CELL FOR ELECTROLYZING SOLUTIONS OF ALKALI CHLORIDES

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The present invention relates to an electrolytic cell, particularly adapted for electrolyzing alkali chloride solutions, and has for its purpose to attain a cell of high current capacity which at the same time occupies little space and is cheap to build.

The invention is based on the cell type, well known in the art of electrolyzing alkali chloride solutions, in which a permeable cathode consisting of perforated sheet-metal, wire gauze and the like with a diaphragm adjacent to the cathode forms a container for the solution to be electrolyzed, in which container the anode or a row of anodes is placed.

According to the invention a number of electrolyzing units or sets each consisting of cathode, diaphragm and anode are installed in one and the same outer container for the electrolyte emerging from the permeable cathode and for the hydrogen formed during electrolysis. In such a cell all the electrolyzing units are connected in parallel and the result is a cell of very high current capacity, which occupies very little space relatively to its capacity as compared with previous constructions, in which each electrolyzing unit constitutes a separate cell. More over the new cell is far cheaper to construct because a large number of partitions for the individual electrolyzing units are dispensed with and the several units may be placed much closer to one another.

The invention is illustrated in the accompanying drawings in which

Figs. 1 and 2 show diagrammatical cross sections of the cell in two different modifications, and

Figs. 3 and 4 show plan views of the outer containers according to Figs. 1 and 2 respectively.

According to Figs. 1 and 3 four electrolyzing units are installed in the common container —b— in which the electrolyte passing through the cathode collects. Each electrolyzing unit is composed of the cathode —a— of perforated sheet-metal, wire gauze or the like, a diaphragm —c— on the inside of the cathode and forming together with the latter the trough-like container for the electrolyte, and one or more anodes —d— placed in this container.

The cell shown in Figs. 2 and 4 differs from that represented by Figs. 1 and 3 mainly by its having the electrolyzing units constructed as double-units, the cathode and the diaphragm forming two troughs located side by side and containing two anodes or two rows of anodes.

For suspending these electrolyzing units in the common container —b— there are provided troughs —e— extending along the upper edge of the container. The troughs —e— on two opposite sides of the container communicate by means of similar but somewhat broader troughs —f—. The troughs —e— and —f— form liquid-seals in which the electrolyzing units are suspended by means of a frame of angle iron extending along the whole periphery of the unit and serving as a fastening device for the cathode and the diaphragm and as support for the cell top and the anodes, said angle iron resting upon its turned-down flange in the troughs —e— and —f—.

I claim:

A cell for electrolyzing solutions of alkali chlorides comprising an outer unsubdivided tank for the electrolyzed liquid and the hydrogen, a trough for sealing liquid at the top of the tank on all its sides and trough extending across the tank and connected to the aforementioned trough, and electrolyzing units in the tank each consisting of an anode carrying cell top, a cathode and a diaphragm adjacent thereto, said cathode and diaphragm folded to form two adjacent pockets in which two anodes are supported from said top, said units being supported by the trough in the gas space of the outer tank.

In testimony that I claim the foregoing as my invention I have signed my name.

EDOUARD KREBS.