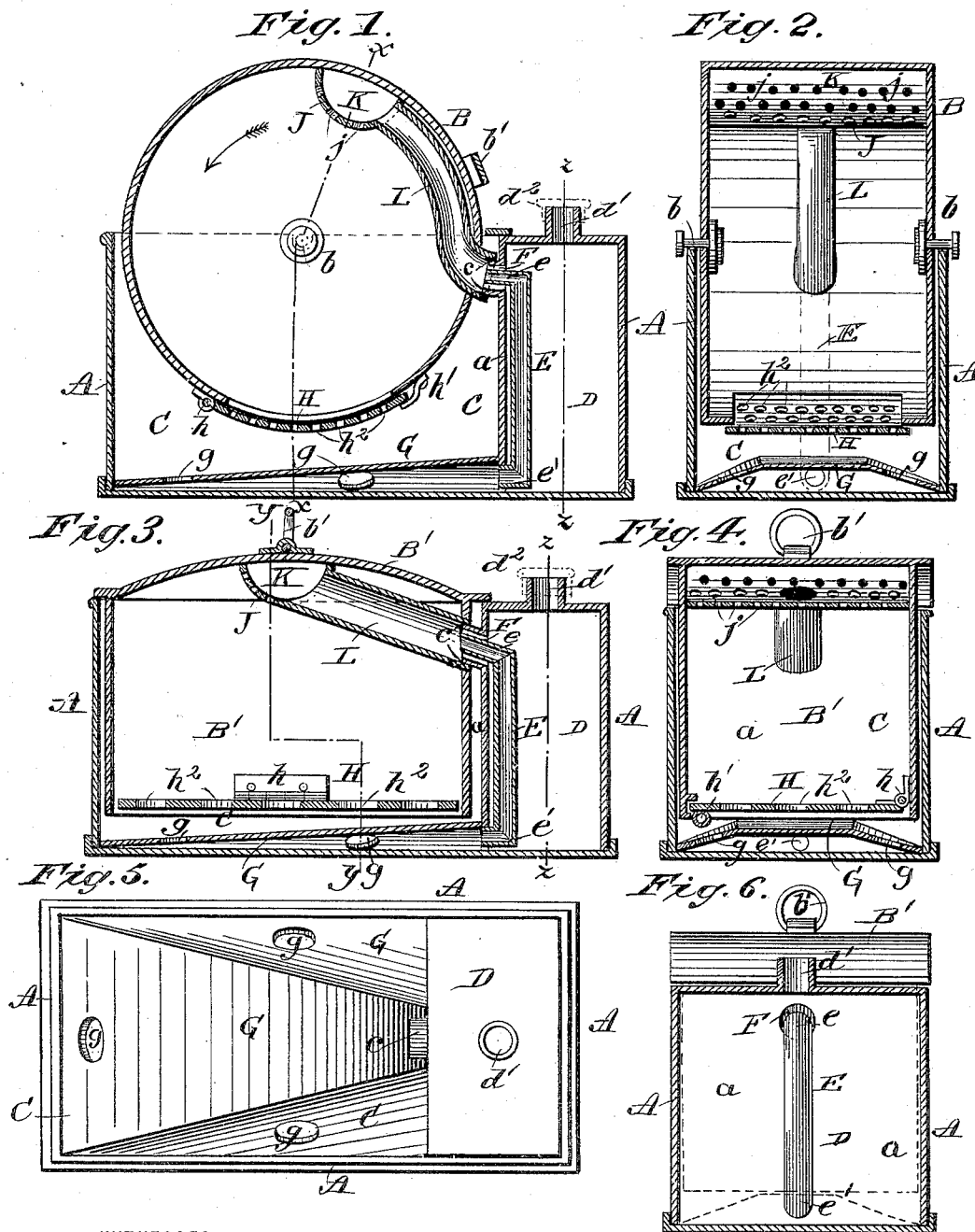


(Model.)

L. J. MONTGOMERY & C. P. TOWNSEND.
WASHING MACHINE.

No. 422,144.

