

Reports on Foreign and American Patents Relating to Chemistry.

Foreign Patents.

Condensed from R. BIEDERMANN'S Report to the Germano Chemical Society, by H. ENDEMANN.

PETER STUART BROWN, Glasgow : *Method and apparatus for the manufacture of ammonium sulphate, from ammoniacal liquors, especially gas-water.* (Germ. P., No. 6198, July 30, 1879.)—The inventor proposes to use soda for the neutralization of the salt solutions which, on evaporation, become acid. Manufacturers of the sulphate have used ammonium carbonate for the same purpose.

ED. WESTON, Newark : *Galvanoplastic nickel plating.* (Germ. P., No. 6741, Aug. 4, 1879.)—Nickel precipitated from nickel ammonium sulphate or nickel ammonium chloride solutions, is hard and brittle, and cannot easily be polished. Boracic acid added to nickel solutions produces a fine precipitate of tough metal. The inventor uses for five parts of nickel chloride two parts of boracic acid.

TH. FLEITMANN, Iserlohn : *Method to weld iron, cobalt and nickel together, for the purpose of plating.* (Germ. P., No. 7569, Dec. 15, 1878.)

N. G. H. E. STRUCK, St. Petersburg : *Improvements relating to the manufacture of artificial stones, the preparation of cements and paints.* (Germ. P., No. 7581, Jan. 26, 1879.)

1. Artificial marble, with silicate of potash.—Crushed minerals, 280 parts by weight ; ground lime-stone or chalk, 140 parts ; ground and calcined calamine, 5 parts ; ground and calcined feldspar, 3 parts ; ground fluorspar, 2 parts ; phosphate of lime, 2 parts ; silicate of potash, 40 parts. If silicate of soda is to be used, take for forty parts of crushed minerals, 280 ; chalk, etc., 140 ; calamine, 6 ; phosphate of lime, 3 ; feldspar, 4 ; fluorspar, 1½.

2. Building stones, stone pipes, etc.—Crushed stone or sand, 4,000 parts by measure ; chalk or lime-stone, 528 do. ; calcined clay, 60 do. ; silicate of soda, 130–250 do.

3. Mill stones.—Coarsely broken quartz or flint, 4,000 parts by weight ; chalk or ground lime-stone, 500 ; phosphate of lime, 45 ; feldspar, 60 ; fluorspar, 10 ; silicate of potash, 250.

4. For grinding stones and whet stones.—Fine quartz sand or emery, 127½ parts by weight ; lime-stone, 37½ ; calamine, 15 ; phosphate of lime, 15 ; feldspar, 2 ; fluorspar, ½ ; silicate of soda, 37½.

In using liquid glass in the composition described, no soluble chlorides are formed which would effloresce and require washing or soaking for their removal, but merely insoluble non-hygroscopic compounds.

KARL PHILIP KULMANN, Idar, and KARL AUGUST LORENZ, Oberstein : *Method to produce onyx from ordinary agates.* (Germ. P., No. 6740, Nov. 10, 1878.)—The agates are immersed for eight days into a nitrate of iron solution. Those parts which are to become white are then impregnated with a solution of 1 part of caustic potash, in 1 part of water. The dried material is then calcined at a red heat in a covered earthenware pot.

WILLIAM POCHIN, Salford : (Engl. P., No. 4270, Oct. 24, 1878.)—Proposes to use the slag, which is obtained by the process of *dephosphorising iron with the aid of lime, as a manure*. To this end, at first, most of the lime and iron is removed by muriatic acid, and the residue is finally, by treatment with sulphuric acid, converted into superphosphate.

FRIED. GRAESSLER, Cannstadt : *Method for the manufacture of amidoazobenzole-sulphonic acids and homologues*. (Germ. P., No. 7094, Feb. 13, 1879.)—Instead of converting amidoazobenzole into the corresponding sulphonic acid, he proposes to start from sulphanilic acid ($C_6H_4NH_2.SO_3H$), which is, by the action of nitrous acid, first converted into diazobenzole-sulphonic acid, and this, by means of aniline, into diazoamidobenzole-sulphonic acid.

