

234,815.—*Process of extracting malt.* JOHN A. SCHAEFER.

234,838.—*Artificial stone.* GEORGE W. MASON.

Nov. 30, 1880.

234,844.—*Compound for curing and preserving meats.* WILLIAM ARCH-DEACON.

Salt, pyroligneous acid and salicylic acid.

234,884.—*Apparatus for and process of separating gold, silver and copper from lead.* ARTHUR H. MEYER.

234,904.—*Apparatus for mixing aeriform fluids.* JOHN F. BARKER.

234,998.—*Apparatus for purification of the products resulting from distillation of wood.* JEAN A. MATHIEU.

235,014.—*Preparation of clay for manufacture of pottery.* SIMEON G. PHILLIPS.

The clay is soaked in a thin solution of alum.

235,053.—*Manufacture of starch.* THEODORE GASSAWAY.

Refers to the manufacture of starch from wheat, without fermentation.

235,057.—*Process of refining paraffine wax.* WILLIAM M. SLOANE and WILLIAM BELL.

It is recrystallized from naphtha, pressed, melted and filtered.

Foreign Patents.

Condensed from R. BIEDERMANN'S Report to the German Chemical Society,
by OTTO H. KRAUSE.

R. GRUENEBERG, Alt Damm: *Improvements in the method of preparing potassium sulphate from Stassfurt salts.* (Germ. P., No. 10753, September 13, 1879.)—Schoenite, which is subsequently converted into potassium sulphate, is formed by bringing together potassium chloride and magnesium sulphate, and the resulting liquors used for dissolving natural or artificial carnallite, or kainite. (See preceding Patent.)

H. PRECHT, New Stassfurt: *Method of separating sodium and magnesium chloride from potassium-magnesium sulphate, derived from kainite.* (Germ. P., No. 10637, August 5, 1879.)—Kainite is treated under a steam pressure of 2–5 atmospheres, with water or saline solutions, magnesium sulphate excepted, in quantities of the solvents insufficient for the solution of the sodium chloride.

M. NAHNSEN, Leopoldshall: *Method of working up kainite.* (Germ. P., No. 10772, February 26, 1880.)—Water and hydrochloric acid are driven off by heating to redness. The resulting friable mass, consisting of magnesia and potassium and magnesium sulphate, is treated with a saturated solution of sodium chloride, to remove mechanically the rock salt which remains unaltered during the heating; magnesia is left as a residue upon treatment of the double sulphates with water.

B. BERNHARDI, Stassfurt: *Improvements in the method of treating saline lyes containing potassium compounds.* (Germ. P., No. 10821, December 18, 1879.)—Magnesium sulphate, in dry form or in solution, is added to the mother liquors resulting from working up carnallite, schoenite, or potassium chloride.

HENRY GLOVER, Silvertown: *Method and apparatus for manufacturing and concentrating sulphuric acid.* (Germ. P., No. 10834, March 26, 1880.)—The object of this invention is to prevent loss of sulphur by sublimation, in burning sulphur, or pyrites, and to utilize completely the heat of combustion. The gases from the furnace are made to pass through a chamber containing open brick work, like in a hot blast stove, in which the volatilized sulphur deposits. When the chamber has become hot enough, air is admitted from a flue beneath, and the sulphur burned away. Over these chambers, platinum vessels of peculiar construction are placed for concentrating the acid, and thereby utilizing the heat.

I. V. RICKMAN, London, and I. B. THOMPSON, New Cross: *Method and apparatus for generating ammonia.* (Germ. P., No. 10889, March 11, 1880.)—Carbonaceous materials are subjected to slow combustion upon an inclined grate by limiting the supply of air and steam. The ammonia is absorbed from the products of combustion by means of acids. Or the materials may be moistened with 4–8 per cent. of sodium chloride, and burned in a coke oven, and the ammonia obtained as chloride. (The utilisation of atmospheric nitrogen in this or a similar manner, has been previously attempted by Rickman, Engl. P., No. 3348, 1878, and by others before him; among others, Swindell's Engl. P. of June 21, 1876. R. B.)

G. J. WELLS, Widnes: *Manufacture of caustic alkalis.* (Engl. P., No. 3803, September 22, 1879.)—Alkaline carbonates are treated with lime in the cold and under pressure.

W. J. MENZIES, St. Helens: *Manufacture of caustic alkalis.* (Engl. P., No. 3804, September 22, 1879.)—Similar to the above. The solution of alkaline carbonate is treated under pressure in a close vessel, having a false bottom, upon which a layer of limestone is placed to serve as a filter.

MR. PAULI, Mannheim: *Improvements in firing balling furnaces.* (Engl. P., No. 3825, September 23, 1879.)—Produces generator gas upon the grate of the furnace, and burns it within the revolving cylinder.

G. I. B. LACOMBE, Lille: *Treatment of soda and potash.* (Engl. P., No. 3661, September 13, 1879.)—Employs Leblanc's process for preparing cyanides and ferrocyanides, by heating a mixture of potassium sulphate, chalk, coal, ferric oxide and nitrogenous organic matter. The fused mass is extracted with water, and the liquid treated with carbonic acid, etc.

W. CHADWICK, T. CHADWICK and J. CHADWICK, Manchester: *Manufacture and purification of aluminium sulphate.* (Engl. P., No. 4078, October 9, 1879.)—Pulverized bauxite is mixed with 3–5 per cent. of its weight of arsenious acid, and dissolved in sulphuric acid. Iron in combination with arsenious acid, is precipitated as a brown precipitate, upon the addition of lime to the diluted liquid. Excess of arsenious acid is removed from the filtrate by means of hydrogen sul

phide. If use of arsenic is to be avoided, the bauxite may be mixed with 10 per cent. of oxalic acid and 5-10 per cent. of hydrochloric acid, to remove iron and lime.

BADISCHE ANILIN UND SODAFABRIK, Mannheim : *Method of preparing nitro-sulphonic acids of alpha-naphthol, and particularly dinitronaphthol-sulphonic acid.* (Germ. P., No. 10785, December 28, 1879.)—If the attempt be made to nitrate naphtholmonosulphonic acid, dinitronaphthol is produced. Higher naphthol-sulphonic acids, however, and especially naphtholtrisulphonic acid, can be nitrated. Ten kgrms alpha-naphthol are treated at 40-50° C., with 20 kgrms fuming sulphuric acid containing 25 per cent. anhydride, until naphthol ceases to separate upon dilution; 18 kgrms fuming sulphuric acid of 70 per cent. anhydride are then added, and the heating continued. The end of the sulphuration is attained when a sample, after being nitrated, ceases to separate dinitronaphthol upon dilution with water.

HÖRDER BERGWERKS UND HÜTTENVEREIN HÖRDER UND RHEINISCHE STAHLWERKE, Ruhrort. *Method of dephosphorizing iron.* (Germ. P., No. 10472, September 10, 1879.)—Object of this invention is to remove the phosphorus before all the carbon is removed from the iron in the Bessemer process. For this purpose tribasic calcium and magnesium phosphates are formed, and these rendered fusible and suitable for being taken up by the slag, by the addition of fluor spar.