H. HATFIELD.

ELECTROLYTIC APPARATUS.

APPLICATION FILED MAR. 7, 1910.

961,125. Patented June 14, 1910.

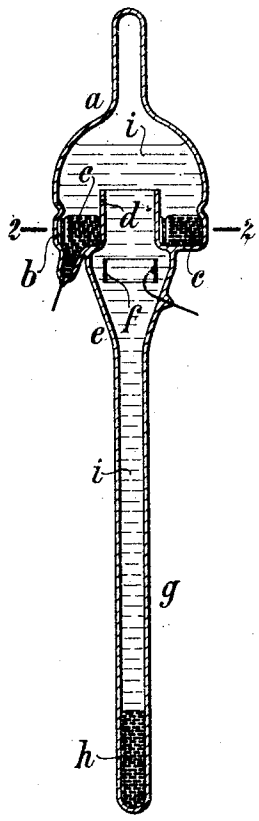

Fig.1

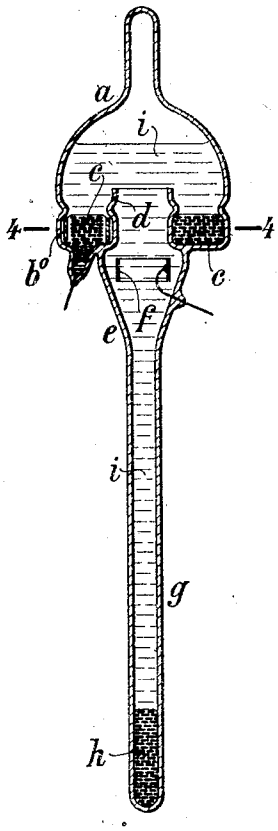

Fig.3

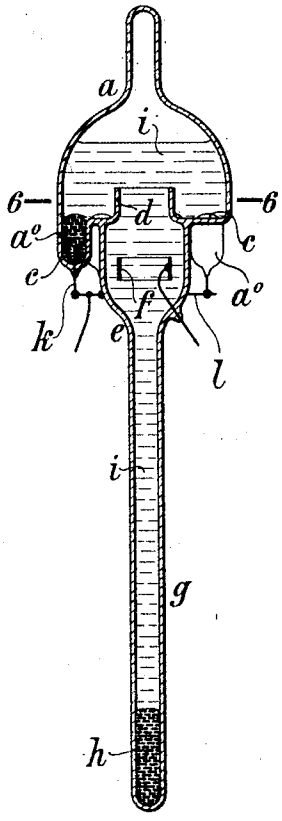

Fig.5

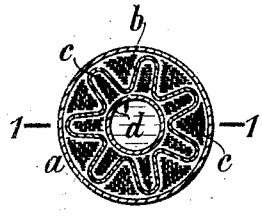

Fig.2

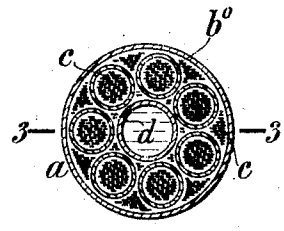

Fig.4

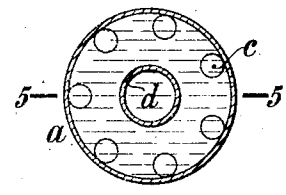

Fig.6

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ELECTROLYTIC APPARATUS.

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To all whom it may concern:

Be it known that I, HENRY HATFIELD, a citizen of Great Britain, residing at Lichtenhainerstrasse, Jena, in the Grand Duchy of Saxe-Weimar, Germany, have invented a new and useful Electrolytic Apparatus, of which the following is a specification.

The invention relates to electrolytic apparatus having a liquid anode and being subject to shocks, so that particles of the anode are liable to be jerked out of the anode vessel into the cathode vessel. To prevent such mechanical waste of the anode, the latter is according to the present invention divided into small partial anodes, its agitation being thus restricted. A conductive connection between these anodes may be performed by anode liquid, the anodes being not fully separated from each other, or wire connections may be provided between the single anodes.

In the annexed drawing: Figure 1 is a longitudinal section through an electrolytic electricity meter constructed according to the invention. Fig. 2 is a cross section on line 2—2 in Fig. 1. Fig. 3 is a longitudinal section through a similar meter. Fig. 4 is a cross section on line 4—4 in Fig. 3. Fig. 5 is a longitudinal section through a third meter of the same kind. Fig. 6 is a cross section on line 6—6 in Fig. 5.

The three meters shown are arranged each with a vertical axis. In the example of Figs. 1 and 2, the anode vessel *a* is furnished with a closed ring *b*, which is composed of waved articles and serves for dividing the liquid anode into partial anodes *c*. These small anodes communicate with each other around the lower edge of the dividing ring, so that a special conductive connection between them could be dispensed with. The circular row of anodes surrounds the mouth *d* of the cathode vessel. In the middle part *e* of this vessel a solid annular cathode *f* is placed, and the lower part *g* is formed as a measuring tube, in which the anode liquid *h*, precipitated from the electrolyte *i* on the cathode *e*, is gathered. The small anodes can not undergo large agitations, so that there is no liability that anode particles be detached and jerked into the mouth *d* so as to sink down into the tube *g* and falsify the quantity of the anode liquid *h*.

In the example of Figs. 3 and 4, the waved ring is replaced by a circular row of small rings b^0 leaving likewise around their lower edges some communication between the partial anodes *c*.

The constructional form of the meter shown in Figs. 5 and 6 has the partial anodes *c* located in bulges a^0 of the bottom of the anode vessel *a*, so that these anodes are fully separated from each other. Each bulge a^0 is fitted with a leading-in wire *k*. These wires terminate in an annular wire *l*, whereby a conductive connection between the single anodes *c* is realized.

I claim:

1. In an electrolytic apparatus an anode vessel, a plurality of liquid anodes, a conductive connection between the anodes, a cathode vessel inferior to the anode vessel and communicating with it at a place superior to the anodes, a solid cathode and an electrolyte contained in both vessels.

2. In an electrolytic apparatus an upper anode vessel, a lower cathode vessel, these two communicating with each other by the mouth of the cathode vessel projecting through the bottom of the anode vessel into the central part of the latter, a row of liquid anodes arranged to surround the mouth, a conductive connection between the anodes, a solid cathode and an electrolyte contained in both vessels.

3. In an electrolytic electricity meter an anode vessel, a cathode vessel projecting with its upper mouth centrally through the bottom of the anode vessel and forming with its lower part a measuring tube, a row of liquid anodes arranged to surround the mouth, a conductive connection between the anodes, a solid cathode arranged above the measuring tube and an electrolyte contained in both vessels.

HENRY HATFIELD.

Witnesses:

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