J. D. M. ARMBRUST.

Boiler Washing-Machine.

No. 161,731. Patented April 6, 1875.

Fig 1

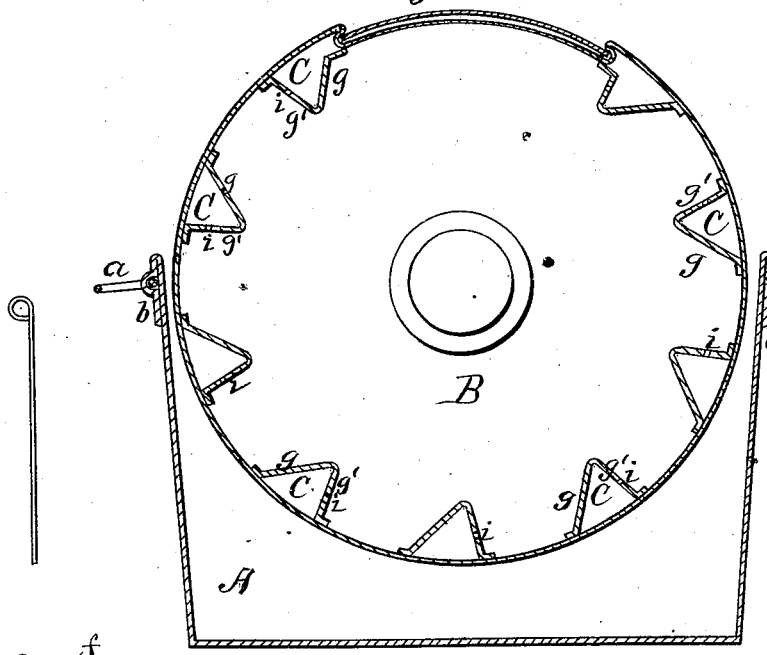
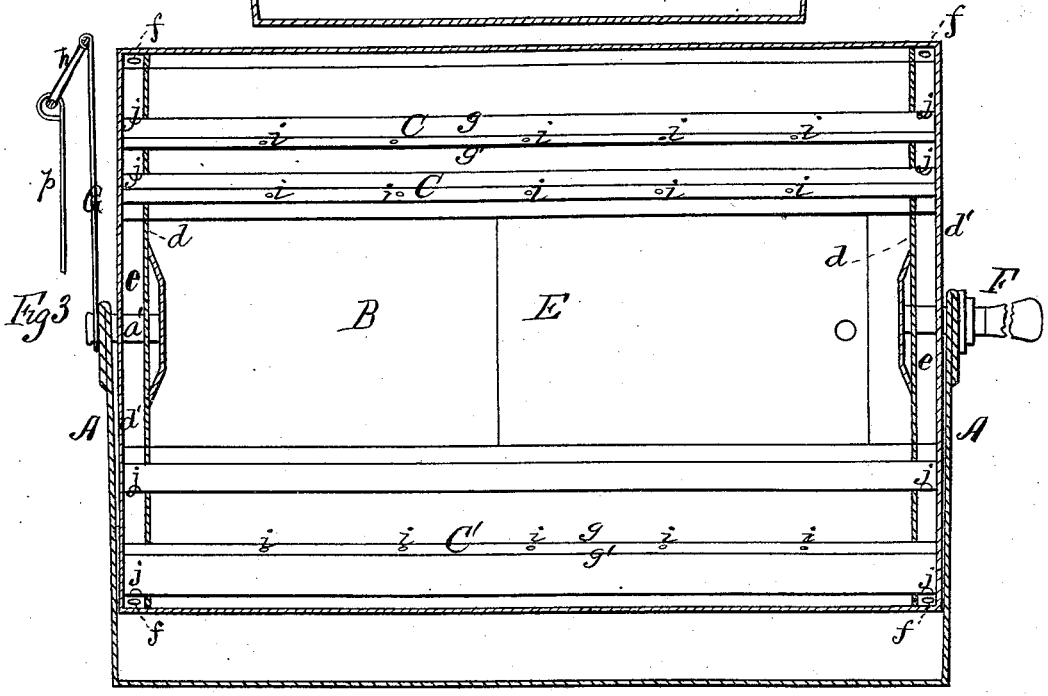


Fig 2

Fig 3



WITNESSES

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JOHN D. M. ARMBRUST, OF APOLLO, PENNSYLVANIA.

IMPROVEMENT IN BOILER WASHING-MACHINES.

Specification forming part of Letters Patent No. **161,731**, dated April 6, 1875; application filed December 19, 1874.

To all whom it may concern:

Be it known that I, JOHN D. M. ARMBRUST, of Apollo, in the county of Armstrong and State of Pennsylvania, have invented a new and valuable Improvement in Steam Washing-Machines; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawing is a representation of a transverse sectional view of my steam-washer, and Fig. 2 is a detail view of the same. Fig. 3 is a longitudinal vertical sectional view.

