Oct. 5, 1937. P. SCHOUWSTRA 2,094,679

GASEOUS ELECTRIC DISCHARGE LAMP DEVICE

Filed Aug. 11, 1936

Fig. 1

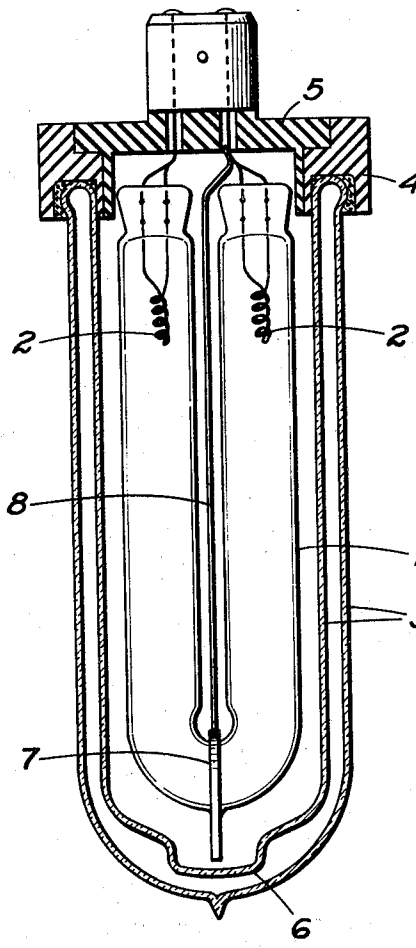
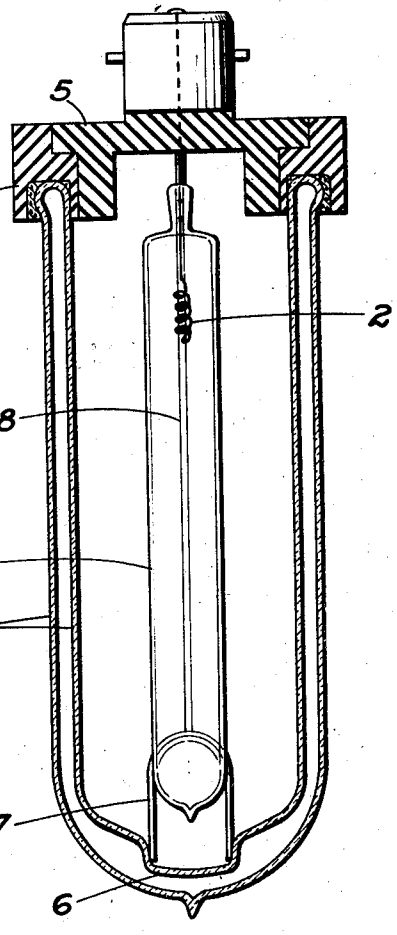


Fig. 2



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GASEOUS ELECTRIC DISCHARGE LAMP DEVICE

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In Germany August 26, 1935

2 Claims. (Cl. 176—122)

The present invention relates to gaseous electric discharge lamp devices generally and more particularly the invention relates to lamp units comprising such devices similar to that described in the United States Patent 2,042,138, granted May 26, 1936 to Cornelis Bol.

The lamp unit disclosed in the patent referred to comprises a gaseous electric discharge vapor lamp having an elongated, curved, tubular container mounted in a double wall evacuated flask in which the container is centered in the flask by a cylindrical protuberance attached to the curved portion thereof which protuberance fits into an indentation in the inner wall of the flask. Direct contact between the lamp container and the flask is thus avoided while the container is supported centrally in the flask in a positive manner.

The object of the present invention is to provide a simple, inexpensive centering support element for a lamp container mounted in a heat conservator, such as a double wall flask. Still further objects and advantages attaching to the device and to its use and operation will be apparent to those skilled in the art from the following particular description.

