(No Model.)

B. S. KERR.

WASHING MACHINE.

No. 474,746. Patented May 10, 1892.

Fig. 4.

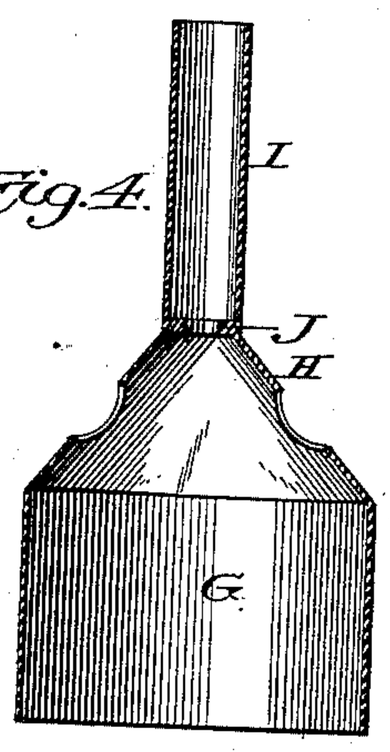


Fig. 3.

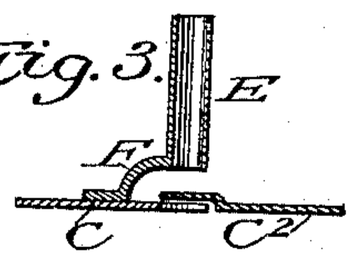


Fig. 5.

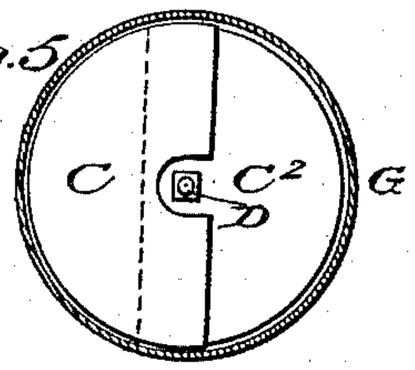


Fig. 6.

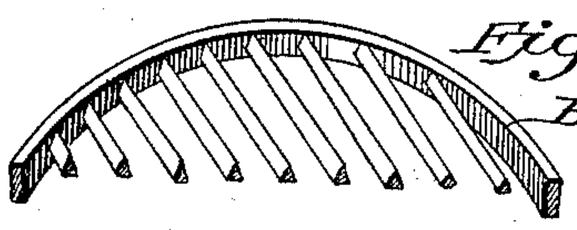


Fig. 1.

