D. Graves.

Washing Mach.

No. 89,401. Patented Apr. 27, 1869.

Fig. 2.

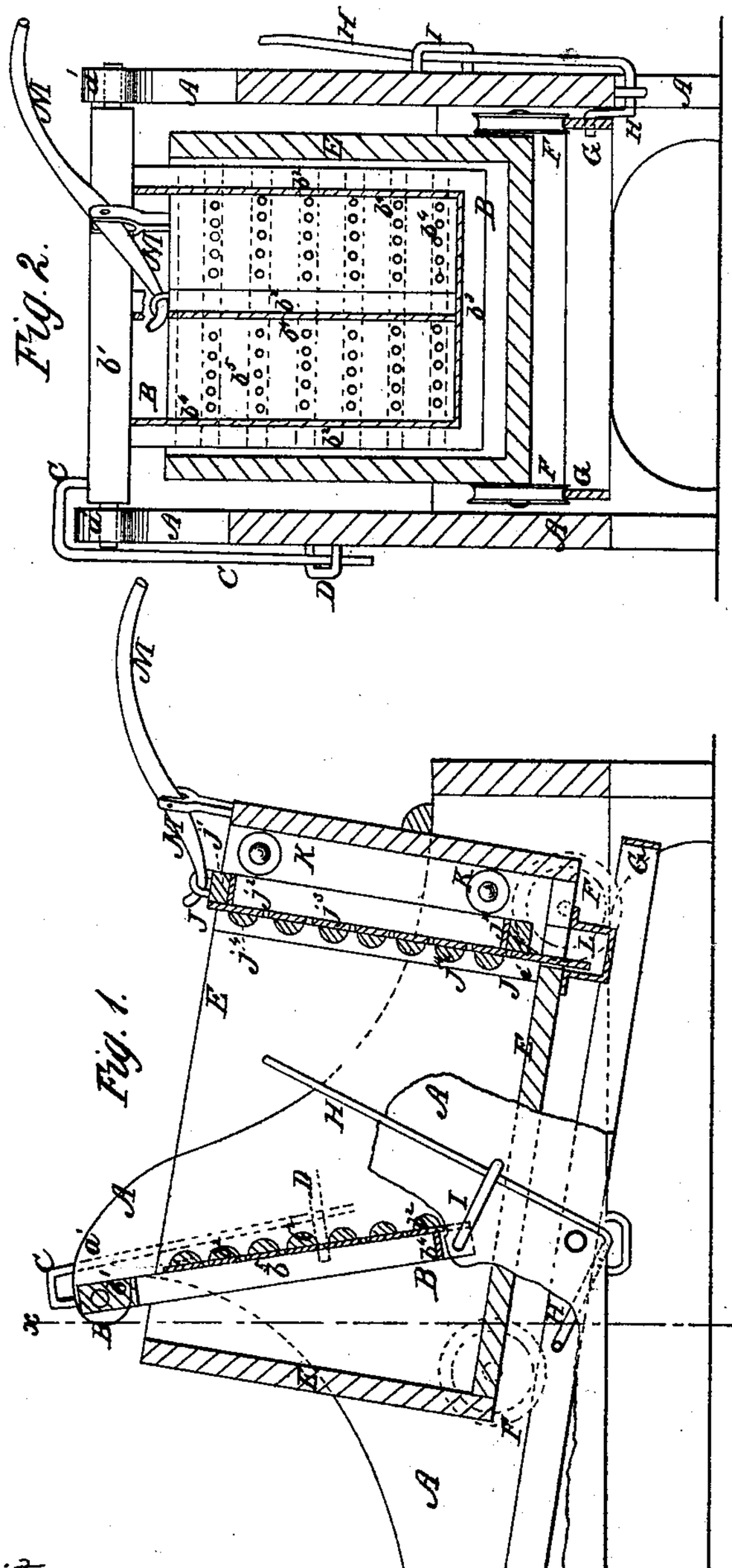

Fig. 1.

Witnesses,

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DAVID GRAVES, OF SPRING VALLEY, NEW YORK.

Letters Patent No. 89,401, *dated April* 27, 1869.

IMPROVED WASHING-MACHINE.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, DAVID GRAVES, of Spring Valley, in the county of Rockland, and State of New York, have invented a new and useful Improvement in Washing-Machines; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing, forming part of this specification, in which—

Figure 1 is a side view, partly in section, of my improved machine.

Figure 2 is a detail sectional view of the same, taken through the line *x x*, fig. 1.

Similar letters of reference indicate corresponding parts.

My invention has for its object to furnish an improved washing-machine, which shall be so constructed and arranged as to do its work quickly and thoroughly under the combined operation of pressure, rubbing, and rinsing; and

It consists in the construction and combination of the various parts, as hereinafter more fully described.

