

## UNITED STATES PATENT OFFICE.

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## SOAP AND METHOD OF MAKING SAME.

Austrian Patent No. 19305.  
British 22,580 of 1903 (mod) same more.  
French 336953 (patented) like British.

SPECIFICATION forming part of Letters Patent No. 786,556, dated April 4, 1905.

Application filed April 21, 1904. Serial No. 204,289.

*To all whom it may concern:*

Be it known that we, HERMANN GIESSLER and HERMAN BAUER, subjects of the Emperor of Germany, and residents of Stuttgart, in the Kingdom of Württemberg, Empire of Germany, have invented certain new and useful Improvements in Soaps Which When Used Develop Active Oxygen and Methods of Manufacturing the Same, of which the following is a specification.

Our invention relates to the production of a soap which will combine cleansing, bleaching, and antiseptic properties without, however, being liable to deteriorate by decomposition or to injure or destroy the surfaces of goods to which it is applied.

We have discovered that soaps possessing the above-indicated characteristics may be produced by mixing with a suitable soap body stable salts of the higher (super) acids, and particularly the alkali or ammonium salts of the higher (super) acid compounds of boron or carbon. These salts may be added to the soap body either alone (preferably in powdered condition) or mixed with fatty bodies free from glycerin.

To describe our invention in detail, we may say that the following salts are eminently suitable for the purpose of our invention on account of their high stability and of their high contents of oxygen, as well as on account of their easy manufacture: sodium perborate, ( $\text{NaBO}_3$  or  $\text{Na}_2\text{B}_2\text{O}_5$ ) or ammonium perborate, ( $\text{NH}_4\text{BO}_3$ ) or sodium percarbonate, ( $\text{Na}_2\text{CO}_4$ ). One of these salts or mixtures of two or more of them are added in a suitable condition, preferably powdered, to a soap body, which may be of any approved constitution—for instance, any of the usual soaps. The proportions may vary; but we find it preferable to add to the soap body from ten to twenty per cent. or more of its weight of the above-indicated oxygen salts or salt mixture. The incorporation of the salts with the soap body may be effected in any suitable manner. If preferred, the salt or salt mixture before being added to the soap body may be mixed with a suitable fatty body free from glycerin in proportions sufficient to produce a dough-like or salve-like consistency. As such fatty

bodies we may employ lanoline, a solution of ambergris, spermaceti, sperm-oil, vaseline, or paraffin, it being understood that the salts are in a comminuted condition when admixed to such fatty body.

We have found that a soap produced according to our invention as above described has remarkable keeping qualities, this being due, in our opinion, to the fact that the soap body envelops the oxygen-containing salts, and thus preserves them until the soap is used. We have found that the salts will not decompose even if the soap body contains as much as twenty per cent. of water. The oxygen contained in the salts herein mentioned will be given off only after the soap has been dissolved in a considerable body of water, and thus the best conditions are obtained for an efficient cleansing and bleaching action of the soap. It has been ascertained that the soap will successfully remove from garments stains produced by red wine, cherries, cocoa, &c. In many cases it will be sufficient to use the soap with cold water, and in some cases after applying the soap cold the goods to be treated may be heated to hasten the removal of the stains. No preliminary and no after treatment are required.

The soap, whether used cold or as an addition to boiling water, will not have any destructive or injurious effect even on very delicate fabrics. For instance, the soap containing the perborate, after giving off its active oxygen, will leave only borax as a residue, which salt has no injurious action, but rather increases the fat-dissolving power of the soap. The soap will not cause wool to become felt-like.

When used as a toilet soap, our improved soap will have no unpleasant biting action and may therefore be used without discomfort to remove fruit-stains or for general cleaning purposes.

It will be understood that we prefer to employ the perborates or percarbonates of sodium or ammonium containing the highest proportion of oxygen; but other salts containing a high proportion of oxygen may be employed, provided they have sufficient stability for the purpose of our invention. The



aqueous solutions of such salts have a reaction which is only slightly alkaline and are therefore not liable to injuriously affect fabrics or the skin, and soaps made according to our invention therefore are very stable and harmless and at the same time of very efficient antiseptic, bleaching, and cleansing properties.

We desire it to be understood that the term "alkali" as used in the appended claims is to be given an interpretation broad enough to include ammonium. Further, where the element "boron" is mentioned in the claims we desire it to be understood that carbon is to be considered an equivalent of boron.

We claim as our invention—

1. The herein-described process of producing soap which consists in adding a stable salt of one of the superacids of boron, to a suitable soap body, so as to cause such soap body to envelop and protect the salt.

2. The herein-described process of producing soap, which consists in admixing to a suitable soap body an alkali salt of a superacid of boron.

3. The herein-described process of produc-

ing soap, which consists in mixing a stable salt of one of the superacids with a fatty body free from glycerin, to a paste-like or salve-like consistency, and adding such paste to a suitable soap body.

4. A soap containing a suitable soap body and a salt of one of the superacids of boron.

5. A soap containing a suitable soap body and an alkali salt of a superacid of boron.

6. A soap containing a suitable soap body, and in addition thereto a fatty body, free from glycerin, and a salt of one of the superacids.

7. The herein-described process of producing soap, which consists in mixing a salt of one of the superacids with a fatty body free from glycerin, and incorporating the mixture with a suitable soap body.

In testimony whereof we have hereunto set our hands in the presence of two subscribing witnesses.

HERMANN GIESSLER.  
HERMAN BAUER.

Witnesses:

WM. HAHN,  
ERNST ENTENMAN.

*Ref. —  
Allworth, British 11,053/00.*