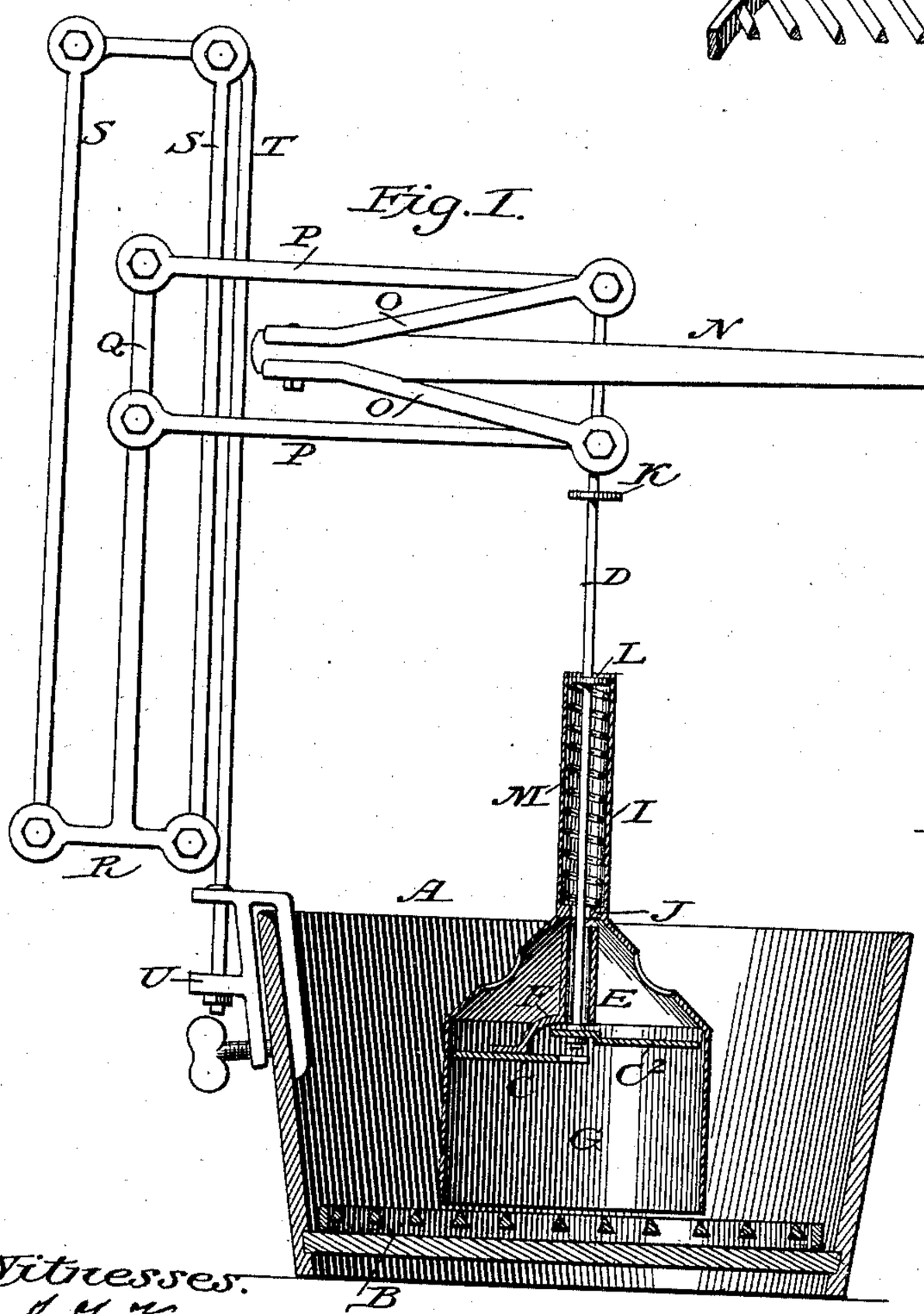
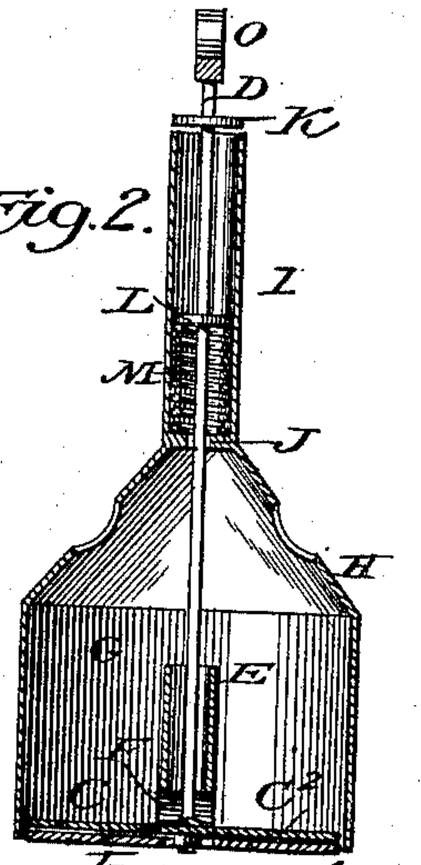


Fig. 2.



Witnesses:
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UNITED STATES PATENT OFFICE.

BENJAMIN S. KERR, OF MONROE, WISCONSIN.

WASHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 474,746, dated May 10, 1892.

