D. COMAN.

Washing-Machine.

No. 209,023. Patented Oct. 15, 1878.

Fig. 1.

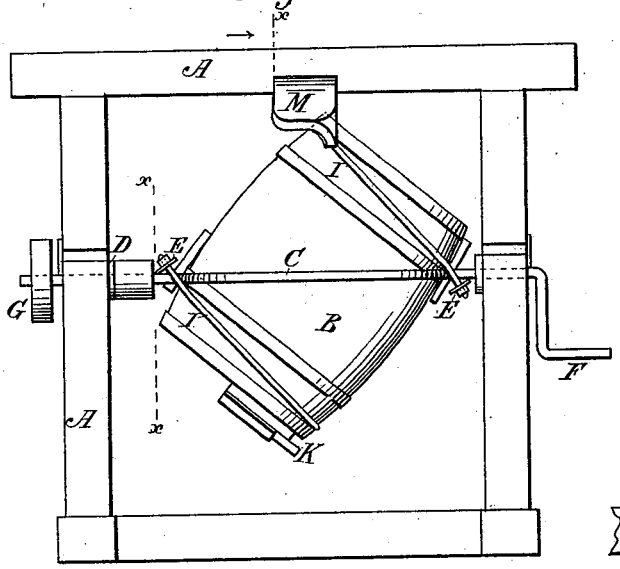


Fig. 2.

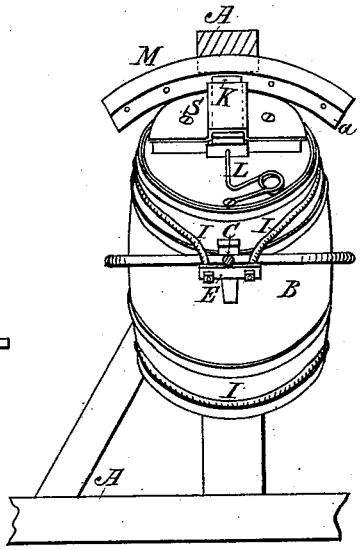


Fig. 3.

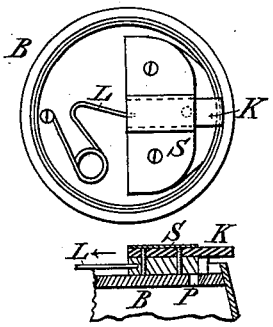


Fig. 4.

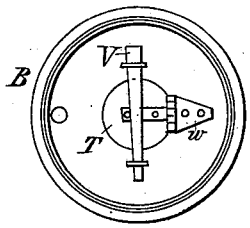
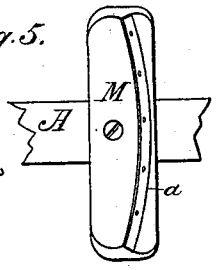


Fig. 5.



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UNITED STATES PATENT OFFICE.

DARIUS COMAN, OF DELAVAN, MINNESOTA.

IMPROVEMENT IN WASHING-MACHINES.

Specification forming part of Letters Patent No. **209,023**, dated October 15, 1878; application filed June 1, 1878.

To all whom it may concern:

Be it known that I, DARIUS COMAN, of the town of Delavan, county of Faribault, State of Minnesota, have invented a new and useful Improvement in Machines for Washing Clothes and other articles, of which the following is a specification:

The invention relates to that class of machines known as "washing-machines," for washing clothes, cloths, yarns, &c.

The object of the invention is to wash clothes easily, speedily, and at the same time to do it well, without friction, injury, or wearing of the clothes; and, further, to so arrange the vent of the machine that it can be easily and readily operated in giving vent to the washer to prevent its bursting.

The invention consists of a barrel revolving in bearings suspended by a shaft, and held in place by rods or hoops running from the shaft diagonally, and propelled by a crank or pulley, as will be hereinafter more fully described, and then specifically pointed out in the claims.

