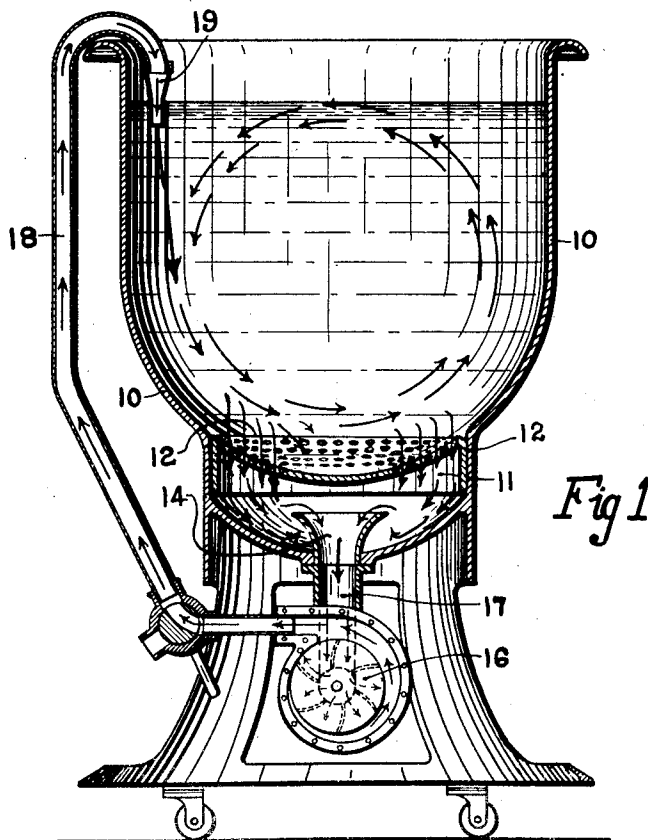
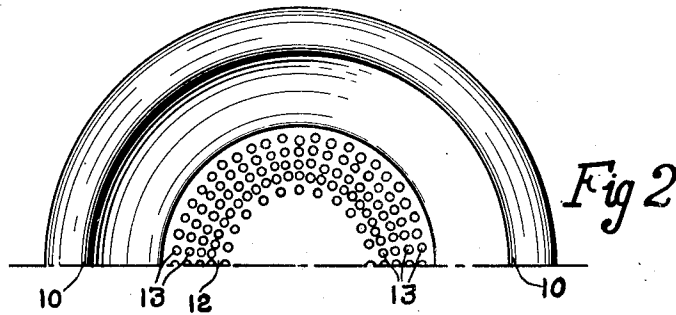


N. LOMBARD.
METHOD OF WASHING.
APPLICATION FILED AUG. 14, 1920.

1,411,286.

Patented Apr. 4, 1922.



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METHOD OF WASHING.

1,411,286.

Specification of Letters Patent.

Patented Apr. 4, 1922.

Application filed August 14, 1920. Serial No. 403,519.

To all whom it may concern:

Be it known that I, NATHANIEL LOMBARD, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented a new and useful Method of Washing, of which the following is a specification.

This invention relates to a method of washing clothing and similar articles, and is an improvement over that disclosed in my prior Patent, No. 944,736, dated December 28, 1909.

In the machine constituting the subject of that patent, the clothing was washed by introducing water under pressure and at a considerable velocity tangentially into a cylindrical tub. That caused the water to flow rapidly around it in a circle. At one side there was an overflow chamber which received water over the upper edge of the tub, and it was from this chamber that the water was pumped into the tub. That constituted a satisfactory method of washing without the employment of any machinery inside the tub, but I find in practice that a better washing action can be secured by drawing the water out of the tub through a surface along which the clothing is circulated. The water, in accordance with the present invention, is drawn out through a series of perforations in the wall of the tub but the main current of water flows right by these perforations with the clothing. This causes the clothing to come to that surface on each of its rotations and rub over the perforated surface. This adds to the washing action as the water is drawn through the perforations and through the clothing while in momentary contact with the perforated surface and while the clothing is in motion. The clothing is also forced in this way against the perforated, and therefore irregular, surface of the tub while it is moving around in contact therewith. This affords a rubbing action which is not secured in the construction shown in my above mentioned patent.

