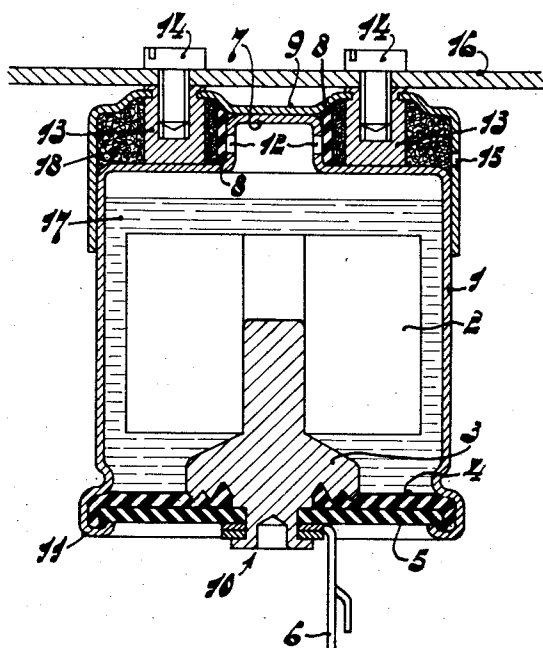


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ELECTROLYTIC DEVICE
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ELECTROLYTIC DEVICE

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My invention relates to electrolytic devices, and more particularly to electrolytic condensers.

Various methods have been proposed for locating and mounting electrolytic condensers within electric apparatus, for instance in radio sets. For example, condensers provided with a threaded tube on the same end from which the anode connection protrudes, may be mounted in a radio set with the threaded tube projecting down through a hole in the panel and secured thereto by a nut. Such locating of condensers above the panel has the disadvantage that the condensers are close to parts which produce heat during the operation of the apparatus; for instance, rectifying tubes, transformers, etc. The absorption of heat by the electrolyte of the condenser may decompose same into chemical constituents other than the initial constituents, which precipitate to form a deposit in the lower portion of the container. Such a precipitation is very detrimental to the proper operation of the condenser.

To overcome these thermal difficulties, it has been proposed to mount such condensers below the panel, i. e., with the anode connection projecting up through a hole in the panel. Such a mounting, however, has the disadvantage that the anode connection within the container is not completely covered by the electrolyte, in which case corrosion may take place at the surface of the electrolyte.

It has also been proposed to use various hook-shaped supports which clamp into a hole in the mounting panel. Such supports, in addition to being of rather complicated and expensive construction, have the disadvantage that the condenser is not rigidly mounted. Furthermore, such clamps do not contact the panel with a large surface area, and as a result the transition resistance may reach a high value.

In accordance with my invention, I eliminate all the above-mentioned disadvantages by providing an electrolytic condenser with a double-walled end and with an anode connection at the opposite end, the space formed between the double walls being used for housing both the fastening means and an exhaust device.

Condensers according to my invention may be located beneath the mounting plate and suspended therefrom so that they will not be exposed to the heat produced by the other parts; and due to the fact that the anode is located at the bottom, any danger of corrosion is avoided, provided the container is sufficiently filled with electrolyte.

Further advantages of condensers according to

the invention will appear as the specification progresses.

In order that my invention may be more clearly understood and readily carried into effect, it will be more fully described in connection with the accompanying drawing, in which the single figure is a cross-sectional view of an electrolytic condenser according to my invention.

The condenser shown in the drawing consists of a container 1, for instance of aluminium, open at its lower end and provided on its upper closed end with a dome 7 having two apertures 12. The dome 7 is encircled by a rubber band 8, which in known manner serves to relieve the gas pressure developed in the container during the operation of the condenser.

Within the container 1 and slipped over a rod 3 of conductive material, is a formed anode 2, for instance of aluminum, having a large surface area. Secured to the rod 3 by spinning over the edge, as indicated at 10, or by means of a screw thread and nut, are a rubber gasket 4, a washer 5 of hard insulating material, and a soldering lug 6; the latter serving as the external connection to the anode.

