E. S. M. FORD.
Washing-Machine.

No. 204,310. Patented May 28, 1878.

Fig. 1.

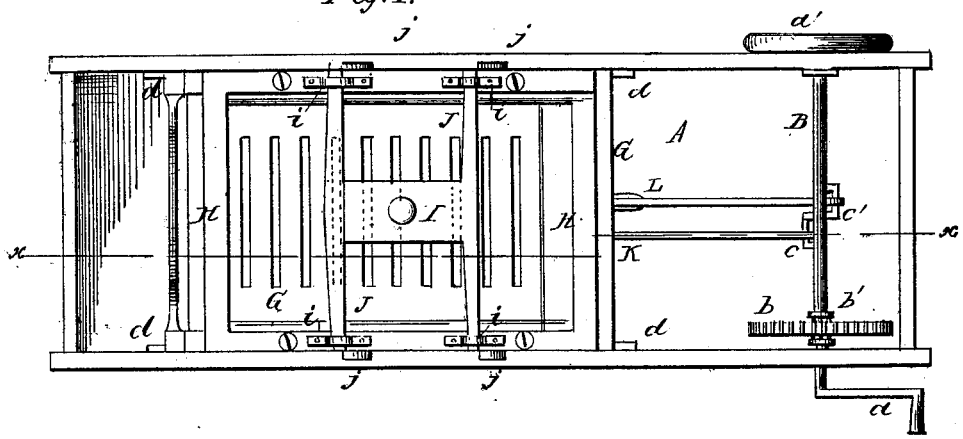


Fig. 2.

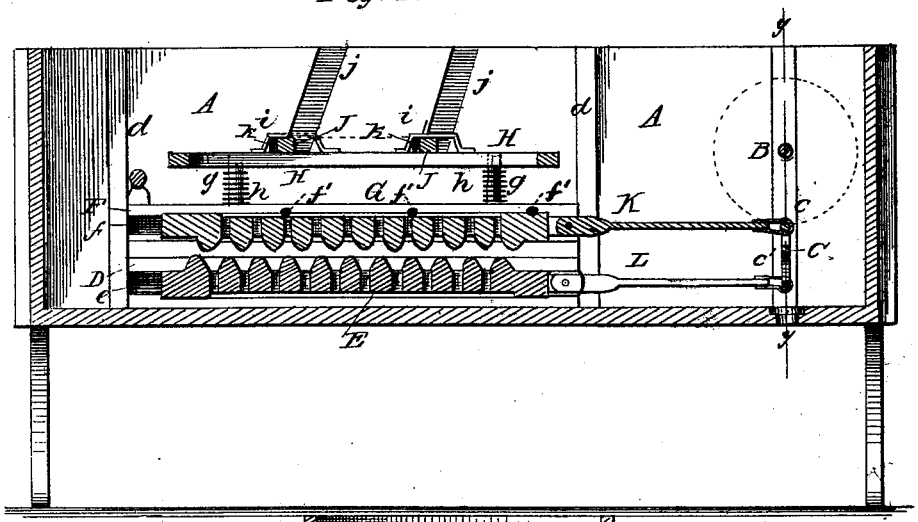
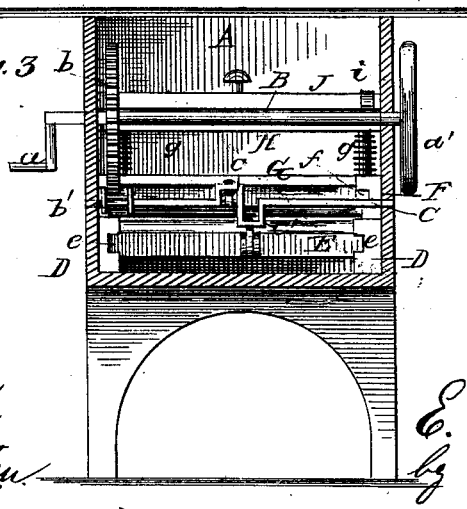


Fig. 3.



Witnesses:
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UNITED STATES PATENT OFFICE.

ELISHA S. M. FORD, OF CHRISTIANSBURG, KENTUCKY.

