February 24, 1880.

224,766.—*Vapor motor.* EDWIN M. BRADY.

Claim: A mixed vapor, adapted for use as a motor for machinery, the same consisting of vapor of bisulphide of carbon and vapor of saponified paraffine oil.

224,841.—*Compound for removing paint or varnish.* WILLIAM H. NORDABY.

Consists of lime, sal-soda, aqua-ammonia, creosote and water.

224,883.—*Compound for preserving fruit.* JOSEPHUS CRAFT.

Ten grains each of bisulphite of calcium and biborate of sodium, dissolved in one ounce of glycerine. This is added to one quart of sugar syrup, heated to 200° F., and poured over the fruit.

224,927.—*Dye-stuff or coloring matter.* FRIEDRICH KOEHLER.

A bluish-red coloring matter produced from the sulpho acid of diazo-azo-benzole and a bisulpho acid of beta-naphthole.

224,928.—*Dye-stuff or coloring matter.* FRIEDRICH KOEHLER.

A red coloring matter produced from the sulpho acid of diazo-azo-benzole and beta-naphthole.

Foreign Patents.

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

CARL LOEWIG, Breslau: *Clarification of beet and cane juice, syrup, &c.* (Germ. P., No. 8033, December 17, 1878.)—1,000 parts of cane juice are treated with 2 parts of lime, 1¼–1½ per cent. of colloid alumina, and, after a few minutes, slowly heated to 60° and 70° C. The deposit formed, contains the acids previously in combination as potassium salts, coloring, and other organic matters. Hydrofluosilicic acid or basic aluminium chloride is added to the filtrate, for the purpose of removing or neutralizing alkalies.

The juice can be evaporated immediately, or it may be still further improved by filtration through bone black.

The same treatment may also be applied to the intermediate products of the refining process.

Molasses or syrup is first diluted to 40° or 50° Brix. 1 per cent. of lime, and then colloid alumina added, until a filtered sample remains clear upon addition of basic plumbic acetate.

The filtrate passed through bone black, or treated by the osmose process, and evaporated, is said to yield an odorless syrup, from which sugar crystallizes out liberally.

EMIL JACOBSEN, Berlin: *Method of preparing sulpho acids of rosaniline, and coloring matters derived from them, and of alizarine and of purpurine, by the action of sulphuric chlorhydrate.* (Germ. P., No. 8764, March 1, 1879.)—Equivalent quantities of rosaniline, substituted rosanilines or their salts, alizarine or purpur

ine, are added to sulphuric chlorhydrate, contained in a cooled vessel, provided with a stirrer. The reaction is completed by warming the mixture upon the water-bath, and the sulpho acid obtained in known manner.

GRIPEKOVEN & Co., Brussels: *Artificial leather for lithographic rollers.* (Germ. P., No. 8738, July 31. 1879.)—20 parts syrup, 20 parts glue, 3 parts nitrate of potash, 3 parts sugar, 5 parts water, 1 part almond oil and 1 part chrome yellow, sulphate of alumina and potash, are heated upon the water-bath, and a hollow cylinder, the walls of which are about one-half inch thick, is formed of the mixture. It is then left for ten hours in a solution of sulphate of alumina and potash, and dried in the air.

PAUL GONDOLO, Paris: *Extraction of tannine.* (Germ. P., No. 7864, April 2. 1879.)—The water used is acidified with 0.6 per cent. sulphuric acid, the neutralized extract clarified by a small quantity of blood or gelatine, filtered and concentrated in air or in vacuo.

ALBERT CHRISTIANS and HEINRICH REINHOLD, Hamburg: *Coating for blackboards.* (Germ. P., April 27, 1879.)—A varnish, containing gum copal, shellac, venice, turpentine, lampblack and emery, is applied in two coats, the first being ignited and burned away before the second permanent one is laid on.

LAMBERT VON BABO, Freiburg: *Collodion covering for segars.* (Germ. P., Aug. 8, 1879.)

GILB. HUMPHREY COMFORT, London *Effervescent beverage.* (Engl. P., No. 73, January 7, 1879.)—Milk charged with carbonic acid.

WILLIAM RIDDLE, London: *Preservation of meat, milk, &c.* (Engl. P., No. 25, January 2, 1879.)—Meat is impregnated with carbonic acid, in a vessel from which the air has been exhausted. Milk is neutralized by addition of sodium bicarbonate, a little sugar added, and impregnated with carbonic acid. Hides are treated under pressure with solutions of aluminium chloride, or magnesium or zinc sulphate.

SYLVESTER FULDA, London: *Preservation of food.* (Engl. P., No. 347, Jan. 28, 1879.)—Claims mixtures of alum, silicate of soda, borax, cream of tartar, isinglass, lime and glauber's salts.

CHARLES CAMOYANO, London: *Furniture polish.* (Engl. P., No. 364, Jan. 29, 1879.)—Mixture of beeswax, turpentine, linseed oil, vinegar, chloride of antimony and wood spirit.

