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ANODE FOR RADIO TUBES

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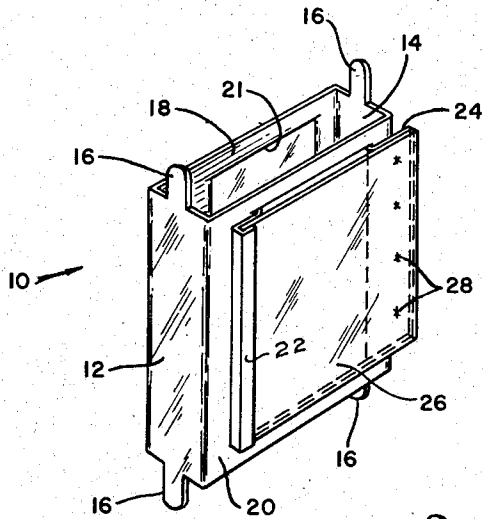


FIG-1

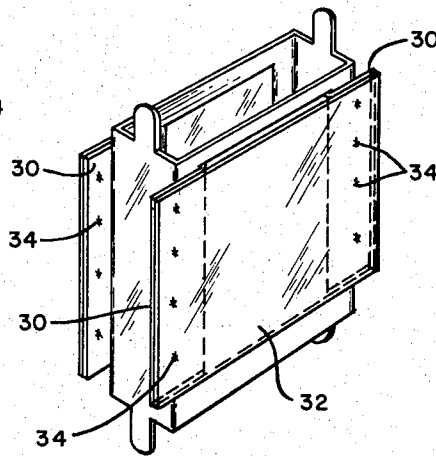


FIG 2

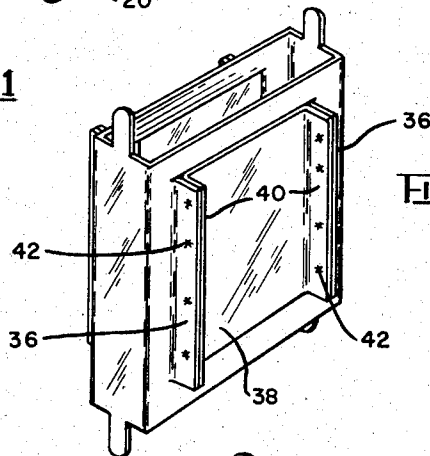


FIG 3

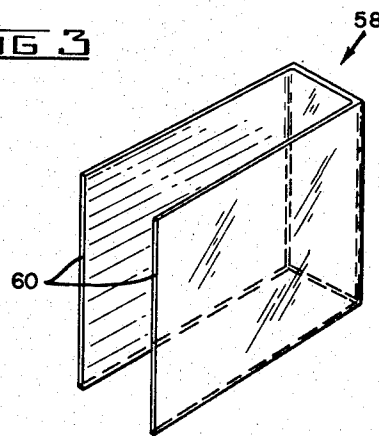


FIG-5

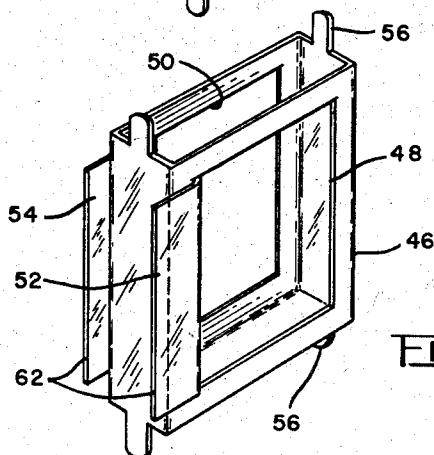


FIG-4

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7 Claims. (Cl. 313-217)

This invention relates to anode construction for line up type tubes.

There are types of electron tubes which employ more than one grid and it is required for the proper functioning of such tubes that grids shall shadow each other insofar as the electron stream is concerned. Usually, the process of lining up these grids is accomplished after the tube mount (including cathode, grids, beam confining plate, if any, and anode) is assembled between the conventional insulating spacers, and many schemes have been employed to permit visual inspection of grids for their alignment. Thus, in the past, the anodes have been provided with windows and cover plates therefor pivoted in the plane of a surface of the anode, or a tab was cut out of the anode which could be bent back for inspection of the grids and then restored to the plane of the anode material or the anode had been cut down a little at the top and bottom so that the eye could skim over or under the anode and inspect the grids for grid alignment. These schemes and others have been provided, but they allow for inspection of a part only of the grids.

It is a purpose of this invention to provide an anode construction which shall enable the visual inspection of the grids, from both major faces, if desired, after only a portion of the anode is in place sufficient to afford proper spacing of the insulators.

