PROCESS OF MAKING HIGHER FATTY ACID ANHYDRIDES. H. F. Oxley and E. B. Thomas (Celanese Corp. of America). *U. S. 2,246,599.* Process for the production of anhydrides of carboxylic acids which comprises causing a carboxylic acid to react with the anhydride of a lower fatty acid to produce the anhydride of the higher acid together with the lower acid, by introducing the vapors of the lower anhydride below the surface of a body of the higher acid maintained in the molten state above the boiling point of the lower anhydride, and allowing the vapors of the lower acid produced to escape from the reaction zone.

PROCESS FOR THE RECOVERY OF GLYCEROL FROM STILL RESIDUES FROM FERMENTATION PROCESSES. R. A. Walmesley (Imperial Chem. Industries, Ltd.). *U. S. 2,235,056.* A process for the recovery of glycerol from still residues comprises the step of extg. the glycerol-contg. liquor with a solvent selected from the group consisting of aniline, the toluidines and quinoline and recovering the dissolved glycerol by treating with cold water.

Abstracts

Soaps

Edited by
M. L. SHEELY

SOAP

PROPOSE P-S-626 REVISIONS. *Soap 17,* No. 7, 39 (1941). Revisions proposed for the Federal specification for powdered toilet soap (for dispensers). Specification P-S-626, make provisions for borax soap (Type II) in addition to straight soap, now known as Type I. A tentative draft of the proposed revisions, dated May 23, gives the following general requirements for Type II powdered toilet soap: "Borax Soap: Powdered toilet soap for use in dispensers (Type II) shall be a uniform mixture of a thoroughly saponified soap and borax ($Na_2B_4O_7$:10 H_2O); shall be uncolored and mildly perfumed unless otherwise specified; shall be a uniform, free-flowing, non-caking powder; and shall lather freely when used with cold soft water." Detailed requirements add that the material shall be free-flowing and no-caking when used in a dispenser conforming to Type III or IV of Federal specification FF-D-396; that it shall contain not less than 23% and not more than 27% of anhydrous soap, and not less than 72% of borax; or more than 77%; that free alkali shall not exceed 0.1%; that matter insoluble in water shall not exceed 0.2%; that rosin, sugar, and foreign matter shall not be present; and that the material shall meet the following fineness requirements:

Retained on	Min. Per cent	Max. Per cent
No. 12 sieve	....	0
No. 45 sieve	5	....
No. 100 sieve	45	....

Another requirement not included in the old specification is that the anhydrous soda soap content of the straight soap (Type I) shall be not less than 91%.

THE EFFECT OF SALTS ON DETERGENCE. R. C. Palmer. *J. Soc. Chem. Industry 60,* 56-60 (1941). The effect of added salts of different valency types on the detergent power (ability to remove olive oil from wool) of a few com. detergents of the sulphonated alc. type has been investigated. Mn, Ca and Ba salts increase the detergent power just as readily as Na salts but are effective in much lower concns. than Na salts. Too great a concn. of any salt decreases the detergent power. The view that micelles (of the detergent) play a part in detergence is criticized, and an explanation of the salt effect is put forward.

THE EFFECT OF pH ON DETERGENCE. R. C. Palmer. *J. Soc. Chem. Industry 60,* 60-2 (1941). The variation of detergent power (ability to remove olive oil from wool) of a few com. detergents and Na oleate has been studied. An increase of pH has only a small effect on solns. of detergents of the sulphonated alc. type (except Igepon T), but a large effect on Na oleate solns. A decrease in pH results in poorer detergence however. These results are discussed in terms of adsorption of detergent at the wool/water interface.

AN ELECTRON MICROSCOPE STUDY OF CURD FIBERS OF SODIUM LAURATE. L. Marton, J. W. McBain and R. D. Vold. *J. Amer. Chem. Soc. 63,* 1990 (1941). Electron microscope photographs of a curd of sodium laurate show that it consists of a mass of fibers which are thin ribbons whose widths tend to be integral multiples of approximately twice the length of the sodium laurate molecules. The fibers branch to form a felt, which accounts for the rigidity of the curd. The fiber junctions also give rise to many capillary spaces of variable diameter in which water can be retained, even at a very low relative humidity. Some of the sodium laurate apparently is not a part of the fibrous structure but is present as granules 100-200 A. in diameter irregularly spaced along the fiber.

PATENTS

PROCESS OF MAKING SOAP. Benjamin Thurman (Refining, Inc.). *U. S. 2,242,187.* The process of producing soap, which comprises, mixing substantially anhydrous powdered caustic alkali with a saponifiable material substantially free of uncombined fatty acids, and heating a flowing stream of said mixture in the absence of substantial quantities of water and in the presence of an inert viscosity-reducing liquid comprising kerosene to a temperature sufficiently high to cause said alkali to react with said saponifiable material to produce substantially anhydrous molten soap and pure glycerine. At the high temperatures used, the Varrentrapp reaction occurs, which results in a shift in the double bond, and a fission of the carbon chain. This is not necessarily undesirable, as it reduces the unsaturation of the fatty acid radicals in the soap. It can be avoided, however, by rapidly raising the temperature above the melting point of the powdered anhydrous caustic alkali and then immediately separating the volatiles from the resulting soap in the vapor separating chamber, and quickly cooling the soap thus formed. The caustic, also, is not present in excess to accelerate the reaction.

