2 Sheets--Sheet 1.

F. O. MATTHIESSEN.

Centrifugal Machine in Sugar Manufacture.

No. 167,000. Patented Aug. 24, 1875.

Fig. 1.

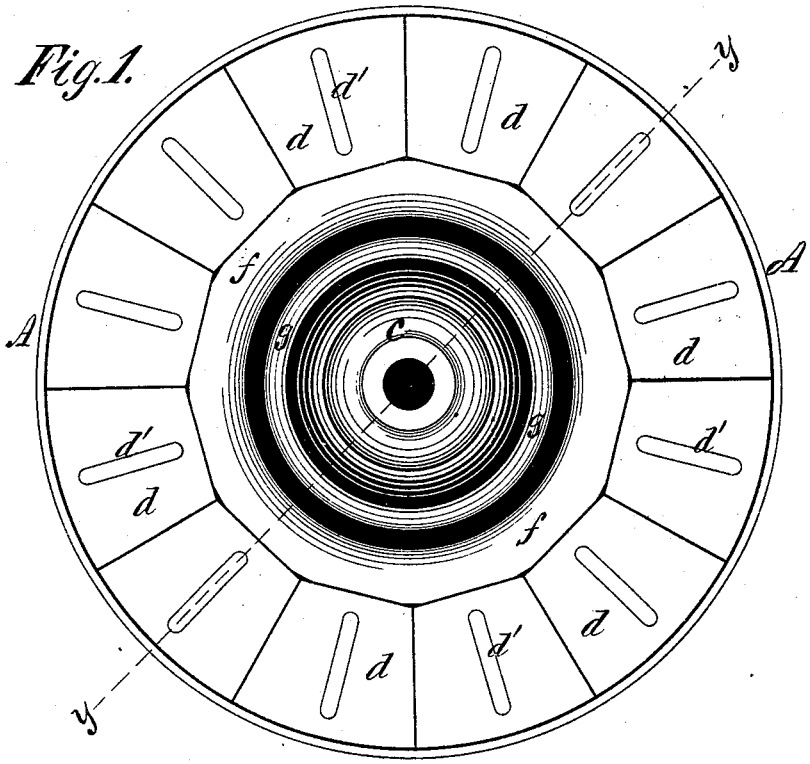

Fig. 2.

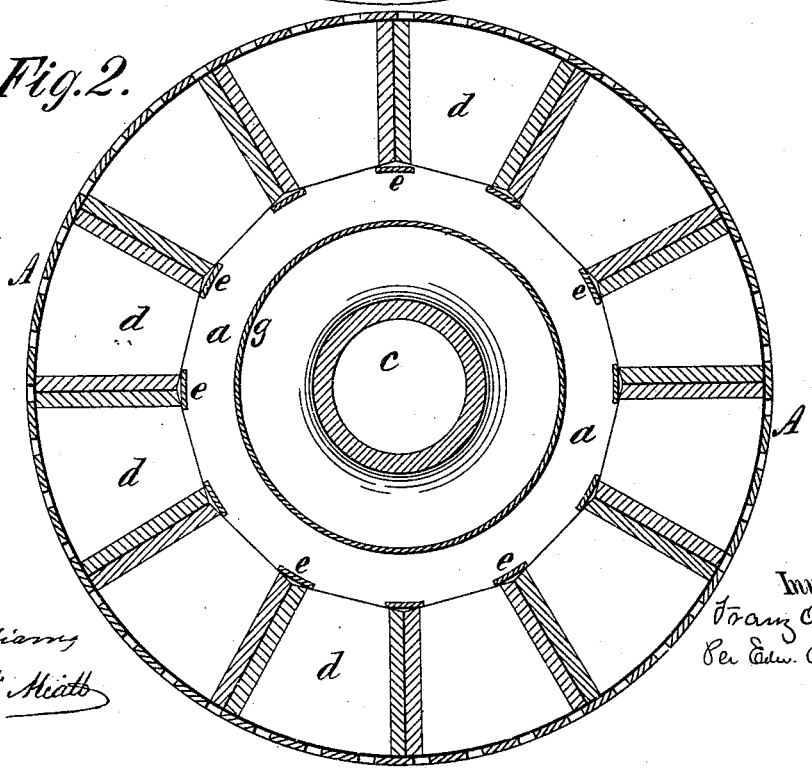

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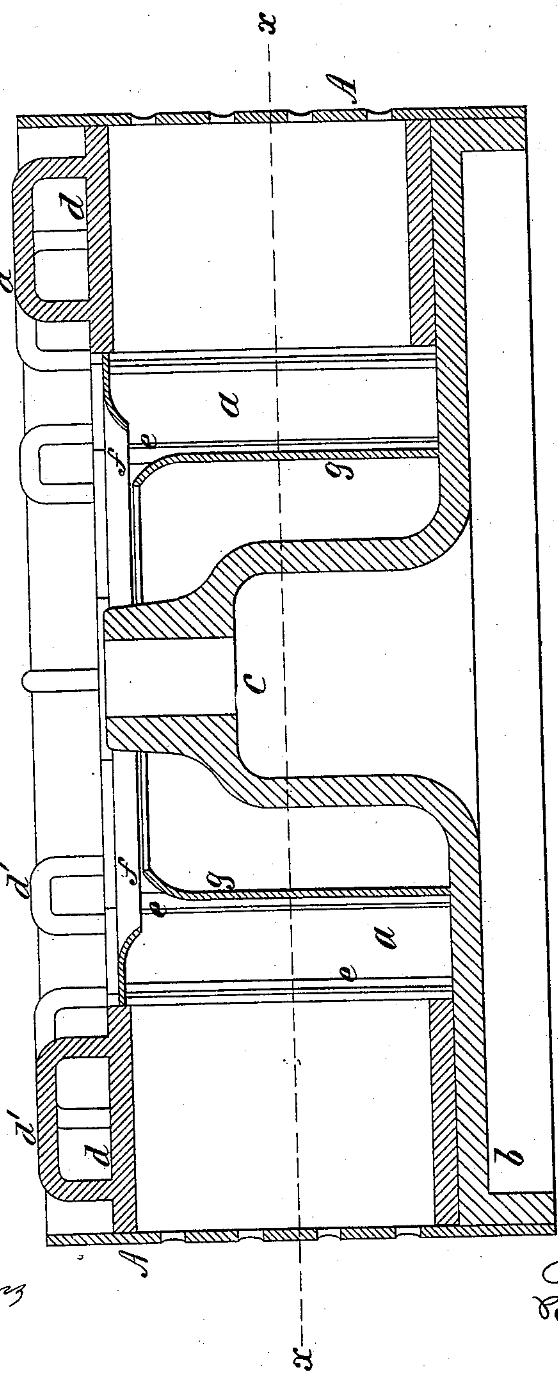
Fig. 3.



