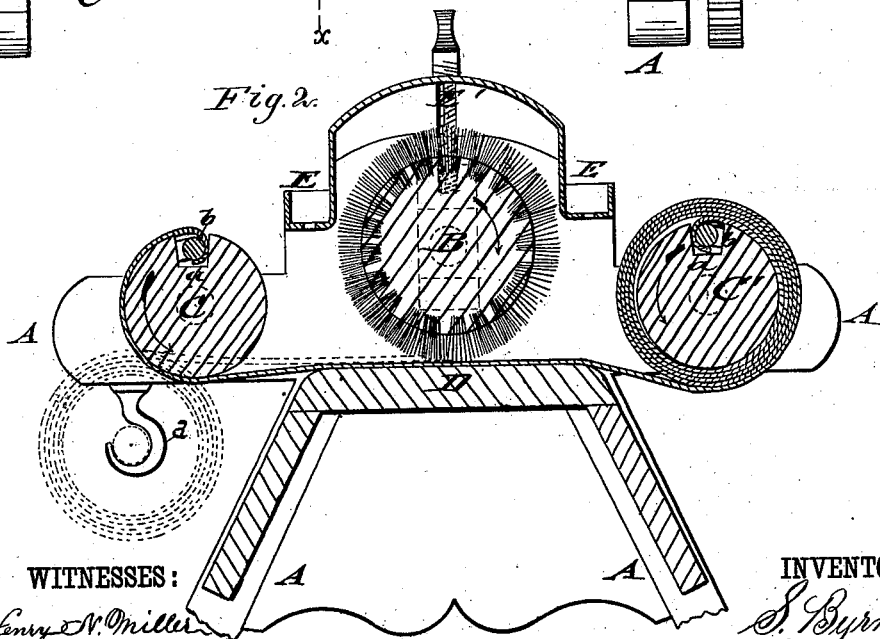
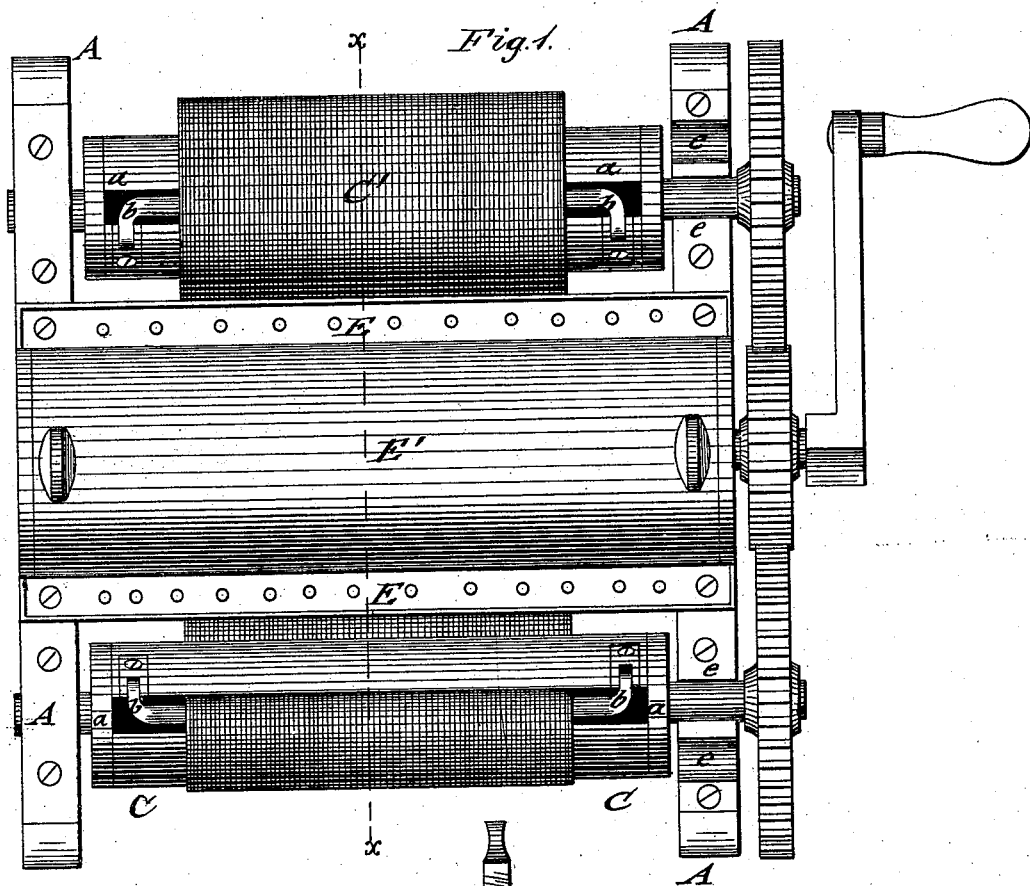


S. BYRNE.
Washing-Machine.

No. 209,797.

Patented Nov. 12, 1878.



WITNESSES:
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UNITED STATES PATENT OFFICE.

SYLVESTER BYRNE, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN WASHING-MACHINES.