The anode 2—together with rod 3, gasket 4, washer 5, and lug 6 secured thereto—is supported from the lower end of the container 1 by spinning over the edge thereof, as indicated at 11; the gasket 4 being clamped around the edge of washer 5 to give a liquid-tight seal.

The container 1 is filled with a suitable electrolyte 17 to a level above the top of the anode 2, whereby with the condenser mounted in the position illustrated, the anode is completely covered by the electrolyte and no corrosion can occur.

To the upper end of a container 1 is secured, for instance by rolling, soldering, or spot-welding, a cap-shaped cover 9 provided with two threaded bushings 13, which serve as fastening means for the condenser. The condenser is supported from a panel 16 by means of two screws 14 engaging the bushings 13.

The bushings 13 may be of metal, as shown, or if it is desired to insulate the container from the panel, may be of insulating material, for instance a molding having a threaded insert.

Although a single bushing and screw may be used, I prefer to use two bushings as this provides a more rigid mounting, especially in case of large condensers. Furthermore, a plurality of bushings afford an increased contact area and a better electrical connection between the mounting plate and the condenser. Such a suspension

means, when also serving as a cathode connection, decreases the transition resistance.

Within the space formed between the cover 9 and the container 1 is provided a liquid-absorbing substance 10, for instance glass wool, which, as described in U. S. patent application Ser. No. 659,393 of Van Embden now Patent No. 2,048,417, serves to prevent the escape of liquid during the exhaust of gas from the condenser. If the cover 9 is not air-tightly sealed to the container 1, for instance spotwelded thereto at several points, the gases escaping through the holes 12, after passing through the substance 10, may pass out between the walls of the container 1 and the cover. However, if desired vent holes 15 may be provided in the cover 9.

It will be noted that the condenser according to the invention is of substantially cylindrical contour, of small size, and very compact; the space between the double wall portion serving to house both the fastening means and also the exhaust device.

While I have described my invention in connection with specific examples and applications, I do not wish to be limited thereto, but desire the appended claims to be construed as broadly as permissible in view of the prior art.

What I claim is:

1. An electrolytic condenser comprising, a container having a closed end, an anode within said container and having an external connection at the other end thereof, a cup-shaped member mechanically secured at the closed end of said container, an exhaust device within the space formed between said member and the closed end of the container, and means positioned within said space for supporting the condenser.

2. An electrolytic condenser comprising, a container having a double-walled end, the outer wall being provided with a plurality of apertures, an anode within said container and having an external connection at the other end thereof, and means to support said condenser from a panel, said means comprising a plurality of nuts disposed one beneath each of said apertures, and screws cooperating with said nuts and passing through the panel.

3. An electrolytic condenser comprising a container having a double-walled end, an anode

within said container and having an external connection extending from the other end thereof, an exhaust device for said condenser, said device being disposed within the space formed at the double-walled end, and means for supporting said condenser and serving as a cathode connection, said means being positioned within said space.

4. An electrolytic condenser comprising a container having a double-walled end, means including an apertured protuberance of the inner wall to relieve the pressure in said container, an anode within the container, fastening means for said condenser, and a liquid-absorbing substance, said fastening means and absorbing substance being positioned within the space formed by the double-walled end.

5. An electrolytic condenser comprising a container having a double-walled end, an electrolyte within said container, an anode within said container and having an external connection extending through the end of the container opposite to the double-walled end, venting means partly within the space formed at said double-walled end, and means for supporting the condenser comprising a member extending into the space formed at the double-walled end.

6. An electrolytic condenser comprising a container having a closed end, an anode within said container and having an external connection at the other end thereof, a separate cup-shaped member secured to the closed end of said container to form an intermediate space, and mounting means positioned within said space.

7. An electrolytic condenser comprising a container having a closed end, an anode within said container and having an external connection at the other end thereof, a cup-shaped member slipped over the closed end of said container and secured thereto, said member being provided with a plurality of apertures, means positioned within the space between said cup-shaped member and the closed end of said container to support said condenser from a panel, said means comprising a plurality of nuts disposed between said apertures, and screws cooperating with said nuts and passing through the panel.

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