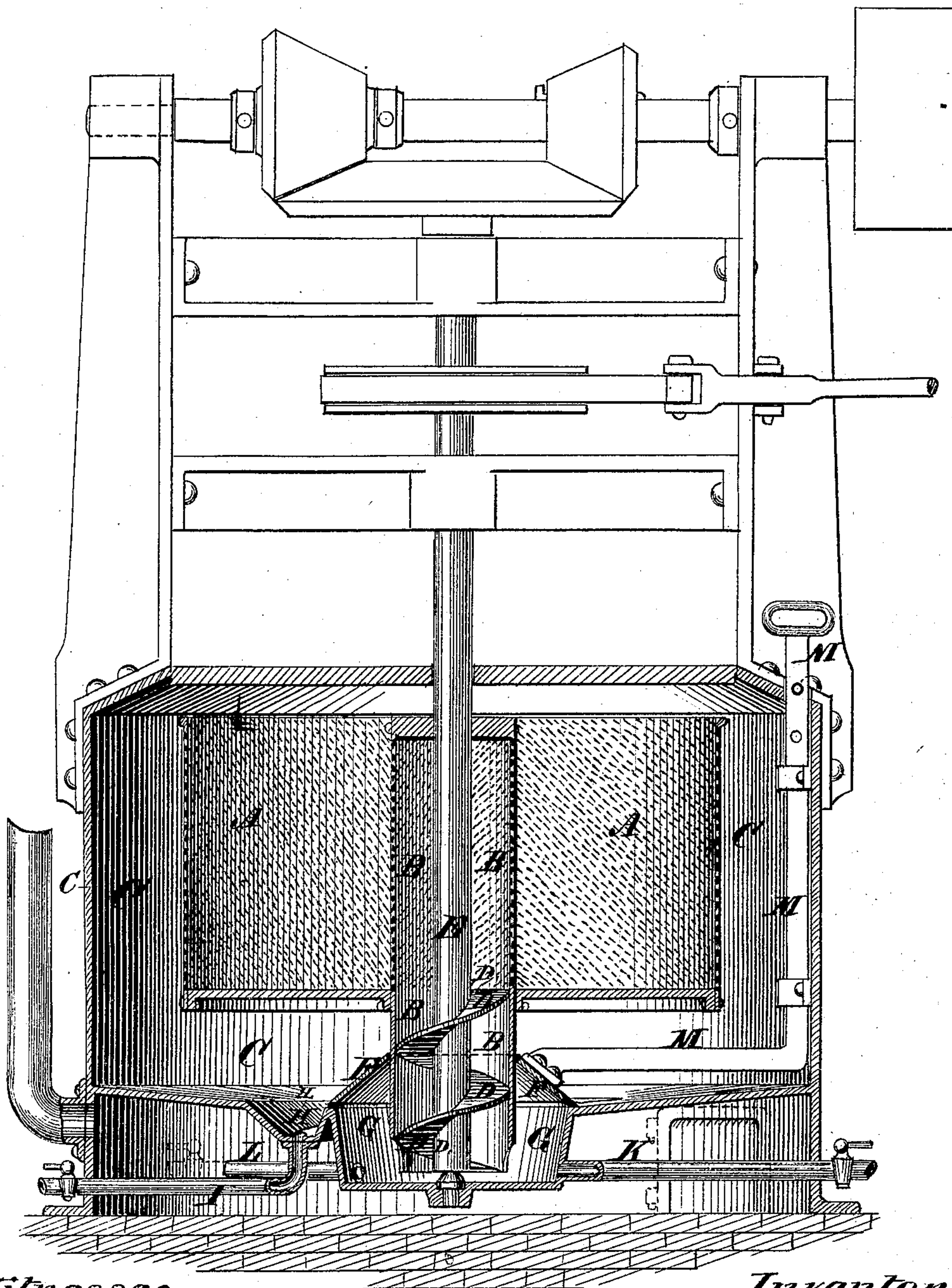


E. J. M. BECKER.
Centrifugal Machines.

No. 139,108.

Patented May 20, 1873.



Witnesses
Michael Ryan
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E. JOHN M. BECKER, OF NEW YORK, N. Y.

IMPROVEMENT IN CENTRIFUGAL MACHINES.

Specification forming part of Letters Patent No. **139,108**, dated May 20, 1873; application filed March 15, 1873.

