

# UNITED STATES PATENT OFFICE.

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## EMULSION AND PROCESS FOR PRODUCING THE SAME.

No. 931,520.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JULIUS STOCKHAUSEN, a subject of the German Empire, residing in Crefeld, Germany, have invented a new and useful Emulsion and Process for Producing the Same; and I do hereby declare the following to be a full, clear, and exact description of the same.

It is well known that watery emulsions of carbon tetrachlorid can be produced by means of sulfonated oils or fats, especially by Turkey-red oils, or by soaps which are obtained by saponifying, at comparatively high temperatures, sulfonated fats or oils with 6% or more sodium hydrate. The present process is based upon the discovery that, in a similar way, watery emulsion can also be produced from chlorids of hydrocarbons with more than one carbon atom, such as tetrachlorethane ( $C_2H_2Cl_4$ ), pentachlorethane ( $C_2HCl_5$ ), trichlorethylene ( $CHCl_2:CCl$ ), perchlorethylene ( $C_2Cl_4$ ), and that the emulsions obtained with these chlorids penetrate more easily into the goods and thereby render possible a considerably more thorough removal of the fat than the emulsions produced with carbon tetrachlorid. This is of importance, especially for the washing of raw wool, because raw wool must contain less than 1% of fat in order to give satisfactory results in the further treatment (bleaching, dyeing). In the application of emulsion of carbon tetrachlorid, this is only possible if the wool is also washed with soap, while with the chlorids containing more than one carbon atom the same result can be obtained without any use of soap. Further, in the employment of perchlorethane, acetylene tetrachlorid, trichlorethylene, dichlorethylene, etc., considerably larger quantities of these chlorids can be incorporated with the soaps than of carbon tetrachlorid. This increase in the capacity of emulsifying is also strikingly shown by the fact that even ordinary soaps and saponaceous compounds—although to a slighter degree and with less efficiency—can be incorporated with the chlorids.

The practical carrying out of the process can take place for example as follows: Dissolve in  $\frac{1}{2}$  to 1 part of water, 1 part of the

soap obtained by saponifying sulfonated fats, oils, fatty acids or oleic oils, with 6% or more of sodium hydrate, at comparatively high temperatures; then stir into the solution, either hot or cold, 1 to 2 parts of tetrachlorethane, pentachlorethane, trichlorethylene, or perchlorethylene. For increasing the solubility of the chlorid there can be added also diluted soda-lye.

I am aware that it is not new to produce emulsions of chlorids of hydrocarbons with more than one carbon atom, by means of albuminoids, *e. g.*, mucin, or alkaloids, or enzymes, for example, emulsin, or common soaps. But, my emulsions of chlorids of hydrocarbons with more than one carbon atom are produced by means of a sulfonated product, especially sulfonated fats or oils, or Turkey-red oil, or the soaps obtained by saponification of sulfonated fats or oils with at least 6% of sodium hydrate.

Having thus fully described my invention, what I claim is:

1. The process of producing emulsions which consists in emulsifying with a sulfonated product, such as sulfonated fats, oils, or Turkey-red oil, chlorids of hydrocarbons having more than one carbon atom.

2. The process of producing emulsions which consists in saponifying sulfonated fats or oils with at least 6% sodium hydrate, and then emulsifying the soap thus obtained with chlorids of hydrocarbons having more than one carbon atom.

3. A new article of manufacture, an emulsion composed of a saponified product (especially sulfonated fats, or oils, or Turkey-red oil), and chlorids of hydrocarbons having more than one carbon atom.

4. As a new article of manufacture, an emulsion composed of sulfonated fats or oils saponified with at least 6% sodium hydrate, and chlorids of hydrocarbons having more than one carbon atom.

In testimony whereof, I have signed my name to this specification in the presence of two subscribing witnesses.

JULIUS STOCKHAUSEN.

Witnesses:

HENRY QUADFLIEG,  
ELISE KALBUSCH.