A. A. GOUBERT.

Centrifugal Liquoring Apparatus.

No. 221,807. Patented Nov. 18, 1879.

*Figure 1.*

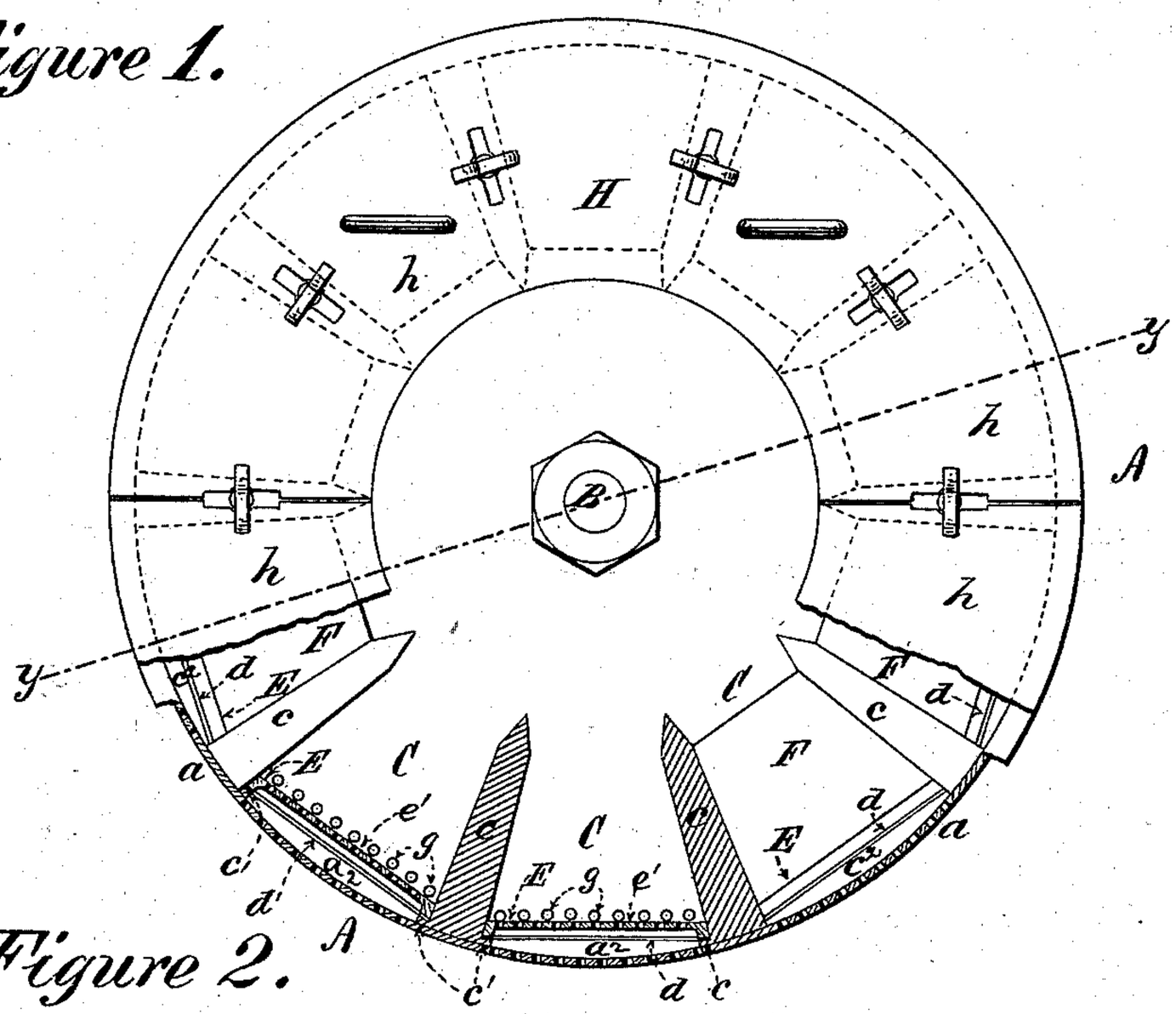
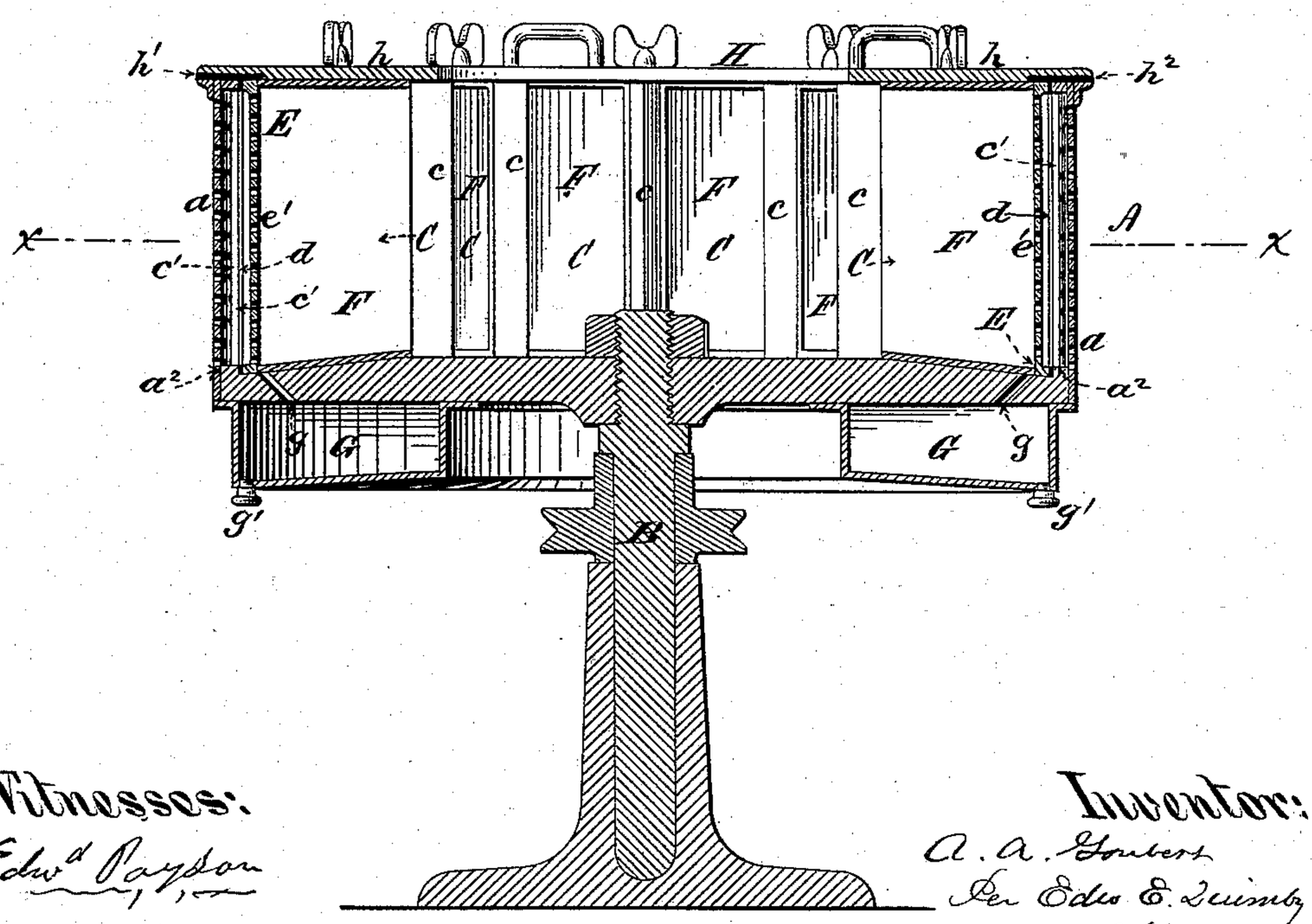



