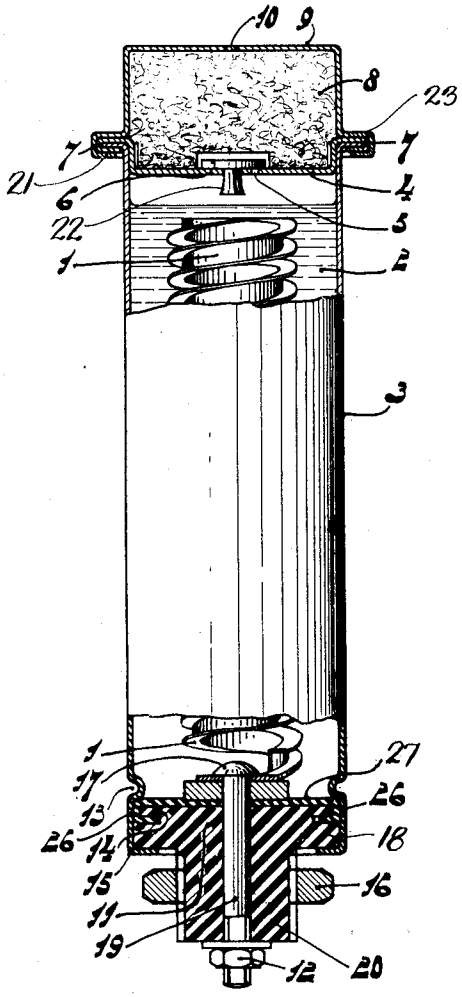
July 21, 1936. H. J. M. VAN EMBDEN 2,048,417

ELECTROLYTIC DEVICE

Filed March 2, 1933



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Patented July 21, 1936 2,048,417

UNITED STATES PATENT OFFICE

2,048,417

ELECTROLYTIC DEVICE

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Application March 2, 1933, Serial No. 659,393
In the Netherlands March 5, 1932

10 Claims. (Cl. 175—315)

The present invention relates to electrolytic devices and more particularly to condensers.

Such devices comprise a container, an electrolyte and electrodes, of which at least one is of film-forming metal, and which is covered with an electrolytically-formed film.

To prevent contamination and evaporation of the electrolyte, such devices are generally fully enclosed and are sealed in a liquid and air-tight manner.

During the operation of the device, however, gases are liberated at the electrodes and means must be provided to permit the escape of these gases. Various venthole and valve constructions have been used for this purpose, these constructions, however, having the common drawback that the escaping gases carry with them some of the electrolyte.

This is due especially to the fact that such vents and valves operate intermittently and open only when the accumulation of the liberated gases produces sufficient pressure to open these venting means. At such pressures the gas carries sufficient electrolyte to the exterior that the latter, when depositing on adjacent objects, soil and damage them. This is highly objectionable especially in the case of those devices, for instance radio receiving sets, in which other devices are mounted in close proximity to the electrolytic condensers, and in which the wetting of these devices by the electrolyte may be detrimental to the proper operation thereof.

The present invention is intended to obviate the above difficulty. According to my invention, an absorbing substance, for instance glass-wool, is provided around the venting means and in the path of the escaping electrolyte, which absorbs the electrolyte carried out by the escaping gas.

In one embodiment of my invention I provide the vent-valve, together with the absorbent, at one end of the container, and preferably make this end portion re-entrant, whereby the re-entrant portion together with a protective cap, form a chamber to receive the absorbent.

In order that the invention may be clearly understood and readily carried into effect, an electrolytic condenser embodying my invention will be described more fully with reference to the accompanying drawing, in which the single figure is a side elevation partly in section, of a condenser embodying our invention.

The electrode 1 consists of a helically-shaped profiled rod of film-forming metal, for instance aluminium, tantalum or zirconium. A cylindrical container 3, open at both ends, and which may be of filming or non-filming metal, forms the supply conductor for the electrolyte which constitutes the other electrode, and contains a suitable electrolyte 2, for instance, an aqueous solution of borax and boric acid.

A re-entrant lid 4 is provided at the upper end of the container 3 and its flange 7 engages by means of crimping a corresponding flange 21 of the container 3.

The lid 4 is provided with an aperture 5 closed by a valve shown as a mushroom-shaped rubber flap 6, the slightly tapered stalk 22 of which passes through the lid 4 and is secured in air and liquid-tight manner thereto.

A protective metal cap 9 is provided on the top of the lid 4 and is suitably secured to the container, for instance, by the provision of a flange 23 crimped around the flange 7 of the lid. The cap 9 also assists in preventing the escape of the electrolyte.

The cap 9 is provided with an exhaust hole 10.

The space between the cap 9 and the lid 4 is filled with a suitable absorbing material 8, for instance with sawdust, woodwool, glass-wool, sponge rubber, or the like, whereby sufficient free space is left on the top of the valve 6 so as not to interfere with the proper operation of the valve.

