April 14, 1925.

1,533,210

J. W. RADU

VACUUM TUBE MOUNTING

Filed Dec. 21 1920

Fig. 1.

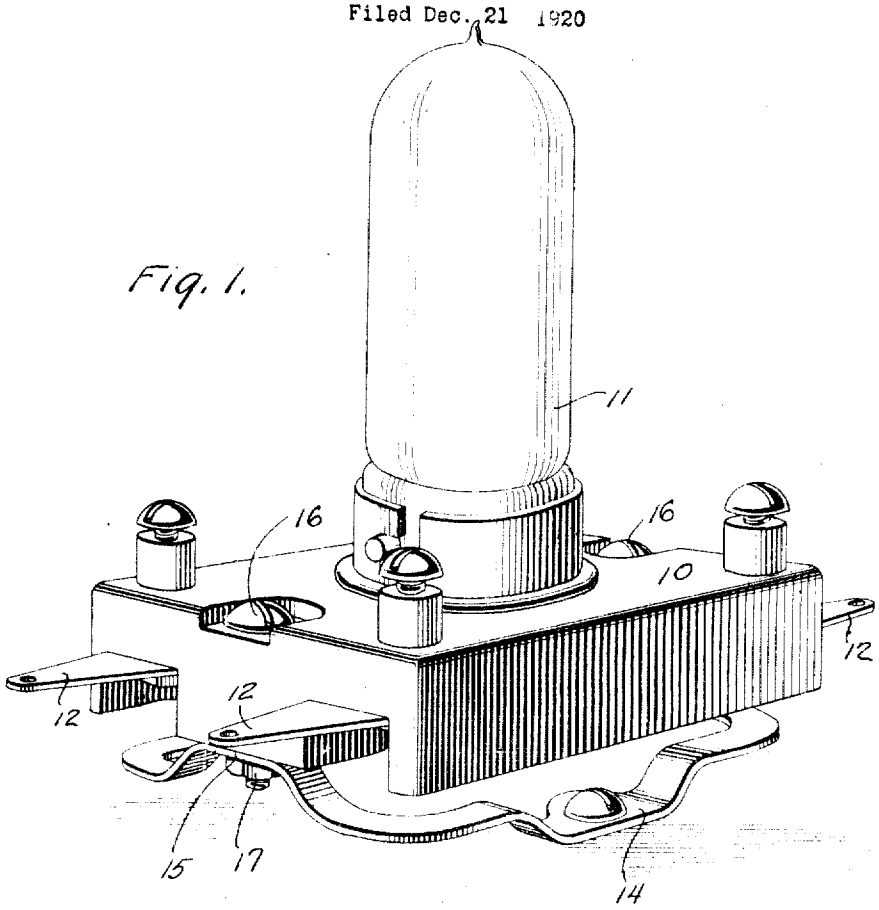
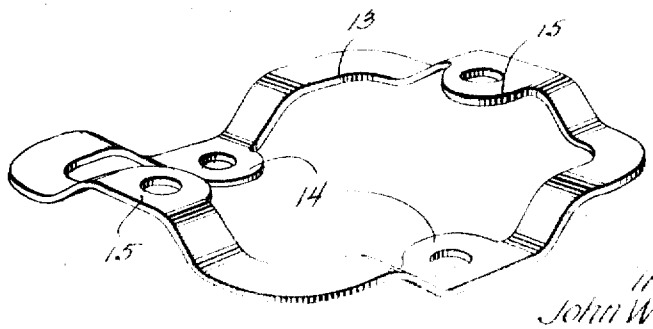


Fig. 2.



Inventor.
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By W. E. Beatty Atty

Patented Apr. 14, 1925. 1,533,210

UNITED STATES PATENT OFFICE.

JOHN W. RADU, OF NEW YORK, N. Y., ASSIGNOR TO WESTINGHOUSE ELECTRIC COMPANY, INCORPORATED, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

VACUUM-TUBE MOUNTING.

Application filed December 21, 1920. Serial No. 432,171.

To all whom it may concern:

Be it known that I, JOHN W. RADU, a citizen of the United States, residing at New York, in the county of New York, State of New York, have invented certain new and useful Improvements in Vacuum-Tube Mountings, of which the following is a full, clear, concise, and exact description.

This invention relates to mountings for electrical apparatus such for example, as vacuum tubes and has for its object the provision of a mounting for such apparatus of a character to protect it against injury from external blows or other disturbances.

