

J. B. Waring,
Wash Boiler,
N^o 84,923, Patented Dec. 15, 1868.

Fig. 1.

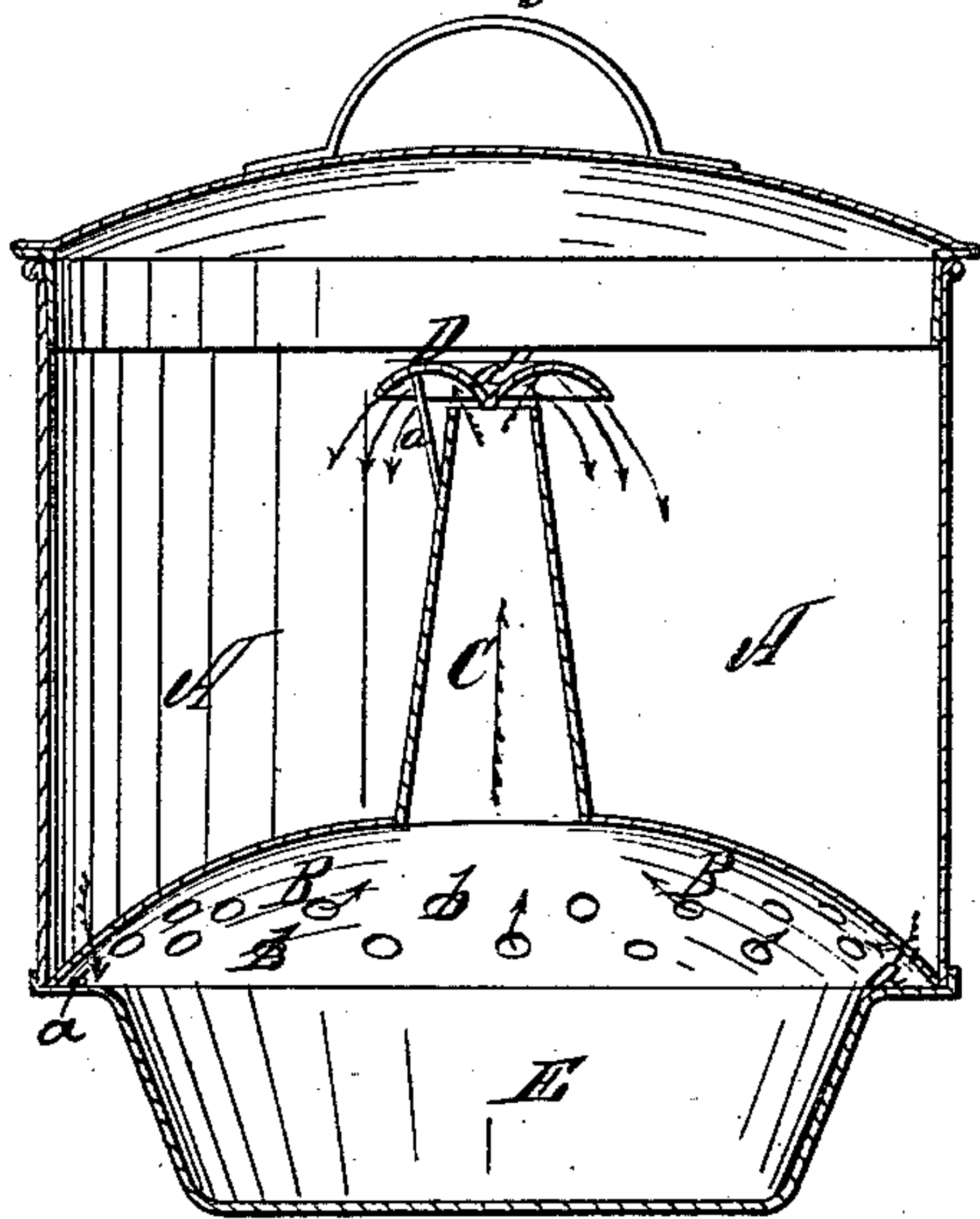


Fig. 3.