IMPROVEMENT IN WASHING-MACHINES.

Specification forming part of Letters Patent No. **204,310**, dated May 28, 1878; application filed April 16, 1878.

To all whom it may concern:

Be it known that I, ELISHA S. M. FORD, of Christiansburg, in the county of Shelby and State of Kentucky, 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 thereof, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a top view, Fig. 2 is a longitudinal vertical section, and Fig. 3 is a cross-section, of my improved washing-machine.

Similar letters of reference denote corresponding parts in all the figures.

This invention relates to that class of washing-machines in which the clothes are placed between two reciprocating rubbing-surfaces; and it consists in the improved construction and arrangement of parts, which I shall now proceed more fully to describe.

In the drawings, A is the tub or box, which is, preferably, rectangular in shape. At one end of the box are arranged two horizontal shafts, B C, one above the other. The upper one, B, has an operating-crank, *a*, and balance-wheel *a'*. It also has a gear-wheel, *b*, engaging with a smaller gear-wheel, *b'*, on the lower shaft C. Upon the shaft C is formed a double crank, *c c'*, by which the rubbing mechanism is operated, as hereinafter set forth.

The inside of box A has vertical slats or cleats *d d*, between which I place a frame, D, having grooves *e e*, to accommodate the lower reciprocating rubber E.

A detachable frame, F, having grooves *f f*, provided with friction-rollers *f' f'* for the rubber G, is placed on top of frame D, in such a manner that the fluted or corrugated surfaces of the rubbers shall face each other. The frame F has four uprights, *g g g g*, connecting it to, but sliding in perforations in, a third frame, H. Springs *h h* are coiled around the uprights *g g*, thus holding the frame F in position by forcing it down, while at the same time it is allowed to play in an upward direction.

On top of frame H are placed four bails or keepers, *i i*, in which slides the lock-frame I. The legs J J of the latter project on both sides, and slide in oblique or diagonal grooves *j j* in the sides of the box. The grooves *j j* terminate in recesses *k k*, in which the ends of legs J are made to catch, thus holding the frames F H securely in the box during the operation of the machine.

K L are pitmen, connecting the rubbers E G to the cranks *c c'* of crank-shaft C, by the rotation of which the rubbing-boards are thus reciprocated in opposite directions.

From the foregoing description, and by reference to the drawings hereto annexed, the operation and advantages of my improved washing-machine will be readily understood.

By disengaging the lock-frame I from the recesses *k k* the frame F H with the rubber G may be readily raised up, to admit of the clothes being placed between the rubbers. After readjusting the frame F H with the rubber G, the shaft B is turned by its crank *a*, the result of which is that through the intermediate gear the rubbers E G are rapidly reciprocated in opposite directions, thus rubbing and cleansing the clothes thoroughly, with a movement which is an almost precise imitation of washing by hand.

By reason of the arrangement of the upper frame F, as herein described, the rubber G has sufficient play in an upward direction to accommodate a large quantity of clothes without any danger of tearing them.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

1. The combination of the box having the stationary frame D, holding a reciprocating rubber, E, with the detachable frame F H, holding the reciprocating rubber G, and the lock-frame I, substantially as described, for the purpose herein set forth.

2. In a washing-machine, the combination, with the tub or receptacle A, having the oblique or diagonal grooves *j j*, the lower extremities of which terminate in recesses *k k*, which extend to one side of said grooves, as shown, of the lock-frame I, whose arms are confined in said recesses, staples or keepers *i i*, fastened to the frame H, and frame F, provided with spring-surrounded uprights *g g*, moving vertically in perforations in the frame H, substantially as and for the purpose specified.

3. The improved washing-machine herein described, consisting, essentially, of the box or tub A, having grooves and recesses *k*, stationary frame D, having rubbing-board E, detachable frame F H, having rubbing-board G, lock-frame I, pitmen K L, double crank-shaft C, shaft B, having crank *a*, and gear-wheels *b b'*, all combined, arranged, and operating substantially as described, for the purpose herein set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

ELISHA S. M. FORD.

Witnesses:
HARRY GUVEITZ,
I. B. MCNEMAR.