G. L. Witsil,

Washing Machine.

No. 110,181. Patented Dec. 13. 1870.

Fig I

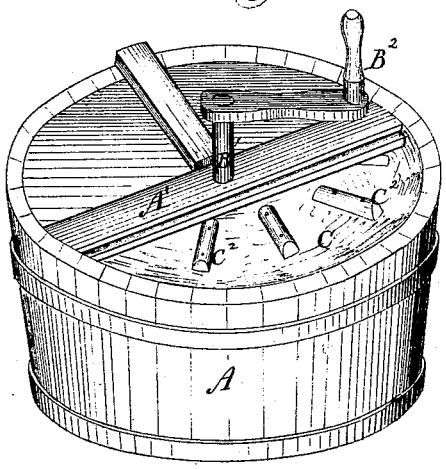
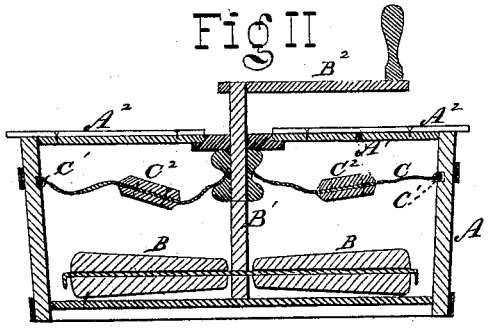


Fig II



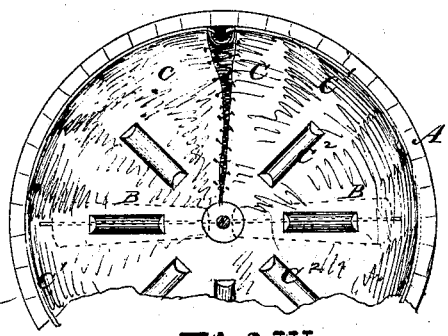


Fig III

Attest
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GEORGE L. WITSIL, OF PHILADELPHIA, PENNSYLVANIA.

Letters Patent No. 110,181, dated December 13, 1870.

IMPROVEMENT IN WASHING-MACHINES.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, GEORGE L. WITSIL, of Philadelphia, in the county of Philadelphia and in the 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 making a part of this specification, in which—

Figure 1 is a perspective view of my improved machine, showing the tub for containing the clothes to be washed and the water for washing them, the crank for operating the machine, and a portion of the flexible diaphragm which rests upon the clothes while they are being washed.

Figure 2 is a central vertical section, showing the vessel in which the washing is done, the rollers for agitating the water, the flexible diaphragm with its weights, and the crank for operating the rollers.

Figure 3 is a top view, showing the means of securing the diaphragm in position with reference to the tub or vessel in which it is placed and with reference to the rollers.

Corresponding letters refer to corresponding parts in the several figures.

This invention relates to that class of machines which is used in washing or cleansing clothes; and

It consists in the employment of a flexible weighted diaphragm, which rests upon the clothes while being cleansed, and in the combination of said diaphragm with the other parts of the machine, as will be more fully described hereinafter.

In machines of this type it is necessary that the articles to be cleansed should be held in contact with the washing-rollers, and, at the same time, that they should be kept below the surface of the water, in order that the motion imparted thereto may affect the entire mass by being caused to pass entirely through it, as a consequence of the motion imparted thereto by the agitating mechanism.

To secure this result I employ the weighted elastic diaphragm.

To enable those skilled in the art to construct and use my improved machine, I will proceed to describe it, with reference to the annexed drawing, in which—

A refers to a tub or vessel, of any required diameter and height, having its lower head firmly fixed therein, so as to form a water-tight joint, while across its upper end there is placed a cross-lever, A^1; the upper surface is flush with the upper ends of the staves composing the vessel.

This cross-lever is notched into the vessel and permanently secured thereon, so that it may form a support for the inner edges of the two sections of the upper removable head A^2 A^2 to rest upon, and at the same time form a support for the upper end of the shaft to which the crank is attached.

B B refer to conically-formed rollers, which are fixed to arms or spindles, which are affixed to the vertical shaft B^1, or which pass through it in such a manner as to give them a horizontal position and cause them to revolve thereon when the crank is turned, and at the same time cause them to perform the entire circuit of the interior of the vessel, they being nearly or quite in contact with the lower head.

This arrangement of the rollers insures a brisk agitation of the water, insuring its passage up through the material to be cleansed, and by combining with such rollers the flexible weighted diaphragm, the upper strata of the clothing will receive the same action of or from the water as do the clothes more nearly in contact with the rollers.

The boiling water being placed in the tub before the clothes or materials to be cleansed are placed therein, the rollers prevent them from touching the water until the machine is worked, therefore there is not the objection offered which has been common to most other machines in settling the dirt or causing the clothes to assume a yellow or dingy color, by placing them in boiling water, the cleansing in this case being done by the expansive power of hot suds, which expand and pass through the texture of the clothes upon the movement of the rollers.

The rotary movement of the rollers is effected by means of the crank B^2, which is placed upon the upper end of the vertical shaft B^1.

C refers to a flexible diaphragm, which may be made of canvas, felt, or any other suitable cloth, when it is desirable to place the clothes to be washed upon the top of the diaphragm, or even when desirable to place them below it, the cloth diaphragm will be found to work well, but in the last-named case a rubber diaphragm may be substituted.

This diaphragm is held in its position in the tub as shown in fig. 2, by means of a hoop, C^1, of wood or non-corrosive metal, which fits into a groove in the tub or vessel, its ends being held by a staple driven into such tub, or it may be secured in other suitable manners.

The central portion of the diaphragm C is secured to a block of wood which is attached to the under side of the cross-bar A^1, said block being so arranged that the shaft B^1 passes through it.

To this block the diaphragm is secured by means of a gathering string, so as to prevent the water from passing above it at that point.

At a point about midway between the shaft B^1 and the interior surface of this vessel there are affixed to

the diaphragm weights, C^2 C^2, which may be made of wood or of non-corrosive metal, the office of which is to press the clothes down upon the rollers when placed below the diaphragm, or, in other words, to prevent the expansion of the water caused by converting it into suds from removing the clothes out of the reach of the action of the rollers.

To provide for the ready insertion and removal of the clothes to and from the space below the diaphragm a slot or slit is made, which is bound up with a string passing through eyelets, and which may thereby be closed up, so as to prevent the passage of the water through that point.

Having thus described my invention,

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

1. The elastic weighted diaphragm C, in combination with a tub or vessel in which clothes are to be washed or cleaned.

2. The combination of the weighted diapuragm C^1, shaft B^1, and rollers B, substantially as and for the the purpose specified.

3. The combination of the block to which the center of the diaphragm is attached, the diaphragm C, the cross-bar A^1, and the vertical shaft B^1, substantially as shown and described.

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

Witnesses: GEO. L. WITSIL.

C. F. CLAUSEN,

A. RUPPERT.