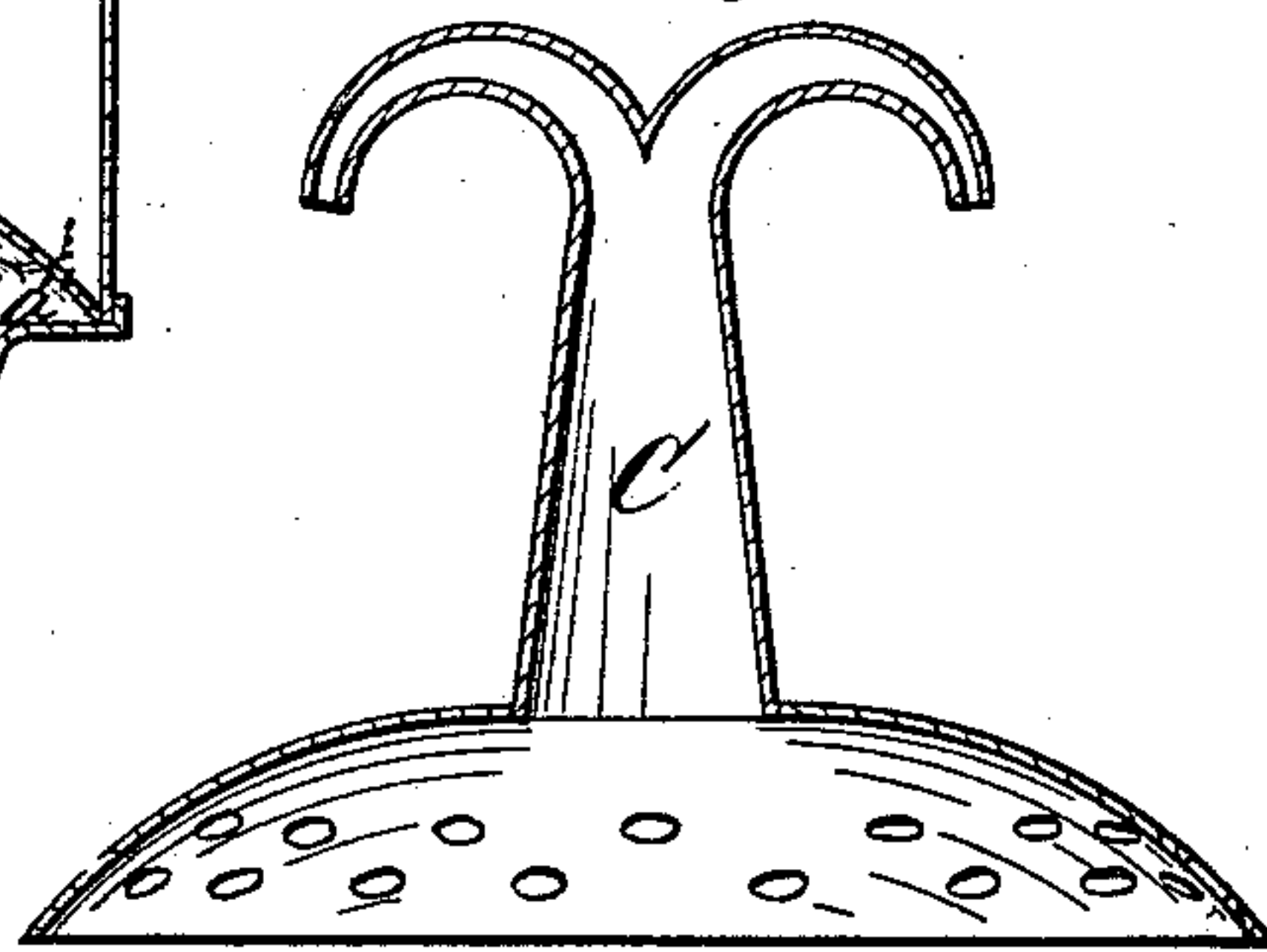
