2 Sheets—Sheet 1.

E. E. QUIMBY.

Centrifugal Liquoring Apparatus.

No. 223,539. **Patented Jan. 13, 1880.**

Figure 1.

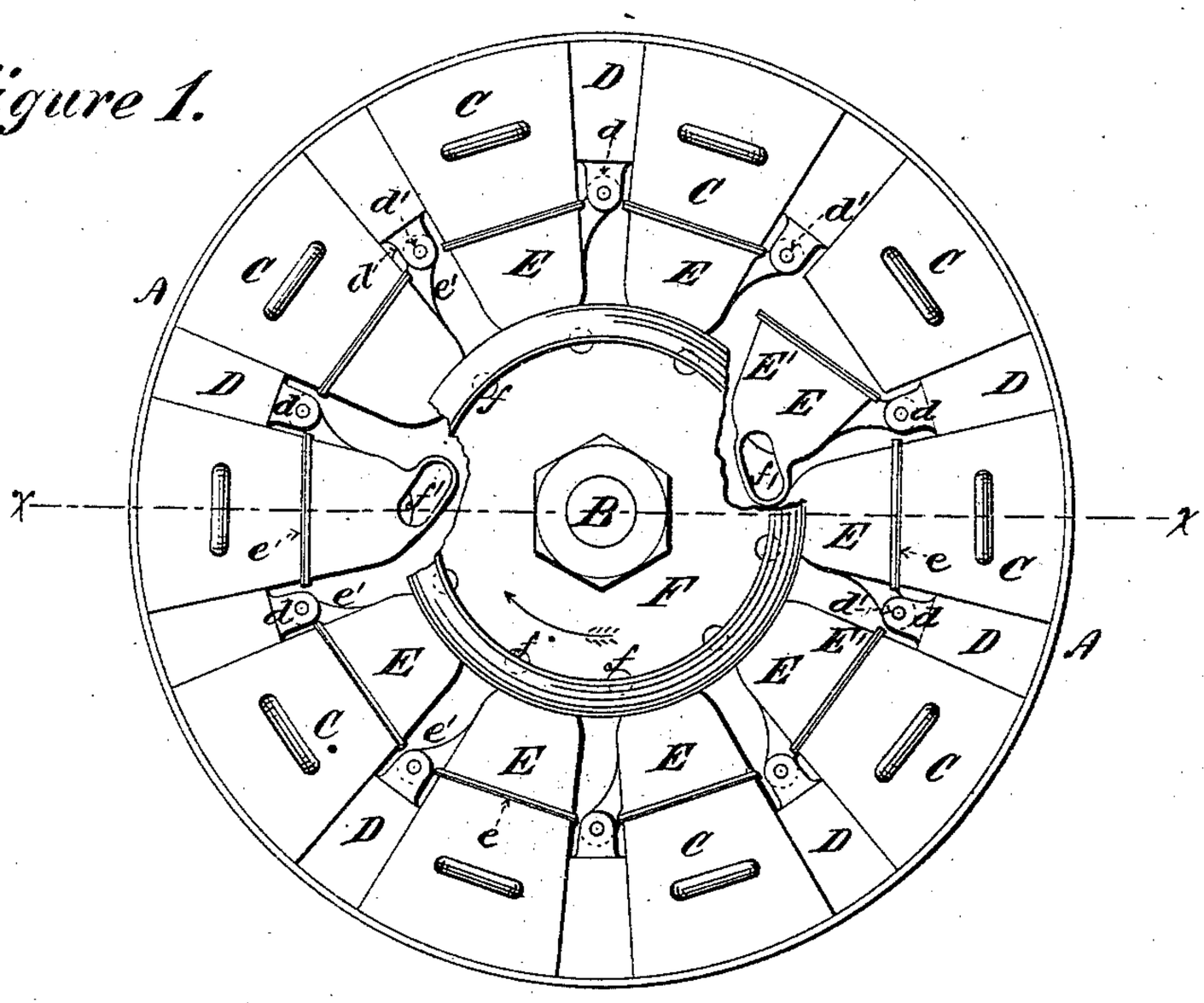
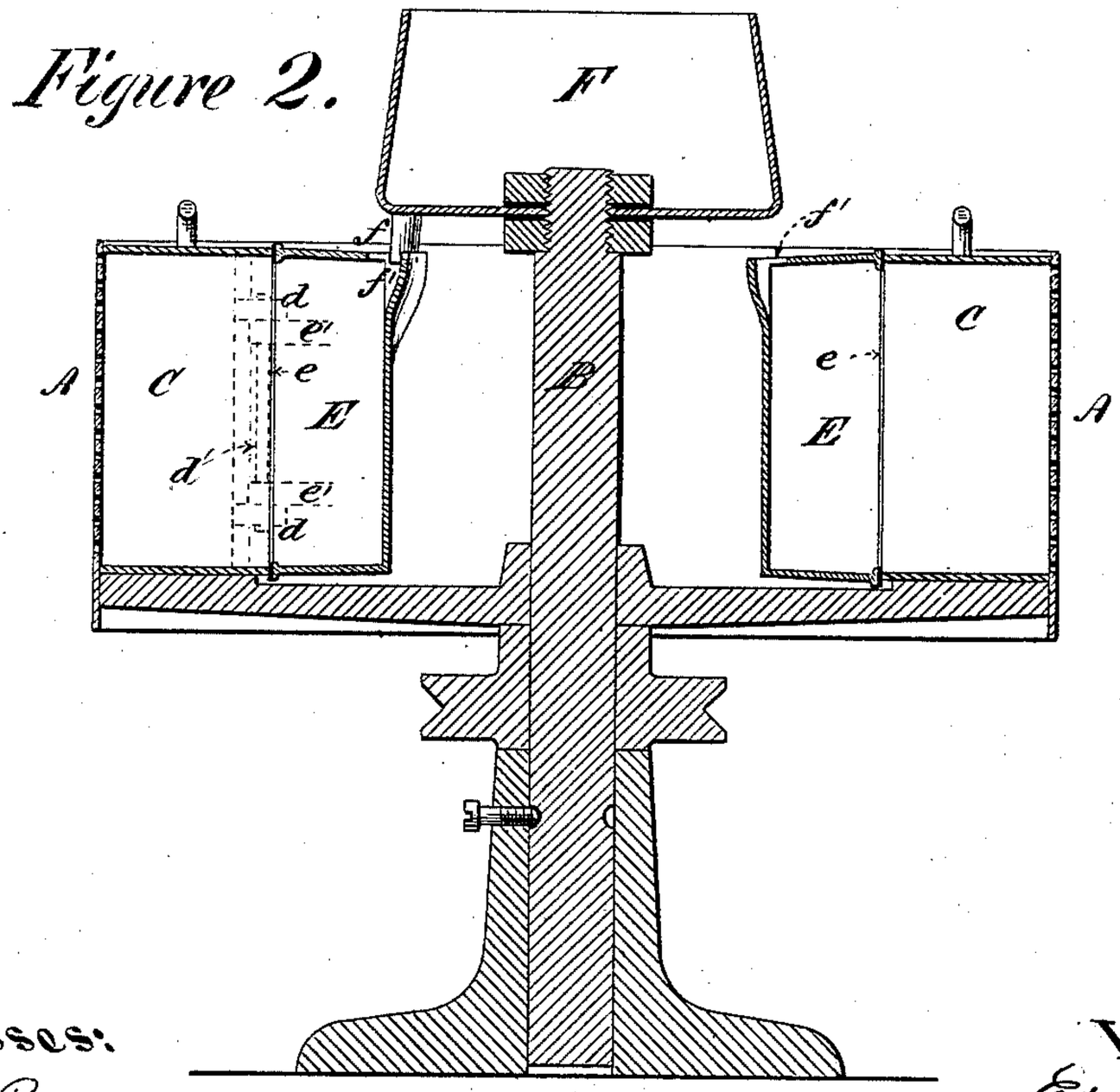