MEISTER, LUCIUS and BRUENING, Hoechst, a./M. : *Method for the manufacture of dye-stuffs*. (Germ. P., No. 7217, Dec. 3, 1878.)—By the action of the sulpho acids of naphthol on the diazo compounds of phenol, the naphthols and their ethers. Diazophenols produce yellowish-red dyes, while the diazophenol ethers produce red or bluish-red shades. Diazonaphthol ethers produce reddish-violet dyes.

E. A. G. BONG and L. THIERCELIN, Paris : *Apparatus for the mechanical preparation of safflor*. (Germ. P., No. 6345, Jan. 24, 1879.)—The separation of the yellow fibres which connect the three eyes of the flowers, is effected by means of several pairs of rollers, of which the first has the slowest motion, and those following rotate more and more rapidly. A blast finally completes the separation.

MATH. DUBISLAV, Schonungen : *Manufacture of a non-poisonous mordant*. (Germ. P., No. 7179, Jan. 15, 1879.)—1 kgrm fresh wine-yeast is evaporated with 4 grms tartrate of soda ; to the thick, boiling mass, 15 grms glue and 10 grms tannic acid are added. After drying and grinding, the substance is ready for the market. For its application, it is to be dissolved with a decoction of soap root and dye in water, if woollen goods are to be dyed, or without soap root if the bath is intended for the dyeing of silk.

VEREINIGTE GUMMIWAARENFABRIKEN, Harburg, Wien : *Artificial slate for writing slates, &c.* (Germ. P., No. 7194, March 18, 1879.)—Pumice stone and bone black, both powdered, are mixed with purified rubber and sulphur, in the following proportions : 10 india rubber, 16 pumice stone, 21 bone black, 5 sulphur. This mass, after it has been rolled in sheets, is piled in packages with intermediate layers of paper and tin sheets, pressed and exposed for $2\frac{1}{2}$ hours to a temperature of from 130° to 140° C. Each single plate is finally packed between two plates of metal, which can be heated to 130° to 140° . After remaining here for two hours, the plates, after cooling, are removed and smoothed by pumice stone.

GEORGE GOUNDRY MUNGER, Rochester : *Lubricator consisting of petroleum, graphite, Japan wax, tallow and soda*. (Engl. P., No. 4329, Oct. 28, 1878.)

ALEXANDER BOURG and CHARLES BERTAU, Etricourt : *Improvement in air-pumps used in sugar houses*. (Germ. P., No. 7526, April 6, 1879.)

JACOB WILL, DECASTRO, New York : *Decolorizing sugar solution*. (Germ. P., No. 7129, Nov. 19, 1878.)—To the neutral sugar solution, $\frac{1}{10}$ per cent. of zinc nitrate is added ; then blood, or other albuminous substances ; after heating and stirring, coagulation takes place. The zinc is carried into the coagulum, carrying the coloring matters with it.

MONITZ WEINMICH, Pececk : *Method for the preparation of sugar saccharate from syrup and molasses*, with the aid of alcoholic solutions. (Germ. P., No. 7171, Oct. 1, 1878; Engl. P., No. 3252, Aug. 17, 1878.)—To the syrup or molasses a quantity of dry slacked lime, corresponding to 55 per cent. of the sugar present, is added. After some time, and the application of heat, the saccharate has formed. The mass is allowed to cool, and is then ground in the disintegrator, and stirred with alcohol for some time. The saccharate becomes sandy after repeated applications of fresh quantities of alcohol. A treatment of from ten to twelve hours completes the purification. The alcohol is recovered by distillation, and the residue from the distillation is used for manuring. Thus, 90 per cent. of the sugar present may be recovered.

