

UNITED STATES PATENT OFFICE.

OSCAR LIEBREICH, OF BERLIN, GERMANY.

PROCESS OF PRODUCING FATTY ACIDS.

SPECIFICATION forming part of Letters Patent No. 778,980, dated January 3, 1905.

Application filed December 26, 1903. Serial No. 186,738.

To all whom it may concern:

Be it known that I, OSCAR LIEBREICH, a citizen of the German Empire, residing at Berlin, Germany, have invented a new and useful Improvement in and Relating to Processes of Producing Fatty Acids, of which the following is a specification.

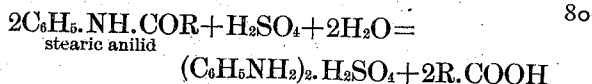
My invention relates to a process of producing fatty acids; and it consists in heating acidulated derivatives of aromatic bases with sulfuric acid and separating the fatty acids produced thereby from the sulfates of the aromatic bases which are formed in the process.

The value of this process substantially depends on the fact that the acidulated derivatives of aromatic bases on a commercial scale are obtained in the form of compounds or mixtures containing the radicals of more than one fatty acid and eventually several aromatic bases. From these compounds of acidulated derivatives of aromatic bases especially only some constituents—for instance, that containing the radical of stearic acid—are separated by fractional distillation or by other known processes for further use, whereas the remaining mixture frequently cannot be profitably employed. Now my invention is adapted to produce valuable products—namely, fatty acids and sulfates of aromatic bases from the said compounds of acidulated derivatives of aromatic bases. At the same time my new process cheapens the production of acidulated derivatives of aromatic bases and of pure glycerin from glucerids of fatty acids, the so-called “fats” and “oils,” in accordance with my invention for which I have obtained Letters Patent in the United States numbered 741,585. In performing the last-named process I obtain besides pure glycerin a mixture of several acidulated derivatives of aromatic bases. As above stated, only some constituents of such mixture are practically directly used, whereas the others at this time for themselves have less technical value, so that it would be desirable to dissociate same, so as to form free fatty acids and to regenerate the aromatic bases. Now my present invention realizes this effect. Therefore by the combination of my said former process forming the subject-matter of my said United

States Patent No. 741,585 with the process of this invention by the treatment of fats or oils I obtain in the first step, where I heat the fats or oils with aromatic bases, acidulated derivatives of aromatic bases and anhydrous glycerin, and in the second step, by heating the compound of acidulated derivatives of aromatic bases with sulfuric acid, fatty acids and sulfates of aromatic bases.

Obviously I can use for my combined process every kind of cheap fat or oil, and I obtain the following valuable products in comparatively pure condition: acidulated derivatives of aromatic bases, anhydrous glycerin, fatty acids, and sulfates of aromatic bases.

The performance of my invention may be seen from the following example: I heat a compound of acidulated derivatives of anilin of one hundred parts in weight with sixty-six parts of sulfuric acid of forty-two-per-cent. concentration up to about 250° centigrade. When doing so, the sulfuric acid combines with the anilin, whereas the fatty acids are freed in a substantially pure form and in a condition adapted to be saponified by alkali in aqueous solution, forming then a soap which gives a clear solution in water. The reactions taking place may be seen from the following formula:



In this formula R is identical to $C_{17}H_{35}$ for stearic acid, or, in other words, if stearic anilid is the particular raw material treated then R will be $C_{17}H_{35}$.

The reaction between the acidulated derivations of anilin and the sulfuric acid is preferably performed in a closed vessel to avoid the evaporation of water from the sulfuric acid. The time of reaction depends in wide ranges from the more or less intimate mixture of the components during the process. For this reason it is advisable to provide the vessel of reaction with agitating means.

The temperature of 250° centigrade above mentioned may be varied. However, lower temperatures generally require more time for finishing the reaction.

The sulfate of anilin may be used for the production of anilin in a well-known manner or it may be used for some other purpose—for instance, for the production of sulfanilic acid—in a known manner by heating the sulfate of anilin, after evaporation of its solution, up to 250° centigrade.

The decomposition of the acidulated derivatives of aromatic bases by sulfuric acid is a remarkable effect, because alkali is not suitable for this purpose.

Having fully described my invention, what I claim is—

1. The process of producing fatty acids consisting in heating acidulated derivatives of aromatic bases with sulfuric acid and separating the fatty acids and the sulfates of the aromatic bases produced thereby.

2. The process of producing fatty acids consisting in treating glycerids of fatty acids, the so-called fats or oils, with aromatic bases so as to form acidulated derivatives of aromatic bases and glycerin separating the said acidulated derivatives of aromatic bases and glycerin, heating the so-produced acidulated derivatives of aromatic bases with sulfuric acids and finally separating the resulting fatty acids and sulfates of aromatic bases.

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

OSCAR LIEBREICH.

Witnesses:

WOLDEMAR HAUPT,
HENRY HASPER.