LEON FARGUE, Paris: *Ink compound.* (Engl. P., No. 526, Feb. 10, 1879.)—Aniline colors, soluble in water, are mixed with glycerine to a plastic mass, which is pressed into the pens.

OTTO STREUBEL, Paris: *Vegetaline.* (Engl. P., No. 127. Jan. 11, 1879.)—A substitute for ivory, caouchouc, leather, &c., and less combustible than celluloid. Cellulose is treated with sulphuric acid of 58° Bé at 15° C., washed, dried and ground, and the powder mixed consecutively with resin soap and sulphate of alumina, to form resinate of alumina. The mass is then pressed, and cut into slabs for use. To increase the incombustibility of it, silicates and borax may be added.

JAMES BALLANTYNE HANNAY, Glasgow: *Compound for preventing the destruction of ships' bottoms, or other submarine objects.* (Engl. P., No. 5088,

Dec. 12. 1878.)—60 parts alcohol, 9 parts shellac, 4 parts rosin, 3 parts gallipot, 2 parts soft gallipot, 4 parts arsenite of copper, 3 parts arsenite of mercury, 9 parts chromate of mercury, and 6 parts coloring matter.

HANS WEGENER, Weitendorf: *Apparatus for the production of high temperatures.* (Germ. P. of August 19, 1879.)—The object to be heated is exposed in a cylindrical vessel to the action of an oxyhydrogen blowpipe, under pressure. The pressure is produced by repeated explosions of small quantities of gun-cotton.

ERNEST GASTON BONG, Paris: *Method and apparatus for the reduction of alkaline and earthy sulphates.* (Engl. P., No. 845, March 6, 1879.)—The sulphates are heated in a system of chambers, and subjected to the action of sulphuretted hydrogen and generator gases (crude coal gas). The latter yield carbonic acid, which converts some of the sulphide in the moment of its formation, into carbonate.

The sulphurous acid formed during the reduction is free from air. The inventor claims that, by increasing the reducing agent, sulphur may be obtained. By mixing alkaline with earthy sulphates, fusion of the alkaline sulphides is avoided.

If silicates, clay and the like, be added to the sulphates treated by this process, silicates or aluminates of the alkalies or cement may be obtained.

ANTON ZENISEK and C. SCHMIDT, Dobrowitz: *Apparatus for manufacturing hydrofluosilicic acid.* (Germ. P., No. 9072, May 30, 1879.)—Silicium fluoride is generated in a long cast-iron retort, having the same cross-section throughout that part of its length which contains the charge. The ends of the retort are closed by cast-iron plates, and connected with a vessel containing water, and provided with a suitable stirring apparatus.

LARS W. BECK, Antwerp: *Method and apparatus for making assimilable phosphates.* (Engl. P., No. 814, Feb. 28, 1879.)—Sulphurous acid from a pyrites furnace is injected into water containing the raw phosphates. Calcium bisulphite and acid calcium phosphate are formed, and precipitated by the action of steam or hot air from the solution drawn off into another vessel. The sulphurous acid evolved is used over again. (The precipitation by heating of phosphates, dissolved in aqueous sulphurous acid, was first proposed by Gerland, see Wagner's Jahresber., 1864, 186, R. B.)

KARL ADOLF RIEBECK, Halle: *Method of purifying mineral oils.* (Germ. P., No. 9078, July 12, 1879.)—Creosote and similar matters are removed by treatment with solution of chloride of lime in alcohol, and with caustic soda.

C. HABER, Ramsbeck, Westphalia: *Method of separating iron and copper pyrites from mixtures with other minerals.* (Germ. P., August 21, 1879.)—Iron and copper pyrites are roasted, and the magnetic oxides removed from the mixtures with the aid of magnets.

LAMBERT HERLITSCHKA, Bautzen: *Furnace and method of fusing and refining metals.* (Germ. P., No. 18, Feb., 1879.)—The inventor claims the use of hydrocarbons as reducing agents for metallic oxides and sulphides, also sulphur and phosphorus, or sulphides and phosphides, in presence of superheated steam, as fluxes.

FERD. HECKEL and OSCAR OTTMANN, Neustadt: *Apparatus for the manufacture of illuminating gas.* (Germ. P., No. 8865, May 13, 1879.)—Hydrogen gas, evolved from iron filings and dilute sulphuric acid, in a tank lined with lead, is collected in a gas-holder, and passed through a vessel containing cotton saturated with gasoline.

JOS. BINON and ALPH. GRANDFILS, Stolberg: *Method of conglomerating mixtures of zinc ore and coal.* (Germ. P., No. 8703, July 5, 1879.)—The charge of zinc ore and coal is mixed with dry tar, and heated until the latter liquifies. The doughy mass is pressed in moulds to forms which exactly fit the interior of the zinc muffles.

