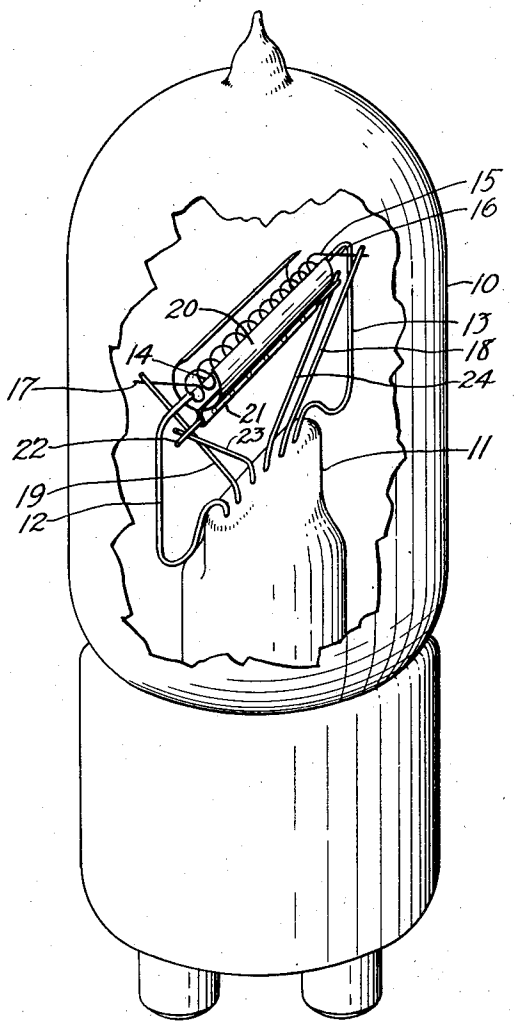
Dec. 15, 1925. 1,565,570

W. G. HOUSKEEPER

ELECTRON DISCHARGE DEVICE

Filed Oct. 29, 1923



Inventor:
William G. Houskeeper.
by E.W. Adams Atty

Patented Dec. 15, 1925. 1,565,570

UNITED STATES PATENT OFFICE.

WILLIAM G. HOUSKEEPER, OF EAST ORANGE, NEW JERSEY, ASSIGNOR TO WESTERN ELECTRIC COMPANY, INCORPORATED, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

ELECTRON-DISCHARGE DEVICE.

Application filed October 29, 1923. Serial No. 671,353.

To all whom it may concern:

Be it known that I, WILLIAM G. HOUSKEEPER, a citizen of the United States of America, residing at East Orange, in the County of Essex, State of New Jersey, have invented certain new and useful Improvements in Electron-Discharge Devices, of which the following is a full, clear, concise, and exact description.

This invention relates to electron discharge devices and has for its object to simplify the supporting structure for the electrodes of vacuum tubes of the three electrode type.

This object is attained by constructing the grid in the form of a wire helix having its ends extending tangentially in opposite directions and forming the anode substantially cylindrical with a longitudinally extending rib through which extends a supporting rod.

Referring now to the drawings, the single figure thereof discloses a vacuum tube constructed in accordance with the invention.

The glass enclosing vessel 10 is provided with an inwardly projecting stem 11, in the press of which are sealed supporting and leading-in wires for the electrodes. The leading-in wires 12 and 13 are arranged at the extreme ends of the press and extend to substantially the center of the vessel 10, at which point their ends are directed toward each other. Supported between and by the leading-in wires 12 and 13 is a filamentary cathode 14. Surrounding the cathode is a wire helix grid 15, the ends 16 and 17 of which extend tangentially from the surface of the helix in opposite directions and are welded respectively to the leading-in and supporting wires 18 and 19, which are bent so as to be divergent with respect to each other. An anode 20 is supported substantially concentrically with respect to the filament and grid. The anode comprises a sheet metal plate bent into substantially cylindrical form and having a rib 21 extending longitudinally thereof. A rod 22 extends through the rib 21, the latter being crimped to the former at several places throughout its length. The rod 22 is welded to the ends of the leading-in and supporting wires 23 and 24.

The above described electrodes may be constructed by automatic machines in a very simple manner, thereby reducing materially the cost of their construction. In addition, the provision of the extending rods at either end of the electrodes renders very simple the welding thereof to the supporting wires and contributes materially to reducing the labor cost of manufacturing vacuum tubes.

What is claimed is:

1. An electron discharges device comprising a filament, a helical wire grid surrounding said filament, said grid having its ends extending tangentially in opposite directions, supporting members attached to the ends of said grid, an anode surrounding said other electrodes, said anode comprising a substantially cylindrical metal sheet having a longitudinally extending rib, a rod extending through said rib, and supporting members attached to the ends of said rod.

2. An electron discharge device comprising a filament, a wire grid surrounding said filament, an anode surrounding said other electrodes, said anode comprising a substantially cylindrical metal sheet having a rib extending longitudinally thereof, a rod extending through said rib, and supporting members attached to the opposite ends of said rod.

3. An electron discharge device comprising a filament, an anode surrounding said filament, said anode comprising a substantially cylindrical metal sheet having a rib extending longitudinally thereof, a rod extending through said rib, and supporting members attached to the opposite ends of said rod.

In witness whereof I hereunto subscribe my name this 23rd day of October A. D., 1923.

WILLIAM G. HOUSKEEPER.