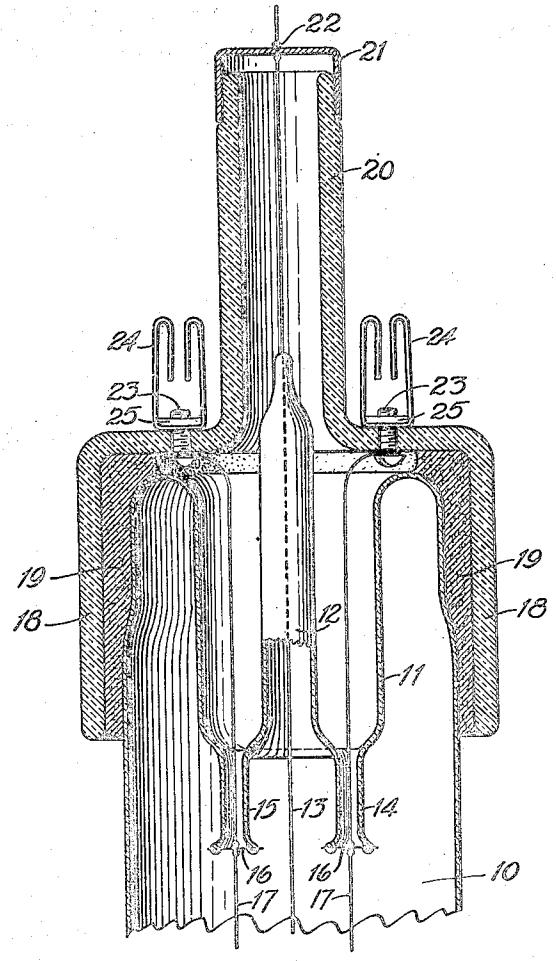
April 16, 1929. A. I. CRAWFORD 1,708,939

ELECTRON DISCHARGE DEVICE

Filed Feb. 10, 1926



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Patented Apr. 16, 1929. 1,708,939

UNITED STATES PATENT OFFICE.

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ELECTRON-DISCHARGE DEVICE.

Application filed February 10, 1926. Serial No. 87,205.

This invention relates to electron discharge devices and more especially to such devices capable of handling large amounts of power.

In high voltage discharge devices, the grid leading-in wire is usually located in an evacuated glass tube projecting beyond the stem of the main vessel, to provide a long path of insulating material between the filament and grid terminals. This construction requires careful handling in the assembly of the device and when installed in a radio or other transmitting system the glass tube is exposed and liable to breakage.

The object of this invention is to provide a base for high voltage discharge devices which maintains high insulation between the terminals and also affords protection for the glass tube extending from the stem of the vessel.

This object is attained by providing the discharge device with a cylindrical base of insulating material having a tubular extension which fits over the glass tube projecting from the stem of the discharge device and forms a protective means for the evacuated tube. This arrangement also provides a dielectric path of high resistance between the terminals on the base and the grid terminal carried by the extension.

Referring to the drawing the single figure illustrates in cross-section a partial view of a discharge device embodying one form of the invention.

The electron discharge device is provided with an enclosing glass vessel 10. An inwardly projecting stem 11 coaxial with respect to the glass vessel 10 is fused to the glass wall at the juncture of the stem and the glass vessel 10. A coaxial tubular glass member 12 extends from the inner end of stem 11 and is reentrant with respect to the stem 11, this tubular member projecting for a short distance beyond the end of the glass stem 11. A metallic conductor or leading-in wire 13 is sealed in the closed end of the tubular member 12 and projects within the vessel 10 to provide an external connection for the grid electrode (not shown). A pair of tubular extensions 14 and 15 projecting from the inner end of the stem 11 are provided with disc seals 16 to each of which is attached a leading-in wire 17 to provide connections for the cathode or filament of the discharge device.

In order to protect the glass vessel and provide easily detachable connections for the leading-in wires of the electrodes, a base 18 is attached to the end of the glass wall by means of cement 19. The base 18 is preferably formed of ceramic material, such as porcelain or a silica compound, commercially known as isolantite. This material may be molded or formed to any desired shape and, as shown in the drawing, comprises a cylindrical cup-shaped portion and a coaxial tubular portion 20 extending from the substantially closed end of the cup portion. Attached to the open end of the tubular extension 20 is a metallic cap 21, to which the leading-in wire 13 is centrally attached as shown at 22. An aperture in the cup portion on either side of the tubular extension 20, is adapted to receive a machine screw 23. Each leading-in wire 17 is attached to the inner end of the screw 23 by any suitable means, such as soldering or welding. The outer end of the screw is adapted to receive a metallic spring clip 24 which is rigidly attached thereto by means of a nut 25. This construction provides an insulating base of high dielectric and mechanical strength and the tubular extension surrounding the grid leading-in wire forms a relatively long path between the filament and grid terminals. Furthermore, the tubular member 12 is considerably shortened thereby reducing to a considerable extent the loss incurred by the breakage of this tube during the various manufacturing processes.

While the invention has been disclosed with respect to a specific construction, it is apparent that various modifications may be made in the detail structure without departing from the scope of the invention as defined in the appended claims.

What is claimed is:

1. An electron discharge device comprising an enclosing vessel, a tubular member extending therefrom, a leading-in wire sealed in said tubular member, a base for said vessel, a protective sleeve carried by said base and surrounding said tubular member, and a terminal attached to said sleeve and leading-in wire.

2. An electron discharge device comprising an evacuated vessel, a tubular member extending beyond said vessel, an insulating base for said vessel, an integral tubular sleeve on said base, said sleeve enclosing said

member, and a metallic cap member closing the end of said sleeve.

3. An electron discharge device comprising an evacuated vessel, a tubular member extending beyond said vessel, a molded base for said vessel, an integral tubular extension on said base into which said tubular member extends, a cap terminal closing said extension, and a leading-in wire in said tubular member connected to said terminal.

4. An electron discharge device comprising an evacuated vessel having a glass stem, a base of dielectric material having a cylindrical body portion and a tubular portion, terminals carried by said body portion, a terminal attached to said tubular portion, and leading-in wires in said stem connected to said terminals, said tubular portion forming a long dielectric path between the terminals mounted in the body portion and the terminal attached to the tubular portion.

5. An electron discharge device comprising an enclosing vessel, a central glass tube extending from said vessel, a base having a cylindrical body portion attached to said vessel and having a concentric tubular portion enclosing said tube.

6. An electron discharge device comprising an enclosing vessel, a glass tube extending from an end of said vessel, a base of dielectric material having a cylindrical body portion attached to said vessel and a concentric tubular portion, said tubular portion enclosing said glass tube, and terminals for said device, one of which is located on said tubular portion and others of which are on said cylindrical portion.

In witness whereof, I hereunto subscribe my name this 8th day of February, A. D. 1926.

ALLEN I. CRAWFORD.