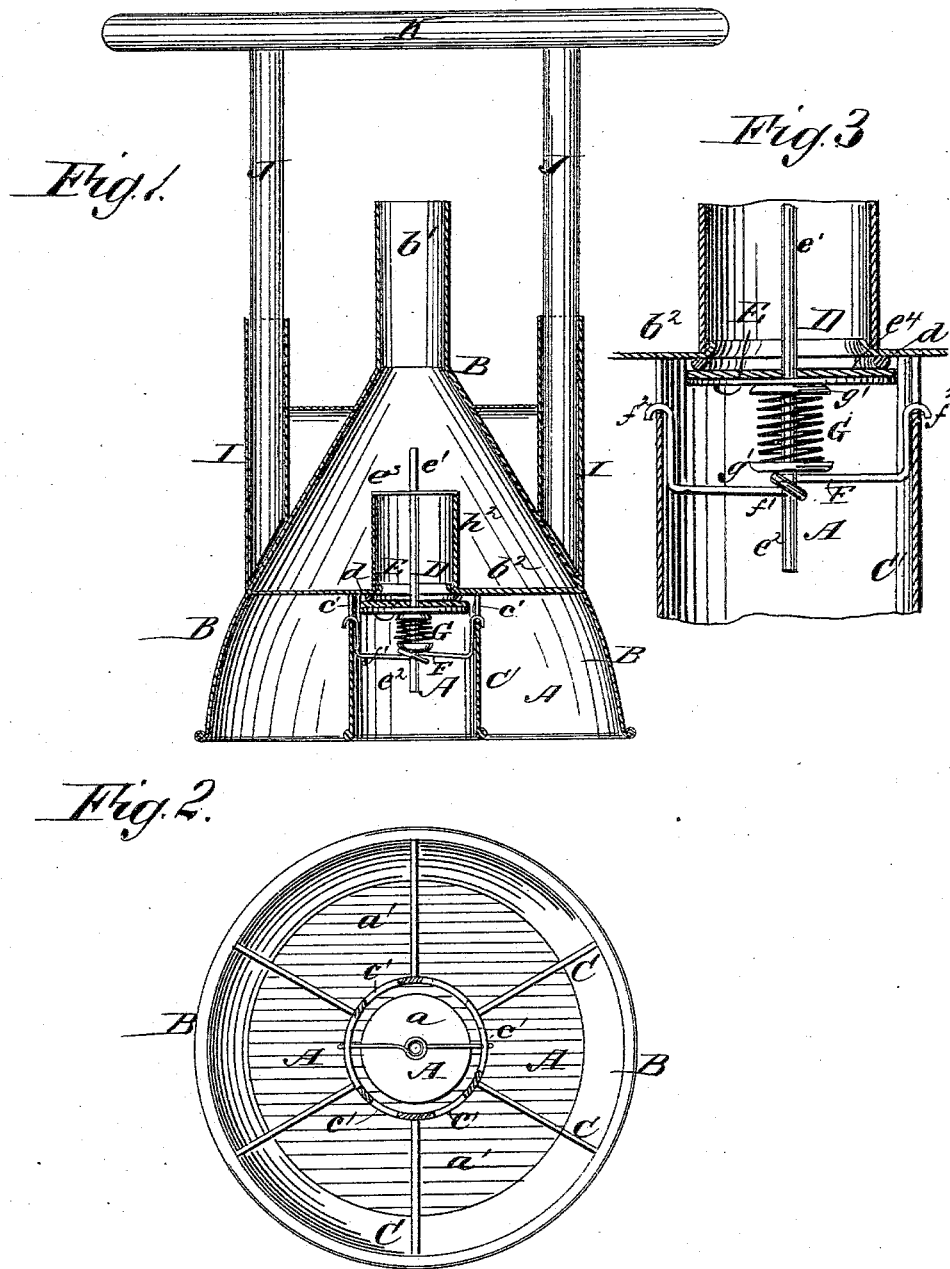


(No Model.)

M. W. PALMER.
WASHING MACHINE.

No. 305,841.

Patented Sept. 30, 1884.



