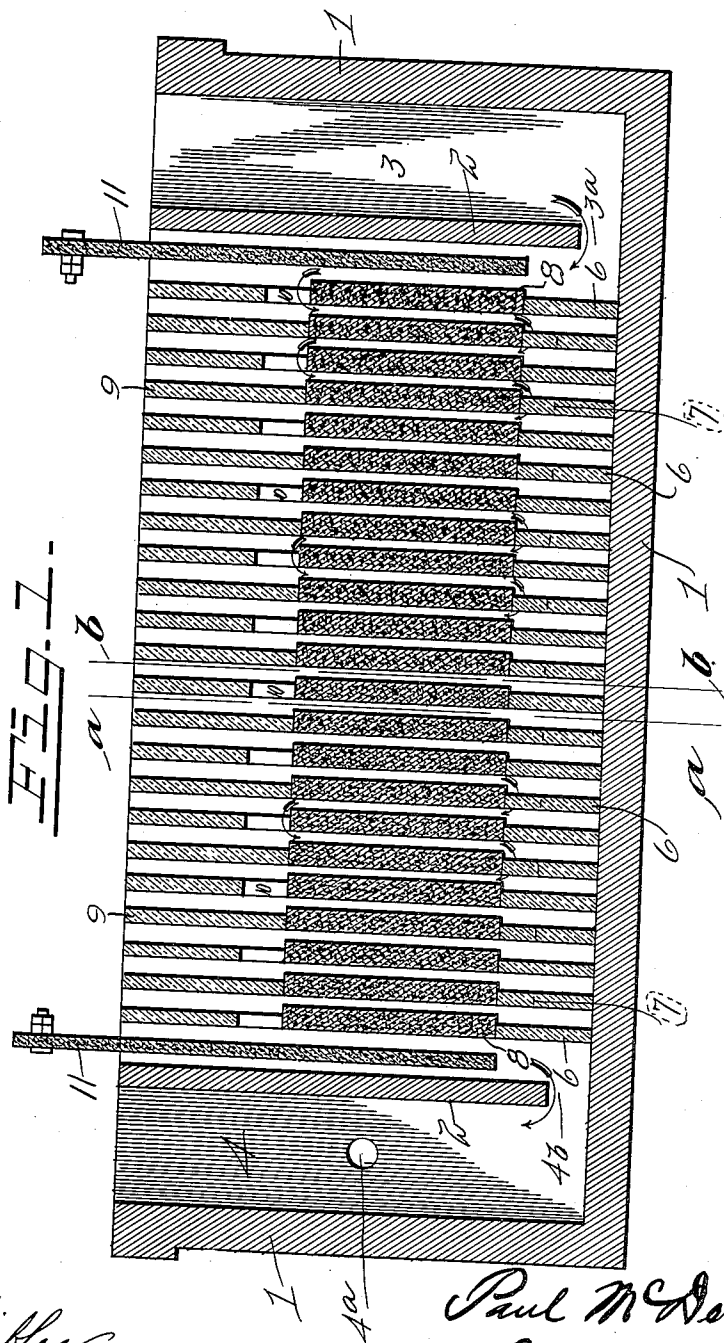


968,492.

P. McDORMAN.
ELECTROLYTIC CELL.
APPLICATION FILED DEC. 27, 1909.

Patented Aug. 23, 1910.
2 SHEETS—SHEET 1.



Witnesses
M. S. L. L.
Edward A. Smith

Inventor
Paul McDorman
R. J. M. L. L.
his Attorney

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2 SHEETS—SHEET 2.

Fig. 2.

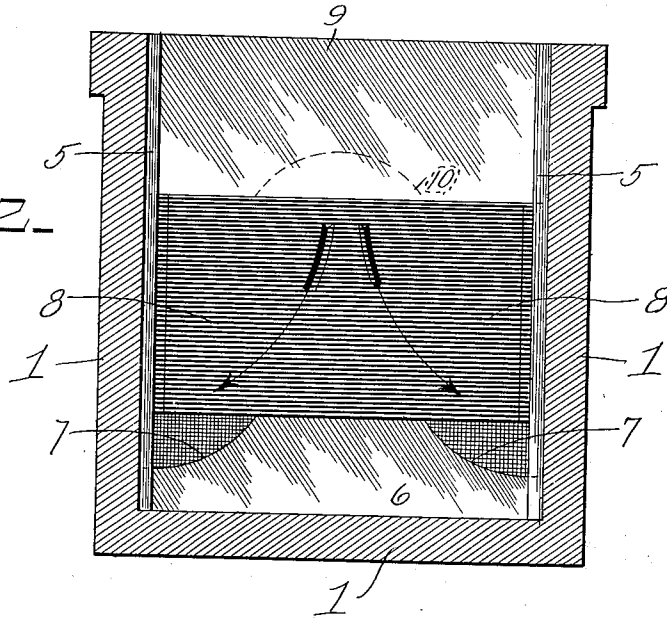
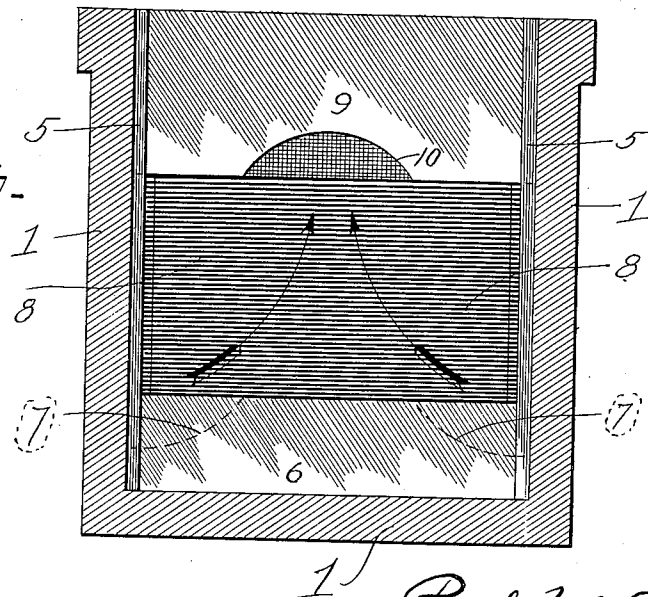


Fig. 3.



