J. DONALDSON.

WASHING-MACHINE.

No. 185,631. Patented Dec. 26, 1876.

Fig. 1.

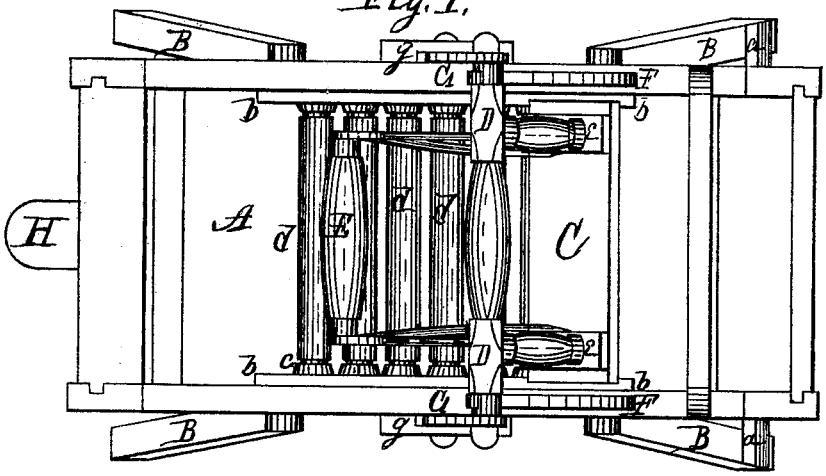
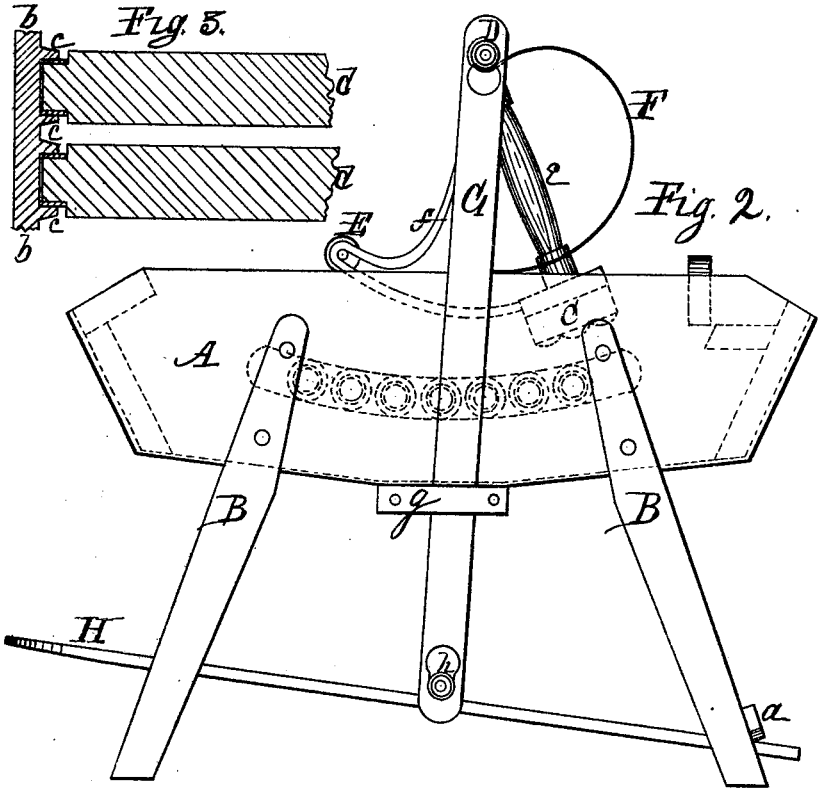


Fig. 5.

Fig. 2.



Attest
E. J. Behel
A. C. Behel.

Inventor
John Donaldson
Per Jacob Behel.
Atty

UNITED STATES PATENT OFFICE

JOHN DONALDSON, OF ROCKFORD, ILLINOIS.

IMPROVEMENT IN WASHING-MACHINES.

Specification forming part of Letters Patent No. **185,631**, dated December 26, 1876; application filed August 25, 1876.

