W. H. HOPKINS.

WASH-BOILER.

No. 185,678. Patented Dec. 26, 1876.

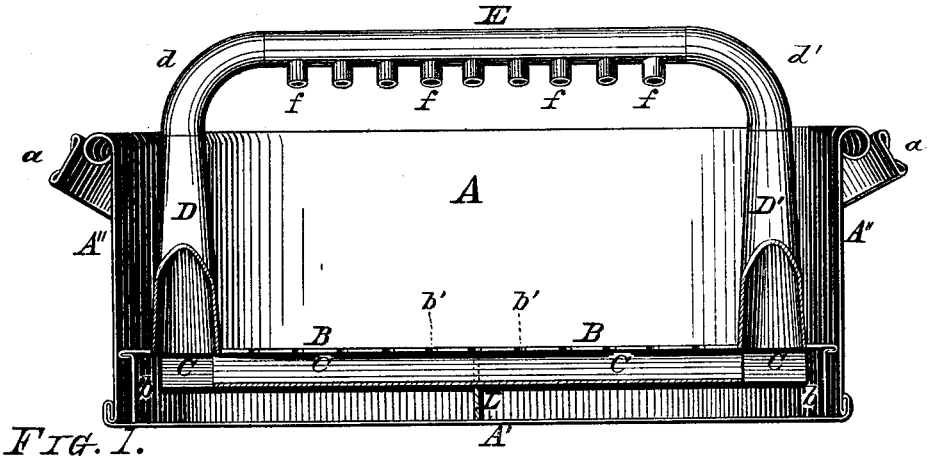


FIG. 1.

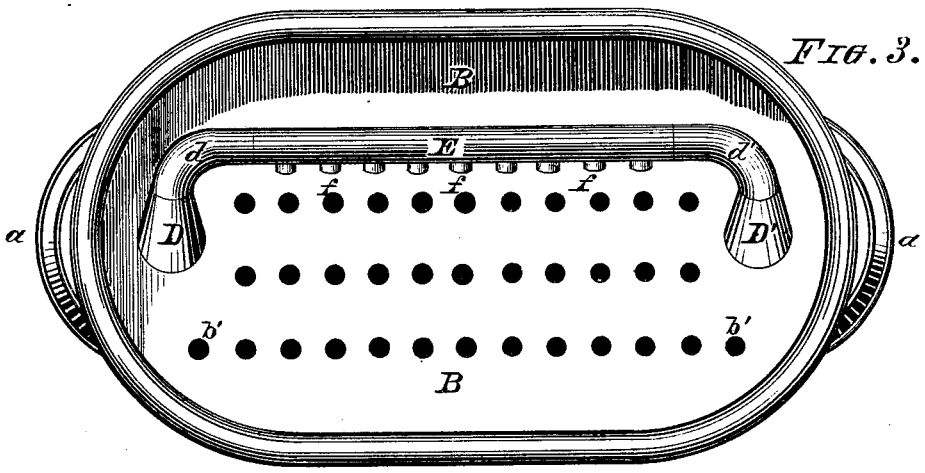
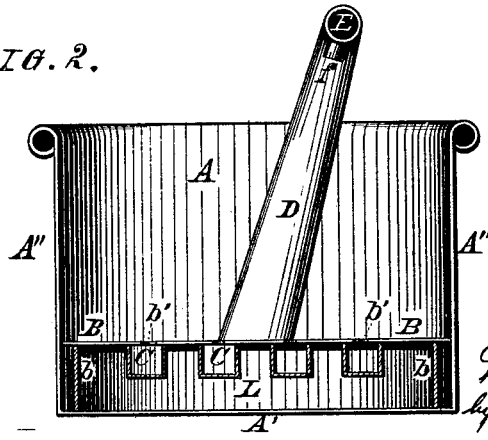


FIG. 3.

FIG. 2.



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UNITED STATES PATENT OFFICE.

WILLIAM H. HOPKINS, OF MILFORD, MICHIGAN.

IMPROVEMENT IN WASH-BOILERS.

Specification forming part of Letters Patent No. **185,678**, dated December 26, 1876; application filed November 29, 1876.

To all whom it may concern:

Be it known that I, WILLIAM H. HOPKINS, of Milford, in the county of Oakland and State of Michigan, have invented certain new and useful Improvements on a Wash-Boiler; and I do hereby declare that the following description of my said invention, taken in connection with the accompanying sheet of drawings, forms a full, clear, and exact specification, which will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to wash-boilers; and it consists in the combination, with a suitable receptacle containing the liquid, of a perforated bottom, placed at some distance from the bottom of said receptacle, said bottom being provided with a series of horizontal conduits or passages corresponding to the number of rows of perforations on its bottom side, and with two conical tubes on its upper side, said tubes being connected by a horizontal tube having a number of discharge-nozzles, to throw the suds rising in the upright tubes over the entire surface of the clothes to be boiled, in a manner as hereinafter fully set forth and described.