As is well-known it is essential for the proper operation of a vacuum tube that the various electrodes thereof be maintained in a certain predetermined spaced arrangement relative to each other. Because of the comparatively light construction of the electrodes of a vacuum tube a slight blow is often effective to cause vibration of the electrodes which will vary their relation to such an extent that the efficiency of the tube is impaired.

In accordance with this invention the objectionable vibration of the electrodes is prevented by providing a resilient mounting for the vacuum tube of such a nature that any shock or vibration of its supporting structure will be absorbed without being appreciably transmitted to the electrodes. As one specific example of such a mounting it has been found very effective to mount a vacuum tube upon an endless resilient member which is provided with four projections extending alternately in opposite directions, two of said projections serving to support the tube socket and the other two being adapted to rest upon the supporting structure. With such an arrangement the vacuum tube is cushioned against a blow from any direction.

This invention will be better understood by having reference to the following specification and accompanying drawings wherein Figure 1 discloses a socket equipped with a resilient mounting and Figure 2 is a detail of a mounting.

The tube socket 10 of any desired type is provided with means for holding a vacuum tube 11 and with means 12 for being connected with the circuits for the tube. Attached to the lower face of the socket is the endless resilient member 13 which is of substantially rectangular configuration. Intermediate the corners of the resilient member 13 are provided projections 14 and 15 extending alternately in opposite directions from the main portion of the resilient member 13. In each of these offset portions is provided an aperture. Bolts 16 extending through the socket 10 are passed through the apertures in the projections 15 and the resilient member 13 is rigidly attached to the socket by means of the nuts 17. The resilient member is adapted to be attached to a supporting structure by means of screws or the like passing through the apertures in offset portions 14.

A resilient member of this type effectively cushions a vacuum tube against a blow from any direction. It may yield slightly toward and away from the supporting structure or it may oscillate about the line extending between the two offset portions 14 or about the line extending between the two offset portions 15.

What is claimed is:

1. In a vacuum tube mounting, means for holding a vacuum tube and an endless resilient metallic ribbon, said ribbon having projections extending alternately in opposite directions, said holding means being supported on one pair of projections and another pair of said projections being adapted to rest on a support.

2. In a vacuum tube mounting, means for holding a vacuum tube and a rectangular resilient member comprising a metallic ribbon, said ribbon being offset intermediate the corners of said rectangle, said holding means being supported on two of said offset portions and the other two being adapted to rest on a support.

3. In a vacuum tube mounting, means for holding a vacuum tube and a resilient frame comprising a metallic ribbon having oppositely extending offset portions, said holding means being supported from at

least one of said offset portions and the remainder of said offset portions being adapted to rest on a support.

4. A vacuum tube mounting comprising means for holding a vacuum tube, a resilient frame comprising a metallic ribbon having four symmetrically arranged oppositely extending offset portions, said holding means being supported on two of said offset portions and the remaining two offset portions being adapted to rest on a support.

In witness whereof, I hereunto subscribe my name this 17th day of Dec. A. D., 1920.

JOHN W. RADU.

least one of said offset portions and the remainder of said offset portions being adapted to rest on a support.

4. A vacuum tube mounting comprising means for holding a vacuum tube, a resilient frame comprising a metallic ribbon having four symmetrically arranged oppositely extending offset portions, said holding means being supported on two of said offset portions and the remaining two offset portions being adapted to rest on a support.

In witness whereof, I hereunto subscribe my name this 17th day of Dec. A. D., 1920.

JOHN W. RADU.

Certificate of Correction.

It is hereby certified that the assignee in Letters Patent No. 1,533,210, granted April 14, 1925, upon the application of John W. Radu, of New York, N. Y., for an improvement in "Vacuum-Tube Mountings," was erroneously described and specified as "Westinghouse Electric Company, Incorporated," whereas said assignee should have been described and specified as *Western Electric Company, Incorporated*, as shown by the records of assignments in this office; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed and sealed this 26th day of May, A. D. 1925.

[SEAL.]

KARL FENNING,
Acting Commissioner of Patents.

Certificate of Correction.

It is hereby certified that the assignee in Letters Patent No. 1,533,210, granted April 14, 1925, upon the application of John W. Radu, of New York, N. Y., for an improvement in "Vacuum-Tube Mountings," was erroneously described and specified as "Westinghouse Electric Company, Incorporated," whereas said assignee should have been described and specified as *Western Electric Company, Incorporated*, as shown by the records of assignments in this office; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

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[SEAL.]

KARL FENNING,
Acting Commissioner of Patents.