

Foreign Patents.

Condensed from R. BIEDERMANN'S Report to the German Chemical Society,

by OTTO H. KRAUSE.

G. BORSCHÉ, Leopoldshall: *Method of obtaining potassium-magnesium sulphate from kainite.* (Germ. P., No. 10642, Nov. 4, 1879.)—Crude kainite is dissolved in water of 30–35° C., to a density of 1.25, and crystallized magnesium sulphate added, upon which potassium-magnesium sulphate crystallises out. The mother-liquor is concentrated by evaporation, and mixed with a hot solution of magnesium chloride, whereby nearly all the sodium chloride contained in the kainite is separated as a powder.

R. GRÜNEBERG, Altdamin: *Improved method of working up kainite.* (Germ. P., No. 10754, Dec. 18, 1879.)—Kainite is macerated with a solution of schoenite, saturated in the cold, whereby the kainite is converted into schoenite. Sodium and magnesium chloride enter into solution, and can be used to dissolve native or artificial carnallite.

F. JULLIEN, Lorient: *Manufacture of iodine from marine plants.* (Engl. P., No. 5041, Dec. 9, 1879.)—Marine plants or the varec are systematically extracted, and the lyes precipitated with iron or copper sulphate. The precipitate separated by decantation, is then distilled in retorts.

A. HEGENER, Cologne: *Improvements in apparatus for obtaining ammonia from gas liquors.* (Germ. P., No. 11669, March 11, 1880.)—Two tanks are placed one over the other, and over the gas liquor boiler. The upper one contains milk of lime and is open on top. The lower one is connected with the upper one and with the boiler, by means of cocks and pipes so arranged as to enable steam from the boiler to force the milk of lime received from the upper tank into the gas liquor.

I. P. KAGENBUSCH, Leeds: *Extraction of aluminium and gold from clay.* (Engl. P., No. 4811, Nov. 25, 1879.)—The inventor claims that from clay fused with the aid of fluxes and electrolysis, aluminium can be obtained by cupellation of the alloy of lead and aluminium. Gold is said to be obtained in a similar manner.

OTTO E. POHL, Liverpool: *Manufacture of sulphate.* (Engl. P., No. 5031, Dec. 9, 1879.)—Proposes to make sulphate by bringing sulphurous acid gas and heated air into contact with a solution of sodium chloride which is being evaporated.

AKTIENGESSELLSCHAFT FARBWERKE, successors to Meister LUCIUS UND BRUENING, Hoechst, a. M.: *Method of oxidising leuco-bases and their sulphuric acids with the aid of chlorinated quinones.* (Germ. P., No. 11412, Nov. 11, 1879.)—The term leuco-bases is intended to comprise not only leucaniline and the corresponding bases, but also the bases resulting from the combination of aldehydes, or acid chlorides, with primary, secondary and tertiary aromatic monamines. The production of green dyes results chiefly from the oxidation of methylated, ethylated, phenylated and benzylated derivatives of diamidotriphenylmethane and its homologues. Diamidotriphenylmethane gives, by oxidation with chlorinated

quinones, a reddish-blue, not particularly fine, coloring matter. Methylated, ethylated, phenylated and benzylated derivatives of this base give, on the contrary, very fine dyes, some of which are directly soluble in water.

All the leuco-bases from the rosaniline-melt can, by means of chloranile, be converted into coloring matters in the same manner as the leuco-bases of triphenylmethane.

AKTIENGESELLSCHAFT FARBWERKE, successors to Meister LUCIUS UND BRUENING, Hoechst, a. M.: *Improvements in the preparation of coloring matters with the aid of chlorinated quinones.* (Germ. P., No. 11811, Nov. 12, 1879; addition to Germ. P., No. 8251, June 24, 1879.)—By employing the various mono and dimethylated, mono and diethylated bases, dyes are obtained of different shades, from reddish-violet to bluish-violet, which are all soluble in water.

GEBRUEDER RAMDOHR, Wanzleben: *Manufacture of magnesia from magnesium chloride, by heating it to redness in the oxidising flame, and passing steam over it.* (Germ. P., No. 11540, Oct. 9, 1879.)—Relates to practical details of the process in which this well known reaction is employed.