RUDOLF BERGHEEN, Rößtzech : *Method for the removal of the gases from the cells of sugar-beet roots*. (Germ. P., No. 984, Oct. 11, 1879.)—Waste steam of 75 to 80° C., in a partial vacuum, is used for this purpose.

W. KETTE, Jassen : *Method for the recovery of albuminate from diluted potato juice*. (Germ. P., No. 7428, March 19, 1879.)—With the aid of liquid glass and acids.

O. THUEMMEI, Berlin : (Germ. P., No. 7593, April 18, 1879.)—*Food* prepared by mixing 100 pts. *husks* (distillery remnants) with $8\frac{1}{2}$ *best-sugar molasses*, at a temp. of 50° C.; then 33 $\frac{1}{2}$ pts. of rye or wheat bran are added; cakes are formed from this, and baked and roasted.

G. H. E. BERING, Bromberg : *Removing the bitter principle of lupines*. (Germ. P., No. 7706, Feb. 5, 1879.)—By means of soda, in order to make them fit for food.

E. JOHNSON SPITTA, Clapham : *Food for children*. (Engl. P., No. 4402, Oct. 31, 1878.)—Consisting of wheat-flour, ginger, sugar, milk and water.

P. SCHWING, Barmen : *Substitute for coffee*. (Germ. P., No. 7513, Sept. 26, 1878.)—Arabian or Turkish wheat is malted, dried, roasted and ground.

AUGUSTE BORCHERS, Valparaiso : *Proposes the use of a plant, Eugenia Cheken, as a medicine*. (Engl. P., No. 3529, Sept. 6, 1878.)—Inhalation of vapors from an infusion of this plant is prescribed in attacks of diphtheria, laryngitis, etc., and the decoction for diseases of the intestinal canal. It is also stated that it acts upon the kidneys.

JEAN WICKERSHEIMER, Berlin : *Preservation of corpses*. (Germ. P., No. 7265, April 23, 1879.)—Dissolve in 8 liters of boiling water, 100 grms alum, 25 grms salt, 12 grms saltpetre, 60 grms potash and 10 grms arsenious acid. After cooling, filter. To 10 liters of the neutral fluid, 4 liters of glycerine and 1 liter of methylic alcohol are added. For the preservation of the corpse of a child, 1 $\frac{1}{2}$ liter; for a grown person, 5 liters are required. Smaller objects are simply immersed from 6 to 12 days. (It is stated that the German government has bought this patent, and for the purpose of aiding its universal application, has allowed its free use.)

JAMES MACTEAR, Glasgow : *Apparatus for the manufacture of sulphurous acid*. (Engl. P., No. 3901, Sept. 19, 1878.)

WILL. WALLACE, London : *Manufacture of ammonium sulphate*. (Engl. P., No. 3694, Sept. 19, 1878.)

LUDWIG MOND, Northwich : *Treatment of salt solutions*. (Engl. P., No. 3909, Sept. 11, 1878.)—For the manufacture of soda and ordinary salt.

HOLBROOK GASKELL, Widnes : (Engl. P., No. 8783, Sept. 25, 1878.)—*Improvement in the manufacture of aikali*, concerning the prevention of the formation of cyanides by the action of air and steam on the mass, which is heated on a revolving hearth.

GEORGE GLOVER, Carville Chemical Works, Wallsend, Northumberland : (Engl. P., No. 3973, Sept., 1878.)—*Method to destroy cyanides, sulphides and hypsulphites*, in the manufacture of soda. The inventor adds manganese oxides, natural or artificial, which form manganates, which in turn oxidize the substances to be destroyed. 100 grms manganese ore of 60 to 70 per cent. are generally sufficient for each ton of soda. Soda thus prepared is said to be as pure as refined alkali.

R. LAVENDER and JOS. RICHARDS, Pontypool : (Engl. P., No. 3182, Aug. 12, 1878.)—*Utilization of the sulphuric acid* which has been employed for the cleaning of the iron previous to tinning. The fluid is distilled until the residue, by destructive distillation, ceases to give off any gases ; the latter are conducted into a sulphuric acid chamber.

