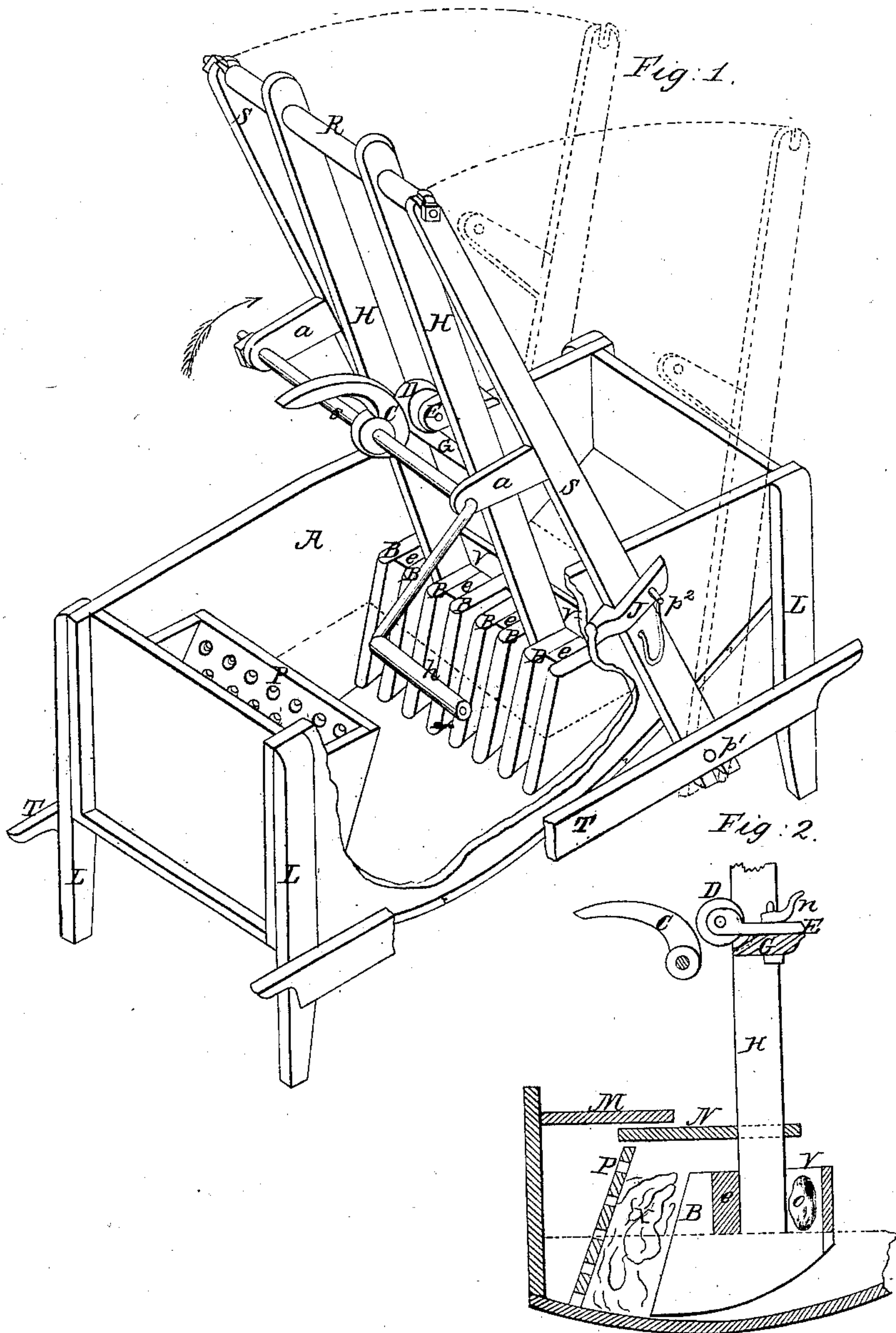


*E. H. Cook,*

*Washing Machine,*

N<sup>o</sup> 55,471.

*Patented June 12, 1866.*



Witnesses;  
Otto L. Johnson  
George Johnson

Inventor;  
Elisha H. Cook



# UNITED STATES PATENT OFFICE.

ELISHA H. COOK, OF CLARENDON TOWNSHIP, CALHOUN COUNTY, MICHIGAN.

## IMPROVED WASHING-MACHINE.

Specification forming part of Letters Patent No. 55,471, dated June 12, 1866.

*To all whom it may concern:*

Be it known that I, ELISHA H. COOK, of the township of Clarendon, in the county of Calhoun and State of Michigan, have invented certain new and useful Improvements in Washing-Machines; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a perspective view. Fig. 2 is a partial longitudinal vertical section.

