

F. O. MATTHIESSEN.  
Centrifugal Liquoring Apparatus.

No. 221,895.

Patented Nov. 18, 1879.

Figure 1.

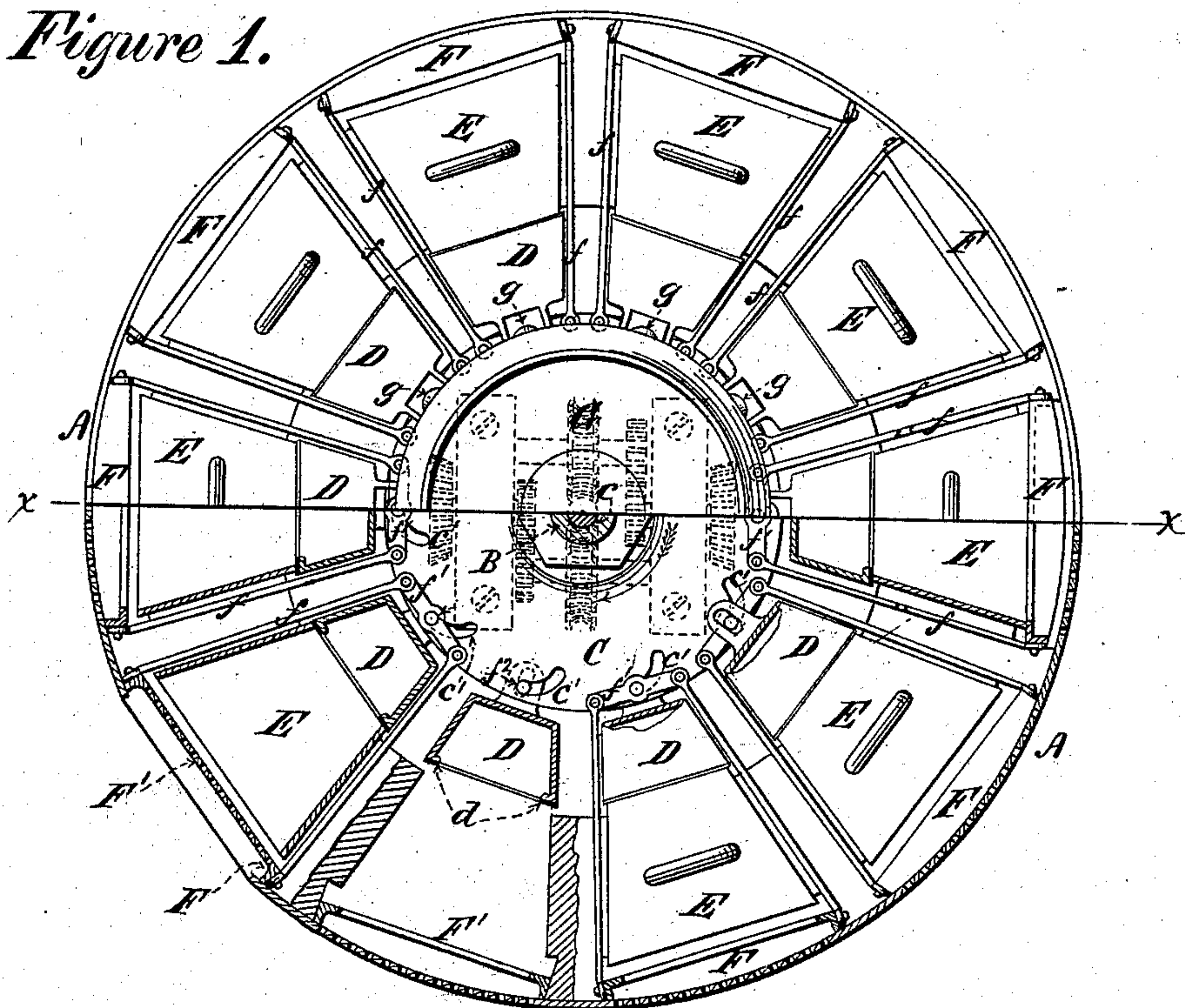
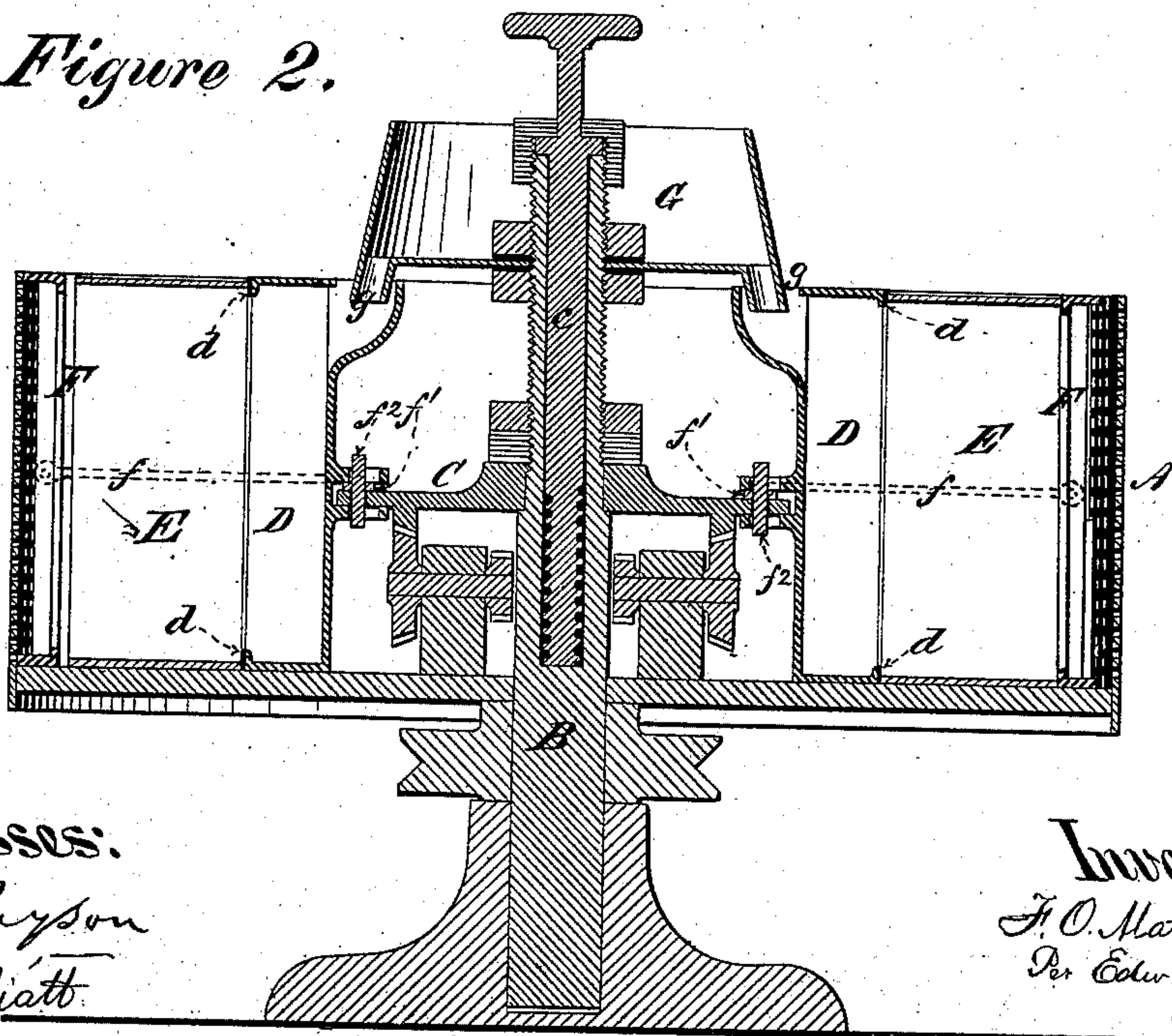


