S. F. O'CONNOR.

WASHING MACHINE.

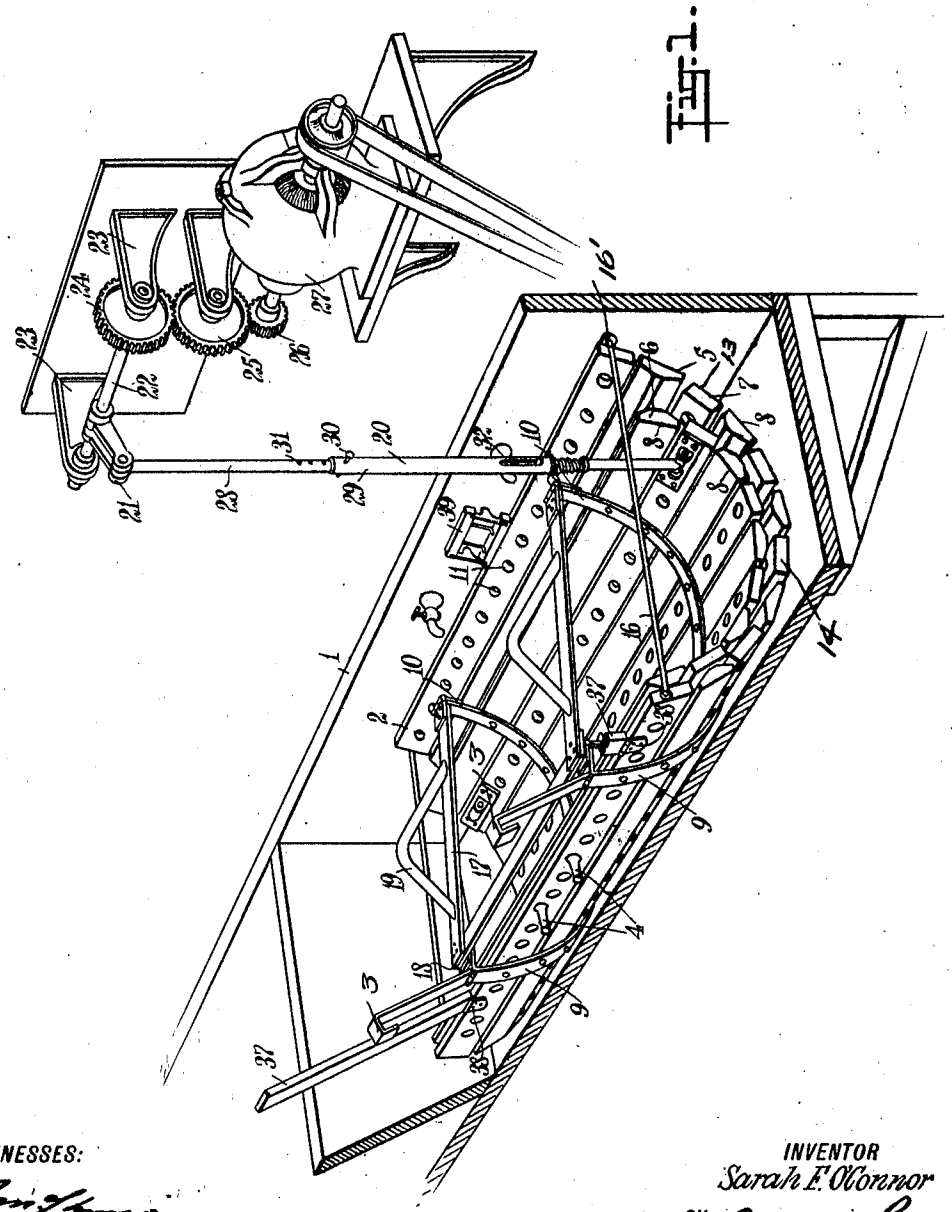
APPLICATION FILED AUG. 1, 1910.

1,004,065.

Patented Sept. 26, 1911.

2 SHEETS—SHEET 1.

Fig. 1.



WITNESSES:

R. Whiting

INVENTOR

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BY Munn & Co.

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2 SHEETS—SHEET 2.

Fig. 2.

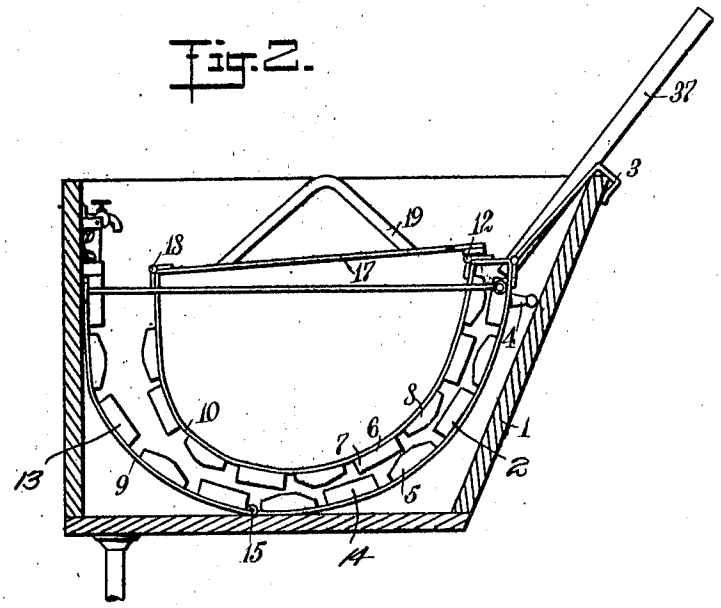


Fig. 4.

