

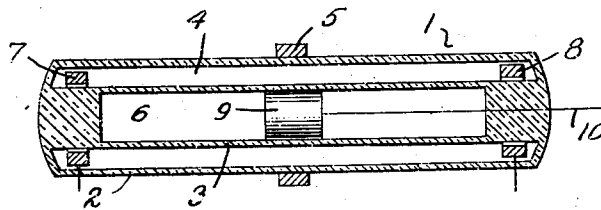
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ANNULAR ELECTRONIC TUBE

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By

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UNITED STATES PATENT OFFICE

2,437,365

ANNULAR ELECTRONIC TUBE

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Original application October 3, 1938, Serial No. 233,136. Divided and this application June 8, 1944, Serial No. 539,246

4 Claims. (Cl. 250—27.5)

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This invention relates to electron discharge tubes and is a division of my copending application Serial No. 233,136, filed October 3, 1938, abandoned September 19, 1945.

An object is to provide a tube in which the grid or control element will be separated from the electron stream.

Another object is to provide a double walled tube with anode and cathode placed in the space between the tubes and the grid outside of the space.

Other objects will appear in the specification. In the drawings:

The figure is a sectional view of an elongated double walled tube, the section being made by a plane through the axis.

In the figure, tube 1 has outer cylindrical envelope 2 and inner tube 3 connected together so that an annular space 4 remains and also a central cylindrical space 6. Annular electrodes 7 and 8 are placed as shown and central element 9 with sealed lead 10 may also be employed. A glowing column of gas can extend between electrodes 7 and 8 so that most of the light will be produced in a thin outer layer or a mercury vapor discharge can take place so that the ultraviolet light will not be readily absorbed by the mercury vapor. If electrode 7 is used as a cathode and electrode 8 as an anode, then element 9 placed in tube 3, can be used as a grid control element. In this way the grid does not block the electron path and does not accumulate direct charges from the electrons or gas ions. This tube is similar to the tube shown in Figure 6 of my application Serial No. 208 954, filed May 20, 1938, abandoned October 3, 1939. A potential difference between outer metal ring 5 and grid 9 may be used or ring 5 and grid 9 may be connected together.

What I claim is:

1. An electron discharge tube comprising, a pair of sealed coaxial envelopes forming a closed

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annular space therebetween, an annular electrode within said space at each end of said envelopes, and a control element within the inner envelope.

2. An electron discharge tube comprising, an inner cylindrical envelope, an outer cylindrical envelope surrounding said inner envelope and sealed thereto to form an annular space therebetween, an annular cathode within said space, an annular anode within said space, and a control element within said inner envelope.

3. An electron discharge tube comprising, an inner envelope, an outer envelope surrounding at least a portion of said inner envelope and sealed thereto to form a space between said envelopes, a cathode and an anode within said space, and a control element within said inner envelope.

4. An electron discharge tube comprising, an inner envelope, an outer envelope surrounding at least a portion of said inner envelope and sealed thereto to form a space between said envelopes, a cathode and an anode within said space, a control element within said inner envelope, and a control element outside said outer envelope.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
767,408	Hewitt	Aug. 16, 1904
1,128,229	Comstock	Feb. 9, 1915
1,273,668	Priest	July 23, 1918
1,724,298	Miller	Aug. 13, 1929
1,976,500	Imaoka	Oct. 9, 1934
2,038,341	Bruche	Apr. 21, 1936
2,056,641	Zecher	Oct. 6, 1936
2,115,399	Ruben	Apr. 26, 1938
2,126,787	LeBel	Aug. 16, 1938
2,346,522	Gessel	Apr. 11, 1944