

# United States Patent Office.

ARNOLD WEICHERT, OF NEW YORK, N. Y.

Letters Patent No. 108,861, dated November 1, 1870.

## IMPROVEMENT IN THE MANUFACTURE OF SUGAR.

The Schedule referred to in these Letters Patent and making part of the same

### *To all whom it may concern:*

Be it known that I, ARNOLD WEICHERT, of the city, county, and State of New York, have invented a new and useful Improvement in the Manufacture of Sugar; and I do hereby declare that the following is a full, clear, and exact description of the same.

In the manufacture of raw sugar from cane by the process or processes in common use on plantations, there is an enormous waste owing to so large a proportion of crystalline or crystallizable sugar being degraded into non-crystalline sugar, and in that state remaining in the molasses.

With a view to obviate this waste, and to supply to the sugar-refiner the entire saccharine product of the sugar-cane, there has recently been adopted in some places, to a limited extent, a plan of evaporating the juice without attempting anything like perfect or regular crystallization, or the separation of the crystalline and non-crystalline products, into a conglomerate mass which is known as "concrete;" and in this state the sugar has been shipped to market.

The only apparatus which has heretofore, so far as I have known, been used successfully, or the only one which has been used to any extent for the manufacture of this concrete, has been one of English manufacture, specially contrived for the purpose, and known as a "concretor."

This apparatus performs the evaporation in the atmosphere, and besides being somewhat complicated and difficult to manage, is very wasteful of fuel.

I have found by experiment that the concrete can be successfully manufactured in the vacuum-pan, and that in all places where there is a plentiful supply of

water it can be so manufactured more economically than by the concretor; and

This invention consists in the manufacture of concrete sugar by evaporation in the vacuum-pan.

In carrying out the process, any kind of vacuum-pan may be used, and the process may be performed throughout in a single pan or system of pans; but I find it better, on account of economy and expedition, to evaporate the cane-juice to a density of about 30° Beaume, in one pan or system of pans, and then to transfer it to another pan or system of pans, in which I continue the evaporation until the concrete is obtained, and to fill up the first pan or series again with fresh juice, keeping one pan or system of pans employed in the preparatory evaporation, and the other in the final evaporation.

I prefer to use for the preparatory evaporation the system of vacuum-pans known in the manufacture of beet-root sugar as "triple-effet," and, in the final evaporation, a simple vacuum-pan such as is commonly used in the manufacture of cane-sugar.

The juice, before being introduced to the first pan or series of pans, is simply subjected to the usual defecating and clarifying process.

What I claim as my invention, and desire to secure by Letters Patent, is—

The manufacture of concrete sugar by the evaporation of the juice in the vacuum-pan, substantially as herein described.

ARNOLD WEICHERT.

Witnesses:

FRED. HAYNES,  
FERD. TUSCH.