April 16, 1946. S. J. KOCH 2,398,535

CONTACT TERMINAL FOR ELECTRON TUBES

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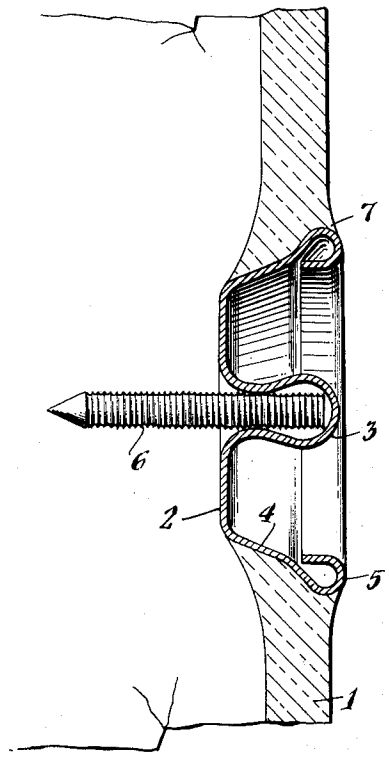


Fig. 2

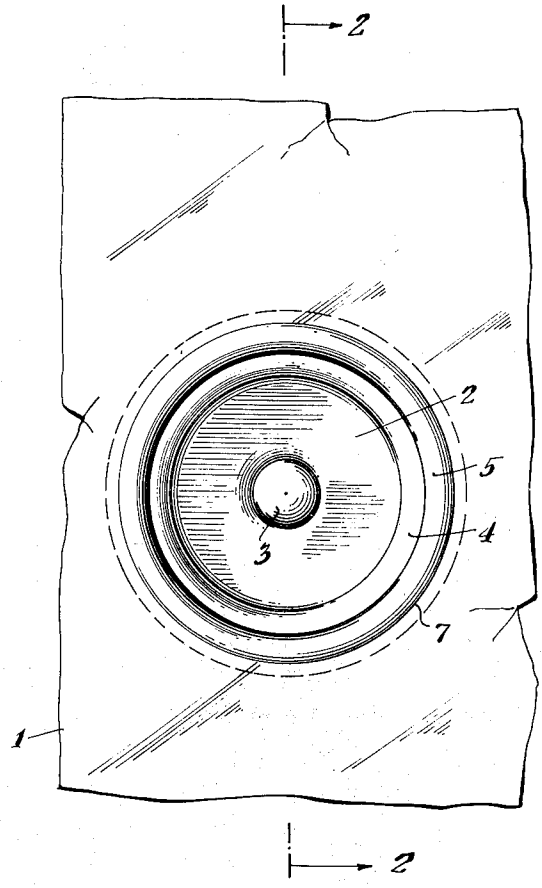


Fig. 1

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CONTACT TERMINAL FOR ELECTRON TUBES

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6 Claims. (Cl. 250—27.5)

This invention relates to a terminal or contact element for making connection from a source of electrical potential to an electrode inside of an electron tube or cathode-ray tube.

Heretofore, such connection has been made by fusing the glass and locating the terminal so that it extended through the glass wall of the tube and projected outside thereof, with the result that the projecting terminal was in danger of being struck, causing the glass to break and ruin the tube.

Attempts to obviate this danger have been made by fusing a dish-shaped button in the tube wall so that its rim was flush with the surface of the glass. A lug or pin was formed at the middle of the bottom of the button to serve as terminal, and was of such a length that it did not extend beyond the surface of the glass tube. Its edge was fused to the glass wall. Troubles have arisen by this expedient because the junction of the thin glass of the tube with the thin edge of the button was such that leakage would take place due to fractures between glass and metal, thus destroying the vacuum in the tube: or the surface contact between glass and metal was so small as to be inadequate.

By the present invention prior difficulties are overcome and an electrical contact element of a new sort is installed on a vacuum tube in such a way that the danger of its being knocked off is obviated and the danger of the vacuum in the tube being destroyed because of fractures along the edge of the contact element is greatly reduced or entirely obviated.

The invention may be understood from the description in connection with the accompanying drawing, in which:

Fig. 1 is a plan view showing the device in place; and

Fig. 2 is a section along the line 2—2 of Fig. 1.

In the drawing, reference character 1 indicates a portion of the glass wall of an electron tube such as an oscillograph tube. A metallic cup 2 is provided at the center of its bottom with an integral hollow projection 3, which is round in cross section and terminates in a rounded head, which, in turn, terminates slightly below its rim 5 of wall 4. This projection 3 is the terminal or post to which the terminal at the end of a wire is to be connected, preferably by snapping it into place by pressure over the rounded head thereof.

A beaded edge or rim 5 is provided on the wall 4 of the cup 2 by bending or turning the edge inwardly and leaving a small annular space between the edge and the wall.

A roughened pin 6 is pressed into the hollow terminal 3 and is held in place by friction. It may have an enlarged oval head to fit inside the hollow projection 3 whenever desired. It projects into the tube when the device is anchored in the wall of the tube and may serve to support the getter in the glass tube 1.

The cup 2 is located in an opening through the glass. The wall 4 and rim 5 and adjacent glass are heated until the glass flows so as to make contact with the wall 4 of the cup 2 for a considerable portion thereof from its top edge towards the bottom of the cup, and at the same time the glass flows to a certain extent along the outer surface of the rim 5 as shown at 7. In this way a considerable increased area of contact is provided between the glass and the wall of the cup. This greatly decreases the likelihood of injuring the metal at the junction of the cup and glass wall. The sealed joint is made more secure because the danger of destroying or injuring the junction made between glass and metal when the heat is applied is obviated.

What is claimed is:

1. A contact terminal for a glass vacuum tube, comprising a cup-shaped metallic member having an in-turned rim with an integral portion of the glass extending over substantially half of said rim and terminating substantially at the middle of said rim.

2. A contact terminal for a glass vacuum tube, comprising a cup-shaped metallic member having an in-turned rim that is substantially circular in cross section with an integral portion of the glass extending over substantially half of said rim and terminating substantially at the middle of said rim.

3. A contact terminal for a glass vacuum tube, comprising a cup-shaped metallic member having an in-turned rim with a portion extending outwardly of the main portion of the cup with an integral portion of the glass extending over substantially half of said rim and terminating substantially at the middle of said rim.

4. A contact terminal for a glass vacuum tube, comprising a cup-shaped metallic member having an outwardly flaring wall terminating in a rounded rim with an integral portion of the glass extending over substantially half of said rim and terminating substantially at the middle of said rim.

5. A contact terminal for a glass vacuum tube,

comprising a cup-shaped metallic member having an outwardly flaring wall terminating in a rounded rim, said rim having a portion which flares outwardly more than said wall with an integral portion of the glass extending over substantially half of said rim.

6. A contact terminal for a glass vacuum tube, comprising a cup-shaped metallic member having an outwardly flaring wall terminating in a rounded rim the edge of which terminates near the inner surface of said wall with an integral portion of the glass extending over substantially half of said rim.

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