

# UNITED STATES PATENT OFFICE.

ANDREW GORDON FRENCH, OF GREY LYNN, NEAR AUCKLAND, NEW ZEALAND.

## PROCESS OF MANUFACTURING AMMONIUM CHLORID.

No. 882,460.

Specification of Letters Patent.

Patented March 17, 1908.

Application filed August 28, 1905. Serial No. 276,184.

*To all whom it may concern:*

Be it known that I, ANDREW GORDON FRENCH, a subject of His Majesty the King of the United Kingdom of Great Britain and Ireland, resident of Williamson avenue, Grey Lynn, near the city of Auckland, in the Provincial District of Auckland and Colony of New Zealand, chemist, have invented an Improvement in a Process of Manufacturing Ammonium Chlorid, of which the following is a specification.

In carrying out my improved process for the manufacture of ammonium chlorid from coke or carbonized coal which contains sulfur and nitrogen I drench the dry and porous coked combustible with a strong brine of common or sea salt and water, and introduce the material thus prepared into any convenient form of kiln, oven, or furnace and burn the same with an admission of atmospheric air and steam. A chemical reaction takes place at a low red heat between a portion of the oxygen of the air the sulfur and nitrogen of the carbonized coal and the steam resulting in the production of ammonium chlorid which being a volatile substance vaporizes and may be caught in any convenient flue chamber, or other form of condenser. Where sea water is conveniently obtainable it may with advantage take the place of a prepared brine but in this case it is necessary

to spray the sea water over the burning mass repeatedly in order to supply the required quantity of salt.

I find after numerous trials and investigations that to obtain the completed conversion of all the nitrogen present in the burning material each pound of nitrogen requires about one and one seventh pounds of sulfur and about four and one half pounds of common sea salt and these proportions being given all the nitrogen is taken up and converted into ammonium chlorid.

A full and sharp blast of air expedites the burning and does not injure the ammonium chlorid so long as steam is present in not less than ten per cent. of the volume of the blast.

Having fully described my invention what I desire to claim and secure by Letters Patent is:—

A process of manufacturing ammonium chlorid which consists in drenching carbonized coal containing sulfur and nitrogen with a strong brine and then burning said drenched carbonized coal by subjecting it to a current of air containing at least 10 per cent. of steam.

ANDREW GORDON FRENCH.

Witnesses:

GEORGE WILLIAM BASLEY,  
HILDA MAY FROUDE.