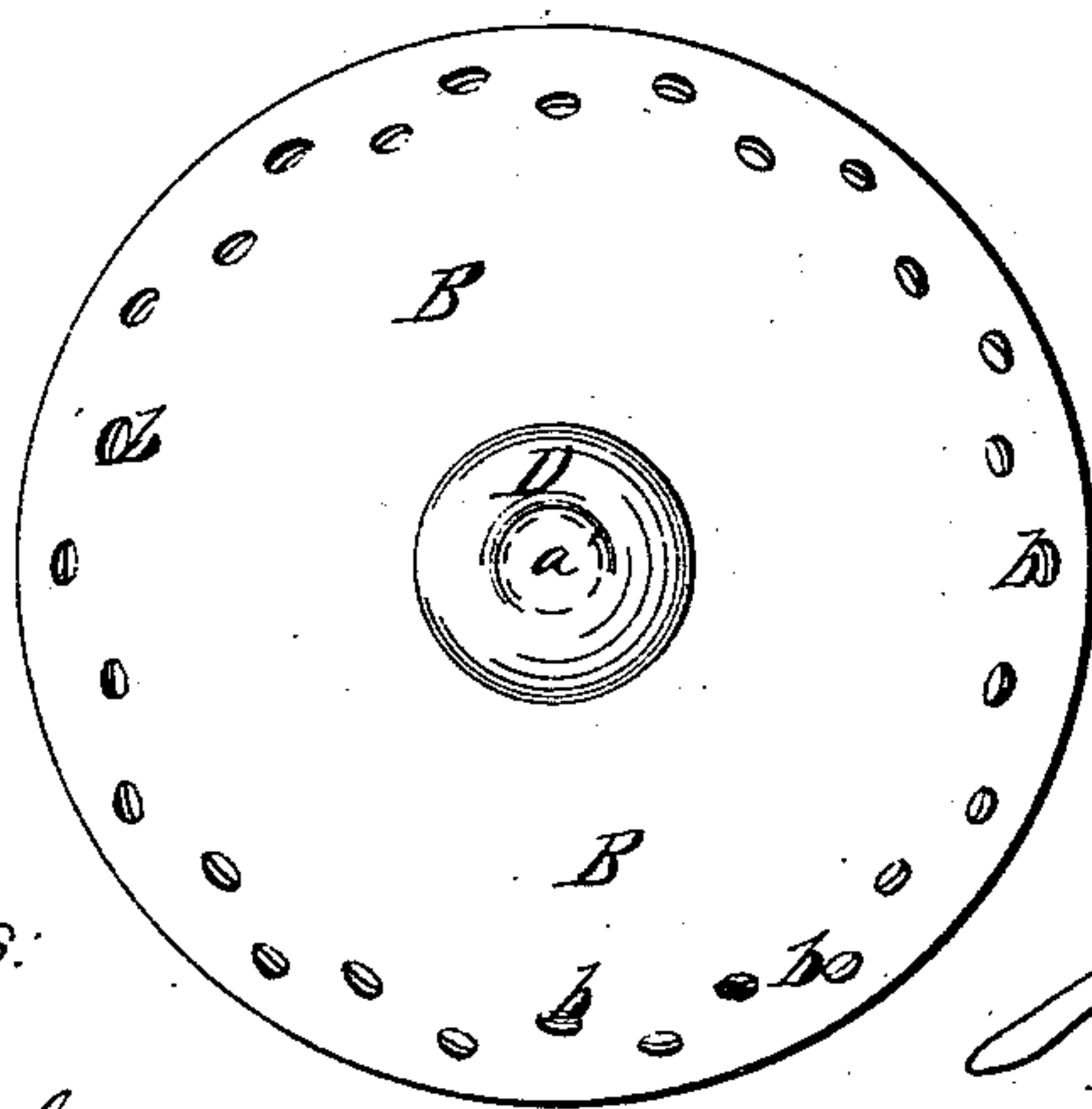


