G. M. Harris,

Washing Machine.

No. 51,313. Patented Dec. 5, 1865.

Fig. 1.

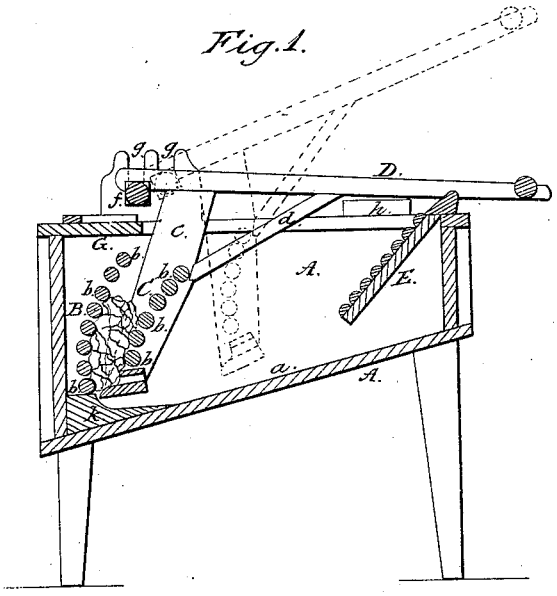
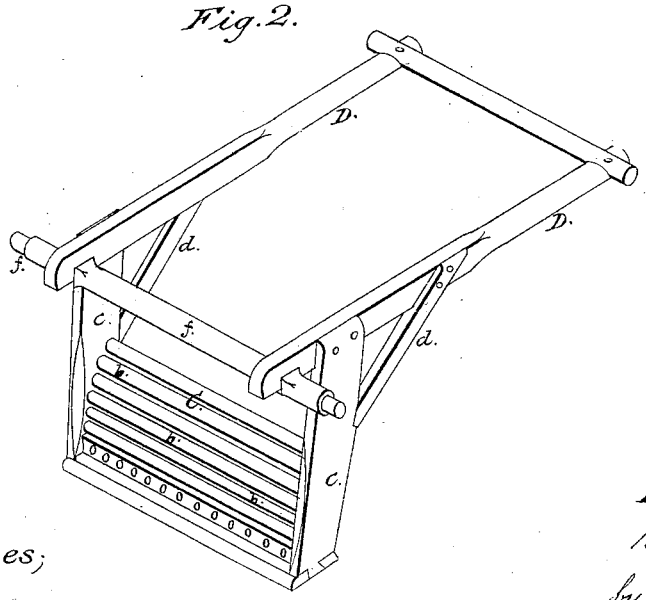


Fig. 2.



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UNITED STATES PATENT OFFICE.

GILES M. HARRIS, OF ELMIRA, NEW YORK.

WASHING-MACHINE.

Specification forming part of Letters Patent No. **51,313**, dated December 5, 1865.

To all whom it may concern:

Be it known that I, GILES M. HARRIS, of Elmira, in the county of Chemung 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 and exact description thereof, reference being had to the accompanying drawings, making part of this specification.

Figure 1 is a longitudinal vertical section of my improved machine; Fig. 2, a perspective view of the lever-rubber detached.

Like letters of reference indicate corresponding parts in both figures.

I obtained a patent of the United States July 12, 1864, for a washing-machine, in which an essential novelty consisted in the employment of adjustable bearings for the axis of the lever-rubber, so that the latter might be moved forward or backward at pleasure, to allow a greater or less quantity of clothing to be washed at once. In general construction the machine was of that class where the "roll" or mass of clothing is alternately pressed between an upright bed and rubber, the latter being opreated by a lever.

The machine covered by my present application is an improvement of the first above described, the adjustable bearings being employed in both.

My invention consists in the combined arrangement of a concave overhanging slat-bed, a convex slat rubber, nearly parallel in position with and extending to nearly the same height as the said bed, and of a concave portion, *k*, of the bottom A of the machine, at the foot of the stationary concave bed, all substantially as hereinafter set forth.

As represented in the drawings, A is the ordinary receptacle or tub, having an inclined bottom, *a*, to direct the water to the lower angle, where the washing is performed.

B is the upright washing-bed, composed of slats *b b*, situated a little distance apart to allow water to pass through.

C is the rubber, composed of slats arranged in the same way, the ends resting in arms *c c*, attached to a double lever, D, braced by braces *d d*, and having an axis, *f*, whose ends rest in any of a series of bearings, *g g*, on either side, in such a manner that the lever may be changed either backward or forward, so as to increase or lessen the distance between the bed and rubber, to admit a greater or less quantity of clothing to be washed at once.

E is a stationary wash-board for washing wristbands, &c., and G is a board for preventing an overdash of the water.

A suitable edge piece, *h*, is secured to one side of the receptacle, for the purpose of attaching a wringing-machine.

Thus far the general construction is substantially the same as in my first machine already alluded to; but in the old machine the slats *b b* were arranged on a straight line, both in the bed and rubber. But in the present invention the stationary bed is concave from bottom to top, while the rubber is correspondently convex on the side facing it, substantially as shown in Fig. 1, and the portion *k* of the bottom A of the machine is concave, so that the clothes are begun to be turned upward and over before coming in contact with the concave bed. Both the bed and rubber reach nearly to the top of the receptacle, so that the clothes do not fall over, but are spread out in a thin mass.

The effect is as follows: At each forward stroke, as the clothing is compressed between the slats, the tendency is to raise them above the general level of the water in the receptacle, and the liquid is more thoroughly expressed. The hollowing or wedging form of the bottom at *k* facilitates this action, as there is no sharp angle there, as in ordinary machines. This peculiar form of the bed and rubber also not only insures a better action upon the clothes, but also a more perfect revolving motion of the same while being washed, for as the clothes are raised at each stroke, as before described, their inclined position insures their falling again, and, it is manifest, in a different position than before. Where the bed is merely vertical instead of impending, it is obvious that the turning motion would be much less, from the fact that some times the roll will not fall back.

I am aware that an inclined or overhanging bed used in connection with an ordinary rubber has been employed; but I am not aware that such an arrangement as I present has ever before been known or used. In this case the slats of the rubber extend as high as those

of the bed itself, and are of the same form, so that, however large the roll may be or in whatever position it may lie, it is sure of receiving the required pressure, and in a thin mass, so that the washing is effectual.

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

The combination and arrangement of the concave overhanging slat-bed B, the concave portion *k* of the bottom at the foot of the said bed, and the convex slat rubber C, substantially as and for the purpose herein specified.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

G. M. HARRIS.

Witnesses:
R. H. RANSOM,
JOHN BRIGHT.