UNITED STATES PATENT OFFICE.

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NON-ODOROUS PHENOL SALVE AND OINTMENT.

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To all whom it may concern:

Be it known that I, NATHAN SULZBERGER, a citizen of the United States of America, residing at No. 34 West Seventh-first street, New York city, in the county of New York and State of New York, have invented new and useful Improvements in Making Non-Odorous Phenol Salves and Ointments, of which the following is a specification.

The well established valuable antiseptic and analgesic qualities of the phenols (carbolic acid, cresols, etc. and derivatives of same) and their mixtures are offset detrimentally to their more general use by their objectionable and very penetrating odor, which oftentimes clings to the skin even after the salve has been removed and washed off. This objection reveals itself most particularly when the phenols are used in form of salves and ointments since in this particular form the phenols are mostly used externally on sores and wounds of the skin.

It has now been found that salves and ointments, etc. still possessing the antiseptic and analgesic action of the phenols can be prepared to take the place of all such ointments, etc. heretofore manufactured with the strong smelling phenol compounds themselves by using their odorless higher fatty acid esters, such as for instance, the phenol esters of palmitic and stearic acids (and their mixtures).

Phenyl-stearate can be obtained by heating together five hundred gr. of dried stearic acid with 100 gr. phosphorus trichlorid for several hours at from 80 to 90 degrees C. The stearic acid chlorid, freed from the excess of the phosphorus trichlorid and from phosphoric acid is then brought into reaction with about 200 gr. phenol and after the spontaneous evolution of hydrochloric acid has ceased, is heated for 3 to 4 hrs. to 85 to 90 degrees C. The product carefully washed and dried is ready for use. Phenyl oleate can be prepared in similar manner: In one case 600 gr. of dried oleic acid were heated together for 5 to 6 hrs. with 110 gr. phosphorus trichlorid in a flask with reflux condenser. The chlorid freed from the excess of phosphorus trichlorid and from the formed phosphoric acid was brought into reaction with 220 gr. phenol and after the evolution of hydrochloric acid had ceased at ordnary temperature, the temperature was gradually raised to about 85 to 95 degrees C. and kept there for about 5 hrs. Finally the temperature was raised to about 130 degrees C. for about an hour, when the finished ester was carefully washed and dried. Derivatives of these phenol fatty acid esters, which may also be used in making these salves and ointments, can be made and prepared in similar manner. All these salves etc. and also fats and oils containing larger or smaller amounts of these esters, will not turn rancid. These odorless non-irritant esters though melting generally at too high a degree to make their employment in the pure state (phenylstearate melting at 52 degrees C., phenylpalmitate melting at 45 degrees, etc.) as salves and ointments for the skin very desirable, by being mixed with larger or smaller percentages of animal, vegetable or mineral fats and oils (such as for instance, lanolin, vaseline, etc.) can be used in making salves and ointments of any desired softness and consistency. Into such salves and ointments can also be mixed a great number of chemicals of pharmaceutical value, if so desired, since these fatty acid esters do not interfere with the action of a great many of these bodies. For example, to obtain a salve of proper consistency containing phenylstearate, I can melt together about equal parts of phenylstearate and liquid petrolatum (or benzoinated lard or lanolin or white vaseline). To obtain a salve containing some chemical substance besides, I cite for instance the following formula for a borax slave; 40 parts phenylstearate 30 parts liquid petrolatum, 10 parts white wax and 20 parts of an aqueous saturated solution of borax. These salves are all white bodies unless colored through the addition of foreign matter. They may be perfumed wherever desired. Salves can also be made by mixing liquid phenol oleates with the solid fatty acid esters. These latter need contain no foreign fat or oil at all and therefore consist of much greater percentages of phenol. In making a salve with the liquid phenyl oleate the following formula can be used: 40 parts phenyl oleate, 20 parts wax and 40 parts lanolin.

Instead of using the pure fatty acid phenol esters, the phenol esters made from the crude or commercial acids (as such fatty acids are for instance obtained by saponifying animal and vegetable fats and oils) may be employed in making these salves and ointments. Such salves and ointments may also contain mixtures of fatty acid esters made from a

mixture of phenols (for instance, when such esters are made from mixtures of cresols).

I claim:

1. An antiseptic salve of the nature disclosed, composed of phenyl-stearate melting at about 52° C. and having mixed therewith some suitable unguent adapted to lower the melting-point of the phenyl-stearate and to impart to the resultant compound a grease-like consistency.

2. A non-odorous non-irritant antiseptic salve of the nature disclosed for medical and pharmaceutical use, composed of a comparatively hard ester of a phenol and a fatty-acid in mixture with a sufficient quantity of a suitable unguent to impart to the resultant mixture a melting point of approximately body-temperature; said phenol having the capacity of forming with stearic acid an ester melting at not less than about 40° C. and said fatty-acid containing more than 12 atoms of carbon.

3. A non-odorous antiseptic composite salve of the nature disclosed for medical and pharmaceutical use, composed of an ester of a phenol and a fatty-acid having more than twelve atoms of carbon, said ester having a melting point of not less than about 40° C., in mixture with a quantity of a lower-melting suitable unguent sufficient to impart to the resultant mixture a salve-like consistency enabling it to melt and liquefy when rubbed on the skin.

4. A non-odorous non-irritant composite antiseptic salve of the nature disclosed for pharmaceutical and medical use, composed of an ester of a phenol and a fatty-acid having more than twelve atoms of carbon, in mixture with a sufficient quantity of a suitable unguent to impart to the resultant mixture a melting point of approximately body-temperature whereby said mixture may have a salve-like consistency enabling it to be readily smeared on the skin; said phenol being mono-hydric and having the capacity of forming with stearic acid an ester melting at not less than about 40° C.

5. A non-odorous non-irritant composite antiseptic salve of the nature disclosed for pharmaceutical and medical use, composed of an ester of a mono-hydric phenol and a fatty-acid having more than twelve atoms of carbon, said ester having a melting point of not less than about 40° C., in mixture with a lower-melting suitable unguent in such proportions as will impart to the resultant mixture a salve-like consistency enabling it to be readily smeared on the skin and be absorbed thereby.

6. An antiseptic non-irritant composite salve of the nature disclosed for pharmaceutical and medical use, composed of an ester of a phenol and a fatty acid in mixture with a sufficient quantity of a suitable unguent to impart to the resultant mixture a melting point of approximately body-temperature enabling it to normally possess a salve-like consistency and have the capacity of being readily smeared on the skin; said fatty acid having more than twelve atoms of carbon and said phenol being such as will form with stearic acid a solid ester melting at not less than about 40° C.

7. An antiseptic non-irritant composite salve of the nature disclosed for pharmaceutical and medical use, composed of a solid ester of a mono-hydric phenol and a fatty acid having more than twelve atoms of carbon, in mixture with a sufficient quantity of a suitable unguent to impart to the resultant mixture a melting point of about body temperature.

8. An antiseptic non-irritant non-odorous composite salve of the nature disclosed for pharmaceutical and medical use, composed of an ester of a mono-hydric phenol and a fatty acid, in mixture with such a proportion of a suitable unguent as will suffice to impart a salve-like consistency to the resultant mixture and enable it to be readily smeared on the skin.

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Witnesses:
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