

UNITED STATES PATENT OFFICE.

PAUL IMHOFF, OF LIVERPOOL, ENGLAND, ASSIGNOR TO THE UNITED
ALKALI COMPANY, LIMITED, OF SAME PLACE.

MANUFACTURE OF OXYHALOGEN SALTS.

SPECIFICATION forming part of Letters Patent No. 627,063, dated June 13, 1899.

Application filed November 11, 1898. Serial No. 696,134. (No specimens.)

To all whom it may concern:

Be it known that I, PAUL IMHOFF, Ph. D.,
chemist, a subject of the German Emperor,
and a resident of No. 18 Greenbank road,
Sefton Park, Liverpool, in the county of Lan-
caster, England, have invented certain new
and useful Improvements in the Manufacture
of Oxyhalogen Salts, (for which I have applied
for a patent in Germany on the 28th day of
March, 1898,) of which the following is a speci-
fication.

In the manufacture of salts of the oxyhalo-
gen acids—such as hypochlorites, chlorates,
and the like—by the electrolysis of alkaline
or alkaline earth or magnesium chlorids in
cells in which no diaphragm is employed sec-
ondary reactions leading to undesirable re-
sults are liable to occur.

The first action of the current in the elec-
trolysis of the alkaline chlorid or other chlo-
rid above referred to liberates at the cathode
a certain quantity of the electronegative ion
and at the anode an equivalent quantity of
chlorin. The potassium ion liberated at the
cathode when potassium chlorid is electro-
lyzed reacts, further, with the water present
to form caustic potash, hydrogen being liber-
ated at the same time. The hydrogen thus
liberated at the cathode is in the nascent
state, and on this account it acts prejudicially
on the oxyhalogen salt in the neighborhood
of the cathode by reason of the reducing ac-
tion it exerts. I have found that this reduc-
ing action may be avoided by adding to the

solution certain inorganic oxidizing salts of
the oxygen acids—such, for example, as po-
tassium chromate. I have also found that
these salts diminish the loss of current caused
by the decomposition of water. By this means
a considerably-increased yield may be ob-
tained from a given quantity of current than
was previously the case. The addition of such
salt may be made with satisfactory results to
either a neutral or alkaline electrolyte.

Having now particularly described and as-
certained the nature of this invention and in
what manner the same is to be performed, I
declare that what I claim is—

In the electrolysis of alkaline chlorids, al-
kaline-earth chlorids and chlorid of magne-
sium without a diaphragm, in neutral or in
alkaline solution for the production of oxy-
halogen salts, the improvement consisting in
adding to the bath inorganic oxidizing-salts
of the oxygen acids, thereby effecting a dimi-
nution in the reduction brought about by
nascent hydrogen and a diminution of the
decomposition of water and passing through
such bath in electric current, substantially as
described.

In testimony whereof I have signed this
specification in the presence of two subscrib-
ing witnesses.

PAUL IMHOFF.

Witnesses:

FREDERICK JAMES HAWKINS,
ALFRED PATCHETT.