To all whom it may concern:

Be it known that I, JOHN DONALDSON, of the city of Rockford, in the county of Winnebago and State of Illinois, have invented a new and useful Improvement in Washing-Machines, which improvement is fully set forth in the following specification, reference being had to the accompanying drawings, in which—

Figure 1 is a plan view, and Fig. 2 a side elevation, of my improved washing-machine; and Fig. 3 is a horizontal central section of the end portion of the washing-rollers and their bearings.

My invention relates to that class of washing-machines in which the lower washing-surface is of concave form, composed of journaled rollers placed in a suds-box, and a vibrating rubbing-surface suspended above the concave roller-surface, to receive the articles to be washed between the surface, in contact with the water in the suds-box; and consists in the devices and combination of devices, which I now proceed to explain.

In the figures, A represents a suds-box, which, in plan, is of rectangular form with flaring ends, and is deepest in the center of its length, for the purpose of causing the sediment to settle in the center, under the concave, from which it may be drawn by means of any suitable opening for the purpose. This suds-box is supported on legs B, near its ends, one pair of which are connected by a cross-bar, *a*, near their lower ends. Curved metallic plates *b*, fitted with cup-bearings *c*, are secured in place to the inner sides of the suds-box, at a proper distance from its bottom.

The concave washing-surface is composed of rollers *d*, the journals of which are fitted to revolve in the cup-bearing *c* in the curved plates *b*. C is a rubbing-board, corrugated on its under side, as shown in dotted lines in Fig. 2, and is connected to the rock-shaft D by posts *e*, forming a frame, which is provided with a handle, E, supported by wire brackets *f*, connected to the rubbing-board and the rock-shaft. This frame is suspended over the suds-box by means of the rock-shaft, the journaled bearings of which rest in the curved boxes in the free ends of the curved plate-springs F, in such a manner as to swing freely over the concave washing-surface in the suds-box.

The curved springs F, which support the swing-frame, are made of plate or bar material, and are secured to the suds-box in such a manner as to support the rock-shaft nearly in the center of a circle of which the concave washing-surface is a segment, and are of such construction and placed in such a manner as to hold the rubbing-board suspended above the concave washing-surface in a flexible manner, to admit of a vertical, a horizontal lengthwise, and an oscillatory movement of the rock-shaft, to permit the rubbing-board to adapt itself to the inequalities and different thicknesses of the goods to be washed.

G are bars, which loop onto the outer ends of the rock-shaft, from which they depend, passing through directing-loops *g*, and are connected at their lower ends by a crosswise bar, *h*, looped into the depending bars G in the same manner as the bars are looped onto the rock-shaft. H is a treadle, connected centrally to the cross-bar *h* by a pivot-bolt, its rear end extending under the cross-bar *a*, and its forward end extending in front of the suds-box, to receive the foot of the operator.

In operating my improved washer, the suds is placed in the box, and the clothes to be washed are placed on the concave washing-surface in the suds-box. Then the operator with his foot, by means of the treadle, forces the rubbing-board C down on the clothes, and, by means of the handle E, imparts to the rubbing-board a vibrating motion, which moves the clothes to and fro on the concave washing-surface, in contact with the suds or washing-fluid, in which operation the springs E permit of both a vertical and a horizontal lengthwise movement, so that the rubbing-board can adapt itself to any inequalities in the goods in the washing. In washing larger articles, the position of the goods is readily shifted toward either end of the suds-box by permitting the rubbing-board to rise, and then moving it over the goods toward either end of the concave washing-surface, and then, by means of the treadle, force it in contact with

the goods, and then moving it toward the opposite end of the concave, which will carry the goods with it.

I am aware that machines have been made and used in which the vibrating rubbers have been supported on spring-bearings in rigid supports secured to the suds-box, and provided with treadle-connection, to force the rubber in contact with the goods; and in some instances plate-springs, in connection with rigid supports and hand-levers, have been employed to force the rubber in contact with the goods to be washed. These, therefore, I do not claim.

I claim as my invention—

In a washing-machine, substantially as described, the combination of the treadle H, bars G, rubbing-frame, and springs F, these parts constructed, arranged, and operating as and for the purpose set forth.

JOHN DONALDSON.

Witnesses:

A. O. BEHEL,

E. J. BEHEL.