Fig. 2.



Witnesses:

McCombs
a cedore

Inventor

J. B. Waring
per Brown, Combs & Co.
Attys.

United States Patent Office.

J. B. WARING, OF BROOKLYN, NEW YORK, ASSIGNOR TO HIRAM DURYEA, OF NEW YORK CITY, ASSIGNOR TO W. E. DICKSON, OF CHELSEA, VERMONT.

Letters Patent No. 84,923, dated December 15, 1868.

IMPROVEMENT IN HYDRAULIC WASH-BOILERS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, J. B. WARING, of Brooklyn, in the county of Kings, and State of New York, have invented a new and useful Improvement in Wash-Boilers; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a portion of this specification, in which—

Figure 1 is a vertical transverse section of a wash-boiler, made according to my invention.

Figure 2 is a plan view of one portion of the same.

Figure 3 is a vertical transverse section of a modification of one portion of the same.

Similar letters of reference indicate corresponding parts in all the figures.

This invention consists substantially in a perforated concavo-convex diaphragm, a central tube, and a deflector, or its equivalent, so combined for use within a suitable boiler as to provide an efficient means whereby a circulation of the water or suds within the boiler may be produced, and, as a consequence, the thorough cleansing of the cloth or fabrics placed in the boiler be insured.

To enable others to understand the nature and construction of my invention, I will proceed to describe it with reference to the drawings.

A represents a vessel or boiler, preferably of circular form, and the central portion of the bottom of which may be depressed, as shown at E, an annular shoulder, *a'*, being thus provided, upon which may rest the circumference of a concavo-convex plate or diaphragm, B, which, near its periphery, is perforated with numerous small holes, *h*, and is furnished centrally with a tube, C, which may be of tapering form, smallest at its upper end, and communicating at its lower extremity with the space below the diaphragm, and at its top with that portion of the boiler above the same.

D indicates a cap or deflector, which is attached centrally to the top of the tube, at a suitable distance therefrom, by braces, *a*, and which is depressed at its centre, *a''*, and has its circumferential portion flaring downward, in such manner as to deflect the water rising from the tube radially from a line drawn through the axis of the tube.

The clothes or fabric to be boiled or cleansed, being placed in the boiler, together with a suitable quantity of water or suds, and the boiler being placed upon a stove or furnace, the operation of the apparatus is as follows:

The boiling or ebullition of the water or suds, causes the same to pass upward through the tube C, until, striking the deflector D, it is sprayed or thrown outward, and, falling upon the clothes or fabrics, passes

downwards through the same, and through the holes *b* in the diaphragm, and is then caused to again pass upward through the tube, a continual circulation of the water or suds within the boiler and through the clothes or fabrics being thus obtained, and the efficient cleansing of such clothes or fabrics being, as a consequence, secured.

Although, as above stated, I prefer to make the vessel of circular form, yet, if made of other forms, as, for instance, elongated, like those in common use, the false bottom must, of course, be adapted to it, and, in such case, if desired, there may be two tubes employed. Nor is it necessary that the perforated false bottom be strictly concavo-convex, so long as its surface be sustained at the proper elevation above the bottom of the vessel, and the perforations will, of course, be adapted in size, number, and location to the needs of the whole apparatus.

As equivalent to the use of the cap or deflector D, the upper end of the tube may be provided with two or more curved tubes, extending radially therefrom, as shown in fig. 3, and serving, in a manner similar to that of the deflector, to distribute the water or suds as it issues from the tube.

A great advantage results from the peculiar form and inverted position of the caps D. By reason of flaring upward from the apex, and turning downward and still upward, the rising jet of water is centrally and evenly divided by the point of the apex, and then gently guided in all directions, as desired, without abruptly breaking its current, as must be the case when the vertically-rising column is projected into the centre or upon the sides of a hollow cone, which is not inverted.

I am aware that a conical cap, having its apex upwards, has been used upon a wash-boiler tube, and also that false bottoms, with openings therein, have been employed. These, therefore, I do not claim; but

I claim, as a means for guiding and showering over the clothes an ascending column of water, the employment of one or more inverted conical flaring caps C, constructed substantially as described.

Also, such a cap, combined and arranged as shown and described, relatively to the open top of a vertical tube of a wash-boiler.

Also, such a cap or caps, when combined each with a vertical tube, and with a perforated false bottom, substantially as and for the purpose described.

J. B. WARING.

Witnesses:

A. LE CLERC,
J. W. COOMBS.