connected, on the principle of a syphon, with the observation tube and its jacket. By means of a pinch cock attached to the exit tube, the hot water is allowed to flow through the jacket until the thermometer shows the temperature desired. It is hardly necessary to say that the observation tube must be filled at a temperature near that at which the reading is to be made, to prevent expansion. If we desire to make a reading at 0°, corresponding to 44° to the left, Clerget, we replace the water by alcohol which is cooled by a salt and ice bath to —3° or —4°.

The apparatus is then used as before. We have thus a means of making readings at any desired temperature without having to mutilate the polariscope, as is done by fitting it with a water bath. I will say, however, that a judicious use of Clerget's principle renders readings at a given temperature unnecessary. They are, however, useful in certain complex mixtures by doing away with certain calculations.

I propose next to extend my investigations to candies and other confections in which glucose enters as an ingredient.

Reports on American and Foreign Patents Relating to Chemistry.

American Patents.

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

Oct. 5, 1880.

232,889.—*Apparatus for extracting metal from ores.* THURSTON G. HALL.

232,922.—*Manufacture of Soap.* LOUIS BASTET.

A compound of soap and mineral oil, with or without the addition of boracic acid.

232,974.—*Vulcanized plastic compound.* ALFRED B. and CHARLES JENKINS.

Use infusorial earth as an admixture to ordinary vulcanized india-rubber.

232,991.—*Method and Apparatus for obtaining ammonia.* HANS P. LORENZEN.

See German Patent, p. 302.

232,995.—*Process and apparatus for preparing saccharate of lime and obtaining sugar.* HENRY A. J. MANOURY.

This process has been sufficiently described in the current literature. It is patented in France and Germany since 1877, and extensively adopted in Europe for the recovery of sugar from beet-root molasses.

Oct. 12, 1880.

233,070.—*Manufacture of wood pulp for paper.* JEFFERSON CHASE.

It is produced by reduction between revolving stones of brush, twigs, and small branches of trees, in their natural state.

233,144.—*Coating rubber with metal.* JOHN A. DALY.

For dentistry.

233,197.—*Lubricating composition.* CHARLES F. BROADBENT.

A mixture of milk of lime, precipitated chalk, and a solution of carbonate of soda, to be mixed with any ordinary lubricating oil.

233,217.—*Process for preserving fruits and other articles.* MARION F. DERBY.

The preserving agent is sulphurous acid gas, partly free and partly absorbed in an alum solution, to be poured over the articles.

233,296.—*Enameled rubber-cloth.* EDGAR M. STEVENS.

Oct. 19, 1880.

233,332.—*Method of and apparatus for bottling and barreling malt and fermented liquids, under pressure.* JOHN C. DE LA VERGNE and JULIUS J. SUCKERT.

233,453.—*Process of purifying fats and oils.* ALEXANDER W. WINTER.

The liquid or liquified fat is mixed with a certain proportion of Fuller's earth.

233,458-460.—Three patents relating to the *manufacture of artificial indigo*, taken by ADOLF BAEYER, in Munich.

The first Patent claims the production of orthonitrodibromhydrocinnamic acid, from orthonitrocinnamic acid and bromine ; the third, the production of orthonitrophenylpropiolic acid, prepared from the first named compound, by boiling with alcoholic potash ; the second, the production of orthonitrophenyloxacrylic acid from orthonitrocinnamic acid and hypobromous acid, and subsequent treatment with alcoholic potash. Concerning the relations of these products to indigo, see Patent 227,470, p. 228.

233,465.—*Red coloring matter.* HEINRICH BAUM.

This is the product of the reaction of diazoazobenzole with beta-naphtholedisulpho acid.

233,497.—*Lubricant.* SAMUEL FRAZER.

A compound of sal-soda, water, lime, and four qualities of rosin-oil, described in the specification.

233,502.—*Compound for pavements, drain-pipes, etc.* J. PIERSON GRANT.

Coal-tar, asphaltum, sulphur, iron filings, rosin, linseed-oil and sand.

233,505.—*Apparatus for extracting metals from ores.* THURSTON G. HALL.

233,558.—*Process of treating pyroxyline in the manufacture of plastic compounds.* JULES and CHARLES SCHMERBER.

233,568.—*Process of and furnace for reducing oxides to the metallic state.* THOMAS SOUTHAN.

Refers to the reduction of iron ore, without the production of slag.

Oct. 26, 1880.

233,600.—*Process of reclaiming rubber from old and waste vulcanized rubber, and utilizing the same in manufacturing rubber goods.* JOHN H. CHEEVER.

The old vulcanized rubber is boiled in raw petroleum.