WITNESSES:
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L. Sedgwick

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UNITED STATES PATENT OFFICE.

MERRITT WESLEY PALMER, OF HOLLAND, MICHIGAN, ASSIGNOR TO HIMSELF, AND ISRAEL M. TAPPEN, OF JUNIATA, NEBRASKA.

WASHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 305,841, dated September 30, 1884.

Application filed October 2, 1883. (No model.)

To all whom it may concern:

Be it known that I, MERRITT W. PALMER, of Holland, Ottawa county, Michigan, have invented a new and Improved Washing-Machine, of which the following is a full, clear, and exact description.

This invention consists in certain improvements in that class of clothes-washers in which the water is forced through the clothes by the air being compressed in the vessel and said vessel having a valve to admit air when it is raised, but prevent it from escaping when the vessel is forced down upon the clothes, as will be hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a sectional elevation of the washer. Fig. 2 is a plan view of the washer from beneath, and Fig. 3 is an enlarged sectional elevation of the valve and springs.

B is a bell-shaped vessel, terminating at the top in a tube, b' , reaching above the water, in which the vessel may be immersed, and thereby excluding the water from but freely admitting air to the vessel B. Vessel B is divided by a horizontal partition, b^2 , below which is the air-chamber A. The chamber A is divided into several compartments, a, a' , by the circular partition C' and the radial partitions C C, which partitions strengthen and give support to the vessel B, and press on the top of the clothes in the washing-tub. The several compartments a' are connected with the compartment a by openings $c' c'$ through the circular partition C' .

D is a circular opening through the center of the top b' of the air-chamber A. Around the under side of the opening D is a raised valve-seat, d , for the puppet-valve E, opening downward, which covers the opening D, and is for the purpose of admitting air to the air-chamber A during the upward movement of the washer and confining the air in the air-chamber during the downward movement thereof. The valve has a stem, e' , on its upper side, and a stem, e^2 , on its lower side. The stem e' passes through an aperture in the

guide e^3 , and the stem e^2 is held by the spring F, and thus the valve is retained in a central position on or under the opening D and valve-seat E. The upper side of the valve is covered with leather, felt, cloth, or other suitable material, e^4 , in order that it may form a water-tight joint. The spring F is formed with a loop, f' , in the center for the reception of the stem e^2 of the valve E, and its ends are bent upward and formed into hooks $f^2 f^2$, which are hooked over the partition C' through two of the openings $c' c'$, by which means it is held in its position.

G is a spiral spring, covered at its ends by caps $g' g'$, which are perforated in their centers for the reception of the stem e^2 of the valve. The perforated caps $g' g'$ form a guide, by which the spring G is held to a central position beneath the valve E by the stem e^2 of the valve. The spring G, in connection with the spring F, holds the valve E to its seat. The opening D in the top b' of the air-chamber A is surrounded on the upper side by a tube, h^2 , to which the guide e^3 is attached.

I I are sockets to receive the arms J J of the handle K. The sockets are firmly attached to the body of the washer. The handle K, by which the washer is operated, has two arms fitted to the sockets I I and secured therein.

The operation is as follows: The clothes, with water sufficient to cover them and soap, being placed in a tub, the washer is placed in the water on top of the clothes and is pressed downward on them. It is moved from place to place on the clothes, and by an up-and-down movement is pressed frequently on every part of them. By the up-and-down movement of the washer the air-chamber is kept filled with air through the valve in the top, which air, acting under pressure placed on the washer by the operator, effectively acts on the water beneath it, which is thus forced through the fabrics, thereby removing the dirt and cleaning them in the most thorough manner.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

The combination, in a washing-machine, of the vessel provided with a horizontal partition-plate, having a central opening and a

tube, C, below the opening, with the hooked
spring F, engaging openings in the tube, and
a loop at its center to guide the valve-stem
e², the plates g' g' on said stem, and a spiral
5 spring between said plates, and a valve on
the stem above the cap-plates g', for closing
the opening in the partition-plate when the

machine is forced down, substantially as set
forth.

MERRITT WESLEY PALMER.

Witnesses:

ISAAC FAIRBANKS,
THOMAS L. WELSH.