

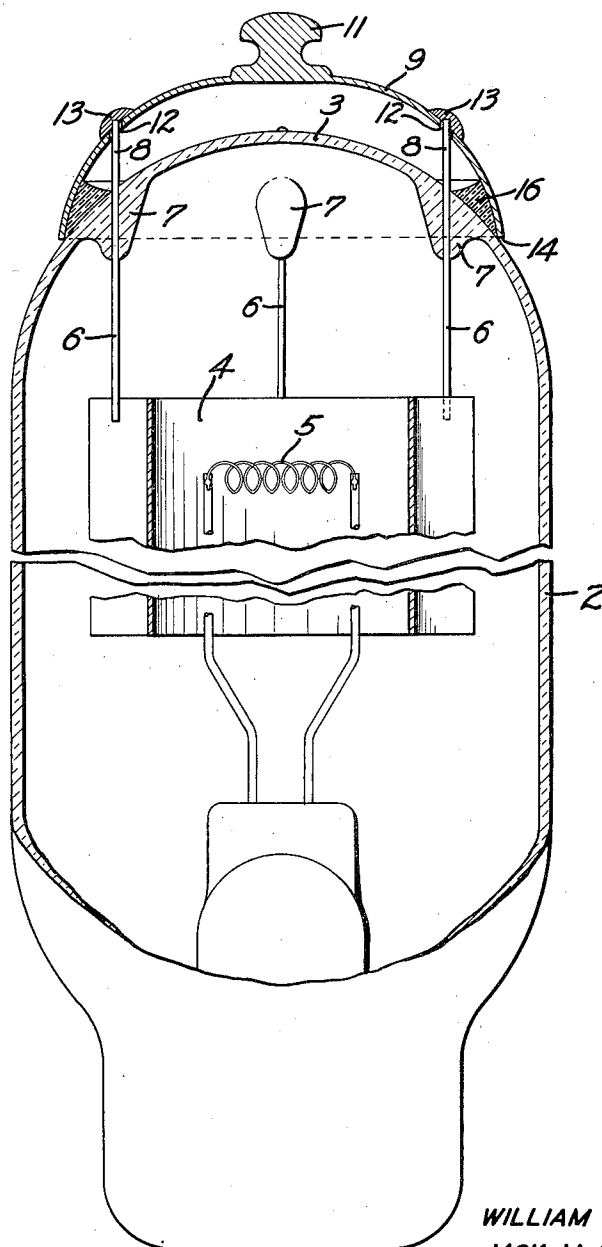
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TERMINAL

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1 Claim. (Cl. 250—27.5)

Our invention relates to terminals for electrical devices enclosed in glass envelopes.

Among the objects of our invention are: to provide terminal construction which protects the leads where they enter the envelope; to provide a combination protective cap and terminal; to provide a cap with which the use of cement as a securing means is not essential; and to provide a symmetrical construction for anode connections which permits the production of space discharge devices having uniform electrostatic fields.

Other objects of our invention will be apparent or will be specifically pointed out in the description forming a part of this specification, but we do not limit ourselves to the embodiment of the invention herein described, as various forms may be adopted within the scope of the claim.

Referring to the drawing:

The figure is an elevational view of an envelope embodying our invention; parts being shown in section to disclose the interior construction.

Broadly, the terminal of our invention comprises, in combination, an envelope, provided with a closed end of substantially hemispherical shape, having an anode mounted therein. The mounting means for the anode comprises a plurality of leads sealed through the closed end of the envelope; and a metallic cap is provided, which fits over the hemispherical end of the envelope, to which the leads are fastened. A terminal is provided, which is an integral part of the cap.

The generally accepted practice in attaching terminals to leads communicating with electrodes enclosed in an evacuated glass envelope, is to provide a metallic cap which is soldered to the lead, and secured to the glass by means of a suitable cement. Very frequently this cement loses its grip on the smooth glass with the result that the loosened terminal either separates from the lead, or the unavoidable bending of the lead in making connections to the terminal causes minute cracks in the seal, which permit the admittance of air to the envelope, thereby destroying the usefulness of the device.

We avoid these difficulties by providing the envelope with a substantially hemispherical end, and the electrode with a plurality of spaced leads extending therethrough. A cap, carrying the terminal, is provided which fits well over the rounded end of the envelope so as to cover all the leads. The leads are brought through holes in the cap and soldered; and cement may be used

to further secure the cap to the envelope, but it is not essential.

In greater detail, the terminal of our invention is illustrated as being used with a thermionic device, comprising an evacuated envelope 2 having a hemispherical end 3. Cooperative electrodes, the anode 4 and the cathode 5, are provided in the envelope; the anode having a plurality, preferably four, of circumferentially spaced leads 6 secured thereto and extending through the seals 7 to terminate in short extensions 8.

A bell shaped cap 9, having the terminal 11 formed thereon, is provided with spaced apertures 12 which are adapted to receive the extensions 8, and quantities of solder 13 are used to secure the extensions to the cap. The dimensions of the cap are such that the edge 14 of the cap is seated well over the rounded end of the envelope.

The leads 6 are usually of sufficient diameter that the extensions 8 are quite rigid and will hold the cap firmly in place. However, if it is desirable to make the leads of smaller wire, cement 16 may be used to secure the cap to the envelope and preclude any possibility of damage to the seals due to accidental bending of the extensions 8.

In the construction of electronic devices, wherein the elements are symmetrical to provide uniform fields, the combined cap and terminal of our invention provides an effective and attractive means of joining leads which are located in spaced relationship. Another valuable feature lies in the fact that, unlike devices using a terminal whose connection to a lead depends on a single soldered joint, the terminal of our invention is provided with a plurality of joints, which insure efficient operation of the device at all times.

We claim:

In combination, a cylindrical envelope having a hemispherical end of substantially the same curvature as that of the cylinder, a cylindrical electrode contained therein, concentrically positioned with respect to said envelope, a plurality of spaced lead wires extending upwardly from the periphery of said electrode through said hemispherical end, and a substantially hemispherical cap having a diameter at least as great as that of said electrode on the outside of said end, said lead wires being fastened to said cap near the periphery thereof.

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