Figure 2.



Witnesses:

Edwd Payson

Geo. W. Matts

Inventor:

Edw. E. Quimby.

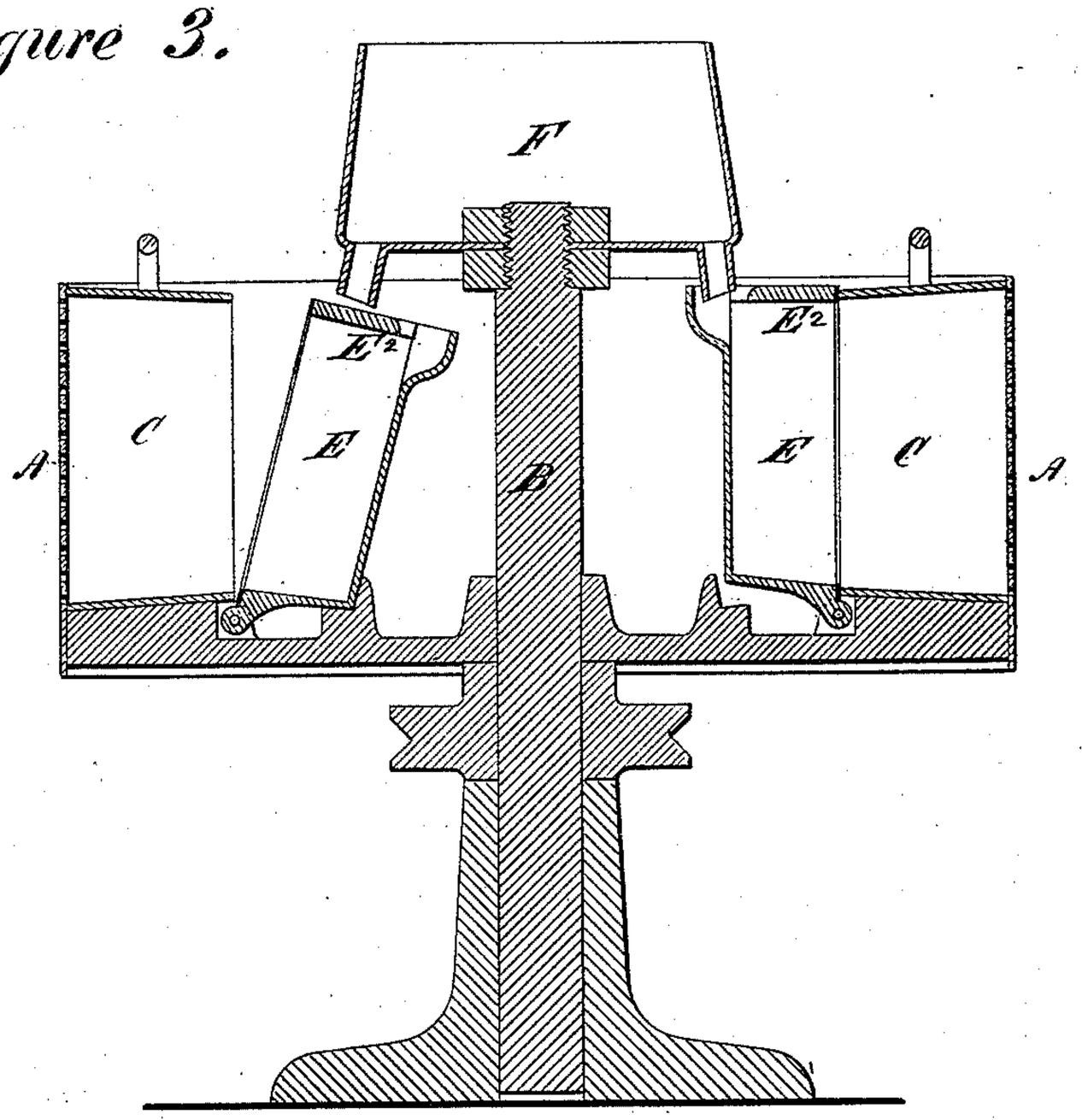
2 Sheets—Sheet 2.

E. E. QUIMBY.

Centrifugal Liquoring Apparatus.

No. 223,539. Patented Jan. 13, 1880.

Figure 3.



Witnesses:
Edwd Dayson
Geo. W. Miatt

Inventor:
Edw. E. Quimby

UNITED STATES PATENT OFFICE.

EDWARD E. QUIMBY, OF ORANGE, ASSIGNOR TO F. O. MATTHIESSEN & WIECHERS SUGAR REFINING COMPANY, OF JERSEY CITY, N. J.

CENTRIFUGAL LIQUORING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 223,539, dated January 13, 1880.

Application filed August 8, 1879.

