H. E. Smith,

Washing Machine,

No. 29,830. Patented Aug. 28, 1860.

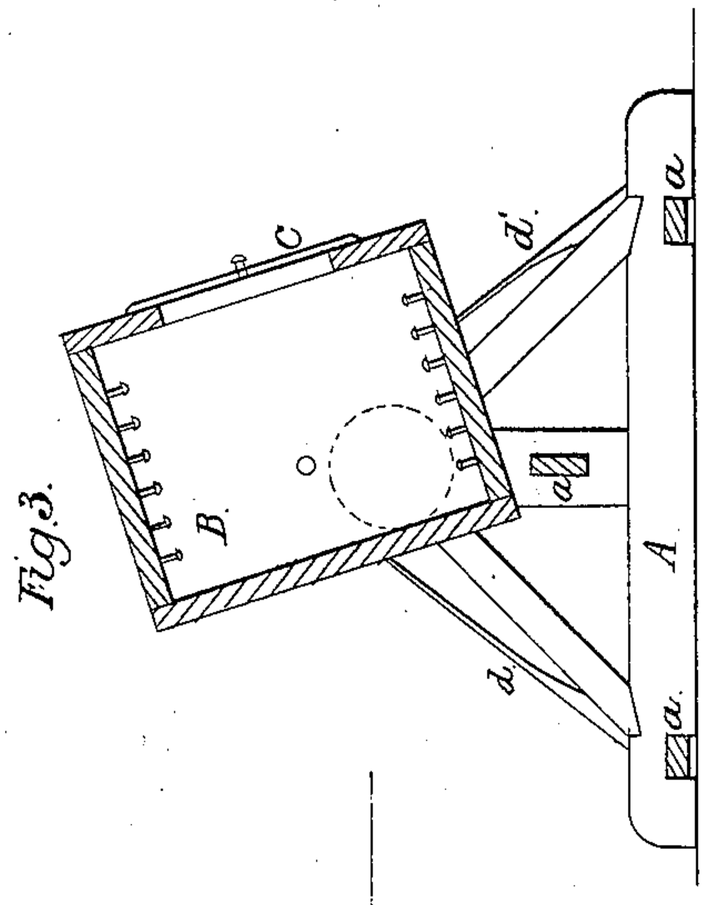

Fig. 3.

