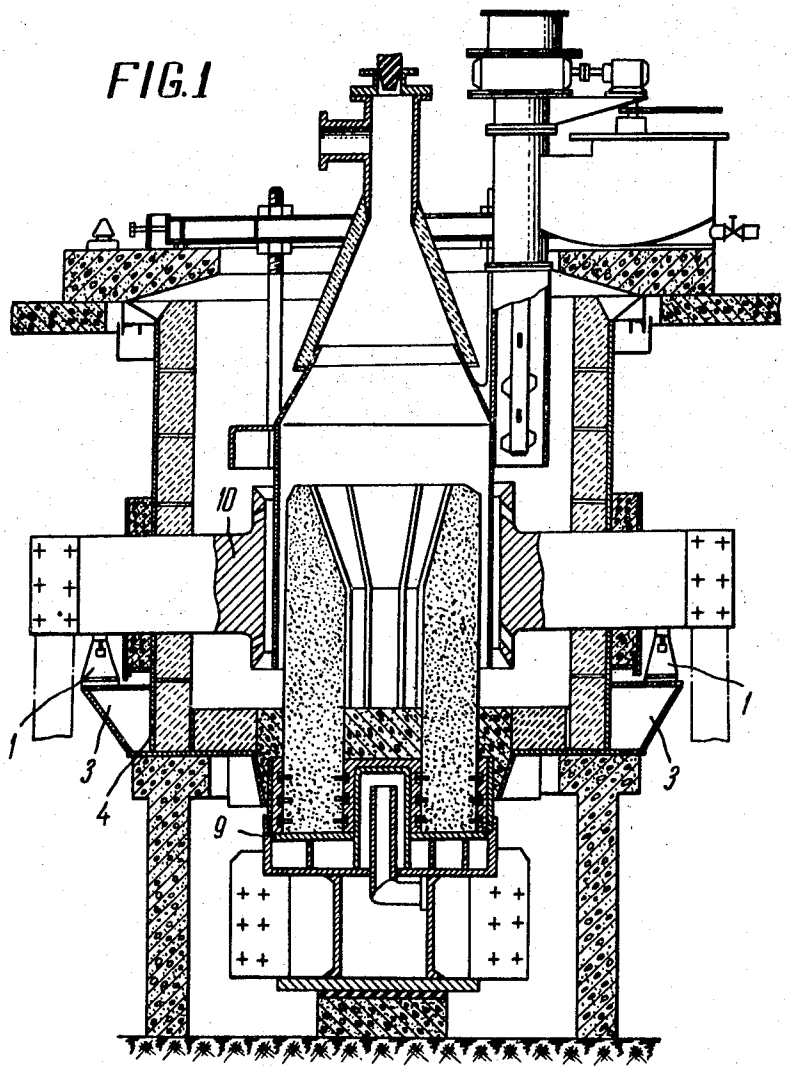
Feb. 29, 1972 E. I. ADAEV ET AL 3,645,878

DEVICE FOR SETTING CATHODES IN ELECTROLYZERS

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FIG.1



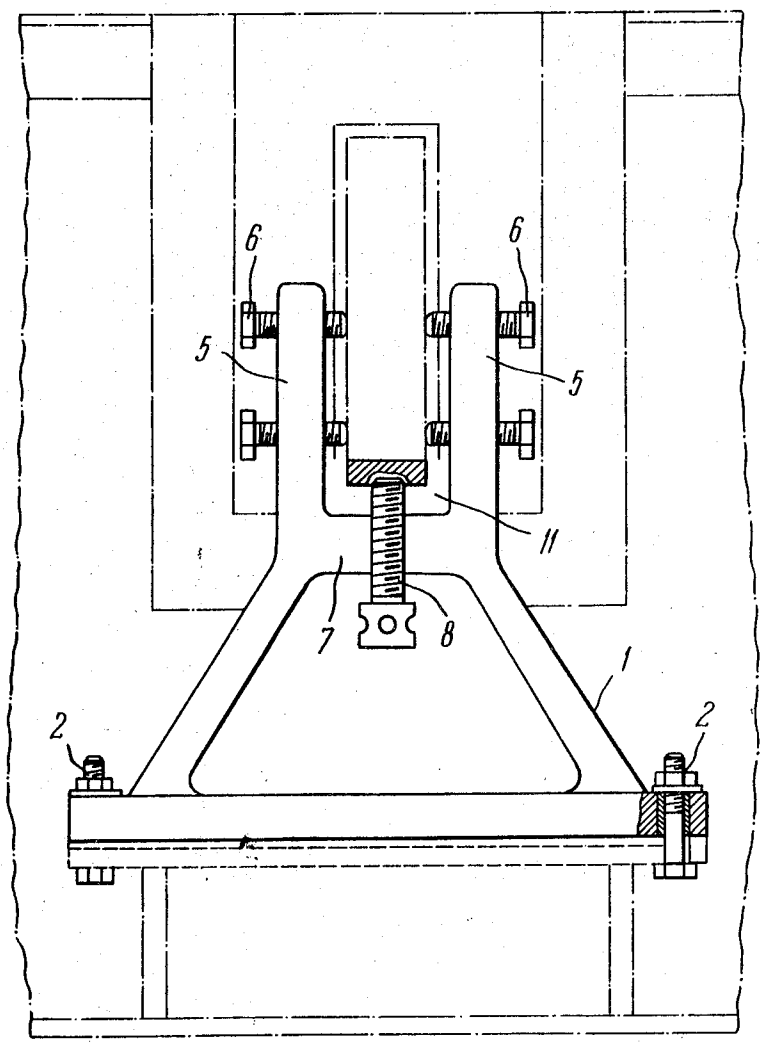
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FIG. 2