Figure 2.



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# UNITED STATES PATENT OFFICE.

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## IMPROVEMENT IN CENTRIFUGAL LIQUORING APPARATUS.

Specification forming part of Letters Patent No. **221,895**, dated November 18, 1879; application filed July 2, 1879.

*To all whom it may concern:*

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

My invention relates to the class of devices used to conduct white liquor from a central reservoir into the sugar contained in a series of molds arranged concentrically in the basket of a centrifugal machine without allowing any of such liquor to escape otherwise than through the sugar to be liquored; and my invention consists in combining with the sugar-molds clamping devices, by the operation of which the sugar-molds are all simultaneously drawn radially inward, and their inner open faces are firmly compressed against elastic gaskets secured in the outer open faces of a series of stationary cells permanently erected in the central portion of the basket, and severally communicating with the central reservoir or chamber into which the white liquor is poured.

In carrying out my invention, I employ a horizontal cam-wheel operated by worm-gear, the worm extending upward through the hollow spindle of the centrifugal machine. This, however, is not a part of my invention. A similar device is shown in another pending application, where the cam-wheel is employed for simultaneously forcing outward a series of movable liquoring-boxes.

In the present case I employ stationary cells instead of movable liquoring-boxes, and I arrange outside of each mold a quadrangular frame, with links respectively on opposite sides of the mold, extending radially inward to a cross-bar carrying a cam-pin, which is engaged by an eccentric slot in the cam-wheel, this slot being of such shape that when the cam-wheel is turned in the proper direction the quadrangular frame is drawn inward, thus pressing inward the sugar-mold.

The accompanying drawings, representing a centrifugal machine embodying my improvements, are as follows: Figure 1 is a top view, partly in horizontal section. Fig. 2 is a central vertical section through the line *xx* on Fig. 1.

The drawings represent the basket A of a

centrifugal machine mounted upon the usual vertical spindle B. The central portion of the basket is occupied by the cam-wheel C, which is operated by bevel and worm gear by means of force applied to the worm-shaft *c*. A number of stationary cells, D, are arranged concentrically just outside of the edge of the cam-wheel, and their outer open faces are provided with the elastic gaskets *d* for the purpose of making tight joints with the inner open faces of the sugar-molds E.

Outside of each sugar-mold is a quadrangular frame, F, which engages the outer open face of the sugar-mold. Each side piece of the quadrangular frame F is connected with the link *f*, which extends inward, and on its inner end is secured to the cam-pin bar *f'*, carrying the cam-pin *f*<sup>2</sup>, which extends downward through the cam-slot *c'* in the cam-wheel C.

It will be seen that, owing to the eccentric form of the cam-slot, when the cam-wheel is turned in the direction indicated by the arrow in Fig. 1, the quadrangular frame F, by reason of its connection with the cam-pin bar, is drawn radially inward. The sugar-mold, having been previously inserted in the space between the quadrangular frame and the stationary cell, is by this operation drawn inward and its inner open face forced against the elastic gasket on the outer open face of the cell, thus making a tight joint, and preventing the escape of sugar-liquor discharged into the stationary cell otherwise than through the sugar contained in the mold.

The quadrangular frame may, if desired, be provided with a perforated metallic sheet, F', in which case the usual perforated rim of the basket may be dispensed with and a substantial cylindrical frame be provided in its stead.

It will, of course, be understood that other devices may be employed to pull the sugar-molds radially inward against the gaskets inserted in the outer open faces of the stationary cells, and that these devices may be arranged to operate independently upon each mold; but, as a matter of convenience, I prefer to employ a device by the operation of which all the molds are simultaneously drawn inward.

A central reservoir, G, is mounted upon the

spindle, and is provided with a series of spouts, *g*, by means of which white liquor poured into the central reservoir is conducted into the several stationary cells.

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

1. In centrifugal liquoring apparatus, the combination of the stationary liquoring-cell *D*, the sugar-mold *E*, and the frame *F*, which engages the outer open face of the sugar-mold, with the inwardly-extending links *f* and mechanism for forcibly pulling the quadrangular frame radially inward for the purpose of compressing the inner open face of the sugar-mold upon the elastic gasket *d*, and thus packing the

joint between the inner open face of the sugar-mold and the outer open face of the stationary cell.

2. The combination, in a centrifugal machine, of the series of concentrically-arranged stationary cells *D* and an outer circle of movable sugar-molds, *E*, and mechanism for simultaneously forcing all the sugar-molds radially inward against gaskets secured upon the outer open faces of the stationary cells, substantially as set forth.

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Witnesses:

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