Nov. 17, 1936. P. HETENYI 2,060,866

CONTAINER VENT

Filed July 19, 1932

Fig. 2

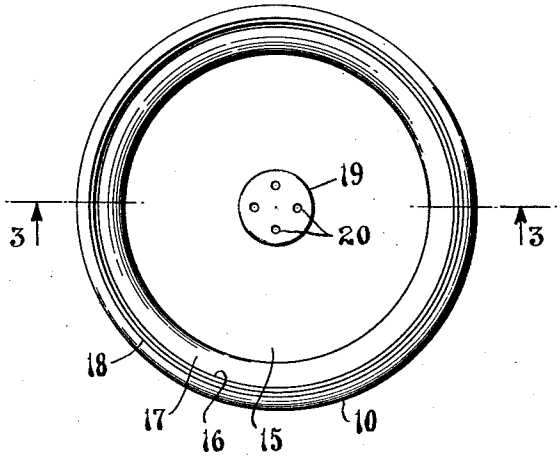


Fig. 1

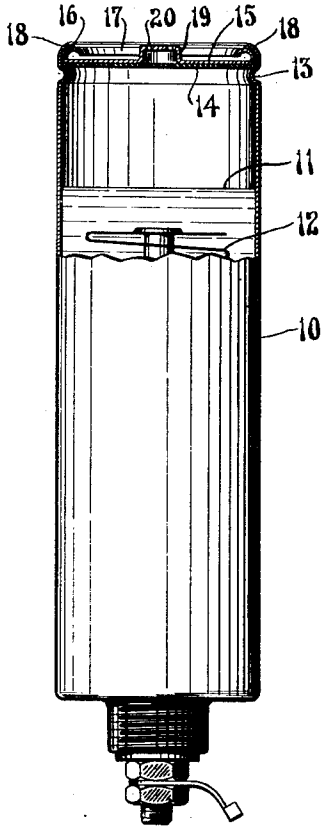


Fig. 3

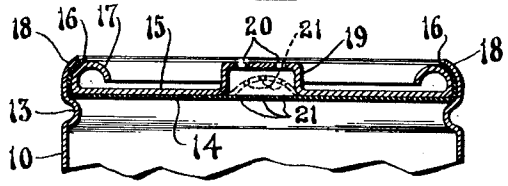
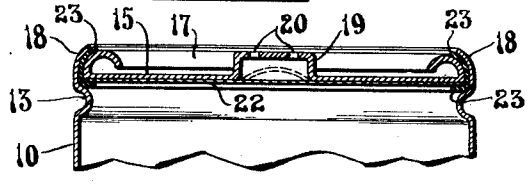


Fig. 4



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Patented Nov. 17, 1936 2,060,866

UNITED STATES PATENT OFFICE

2,060,866

CONTAINER VENT

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Application July 19, 1932, Serial No. 623,317

2 Claims. (Cl. 175—315)

It is the object of this invention to provide a container vent of an improved breather construction which will be particularly adaptable for use in connection with electrolytic condensers.

Another object of this invention is to provide a vent for an electrolytic condenser which will seal the condenser against the entrance of foreign matter, while at the same time permit the release of gases generated therein.

A further object of this invention is to provide a vent or breather construction for electrolytic condensers comprising a diaphragm of thin sheet rubber in which are pierced small holes; said rubber being held in position underneath a perforated cup-shaped extrusion of the container cover into which the rubber can expand to allow the release of gases generated within said container.

Another object of this invention is to provide a vent construction for electrolytic condensers comprising a cover for the electrolyte container having a perforated cup-shaped extrusion and a diaphragm of thin metal foil securely held in position underneath said cover; which, under slight gas pressure will be slightly expanded within the cup-shaped extrusion and under extreme gas pressure, will tear through to allow free escape for the gases without causing injury to the rest of the container.

With these and other objects in view, to be more fully set forth hereinafter, the invention consists in the novel construction, combination of elements and arrangements of parts which will be exemplified in the operation and construction herein described in the following specification and illustrated in the accompanying drawing.

The disclosure made the basis of exemplifying the present inventive concept suggests a practical embodiment thereof, but the invention is not to be restricted to the exact details of this disclosure, and the latter therefore is to be understood from an illustrative, rather than a restrictive standpoint.

