

UNITED STATES PATENT OFFICE.

JOHANN CARL WILHELM FERDINAND TIEMANN, OF BERLIN, GERMANY,
ASSIGNOR TO HAARMANN & REIMER, OF HOLZMINDEN, GERMANY.

FRAGRANT KETONE.

SPECIFICATION forming part of Letters Patent No. 583,720, dated June 1, 1897.

Application filed April 21, 1896. Serial No. 583,505. (No specimens.) Patented in France April 27, 1893, No. 229,683; in England May 1, 1893, No. 8,736, and September 18, 1893, No. 17,539; in Germany September 8, 1893, No. 75,120, and in Belgium September 23, 1893, No. 106,520.

To all whom it may concern:

Be it known that I, JOHANN CARL WILHELM FERDINAND TIEMANN, (coproprietor of the firm of Haarmann & Reimer, of Holzminden,) a subject of the King of Prussia, residing at Berlin, in the Kingdom of Prussia, Germany, have invented new and useful Improvements in Processes of Making Odoriferous Substances from Citral and its Homologues, (for which I have obtained Letters Patent in Germany, No. 75,120, dated September 8, 1893; in Belgium, No. 106,520, dated September 23, 1893; in England, No. 8,736, dated May 1, 1893, and No. 17,539, dated September 18, 1893; and in France, No. 229,683, dated April 27, 1893, and patent of addition in France, dated September 18, 1893,) of which the following is a specification.

In my prior application for Letters Patent, Serial No. 488,321, I have described a process for manufacturing perfumes or odoriferous substances from citral and the homologues of acetone, which process constitutes a further perfecting of the process for manufacturing ionone described in United States Letters Patent No. 556,943, granted to me March 24, 1896.

Hereinafter another mode for carrying out this process will be described.

In place of the citral in the first-mentioned process citronellone (citronellal) may be used. Citronellone is an aldehyde containing two atoms more of hydrogen than citral. The properties of the final products of the process, as far as their industrial application is concerned, are not essentially altered by this substitution.

The process is carried out in the following manner: Equal parts of citronellone and acetone are shaken together with dilute alkaline

lye for several days. The product of reaction is extracted by means of ether, and the ether residue of the distillation is subjected to a strong steam-current. The oil passed over is collected. By a repeated fractional distillation *in vacuo* a fraction boiling under a pressure of twenty-one millimeters at a temperature of from 153° to 156° centigrade is obtained. This represents the product of condensation of citronellone (citronellal) with acetone, which I term "dihydro-pseudo-ionone." By digesting with dilute sulfuric (about three per cent.) acid at a temperature of at least 102° centigrade the dihydro-pseudo-ionone passes over into the dihydro-ionone, boiling under a pressure of 23.5 millimeters at a temperature of about 136° centigrade and having an odor of fresh flowers. Considerable quantities of by-products are formed during this operation. Also, in this process acetone may be substituted by its homologues.

The hydrated ionone thus obtained, as well as the ionone itself, are intended to be used as odoriferous substances in perfumery and as aromatics for food.

I claim—

The herein-described process for the manufacture of fragrant ketones consisting in treating citronellone (citronellal) and acetone or its homologues with an alkaline condensing agent to form new ketones and then converting said ketones by means of acids into ketones isomeric with said ketones first formed.

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

JOHANN CARL WILHELM FERDINAND TIEMANN.
Witnesses:

OTTO HERING,
GUSTAV HÜLSMANN.