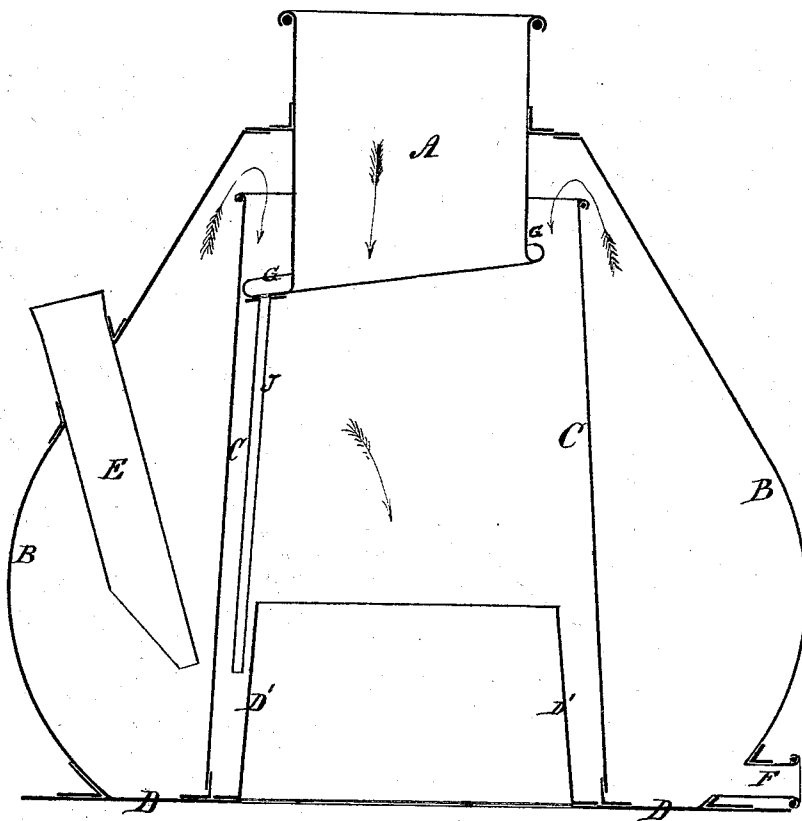


H. PRIEW.

Centrifugal Machines for Purifying Sugar.

No. 135,727.

Patented Feb. 11, 1873.



Witnesses.

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UNITED STATES PATENT OFFICE.

HERMANN PRIEW, OF MAGDEBURG, PRUSSIA.

IMPROVEMENT IN CENTRIFUGAL MACHINES FOR PURIFYING SUGAR.

Specification forming part of Letters Patent No. 135,727, dated February 11, 1873.

To all whom it may concern:

Be it known that I, HERMANN PRIEW, of the city of Magdeburg, in the Kingdom of Prussia, have invented certain Improvements in Sugar-Refining, and in the machines employed therein, which consist in the application of a cover to the centrifugal machines employed.

The object of this invention is to produce more sugar and a better quality from the raw material than has hitherto been practicable, for which purpose I take the raw material, in a thick liquid state, from the mash-trub or direct from the vacuum-pan into the centrifugal machine, which is provided with a cover of peculiar construction, and forming a principal feature in this invention.

This cover is provided with a tube of wide area, opening into and surrounded by a double jacket or casing, which is open to the atmosphere at the top. Steam is admitted into this jacket or casing, and is drawn into the drum of the centrifugal machine along with a quantity of air, which enters through the open top and mixes with the steam, in the form of hot fog, the heat of which brings the thick liquid sirup contained in the raw material into a thin liquid state, and drives or forces it so in the form of uncrystallized sugar from the drum into the outer casing of the centrifugal machine.

It will be readily apparent that this introduction of steam and air is capable of removing the sirup from the crystals without dissolving them, as is the case when water is introduced along with them, and that by this means a considerably greater quantity of the first quality of sugar is obtained, as also of the secondary products, which are of a lighter color, purer taste and odor, and attain to a higher degree of polarization.

These improvements do not necessitate any alteration of the existing centrifugal machines to which they may be applied, although for the variously-constructed centrifugal machines not always the same cover or apparatus for preparing the mixture of steam and air is advantageously to be used. To most constructions the apparatus shown in the annexed drawing will be suitable.

D is a cover to be put on the centrifugal machine, provided with a tube, C, of wide area, opening into a jacket, B, which surrounds such tube, and is open to the atmosphere through the short open tube A. This

apparatus or cover, which can be used in one piece, or can consist of two halves, is to be put on the outer casing of the centrifugal machine. The jacket B is provided with a tube, E, for admitting steam, and with a pipe, F, for allowing the escape of any condensed steam. In case of the cover being divided in two halves each half is provided with a tube, E, and a pipe, F.

After the drum of the centrifugal machine is set in motion, steam (for this purpose before reduced to a certain pressure) passes through E into the jacket B, whence, leaving any containing water or condensed steam in there, it is forced, in consequence of the sucking effect of the centrifugal motion of the drum, to pass through the ring-like opening between the upper part of the tube C and the under part of the short open tube A, in the direction of the arrows, into C. Here the steam is mixed with air, which is likewise sucked in through the open tube A, enters so in an appropriate state into the drum, comes in contact with the thick liquid raw material, and effects in the above-described manner the cleaning of the same, and at the same time the drying of the remaining sugar.

The short tube A on the lower end is provided with a large rim or channel, G, to collect any water or condensed steam which may pass with the steam over the edge of the tube C, and which is then conducted through the pipe J between the raised central part D' of the cover D and the tube C, to prevent the same passing into the centrifugal machine.

By the application of this invention the use of water in the centrifugal machines is entirely dispensed with, and the process of sugar-refining is rendered simpler and cleaner.

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

1. The herein-described arrangement for using dried steam with air in a centrifugal machine, substantially in the manner and for the purpose set forth.

2. The cover D, in combination with the jacket or casing B, tubes C and A, steam-pipe E, and water-escape pipe F, attached to the top of a centrifugal machine, and arranged in the manner substantially as described, and for the purposes set forth.

HERMANN PRIEW.

Witnesses:

WILHELM CARL SÉHÖLL,
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