233,600.—*Galvanic Battery.* JOSEPH H. CHEEVER.

233,680.—*Manufacture of carbon bisulphide and sulphuric acid from pyrites, and apparatus therefor.* ELIE C. E. and LÉON L. LABOIS.

Part of the sulphur is extrated from pyrites by distillation, and serves for the manufacture of carbon bisulphide in the ordinary way; the rest is obtained by roasting, and used in the manufacture of sulphuric acid.

233,716.—*Compound for Soap.* JOHN F. TYRRELL.

233,728.—*Condensed cider compound.* EDWIN R. CLEVELAND.

Concentrated cider or apple juice with salicylic and aromatic sulphuric acids.

233,750.—*Desiccating eggs.* HALVOR HALVORSON.

233,799.—*Extracting gold and silver from ores.* JAMES V. POMEROY.

Introduces chlorine gas or chloride of lime with an acid, into the pulverized ore with the mercury in the amalgamating process.

233,860.—*Process and apparatus for generating gas.* ERAZM J. JERZMANOWSKI.

A fluxing material is added to the coal used for making water gas, which, uniting with the ash of the coal, produces a fluid slag. To prevent the latter from clogging, a bath of molten iron is kept in the base of the furnace.

233,861.—*Process of producing hydrogen.* ERAZM J. JERZMANOWSKI.

A mixture of water gas and superheated steam is passed over highly heated blocks made essentially of alkaline aluminates. Under these conditions the carbonic oxide is transformed into carbonic acid, which is afterwards eliminated by absorption.

233,862.—*Process of and apparatus for making illuminating gas.* ERAZM J. JERZMANOWSKI.

233,875.—*Mixed phosphatic manure.* JOHN C. PERKINS.

233,885.—*Art of preparing waste vegetable products for use and transportation.* WM. HARROLD SMITH.

Compresses the material in a heated state (150—500° F.) in moulds, and forms solid blocks of it, without any other admixture.

233,886.—*An article for cattle food.* WM. HARROLD SMITH.

Compressed bran.

233,887.—*Fuel.* WM. HARROLD SMITH.

Compressed saw-dust.

233,900.—*Producing aluminium bronze.* JAMES WEBSTER.

Copper electroplated with aluminium is melted altogether with an alloy of copper, nickel, aluminium and tin.

233,916.—*Manufacture of aluminous cake.* GEORGE F. BIHN and ROBERT HEERLEIN.

Sulphate of alumina containing iron is treated in a semi-fluid state with alkaline sulphites.

233,948.—*Manufacture of artificial marble or stone.* ALVIN M. RICHARDSON.

233,960.—*Artificial stone and marble.* WILLIAM H. YOUNG.

234,025.—*Apparatus for burning sulphur to produce sulphuric acid.* HENRY GLOVER.

Foreign Patents.

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

KARL MOELLER, Kupferhammer, near Brackwede: *Improvements in apparatus for filtering vapors and gases.* (Germ. P., No. 10451, Jan. 22, 1880, being additional Patent to Germ. P., No. 8806. See this JOURNAL, **2**, 191.)—The additions relate to arrangements for keeping the filters moist, for scraping off dust and soot, and for regulating the temperature.

T. H. COBLEY, Dunstable: *Method of working up manure straw.* (Engl. P., No. 3312, August 16, 1879.)—The manure is digested with calcium sulphide and boiled with water, to obtain ammonia. After separating the liquid, the straw is treated with alkali, and the cellulose which results is used in the manufacture of paper.

PAUL STUBE, Paris: *Manufacture of illuminating and heating gas.* (Engl. P., No. 3302, August 16, 1879.)—Water gas, prepared in a retort from heated coal and steam in the usual way, is carburetted in a second retort by means of oil, fat, rosin, tar, etc., in the usual way, and freed from carbonic acid by milk of lime in the usual way. The carbonic acid, however, is removed by means of an ammoniacal solution of copper, which can be regenerated by heating. Besides this, the patent contains Mallet's process for preparing oxygen from air, and Tessié du Motay's method of obtaining it also from air, by means of alternate treatment of heated sodium permanganate with air and superheated steam.

EMIL DREYSSIG, Ravensburg *Tar varnish.* (Germ. P., No. 10685, Nov. 13, 1879.)—Tar heated to 70° C., with equal weight of hydraulic lime, Roman or Portland cement. This varnish is not acted upon by acids, and is adapted for coating wood exposed to water, etc.

JACOB ENGELS, Kalk: *Explosive made from pyroxyline, nitroglycerine, pyropaper, xyloidine, nitromannite and silicate of soda, which explodes at a low tempera-*