

G. W. & H. B. ADAMS.

Improvement in Wash-Boilers.

No. 126,005.

Patented April 23, 1872.

Fig. 1.

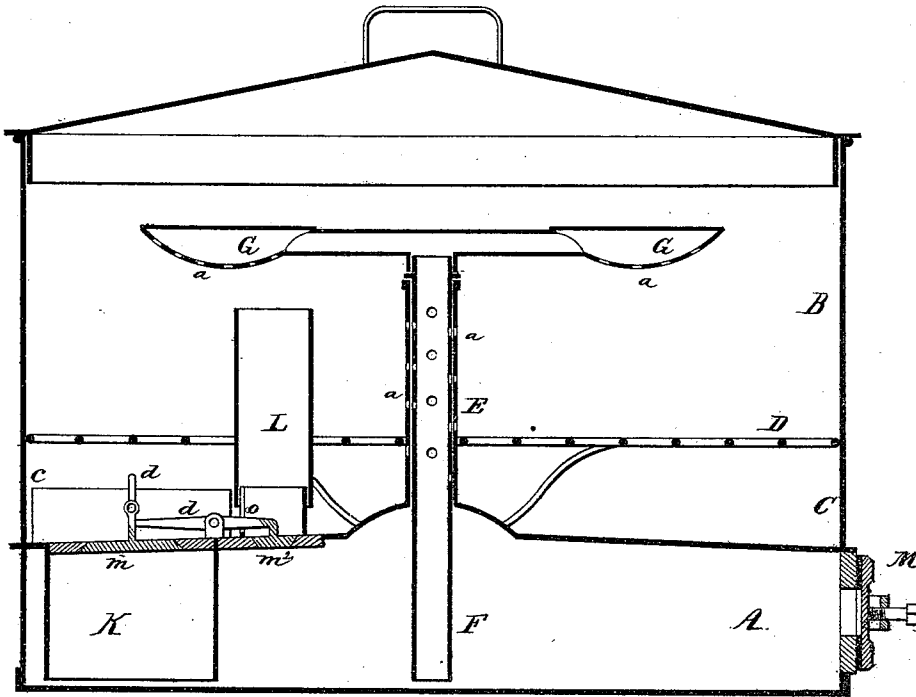
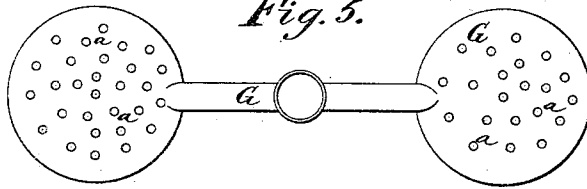


Fig. 5.



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IMPROVEMENT IN WASH-BOILERS.

Specification forming part of Letters Patent No. 126,005, dated April 23, 1872.

SPECIFICATION.

To whom it may concern:

Be it known that we, GAYLORD W. ADAMS, of Candor, and HORACE B. ADAMS, of Owego, in the county of Tioga, in the State of New York, have invented an Improvement in Portable Wash-Boilers, of which the following is a full, clear, and exact description:

The object of our invention is to furnish a portable boiler, of the size and general appearance of wash-boilers in common use, suitable to be placed on any range or cook-stove, and in which articles can be washed in the shortest possible time by means of either steam or hot water; and it consists in, first, a wash-boiler divided into two communicating chambers of unequal sizes—an upper chamber which is water-tight, and provided with a rack whereupon to place dishes, clothes, or other articles, a water-space thereby being formed underneath them, and a lower and smaller chamber, which is steam-tight, so as to hold the heating water; second, a spray-pipe, which can be so adjusted in its surrounding tube that the apparatus will throw upon the articles within either hot water or steam, both in a lateral and vertical direction; third, automatic steam and water valves, so combined as to work together at the same instant, and which, on being operated by a float within a separate reservoir, open communication between the upper and lower chambers, whereby steam in the boiler is permitted to escape into the upper chamber; and hot water collected beneath the rack is returned to the boiler to be heated over again.

Referring to the drawing forming a part of this specification, Figure I represents a vertical longitudinal section of the entire wash-boiler through the line *y y*, Fig. II; Fig. II, a plan view of the inside of the upper chamber, showing the rack, spray-pipe, automatic valves, and the float within its separate reservoir; Fig. III, a vertical cross-section through the line *x x*, Fig. II, and which also shows the hand-key for turning the dish-washing attachment; Fig. IV, the sprinkler for washing dishes; Fig. V, the sprinkler for washing clothes.

