ABSTRACTS

Soaps

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Improvements in Soap Flakes, Curled Flakes. *The Perfumery and Essential Oil Record* 25, 11, 363 (1934).—One of the most valuable properties of soap flakes is their rapid solubility in water, and some of the flakes now being produced show a very marked improvement in this respect, dissolving very rapidly even in cold water. Among the ways in which this quick solubility may be brought about are (1) the production of the soap from material which gives a readily soluble soap, e. g., coconut or palm kernel oli, and (2) reducing the size and thickness of the flakes. These dimensions are limited, however, by the necessity for having a fairly strong flake which shall not break or powder too easily, or else the volume contracts and the carton of flakes when opened appears to have been incompletely filled. To obviate this difficulty, and produce smaller flakes which shall at the same time have the requisite strength, an ingenious idea has recently been embodied in a patent by H. P. Forte, assignor to Lever Brothers Company (U. S. P. 1,942,418). The flaked soap as it leaves the roll of the mill is hot and in the form of curved or arched flakes, and Forte retains this curvature of the flakes by rapidly transferring them to a cooling tower, where they fall through a current of cold air, i. e., at about 85-90° F., or as he describes it, room temperature. Such curled flakes may be made smaller, both in size and thickness than the ordinary flakes, without any tendency to crumble, a length of 0.25 in., and thickness of 0.002 in. being suggested in the specification as suitable, as compared with a normal length of about 0.5 in., and thickness 0.0045 in. The new flakes retain their shape and bulk volume in the carton, and when thrown into water do not lump together.

Synthesis of Glycerides by Means of the Twitchell Reagent. S. L. Ivanov and P. T. Klokov, *J. Applied Chem.* (U. S. S. R., 7, 171-7 (1934).—Glyceride synthesis in the presence of the Twitchell reagent is almost complete in 5-7 hours at 100° when carried out in a stream of CO_2. Linolenic acid reacts somewhat more rapidly than does oleic acid. Addition of linolenic acid to mixtures of fat acids derived from sunflower and castor seeds promotes the reaction and the products are characterized by refractive indexes near those of the natural oils. By use of almost theoretical amount of glycerol, triglycerides are obtained. The attempt to prepare the glycerides of cacao butter and coconut oil from a mixture of their acids yielded a product that differed slightly from the original substances in melting point. (C. A. 28, 22, 7571 (1934.)

Soap Boiling in Covered Kettles. R. Heublyum. *Seifensieder-Ztg.* 61, 611-12 (1934).—The Russian practice of boiling soap in kettles having covers equipped with openings for charging various materials and with a gas vent leading to the outdoors not only improves conditions in the kettle room (no more noxious mists, etc.) but also makes it possible to shorten the duration of the boiling by 1 to 1½ hours. When saponifying with carbonates, covering the kettle permits the CO_2 given off to be led away and used to precipitate $Ca(OH)_2$ in the glycerol water. (C. A. 28, 22, 7572, 1934.)

Common Salt in Milled Toilet Soaps and Its Determination. I. Davidsohn. *Seifensieder-Ztg.* 61, 512-13 (1934).—Production of a non-cracking milled soap depends largely on the proper control of 3 factors; the type of fat saponified, the milling and compressing machine used, and the NaCl content of the finished product. The value of a rapid reliable method for determining small amounts of NaCl in soap is therefore evident. Two variations of Bennet's method (cf. *C. A.* 15, 3761) are recommended. (1) The sample is dissolved in H_2O, treated hot with an excess of $Mg(NO_3)_2$ with or without Na_2CO_3, filtered and washed. The filtrate and washings are titrated with $AgNO_3$, Na_2CrO_4 being used as indicator. This method is applicable to soaps containing water glass or talc. (2) Instead of filtering after adding the Mg salt, the solution together with any precipitate is boiled 10 minutes and then titrated with $AgNO_3$. Omission of the boiling or filtering operation causes low results. (C. A. 28, 22, 7572 (1934.)

Spotting in Toilet Soaps. Julius Schaal. *Soap* 10, No. 10, 17-18 (1934).—If the soap base and its perfume are correct, the cause of spot formation is generally found in the soap die. Steel dies are safe; Cu and brass dies are dangerous. Proper fitting of the die in the press is important as well as having proper plate inserts and supporting plates so that when pressure is applied there will be no shifting of parts causing friction between the frame and the die which can later produce catalytic action and spots. Improper care of the die after use will produce corrosion and subsequent spotting. (C. A. 28, 22, 7572 (1934.)