Patented Feb. 25, 1890.



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WASHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 422,144, dated February 25, 1890.

Application filed July 31, 1888. Serial No. 281,530. (Model.)

To all whom it may concern:

Be it known that we, LEVI JAMES MONTGOMERY and CLARK PLUMLEY TOWNSEND, of Broken Bow, in the county of Custer and State of Nebraska, have invented a new and Improved Clothes-Washer, of which the following is a full, clear, and exact description.

Our invention relates to an apparatus whereby clothes may be washed without mechanical rubbing or squeezing of them by hand and with economy of time and labor; and the invention has for its object to provide a simple, inexpensive, and efficient clothes-washer in which circulating hot water and steam are utilized in a manner assuring quick and thorough cleansing of the clothes and without injuring them.

The invention consists in certain novel features of construction and combination of parts of the clothes-washer, all as hereinafter described and claimed.

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

Figure 1 is a central longitudinal section of the preferred form of our improved clothes-washer. Fig. 2 is a vertical transverse section thereof, taken on the line $x x$ in Fig. 1. Fig. 3 is a central longitudinal section of a modified form of the washer operating on the same general principles; and Fig. 4 is a vertical transverse section thereof, taken on the line $y y$ in Fig. 3. Fig. 5 is a plan view of the boiler of the washer, the clothes-box being removed; and Fig. 6 is a vertical transverse section taken through the steam-generator of the washer and on the line $z z$ in either Figs. 1 or 3.

We will first describe the washer in its preferred form and with more special reference to Figs. 1, 2, 5, and 6 of the drawings, as follows:

The washer consists of two main parts—a boiler A and a clothes box or holder B—which, when the washer is in use, is placed within the main open-topped section or compartment of the boiler, as hereinafter explained. The boiler A is preferably made in elongated rectangular form, and is divided by a vertical transverse partition a into two compartments—a large one C to receive the clothes-box B and a small one D, which is the wa-

ter-boiler or steam-generator of the apparatus, and has in its closed top d an opening d' , through which the water or washing-liquid will be poured into it, and this opening will be closed by a screw-cap or plug d^2 , fitted to a collar or flange at the opening, and shown in dotted lines in Fig. 1 of the drawings. The compartment D communicates with the one C only by means of a thimble c , fitted in or to the partition a and projecting outward therefrom so as to make a joint with an upper tube of the clothes-box, as hereinafter explained. A tube E, which is preferably run vertically through the boiler-compartment D, has a lower elbow or bend e' , which projects into the clothes-box compartment C at its bottom, and an upper elbow e , which projects through the thimble c into the compartment C, but is sufficiently smaller than the thimble to provide a somewhat narrow annular steam-outlet F between the elbow and the thimble, and through which steam will pass from the boiler-compartment D to the clothes-box.

At the bottom of the compartment C is fixed or fitted an auxiliary floor G, which slants at its central portion and lengthwise from a point a little above the open end of the elbow e' of the pipe E to the farther end of the bottom proper of the boiler A, and the floor also slants to said bottom at the sides of the boiler and is provided with holes g —one next the farther end and one at each side of the compartment C, as shown in Figs. 1, 2, and 5 of the drawings. These holes g allow circulation of boiling water and steam from the bottom of the compartment C up through the tube E, and thence to the top of the clothes-box.

The clothes box or holder B in its preferred form is made as a cylindrical case, which fits within the boiler-compartment C and has opposite side trunnions or gudgeons $b b$, by which it is journaled in open notch-bearings at the top of the boiler. A portion of the periphery of the box B is formed as a door H, which is hinged at h at one side or end, and may be held closed by a suitable catch, lug, or button h' . The door is provided with a series of perforations h^2 , which allow free circulation of water and steam through it and the clothes which the box contains when the washer is in use. The clothes-box has a suit-

able handle or bail b' , by which it may be lifted from the boiler.