In the accompanying drawing, in which similar letters of reference indicate like parts, Figure 1 is a side view of the machine. Fig. 2 is a section of the same on line *x x*, Fig. 1, looking in the direction of the arrow. Fig. 3 represents one end of the barrel, with spring and bar for opening and closing the vent attached thereto. Fig. 4 represents the other end of the barrel, with hinged door for introducing and removing the clothes, and the bar by which the same is secured. Fig. 5 is a detailed view of the bar M, showing more fully the curved rib *a* thereon.

In the drawings, A represents the frame of the machine; B, the barrel or receptacle for holding the clothes or material to be washed; C, the shaft upon which the barrel is hung, and D the bearing that supports the shaft and upon which it turns. The frame A is made of wood, with sills, posts, and beams of the desired size, framed together in the ordinary manner, so as to form a firm support for the operative mechanism of the machine. The barrel B is composed of staves or lags of wood, provided with heads, and the whole secured firmly together with hoops or bands in the ordinary manner. The shaft C is formed with a loop for holding the barrel, and when placed therein it hangs inclined to the plane of its axis, more or less, as may be desired. The barrel is also secured to the shaft, and held firmly in place thereon by means of hoops I, which pass around it at each end, and also around the shaft, having their ends secured together and to the shaft by cross-bars E, so as to prevent any lateral movement of the barrel when rotated. An ordinary crank, F, is attached to one end of the shaft C, by means of which the barrel is turned or propelled; or it may be operated by means of a pulley, G, or a tumbling-rod attached to the square end of the shaft, outside of the said pulley. One head of the barrel is provided with a vent, P, that is opened and closed by the vent-bar K. This bar may be made of iron, steel, wood, rubber, or of any proper material, made of two pieces, fastened together, one longer than the other, the longer at the top and the shorter at the bottom, and it covers the vent-hole, as shown in Fig. 3. The bar K is held close to the head of the barrel and in place by the cross-bar S, and is moved to open the vent at each revolution by striking the projecting curved rib *a* upon the cross-bar M, which is made of wood, and faced on the curved side of the rib *a* with iron or other hard substance, and fastened or bolted to the top beam of the frame. When the bar K is forced back by the convex bar M it will be returned as soon as it passes M by means of the spring L. The other head is provided with an opening to receive the clothes to be washed. This opening is provided with a door, T, that is made to fit closely into the opening, and is secured to the head of the barrel by means of hinge *w*, and held in place when closed by a cross-bar, V.

This washer is operated as follows: The head of the barrel is turned up. The door T is opened; the warm water, soap, and clothes placed therein. The opening is first covered with a cloth. The door is then shut down and secured by the bar, the cloth making the door to fit perfectly tight, so as to prevent leaking. Power is applied to the shaft C, causing the barrel B to revolve, allowing the vent-bar K to strike the cross-bar M once in each revolution, opening the vent-plug gradually, and allowing the steam to escape.

It is evident that when the barrel stands

perpendicular with its vent-head top, the vent is fully opened, and will be gradually closed as the vent-bar moves along under the curved bar M until it has passed beyond it, when it will be fully closed by the operation of the spring. The gradual opening and closing of the vent allows the air to enter and fill the vacuum created by the condensation of the steam. The barrel is made to revolve over and over until the washing of the clothes inside is completed, when the barrel is again placed horizontally, the water drawn off, and the clothes removed.

Having fully described my invention, what I claim, and desire to secure by Letters Patent, is as follows:

1. The looped shaft C and straps I, in combination with barrel B, in the manner and for the purpose specified.

2. The barrel B, provided with vent P and automatically-sliding bar K, in combination with the bar M, substantially as and for the purpose specified.

3. In a washing-machine, the looped shaft C and hoops or straps I, in combination with barrel B, provided with automatically-closed vent P in one end and hinged door T in the other, all constructed, arranged, and operating in the manner and for the purpose substantially as herein shown and described.

DARIUS COMAN.

Witnesses:

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A. H. KNEELAND.