Similar letters of reference indicate corresponding parts in both figures.

The suds-box of the machine, to contain the clothes to be washed, is exhibited at A, with one side broken through to expose the interior parts. I construct this box in the ordinary manner, of any required capacity, and support it upon legs L, after the common fashion of this class of machines.

P represents a partition fitted transversely across the box in such manner as to be easily removed when necessary. This partition is perforated with holes for the purpose of allowing the suds to pass freely through, and is not placed vertically, but is inclined in such manner that when the clothes are pressed against it by the beaters (to be hereinafter described) they will partially fall over or turn when said beaters are withdrawn.

A swinging standard, S, provided with an arm, *a*, is hung on each side of the box, and generally to the box and to longitudinal handle-strips T, by pins *p'* or a rod passing through below. The upper ends of the standards lean inward toward the center of the box when in working position, and the standards rest in shouldered cleats J, secured by check-pins *p*<sup>2</sup>. Free access can be had to the clothes in the box at any time by swinging back the standards to the position shown by the broken lines, where they will rest against a stop or the upper ends of the legs.

The cleaning of the clothes is effected by vibrating beaters, (marked B,) attached in sets to each lower end of the two vibrating hangers H, suspended by a rod, R, in bearings at the upper ends of the swinging standards.

I usually construct these beaters of hardwood boards, the front edges being rounded

and having a similar slope to that of the perforated abutting board, and nail or otherwise secure each set to the lower end of its hanger with strips *e*, interposed in such manner that the submerged portions of the beaters may have clear intervening spaces between them.

As my beaters operate against the clothes by their gravity in vibrating like a pendulum, the motion of which is arrested at the lowest point in the arc, it is sometimes necessary to crease that gravity for very heavy work, and for this purpose I prolong the outer beater of each set and nail on a back and bottom, so as to form a box, V, above the water-line, in which a stone, *o*, or other heavy body may be placed to increase the percussive force.

The upward vibration of the beaters is effected by partially revolving, by means of the crank-handle *h*, the cam-shaft *s*, which is hung in bearings at the ends of the standard-arms.

The cam C is best of the involute or similar form, and to save friction I cause it to act against a roller, D, hung to a forked slide or rod that can be adjusted to the girt G, which connects the two hangers. This adjustment of the roller is very important to maintain its proper relative position with the cam according to the quantity of clothes in the box, so that the fullest leverage can be maintained under all conditions. I usually adjust the roller-slide E by passing the bolt that connects it to the girt through a slot, and secure by a lever-nut, *n*.

To arrest splashing when the beaters strike the clothes, I usually employ a cover, M, (see Fig. 2,) in connection with a splash-board, N.

The mode of operation is as follows: The clothes having been placed in the box, as seen at X, in the hot suds, as usual, the friction-roller must be adjusted on the hanger-girt so that it will not strike the cam when the beaters are pressed against the clothes, but will be as close as may be and be safe not to touch. The operator then taking hold of the crank-handle, revolves the shaft and its cam in the direction of the arrow sufficiently to give the necessary upward semi-vibration to the beaters, when the motion of the crank is reversed, and the beaters swing back by their gravity against the clothes, pressing them against the perforated board, through the holes of which the suds-water charged with the dirt is pressed.



This is repeated until the clothes are thoroughly clean, which is quickly effected, as the clothes fall over after each stroke, and present a new surface for the succeeding one. Of course the cam could be so arranged as to effect the stroke by a continuous rotation in one direction, as in some fulling-mills, lifting-stamps, &c.; but as my object is to save labor, and especially that motion of the arms so fatiguing to females and young persons when they are compelled to use them in unfavorable positions, I prefer to move the crank in the manner of rowing, and exert no more power than just sufficient to swing back the suspended beaters. The whole apparatus can be readily swung back during the process of washing, as aforesaid, to examine the clothes, &c.

I do not claim, broadly, washing clothes by means of beaters suspended inside of a sud-box and which are caused to vibrate back and forth, for the Shakers have for a long time used

this mode, and the same principle of vibration is used by others in various forms of application; but

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

1. The employment of the suspended beaters B, constructed with boxes V to contain weights, in combination with the perforated partition-board P, substantially as and for the purposes herein described.

2. The mode of actuating the suspended beaters aforesaid by means of the crank-shaft s and cam C, in combination with an adjustable roller, D, the same being operated in connection with the hangers and standards herein described, substantially as and for the uses specified.

ELISHA H. COOK.

Witnesses:

OTTO L. JOHNSON,  
GEORGE JOHNSON.