*Figure 2.*

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# UNITED STATES PATENT OFFICE.

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## IMPROVEMENT IN CENTRIFUGAL LIQUORING APPARATUS.

Specification forming part of Letters Patent No. **221,807**, dated November 18, 1879; application filed September 2, 1879.

*To all whom it may concern:*

Be it known that I, AUGUSTE A. GOUBERT, of the city and State of New York, have invented certain Improvements in Centrifugal Liquoring Apparatus, of which the following is a specification.

My improvements relate to the class of apparatus employed to conduct prescribed quantities of white liquor from the central chamber or reservoir of a centrifugal machine, without allowing the escape of such liquor otherwise than through the sugar contained in the molds; and my invention consists in establishing in the outer portion of the basket a series of cells separated from each other by means of vertical walls projecting inward from the rim of the basket toward the spindle, and provided at the top with a removable annular cover, preferably composed of two or more segments. The sugar-molds are loosely deposited in the cells and their outer open faces bear against a quadrangular frame, to which a perforated diaphragm is affixed. This frame is loosely deposited in the mouth of the cell adjoining the rim, and has its outer bearing upon a gasket of elastic material affixed to the inner face of a shoulder, the sides of which are formed by projections from the division-walls, the bottom by an upward projection from the floor of the basket, and the top by a bar extending across the upper outer end of the cell.

When the machine is rotated the mold is forced outward by centrifugal action, thus effecting the compression of the gasket and preventing the escape of white liquor otherwise than through those portions of the perforated rim of the basket immediately opposite the molds.

I provide underneath the floor of the basket an annular collecting-chamber, into which any excess of liquor remaining in the basket can be drained, and from which it can be discharged by means of suitable faucets.

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

The drawings represent the usual basket A of a centrifugal machine, mounted upon the vertical spindle B and divided into a series of cells, C, by means of the radial partition-walls *c*.

It will be seen that the partition-walls extend outward to the rim *a* of the basket, and that at the outer mouth of each cell there is provided an inwardly-projecting shoulder, the sides of which are contributed by the projections $c'$ cast upon or otherwise affixed to the outer portions of the partition-walls, the bottom of which is contributed by the projection $a^2$ in the floor of the basket, and the top by the bar $c^2$ extending across the upper outer edge of the cell. The inner face of this shoulder is provided with the elastic gasket *d*, which affords the bearing for the quadrangular frame E, to which the perforated diaphragm $e'$ is affixed.

It will be seen that the bottom of each cell is a plane, which is outwardly and downwardly inclined to make it conform to the inclination of the bottom of the mold F.

Beneath the floor of the basket I provide a collecting-chamber, G, into which liquor contained in the basket may be drained, when the machine is stationary, through the inwardly and downwardly inclined channels or tubes *g* formed or inserted in the bottom of each cell. The escape of the liquor over the top of the rim of the basket is prevented by means of the removable annular plate H, which is preferably composed of two segments, *h h*, each provided with the packing-strips $h'$ and $h^2$, by means of which a tight joint is made when the plates are screwed or clamped down upon the tops of the partitions and the rim of the basket.

The collecting-chamber G is provided with faucets $g'$, by means of which the fluid therein contained can be drawn off when desired. The central portion of the basket may be left open, or the usual central reservoir may be mounted upon the upper end of the spindle B, and the treating-liquor may be conducted into the sev-

eral cells therefrom by means of the usual spouts.

The escape of white liquor from the machine otherwise than through the sugar contained in the molds has heretofore been prevented by means somewhat analogous to those which I employ—that is to say, movable cells or liquoring-boxes have been employed which, under the influence of centrifugal action, were driven radially outward, making tight joints, respectively, with the inner open faces of the molds.

In the present case it will be observed that centrifugal force is utilized for the purpose of packing a joint through which white liquor would otherwise escape; but instead of a movable cell or liquoring-box I provide a stationary cell and effect the necessary packing of the joint by means of a gasket in front of a mold free to move outward under the action of centrifugal walls. The partition-walls C may be dispensed with, and the rim of the basket be made polygonal, with a number of sides equaling the number of molds, the gaskets in such case being affixed either to the outer open faces of the molds or to the edges of the several sides of the polygonal rim, when they will be respectively engaged by the outer edges of the molds; or the gaskets may be affixed to the inner side of a concentric rim, and the outer faces of the molds be rounded to conform to the shape of the rim. In either case the thrust outward of the molds effects the compression of the gaskets and prevents the escape of liquor except through the interior of the molds.

I claim as my invention—

1. In centrifugal liquoring apparatus, a series of sugar-molds loosely contained in the basket of a centrifugal machine, in combination with a series of quadrangular gaskets of elastic material respectively interposed between each mold and the perforated rim of the basket, whereby when the machine is rotated the molds are driven radially outward by centrifugal force and the gaskets are compressed, thus preventing the escape of liquor from the machine otherwise than through those portions of the perforated rim of the basket immediately opposite the outer open faces of the molds.

2. The basket A, provided with the vertical partitions C, extending inward from the rim, and with a removable annular cover, H, in combination with the collecting-chamber G, communicating with the spaces or cells between the partitions by means of the inwardly and downwardly inclined passages or tubes $g'$, substantially as and for the purpose set forth.

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Witnesses:

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