FAURE & KESSLER, Paris : *Apparatus for the concentration of oil of vitriol*. (Germ. P., No. 6972, Jan. 26, 1879.)—Not new.

SCHNEEBERGER ULTRAMARINE WORKS, SCHINDLER, Bockau : *Apparatus for the absorption of diluted acid gases*.—To this end they are, with the aid of a ventilator, pressed into large chambers, where they come into contact with a current of water, passing in an opposite direction over pieces of lime stone.

C. HILT, Kohlscheid : (Germ. P., No. 7590, Jan. 1, 1879.)—*Method of preparing from coal dust bituminous coal bricks*, with the aid of paper pulp prepared from wood.

WILLIAM WHITE, London : *Fillers*. (Engl. P., No. 3746, Sept. 21, 1878.)—5 parts of red oxide of iron, 2 parts powdered charcoal and 2 parts of clay, are moulded, dried and baked.

ARCH. HENRY PLANTAGENET STUART WORTLEY, London : *Preparation of electrodes for the electric light*. (Engl. P., No. 3656, Sept. 17, 1878.)—To prevent the waste of the carbon points, the carbon is mixed with a magnesium silicate, for instance, asbestos, which, shortly after they commence to be used, melts, thus effectually excluding the oxygen, and preventing waste by combustion. The composition is given as follows : 100 pts. gas coal, 2 pts. graphite, and 1 pt. of asbestos, resp. 1½ pts. steatite. Instead of this an asbestos cap for ordinary carbon points is proposed.

WILH. GRUBNE, Berlin : *Method to obtain raised and dead etched writing or pictures on glass or porcelain*. (Germ. P., No. 6676, Nov. 19, 1878.)—For this purpose the glass is etched with fluid hydrofluoric acid. The picture, however, is not prepared with a mass which is perfectly proof against hydrofluoric acid ; thus the glass around the picture or writing is eaten away, keeping at the same time its polish, while the picture appears raised and dead. As such substances, lac and oil varnishes are mentioned. Solutions of asphaltum, gutta percha or India rubber are not applicable.

JOS. HECKMANN, Loughton : (Engl. P., No. 3130, Aug. 8, 1878.)—*Treatment of paper and parchment*, to make erasures unfailingly visible. To the mass used for sizing, Prussian blue and ammonium sulphide are added.

JOAO ANAST. ROSA, Paris : (Engl. P., No. 3883, Oct. 3, 1878.)—*Waterproof leather*, by means of the application of coprophonium or other rosins in turpentine, petroleum ether, etc.

JAMES HART, Stratford : (Engl. P., No. 3798, Sept. 26.)—*Cement* consisting of glue, white lead, oil, alum and borax.

ADOLPH SCHLIEPER, Veysaux, Switzerland : *Food*. (Engl. P., No. 3102, Aug. 6, 1878.)—123 kgrms wheat flour, 13 kgrms bean flour, 6 kgrms oatmeal, 1 kgrm salt, 0.160 kgrm soda, 0.240 kgrm calcium phosphate, are mixed with water, formed and baked. The cakes are then ground, and the flour thus obtained mixed with 12 kgrms corn meal. This mixture is said to contain the various substances in such proportions, as to be most serviceable for the daily wants of the human body.

JOSEPH WILSON, Penrith : *Recipe for the destruction of parasites on animals and plants*. (Engl. P., No. 5090, Dec. 12, 1878.)—The inventor melts 50 pts. of tallow and 25 pts. rosin ; he then adds 50 pts. alkali and 25 pts. borax—finally water, and boils. To this, 75 pts. of carbolic acid and 30 pts. of calcium sulphuret solution, and 80 pts. of a tobacco decoct, are added. According to the views of the inventor, sulphoglycerolcarbolate of nicotine is formed.