To all whom it may concern:

Be it known that I, E. JOHN M. BECKER, of the city, county, and State of New York, have invented an Improvement in Centrifugal Drying-Machines, of which the following is a specification:

The accompanying drawing represents a central vertical section of my machine.

My invention consists in adapting a centrifugal machine to such various purposes by inserting a second partly-perforated smaller cylinder, B, of suitable size and form, within the perforated chamber A of a common centrifugal machine, in such manner that the smaller cylinder B surrounds the vertical shaft E, which holds the large revolving perforated outer cylinder. The non-perforated part of the smaller cylinder extends through the bottom of the larger cylinder, and contains an Archimedean screw, D, which fills the space between the shaft E and the non-perforated part of the smaller cylinder, while the part extending above the bottom of the larger chamber is closed on top, which is on a level with the edge of the open-ended large cylinder. Both the smaller and larger cylinders are securely fastened to the shaft. The smaller chamber may be made wider on top or bottom, or entirely cylindrical. The stationary outer chamber C, surrounding the perforated cylinder, is so constructed as to form in its center a well, G, in which the discharge-water is collected. The well is so constructed as to give ample room for the reception of the smaller cylinder, which projects into it, and to admit a free ingress and egress of the water, and also to prevent the revolving smaller cylinder from imparting motion to the surrounding liquid. A feed-water pipe, L, with a stop-cock leading into this well, serves two different purposes: first, to feed the centrifugal apparatus with hot suds or other liquid, and, secondly, to let clean water enter into the well for rinsing or cleaning. A second pipe, K, with stop-cock leading out of the well, serves to discharge the liquids. A mantle, F, of truncated conical form, and made of sheet-iron, covers the open space between the inner cylinder and the well in such a manner as to fit with its smaller opening around the non-perforated part of the cylinder, while the

base of the mantle, which has a soft lining of rubber, fabric, or other material, rests on the top of the well, tightly closing it. Between the upper end of the mantle and smaller cylinder is a small annular space, which does not reach to the bottom of the larger cylinder, and therefore allows the raising and lowering of the mantle. To the outer side of the mantle is fixed a rod, M, extending across the bottom of the larger cylinder and bent at a right angle, so that it passes up through the stationary chamber, where it terminates in a handle. By lifting the mantle from its base, the water which is forced through the perforated cylinders runs into the well, where the screw forces it up and discharges it a second time against the outer stationary chamber. By replacing the mantle, the discharge-water is shut off and collected outside of the well in a recess, H, formed in the bottom of the stationary chamber, where it is led off through the draw-off pipe I, which is provided with a stop-cock. The stationary chamber may be so constructed as to admit the heating of the suds by steam or fire.

The machine operates as follows: After the stop-cocks are closed, the articles to be washed are placed into the space between the perforated cylinders, the hot suds (when the articles were not boiled) poured over them, the stationary chamber then closed, the machine set in motion, and the mantle lifted. The suds are thrown by the centrifugal force against the wall of the stationary outermost chamber and flows into the well, whence it is forced up by the screw and thrown a second time against the articles through the perforations of the smaller cylinder, and so on until the grease and dust in the articles are completely disengaged from the fabrics. The mantle is then dropped, and the stop-cock of the discharge-pipe connected with the aforementioned recess opened, and the suds discharged. Then the mantle is again lifted, the feed-water pipe leading into the well opened to admit clean water, by which the articles are rinsed. When the supply of clean water is shut off, the machine works as a drier.

In case the articles put into the machine are dry, the suds may be fed by means of the feed-water pipe, which, in such case, is

branched to lead into a tank filled with hot suds.

For washing lace and fine fabrics in general, I use a fine wire netting or horse-hair gauze, placed over the perforations and inside of the larger cylinder. A similar netting on the smaller cylinder is intended to spread the water when forced through the apertures. The netting on the larger cylinder prevents the fine lace from being forced through the perforations.

What is here claimed, and desired to be secured by Letters Patent, is—

1. The Archimedean screw D, arranged within the inner rotary chamber B of a double centrifugal machine, as set forth.

2. The well G, formed around the inner rotary chamber B of a double centrifugal machine, as specified.

3. The up-and-down-adjustable mantle F, arranged in connection with the two rotary chambers A and B in a centrifugal machine, as specified.

4. The stationary chamber, provided with a recess, H, in the bottom for the collection of the suds, in combination with the well G, for operation substantially as described.

E. JOHN M. BECKER.

Witnesses:

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