METHOD OF PREPARATION OF A SOAP. William De Laney (Hercules Powder Co.) *U. S. 2,242,289.* A method of preparing a soap solution which comprises dispersing in water a gasoline-insoluble pine wood resin, produced by extracting resinous wood with coal

tar hydrocarbon, removing said hydrocarbon by evaporation, extracting the residue with a petroleum hydrocarbon and recovering a gasoline-insoluble resin, carrying out said dispersion in water with about 10 to about 60% solids concentration, and saponifying at room temperature with an aqueous potassium hydroxide solution of about 20 to about 50% concentration to give a substantially neutral soap. *U. S. 2,242,529* (Arthur Langmeier to Hercules Powder Company) covers a soap from the resin obtained as a by-product in the refining of FF wood rosin to a pale grade of wood rosin.

DETERGENT. Fred Muncie (Colgate-Palmolive-Peet Co.) *U. S. 2,242,979.* An apparatus for continuously forming a detergent product that comprises a mixer for reacting glycerine and sulphuric acid with fatty oil, heat transfer means within the mixer to maintain the desired temperature, and a neutralizer including an agitator, a cooling means and means to add a neutralizing solution in just sufficient amount to neutralize the reaction product.

MANUFACTURE OF INSULATING MATERIAL. Albert L. Clapp. *U. S. 2,225,100.* A process which comprises thoroughly soaking a mass of aggregated mineral wool fiber with aqueous slime of water-soluble fatty acid soap (tall oil) in amount in excess of that necessary to envelop the fiber substantially uniformly; removing excess slime from said mass; adding the slime-soaked mass to an already-prepared suspension of asbestos in lime water, thereby converting aid slime into calcium fatty acid soap slime; agitating said mass in said water to liberate substantially completely the fibers of said mass and thereby to produce an aqueous suspension of the substantially completely liberated fibers, said agitation being controlled to preserve largely the original fiber length of said mineral wool fibers; and sheeting the mixed fibers from the resulting aqueous suspension.

BRILLO SOAP PADS. Crosby Field and Gerald Toole (Brillo Manufacturing Co., Inc.). *U. S. 2,240,114* and *U. S. 2,240,135.* A method of making fluffy metal wool strips into soaped metal wool pads for cleaning purposes, which method includes stretching the strip, impregnating said strip, under pressure, with more hot fluid soap than is desired; squeezing out excess soap by constant resilient pressure maintained independently of variations in thickness or resilience of the strip; partially drying the soaped ribbon by applying heat first to one surface and then to the other surface thereof; severing the partially dry soaped ribbon into suitable lengths suitable for a pad, and assembling it in layers; and compressing the layers to a predetermined volume required to form a pad of predetermined, substantial, porosity and elasticity.

LAUNDERING AND WASHING COMPOUND. Howard Bishop (Pennsylvania Salt Manufacturing Co.). *U. S. 2,241,580.* The process of laundering goods, which comprises subjecting the goods to the usual soap treatment and to subsequent rinses to remove the major part of the soap but retaining some soap in the goods, thereupon subjecting the goods to the action of a solution, whose pH is 4 or less, of zinc silico fluoride adapted to impart an acid condition to the fabrics while forming an anti-irritant, insoluble, non-sticky precipitate with the soapy material in the goods, and concluding the laundering process by separating the goods from said solution, hereby the goods at the conclusion of the laundering process are left on the acid side.

MANUFACTURE OF SOAP AND RECOVERY OF GLYCERINE AND OTHER VOLATILE UNSAPONIFIABLES. Henry W. F. Lorenz. *U. S. 2,232,544.* The continuous process of producing soap from oxygen-containing organic bodies derived from the oxidation of petroleum oils, paraffin wax and other high-boiling hydrocarbon oils, and fats, containing high molecular weight saturated and unsaturated mono-carboxylic acids, oxycarboxylic acids, lactones and the like, which consists in separately conducting a stream of said oxygenated organic bodies heated to a temperature above the melting point of the resulting anhydrous soap and a heated stream of a saponifying agent to a compound mixing and spraying means, whereby said stream of oxygenated bodies and of the saponifying agent are caused to intimately commingle, to react and to be sprayed, directing said spray more or less counter-currently in commingling relationship with a current of superheated steam passing through an operating chamber, conducting off to a condenser the steam and accompanying volatile unsaponifiable matter present and formed by the saponification reaction, permitting the sprayed particles of soap to precipitate by gravity through a cooler atmosphere of steam, in order to solidify said individual particles of soap, and collecting and removing the soap formed.

PROCESS FOR PREVENTION OF RANCIDITY IN SODIUM SOAPS. Victor Dabsch and Julius Cato Vredenburg. *Ger. 682,329.* Process for prevention of rancidity in sodium soaps which contain in their fatty mixture liquid fatty oils with an iodine no. of 70 or more, characterized by the addition, after removal of impurities, of a small amount of glycerine or other polyhydric alcohols, separately or in admixture, together with a small amount of trisodium phosphate. This process is applicable to soaps containing up to 55% of liquid fatty oils in the fatty mixture.

SOAP SPRAY. Charles Hagopian. *U. S. 2,238,588.* In a device for delivering plain and soapy water, a soap chamber, a connecting member secured thereto having a tube or faucet connecting means at its top end and, outwardly and inwardly projecting flanges at its lower end, said inwardly projecting flange terminating in an aperture, a valve tube in alignment with said aperture, a valve closing said valve tube to direct water through the soap in said soap chamber, said soap chamber having perforations in its bottom surface for spraying soapy water, and a discharge tube secured to said valve tube whereby a single stream of plain water may be delivered from said valve tube.

COMPOSITION FOR COATING METAL BEING FORMED. Harold R. Hurd. *U. S. 2,238,738.* Wire-drawing lubricant comprising 28 parts of a vegetable soap, 2 pts. of ferrous oxide, and 70 parts of lime water, in which a dispersion of lime and ferrous oxide in water is stabilized by means of the soap.