H. GUENTHER, Berlin: *Improvements in the method of preparing black printing ink.* (Germ. P., No. 11930, May 8, 1880; addition to Germ. P., No. 9566, Oct. 28, 1879, see this JOURNAL, 2. 231.)—Heavy tar oil from the manufacture of anthracene is boiled with 10 per cent. cupric chloride dissolved in water, whereby a saving of aniline violet results.

M. WEINRICH, Vienna: *Treatment of sugar solutions.* (Engl. P., No. 4831, Nov. 26, 1879.)—To the heated beet sirup, calcium hydrate and milk of lime are added, to produce saccharate of lime.

E. MOURLOT, Paris: *Substitute for gutta-percha.* (Engl. P., No. 4846, Nov. 27, 1879.)—The tar which remains in the retort after the dry distillation of birch bark.

CHARLES TELLIER, Paris: *Treatment of coal.* (Engl. P., No. 4473, Nov. 3, 1879.)—The coal is separated from foreign matters by floating it off in a concentrated solution of calcium or magnesium chloride. (A process similar to the above was described by Hargreaves, *Dingler's Polyt. Journ.*, 1868. R. B.)

JAMES WEBSTER, Edgbaston: *Preparation of aluminium bronze.* (Germ. P., No. 11577, April 2, 1880.)—Aluminium is deposited electrolytically upon granular or sheet copper to the extent of 1 to 10 per cent., and then combined with 1 to 6 per cent. of an alloy composed of 20 pts. nickel, 20 pts. copper, 30 pts. tin and 7 pts. aluminium.

A. VON KERPELY, Chemnitz: *Method of preparing bricks from limestone or dolomite.* (Germ. P., No. 11348, Feb. 10, 1880.)—Burned limestone or dolomite is made into a paste with vinegar, and the resulting highly plastic mass formed into bricks, and calcined at a white heat.

JACOB OERTLE, Nuremberg: *Apparatus for producing illuminating gas from gasolene.* (Germ. P., No. 11121, Feb. 28, 1880.)—Two connected pipes filled with wool, in the first of which an upward current of air comes in contact with the gasolene fed in from a vessel above. The second pipe serves as a purifier.

W. HENDERSON, Irvine: *Treatment of certain ores.* (Engl. P., No. 4481, Nov. 3, 1879.)—Ores containing silver, cobalt, nickel and zinc, are roasted, the oxides mixed with acid sodium sulphate, heated to low redness, and extracted with water containing sulphuric acid.

P. G. L. DESIGNOLLE, Paris: *Extraction of noble metals by means of mechanical and electrochemical amalgamation, and apparatus for the same.* (Germ. P., No. 11415, Feb. 8, 1880.)—The ore is worked together with a slightly acid mercurial solution in a rotating cylinder filled with iron balls. When the amalgamation of the gold is complete, the mass is transferred to a second apparatus, consisting essentially of amalgamated copper or silver plates which retain the gold amalgam contained in the mud received from the cylinder.

W. MÜLLER, Antwerp, and E. GEISENBERGER, Brussels: *Apparatus for obtaining ammonia from atmospheric nitrogen.* (Germ. P., No. 11489, June 19, 1879.)—See their Amer. Pat., this JOURNAL, 2, 142.

W. CHADWICK et. al., ST. HELENS: *Manufacture of alum and sulphate of alumina free from iron.* (Germ. P., No. 11137, Oct. 10, 1879.)—See their Amer. Pat., this JOURNAL, 2, 440.

E. NEUMANN, Rossweil: *Method for utilising the waste water from wool-washing establishments and fulling mills.* (Germ. P., No. 11112, Dec. 19, 1879.)—The waters are treated in pits with milk of lime, the lime soap thereby formed precipitates the greater part of the impurities. Glue or other nitrogenous matters may subsequently be removed by means of a weak solution of tannin. The deposit of insoluble salts of the fatty acid is subjected to destructive distillation to obtain ammonia, etc.