Application filed August 24, 1891. Serial No. 403,637. (No model.)

To all whom it may concern:

Be it known that I, BENJAMIN S. KERR, a citizen of the United States, residing at the city of Monroe, in the county of Green and State of Wisconsin, have invented a new and useful Washing-Machine, of which the following is a specification.

My invention relates to improvements in washing-machines in which a piston adjusted to a cylinder is used to force suds into and through clothing or other fabrics sustained in said suds on a false bottom, in which there is a grating of parallel bars placed at the bottom of an ordinary circular wash-tub, said piston being in sections attached to a piston-rod, one directly and the other indirectly, and to which piston-rod is indirectly attached a handle-rod by which the machine is worked by the hands, said handle-rod being indirectly attached to the said tub. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a vertical section of the wash-tub used, the false bottom, and the piston and its attachments or pounder, with the piston at the top of the cylinder and the sections apart, leaving an opening between them, and a view in elevation of the handle-rod and the machinery connected with and attaching it to the tub. Fig. 2 is a vertical section of the pounder as it appears with the piston depressed to the bottom of the cylinder, the space between the two sections being closed. Fig. 3 is a vertical section of the piston and tube attached by the arm to it. Fig. 4 is a vertical sectional view of the cylinder and parts attached to it. Fig. 5 is a view of the bottom of the pounder. Fig. 6 is a perspective view, parts being broken away, of the false bottom.

Similar letters refer to similar parts throughout the several views.

A represents the wash-tub, in which, at its bottom, is placed false bottom B, the rim or band of which false bottom extends below the lower plane of the parallel bars of said grating in the same and rests on the bottom of the tub, thereby forming an open space between said grating of parallel bars and the bottom of the tub. On this false bottom in the suds rests or is placed the clothing or other fabrics while being washed. Section C^2 of the piston is firmly fixed to the lower end of the piston-rod D, and section C of the piston is attached to the piston-rod D by means of the tube E, which tube is firmly fixed to said section C by arm F, extending from one to the other. The piston-rod D passes vertically through said tube E and has through it a short vertical reciprocal movement. Section C^2 of the piston is adjusted to lap over C section a short distance across the middle of the piston, and tube E is at its lower end fixed a short distance from C section, allowing a short vertical reciprocal movement of C^2 section above C section, thereby causing the space between the two sections of the piston to be opened or closed in accordance with the vertical reciprocal movements of the piston-rod in tube E. The piston is adjusted to a vertical reciprocal movement in the vertical cylinder G by means of the piston-rod D. Cylinder G is attached to cone H, and to the top of which cone is attached tube I, and in which tube I the piston-rod has a vertical reciprocal movement. In the lower end of tube I is fixed ring or plate J, through which the piston-rod has a vertical reciprocal movement. Piston-rod D is provided with plates K and L. The piston is kept in its position in the cylinder G by means of the plate K coming in contact with the upper end of tube I in its downward movement and by the upper end of tube E coming in contact with plate J in its upward movement. M is a spiral spring resting at its lower end on plate J and at its upper end against plate L, and is adjusted to hold the piston at the top of cylinder G and keep open the space between the sections of the piston, excepting when downward pressure is had upon the piston-rod D. C section of the piston is provided above with a vertical rim fixed to the same, extending around from the lapping edge of C^2 section from one side to the other for the purpose of maintaining the two sections in their proper relative position toward each other and the cylinder G.

For operating the pounder or piston and its attachments the handle-rod N is firmly fixed between the converging ends of rods O O. Rods O O are of equal length and attached to the piston-rod D by the pivotal bolts, on which parallel rods P P are pivoted

to said piston-rod. Parallel rods P P are also of equal length and at their other ends pivoted to vertical standard Q at equal distance with their pivotal points of attachment to the piston-rod. Standard Q is attached at right angles to horizontal swinging bar R. To bar R are pivoted at their lower ends parallel rods S S, which rods are of equal length, and at their upper ends pivoted to the projecting horizontal arm at the top of standard T. Standard T is swiveled to clamp U in a vertical position. Clamp U is securely clamped to the side of the tub.