A is the outer case or frame of the machine, which is made rectangular in its general form, and the middle parts of the sides of which are extended upward, to furnish supports to the adjustable stationary rubber-board B.

The rubber-board B is rigidly attached to the shaft or cross-bar b^1, the ends or journals of which rest in bearings in the supports a'.

To the cross-bar b^1 is securely attached an iron frame, b^4, to which is securely attached a metallic plate, b^5.

b^2 are wooden strips or bars, attached to the vertical bars of the iron frame b^4, for convenience in attaching the half-round wooden bars or cleats b^6, placed transversely upon the face of the metallic plate b^5.

The plate b^5 is perforated, between the slots b^6, with numerous holes, so that the water can pass through it freely.

The plate b^5, being metallic, enables the perforations to be made more numerous, and of a sufficient size to insure a free circulation of the water throughout the entire surface of the rubber-board, which cannot be done with a wooden board without making the holes of such a size as to injure the clothes, and destroy the strength of the board.

C is a lever, which is attached to the cross-bar b^1 of the frame of the rubber B, and extending down along the side of the case or frame A, and catching upon the teeth of a ratchet-bar, D, attached to the side of the case or frame A, so that the rubber-board B may easily be adjusted in any desired position, by adjusting the position of the lever C.

E is the water-box, which is made rectangular in its general form, and to the four corners of the bottom of which are pivoted four grooved or flanged pulleys, F, which rest upon and roll along the side-bars of the frame G.

The frame G is pivoted, at the central points of its side-bars, to the sides of the case or frame A, so that the said frame may be tilted, to cause the box E to roll back and forth along its side-bars.

The frame G may be operated or tilted by means of a bent lever, H, pivoted to the lower part of the case or frame A, and connected with the frame G.

The upper part of the lever H extends up along the side of the case or frame A, into such a position that its upper end may be conveniently reached and operated by the operator.

The movement of the lever H is limited by a guard or keeper, I, attached to the side of the case or frame A, as shown in figs. 1 and 2.

J is the movable rubber-board, which is formed of wooden bars j^1, an iron frame, j^2, a perforated metallic plate, j^3, and transverse wooden cleats j^4, in the same manner as herein described with reference to the rubber-board B.

The rubber-board J moves up and down vertically, along the side of the cleats e', attached to the inner surface of the box E, and is held forward against said cleats by the friction-rollers K, pivoted to said box E, as shown in fig. 1.

The bottom of the box E has a transverse groove or recess, L, formed in it, into which the lower edge of the rubber-board J enters, and which is made of such a depth that the movement of the rubber J will never raise its lower edge out of the recess L, so that it will be impossible for the clothes to ever get beneath the lower edge of the said rubber, and prevent its free movement, or be cut, worn, or injured.

The rubber-board J is operated, to rub the clothes, by a lever, M, pivoted to the edge of the box E, or to a support attached to the said box.

The forward end of the lever M is connected with the rubber-board J, and its free end extends out, in such a position that it may be conveniently reached and operated by the operator while standing in such a position that he can, at the same time, reach the lever H, to operate it, when required.

In using the machine, the clothes to be washed are placed in the box E, between the rubber-boards B and J, and the box E is filled about one-third full of water.

The lower end of the frame G is then raised, by means of the lever H, causing the box to run to the other end of said frame G.

The water, as the lower end of the box E begins to rise, flows toward the other end of said box, and, by its weight, assists in the operation.

This movement of the box E presses the clothes between the rubbers B and J, by the weight of the water in the box.

The rubber J is then moved up and down, by means of the lever M, rubbing the clothes between the said rubbers.

When the clothes have been rubbed for a few seconds, the lever H is operated, to tilt the box E slightly in the other direction, causing the water to flow through the perforations of the rubber-board B, pushing the clothes away from said board, and causing them to fall back into the water, and thus rinsing them.

As the box E is tilted back, the return-flow of the water again lifts the clothes, bringing them into a different position upon the board B, when the rubbing is repeated, and so on until the clothes have been thoroughly washed.

Having thus described my invention,

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

1. The movable tilting box E, having wheels or rollers F pivoted to its lower part, in combination with the tilting-frame G, pivoted to the frame or case A, and operated by the lever H, or other suitable device, substantially as herein shown and described, and for the purpose set forth.

2. The stationary rubber-board B, adjustably connected to the frame, or case A, in combination with the movable tilting-box E, substantially as herein shown and described, and for the purpose set forth.

3. The movable rubber-board J, constructed and operating substantially as herein shown and described, in combination with the movable tilting box E and rubber B, as and for the purpose set forth.

Witnesses: DAVID GRAVES.

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JAMES T. GRAHAM.