FERD. CAMUS, Paris: *Treatment of corn and other cereals.* (Germ. P., No. 11501, March 12, 1880.)—The grains are bleached by soaking them in a solution of acid sodium, or calcium sulphite, and adding an acid.

G. F. MEYER, Braunschweig: *Method of filtration of beet juice.* (Germ. P., No. 11296, Feb. 13, 1880.)—Besides sand, mineral wool, etc., mentioned in his first patent (see this JOURNAL, 1, 305), the inventor now claims also the use of quartz, coal, coke, and the insoluble compounds of the alkaline earths, as substitutes for bone-black.

P. H. H. NEUMANN, Brussels: *Method of rendering parchment paper opaque and pliable.* (Germ. P., No. 10008, Jan. 8, 1880.)—The property mentioned is given to it by adding baryta salts to the pulp, or applying them in the solution to the paper before the treatment with sulphuric acid, the latter by adding calcium chloride or other hygroscopic substance.

H. GUETTLER, Kriewald: *Use of dextrine in the preparation of cartridges from compressed blasting powder.* (Germ. P., No. 10978, Dec. 3, 1879.)—The mixture is impregnated with solution of dextrine and the plastic mass compressed. A coating of shellac renders it waterproof.

T. H. COBLEY and W. G. GARD, Dunstable: *Method of preparing tannin black for printing ink, blucking, etc.* (Number and date of patent not given.)—Leather waste and animal matters containing glue or gelatine, and materials containing tannin, are extracted with alkaline water. The solution is then precipitated with an iron salt, and the precipitate mixed with tar oil.

CHARLES WIGG, Liverpool: *Manufacture of potassium and sodium sulphate.* (Engl. P., No. 5105, Dec. 13, 1879.)—Superheated steam is injected into the sulphate furnace. The hydrochloric acid gas evolved being free from air, can be more readily condensed.

HENRY BRUNNER, Widnes: *Manufacture of soda.* (Engl. P., No. 5228, Dec. 22, 1879.)—The inventor adds sodium nitrate, or the oxides or carbonates of zinc, lead, iron and manganese, to the lyes to oxidise or decompose sulphides, and to remove silicate of alumina, etc.

G. BORSCHÉ, Leopoldshall: *Improvements in the method of obtaining potassium-magnesium sulphate and carnallite from kainite.* (Germ. P., No. 11028, Dec. 4, 1879; addition to Germ. P., No. 10642, see this JOURNAL, 3, 70.)—Sodium sulphate may be employed instead of magnesium sulphate for the purpose of precipitating the potassium-magnesium sulphate.

R. POWELL, Liverpool: *Manufacture of calcium sulphite.* (Engl. P., No. 5109, Dec. 13, 1879.)—Dry process. Sulphurous acid is brought into contact with pulverised lime, or with calcium carbonate, in a series of lead chambers.

GEBRUEDER RAMDOHR, Wanzleben: *Manufacture of magnesia from magnesium chloride.* (Germ. P., No. 11746, March 7, 1880; addition to Germ. P., No. 11580, Oct. 9, 1879.)—The solution of magnesium chloride is evaporated by direct application of an oxidising flame, and heated in presence of superheated steam to drive off a large part of the hydrochloric acid. The residual mixture of MgO and MgCl₂ is mixed with iron ore or clay, and formed into bricks which are burned at a high temperature in presence of steam.

H. UELSMANN, Koenigshuette: *Use of silicious iron in galvanic batteries.* (Germ. P., No. 11284, May 11, 1880.)—The iron in a zinc-iron battery is replaced by pig iron containing 12 per cent. of silicium.

JAMES MACTEAR, Glasgow: *Preparation of crystalline carbon.* (Engl. P., No. 5143, Dec. 16, 1879.)—The inventor proposes to prepare carbon in a diamond-like form by subjecting carbon compounds to a very high pressure and high temperature, preferably in presence of a body capable of uniting with the elements combined with the carbon in such compounds.

JAMES MACTEAR, Glasgow: *Preparation of crystallised carbon.* (Engl. P., No. 45, Jan. 6, 1880.)—Carbonic acid and finely divided iron, or oxalic acid and oxidisable metals, are heated for 70 hours in steel vessels to a temperature of 300 to 400° C. The finely crystallised carbon so obtained, is intended to be used as a substitute for emery.