The operation of the device for working the pounder is as follows: The standard T being swiveled to the clamp U in a vertical position, the horizontal arm of the same will maintain a position parallel with the top of the tub in whatever direction it may be laterally turned, and the swinging bar R being attached pivotally to said arm by the parallel and equal-length rods S S it follows that at whatever position it may be moved laterally it will remain parallel with said arm and standard Q be maintained always in a vertical position, and as standard Q always maintains a vertical position and as the parallel rods P P are of equal length and pivoted to it at one end and to the piston-rod D at equal distance at the other it follows that however high or low the piston-rod may be elevated or depressed it will maintain a vertical position, or a position parallel to standard Q, and as the handle-rod N is firmly held between the converging ends of the rods O O and the other ends of said rods being attached to the piston-rod it follows that said handle-rod will remain at right angles with said piston-rod and parallel with the plane at the top of the tub in the vertical reciprocal movements of the same. Said adjustment of the swiveled standard T with its horizontal arm and equal-length parallel rods S S, pivoted to its arm, and swinging bar R, parallel with the said arm with the vertical standard Q, to which are pivoted parallel equal-length rods P P, to the other end of which is pivoted the piston-rod D, to which are attached equal-length converging rods O O, between the converging ends of which rods is fastened handle-rod N, affords a means of moving the pounder in any direction desired, either laterally or vertically, and at the same time furnishes a means of working the piston of the pounder in its movements.

The operation of the piston and its attachments or pounder is as follows: The tub being filled with suds to a suitable depth and the clothing or other fabrics placed therein on a false bottom B, the disengaged end of handle-rod N is grasped with the hands of the operator and held above the suds. The piston is then held at the top of the cylinder. C^2 section of the piston is held up against tube E, the upper end of which rests against plate J, and an open space between the lapping edges of sections C and C^2 of the piston maintained. The lever is moved downward, the lower end of the cylinder enters the suds above the clothing, it passes downward, the suds enter the cylinder, displacing the air in the cylinder, which passes out through said open space between the sections of the piston and through holes in cone H made for that purpose, the bottom of the cylinder comes in contact with the clothing, its downward progress is arrested, but not the downward movement of the handle-rod. The force of the handle-rod is continued on the piston-rod, moving the piston downward. C section comes in contact with the suds, is momentarily arrested, and the space between C and C^2 sections closed and the suds prevented from escaping up between them. The downward pressure of the handle-rod is continued, forcing the piston down the cylinder, forcing the suds out of the bottom of the cylinder into and through the clothing and grating of the false bottom into said space below, where it passes off laterally from under the pounder and up through the grating of the false bottom, loosening up the clothing and preventing them from being packed down upon and into the grating of the false bottom. The downward pressure is then discontinued, whereupon by the pressure of the spiral spring against plate L, C^2 section is raised above C section and the air enters through the opening in the piston and fills the cylinder as the piston is raised to the top of the cylinder by the continued pressure of the spiral spring, thereby allowing the pounder to be easily lifted from the suds by the handle-rod. The pounder is then moved laterally to another place in the tub, where the same vertical reciprocal movements are had, with the same results, and the clothing washed by the currents of suds thus produced passing through the clothing.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In combination, cylinder G, cone H, tube I, and plate J, attached together, and plate L, attached to piston-rod D, and spiral spring M, encircling piston-rod D and resting at one end against plate L and at the other against plate J, and piston C C^2, arm F, tube E, and piston-rod D, attached together as described, all substantially as described.

2. In combination, clamp U, adjusted to be clamped tightly to tub A, standard T, swiveled to the same, parallel rods S S, bar R, and standard Q, attached to the same, parallel rods P P, converging rods O O, attached to piston-rod D, piston-rod D, and the handle-rod N, attached to the converging rods O O, all substantially as described.

BENJAMIN S. KERR.

Witnesses:
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