J. O. DONNER.

Centrifugal Sugar-Machine.

No. 160,655. Patented March 9, 1875.

Fig. 1.

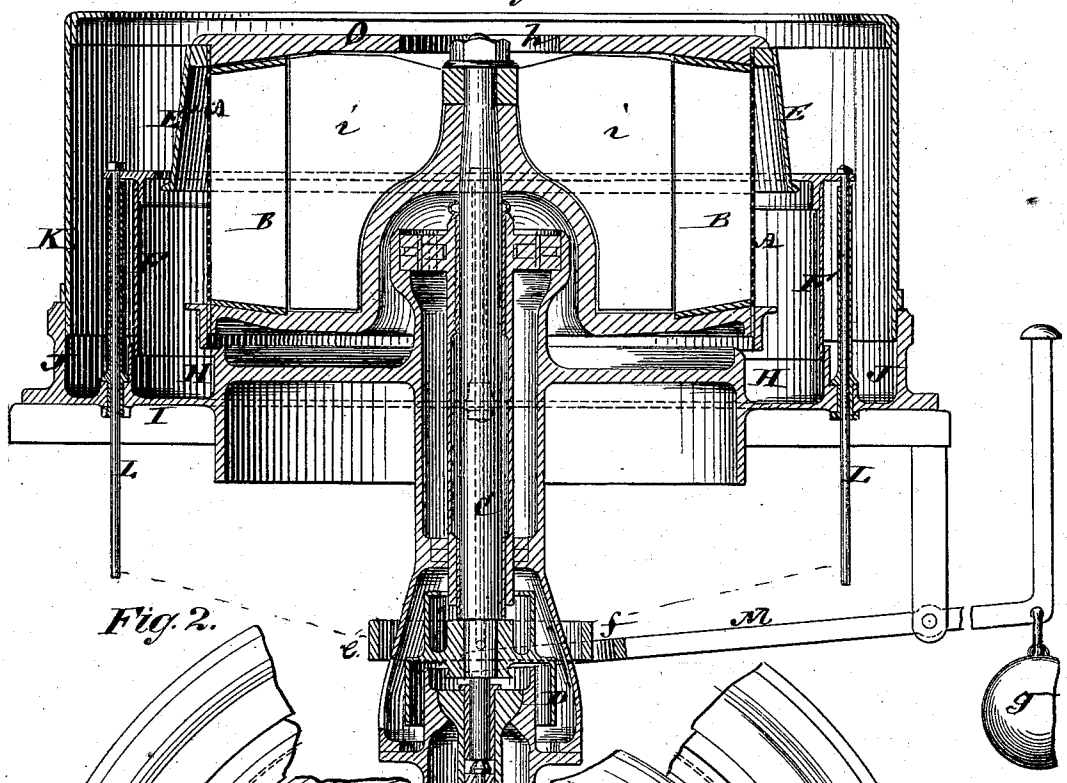
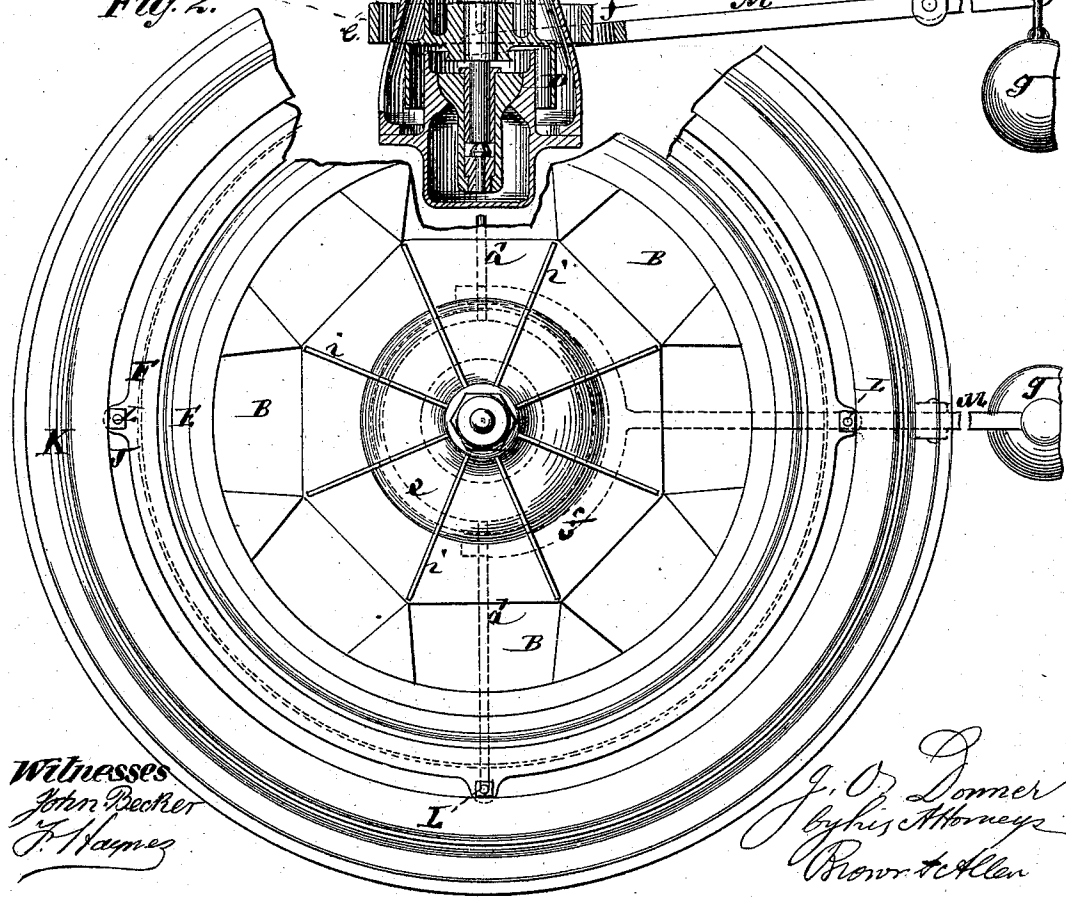


Fig. 2.