With this object in view, the invention consists of the method by which it is secured. Reference is to be had to the accompanying drawing in which—

Fig. 1 is a central sectional view of a machine constructed to carry out the method set forth herein; and

Fig. 2 is a plan of the same.

In the drawings, I have shown the invention as being carried out by means of a machine involving a casing 10 of cylindrical shape but with a hemispherical bottom. Below this bottom there is a chamber 11 for receiving the water flowing from this receptacle to compensate for the water introduced therein during the washing process. This chamber is separated from the main tub or casing 10 by a perforated grid 12 which constitutes the bottom of the tub for receiving the clothing. It partakes of the shape of the hemispherical bottom above mentioned, and when in place, constitutes a part thereof. It is provided with numerous perforations 13, preferably circular in shape and conveniently depressed around their edges if desired. The center of the grid is solid just above a trumpet shaped outlet 14. This causes the dirt and solids to be trapped about the sides of this at the bottom and assists in keeping them from being circulated back through the pump into the tub again.

In the operation of the machine for carrying out the above mentioned process, the tub is filled either partly or wholly with hot water with any usual soap or detergent composition introduced into it. The clothing or textile material is introduced. Then a pump 16 of any desired character is started. This draws the water down through the perforations in the bottom of the tub where it escapes through the perforated grid into the chamber 11, then through a pipe 17 into the pump and from there through a pipe 18 to a nozzle 19. This nozzle is arranged substantially parallel with the adjacent surface of the tub and discharges the water under any desired degree of force and velocity along that surface. This causes the water and clothing to be churned around in the tub in the direction indicated by the arrows in Fig. 1. This action alone, as so far described, washes the clothes but the fact that the clothing is forced against the grid during its circular motion by the withdrawal of the water at high speed through the perforations in the grid, causes the clothing to rub along the perforated surface of the grid. This materially increases the efficiency of the washing action by providing, in addition to the results secured in accordance with my above mentioned patent, the double action of the

grid. By this double action, I mean that the clothing is forced against the grid by the currents of water passing through, these being distributed uniformly over a wide area and also the discharge of the currents of water directly through the clothing while it is receiving its rubbing action tends to extract further dirt therefrom.

By making the bottom hemispherical and placing the overflow openings low in it, the stream of flowing water is contracted laterally at the bottom. The clothing therefore, is concentrated and speeded up as it passes over the grid and the rubbing action increased.

I find in practice that this constitutes a very efficient method of washing clothing and the like, without the employment of any moving parts inside the machine.

Although I have shown a specific form of washing machine in connection with the above description, I am aware of the fact that the invention can be carried out with mechanism of various kinds without departing from the scope thereof as expressed in the claims.

Therefore, I do not wish to be limited to any of the details of construction or arrangements of parts shown herein, but what I do claim is:—

1. A method of washing clothing and the like which consists in causing the washing water and contents of a washing tub or the like to be given a motion in an endless path, and moving the articles to be washed in a current over and closely adjacent to a surface provided with perforations and constituting a rubbing surface.

2. A method of washing clothing and the like which consists in introducing the water in a swift current tangentially into the tub, thereby causing the entire contents of the

washing tub to be given a swift whirling motion in an endless path, and moving the articles to be washed over a perforated rubbing surface, and at the same time forcing the clothing against said rubbing surface by means of water currents passing through it.

3. A method of washing clothing and the like which consists in giving the contents of a washing tub a whirling motion in an endless path, moving the articles to be washed over a surface near the bottom provided with perforations constituting a rubbing surface, and simultaneously drawing the water out of the tub through said rubbing surface to bring the clothing against it without impeding its circulation in said path.

4. A method of washing clothing and the like which consists in causing the contents of a washing tub or the like to be given a motion in an endless path, moving the articles to be washed over a surface provided with perforations constituting a rubbing surface, drawing the water out of the receptacle or tub through said rubbing surface, conducting the water out, and trapping the heavier particles on the way out.

5. A method of washing clothing and the like which consists in causing the entire contents of a washing tub to be given a swift whirling motion in an endless path, and moving the articles to be washed over a perforated surface, and at the same time forcing the clothing against said rubbing surface by means of water currents passing through it, and contracting the stream of water where it passes over said perforated surface.

In testimony whereof I have hereunto affixed my signature.

NATHANIEL LOMBARD.