It is a further object of the invention, in such an anode construction, to provide for easy completion of the anode without disturbing grid alignment.

For a better understanding of the invention attention is directed to the anode structures shown in the accompanying drawing in which:

Fig. 1 illustrates a form of tabbed anode wherein substantially the whole of both major faces of the anode are windowed and closure plates are provided covering the windows in the anode after grid inspection and adjustment.

Fig. 2 illustrates a slightly modified form of the invention.

Fig. 3 illustrates still another slightly modified form of the invention.

Fig. 4 illustrates yet another form of the invention wherein the windows are flanged in such manner as to adapt the mounted anode portion to receive a U-shaped double closure plate member.

Fig. 5 illustrates the U-shaped double closure plate adapted to be secured to the anode portion of Fig. 4.

Considering the figures in greater detail, at 10 in Fig. 1 is shown an anode such as may be employed in a grid line up or beam power tube, the anode tabs 16 extending therefrom to cooperate with insulating spacers conventionally employed. The anode also has a windowed back wall 18 and a windowed front wall 20. These windows cover substantially the entire major faces of the parallelepiped to allow for visual inspection of substantially the whole of the grids. One vertical edge of each of the windows in walls 18 and 20 has a portion

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struck out, reversely bent upon itself and then again bent to form a flange with a channel 22 and the opposite edge has formed therewith a reversely bent flap or flange 24 lying as close to the outer planes of the walls 18 and 20 as possible. After grid inspection and alignment through either or both of the windows an end of a metallic cover or closure plate 26 is slipped into the channel 22 of one of the windows and the opposite end welded to the corresponding flange 24 as at 28. A similar closure plate is likewise applied to the opposite window, e. g., window 21.

In the form of invention shown in Fig. 2, both side edges of each of the windows are provided with flaps or flanges 30 and each of the cover plates 32 is welded at its lateral ends to the flanges as at 34.

In the form of the invention illustrated in Fig. 3, the opposite vertical edges of each of the windows in the front and rear wall is provided with flanges 36 bent at right angles to its wall and each wall has a cover plate 38 with mating ends in the form of flanges 40 welded to the flanges 36 as indicated at 42.

In the form of the invention illustrated in Figs. 4 and 5, there is provided an anode portion 46 provided with windows 48 and 50 on its front and rear major face. Each of the windows is provided with a single flange 52 and 54 cut from its respective side edge portion and bent back into parallelism with each other and substantially into contact with the outer walls of the major faces of the anode.

Like in all other forms, the anode portion is provided with tabs 56 for securing the insulating spacers to the anode portion. After grid inspection the anode may be completed by slipping thereover the anode portion of Fig. 5. This portion comprises a metal cover plate 58 bent into U-shape from a rectangular plate and telescoping snugly over the anode portion 46. The depth of the U-shaped member is such that the edges 60 of the U-shaped member will substantially register with the edges 62 of the flanges 52 and 54 when the bight of the U-shaped portion is against the anode portion 46.

Having thus described the invention, what is claimed is:

1. An anode comprised of a first portion provided with at least one window and means for securing the same between spaced insulators of a mount, flanges on said first portion, and a second anode portion covering the window, said second portion being devoid of means for securing the same to said insulating spacers but provided with ends complementary to the flanges on the first portion, at least one end of the second portion being secured to a complementary flange of the first portion.

2. An anode comprised of a first portion provided with at least one window and means for securing the same between spaced insulators of a mount, flanges on said portion, and a second anode portion covering the window, said second portion being devoid of means for securing the same to said insulating spacers but provided with ends complementary to the flanges on the first portion, at least one end of the second portion being secured to a complementary flange of the first portion, one of the flanges of the first portion being reversely bent to form a channel and a complementary end on said second portion fitting into said channel.

3. The structure set forth in claim 1 characterized by both of the flanges of the first anode portion being at right angles to said first portion, and complementary right angular flanges on the second anode portion fastened to said flanges of the first anode portion.

4. An anode comprising a parallelepiped with a window in a major face thereof, each of two opposite sides of the window being provided with a flange, and an anode cover plate for the window provided with ends com-

plementary to the first flanges, at least one end on the cover plate being secured to a window flange.

5. The subject matter of claim 4 characterized by one of the flanges of the window extending at right angles to the plane of the window and by the anode cover plate 5 having a flange extending at right angles to the anode cover plate and secured to said first flange.

6. The structure of claim 4 characterized by the flange on the window being reversely bent upon itself with said one end of the cover plate fitting in said reversely bent 10 end and secured to the parallelepiped.

7. The subject matter in claim 4 characterized by the parallelepiped having flanges at right angles to the plane

of the window and the anode cover plate having complementary flanges secured to said first flanges.

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