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UNITED STATES PATENT OFFICE.

JOHN OTTO DONNER, OF NEW YORK, N. Y.

IMPROVEMENT IN CENTRIFUGAL SUGAR-MACHINES.

Specification forming part of Letters Patent No. **160,655**, dated March 9, 1875; application filed October 2, 1874.

To all whom it may concern:

Be it known that I, JOHN OTTO DONNER, of the city, county, and State of New York, have invented certain Improvements in Centrifugal Machines for the Manufacture of Sugar and other purposes, of which the following is a specification:

This invention consists in certain attachments to a centrifugal machine, and combinations of devices therewith, for the manufacture of sugar, and other purging and washing purposes, whereby increased facility is afforded for the separate ejection from and passage through the substance under treatment in the machine of two or more liquids of different descriptions, or of different grades, and for the separate collection of said liquids after their ejection from the substance.

Figure 1 represents a vertical section of a centrifugal machine with my invention applied thereto, and with sugar molds or boxes arranged therein. Fig. 2 is a plan of the same with the top removed.

A is the revolving basket or perforated cylinder of a centrifugal sugar-machine, having the molds B, containing the sugar within it; and C, the vertical shaft for revolving said basket by means of a pulley, D. Said basket with its driving attachments are of the ordinary or any suitable construction.

To separate the white cleansing solution used in manufacturing sugar by the centrifugal process, when said solution is thrown off by the centrifugal force, and after having passed through the sugar, from what is known as the green sirup previously thrown off from the sugar by the machine, the following attachments are provided: The revolving basket A has secured to its upper edge an outer apron, shield, or curtain, E, arranged at a suitable distance from the outer periphery of the basket, and of greater diameter below than above; also, only of a depth equal to a portion of the depth of the basket. This shield or curtain is of a close construction, and serves to pass any liquid ejected from the sugar in the molds, and through the basket A, down the interior of said shield, and so that it is finally thrown off below the bottom edge of the latter. If this liquid be green sirup it is caused, after its escape below the bottom edge of the shield E, to pass within and against a cylindrical partition or case, F, surrounding the lower portion of the revolving basket. This case or partition F, which may be of larger diameter than the curtain E, and does not require to revolve in common with the basket A, passes the sirup down into a gutter, H, in the bed or table I, and from whence it is run off by pipes as required. Outside of the gutter H and case or partition F, in the bed or table I, is another gutter, J, which serves to collect and run off the white solution passed through the sugar after the green sirup has been expelled. To do this the cylindrical partition or case F is raised sufficiently to allow of the white solution used in washing the sugar, after passing the lower edge of the curtain E and exposed lower portion of the basket A, meeting with no obstruction till it strikes the outer fixed case or cylinder K, which conducts said solution down to the outer gutter J.

If preferred, and such is the case in the present instance, the partition or case F may be raised to pass the green sirup first into the outer gutter J, and afterward be lowered to pass the white or cleansing solution into the inner gutter H. In either case, however, the two liquids or grades of liquid ejected from or passing through the sugar are collected for separate transfer in separate gutters or running-off devices.

The movable partition or case F, instead of being made to rise and fall to open and close, may be opened and closed in other ways; but it is preferred to have it rise and fall, and to this end said case has attached to its upper edge, in two or more places, rods or guides L L, running downward through openings in the bed I, and two opposite ones of said guides being connected by cross-rods *d d* and a ring, *e*, which rest on a fork, *f*, of a lever, M, that may have a counter-balance, *g*, to facilitate the raising, when required, of the partition or case F above the lower edge of the shield E.

To dry the sugar, or otherwise to carry out a drying operation on the substance, while revolving in a centrifugal machine, the revolving cylinder or basket A has combined with it a rotary fan-blower, which may be variously constructed.

In the example represented by the drawings the revolving basket is fitted with a cover, O, having a central inlet-opening, H, for the entrance of the air, and under this cover there are arranged within the basket a series of radial wings or fan-blades, *i*, which are attached to a central hub secured to the upper part of the shaft C, and which are, therefore, caused to rotate with the shaft and basket, and so caused to draw in air through the opening H, and drive it through the contents of the machine, and outward through the sides of the basket.

I claim—

1. The combination, with the revolving basket or perforated cylinder, of externally-arranged inner and outer gutters, and a partition separating them, essentially as and for the purposes herein set forth.

2. The movable partition or case F, having guides L, and constructed to rise and fall, in combination with the inner and outer gutters J H and the revolving basket or perforated cylinder A, substantially as specified.

3. The combination, with the revolving basket or perforated cylinder A, of the shield or curtain E, substantially as specified.

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