

UNITED STATES PATENT OFFICE.

JULES EDMOND FOURNIER, OF COURVILLE, FRANCE.

IMPROVEMENT IN THE MANUFACTURE OF ACETATE OF LEAD.

Specification forming part of Letters Patent No. 56,505, dated July 17, 1866.

To all whom it may concern:

Be it known that I, JULES EDMOND FOURNIER, of Courville, in the Empire of France, have invented certain new and useful Improvements in the Manufacture of Acetate of Lead; and I hereby declare the following to be a full, clear, and exact description of the same.

This invention consists in manufacturing acetate of lead, or salt of Saturn, by means of raw pyroligneous acid distilled or saturated with lime and decomposed by sulphuric or muriatic acid. This product is then saturated with lead or its derivatives, evaporated, crystallized, submitted to the action of a turbine (*turbiné*) or pressed, then dissolved or remelted, evaporated, decolorized, and cleared, and finally recrystallized.

I proceed as follows: I take distilled pyroligneous acid, whatever be its crystallizable richness, and whether obtained by simple carbonization or concentrated by lime and afterward decomposed by sulphuric or muriatic acid. I saturate it with lead or its derivatives to complete saturation. It is even necessary that the liquors be supersaturated. In this manner the deposits and impurities precipitate better. When the liquors have become clear I add pyroligneous acid to bring them to the state of neutrality. Before this addition of pyroligneous acid it is well, in order to precipitate the deposits more promptly, to add a little lime, which, in this instance, is only for removing the fatty matters, the liquors being supersaturated. If the acid is weak the saturation will not be strong, and I make up for it by evaporating in a copper vessel until I obtain an acid strength of 50° at the maximum. (45° will generally suffice.) These liquors evaporate very easily, and much better than those arising from acetate of soda.

When the evaporation has been completed—that is to say, when the liquors mark the degree above mentioned—I leave them for one or two hours to clear, and I then crystallize them. The liquors in cooling become crystallized in a sort of paste of crystals which appear sufficiently pure, and of other small globules which appear in the form of small fungi. I crush the whole together and obtain a pasty liquid, which I submit to the action of a press or of a turbine similar to those used in the manufacture of sugar (*turbiné à sucre*) until

that which remains in the press or turbine is perfectly drained. I withdraw the products which have become dry. These dried products are redissolved in water until they mark about 30°. I then add to each one hundred pounds of these liquors about one and a half or two pounds of chloride of lime in the state of paste or liquid, in order to remove from the liquors the coloring-matter which they contain, and which is very tenacious. I leave the mixture until it becomes clear. I decant it and bring it again to 45°. I crystallize it and submit it again, if necessary, to the action of the turbine or press in order to redry it. It is not always necessary to submit it a second time to the action of the turbine or press. It depends upon the richness and purity of the acids employed.

The products of the second operation in the turbine or press are composed of small but very white crystals, and it is only necessary to remelt them once more, and by passing the liquors over a little animal-black I obtain a very fine salt of Saturn, or acetate of lead, quite as good as that hitherto obtained by pure acid manufactured by acetate of soda. I treat the mother-waters as has been done with the saturations from which they arise.

Having thus described the nature of my invention, what I claim, and desire to secure by Letters Patent, is—

1. The direct manufacture of acetate of lead, or salt of Saturn, by the process herein described—that is to say, by means of pyroligneous acid distilled or saturated with lime and decomposed by sulphuric or muriatic acid, then saturated with lead or its derivatives, evaporated, crystallized, pressed or submitted to the action of a turbine, and finally redissolved, evaporated, decolorized, clarified, and recrystallized.

2. In the process of manufacturing acetate of lead, as described, specially, the employment of the turbine or press, as and for the purposes herein set forth.

In testimony whereof I have signed my name to this specification before two subscribing witnesses.

J. E. FOURNIER.

Witnesses:

A. BLÉTRY,
CHÉRÉFIN.