

No. 732,753.

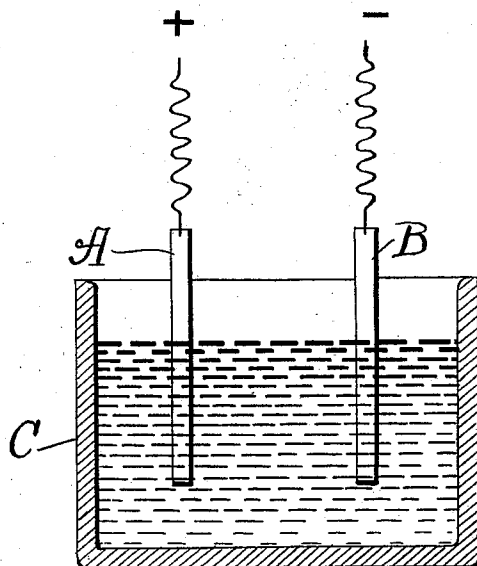
PATENTED JULY 7, 1903.

P. LEDERLIN.

ELECTROLYTIC MANUFACTURE OF CHLORATES AND PERCHLORATES.

APPLICATION FILED JULY 11, 1902.

NO MODEL.



Witnesses

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PIERRE LEDERLIN, OF CHEDDE, FRANCE.

ELECTROLYTIC MANUFACTURE OF CHLORATES AND PERCHLORATES.

SPECIFICATION forming part of Letters Patent No. 732,753, dated July 7, 1903.

Application filed July 11, 1902. Serial No. 115,241. (No specimens.)

To all whom it may concern:

Be it known that I, PIERRE LEDERLIN, a citizen of the Republic of France, and a resident of Chedde, Haute-Savoie, France, have invented new and useful Improvements in or Relating to the Electrolytical Manufacture of Chlorates and Perchlorates, which invention is fully set forth in the following specification.

The present invention relates to improvements in or relating to the electrolytical manufacture of chlorates and perchlorates.

One method consists in the use of bichromate of potassium or sodium combined with the use of dilute hydrochloric acid, as described in my Patent No. 693,035, and another in the use of neutral chromate combined with dilute hydrochloric acid, as described in copending application, Serial No. 115,240, filed July 11, 1902; but I have discovered that it is also possible to obtain a very high yield by starting with a liquid having no addition of chromate or bichromate, but taking care that the liquid is kept non-alkaline by convenient additions of dilute hydrochloric acid. By making these additions periodically it is easy to attain a yield, for instance, in chlorate of sodium of from 0.50 to 0.55 grams per ampere hour, and by making the additions continuously a yield of 0.58 to 0.61 grams per ampere hour is obtained, corresponding to ninety per cent. of theoretical amount, instead of a yield of 0.32

grams per ampere hour, which it has always hitherto been impossible to practically exceed, and I obtain this yield so near to the theoretical amount indefinitely and by using constantly the same cathodes (which can be of any substance which will not deteriorate during the course of the electrolysis) and the same liquids periodically deprived by refrigeration and crystallization of the chlorate produced and recharged with chlorid.

The accompanying drawing illustrates an electrolytic cell suitable for use in carrying out the process herein described, A being an anode, B a cathode, and C the vessel for containing the electrolyte in which the anode and cathode are submerged.

I claim—

The process of manufacturing chlorates at a high constant electrochemical yield by electrolyzing a solution of a corresponding chlorid without previous addition of chromate or bichromate and without a diaphragm between the anode and cathode, and maintaining the electrolyte continuously non-alkaline during electrolyzation by suitable addition thereto of hydrochloric acid.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

PIERRE LEDERLIN.

Witnesses:

EMILE LEDRET,
EDWARD P. MACLEAN.