A. BAEYER, Munich: *Preparation of the derivatives of ortho-nitrocinamic acid, the homologues and substitution compounds of these derivatives, and conversion of the same into indigo-blue and analogous coloring matters.* (Germ. P., No. 11857, March 19, 1880.)

A. BAEYER, Munich: *Improvements in the methods of preparing the materials used in the manufacture of indigo, and method for the direct production of this coloring matter upon the fiber.* (Germ. P., No. 11858, March 19, 1880; addition to Germ. P., No. 11857.)—See Prof. Baeyer's American patents, this JOURNAL, 2, 228, 295, 403 and 457.

A. ENGELER, Wintertliur: *Dry method of bleaching cotton by the use of chlorine vapors containing chlorine.* (Germ. P., No. 12127, June 26, 1880.)—The bleaching gas is prepared by allowing sulphuric acid to react upon one part unslaked lime, one part chloride of lime, and one part alcohol.

ORAZIO LUGO, Flushing, and W. T. LEES, Brooklyn: *Improvements in the purification of gas.* (Germ. P., No. 11247, Dec. 19, 1879.)—The crude gas is mixed, between the condenser and the scrubber, with 1 to 2 per cent. of air, and the mixture heated to 250° by means of superheated steam.

A. NOBEL, Paris: *Application of compressed gunpowder in combination with fulminating cartridges composed of dynamite, or of a mixture of gunpowder and dynamite, nitrogelatine, nitrocellulose, bipyrate of baryta, lead or potassa, for blasting purposes.* (Germ. P., No. 11030, Jan. 6, 1880.)—The object of this invention is to render compressed, ungraained gunpowder serviceable for blasting.

V. HAENING, Dresden, and O. REINHARD, Loschwitz: *Extractor with return condenser.* (Germ. P., No. 10771, Feb. 19, 1880; addition to Germ. P., No. 6737.)—The apparatus is composed of two parts. The upper one contains the matter to be extracted, the lower one the extracting liquid. The cover forms the return condenser, being so shaped as to hold the cooling water. Immediately below this, and connected with it, is the cooling pipe. By means of a branch pipe direct steam can be admitted to the upper compartment, whence it passes as extract into the lower one. As soon as sufficient liquid has collected here, the steam by the branch pipe is shut off, and the process of extracting carried on in the usual way.

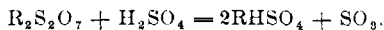
I. BALLATSCHIANO, C. BALLATSCHIANO and H. TRENK, Berlin: *Method of tanning.* (Germ. P., No. 11031, Jan. 10, 1880.)—The following three baths are employed: 1. A solution of chromate of alumina in wood alcohol; 2. A concentrated solution of cream of tartar and nickel-ammonium chloride; 3. A solution of 1 to 2 parts tannin in 1,000 pts. water, and 20 to 25 parts of wood alcohol.

G. PRAETORIUS, Breslau: *Method of making porous objects and vessels of earthenware to be used for filtration, absorption and dialysis.* (Germ. P., No. 11810, Oct. 9, 1879.)—Charcoal powder is added to the clay to produce porosity.

R. A. FISHER, Philadelphia: *Neutral combination of aluminium and zinc sulphate for paper manufacture.* (Engl. P., No. 170, Jan. 14, 1880.)—Oxide of zinc is dissolved in a solution of aluminium sulphate until it is so neutral as not to change coloring matters.

H. GERNER, New York: *Treatment of caoutchouc, gutta-percha, etc.* (Engl. P., No. 47, Jan. 6, 1880.)—Camphor dissolved in alcohol or benzole is incorporated with the mass before vulcanising.

I. A. W. WOLTERS, Dresden: *Method of preparing sulphuric anhydride.* (Germ. P., Jan. 7, 1880.)—Alkaline pyrosulphates are decomposed with sulphuric acid.



The acid sulphate remaining after the distillation is reconverted into pyrosulphate by heating.