Specification forming part of Letters Patent No. **209,797**, dated November 12, 1878; application filed June 8, 1878.

To all whom it may concern:

Be it known that I, SYLVESTER BYRNE, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and Improved Washing-Machine, of which the following is a specification:

In the accompanying drawing, Figure 1 represents a top view, and Fig. 2 a vertical transverse section on the line *x x*, Fig. 1, of my improved washing-machine.

Similar letters of reference indicate corresponding parts.

The object of this invention is to furnish an improved washing or scrubbing machine for heavy fabrics, such as stair-cloths, blankets, sheets, rugs, mattress-covers, sheetings, and similar articles, which may, by being passed first in one direction, then in the opposite direction through the machine, be cleaned in rapid and superior manner.

The invention consists of a revolving scrubbing-roller, in combination with a winding-up and an unwinding roller, to which the ends of the article are attached by means of longitudinal grooves and pivoted fastening-bars, the scrubbing-roller working on the article as it passes over a fixed bench or scrubbing-surface arranged below the roller.

Referring to the drawing, A represents the supporting-frame of my improved washing-machine, on which is supported in central bearings a scrubbing-roller, B, of suitable diameter, that is made either of tufts of bristles, hair, brush-wood, or other suitable stiff material, and revolved by a hand-crank or other mechanism. At one side of the central scrubbing-roller, B, is arranged in suitable bearings the winding-up roller C, and at the other side the unwinding-rollers C', which are both revolved by intermeshing gearing from the shaft of the scrubbing-roller.

The cloth, canvas, or other fabric to be cleaned is attached to the rollers C C' by being placed into a longitudinal groove, *a*, of the same, and retained by means of a hinged rod, *b*, having rectangularly-bent ends, fitted into corresponding end grooves, as shown in Figs. 1 and 2, so that thereby the fabric to be cleaned may be readily passed below the scrubber through the machine, being wound up on one roller and unwound from the opposite one.

A horizontal bench or scrubbing-surface, D, is arranged below the scrubbing-roller, the fabric being drawn over the bench by the winding-up roller, so as to be thoroughly exposed to the action of the revolving scrubbing-brush. The winding and unwinding rollers are about half the diameter of the scrubbing-roller, so as to produce the effective action of the scrubbing-roller.

All the parts of the machine that are exposed to moisture, such as the retaining-rods, are galvanized to prevent rusting.

When the cloth or fabric has been passed entirely through the machine below the revolving scrubbing-brush, the winding-up roller is removed, with the cloth, from its bearings, and hung, after being reversed, into fixed hooks *d* at the under side of the supporting-frame, so that the end of the fabric may be passed over the bench and applied to the opposite roller by means of its groove and rod. The crank is then turned again, and thereby the cloth drawn, with the uncleaned side upward, through the machine, so that the uncleaned side is exposed to the action of the scrubbing-roller, as shown by dotted lines in Fig. 2, and thereby effectually cleaned.

The fabric is soaped when it is rolled up on the unwinding-roller, which can be taken in or out of gear by means of two open boxes, *e*, arranged at one side of the supporting-frame. When rolling the cloth on or off the roller before or after it is cleaned, the spindle of the roller is shifted to the outer bearing.

During the working of the machine the scrubbing-roller is screwed down tightly on the scrubbing-bench by adjustable set-screws bearing on the boxes of the shaft of the scrubbing-roller, which set-screws are released so as to remove the pressure from the cloth when the work is finished.

The water is supplied by means of perforated troughs E, which are supported by a semicircular guard portion, E', extending over the scrubbing-roller on the central standards of the frame, so that a proper degree of moisture is kept up during the passage of the cloth through the machine. When the cloth is entirely scrubbed and cleaned the roller is shifted into the outer bearing again, and the cloth is pulled off the roller and squeezed out in wa-

ter, being then ready to be hung on the clothes-line for drying.

The machine is specially adapted for scrubbing heavy articles which can only be handled with great difficulty, and which are only imperfectly cleaned by hand, these articles being cleaned in a quicker and easier manner by this machine, which is thereby specially adapted for large establishments—laundries, hotels, &c.

Both sides may be used either as winding or unwinding roller, bearing in mind that whenever the fabric is washed on one side the roller over the hooks is lifted off the stand and reversed, placing the same on the hooks so that the dirty side is up. Thus it will be perceived that it must always be the unwinding-roll that is placed on the hooks, the latter being on the opposite side.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination, with the scrubbing-

roller and a fixed bench below the same, of winding and unwinding rollers, and of perforated troughs arranged between the scrubbing and unwinding or winding-up rollers, substantially as and for the purpose set forth.

2. The combination, in a machine for washing heavy fabrics, of unwinding and winding-up rollers, arranged at opposite sides of a central scrubbing-roller, with a supporting-frame having two open boxes or bearings at one side of the rollers, for the purpose set forth.

3. In a machine for washing heavy fabrics, the supporting-frame having hooks or hangers below the bearings, and the winding-up roller for supporting the unwinding roller thereon in passing the fabric with uncleaned side up through the machine, substantially as set forth.

SYLVESTER BYRNE.

Witnesses:

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