On the lower end the container 3 is closed by a bottom piece 11, of suitable insulating material, for instance hard rubber, artificial resin, or the like. The upper portion of the bottom piece 11 forms a disc 18 snugly fitting in the container, whereas its lower portion forms a neck 20 of reduced diameter.

A rubber disc 27 placed on top of the disc 18 acts as a gasket and slightly overlaps the latter, its overlapping portion 26 being bent around the disc 18 and engaging an annular groove 14 provided in the disc.

The disc 18 with its washer 27 is tightly clamped between an annular recess 13 of the container 3 and the crimped-over end portions 15 thereof.

A conducting rod 19 passing through the bottom piece 11 supports and is electrically connected with the electrode 1 at 17. At its other end the rod 19 carries a nut 12 for the outside connection of the electrode.

The neck 20 is threaded to carry a nut 16, by means of which the condenser may be attached to a suitable base.

It will be noted that in a device embodying my invention the escaping electrolyte will be restrained by the absorbent and as the amount of electrolyte passing the vent is comparatively small,

the absorbent provided will be sufficient to absorb all escaping electrolyte during the entire life of the condenser.

Various modifications of my invention may suggest themselves. While I have described my invention in connection with a specific embodiment I do not wish therefore to limit same to such, 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 cell comprising a sealed container, an electrolyte therein in which gases may develop during the operation of the device, a vent member provided on said container for the escape of said gases comprising a valve which opens only on an over-pressure, and an absorbing substance surrounding said vent member on the opposite side thereof from the electrolyte, to absorb the electrolyte carried out by the escaping gases.

2. An electrolytic condenser comprising a sealed container, a film-forming electrode and a liquid electrolyte in said container, said container having an end member, a valve which opens only on over-pressure and is provided on said end member for the escape of gases which may develop during the operation of the condenser, and an absorbing substance disposed around said valve and in the path of the escaping gases to absorb the electrolyte which may be carried out by said gases.

3. An electrolytic device, comprising a sealed container, an electrolyte in which gases may develop during operation of the device, said container having an end member comprising a re-entrant portion, a valve, which opens only on an over-pressure and an absorbent disposed in said re-entrant portion, said absorbent being disposed on the opposite side of the valve from the electrolyte and absorbing the electrolyte which may be carried out by the escaping gases through said valve.

4. An electrolytic condenser comprising a sealed cylindrical container, an electrolyte, an electrode of film-forming material, said container having an end extension, a centrally disposed valve which opens only on an over-pressure and an absorbent around the exterior face of said valve, said valve and absorbent being surrounded by said extension.

5. An electrolytic condenser comprising a sealed container, an electrolyte in which gases may develop during the operation of the device, a vent member comprising a valve which opens only on an over-pressure and is provided on said container for the escape of said gases, and an absorbing substance of the type of wood-wool, glass-wool, sawdust and the like surrounding that side of the vent-member which is opposite the electrolyte, to bind the electrolyte which may be carried out by the escaping gases.

6. An electrolytic cell comprising a sealed container, an electrolyte in said container, a valve through which gases may escape which develop during the operation of the device and which opens only on an over-pressure, an absorbing substance surrounding said valve from the exterior to absorb the electrolyte carried out by the escaping gases, and a cap surrounding said valve and said absorbing substance.

7. An electrolytic condenser comprising a sealed container, an electrolyte and an electrode of film-forming material therein, a valve which opens only on an over-pressure and is centrally disposed at one end of the condenser for the escape of gases which may develop in the condenser during its operation, and a disc of an absorbing substance surrounding said valve from the exterior and adapted to absorb the electrolyte which may be carried out of the container through the valve by the escaping gases.

8. An electrolytic condenser comprising an electrolyte container, a film-forming electrode and a liquid electrolyte in said container, a closure member on top of said container forming a chamber, an absorbent substance in said chamber, and a valve disposed between said chamber and said electrolyte container, said valve only opening upon an excess pressure of the gases liberated in the operation of the condenser.

9. An electrolytic condenser comprising an electrolyte container, a film-forming electrode and a liquid electrolyte within said container, a moisture-absorbent substance arranged at one end of said container and separated from the electrolyte by a partition, and a valve disposed in said partition and adapted to open intermittently by the pressure of the gases liberated from the electrolyte when the pressure exceeds a predetermined value.

10. An electrolytic condenser comprising a cylindrical electrolyte container having a recessed end wall, a film-forming electrode and a liquid electrolyte within said container, a valve in said end wall, a cylindrical-shaped cap provided with a vent hole and arranged around the valve to form a hollow space, a liquid-absorbing mass within said space, said container, cap and wall having flanges rolled together to liquid-tightly seal the container space and the hollow space from each other and from the atmosphere.

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