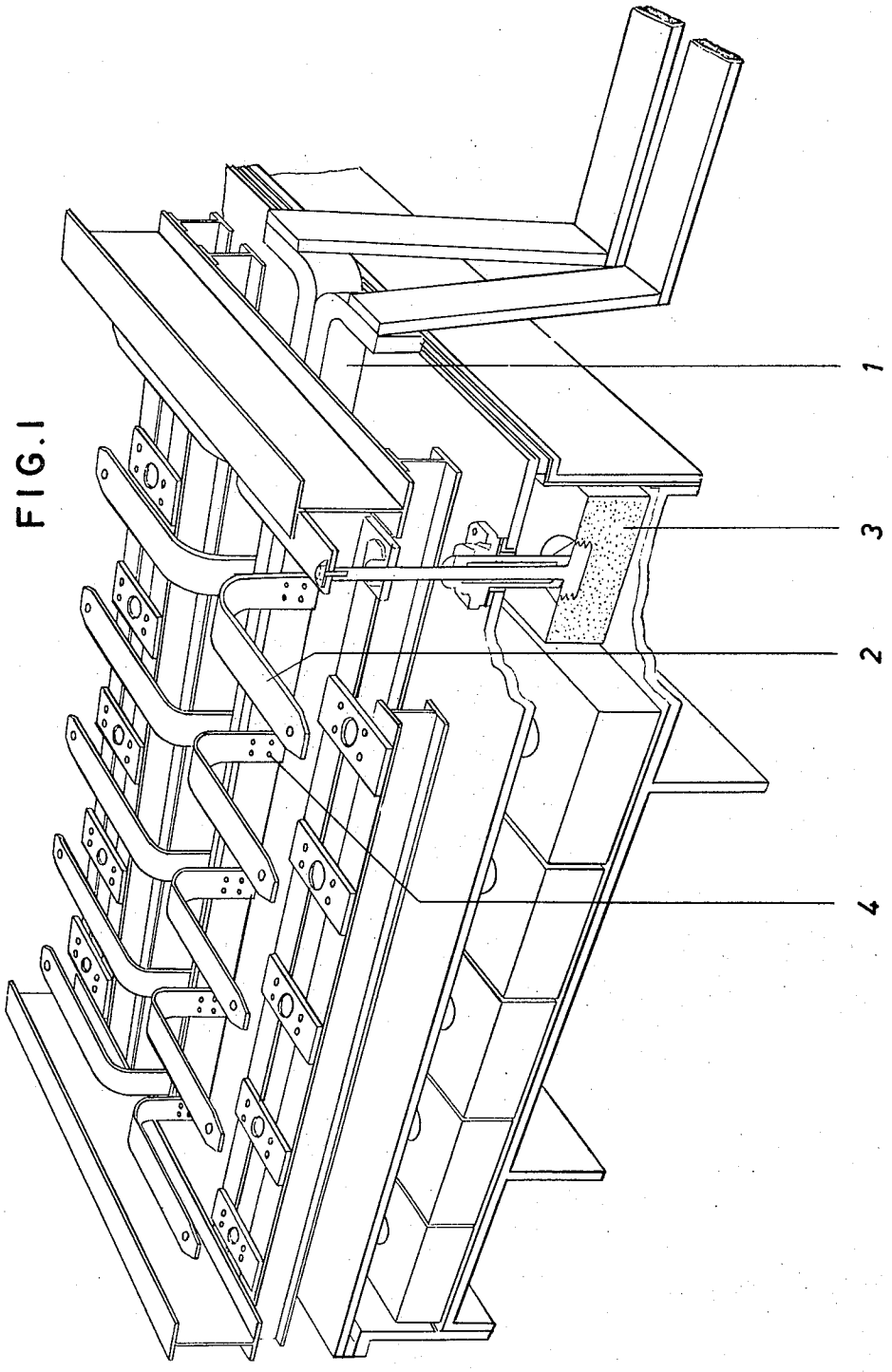
Sept. 19, 1972 L. MOSE 3,692,658

CURRENT SUPPLY FOR ELECTROLYSIS CELLS

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FIG. 1



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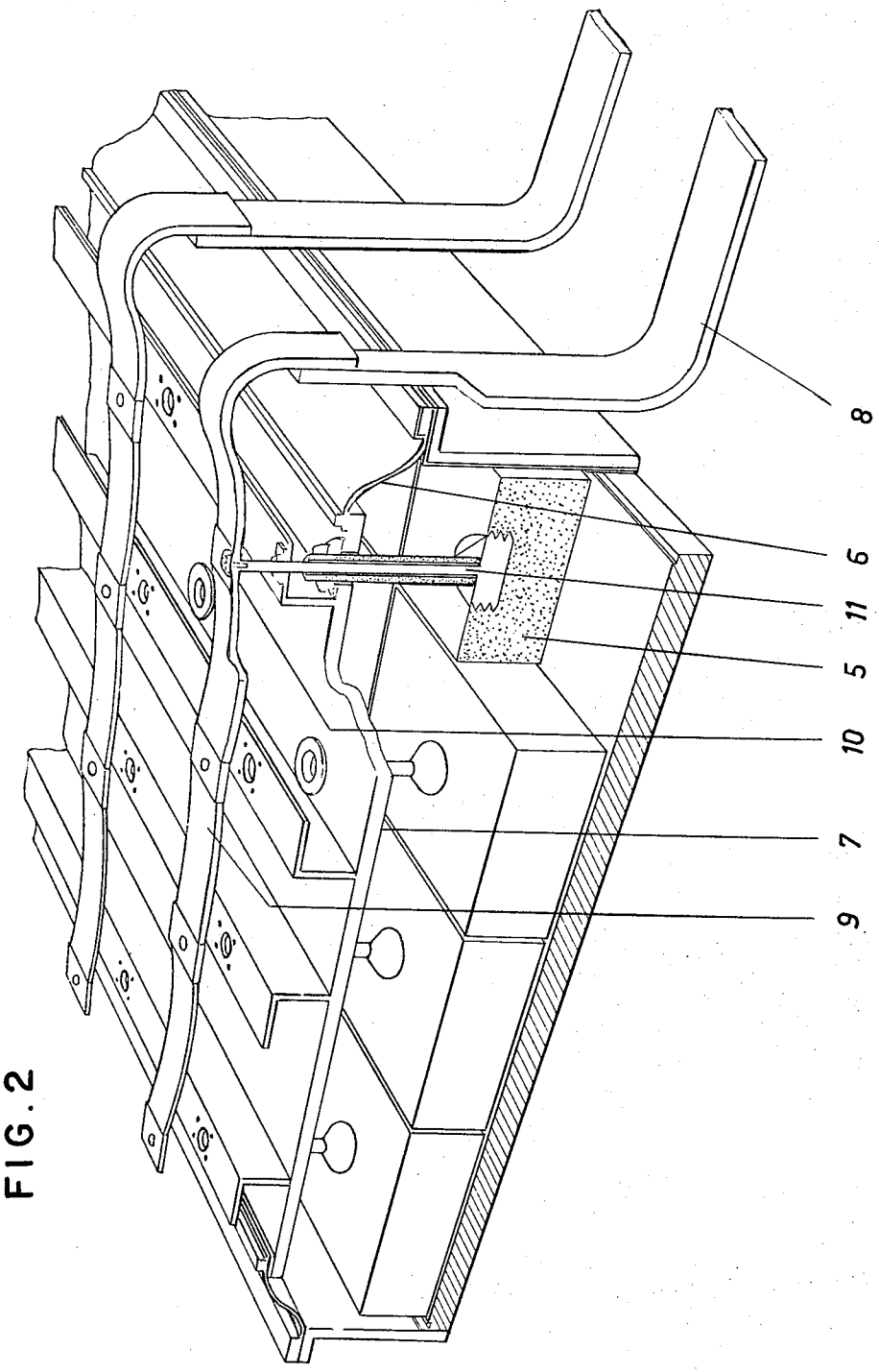


FIG. 2

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3,692,658

CURRENT SUPPLY FOR ELECTROLYSIS CELLS

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Claims priority, application Germany, May 17, 1968, P 17 71 393.8
Int. Cl. B01k 3/00; C22d 1/04
U.S. Cl. 204—219 2 Claims

ABSTRACT OF THE DISCLOSURE

In electrolytic cells of the horizontal type having a series of adjustable anodes arranged in a row within a housing provided with mercury cathode and having a cover flexibly sealed to the rim of the housing, electric current is delivered to the anodes by a strip of copper or the like which extends in the direction of the connection line between the anode axes and is arranged above the cover through which the anode rods connected to the strip project.