Mr. HELLOFF, Berlin: *Blasting compounds*. (Germ. P., No. 12122, June 3, 1880.)—Crude tar oil is treated with concentrated nitric acid. The nitro-compounds formed are mixed with chlorates or nitrates, or with nitric acid.

B. BERNHARDI, Stassfurt: *Combined method for the manufacture of schoenite, potassium sulphate and chloride*. (Germ. P., No. 12498, April 13, 1880.)—Relates to the employment of lyes resulting from the manufacture of schoenite, or potassium sulphate, instead of water, in the preparation of potassium salts.

R. S. NEWALL, Gateshead upon Tyne: *Calcining furnace*. (Engl. P., No. 5230, Dec. 22, 1879.)—Improvement upon Mac'tear's rotating furnace.

I. H. WILHELM Homburg, v. d. H., and F. BOHNSTADT, Frankfort, a. M.: *Manufacture of printing ink from coal tar*. (Germ. P., No. 12282, Dec. 25, 1879.)—Coal tar is mixed with 6 to 15 per cent. of rosin and 10 per cent. of paraffine oil, and strained. After deodorising with chloride of lime, or potassa, 20 to 25 per cent. of glycerine and 12 to 18 per cent. of lamp-black are added to it. According to an additional patent (Germ. P., No. 12286, Jan. 9, 1880), the tar is first treated with 2½ to 3 per cent. of sulphuric acid, neutralised with soda, and deodorised with chlorine as above. Finally lard, glycerine, soap, etc., are added.

M. SALZMANN and F. KRÜGER, Fürstenberg, a. O. *Preparation of red, violet and green coloring matters by the action of chloropicrine upon aromatic amines*. (Germ. P., No. 12096, March 17, 1880.)—Aniline and its homologues are heated with chloropicrine at 110°–120° C. for some time. Red coloring matters, soluble in water, and violet ones, soluble in alcohol, are produced. The part soluble in water is precipitated with salt; the insoluble part is converted into the sulphonic acid. Instead of the bases their salts may be employed, and the reaction may take place in the presence of metallic salts.

O. KOHLRAUSCH, Vienna: *Method of obtaining tannic acid and extracts of dyewoods by means of dialysis*. (Germ. P., No. 12296, Dec. 11, 1880.)—Instead of rasping the wood, it is cut into thin chips and treated with hot water in a diffusion battery which is similar to those employed for extracting sugar from beets.

I. P. CLOSSON, Paris: *Improvements in the process of obtaining magnesia from dolomite*. (Germ. P., No. 12456, Oct. 23, 1879.)—A solution of calcium and magnesium chloride is prepared by decomposing calcined dolomite with manganoous chloride from the manufacture of chlorine, or with ferrous chloride (from pyrites), or with ammonium chloride from the ammonia-soda process, etc.; hydroxide of manganese, hydroxide of iron and ammonia being respectively formed. The solution of magnesium and calcium chloride is treated with additional quantities of calcined dolomite powder to precipitate the magnesia.

T. F. WILKINS, Clapham: *Preservation of fish*. (Engl. P., No. 501, Feb. 4, 1880.)—Treatment with a solution of metaphosphoric acid and sugar.

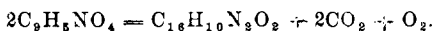
I. MACGAAN, Liverpool: *Manufacture of spirits and fermented liquors*. (Engl. P., No. 512, Feb. 5, 1880.)—Glucose prepared by digesting Indian meal with sulphuric acid is subjected to fermentation. The following salts are added to serve as nutriment for the yeast: Acid potassium phosphate (1.3 pts.), potassium carbonate (0.86 pts.), potassium silicate (0.04 pts.), ammonium tartrate (1.50 pts.), ferrous sulphate (0.17 pts.)

C. C. WALKER, Sallop: *Purification of coal gas*. (Engl. P., No. 545, Feb. 7, 1880).—Before passing to the scrubber the gas is led through one or more small towers containing a number of metallic screens which are intended to retain any tar carried over.

T. A. EDISON, Menlo Park: *Anaesthetic*. (Engl. P., No. 599, Feb. 11, 1880).—Composed of chloral hydrate, alcohol, chloroform, camphor, oil of peppermint, oil of cloves, salicylic acid, amyl nitrate, morphine sulphate and ether.

