

UNITED STATES PATENT OFFICE.

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TO VEREINIGTE CHININFABRIKEN ZIMMER & CO., G. M. B. H., A SOCIETY OF GERMANY.

THEOBROMIN DOUBLE SALTS.

No. 917,096.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that we, CARL MEZGER and ALBERT WELLER, subjects of the German Emperor, and residents at Frankfort-on-the-
5 Main, Germany, have invented certain new and useful Improvements in Theobromin Double Salts, of which the following is a specification.

The manufacture of double salts of theobromin, which are more easily soluble in
10 water than free theobromin, has hitherto been effected by combining theobromin-sodium with molecular proportions of alkali salts of organic acids, double salts having
15 been thus obtained of theobromin with formates, acetates, lactates, benzoates, and salicylates of sodium and lithium.

We have now discovered that very efficient double salts of theobromin can be pro-
20 duced by the molecular combination of theobromin-sodium with halogen salts of the alkalies, such double salts being, for instance, theobromin-sodium-sodium-chlorid, theobromin-sodium-sodium-bromid, and theobromin-sodium-sodium-iodid. All these
25 compounds have the advantage of being readily soluble in water and the sodium chlorid double salt is distinguished by its high contents in theobromin, which is higher than
30 in any other similar preparation, and it has, in therapeutics, the further advantage that the theobromin can act without the addition of an acid foreign to the human body. Other salts, for instance the sodium-bromid
35 and sodium-iodid double salts, contain, in addition to theobromin, other substances which in this combination have a special beneficial therapeutical action.

The preparation is carried out by causing
40 theobromin-sodium to act in molecular proportions on the different halogen salts of an alkali. The following are examples of how this invention may be carried out, but the invention is not limited thereto. The parts
45 are by weight.

Example I: 18 parts of theobromin are dissolved in a moderately concentrated solution, of 4 parts of caustic soda in about 25
50 parts of water. To this solution 5.85 parts of pure sodium chlorid are added. The solu-

tion is filtered, if necessary, and is evaporated to dryness, and the dried residue is ground.

Example II: 20.2 parts of dry theobromin-sodium, prepared in the usual manner, are dissolved, together with 15 parts of sodium-
55 iodid, in as little water as possible; the solution is evaporated to dryness and the residue is pulverized.

The mode of preparation can of course be varied and in lieu of the halogen salts of
60 sodium, the corresponding salts of other alkalies, such as, for instance, potassium iodid, or potassium bromid, can be combined with the theobromin-alkali compounds.

The theobromin-halogen alkali double salts
65 form white powders having an alkaline reaction and a bitter taste. They readily dissolve in water and dilute alkalies, but are decomposed by acids, theobromin being thereby separated. By means of the usual re-
70 agents the halogen contained therein (iodin, bromin, or chlorin), can be easily ascertained; while the contents in potassium, or sodium, can also be ascertained by suitable reactions. All the salts are insoluble in ether, benzolin,
75 and benzene. They are very difficultly soluble in absolute alcohol, even if boiling, but are readily soluble in dilute alcohol and glycerin, especially if heat be applied.

We claim:

1. The herein described process of making
80 theobromin double salts which consists in causing theobromin sodium in solution and a halogen salt of an alkali to react on each other in molecular proportions.

2. As an article of manufacture theobromin halogen alkali double salts, forming
85 white powders having an alkaline reaction and a bitter taste readily dissolving in water and dilute alkalies but being decomposed by
90 acids, theobromin being thereby separated.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

CARL MEZGER.
ALBERT WELLER.

Witnesses:

JEAN GRUND,
CARL GRUND.