In the drawings, heretofore mentioned, which form a part of this specification, and serve to illustrate my invention more fully, Figure 1 is a longitudinal sectional, and Fig. 2 a transverse sectional, elevation. Fig. 3 is a plan.

Like parts are designated by corresponding letters of reference in all the figures.

A is an oblong vessel, constructed of suitable material—such as tin, copper, &c.—consisting of a bottom, A′, double seamed, and soldered to the sides A″, whose upper edges are wired for strength, and provided with ears or bails *a*, for portability of the device. If desired, the bottom A′ may be "dished" or provided with one or more annular depressions, to fit the holes in the top plate of a stove, range, &c. Within this vessel A is placed a bottom, B, having an exterior surrounding rim, *b*, to support the same, at a suitable distance from the bottom A′. This bottom B is provided with a series of four or more longitudinal rows of perforations, *b′*, and with a corresponding series of channels, C, produced of sheet metal, properly bent and soldered to the lower side of said bottom, so that these channels will correspond with the longitudinal rows of perforations *b′*. Centrally the space between the bottom A′ and B is divided into two compartments by the partition-wall L. Attached to the upper side of the bottom B are two obliquely-arranged tapering tubes, D D′, ending in the quarter-turns *d d′*. These tubes communicate with the space between the bottoms A′ B, and are connected together on their smaller ends by the horizontal tube E. On the lower side of said tube E are arranged a number of nozzles, *f*, whose axial line corresponds to that of the upright tubes D D′. The perforated bottom fits the interior of the vessel A snugly, and it, together with its appurtenants, may be removed therefrom or inserted therein at pleasure, the horizontal tube, in conjunction with the upright tubes, serving as a handle for that purpose.

In operation my wash-boiler differs from others in so far that the hot suds rising within the tubes D D′, and passing the horizontal tube E, are discharged through the respective nozzles *f*. These are so arranged as to direct the streams into the center of the boiler, over the entire longitudinal portion thereof, while said horizontal tube E, owing to the inclination of the upright tubes, is placed on one side thereof, in order to facilitate the introduction and removal of the clothes to be boiled. The upright tubes are tapering, and largest on their lower end, to produce a good circulation within the boiler, so that, when the boiling suds rise from below the perforated bottom, together with a large volume of steam, which, when reaching the higher stratum of a comparatively lower temperature, condenses, and thereby reduces the volume, said tubes are reduced in size in proportion to said reduction, and thereby better confine said suds, and assist in their circulation or upward movement. The turns *d* are of a very easy curvature, so as to offer as little frictional resistance to the ascending liquid as is possible in a structure of the kind described. In their downward course the suds pass through the perforated bottom into the horizontal channels below said perforations, and are by them directed toward both sides of the boiler. In this manner the liquid remaining between the perforated bottom and the bottom of the boiler

is perfectly motionless, or nearly so, and particularly so on account of the introduction of the transverse partition L, which separates the space below into two distinct compartments, which allows the deposition of particles of dirt and other solid and heavier substances carried down from the clothes to settle in these apartments, whereby the clothes are supplied with a continuous stream of cleaner suds, and are better boiled, and when removed are in a cleaner condition than they would be if such action had not taken place.

The vessel A may be suitably covered to confine the steam within, thereby to hasten the cleaning process.

Having thus fully described my invention, in order to enable others skilled in the art to which it pertains to make and properly use it, I desire to secure to me by Letters Patent of the United States—

1. The within-described improved wash-boiler, consisting of the vessel A, provided with the perforated bottom B, resting upon its rim *b* at a suitable distance above the bottom of said vessel A, said bottom being provided with a series of channels, C, and with the tapering inclined tubes D D′, connected by the bends *d d′*, and the horizontal tube E, having the nozzles *f*, the whole constructed and arranged in a manner substantially as described, for the purpose stated.

2. The combination, with the perforated bottom B and channels C, of the two tapering tubes D D′, and the connecting-tube E provided with the nozzles *f*, as described, for the use and purpose stated.

3. The combination, with the perforated bottom B, supported at proper distance above the bottom of the liquid-containing vessel A, of the two tapering tubes D D′, and the connecting-tube E, provided with the discharge-nozzles *f*, said tubes D D′ being arranged centrally on both sides of said bottom, and rearwardly inclined, and the nozzles *f*, arranged with their axial line in correspondence with that of said tubes D D′, substantially as described, for the object stated.

In testimony that I claim the foregoing as my invention I have hereto set my hand and affixed my seal in the presence of two subscribing witnesses.

W. H. HOPKINS. [L. S.]

Attest:

MICHAEL J. STARK,

WILLIAM E. SKINNER.