JOS. A. LANFREY and J. L. RENARD, Chartres: *Improvements in the preparation of nitrocellulose paper*. (Germ. P., No. 12115, Jan. 21, 1880).—The object of this invention is the manufacture of an explosive compound composed essentially of nitrocellulose from straw. This nitrocellulose can absorb 75 per cent. of nitroglycerine.

ADOLPH BAEYER, Munich: *Manufacture of artificial indigo and analogous coloring matters from ortho-nitrocinnamic acid, and its homologues and substitution products*. (Germ. P., No. 12601, June 18, 1880; second additional patent to No. 11857, of March 19, 1880).—From the above mentioned substances, ortho-nitrophenylpropionic acid, its homologues or substitution products are prepared; these are dissolved in cold concentrated sulphuric acid, and treated with sulphate of iron. In consequence of the reducing action of the sulphate of iron, indigo blue, or homologues and substitution products of it, are formed according to the following equation:



H. F. PEASE, W. JONES and JOHN WALSH, Middlesborough, o. T.: *Improvements in rotating furnaces and pans used in the manufacture of potassium and sodium sulphate*. (Germ. P., No. 11953, April 18, 1880; addition to Germ. P., No. 1125, Oct. 20, 1877).—The improvements relate to stirring and discharging arrangements in a rotating sulphate furnace.

I. B. FREEMAN, London: *Manufacture of zinc-white*. (Engl. P., No. 5121, Dec. 13, 1879).—In order to give the zinc-white more body, the inventor crushes it under extra heavy mill-stones.

OTTO SANDER, Beuel, near Bonn: *Manufacture of silicic acid from furnace slag, and use of the same for purifying oils*. (Germ. P., No. 11951, April 3, 1880).—Silicic acid obtained by decomposing the slag with sulphuric or hydrochloric acid is boiled with, or used for, filtering dark mineral oils after their treatment with caustic lye and sulphuric acid.

C. VON BUCH, Oxford: *Crystallisation of carbon*. (Engl. P., No. 804, Feb. 24, 1880).—Vapor of carbon disulphide is subjected, under pressure in a heated glass tube from which the air has been removed, to a current from a Leclanché battery for several weeks. More vapor is forced into the tube from time to time. Transparent crystals are deposited which yielded carbonic acid by combustion in oxygen.

According to a second method, aluminium fluoride is heated to whiteness in a crucible with ammonium carbonate or other carbon compound. The fluorine is said to combine with the carbon, and to yield it again in the crystalline form.

A third process (Engl. P., No. 830, Feb. 29, 1880) is based upon the property which gases, like carbonic acid, possess under high pressure, of dissolving

carbon and separating it in a crystalline form under the influence of electric discharges, or diminished pressure.

JOHN SATTISON, Nevada City: *Method of controlling the explosion of blasting compounds containing potassium chlorate.* (Engl. P., No. 810, Feb. 24, 1880.)—Coarsely pulverised mustard seed, or linseed, is added to the mass to prevent the formation of hard cakes which, by rubbing against each other, often cause spontaneous explosion of the cartridges.

H. DESPECHER, Paris: *Apparatus for distilling substances containing hydrogen.* (Germ. P., No. 9451, Dec. 10, 1878.)—The method relates to the distillation of coal or other substances containing hydrogen and carbon. A limited amount of highly heated air, as rich in nitrogen as possible, being admitted to the furnace, the hydrogen is said to combine, and to form water and ammonia.

B. THUEMLER and F. E. SEIDEL, Dresden: *Improvements in the treatment of fibers for the purpose of rendering them suitable for spinning.* (Germ. P., No. 11729, Jan. 21, 1880.)—The stalks of nettles, flax, hemp, jute, etc., are crushed, steamed, then treated with milk of lime and caustic soda. Gum, mucilaginous matters, etc., having thereby been removed, the fibers are subjected to bleaching agents. They are then successively treated with an alkaline carbonate, sulphurous acid, soap water and glycerine vapor.