The invention will first be described in connection with the drawing, wherein similar reference characters are used to designate corresponding parts throughout the several views, and more specifically defined and indicated in the appended claims.

Attention is directed to the drawing, in which—

Fig. 1 is an elevational view partly in section of an electrolytic condenser illustrating one embodiment of the invention;

Fig. 2 is an enlarged plan view of Fig. 1;

Fig. 3 is a sectional view taken on the line 3—3 of Fig. 2 and illustrates the vent construction employing the pierced rubber sheet diaphragm; and

Fig. 4 is a similar view of a modified form of bent construction employing a diaphragm of thin metal foil.

Referring more in particular to the drawing, the form of the invention herein shown by way of illustration includes the usual electrolyte container 10 preferably formed of copper or other suitable chemical resisting material. Mounted within the container and immersed in the electrolyte 11 is the anode 12. The upper end of the container has the inwardly spun shoulder 13 upon which the vent or breather is held in position. Referring more in particular to Fig. 3, it will be readily seen that the thin rubber sheet diaphragm 14 is held in position under the container cover 15 by means of its outer edge 16 being turned upward and around the turned over edge 17 of the cover 15. The rubber diaphragm and the cover are securely held in airtight relation to the shoulder 13 by spinning down the extreme upper end 18 of the electrolyte container. Located in the center of the container cover 15 is the cup shaped extrusion 19 having the perforations 20.

To permit the escape of gases from the receptacle while preventing the entrance of air, the central portion of the rubber diaphragm 14 which underlies the cup-shaped extrusion 19 is provided with a plurality of small pin holes 21. The size of these holes is such that when the diaphragm is in its normal relaxed position as shown in Figs. 1 and 3, they are closed by the natural resiliency of the rubber. When the pressure of gases evolved by the electrolyte increases, the diaphragm is flexed upwardly into the cup-shaped extrusion 19 as indicated by dotted lines in Fig. 3. This flexing of this portion of the diaphragm, stretches it, thus opening the holes 21, and permits the gas to escape. When sufficient gas has escaped and the pressure reduced to substantially that of atmospheric pressure, the diaphragm returns to its normal position and the holes 21 close, again sealing the receptacle.

Referring to Fig. 4, which illustrates a modified form of vent, I provide a disc of very thin metal foil 22 which is chemical-resisting, of a thickness of .0005" more or less, for instance, and which is securely held in position against the bottom of the cover 15 by the rubber gasket 23; said gasket being forced down tightly against the inwardly spun shoulder 13 by the spinning down of the extreme upper end 18 of the container 10. Under light gas pressure in the con-

tainer this diaphragm will expand slightly upward into the cup-shaped extrusion of the cover as indicated by the dotted lines. Should extreme gas pressure develop, the diaphragm will tear through at this point and provide free escape for the gases, leaving the rest of the condenser uninjured.

In accordance with the provisions of the patent statutes, I have described my invention, but I desire it understood that it is not confined to the particular form shown and described, the same being merely illustrative, and that the invention can be carried out in other ways without departing from the spirit of my invention, and therefore, I claim broadly the right to employ all equivalent instrumentalities coming within the scope of the appended claims, and by means of which, objects of my invention are attained and new results accomplished, as it is obvious that the particular embodiments herein shown and described are only some of many that can be employed to attain these objects and accomplish these results.

Having now described my invention, what I claim and desire to protect by Letters Patent is:

1. In an electrolytic condenser construction, a container, a lid for said container having an outwardly directed protective recess, an elastic diaphragm, cut from flat sheet rubber, of uniform thickness stretched beneath said lid with only its peripheral edge clamped between the container and the lid, said diaphragm having a perforation alined with said recess, said perforation being closed except when said diaphragm is flexed by gas pressure into said protective recess.

2. In an electrolytic condenser construction, a container, a lid for said container, having a centrally located inverted cup-like recess with perforations in its upper surface, a flat, elastic diaphragm, punched out of sheet rubber of uniform thickness and freely extensible beneath said lid, except where clamped with its peripheral edge between the container and the lid, said diaphragm having perforations aligned with and accessible from the perforations in the recess of the lid, said perforations being self-closing except when said diaphragm is flexed by gas pressure into said cup-like recess.

PAUL HETENYI.