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VACUUM TUBE

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Fig. 1.

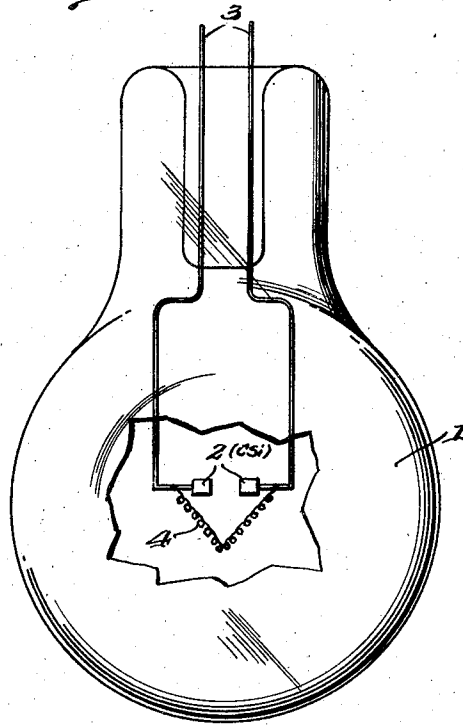
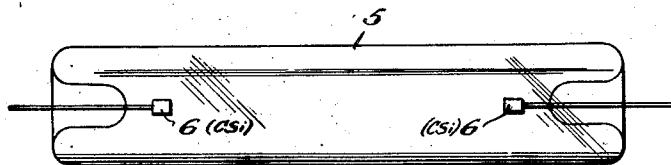


Fig. 2.



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VACUUM TUBE

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Application January 17, 1930, Serial No. 421,433

7 Claims. (Cl. 176—1)

This invention relates to an improvement in vacuum tubes, and is a continuation in part of my application Serial No. 233,519, filed November 15, 1927.

The object of the invention is to provide an anode or electrode for discharge tubes of any of the usual types, such as sunshine lamps, gaseous discharge tubes, neon tubes, or the like, as well as high vacuum tubes, which may be constructed of or comprises carborundum or a composition containing carborundum which may be applied thereto or from which the anode or electrode may be constructed.

The making of the anode of discharge or other similar vacuum tubes or the like of carborundum or alloys, or compositions containing carborundum, prevents sputtering onto the cathode, which latter causes destruction of the emission after a very few hours of the life of the tube. It also helps the gas clean-up in the vacuum tube by keeping the emitters active and by removing oxygen or the like.

The carborundum electrode may be used with any of the various cathodes, such as barium, strontium, or other alkaline earth metals, or, if it is desired, the cathode may comprise mercury and magnesium barium alloy.

The carborundum is particularly effective with such materials to keep the emission active and to greatly improve the results obtained with the tube.

In the accompanying drawing:

Fig. 1 is an elevation of one form of tube having carborundum electrodes, and

Fig. 2 is a similar view of another form of discharge tube.

In Fig. 1, the tube 1 may be filled with a gas in the nature of argon, neon, or the like, and is provided with aligned carborundum electrodes 2, connected with suitable conductors 3 for supplying current thereto. Arranged in parallel with said electrodes 2 is a filament 4 which may be formed of tungsten or the like, and has its ends connected with the lead wires or conductors 3 for receiving current therefrom.

In the form shown in Fig. 2, the tube 5 may be filled with neon gas or the like and has the carborundum electrodes 6 arranged in opposite ends thereof.

I claim:

1. A gaseous discharge tube containing a

gaseous atmosphere, aligned electrodes consisting essentially of carborundum arranged in said gaseous atmosphere, and a filament arranged in said gaseous atmosphere electrically in parallel with the electrodes.

2. A space discharge tube comprising an envelope containing an inert gas and having spaced carborundum electrodes arranged therein, and a single filament permanently connected across and in parallel with the electrodes.

3. A gaseous discharge tube having spaced electrodes arranged therein both consisting essentially of carborundum, and a filament electrically connected across and in parallel with the electrodes.

4. A gaseous discharge tube having spaced electrodes therein both consisting of carborundum.

5. An electric lamp comprising a closed transparent container of globular form, having therein an atmosphere of readily ionizable gases, said container having a hollow neck projecting from its top, a pair of spaced, leading-in wires depending in said neck and having their lower ends offset away from each other and having their adjacent portions insulated from each other, and a pair of electrodes carried by said offset portions, each of said electrodes facing the other electrode, and both of said electrodes consisting of carborundum.

6. An electric lamp comprising a closed transparent container of globular form, having therein an atmosphere of readily ionizable gases, said container having a hollow neck projecting from its top, a pair of spaced, leading-in wires depending in said neck and having their lower ends offset away from each other and having their adjacent portions insulated from each other, and a pair of electrodes carried by said offset portions, each of said electrodes facing the other electrode, and both of said electrodes consisting of carborundum and an incandescible filament connecting the extremities of the offset portions below the electrodes and having its middle portion deflected downwardly away from the arc-space between said electrodes.

7. An electronic discharge tube having an anode consisting of carborundum and having an electronic emissive solid cathode spaced a substantial distance from the anode.

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