L. McINTYRE, Glasgow: *Treatment of fish and fish waste for the purpose of utilising the solid, liquid and gaseous products from them, and apparatus therefor.* (Germ. P., No. 12349, Jan. 1, 1880.)—The material is heated in a rotating cylinder surrounded by a steam jacket. The vapors evolved are passed into sulphuric acid to absorb the ammonia. From the liquid matters which the waste yields, oil is obtained. The dry matters are valuable as manure, or they may be used in the manufacture of murexid, on account of the uric acid contained in them.

H. V. HAIG, Cameron Bridge: *Manufacture of yeast.* (Engl. P., No. 5106, Dec. 13, 1879.)

JUL. STEUER, Blasewitz: *Manufacture of artificial mill-stones, grind-stones and rollers.* (Germ. P., No. 11507, March 31, 1880.)—20 to 70 pts. quartz sand, 70 to 20 pts. porphyry and 5 pts. feldspar, calcareous spar, or fluor spar, are finely ground, mixed with 5 pts. solution of silicate of soda, formed in moulds, and calcined.

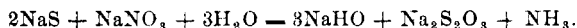
L. WOLLHEIM, Vienna: *Apparatus for collecting non-metallic solid products of electrolytic decomposition.* (Germ. P., No. 11737, May 25, 1880.)—The plate-shaped electrodes are contained in a trough which is so arranged that the liquid to be decomposed enters continuously at the upper end, whilst the products of decomposition pass out through channels near the bottom.

W. KNAUER, Osmuende: *Purification of waste waters from sugar works and other industrial establishments.* (Germ. P., No. 12552, Aug. 1, 1880.)—Instead of purifying the waters, as described in a previous patent, the inventor proposes to allow them to flow over a surface cooler, arranged in the form of a terrace placed under roof.

SACHSENROEDER and GOTTFRIED, Leipsic: *Liquid refined sugar.* (Germ. P., No. 11964, May 23, 1880.)—Dissolved sugar is evaporated with citric or tartaric acid, after which the acid is neutralised with bicarbonate of soda.

H. DRENKEMANN and M. MEIXNER, Basle: *Preparation of pencils for glass painting*. (Germ. P., No. 12662, May 23, 1880.)—Metallic colors are formed into pencils by means of a mixture of 2 pts. stearine oil and 6 pts. stearic acid.

E. CAREY, H. GASKELL and J. HURTER, Widnes: *Purification of alkaline solutions, and generation of ammonia*. (Engl. P., No. 608, Feb. 11, 1880.)—The alkaline solution is first treated with carbonic acid to precipitate alumina and silicic acid, after which the sulphides are oxidised by means of manganic oxide or sodium nitrate. Ammonia is generated when sodium nitrate is employed for oxidising the heated solution—



H. and E. ALBERT, Biebrich: *Extraction of difficultly soluble phosphoric acid from calcic phosphates which have been treated with sulphuric acid*. (Germ. P., No. 12501, May 19, 1880.)—About one hour after the phosphates have been mixed with the acid the mixture is passed through a wet mill. With the aid of a filter press all the phosphoric acid not combined with iron or alumina can be obtained.

JULIAN DENBY, Huelva: *Dephosphorising iron*. (Engl. P., No. 690, Feb. 15, 1880.)—Carbonic oxide or ammonia are blown together with the air, or before or afterwards, through the molten iron contained in a Bessemer converter.

H. UELSMANN, Koenigshuette: *Use of ferrosilicon for apparatus and vessels to contain acids*. (Germ. P., No. 12464, June 15, 1880.)—Iron containing 12 per cent. or more, of silicon is acid proof (see also this JOURNAL, 3, 73).

C. W. SIEMENS, London: *Process and apparatus for compressing molten metals and other substances*. (Germ. P., No. 12037, June 29, 1880.)—Volatile substances such as water, ammonium carbonate, mixtures of nitrates and carbon, are, by means of the cover, introduced into the mould containing the liquid steel. The vapors from the substances volatilized by the heat of the metal exert a pressure upon the contents of the mould.

