

UNITED STATES PATENT OFFICE.

CARLETON ELLIS, OF LARCHMONT, NEW YORK.

SOAP FOR PAINT, VARNISH, &c.

1,000,966.

Specification of Letters Patent. Patented Aug. 15, 1911.

No Drawing.

Application filed December 18, 1908. Serial No. 468,153.

To all whom it may concern:

Be it known that I, CARLETON ELLIS, citizen of the United States, residing at Larchmont, in the county of Westchester and State of New York, have invented certain new and useful Improvements in Soap for Paint, Varnish, &c., of which the following is a specification.

This invention relates to a soap composition for cleaning varnish and has for its object the production of a soap which is substantially free from destructive action on varnish and paint coatings.

Ordinary soap is of a strongly alkaline character and many attempts have been made to neutralize soap to overcome the destructive effect of the free alkali. It is impossible to completely neutralize soap solution by addition of stearic or oleic acid and the like owing to the action of hydrolysis. The introduction of albuminous matters is in a measure palliative but even with treatment of this character, the soap product will be found to act on paint and varnish to a considerable extent.

My invention has for its object the production of a soap, which although even actually alkaline in reaction is without harmful effect on paint or varnish. It has been heretofore supposed that since linseed oil was the base of paint and varnish, generally speaking, that a soap made from linseed oil would not be destructive to the finish coating. For that reason, numerous soaps have been made by the saponification of linseed oil with alkali. These soaps generally are completely saponified compositions, having strongly alkaline reaction and are, so far as I am advised, almost as destructive to paint and varnish as soap made from ordinary fats and greases.

In carrying out my invention, I aim to satisfy the free alkali of the ordinary soap by the introduction of an excess of linseed oil and resinous material, these being the normal and essential constituents of paint or varnish. By so doing, I produce a soap in which the activity of free alkali is greatly reduced or even entirely overcome by virtue of this method of satisfying the free alkali by means of an excess of linseed oil and resinous bodies.

A composition illustrative of my invention is made by dissolving 4 lbs. of tallow soap in 2 gallons of water, and adding 2 lbs. of a mixture composed of equal parts of lin-

seed oil and rosin. The latter mixture is preferably heated before it is introduced into the soap solution, so as to melt the rosin. It is introduced into the soap solution gradually with stirring and the composition is allowed to cool, agitating meanwhile, until of a pasty consistency. By this manner of operation, the oil and rosin are emulsified thoroughly and distributed throughout the entire mass uniformly. Some of the free alkali of the soap saponifies and combines with the linseed oil and resin while the uncombined or hydrolyzed portion is so affected by the presence of the linseed oil and rosin in the proportions specified that the resulting soap does not affect the gloss or durability of paint or varnish even though used repeatedly thereon.

Another composition illustrating my invention is made by dissolving 6 lbs. of palm oil soap with soda as the saponifying alkali, in about 2 gallons of water, adding $\frac{1}{2}$ lb. unneutralized sulfonated oil. In a separate receptacle, a mixture of $\frac{1}{2}$ lb. rosin, $\frac{1}{2}$ lb. gum kauri and $\frac{3}{4}$ lb. linseed oil are melted together, or if preferred, the kauri and rosin may first be melted and the linseed oil added thereto. The palm oil soap solution is raised to a temperature of 70 or 80° C. and the melted gum and oil mixture added thereto with thorough agitation. The mixture is cooled with slow agitation and may then be packaged for use.

Ordinary varnish may be used as a neutralizer in lieu of linseed oil and rosin.

The composition may also be used as a polishing detergent by the addition of polishing abrasives such as tripoli, infusorial earth, silex, etc., and various stiffening or filling materials, such as talc, and the like may be introduced. A suitable polishing detergent is made by dissolving 2 lbs. of tallow soap, 2 lbs. of linseed oil soap and 4 lbs. of cotton seed oil soap in about 2 gallons of water. To this is added, 2 lbs. of a mixture composed of equal parts of linseed oil and rosin and the composition thoroughly agitated until it begins to thicken. When thick enough to hold the polishing abrasive in suspension, 2 lbs. of finely levigated tripoli are added and the mixture stirred slowly until cold. It is possible also for certain purposes to introduce a quantity of petroleum oil where a very oily soap is required. For this purpose, I find the following composition effective: 4 lbs. tallow

5 soap and 4 lbs. cocoanut oil soap are dissolved in 2 gallons of water by the aid of heat. 1 lb. of linseed oil, 1 lb. rosin, $\frac{1}{4}$ lb. of Manila copal and 2 lbs. of 25° paraffin oil are melted and then introduced into the hot soap solution and this mixture agitated and cooled as above set forth.

10 Various other oils preferably those that are commonly used in paint or varnish including Chinese wood oil, corn oil, cotton seed oil and the like may be made use of as well as various other resins, such as shellac, galipot resin, and other varieties of copals. The soap which I prefer to use is made from 15 animal oil such as lard or tallow saponified either with soda or potash or with mixtures of these two alkalis although as previously indicated other oily soap stocks such as cocoanut, corn, cotton seed, fish oils and the like may be employed.

20 In order to make the linseed oil and resinous matters as nearly alike in chemical compositions to those present in the paint and varnish, I modify the composition under 25 certain conditions by making use of linseed oil and rosin which has been greatly thickened or oxidized by the passage through the oil and resin mixture of a current of air, so as to form linoxyn bodies and the like, similar to the oxidation product of oil and resin 30 in finish coatings. A composition illustrating this feature of my invention is made by melting equal parts of rosin and linseed oil, heating to a temperature of about 60° to 70° C. and adding a manganese catalyzer and 35 blowing air through the mixture until greatly thickened. This mixture is then spread out in thin layers to harden and dry. The gummy films or solid flakes of this composition are then introduced into a soap 40 solution containing about 4 lbs. tallow and cocoanut oil soap per gallon of water and thoroughly beaten or kneaded until the oxidized linseed oil is thoroughly incorporated.

Or the thick oil obtained from the treatment 45 by the means of air current may be thoroughly introduced into the soap solution without previously allowing the drying to progress to a point where the oil solidifies.

To recapitulate: My invention, broadly 50 speaking, consists in making an ordinary soda or potash soap, taking care to have present as little free alkali as possible, and in adding to this soap, a quantity of linseed oil and resinous material such as is ordinarily present in varnish and paint, emulsifying such materials into the soap so as to 55 form a seemingly homogenous pasty mass or solid which contains an excess of those very oils and resinous materials which are present in paint and varnish, thereby preventing such alkali as may be set free by hydrolysis or dilution of the soap in application from exerting any harmful action on the linseed 60 oil and resins of finish coatings to which it may be applied. 65

What I claim as my invention is:—

1. A composition for cleaning finish which comprises soap, unneutralized sulfonated oil, water and unsaponified oxidized linseed oil.

2. A composition for cleaning finish which consists in soap, water, sulfonated oil and the principal constituents of paint and varnish including linseed oil and resinous 75 material, all incorporated to make a paste.

3. A composition for cleaning finish which comprises soap, water, linseed oil and sulfonated oil, the amount of said linseed oil being sufficient to more than satisfy the 80 alkali set free by hydrolysis on dilution.

In testimony whereof I have affixed my signature in presence of two witnesses.

CARLETON ELLIS.

Witnesses:

FRANCES I. NEWMAN,
H. O. CHUTE.