JAMES BALLANTYNE HANNY, Glasgow : *Paint for the protection of objects under water*. (Engl. P., No. 5088, Dec. 12, 1878.)—60 pts. alcohol, 9 shellac, 4 rosin, 3 gallipot, 2 soft gallipot, 4 arsenite of copper, 3 arsenite of mercury, 9 chromate of mercury, and 6 coloring matter.

GUST. BERNHEIM, Brussels, and JAMES CROSTON, Manchester : (Engl. P., No. 4925, Dec. 3, 1878.)—*Fire extinguisher*, consisting of a solution, to be used in place of water. It consists of 700 pts. calcium chloride, 20 conc. sol. of baryta, 20 conc. sol. of potassium bicarbonate, 10 conc. sol. of sodium tungstate, 50 ammonium chloride, 25 magnesium sulphate, and 175 water.

ROBERT MUELLER, JR., and H. BOECKEL, Schoenebeck : *Method for the manufacture of iodine and bromine*. (Germ. P., No. 7743, Sept. 12, 1878.)—The apparatus consists of a tower which is filled with coke or stone. From above, the brine containing iodine and bromine enters, from below, chlorine and steam. Near the pipe where the brine enters are the openings through which the iodine and bromine pass into the condensers. To make the action a continuous one, two generators for chlorine are provided.

DICK H. YEOMANS, Middlewich : *Concentration of brine*. (Engl. P., No. 168, Dec. 17, 1878.)

FRED. VERSMANN and JUL. VON QUAGLIO, London : (Engl. P., No. 5291, Dec. 27, 1878.)—*Claim the use of metals incorporated into porous substances*, for the purpose of removing sulphur compounds from illuminating gas. Tungstic and titaniferous iron ores, ground, are given the preference. The temperature at which such actions will take place most advantageously is given as 280° to 300°.

MICHAEL NEUMANN, Raab : *Artificial wool from flax, jute or hemp waste*. (Engl. P., No. 5178, Dec. 17, 1878.)

JAMES HICKISSON, London : (Engl. P., No. 5122, Dec. 13, 1878.)—In order to enable one to write or print on paper, linen or other textile fabrics, the inventor proposes *the use of vanadium inks, fluid or dry*. The vanadium salt, and the salts used for their oxidation, generally nickel and cobalt, are kept separate. Two

pieces of cloth are saturated with the one and the other, and the cloth to be printed is put between. By pressing upon this with a pencil or stamp, the cloth becomes impregnated with both solutions, and thus the print is developed.

A. J. POIRRIER and D. A. ROSENSTIEHL, Paris : (Engl. P., No. 5157, Dec. 16, 1878.)—In order to give to textile fabrics a metallic gloss, the inventors *saturate them with a metallic salt solution* (lead acetate), and bring them before they have become perfectly dry, into boxes, at the bottom of which a sulphide is brought, which, in contact with the air, will slowly develop hydrogen sulphide.

JAMES LAW, Castleton near Manchester : *Mordant for Turkish-red dyeing*. (Engl. P., No. 3696, Sept. 18, 1878.)—The whole is an inferior reproduction of the Mueller-Jacobs process. (Germ. P., No. 1448, Sept. 30, 1877.)

ALFRED EM. MÉRY, Paris : *Manufacture of pigments*. (Engl. P., No. 3741, Sept. 21, 1878.)—The colors are to be mixed with a paste consisting of 24 pts. isinglass, 534 glycerine, 208 water, 208 beeswax, $12\frac{1}{2}$ ammonia, $12\frac{1}{2}$ rosin.

THOS. A. DOWLING and JOHN HARDMAN, New York : *Preservation of wood*. (Engl. P., No. 5211, Dec. 19, 1878.)—The wood is heated under heavy pressure in an air-tight cylinder, the sap escapes, and the wood is allowed to cool, while the pressure is kept on. This mode of treatment is said to prevent the wood from splitting.

WALTER JEYES, Birmingham : *Antiseptic*. (Engl. P., No. 5249, Dec. 23, 1878.)—100 pts. dead oil, 60 pts. caustic soda, 30° B. ; 89 pts. rosin, 20 pts. vegetable oil. To obtain a solid mass, anthracene or naphthalene are added to this.