JOHN BENBOW and H. W. SHEPARD, Brooklyn, and R. SEAMAN, New York: *Improvements in the method of coating iron with other metals*. (Engl. P., date and number not given.)—Organic chlorides are employed in conjunction with the metallic chlorides usually employed in galvanising sheet iron.

COUNT DU CHASTENET D'ESTERRE, Paris. *Gilding metals*. (Engl. P., No. 709, Feb. 17, 1880.)—The objects to be gilded are coated with an enamel composed of alumina, cobalt, red lead, boracic acid and powdered glass, and baked. They are then brushed over with the gilding solution, containing gold, tin, arsenious acid, sulphur dissolved in oil of turpentine and oil of lavender, whereupon they are baked.

S. WALKER, Birmingham: *Use of cryolith and sugar of lead in melting copper and obtaining it in compact and even castings*. (Germ. P., No. 12576, April 2, 1880.)—The above mentioned substances are employed alone or together with borax.

W. H. HOOPES, Baltimore: *Manufacture of artificial stone*. (Engl. P., No. 741, Feb. 19, 1880; Germ. P., No. 11783, Feb. 26, 1880.)

GEBRUEDER SCHFNK, Heidelberg: *Plastic mass.* (Engl. P., No. 650, Feb. 14, 1880.)—Called "tripolith." a substitute for plaster of Paris, over which it is said to have advantages.

J. C. BLOOMFIELD, Castle Cardwell, Ireland: *White cement.* (Engl. P., No. 788, Feb. 19, 1880.)—Lime mixed with 5 per cent. plaster of Paris and with an equal weight pulverised quartz or flint.

G. T. LEWIS, Philadelphia: *Improvements in the manufacture of white lead.* (Engl. P., No. 730, Feb. 18, 1880.)—The lead smoke is blown into a clay retort or muffle heated from the outside so that mixing with the gases from the fire is avoided.

F. G. KROMSCHROEDER, London: *Improvements in the manufacture of illuminating gas.* (Engl. P., No. 619, Feb. 12, 1880.)—Relates to a process of carburetting the gas by passing it through sponges, etc., saturated with hydrocarbons. Excess of the latter is removed by allowing the gas to traverse a compartment of the apparatus in which strips of flannel soaked with acetic acid are suspended.

R. COMBERT, Paris: *Apparatus for purifying oils and fats.* (Germ. P., No. 11460, March 13, 1880.)—The oil is injected by means of steam into the vessel containing the purifying liquid.

J. B. HANNAY, Glasgow: *Antiseptic.* (Engl. P., number not stated.)—Intended for protecting ships' bottoms. It is composed of 45 pts. naphtha, 33 pts. rosin, 12 pts. turpentine and 10 pts. linseed oil, to which arsenite, or chromate of mercury may be added.

JOSEPH DUKE, Totnes: *Fertiliser.* (Engl. P., No. 748, Jan. 20, 1880.)—Gas liquor, sewage, etc., is filtered through a mixture of soluble silicates, superphosphate and peat coke, which retain the nitrogenous matters.

H. W. VOGEL, Berlin: *Improvements in the preparation of photographic emulsions.* (Germ. P., No. 12416, May 8, 1880.)—Four processes are given for combining silver bromide and gelatine emulsions with pyroxyline. The emulsions may be used in the dry or wet condition.

S. W. RIESS, Croydon: *Hair dye.* (Engl. P., No. 5049, Dec. 9, 1879.)—Manganous acetate and pyrogallic acid with addition of glycerine.

E. S. DAUZIVILLÉ, Paris: *Conversion of wood pulp into glucose and alcohol, and apparatus for same.* (Germ. P., No. 11836, March 23, 1880.)—Wood pulp moistened with hydrochloric acid is exposed in acid proof cylinders to the action of hydrochloric acid gas, and then systematically extracted.

C. PIEPER, Berlin: *Method of preparing saccharate of lime from sirup.* (Germ. P., No. 11342, Oct. 14, 1879.)—Powdered caustic lime and powdered "sirup lime," together with sirup, are passed continuously into a mixing apparatus which can be heated. The stiff paste leaving this apparatus upon an endless belt is cooled and dried in a current of air, and coarsely powdered in a disintegrator.