

UNITED STATES PATENT OFFICE.

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SAME PLACE.

PROCESS OF MAKING DOUBLE SALTS OF MERCURY.

SPECIFICATION forming part of Letters Patent No. 405,368, dated June 18, 1889.

Application filed March 29, 1888. Serial No. 268,782. (No specimens.) Patented in England February 29, 1888, No. 3,094.

To all whom it may concern:

Be it known that I, ERNST MENNEL, doctor of chemistry, a subject of the Duke of Sachsen-Coburg-Gotha, residing at Darmstadt, 77 Wienerstrasse, German Empire, have invented certain new and useful Improvements in the Production of Hydrargyrum Compounds, (for which I have obtained Letters Patent in Great Britain, dated February 29, 1888, No. 3,094;) and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

The invention relates to the production of double salts from the combination of mercury with a uni or multi-valent phenol; and it consists in a novel process or method of producing the same, substantially as herein-after fully described, and as set forth in the claims.

Neutral aqueous sublimate solutions have invariably been employed in the processes heretofore known for obtaining the double salts referred to—as, for instance, the process of Schadeck—by which the amorphous yellowish to white hydrargyrum carbolicum oxydatum is obtained by precipitation from an attenuated neutral aqueous solution of the sublimate by means of a concentrated alcoholic solution of potassium phenol; or in the process of Romei, by which the phenol salt is obtained as a red precipitate from the potassium salts of phenol, or the Llalement process for obtaining the thymol salt.

According to this invention the double salts of mercury—such as the thymol salt or the double salts of mercury of other phenols—are obtained by means of an acid solution of nitrate of oxide of mercury, whereby a crystalline and sometimes—as in the case of beta-phenol and resorcin—a microcrystalline salt is obtained, while by the processes above referred to—as, for instance, the process of Schadeck—amorphous pulverulent products are obtained. Practical demonstrations and

analyses have clearly shown that the products or combinations obtained are the double salts of mercury phenolates with a mercury salt. For instance, when nitrate of mercury and thymol were used a salt of the formula $C_{10}H_{13}O_1H_9-H_9NO_3$ was obtained, and when acetate of mercury and thymol were used a salt of the formula $C_{10}H_{13}O_1H_9-H_9C_3H_3O_2$ was obtained.

The process forming the subject-matter of this invention is best carried out as follows: A warm solution of nitrate of oxide of mercury, made tolerably acid by means of nitric acid, is gradually mixed with a warm alkaline thymol solution under agitation, and this is continued so long as the resulting yellow precipitate is again dissolved, so that when strongly agitated the solution will be but slightly turbid. The solution is then allowed to stand and cool, when it will be converted into a crystalline magma by the separation from the double combination of mercury thymolate-mercury nitrate of colorless and felted fine needles, consisting of the double combination of mercury thymolate and mercury nitrate. As this combination is readily soluble in an attenuated soda-lye, especially when heated, it may be obtained from the latter in a purified state by recrystallization. If such an alkaline solution of mercury-thymol double salt is treated with an acid, the salt, owing to its high degree of insolubility in acid, separates therefrom.

In view of the insolubility of the salt the process may be modified—for instance, by treating a weak warm acid solution of nitrate of oxide of mercury with an alcoholic solution of thymol. On cooling, the mixture is also converted into a magma of colorless felted needles. The latter mode of operation is advantageous in that the alkaline thymol solution is not only liable to deep coloration, but also to the formation of sodium nitrate, which can only be removed by prolonged washing.

The pure mercury-thymol salt is absolutely colorless and odorless, but will assume a reddish color after awhile, especially when exposed to light, and smell slightly after thymol, while the salt decomposes readily.

The same results may be obtained with various other phenols—as, for instance, resorcin and beta-naphthol—whose corresponding precipitates are of a yellow color, micro-
5 crystalline, and differ from mercury thymol in that they are more readily soluble in acids.

I claim—

The herein-described process of obtaining double salts of mercury, which consists in

treating a uni or multi valent phenol with an acidulated solution of a persalt of mercury, substantially as described.

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

ERNST MENNEL.

Witnesses:

CARL ED. HAHN,

WALTER A. LANE.