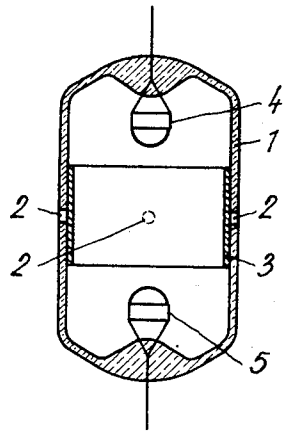
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TRIODE

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TRIODE

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2 Claims. (Cl. 250—27.5)

This invention relates to improvements in electric discharge devices having control electrodes, in particular triodes.

It is known with such devices to secure the control electrode to the inner wall of the discharge vessel between the main discharge electrodes. The known devices of this type are apt to cause trouble when operated under severe conditions. The control electrode tends to deform when the device is subjected to shocks and repercussions. If such deformation is prevented by giving the control electrode an especially sturdy construction, the vessel is liable to be destroyed, when subjected to high acceleration forces. Endeavors have been made to design triodes in such a manner that all points thereof lie symmetrically with respect to an axis of rotation, so as to avoid the above-mentioned drawbacks. However, it is difficult in such symmetrical constructions to secure the lead to the control electrode in such a manner that all points of the vessel actually lie symmetrically with respect to its axis of revolution and to prevent local stresses in the wall of the vessel which could burst the vessel upon the occurrence of the above-mentioned vibrations.

The invention aims at overcoming these difficulties. This is accomplished, according to the invention, by designing the control electrode of the discharge device in the form of a metallic ring or cylinder and by sealing or soldering it to a perforated wall portion of the vessel so that the electrode covers and seals the perforations of the vessel. The invention is particularly intended for triodes, especially for neon lamps having a vessel of glass, quartz, ceramic or the like refractory insulating material.

The accompanying drawing exemplifies diagrammatically an embodiment of the invention in a sectional elevation. The embodiment consists of a triode whose vessel 1 consists of glass or the like and has the shape of a body of revolution. The lateral wall of the vessel is provided with several perforations 2. The control electrode consists of a metallic cylinder 3, preferably of a metal or of a metal alloy whose coefficient of expansion is adapted to that of the glass of the vessel. The control electrode is so arranged inside the vessel as to cover and seal the perforations 2 and is accessible for inleads through the perforations. In the embodiment shown, the control electrode may be secured to the wall of the vessel by sealing, for instance by applying heat with the aid of a flame. The main electrodes 4 and 5 are sealed in a known manner in the upper and lower end of the cylindric vessel. As will be seen from the drawing, the whole arrangement is symmetrical and the inlead may be directly connected with the control electrode through the openings 2 without stressing the material of the vessel wall.

Of course, the invention may also be advantageously applied to triodes, the vessels of which consist, for instance, of quartz or ceramic material instead of glass. When using ceramic material, the control electrode may be secured to the wall of the vessel by soldering. In this case, it is preferable to use a hard solder, if when manufacturing the vessel it is necessary to expose the control electrode to high degassing temperatures.

What is claimed is:

1. A triode having a vacuum vessel of insulating refractory material substantially in the form of a body of revolution, the wall of said vessel having a lateral opening, and an annular control electrode disposed in said vessel in peripheral contact with said wall and covering said opening, said electrode being tightly joined to said wall hermetically sealing said opening.

2. An electric discharge device having a cylindric vessel portion of insulating refractory material, the cylindric wall of said vessel portion having a lateral opening, a cylindric electrode mounted in and concentric with said vessel portion in peripheral contact therewith, said electrode being placed over said opening and tightly joined with said vessel portion hermetically sealing said opening while being accessible through said opening.

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