This invention has relation to washing-machines wherein are employed a cylindrical clothes-receptacle rotating in bearings within a suitable boiler; and the nature of the invention consists in the arrangement and novel construction, in connection with a rotating clothes-receptacle, having at each end a steam and water space between double end walls, of a number of distributing, equalizing, and elevating angular ribs, extending from end to end of the said receptacle and communicating with the said space, whereby the clothing in the receptacle, when the same is caused to rotate, is subjected to the detersive action of steam and water at the same time that it is effectually rubbed and cleansed by the ribs.

In the annexed drawings, A designates a preferably rectangular water-boiler, having bails *a*, by means of which it is conveniently handled. The upper edge of this boiler, which may be of copper, zinc, galvanized iron, or of any other suitable metal, is strengthened by a re-enforcing strip, *b*, for the purpose of giving it a degree of rigidity adequate to resisting the strain and weight of a cylindrical clothes-washer, B, which is journaled therein in notches, as shown in Fig. 3. Receptacle B has double circular ends *d d'*, forming spaces *e e*, between the inner and outer walls. It is also provided with a sliding door, E, adapted to close an aperture in the cylindrical part thereof, through which the articles to be washed are introduced into its hollow interior. That part of the cylindrical wall of receptacle B opposite to that wherein the door E is applied is provided with a number of perforations, *f*, leading into spaces *e* between the ends *d d'*, for a purpose hereinafter explained. C designates a number of hollow angular ribs, rigidly secured in any suitable manner to the inside of the receptacle, and extending from end to end of the same, as shown in Fig. 3. These ribs are preferably of some non-oxidizable metal and are formed by bending a number of strips of metal of suitable dimensions to form a right angle or nearly so, and so that one of the sides *g* bounding the said angle shall be longer than the other *g'*, in or about the proportion of 5 to 3. They also pass through the walls *d* and are closed by the outer walls *d'*, communication being had with the water-spaces *e* through perforations *j* cut through the longer sides *g* of the said ribs, between the walls *d d'*, as shown. The short sides *g'* of ribs C, are provided with a number of spaced perforations, *i*, and the said ribs are so arranged within the said receptacle that when the cylinder is turned in one direction all their short sides shall lead, and when rotated in the opposide direction the long sides *g* shall be in advance.

It will be seen from the above description that when the washer is in use, water is admitted into spaces *e*, from wash-boiler A, through perforations *f*, flowing thence through perforations *j* into ribs C, whence it penetrates into the interior of the receptacle through holes *i*, thoroughly saturating the clothing; also that when water in boiler A is in a state of ebullition, steam arising therefrom will pass through spaces *e*, at each end of the receptacle, into ribs C, whence it escapes into the interior of receptacle B, subjecting the clothing therein to a thorough steaming. When the soiled articles have been sufficiently soaked, the receptacle B is actuated by means of a crank, F, in such a manner as will cause the long sides *g* of ribs C to lead, when they will slide over the said ribs and will be thoroughly rubbed and cleansed of all impurities upon their under sides. If the said receptacle be then rotated in the opposite direction with its short sides *g'* in advance, the clothes will be seized by the said ribs, owing to their reduced

angularity, and will be carried upward and finally turned over, exposing new surfaces to the rubbing action of ribs C.

In practice, I propose to use a stop-cock in connection with wash-boiler A, for the purpose of drawing off the dirty water and of making room for the introduction of fresh water; I also propose to use the device shown in Fig. 2 for the purpose of lifting the receptacle B out of the boiler without bringing the hand in contact with its heated surfaces. The lifting-device above-mentioned consists of a metallic-plate, G, having in one end a slot, *l*, terminating in a circular enlargement, *l'*, and upon the other a bail, *h*, by means of which it may be conveniently handled. Slot *g* is adapted to receive through it the end of the spindle *a'* of receptacle B, and the bail *h* has loosely applied upon it a pin, *p*, which is designed for clearing out the various perforations above described, in the event of their becoming clogged up with soap. It is also designed to be used as a means whereby the sliding door of the rotating clothes-receptacle may be opened or shut without bringing the hands in contact with its heated surface.

What I claim as new is—

The combination, in a rotating clothes-receptacle, of the angular ribs C, having induction perforations *j*, and distributing perforations *i*, with the steam and water spaces *e* formed by walls *d d'*, and communicating with boiler A by means of perforations *f*, substantially as specified.

In testimony that I claim the above, I have hereunto subscribed my name in the presence of two witnesses.

JOHN D. M. ARMBRUST.

Witnesses:

WILLIAM M. COCHRAN,

WM. HENRY.