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UNITED STATES PATENT OFFICE.

FRANZ O. MATTHIESSEN, OF IRVINGTON, NEW YORK.

IMPROVEMENT IN CENTRIFUGAL MACHINES IN SUGAR-MANUFACTURE.

Specification forming part of Letters Patent No. **167,000**, dated August 24, 1875; application filed July 23, 1875.

CASE B.

To all whom it may concern:

Be it known that I, FRANZ O. MATTHIESSEN, of Irvington, New York, have invented a certain Improvement in Centrifugal Apparatus for Liquoring Hard Sugar, of which the following is a specification:

My improvement relates to a modification of my centrifugal sugar-liquoring apparatus, the purpose of which is to treat hard sugar contained in the molds with a prescribed quantity of the cleansing-liquor; and my invention consists in establishing within the centrifugal machine a circular partition surrounding the hub, and forming the inner boundary of an annular space between the perimeter of the partition and the inner faces of the blocks of sugar contained in the molds. The object of my invention is to insure uniform action upon the sugar blocks of a prescribed quantity of cleansing-liquor; and the quantity of cleansing-liquor which I require to use is introduced into the annular space between the central partition and the inner faces of the molds before the centrifugal machine is set in motion.

The accompanying drawings are as follows:

Figure 1 is a top view of the perforated cylinder of a centrifugal machine, which is represented as containing twelve sugar-molds. Fig. 2 is a section transverse to the axis of rotation, on the line *x x* on Fig. 3. Fig. 3 is a section longitudinally through the axis of rotation, through the line *y y* on Fig. 1.

I have not deemed it necessary in my drawings to show the cylindrical chamber containing the perforated cylinder, nor the shaft upon which the centrifugal machine revolves, nor the mechanism for driving it, as those are essential parts of common centrifugal machines, the construction and operation of which are well known.

Referring to the drawings, A represents my perforated cylinder, affixed to the periphery of the disk *b*, in the center of which is the hub *c*, to receive the shaft upon which the machine revolves. A series of twelve sugar-molds, *d d d d*, &c., are placed within the cylinder; and it will be seen that the sides of the molds are in close contact, and stand radially with reference to the cylinder. The inner or narrow ends of the molds are supported by twelve vertical pillars, each marked *e*. These pillars are firmly affixed to the top of the disk *b*, and their upper ends are affixed to and support the annular deflector *f*, the outer edge of which is polygonal, to conform to the flat inner faces of the molds. This construction forms the subject of my pending application for a patent designated Case A. The flat inner faces of the molds of sugar and the pillars form the outer boundary of the annular chamber *a*, the inner boundary of which is formed by the perimeter of the circular partition *g*, which is affixed to the disk *b*, and surrounds the hub *c*. The upper end of the circular partition *g* may be contracted, if desired, for the purpose of enlarging the space between the partition and the inner edge of the deflector, to facilitate the convenient introduction of the treating-liquor into the annular chamber *a*. The capacity of the annular chamber *a* is proportioned with reference to the quantity of treating-liquor which it is designed shall be used; and in operation, after the molds *d d*, &c., are set in the machine, the annular chamber *a* is filled with the treating-liquor before the machine is set in motion. The molds *d*, &c., are of the usual form of sugar-molds for containing hard sugar, and are provided with the handles *d'*, for convenience of transportation. As will be seen, the molds may be separately introduced into or removed from the perforated cylinder.

The operation of my machine is as follows: The molds containing the sugar to be cleansed having been deposited in the cylinder, the annular chamber *a* is filled with the treating-liquor, and the centrifugal machine is then set in motion. The tendency of the treating-liquor to rise as the cylinder revolves is resisted by the deflector *f*, and the body of treating-liquor is thus maintained in contact with all parts of the outer wall of the annular chamber *a*, until it has been driven by centrifugal force radially outward through the sugar contained in the molds. In a large centrifugal machine the space within the molds is larger than is required to contain the quantity of treating-liquor necessary to

cleanse the sugar contained in the molds. By means of my circular partition I am enabled to provide a chamber of the exact capacity required to contain the cleansing-liquor, and my annular chamber thus becomes a measuring-chamber, and performs the double function of measuring the quantity of treating-liquor required, and holding it in proper position preparatory to its being driven by centrifugal force through the sugar contained in the molds.

I claim as my invention—

In a centrifugal sugar-liquoring apparatus, substantially such as described, the circular partition *g*, arranged within the perforated cylinder A, substantially as shown, and constituting the inner boundary of an annular chamber, *a*, of prescribed capacity, substantially as and for the purposes set forth.

F. O. MATTHIESSEN.

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