Witnesses
M. Lubler.
Howard A. Smith

1 Paul McDorman Inventor

By R. M. Carty his Attorney

UNITED STATES PATENT OFFICE.

PAUL McDORMAN, OF DAYTON, OHIO, ASSIGNOR TO THE NAT'L LAUNDRY MACHINERY COMPANY, OF DAYTON, OHIO, A CORPORATION.

ELECTROLYTIC CELL.

968,492.

Specification of Letters Patent. Patented Aug. 23, 1910.

Application filed December 27, 1909. Serial No. 535,161.

To all whom it may concern:

Be it known that I, PAUL McDORMAN, a citizen of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Electrolytic Cells; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to new and useful improvements in electrolytic cells for the decomposition of solutions of sodium chlorid and other salts. The sodium chlorid or common salt is acted upon by an electric current and is decomposed and forms a bleaching salt adapted for use in laundries, textile mills and paper mills as a bleaching agent, or for other purposes.

The object of the invention is to provide a cell in which the flow of the fluid is interrupted, forming eddy currents which allow the free chlorin on the positive side of the plates to be thoroughly absorbed by the solution.

In the accompanying drawings, Figure 1 is a longitudinal sectional elevation through my improved electrolytic cell. Fig. 2 is a sectional elevation on the line *a-a* of Fig. 1. Fig. 3 is a sectional elevation on the line *b-b* of Fig. 1.

Throughout the specification and drawing similar reference characters indicate corresponding parts.

1 designates a rectangular shaped vessel having end partitions 2 which form an entering compartment 3 at one end of the vessel and a discharge compartment 4 at the other end. The discharge compartment 4 is provided with a discharge orifice 4^a. The compartments 3 and 4 communicate with the central portion of the vessel through lower passage ways 3^a and 4^b. The sides of the vessel are provided with ribs 5 in which rest, a lower series of plates 6 of glass or other suitable material; a series of electrodes 8 of carbon or graphite or other suitable material, and an upper series of plates 9 similar to the plates 6. Each alternate plate 6 of the lower series is provided with recesses 7 at their upper corners, and each alternate

plate 9 of the upper series is provided with a recess 10 at their central portion. The plates 9 having the recesses 10, are mounted above the plates 6, which are not provided with the recesses 7, and the plates 6 which are provided with the recesses 7, lie below the plates 9 which are not provided with the recesses 10.

At each end of the vessel, between the partitions 2, and the electrodes 8, is a pole piece 11, said pole pieces being connected to the source of electrical current (not shown). These pole pieces introduce the electric current into the fluid within the vessel and around the electrodes 8. The fluid, which is a solution of sodium chlorid, is introduced by gravity into the compartment 3 where it flows through the passage way 3^a and between the pole piece 11 and the first electrode 8. The fluid then flows over the first electrode, under the second, over the third, under the fourth, and so on to the other end of the vessel where it passes into the compartment 4 through the passage way 4^b. When the fluid passes over the electrodes 8 in this vertical manner, it converges and passes through the recesses 10, and when passing under said electrodes it diverges and passes through the recesses 7. This order, however, may be reversed. The flow of the fluid is thus interrupted throughout its travel and such interruption produces a series of eddy currents therein. When said fluid passes between the electrodes 8, it is acted upon by the electric current which decomposes it, chlorin gas being formed on the positive side of the electrodes 8, but as the fluid is subjected to eddy currents the chlorin gas thus formed is thoroughly absorbed by the fluid. As the chlorin gas is an active bleaching agent, the product will be of maximum strength and none of the gas will be dissipated or wasted.

The glass plates 6 and 9, it will be understood, prevent any loss of electric current due to the current traveling around the upper and lower edges of said plates. The openings 7 and 10 in the plates are comparatively small so that a maximum amount of electric current passes through these openings.

Without limiting myself to the precise arrangement shown and described, I claim:

1. In an electrolytic cell, a plurality of electrodes, a vessel in which said electrodes

are placed in a manner to permit the liquid to flow between said electrodes, plates mounted above and below said electrodes and constructed to allow the fluid to converge and diverge as it flows between said plates, and means whereby said fluid is acted upon by the electric current as it flows between said plates.

2. In an electrolytic cell, a vessel, a plurality of electrodes mounted in said vessel and arranged to allow the fluid in said vessel to flow between them, plates mounted below and above the electrodes, each alter-

nate lower plate being provided with recesses at its upper corners, and each alternate upper plate being provided with a recess in its lower central edge, the recess plates being arranged alternately above and below the electrodes. 15

In testimony whereof I affix my signature, in presence of two witnesses. 20

PAUL McDORMAN.

Witnesses:

R. J. McCARTY,
MATTHEW SIEBLER.