A, in the drawing, represents the boiler or lower chamber; B, the upper chamber, which holds the articles to be washed, the same being placed on a wire or cast-iron rack, D, ar-

ranged in such a position as to form a water-space, C, between the rack and the boiler. F shows a spray-pipe pierced with holes *a* in vertical rows at regular intervals, and adjustable in the correspondingly-perforated telescopic tube E, the friction of the latter being sufficient to hold the spray-pipe in any desired position; and upon the top of the spray-pipe are placed sprinklers G H, friction tight, which may be revolved by the action of the water or by a hand-key, *b*, which (Fig. 3) protrudes above the top cover. I shows a hollow airtight float incased in a separate reservoir, *c*, and attached by levers *d d* to the automatic valves *m m*, the levers being so hinged at *f f* that the valves will open in opposite directions, the water-valve *m* opening downward and the steam-valve *m* opening upward; but it is obvious that both valves may be arranged to open downward, and in practice they will be made so as to open in that way.

Fig. VI shows a modification of the levers which join the float to the automatic valves, where, by means of a single hinge, *f*², the levers *d*² *d*² are caused to open the valves downward. K represents a water-tube beneath the water-valve, and extending downward nearly to the bottom of the boiler; and L, a steam-pipe arranged over the steam-valve, and leading from the boiler to the upper chamber. Both the water-tube and the steam-pipe are used for a purpose which will be hereinafter explained.

The operation of our invention is as follows: A sufficient quantity of water having been poured into the upper chamber, which opens the valves so that the water flows through into the boiler, the articles to be washed are laid upon the rack; the spray-pipe is then adjusted in its tube, being pushed down nearly to the bottom of the boiler if it is desired to throw jets of water, but raised so that its lower end is a little way above the water in the boiler if it is desired to throw jets of steam. For washing dishes the perforated attachment H is used, and for washing clothes the perforated attachment G, which is made of circular form, so as to spread the steam or water jets over the entire surface within the boiler. In Fig. III a hand-key is shown for turning the dish-washing sprinkler; but for washing clothes the

sprinkler may be so adjusted that it will be revolved by the force of the water or steam current. The hot water or steam is forced from the boiler up through the spray-pipe and sprinklers onto the articles placed upon the rack, and eventually drips down or leaches through into the water-space above the boiler. By adjusting the holes in the spray-pipe in line with the holes *a* in the tube jets can be thrown radially upon the articles within at the same time that they are thrown vertically from the sprinklers attached to the spray-pipe. When the water has accumulated in the water-space sufficiently to overflow into and fill the separate reservoir containing the float, the latter, of course, will be raised, and, through the medium of connecting-levers, open the valves, thus allowing the water to escape into the boiler.

This reservoir becomes necessary from the fact that it is desirable to have the water-space evacuated speedily. By means of this device the valves are held open until all the water escapes, as the contents of the reservoir are discharged slowly through a small aperture, *n*, provided to effect only this single result. But the automatic valves are not opened as soon as the float begins to rise, for the end of the float-lever which works the valves plays up and down in a slot or ring, so that it cannot come into contact with and open the valves until the float has risen to the top of its reservoir. The weight of the float holds the valves shut; but while the float is being raised the valves are held shut by the pressure of steam in the boiler. The fixed tube *K* below the water-valve, and which extends nearly to the bottom of the boiler, is for the purpose of keeping the great quantity of accumulated steam occasioned by the decrease of water in the boiler from escaping through the water-valve, and to compel it all to escape through the steam-valve *m*², and up through the steam-pipe into the upper chamber, above the articles

washed. The steam which may collect in the water-chamber also escapes into the steam-pipe through a slot, *o*, Fig. I, which serves, too, as a guide for the movement of one of the valve-levers.

What we claim as new, and desire to secure by Letters Patent, is—

1. The combination of the communicating upper and lower chambers *A B* in a portable wash-boiler, so that the heating water may be conveyed automatically and intermittently, but alternately, from one chamber into the other, as shown and described.

2. The combination of an adjustable spray-pipe, *F*, with its sprinkling attachments and its surrounding perforated tube *E*, for the purpose of throwing either jets of steam or hot water both in a lateral and vertical direction, as shown and described.

3. The combination of the automatic steam and water valves *m m*² with each other and with the upper and lower chambers *A B* of a portable wash-boiler, for the purpose of conveying accumulated steam in the boiler up into the upper chamber at the same instant when the water in the upper chamber is returned into the boiler, as shown and described.

4. The combination of the hollow float *I*, reservoir *c*, automatic valves *m m*², valve-levers *d d*, and steam-pipe *L L* with the upper and lower chambers *A B* of a portable wash-boiler, whether the valves work in the same or in opposite directions, as shown and described.

In witness whereof we hereunto subscribe our names in the presence of two attesting witnesses.

GAYLORD W. ADAMS.
HORACE B. ADAMS.

Witnesses:

ORIN T. GORMAN,
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