BACKGROUND OF THE INVENTION

According to conventional type of construction, as shown on FIG. 1, electrical current is delivered to electrolytic cells of the horizontal type having adjustable anodes and mercury cathode by a current-carrying rail **1** lying between rows of anodes **3** from which lead individual copper strips **2** extending to rods **3***a* connected at their lower ends to the anodes **3**. This structure has the disadvantage that through the branching of the current supply, long current paths are involved and the numerous contact points **4** at the branching areas create increased electric resistance.

It must be realized that the volume of electrical current supplied to the electrolytic process amounts to more than 1,000 a. for each anode. It is important that the current be transferred to the anodes with a minimum loss of voltage. Even a slight saving in voltage means the saving of an appreciable amount of energy. Thus, in the development of the current supply for this purpose, great care must be exercised.

SUMMARY OF THE INVENTION

The problem serving as the basis of this invention is to achieve a simpler embodiment of the current supply which has the shortest current paths to the anodes and the least contact places with the current supplying rails. This is achieved simply and economically by supplying current to the anodes by strips leading from the current-carrying rail which extend in the direction of the lines of connection between the anode axes.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a fragmentary perspective view of a horizontal electrolytic cell with mercury cathode and adjustable anodes equipped with a rigid cover flexibly sealed to the rim of the cell and illustrating a conventional construction in which a current-carrying strip individual to each anode mounting rod extend from a common current-supplying rail, all except one of the anode rods being omitted; and

FIG. 2 is a view similar to FIG. 1, but showing the current-carrying strip for the anodes in accordance with the invention.

DESCRIPTION OF THE PREFERRED EMBODIMENT

The illustrated embodiment of the invention, as shown on FIG. 2, comprises a horizontal electrolytic cell having a housing containing a row of vertically adjustable graphite anodes **5** and mercury cathode and having an open upper end closed by a rigid cover **7** connected to the rim by suitable flexible strips **6**. Each anode **5** has a vertically disposed current-conducting rod **11** which projects in sealed manner through the cover **7** and has a screw connection **10** to a current-supplying flexible strip **9** of copper or other suitable material. It will be understood by those skilled in the art that the anodes **5** may be adjusted vertically individually or conjointly, as shown for example in U.S. Pat. 3,445,373 dated May 20, 1969.

The strip **9** for each set of anodes **5** extends transversely of and above the housing cover **2** and is suitably joined to a current-carrying rail **8** of copper or similar material. The strip **9** is a multiply strip, the number of plies of which decrease from anode to anode so that the end portion thereof (to the left of FIG. 2) remote from the rail **8** would have the least number of plies. Each anode **5** is connected to the strip **9** by a current-carrying rod or shaft **11**, which extends in sealed manner through the cover **7**, and has a screw connection **10** with the strip. It will thus be apparent that the strip **9** extends in the direction of the connection line between the anode axes.

It will be manifest that in accordance with this invention a flexible strip for each anode as in conventional practice is rendered unnecessary and the several strips are replaced by a single strip. With each strip thus eliminated there is also eliminated a connection point between the rail 8 and the anode strip. Thus, not only is the mounting of the current supply facilitated but also the electrical resistance at such contact points is eliminated. Furthermore, by eliminating the several contact strips, a shorter path for the electrical current is achieved and a gain in voltage results.

What I claim is:

1. Current supply for horizontal type electrolysis cells, each having a metallic bottom, side walls, a cell cover, mercury cathode covering the metallic bottom and in electrical contact therewith, anodes arranged in a plurality of parallel rows across each cell, vertically adjustable anode stems projecting through and insulated from the cell cover, a flexible current conductor for each row of anode stems arranged above same and providing an electrical connection between the top of the anode stems of each row and adapted to provide electrical connection to the metallic bottom of an adjoining cell, and each current conductor being arranged in a straight line in plan view.

2. Current supply for electrolysis cells as claimed in claim **1**, in which said current conductors consist of multiply metal, the plies being arranged vertically above each other, the number of plies decreasing from anode

to anode in the direction away from the connection point of said conductor on the cell bottom of the adjacent cell.

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204—225, 250