

UNITED STATES PATENT OFFICE.

ELIE DELAFOND, OF NEW ORLEANS, LOUISIANA.

PROCESS OF FACILITATING CRYSTALLIZATION OF SUGAR.

SPECIFICATION forming part of Letters Patent No. 675,938, dated June 11, 1901.

Application filed December 20, 1899. Serial No. 741,036. (No specimens.)

To all whom it may concern:

Be it known that I, ELIE DELAFOND, a citizen of the United States, residing at New Orleans, in the parish of Orleans and State of Louisiana, have invented certain new and useful Improvements in Processes of Facilitating Crystallization of Sugar; 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.

My invention has relation to the crystallization of sugar out of solutions thereof; and it has for its object a novel process whereby the crystallization of sugar out of its solutions can be more effectually and readily effected than by the processes hitherto in use.

I have discovered that the saccharose can be readily crystallized out of a syrupy saccharose, such as the so-called "spent molasses," or out of masse-cuite when brought into the presence of carbonic-acid gas under pressure, and that the crystallization can be expedited by agitating the solution while in the presence of carbonic-acid gas under pressure. I have furthermore found that the pressure must be above atmospheric pressure, but may vary in accordance with the percentage of saccharose in the solution treated. I am at the present time unable to state whether the action of the carbonic-acid gas is merely mechanical or whether there is any chemical action, or both, or whether the carbonic acid under pressure influences the so-called "melassigenic" action. In view, however, of the great affinity of water and other liquids for carbonic acid, which absorb the same or are absorbed thereby or mechanically combine therewith, it is possible that the action is a mechanical one, while the carbonic-acid gas has a tendency to liquefy the saccharine solutions, and thus admits of the more ready grouping of the sugar-crystals.

Thus, for instance, in the practical carrying out of my process at the Raceland sugar plantation of the Godchaux Company in Mississippi and at the Kenilworth sugar plantation of the same parties in Louisiana molasses and masse-cuite were treated in 1899. At Raceland I treated molasses which had been left over from the manufacture of sugar of the preceding year with a view to allow the sugar to crystallize out by mere natural evaporation of the liquid, but without avail, by

reason of the small percentage of sugar in said molasses and the large percentage of other organic as well as inorganic substances usually contained in spent molasses, that treated being of the third run and having the consistency of masse-cuite. I selected this molasses because of the very small percentage of saccharose contained therein and as furnishing a good test as to the practicability and utility of the process. To this end I subjected three hundred and eighty-three (383) pounds of the molasses referred to to the action of carbonic-acid gas under a pressure of about ninety (90) pounds, the sugar readily crystallizing out of the molasses, and after a few days nearly the whole of the sugar contained in the molasses had crystallized out, the crystals being quite large.

In the further practical carrying out of my invention at the Kenilworth sugar plantation of the Godchaux Company I treated two hundred and fifty (250) hectoliters of masse-cuite under a carbonic-acid pressure of from fifteen to twenty pounds and resorted to agitation with a view to confirming my discovery that the crystallization proceeds more rapidly when the saccharine solution is agitated, and this I found to be a fact, as under the comparatively low pressure stated the sugar crystallized out in from thirty-six (36) to forty-eight (48) hours and the purity of the masse-cuite and the percentage of sugar were lowered in the molasses in the outflow-troughs to such a degree as cannot be obtained by the processes of crystallization hitherto employed.

Having thus described my invention, what I claim as new therein, and desire to secure by Letters Patent, is—

1. A process for facilitating crystallization of sugar, consisting in subjecting a syrupy sugar-juice to the action of carbonic acid under pressure.

2. A process for facilitating crystallization of sugar, consisting in subjecting a syrupy sugar-juice while being agitated to the action of carbonic-acid gas under pressure.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

ELIE DELAFOND.

Witnesses:

J. A. MAILHES,
GEO. H. THÉARD.