

UNITED STATES PATENT OFFICE.

FRANZ O. MATTHIESSEN, OF NEW YORK, N. Y.

IMPROVEMENT IN REFINING SUGARS.

Specification forming part of Letters Patent No. 162,242, dated April 20, 1875; application filed April 8, 1875.

CASE A.

To all whom it may concern:

Be it known that I, FRANZ O. MATTHIESSEN, of New York, N. Y., have invented certain Improvements in Refining Sugar, of which the following is a specification:

My improvement relates to a modification in that process of refining sugar whereby the entire product resulting from the boiling of the clarified sugar-liquor in the vacuum-pan is converted into coffee-sugar without leaving any residuum in the form of sirup.

As I have invented several modifications of that process for which I am about applying for patents, I shall, for convenience, designate the present application as Case A.

My invention consists in discharging the sugar-mass from the vacuum-pan into a mold or molds, from which, after it has been allowed to cool and harden, the sugar-mass is removed and disintegrated, and in this condition is subjected to gentle heat *in vacuo*, until nearly all the water contained in the material operated upon is evaporated, and it acquires the condition of a granular mass, substantially like what is known as coffee-sugar, the slight portion of sirup present being adherent to the crystals.

In the original process the sugar-mass was discharged from the vacuum-pan directly into a vacuum-chamber; but in this case I find that there is liable to be some caking in the trays, and the grain of the resulting sugar is not entirely free. By my present improvement in the process the sugar-mass discharged from the vacuum-pan is allowed to cool and harden, and is then mechanically disintegrated prior to its subsequent treatment by heat *in vacuo*. The cooling process occupies some twelve hours or more, and when the sugar-mass is

cold and hard the disintegrating operation—which is effected by shaving or scraping machines—takes some further time. In addition to this, the material, being cold, has to be reheated to the desired temperature for evaporation.

In the original process, the sugar-mass being discharged from the vacuum-pan directly into the trays in the vacuum-chamber, the treatment in the vacuum-chamber occupied but a short time—say, from a half an hour to one hour and a half, according to the quantity of water present in the sugar, and the temperature at which it was discharged from the vacuum-pan. There is more delay in conducting the process according to the modification herein described, but the result is the production of free-grain coffee-sugar.

I make no claim herein to the process of manufacturing coffee-sugar by the immediate subjection of the sugar-mass discharged from the vacuum-pan to division and evaporation *in vacuo*, as that is the subject of another patent; but

What I do claim as my invention is—

The improved process of producing free-grain coffee-sugar herein described, which consists in cooling and hardening the sugar-mass discharged from the vacuum-pan, and then disintegrating it by mechanical means, and subjecting it to gentle heat *in vacuo* until nearly all the water it contains is evaporated, and it acquires the condition of free-grain coffee-sugar, as set forth.

F. O. MATTHIESSEN.

Witnesses:

ISAAC ROMAINE,
E. N. PENNINGTON.