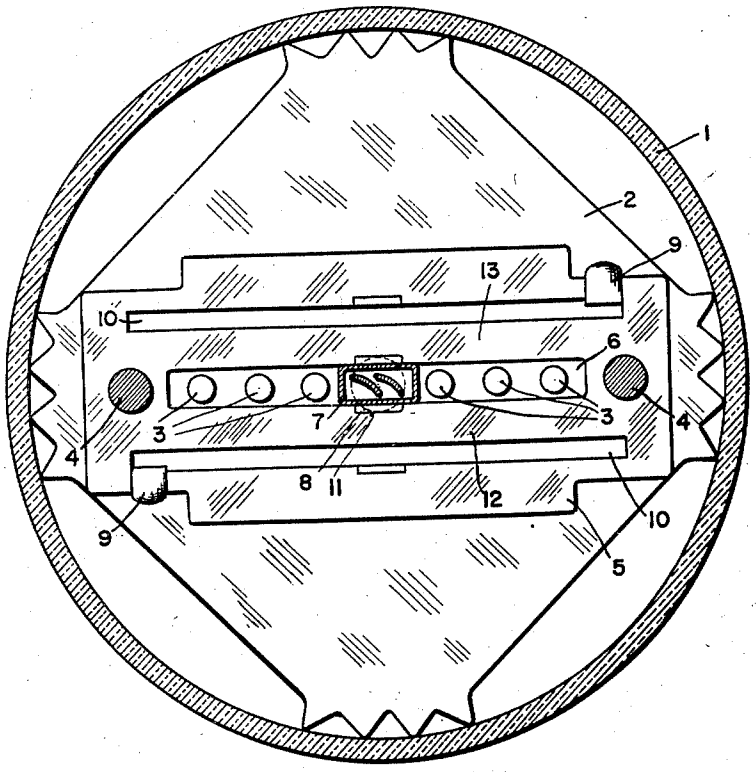
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ELECTRICAL DISCHARGE TUBE

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ELECTRICAL DISCHARGE TUBE

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3 Claims. (Cl. 313—260)

The invention relates to an electric discharge tube, of which the electrodes are centred by means of mica members and, in particular, to such a tube in which microphonic effects are avoided as far as possible.

A frequent cause of microphonic effect is due to the fact that the cathode is set oscillating. Many constructions have been invented to suppress these oscillations. It has, for example, been suggested to provide a mica centring member with long tags which press against the cathode.

Since such tags are formed from the centring member itself, which also centres the further electrodes and must therefore be comparatively thick, these tags give rise to an appreciable heat withdrawal from the cathode ends. The tags must, moreover, be narrow to be sufficiently elastic and resilient.

In accordance with the invention a very simple, effective construction is obtained by centring the cathode by means of at least one separate centring member, which is provided with two narrow strips, the ends of which are connected to one another, forming an elongated, rectangular slot, of which the width at the area of the stay members of one or more electrodes near the cathode exceeds the thickness of these stay members but is, near the cathode, at least locally smaller than the corresponding dimensions of the section of the cathode, the cathode being clamped tight in this slot. The width of the slot is, at least locally, preferably about 50μ smaller than the corresponding size of the sectional area of the cathode. Such a mica member may be very thin, for example from 100 to 150μ and be arranged and secured directly on or below the conventional centring member.

The invention will be described more fully with reference to a drawing, of which the figure is a plan view of an electrode system comprising such a member, mounted in a tube.

Referring to the figure, reference numeral 1 designates the tube wall, 2 a conventional centring member, in which the grid supports 3 and 4 are secured. On the mica member 2 is arranged a mica plate 5, according to the invention, which plate has two narrow strips 12 and 13, which include an elongated, rectangular slot 6, which is wider than the thickness of the stay rods 3, but narrower than the width of the sectional area of the cathode 7. The cathode is thus held elastically between the long sides of the slot 6. Since the member 5 may be very thin, the heat withdrawal from the cathode is

small, particularly if the slot 6 has recesses 11 near the cathode.

Although the drawing shows a cathode with a rectangular sectional area, the invention may be applied also to a circular cathode, as is shown in broken lines. It is evident from the drawing, that the slot need not be bounded by straight sides; it may be locally widened or narrowed.

The centring member 5 is held in the correct position by the stay rods 4 of a collecting grid and secured by the bent-over tags 9 for example of an anode or of a further electrode.

Owing to the great length and the small width of the strips 12 and 13 and to the small thickness of the member 5, a great resilience is obtained, so that the cathode can expand freely when heated.

Although a single embodiment is described, it will be obvious that the member 5 may have other shapes within the scope of the invention.

What is claimed is:

1. An electric discharge tube comprising at least one electrode including a cathode, a plurality of electrode supporting rods, an electrode centering member, and a pair of thin narrow parallel strips of insulating material connected together at the ends thereof and defining therebetween an elongated, rectangular slot through which the said supporting rods extend, the width of said slot being greater than the thickness of said supporting rods, and less than the thickness of the portion of the cathode extending through said slot whereby said cathode is tightly clamped between said insulating strips.

2. An elecrtic discharge tube comprising at least one electrode including a cathode, a plurality of supporting rods, an electrode centering member, and a pair of thin narrow parallel strips of insulating material each having a thickness of about 100 to 150μ and connected together at the ends thereof and defining therebetween an elongated, rectangular slot through which the said supporting rods extend, the width of said slot being greater than the thickness of said supporting rods, and less than the thickness of the portion of the cathode extending through said slot whereby said cathode is tightly clamped beween said insulating strips.

3. An electric discharge tube comprising at least one electrode including a cathode, a plurality of supporting rods, an electrode centering member, and a pair of thin narrow parallel strips of insulating material connected together at the ends thereof and defining therebetween an elongated, rectangular slot through which the said supporting rods extend, the width of said slot being greater than the thickness of said supporting rods, and about 50μ less than the corresponding portion of the cathode extending through said slot whereby said cathode is tightly clamped between said insulating strips.

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