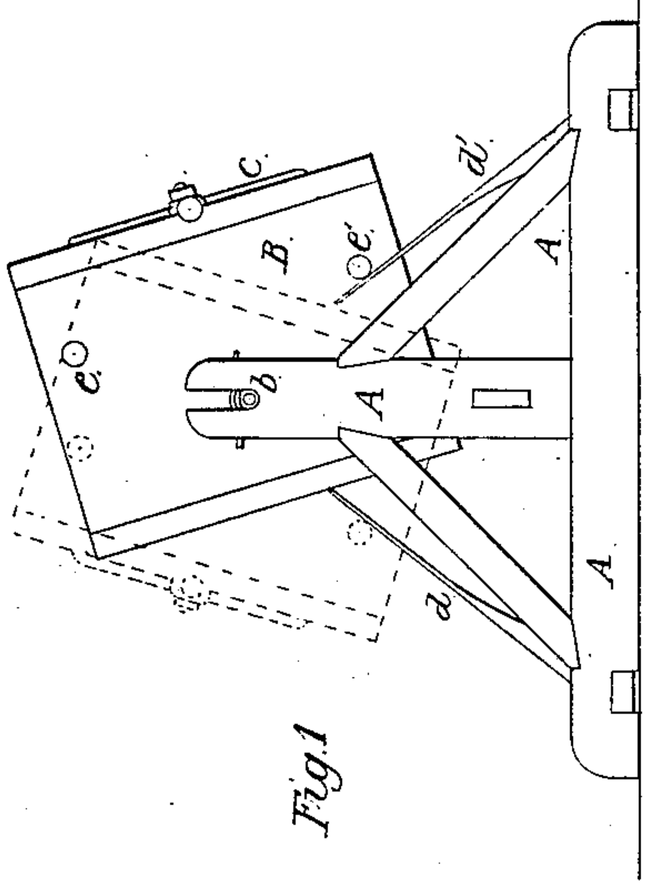

Fig. 1

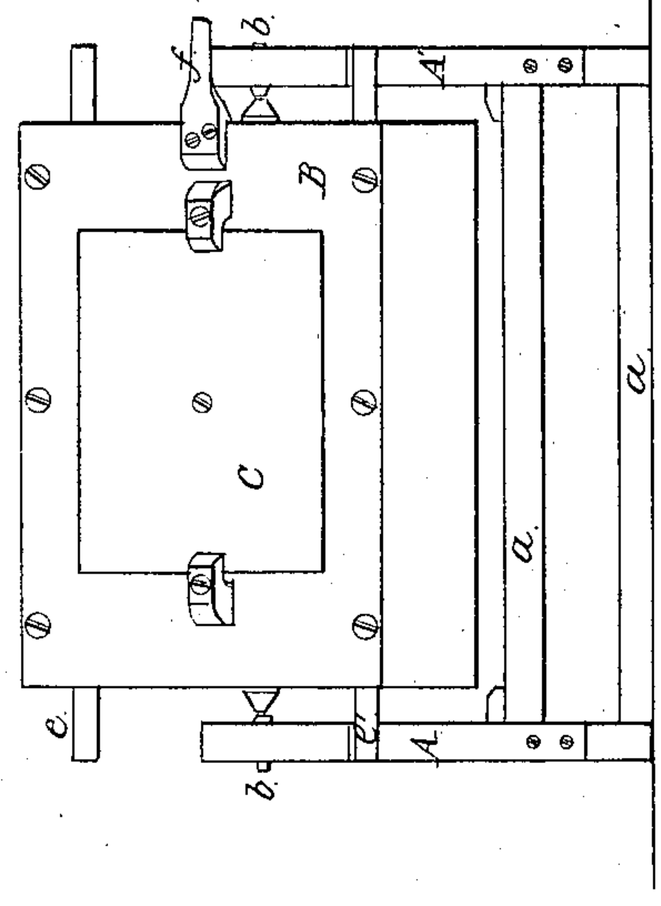

Fig. 2.

Witnesses:

Henry Howson

Chas. Howson

Inventor:

Hamilton E. Smith

UNITED STATES PATENT OFFICE.

HAMILTON E. SMITH, OF PHILADELPHIA, PENNSYLVANIA.

WASHING-MACHINE.

Specification of Letters Patent No. 29,830, dated August 28, 1860.

To all whom it may concern:

Be it known that I, HAMILTON E. SMITH, of the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Washing-Machines; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing and to the letters of reference marked thereon.

My improved washing machine consists of a vibrating box for containing the water and clothes, the center of vibration of the said box being below its center of gravity and the box being arrested at each vibration by springs, as fully described hereafter, so that the repeated tilting of the box from one side to the other, and the sudden arresting of the same may produce that general agitation of the water and impetuous jerks on the clothes by which the latter are rapidly deprived of all their impurities.

In order to enable others to make and use my invention I will now proceed to describe its construction and operation.

On reference to the accompanying drawing which forms a part of this specification, Figure 1, is an end view of my improved washing machine, Fig. 2, a side view, and Fig. 3, a transverse section.

Similar letters refer to similar parts throughout the several views.

A and A′ are the two frames or standards constructed in the manner illustrated in the drawing, or in any other form which may be found most convenient, and connected together by any suitable number of cross beams *a*.

In the opposite frames turn the trunnions *b b* one of which is secured to one end and the other to the opposite end of the box B, the latter being of the oblong form represented in the drawing and having an opening at the top provided with the cover *c*.

To each frame are secured two springs *d* and *d′* inclined in contrary directions and so situated that a pin *e* on the end of the box shall strike against the spring *d* when the box is tilted over in one direction, the pin *e′* striking against the spring *d′* when the box is tilted in the contrary direction. The opposite end of the box is provided with similar pins *e* and *e′* and the opposite frame A′ with similar springs *d* and *d′*. By means of a handle F secured to one end of the box the latter may be readily tilted backward.

It will be observed that the trunnions *b b* are situated at a point nearer to the bottom than to the top of the box, or in other words, below the center of gravity of the latter, the object of this arrangement will be rendered apparent hereafter.

After water and clothes sufficient to about half fill the box, have been deposited in the latter and the lid *c* properly secured, the machine is operated by laying hold of the handle F, and tilted laterally from side to side so as to occupy alternately the two positions shown in black and red lines, Fig. 1, an operation easy to perform for the reason that all the force necessary is that required for raising the box from an inclined to a horizontal position from which it will readily fall by its own weight and that of its contents to the reversed inclined position, on account of the trunnions being placed below the center of gravity of the box.

It will be observed that by the simple tilting of the box from one position to the other without any sudden arrest of its movement the clothes would have a tendency to fall in a comparatively undisturbed mass from one side to the other, and consequently that the cleansing process would be somewhat tedious. As the box however turns to either of the positions shown in Fig. 1, it acquires by its contents and peculiar position of the trunnions, a momentum which is suddenly arrested by the pins on the opposite ends of the box coming in contact with the springs on the opposite frames A and A′, consequently a sudden recoil and equally sudden dispersion and agitation of the water and a sudden jerking of the clothes takes place. The result of the repeated tilting and arresting of the box is, in fact, a reiterated impetus imparted to the water and that general disturbance of the contents and such active and impetuous jerks of the same which tend to the rapid attainment of the desired object. The springs *d* and *d′* in addition to the assistance they afford in producing this action on the contents of the box serve to commence the reversal of the same from one inclined position to the other thus diminishing the exertion required in operating the machine.

For coarse fabrics a weighted roller as shown in dotted lines Fig. 3, may be used to advantage.

I do not desire to claim broadly the employment of a vibrating box for washing clothes, but

I claim as my invention and desire to secure by Letters Patent—

The vibrating box B having its center of vibration situated below its center of gravity as described, when the momentum of the said box is arrested by its pins or projections *e* and *e'* striking against the springs *d* and *d'* or their equivalents as and for the purpose herein set forth.

In testimony whereof, I have signed my name to this specification, in the presence of two subscribing witnesses.

H. E. SMITH.

Witnesses:

HENRY HOWSON,

CHAS. HOWSON.