In accordance with these objects the centering support element consists of a resilient, bifurcated metal member which grips the curved part of the tubular container and extends into and presses against the sides of an indentation in the inner wall of the flask. The centering support element, being of metal, is used as an auxiliary starting electrode, when desired, and in the preferred embodiment of the invention such use is made of this element. Having this structure, the lamp unit is an inexpensive one to manufacture and the centering support element serves both as a support and as an auxiliary electrode.

In the drawing accompanying and forming part of this specification an embodiment of the invention is shown, in which

Fig. 1 is a side elevational, partly sectional view of a lamp unit embodying the invention, and

Fig. 2 is a front elevational, partly sectional view of the lamp unit shown in Fig. 1.

Referring to Figs. 1 and 2 of the drawing the lamp unit comprises a gaseous electric discharge lamp device having a U-shaped tubular container 1. Said container 1 has a gaseous filling therein comprising a starting gas, such as neon, and a metal vapor, such as sodium, cadmium, mercury, lithium, or zinc. When desired, any of the gas mixtures, metal vapor mixtures or gas metal vapor mixtures are used. An electrode 2 is mounted adjacent each end of the container 1. Said electrodes 2 are electron emitting when heated and consist of a filament, such as a tungsten filament, having an electron emitting material, such as barium oxide, associated therewith. Said container 1 is mounted in a double wall flask 3 which has the space between the walls thereof either evacuated or filled with a gas having poor heat conductivity characteristics. Said flask 3 reduces the heat losses by convection and conduction from the container 1 to the end that said container 1 is at a higher temperature and the metal vapor therein at a higher pressure during the operation of the device than would be the case were said flask 3 omitted.

A base 5 of electrically insulating, high heat resisting material, such as porcelain, is attached to said container 1 by the current leads sealed into said container 1. This structure permits the free movement of the ends of said container 1 in the base 5 to the end that said container 1 is not ruptured by the physical strain set up therein by the expansion and contraction thereof caused by the heat of the discharge during the operation of the lamp. The flask 3 has a base 4 cemented thereto which grips the base 5 of the container 1.

The inner wall of said flask 3 has at the bottom thereof opposite the curved part of said container 1 an indentation 6. A U-shape resilient, metal member 7 grips the curved part of the tubular container 1 and extends into and presses against the sides of said indentation 6. When desired, the member 7 is a metal ribbon, such as a nickel, a spring steel, a tungsten, or a molybdenum ribbon, and is approximately 2 mm. in width. The member 7 is provided with a current lead 8 which extends between the parallel legs of the container 1 and is connected to the current lead of one of the electrodes 2 to act as an auxiliary electrode to facilitate starting of the discharge in the device. When desired, a layer of electrically insulating material, such as mica, is interposed between the auxiliary electrode 7 and the container 1 to prevent electrolysis of the glass at high container temperatures. The auxiliary electrode 7 thus acts as both a starting electrode and has a centering support element for the container 1 in the flask 3.

While I have shown and described and have pointed out in the annexed claims certain novel features of the invention, it will be understood that various omissions, substitutions and changes in the forms and details of the device illustrated and in its use and operation may be made by those skilled in the art without departing from

the broad spirit and scope of the invention, for example, the current lead 8 is omitted when desired and the element 7 is used solely as a centering support.

What I claim as new and desire to secure by Letters Patent of the United States, is:—

1. A lamp unit comprising in combination a gaseous electric discharge lamp device having a curved tubular container, a base attached to said container, a heat conservator for said lamp device, and a bifurcated, resilient centering support element gripping the curved part of said container and extending into and pressing against a cylindrical indentation in the wall of said conservator to support said container centrally in said conservator away from the walls of said conservator.

2. A lamp unit comprising in combination a gaseous electric discharge lamp device having a curved tubular container, current leads extending from said container, a base attached to said container, a heat conservator for said lamp device, and a bifurcated, resilient centering support element of electrically conducting material connected to one of said current leads and gripping the curved part of said container and extending into and pressing against a cylindrical indentation in the wall of said conservator to support said container centrally in said conservator away from the walls of said conservator.

PIETER SCHOUWSTRA.