Across the top and inside of the clothes-box B is fixed a plate J, preferably of semi-cylindrical form and provided throughout with a series of perforations j , permitting escape of steam and water from the chamber K, formed inside the plate J, and which had entered said chamber from the generator through an imperforate tube or pipe L, which is fixed at one end to the plate J, and is adapted to fit closely at its other end onto or over the thimble c , which projects from the inner wall a of the generator.

The operation of the clothes-washer is as follows: A proper quantity of water or washing-fluid will be placed in the clothes-box compartment C of the machine, and the boiler-compartment D will also be charged with water or washing-fluid, and it may be up to the outlet F, and the cap or plug d^2 will then be applied. The clothes-box B is then placed on the boiler A in such (not working) position that it may be turned to bring the door H uppermost, so that clothes may be placed within it. The box B is then turned (see arrow) and adjusted so that the projecting end of tube L engages the thimble c , as shown in Fig. 1, and its journals also enter their bearings in boiler A.

When the washer is placed on a stove or heater and the fluid in the compartments C D boils, a circulation of the fluid will be established in the clothes-box B and in the compartment C by passage or flow of the fluid through the bottom holes g , and thence through the tube E, up to and through the clothes-box tube L and into the chamber K, and thence through the holes j of the plate J, down upon the clothes in the box. The steam generated in the boiler-compartment D will, under considerable pressure, escape at the annular opening F in the thimble c , and there will meet the water flowing from the tube E into and along the tube L, the steam-jet thus acting as an injector to stimulate the water-circulation through said tube, the clothes-box, the compartment C, and the tube E, thereby causing the mingled circulating water and steam to be thrown downward forcibly onto the clothes in the box and inducing a strong suction of the washing-fluid downward through the clothes to quickly and thoroughly cleanse them without subjecting them to mechanical manipulation—such as rubbing or squeezing them—and reducing to a minimum the labor required of the operator.

We briefly explain the modified form of washer shown in Figs. 3 and 4 as follows: The clothes-box B', instead of being made cylindrical, is made square or rectangular in general form and occupies quite all of the boiler-compartment C, in which it is suspended by the edge flanges of its fixed or closed top resting on the boiler. The perforated bottom H of this box B' is hinged at one side and latched at the other side. The box is

provided with a transversely-ranging upper perforated tube J, forming a chamber K, which communicates by a tube L with the outlet F of the steam-generator D. The operation of this modified form of washer is substantially like the other, except that the clothes to be washed will be placed in the box B' while it is out of the boiler, and the clothes-charged box will then be inverted and placed in the boiler-compartment C and with its tube L engaging the thimble c of the steam-generator, and when the clothes are washed the box B' will be bodily lifted out of the boiler and may be carried to any rinsing-vessel, into which the clothes may be discharged after the box-door H is opened. The cylindrical clothes-box B above described may also be lifted from the boiler and carried to any desired place with the clothes in it; but by journaling said box on the boiler the washed clothes may be removed from it by simply turning it around until its door H is uppermost, and the door may then be opened to allow the clothes to be removed from the box without the labor and inconvenience involved in lifting the entire clothes-box from the boiler.

It is not essential that the bottom G be employed; but by using it the downward circulation of water through the clothes in the box B or B' and through its perforated door H is maintained more equally, and a more uniform cleansing of all the clothes in the box is thereby assured, as will readily be understood.

Having thus fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a clothes-washer, the combination of a removable clothes box or holder having a lateral opening for admission of steam, and a tube L, leading from said opening part way around the interior of the clothes-box, with the main boiler A, having a double bottom forming a steam-generating space or chamber, and a pipe E, communicating with such space and having a laterally-projecting top portion which coincides and communicates with the opening in the clothes-box when the latter is placed in the boiler, as shown and described.

2. In a clothes-washer, the combination of a main boiler having a lateral compartment D, a clothes-box located in the said main boiler and having an open-ended tube that extends through its sides, a steam-generating chamber at the bottom of said boiler, and a tube connecting the said chamber with the tube in the clothes-box and passing through a thimble c in compartment D, which is large enough to allow space for passage of water, as shown and described.

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Witnesses:

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