To all whom it may concern:

Be it known that I, EDWARD E. QUIMBY, of Orange, New Jersey, have invented certain Improvements in Centrifugal Liquoring Apparatus for employing centrifugal force to effect the liquoring of sugar while it is contained in the molds of a centrifugal machine, (Case No. 6,) of which the following is a specification.

My improvements belong to that class of apparatus used to conduct prescribed quantities of white liquor from the central chamber or reservoir of a centrifugal machine to the several molds arranged in a circle in the basket thereof, without allowing any portion of such liquor to escape otherwise than through the sugar or magma contained in the molds.

My invention, which involves the use of movable liquoring-boxes, consists in so hinging such boxes to a fixed part of the basket that the effect of the rotation of the machine is to cause them to swing outward and make their outer open faces, which are provided with the usual gaskets of elastic material, bear firmly upon the inner open faces of the sugar-molds, thus making a tight joint therewith.

The accompanying drawings, illustrating a centrifugal machine containing my invention, are as follows:

Figure 1 is a top view, with a portion of the central reservoir broken away in order to show the position occupied by the box when swung inward upon a vertical axis away from the mold. Fig. 2 is a central vertical section through the line *x x* on Fig. 1; and Fig. 3 is a similar section, showing the liquoring-boxes hinged at their front lower edges to a horizontal pivot.

The drawings represent the basket A of a centrifugal machine mounted upon the usual vertical spindle B, and containing an outer circle of removable sugar-molds, C. These molds are separated from each other by the vertical pillars D, affixed to the floor of the basket. Each pillar is provided with inwardly-projecting horizontal lugs *d*, which are perforated to admit the vertical rod *d'*, which serves as a pivot for the swinging boxes E. Each of these boxes is provided upon its outer open face with the usual gasket *e*, of elastic material, and is also provided with laterally-projecting ears *e'* at one of its outer corners, which are perforated to admit the rod or pivot *d'*.

The direction in which the basket is intended to rotate is indicated by the arrow in Fig. 1, and it will be seen that the effect of centrifugal force, when the basket is rotated, is to cause the boxes to swing outward, so that their gaskets engage the inner open faces of the molds, and are firmly compressed thereon, making tight joints between the molds and the boxes, respectively.

The machine is provided with the usual central reservoir, F, which has a downwardly-projecting spout, *f*, for each one of the boxes.

The opening *f'* in the top of each box, for the admission of the spouts *f*, is concentrically curved, as will be seen, to prevent the spout from interfering with the swinging movement of the box.

The hinging of the box to a fixed part of the machine serves to retain the box in the proper position with relation to the mold in front of it, and so defines its path of movement that its gasket is brought into contact with the inner edges of the top, bottom, and sides of the mold when the machine is rotated. Substantially the same thing may be accomplished by providing the box with a horizontal axis of oscillation, as shown in Fig. 3, in which the hinge is at the front lower edge of the box, and the bottom of the box is outwardly and downwardly inclined, thus permitting the box to tilt backward away from the mold when the machine is stationary, substantially in the manner shown and described in the pending application of F. O. Matthiessen for a loose tilting box, filed May 23, 1879.

It will be advisable in some cases, in order to bring about a sufficient compression of the gasket by the action of centrifugal force, to load that part of the box farthest from the hinge. This may be easily done by increasing the thickness of the side E' of the box swinging upon a vertical axis, or by increasing the thickness of the top E^2 of the box swinging upon a horizontal axis.

I do not herein claim, broadly, a series of liquoring-boxes loosely contained in the basket

of a centrifugal machine, or flexibly connected therewith, whereby centrifugal force acts to throw them outward against a like series of sugar-molds, or gravity acts to tilt them convergently inward away from the sugar-molds, as such boxes are the invention of F. O. Matthiessen, and are made the subject of claim in his application for a patent filed May 9, 1879, designated Case A.

I claim as my invention—

1. In combination with a centrifugal machine, a swinging liquoring-box hinged to a fixed part of the machine, whereby its path of motion upon its axis of oscillation is such that when swung outward by centrifugal action its gasket will be brought into engagement with the inner edges of the top, bottom, and sides of the sugar-mold in front of it, substantially as and for the purpose set forth.

2. In combination with a centrifugal machine, a hinged liquoring-box, substantially such as described, loaded upon its free extremity, substantially as and for the purpose set forth.

EDW. E. QUIMBY.

Witnesses:
M. L. ADAMS,
EDWD. PAYSON.