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DEVICE FOR SETTING CATHODES IN ELECTROLYZERS

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U.S. Cl. 204—243 R 2 Claims

ABSTRACT OF THE DISCLOSURE

A device for setting the cathodes in electrolyzers made in the form of several diametrically disposed forked members installed at the same level, in which the aperture between the tines of the forked members is used for setting the current-carrying lead of the cathode, in which case each forked member has a means for adjusting the position of the cathode in two mutually perpendicular planes.

The present invention relates to apparatus for producing metals by the method of electrolysis and, more particularly, the invention relates to devices for setting cathodes in electrolyzers.

Known in the art are electrolyzers in which the cathode consists of one or several perforated steel cylinders connected to each other and provided with current-carrying leads which pass through the walls of the electrolyzer and rest upon its lining. In the course of assembling the electrolyzers (in particular, those intended for production of sodium) it is necessary to accurately position the cathode in the electrolyzer because the assembly of the anode and electrolyzer on the whole is carried out in accordance with the position of the cathode. Application of the conventional methods of setting the cathodes by using a hoisting mechanism results in technical difficulties and an inordinate consumption of time and labour. Besides that, due to the rough surface of the lining of the electrolyzer, gaskets of various shape are required for the accurate setting of the cathodes. Due to abovementioned facts, the qualitative setting of the cathodes and the high quality of the assembly of the electrolyzer as a whole are not ensured.

An object of the invention is to eliminate the above mentioned disadvantages.

The main object of the invention is to provide such a device for positioning the cathodes in the electrolyzers which would ensure quick and accurate assembling of the cathode in the electrolyzer with a minimum consumption of time and labour.

This object is accomplished by providing a device for positioning the cathodes with current-carrying leads in the electrolyzers, which device, according to the invention, is made in the form of a few forked members disposed diametrically at the same level, the aperture between the tines of the forked member being used for installing the current-carrying lead of the cathode. In this case each forked member is provided with a device for adjustment of the position of the cathode in two mutually perpendicular planes.

The device for adjustment of the position of the cathode is preferably made in the form of a screw mounted into the base of the forked member and several mounted in the tines of each member.

For a better understanding of the invention one embodiment thereof is further described by way of example with reference to the appended drawings, in which:

FIG. 1 represents the electrolyzer with a device for setting the cathodes according to the invention;

FIG. 2 shows a general view of the forked member according to the invention.

The proposed device comprises two forked members **1** (FIGS. 1 and 2) each of which is secured to the bracket **3** by means of screws **2**, bracket **3** being welded to the casing of an electrolyzer **4**. The tines **5** (FIG. 2) of the member **1** are provided with threaded holes receiving screws **6** utilized for adjustment of the position of the cathode relative to the anode (in a vertical plane). Mounted in the base **7** of the forked member is a screw **8** utilized for adjustment of the position of the cathode in a horizontal plane.

In the course of assembling of the electrolyzer on anode unit **9** is first mounted on the base of the electrolyzer, then the electrolyzer casing **4** is installed. The casing **4** has slots for passage of the current-carrying lead of the cathode therethrough. The cathode **10** is lowered into the electrolyzer so that the current-carrying lead of the cathode enters the aperture **11** between the tines. The cathode is then accurately set in the required position in two mutually perpendicular planes by means of screws **6** and **8**. The anode is set in accordance with the position of the cathode. Then the electrolyzer is lined and, thereafter, the cup of the cathode is set in plane, which cup is fixed on a frame resting upon a plate.

The proposed device allows one to set quickly and accurately the cathode in the electrolyzer casing and to provide the high-quality assembly of the electrolyzer as a whole, and this makes it possible to obtain stable and high process characteristics during the operation of the electrolyzer.

We claim:

1. In an electrolyzer for production of metals by electrolysis, of the type comprising: a central anode and an annular cathode disposed concentrically outside the anode in an electrolyzer-casing and supported by current-carrying members disposed radially on the outside of the cathode; and a supporting means to support said radially disposed members, the improvement being in that said supporting means comprises a forked member for adjustably positioning each said current-carrying member, each said forked member including tines and a base-portion connecting the tines and set-screws in the base and the tines to position the respective current-carrying members and consequently the cathode, by providing adjustment in two mutually perpendicular planes.

2. An electrolyzer as claimed in claim **1** in which the tines are upstanding and are connected by a horizontal base, and the set screws are arranged to provide adjustment in horizontal and vertical planes.

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