loops are formed.

What is claimed is:

1. An electric filament lamp comprising a tubular lamp envelope having on at least one end a pinch seal with current conductors incorporated therein, two series-arranged filaments being stretched in the longitudinal direction of the lamp envelope, said filaments being connected electrically at one of their ends to the current conductors and, at their ends most remote from the pinch seal, being coupled by means of a brace which near the centre of its length comprises at least one loop in which the end of a supporting wire fixed in the lamp envelope is secured, the loop being secured to the supporting wire so as to be non-rotatable in the plane in which the loop is located, and wherein the loop and the cross-section of the supporting wire have non-circular shapes which have been chosen to be so that in the assembled condition of the loop and the supporting wire they limit the mutual rotatability thereof.

2. An electric filament lamp as claimed in claim 1, wherein at least at the area of the connection to the loop, the supporting wire has at least one flat side against which a part of the loop bears.

3. An electric filament lamp as claimed in claim 1, wherein at least at the area of the connection to the loop, the supporting wire has an elongate cross-section.

4. An electric filament lamp as claimed in claim 1 wherein the supporting wire has a rectangular cross section, at least at the area of connection to the loop.

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