Fat Acid Distillation by a New Rapid Thin-Film Method. G. Knigge. *Seifensieder-Ztg.* 61, 668-9 (1934).—The preheated material on entering the vaporizer is spread over a large vertical surface and the heat of vaporization quickly supplied by superheated steam and partly by radiation from another surface heated, e. g., by hot oil, whose temperature can be readily controlled. This arrangement avoids overheating. An efficient plant handling as little as 50 kg. fat acid per hour can be built. (C. A. 28, 22, 7567 (1934.)

Soap Technology. K. L. Weber. *Seifensieder-Ztg.* 61, 489-91 (1934).—Weber doubts that all cases of spot formation are due solely to rancidification caused by air oxidation. Because of the shape and distribution of such spots and on account of the fact that they may occur without concurrent rancification, Weber suggests that spots may in some cases be due to the formation of soaps of heavy metals—especially Fe. The latter may enter the cake in the form of rust during the preparation and working of the soap or may be present either dissolved or suspended in the soap stock. A tendency toward sweating favors spot formation. (C. A. 28, 22, 7572 (1934.)

Sweating of Soaps. Morath. *Seifensieder Ztg.* 61, 553, (1934). —The greater tendency of modern soaps to sweat as compared with soaps made before the war is suggested as being due to different raw materials (increased use of waste, foots, fats containing hydroxyaliphatic acids, as well as impurities in the alkali used today) and to changed methods of working and packing the soap. (C. A. 28, 22 7572 1934.)

OIL PATENTS

Method for Purification of Vegetable Oils. U. S. 1,973,790. Leo F. Appleton, Cleveland, Ohio, to Sherwin-Williams Company, Cleveland, Ohio. Method purification vegetable oils; mixing in with oil suitable amount of phosphoric acid to react with the impurities and glycerides in the oil to produce free fatty acid. (*Chemical Industries*, 35, 5, 427 (1934.)

Oils and Fats. Allen D. Whipple (to the Mantle Lamp Company of America). British 410,834, May 18, 1934. Divided on 410,837 (C. A. 28, 65821). Discoloration of animal or vegetable oils or fats on exposure to air and light is prevented by incorporating not more than 0.05% of colloidal Cu, Co, Cd, or Ag, or of carbonate of Co, Cu, Li, Mn, Cd, Ba, Bi, nitrate of Ca, Be, Li, acetate of Na, Cu, Mn, hydroxide of Co, Be, Cu, Th or of a mixture of $CoCO_3$ with or without Bi subcarbonate. Lard, cottonseed, China wood and linseed oils are specified for treatment. (C. A., 28, 21, 7050, 1934.)

Purifying Fatty Oils. British 407,995. Convention date, October 6, 1931. Sharples Specialty Company, 23rd St., Philadelphia, U. S. A., assignees of E. M. James, Moylan, Pennsylvania, U. S. A.—Fatty oils such as those from cottonseed, corn, soya bean, coconut, palm, peanut, lard, whale, fish, and tallow, are purified by a continuous process consisting in rapidly and continuously producing a fine dispersion of alkali in a stream of the oil, passing the emulsion formed through a heating apparatus where it is rapidly heated to 115-160° F. to destabilize the emulsion, and immediately separating the impurities in a centrifuge. Crude fatty oil at a temperature of below 80° F. and preferably of 65-75° F., and 4-25 per cent by weight of caustic soda solution of 6-20° Be, are fed from tanks and through portioning device, an agitating device such as a Johnson turbo-mixer, and heated coils, to a centrifuge delivering purified oil and sludge, the agitating and heating steps occupying 1-5 minutes and ½-2 minutes respectively. The sludge delivered may be diluted with water, heated, and separated by a centrifuge into diluted soap stock and an emulsion, which is treated with brine and again centrifuged to produce brine and purified oil. The centrifugal separator described in Specification 153,041 (Class 23) may be used.

Splitting Vegetable and Animal Oils and Fats to Produce Fat Acids and Glycerol. Erwin F. Spellmeyer. U. S. 1,976,376, October 9, 1934. An accelerating current is passed through the material to facilitate splitting of olive oil or other oil or fat (suitably in the presence of water together with a small proportion of H_2SO_4 and Twitchell reagent and with use of Cu electrodes). Several examples with details of procedure are given.