K. and TH. MOELLER, Brackwede : *Purification of water for use in steam boilers*. (Germ. P., No. 7343, Jan. 4, 1878.)—The inventors use different methods according to the composition of the water.

1. When a water contains bicarbonate of lime and gypsum. They add so much milk of lime as to convert all the carbonic acid into neutral carbonate, which is precipitated. Thereby another advantage is gained, inasmuch as the gypsum, which is carried down into the incrustation by the monocarbonate, remains now in solution, as far as its solubility permits. Before this point is reached, however, the whole water is discharged, and the operation is then again commenced with a fresh quantity. The crystallization or separation of the gypsum from the water may be prevented to a certain extent, by the addition of some salt. The average time for which a boiler, filled with water purified by this plan, may be used, is from two to three weeks.

2. The water contains mono or bicarbonate of magnesia. Remove these by the addition of lime in excess, and the latter by soda.

3. The water contains carbonate of magnesia and bicarbonate of lime. Treat according to 1.

4. The water contains bicarbonate of lime, sulphate of lime, and carbonate of magnesia. Treat according to 1 and 2.

5. Magnesium chloride is removed by an excess of lime, and this by soda.

6. Sulphate of magnesia. Treat first with excess of lime, and remove this and the gypsum formed by soda.

7. Magnesium chloride and sulphate are, also, first decomposed by lime in excess, and the resulting water is then treated with soda.

8. Waters which contain magnesium chloride, sulphate and carbonate, and calcium carbonate, or other combinations of these bases and acids, are purified in a similar manner.

9. From waters containing lime and magnesia, these have to be removed by soda and heat, as otherwise they prove very destructive to iron.

J. C. GLASER, Berlin: *Methods to remove the bitter taste from lupine seeds, and to preserve them.* (Germ. P., No. 6175, Nov. 10th, 1878.)

JULIUS W. KLINGHAMMER, Braunschweig: *Thalpotosimeter.* (Germ. P., No. 8101, Feb. 5, 1879.)—A new thermometer consisting of an S-shaped tube, closed at one end and filled with a substance which must be a gas at the temperature to be measured. At the open end of the S-shaped tube, a gauge measures the inside pressure, and from this the temperature is calculated.

G. KUEHNEMANN, Dresden: *Improvement regarding the automatic introduction of substances into the analyzer, and the treatment of tough pastes in the same.* (Germ. P., No. 7849, April 11th, 1879.)—This apparatus is intended for the separation of soluble from insoluble substances, as well as for that of the volatile from the non-volatile. There is but little doubt but that this apparatus will be a welcome help in many technical branches, and the improvements intend to extend its usefulness. A useful description cannot well be given without a cut.

American Patents.

Condensed from the Official Gazette of the U. S. Patent Office, by ARNO BEHR.

November 4, 1879.

221,187.—*Processes for removing extractive matters from tanned leather.* GEORGE PLUMER and CHARLES P. KERANS.

Brief: Treats the tanned leather with a solution of borax and water previous to the re-tanning of the said leather, in order to remove all extractive matter, and softens and cleanses the leather.

221,200.—*Galvanizing metal.* WM. H. WAHL and EDWARD Y. ELTONHEAD.

Before being subjected to the process of galvanizing, the iron objects are treated in an acidulated bath of chloride of zinc.

221,219.—*Processes for tanning.* MILO L. DOTY.

The object is to dispense with the use of machinery for steeping and handling the hides, and, instead, to apply directly to the hides suspended in open air, a moist, pasty compound, containing tannin. This compound consists of ground grain, a solution of tannin and salt, and is repeatedly moistened until the hide is thoroughly tanned.

221,281. *Manufacture of chrome steel.* RICHARD BROWN.

Chromates or bichromates of the fixed alkalies, or the alkaline earths, are mixed with the molten metal.