OTTO S. HELLWIG, Brooklyn: *Improvements in furnaces for burning waste.* (Germ. P., No. 8810, July 17, 1879.)—A cast-iron plate or cast-iron pipe, fitted into the fireplace of a furnace, becomes heated to whiteness, and then heats and ignites gases that may have escaped complete combustion.

A. RUEMPLER, Hecklingen: *Removal of pectine substances from solutions of inorganic salts.* (Germ. P., No. 9075, June 15, 1879.)—Caustic soda solutions, from dye-works, &c., are freed from pectine substances, by precipitating the latter at the boiling point by means of magnesia, magnesium, carbonate or hydroxide. The magnesia is recovered from the precipitate by calcining it, or by solution in hydrochloric acid and fractional precipitation with milk of lime.

WILL. GARTON, Southampton: *Manufacture of starch, &c., from rice, corn and other amylaceous substances.* (Engl. P., No. 823, March 1, 1879.)—The substance is digested in cold water, placed in a closed vessel, with a 2 per cent. solution of ammonia, and heated to 50° C. for several days. The ammoniacal solution is drawn off and neutralized with acid, whereby fats and albumen are separated; by evaporation, ammoniacal salts are obtained. The rice, &c., is washed out, and used in the manufacture of starch.

HECTOR LEGRU, Paris: *Improvements in the preparation of saccharate of lime.* (Engl. P., No. 1266, March 29, 1879.)—In preparing saccharate of lime from syrup, the inventor uses little more lime than the quantity theoretically necessary, and adds inert matters, as native calcium carbonate, marl, brick-dust, bone black, and especially the dry calcium carbonate obtained in the decomposition of the saccharate of lime by carbonic acid.

CH. THOMAS, W. J. FULLER and S. A. KING, Bristol: *Extraction of glycerine from soap boilers' waters.* (Engl. P., No. 1282, March 31, 1879.)—The greater part of the salts contained in the waters is removed by evaporation and crystallisation, the remainder by boiling with a fatty acid in excess, whereby they separate as soap. The liquid is then filtered and distilled.

PETER KRAUS, Vienna: *Preservation of food* · (Engl. P., No. 1277, March 31, 1879.)—Consumes the oxygen in the air-tight vessels, by burning alcohol in them, and removes the products of combustion by an air-pump.

G. E. DAVIS, Heaton Moor: *Baking powder.* (Engl. P., No. 1249, March 28, 1879.)—Acid ammonium phosphate and alkaline bicarbonates, or calcium or magnesium carbonate.

G. W REYE & SONS, Hamburg: *Filtering tiles, from infusorial earth and gypsum.* (Germ. P., No. 9094, August 30, 1879.)—1 part gypsum and

3 parts infusorial earth are mixed to a paste, and allowed to harden. After the tiles have been used, they can be cleaned by washing or heating to redness. Impregnated with carbolic acid, they can be used for disinfecting purposes.

WILHELM BITTER, Bielefeld: *Improvements in apparatus for pharmaceutical laboratories.* (Germ. P., No. 8480, June 13, 1879.)—Arrangements for evaporating, distilling, boiling, &c. Apparatus for rapid drying by steam-heat.

CHARLES DE MONTBLANC and LUCIEN GAULARD, Paris: *Apparatus for the ammoniacal manufacture of soda.* (Germ. P., No. 8498, May 20, 1879.)—The apparatus admits of continuous working. Sodium chloride is placed in a tank, to the bottom of which water is admitted, through a perforated pipe. The solution of sodium chloride overflows into a second tank, which encloses the first, and contains a float, to regulate the flow of water into the first. From the second tank, the solution passes to the bottom of a vertical cylinder, to be impregnated with ammonia. Thence it flows into a series of connected cylinders, to be charged with carbonic acid. The end of the pipe which admits the gas is furnished with fans, to prevent the sodium bicarbonate from obstructing the holes.

JOHN CLIFF, Runcorn: *Improvements in sulphate furnaces.*—Replaces the double arch forming the roof by a single arch, composed of larger pieces of masonry.

WALTER WELDON, Rede Hall, Burstow: *Purification of alkaline lyes.* (Engl. P., No. 339, Jan. 28, 1879.)—To oxidize the sulphides in the crude lyes, a hydrated oxide of manganese (hydrate of Mn_3O_4) is added. The following reactions take place: $2Na_2S + Mn_3O_4 = 2Na_2O + 2MnS + MnO_2$, and $14Na_2S + 4Mn_3O_4 = Na_2S_2O_3 + 13Na_2O + 12MnS$. The manganic oxide is prepared by precipitating a solution of manganic sulphate or chloride, with lime or magnesia, and passing air through the mixture.

The manganic precipitate obtained in the purification of the lyes, is dissolved in hydrochloric acid, or it is added to the solution of manganic chloride, resulting from Weldon's method of preparing chlorine. (The above process is similar to the one patented by the Chemische Fabrik, Rheinau, see this JOURNAL, 1, 588.