

UNITED STATES PATENT OFFICE.

SAMSON DUFFNER, OF BERLIN, GERMANY.

PROCESS OF PRODUCING SUGAR.

SPECIFICATION forming part of Letters Patent No. 685,585, dated October 29, 1901.

Application filed June 27, 1901. Serial No. 66,230. (No specimens.)

To all whom it may concern:

Be it known that I, SAMSON DUFFNER, a citizen of the Empire of Germany, residing in Berlin, Germany, have invented certain new and useful Improvements in Processes of Producing Raw Sugar, of which the following is a specification.

This invention relates to improvements in processes of producing raw beet-sugar without after products, the material being treated direct to sugar and molasses, the impurities being removed by filtering.

The invention consists for this purpose of the following steps: Boiling sugar with surcharged beet-syrup, separating the resulting first sugar and first molasses, adding to said first molasses a quantity of calcium carbonate and a quantity of barium chlorid, filtering the mixture, boiling the same, and separating the resulting second sugar and second molasses.

The first step in the process is boiling a mixture of sugar and surcharged raw beet-syrup. The syrup is obtained, preferably, by washing sugar with a quantity of the raw beet-syrup. The raw syrup dissolves and absorbs a quantity of the sugar, and its percentage of contained sugar is thereby increased, so that it is charged with sugar above its normal quantity. The boiled mass is subjected to a centrifugal or other separating means, and a first sugar and first molasses result. The first sugar is then washed with raw beet-syrup. This produces at one step a first sugar suitable for use in the first step of the process (the process being a continuous one) and at the same time produces a surcharged beet-syrup also suitable for use in the first step of the process, as described. The first molasses is then treated by adding to the same a quantity of carbonate of lime (calcium carbonate) and a quantity of barium chlorid in proportion sufficient to combine with the foreign substances contained in the molasses, the proportion of barium chlorid being about 1.5 to 2.5 to every fifty kilograms

of beets used. The molasses is now filtered for removing the impurities and after filtration is boiled. The resulting second sugar and second molasses are separated from each other by a centrifugal or other means and constitute the products of the process. Analysis shows that by the admixture of barium chlorid foreign substances are separated and the molasses is rendered much clearer, as a quantity of the coloring substances are removed. After filtration the molasses is very clear and brilliant. It leaves no large deposit upon subsequent boiling, and the raw sugar produced is of fine quality and easily refined.

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

1. The process herein described of producing raw sugar, which consists in boiling sugar with surcharged beet-syrup, separating the resulting first sugar and first molasses, adding to said first molasses a quantity of calcium carbonate, and a quantity of barium chlorid, filtering the mixture, boiling the same, and separating the resulting second sugar and second molasses, substantially as set forth.

2. The process herein described of producing raw sugar, which consists in boiling a first sugar with a surcharged beet-syrup obtained as herein set forth, separating the resulting first sugar and first molasses, washing said first sugar with raw beet-syrup, whereby a surcharged beet-syrup is obtained, adding to said first molasses a quantity of calcium carbonate, and a quantity of barium chlorid, filtering the mixture, boiling the same, and separating the resulting second sugar and second molasses, substantially as set forth.

In witness whereof I have hereunto set my hand in presence of two witnesses.

SAMSON DUFFNER.

Witnesses:

WOLDEMAR HAUPT,
HENRY HASPER.