

(No Model.)

A. VANDEN-KERCKHOVE.
ELECTRODE.

No. 478,664.

Patented July 12, 1892.

Fig. I.

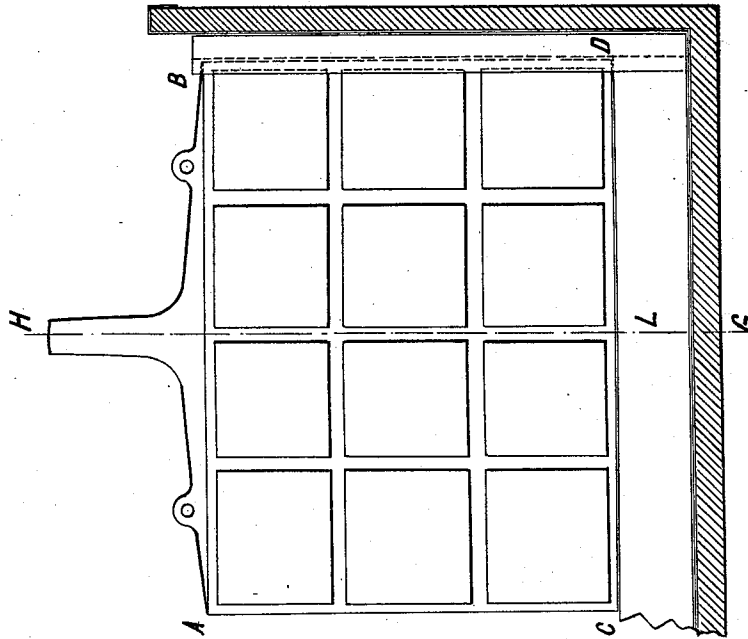
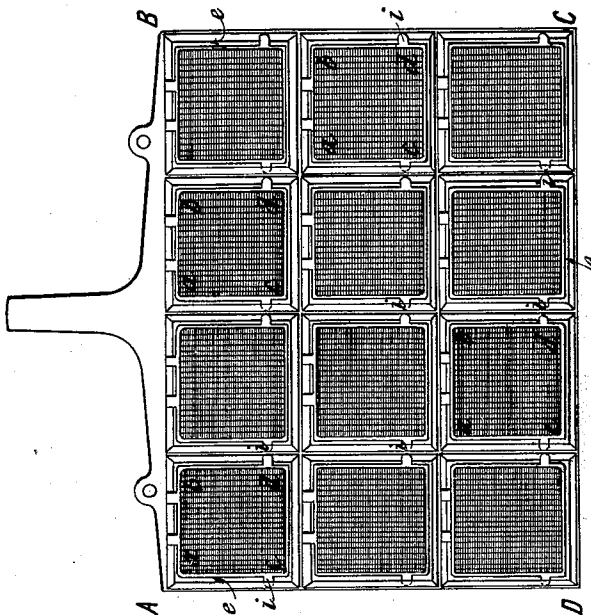


Fig. III



Fig. II



Attest
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UNITED STATES PATENT OFFICE.

ARMAND VANDEN-KERCKHOVE, OF BRUSSELS, BELGIUM.

ELECTRODE.

SPECIFICATION forming part of Letters Patent No. 478,664, dated July 12, 1892.

Application filed February 12, 1892. Serial No. 421,351. (No model.) Patented in Belgium December 9, 1891, No. 73,568; in France December 10, 1891, No. 204,802; in England December 11, 1891, No. 21,702, and in Italy January 5, 1892, No. 470.

To all whom it may concern:

Be it known that I, ARMAND VANDEN-KERCKHOVE, civil engineer, residing at Brussels, in the Kingdom of Belgium, have invented new and useful improvements in and relating to the construction of electrodes of large dimensions for accumulators and to supporting the same in their cells, (for which no patent has been obtained in any country except in Belgium, dated December 9, 1891, number of certificate 73,568; in France, dated December 10, 1891, number of certificate 204,802; in Italy, dated January 5, 1892, number of certificate 470, and in England, dated December 11, 1891, No. 21,702,) of which the following is a specification.

The construction in one piece and at a single casting of lead electrodes of large dimensions for electric accumulators presents numerous difficulties and inconveniences which prevent, so to speak, their being produced beyond certain limits of size. The more the electrodes which are cast in one piece increase in size the more considerable becomes the dead-weight of lead which enters into their construction, which is a point to be taken into consideration not only for enabling them to be made and for giving them the necessary rigidity, but also with a view to their conductivity and to the uniform distribution of chemical action in all parts of their mass, which chemical action, if they were unequal, would occasion malformations and irregularities.

The object of this invention is to allow the construction of rigid electrodes of large dimensions to be accomplished without having occasion to fear the above-named inconveniences.

This invention consists in the adaptation of electrodes of normal dimensions easily made and handled to cases or rigid gratings not easily put out of shape, neutral as regards chemical reactions, and that in such a way that each of their electrodes preserves its insulated and independent action, and cannot exert either on the grating or on the other electrodes action of a nature sufficient to produce malformations.

In Figure I of the annexed drawings is shown the construction of a grate or frame A B C D of hardened lead cast in one piece, the sections of which are calculated to allow of

its resisting mechanical efforts. In Fig. II the normal electrodes *a b c d* are arranged in successive cases of the frame and soldered at two points *a* and *b* by one of their sides in such a way as to preserve between their three other sides and the cross-bars of the frame a sufficient space *e* to allow of dilatation and extension. Small projections *i* on the opposite sides of the edges of the plate or of the cross-bars of the frame and cast thereon at the same time prevent the electrodes from becoming displaced during the working of the same. The squares, gratings, or frame may be of any suitable form and composed of any suitable material which offers sufficient rigidity and neutrality to the action of the electrolysis.

This invention also relates to a new arrangement for supporting in the cells electrodes of large dimensions; and it consists in allowing the electrodes to rest at a greater or smaller number of points throughout their entire length on strips of glass, ebonite, or any other insulating material, or even on a series of insulating pegs or wedges arranged in the same plan, the strips or wedges being placed in the bottom of the cells and of a height corresponding to the space which is desired to leave free between the bottom of the cells and the lower edges of the electrodes.

Figs. I and III show an electrode supported along all its length by a strip of glass *L*, held in a vertical position by grooves *r*, the prolongation of which serves to guide the introduction of the electrode in the cell and contributes, together with the adjacent grooves, to maintain a regular space between all the plates.

Having thus described my said invention and in what manner the same has to be performed, what I claim is—

The herein-described electrode-plate, consisting of a grating and electrodes each secured to said grating by soldering on one of its sides and by lugs or projections on its other sides, thereby allowing a space on three of its sides for the expansion and contraction thereof, substantially as set forth.

ARMAND VANDEN-KERCKHOVE.

Witnesses:

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JOSEPH GOFFIN.