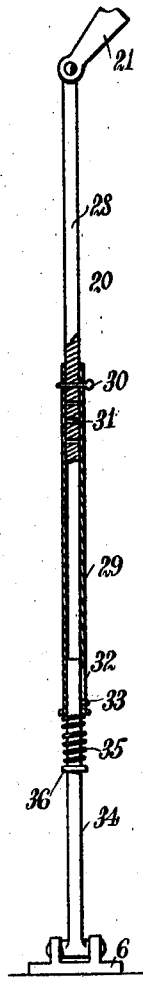
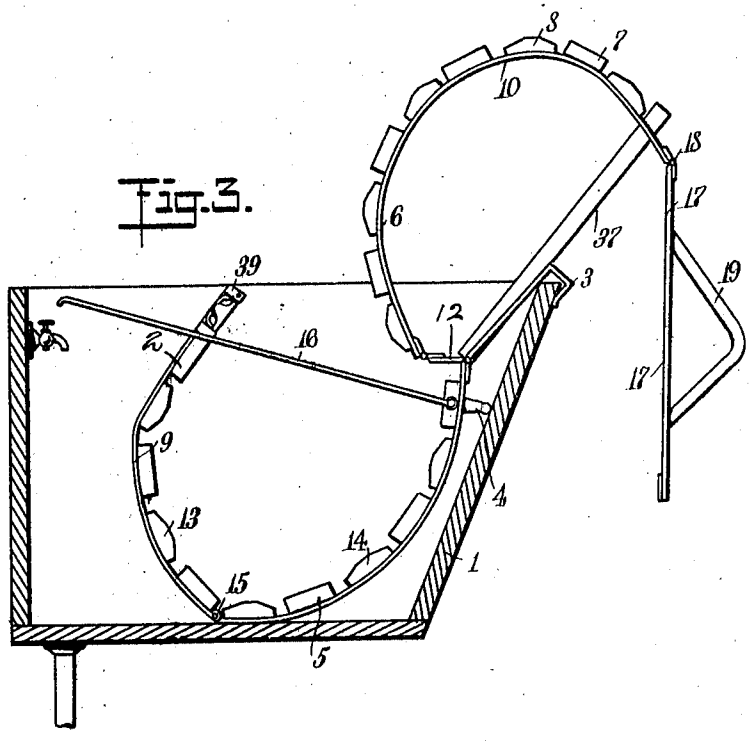


Fig. 3.



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UNITED STATES PATENT OFFICE.

SARAH F. O'CONNOR, OF NEW YORK, N. Y.

WASHING-MACHINE.

1,004,065. Specification of Letters Patent. Patented Sept. 26, 1911.

Application filed August 1, 1910. Serial No. 574,945.

To all whom it may concern:

Be it known that I, SARAH F. O'CONNOR, a citizen of the United States, and a resident of the city of New York, borough of Manhattan, in the county and State of New York, have invented a new and Improved Washing-Machine, of which the following is a full, clear, and exact description.

This invention relates to a washing machine of a type adapted to be used as an attachment to a stationary tub, and is an improvement on my Patent No. 884,946.

An object of this invention is to provide a device which will be simple in construction, inexpensive to manufacture, strong, durable, readily accessible, and easily operated.

A further object of this invention is to provide a washing machine in which concave and convex leaves or rubbers coöperate with each other to draw water through the clothes and force it out, at the same time subjecting the clothes to a slight rubbing motion, whereby the dirt and grease is completely removed, without tearing or wearing the clothes.

These and further objects, together with the construction and combination of parts, will be more fully described hereinafter and particularly set forth in the claims.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views, and in which—

Figure 1 is a perspective view with the front and side of the stationary tub removed to disclose the position of the washing machine in the tub; Fig. 2 is a transverse section, showing the leaves in their coöperating position; Fig. 3 is a view similar to Fig. 2, showing the upper or top leaf removed from the lower leaf, whereby access may be had to the clothing within the lower leaf; and Fig. 4 is an enlarged view in elevation, partly in section, showing the connecting rod for operating the upper leaf.

Referring more particularly to the separate parts, 1 indicates a stationary tub, in which my washing machine, indicated at 2, is adapted to be used. The working parts of the washing machine may be secured to the tub 1 in any well known manner, so as to prevent any unnecessary movement, as for example, by means of pivoted hangers 3, which engage over the edge of the top, and also by struts 4, which engage the front side of the tub.

The washing machine consists primarily of two leaves 5 and 6, the lower one of which 5, is concave on its upper surface, and the upper one of which 6, is convex on its lower surface, so that they coöperate one with the other to wash the clothes between them. These leaves 5 and 6 comprise a plurality of slats 7 and 8, secured together in any well known manner, as by means of metallic straps 9 and 10. It will be noted that the alternate slats 8 are somewhat wedge-shaped on their working faces, so as to coöperate with the flat faces of the interposed slats 7. It will thus be seen that the slats on the leaves 5 and 6 are beveled alternately in a staggered manner. This arrangement has been found very efficient in properly treating the clothes.

It will be noted that the slats are spaced apart somewhat, so as to form interstices through which the water can be drawn in and forced out, so as to cause a strong circulation of the washing solution through the clothing located between the leaves. This circulation is also aided by a plurality of perforations 11, located in the slats at suitable intervals. These perforations are shown in the drawings as located only in the flat slats 7, but if desired, they may be also provided in the beveled or wedge-shaped slats 8. The coöperating leaves 5 and 6 are pivotally connected together in any well known manner, as by means of hinges 12, so that the upper leaf 6 can swing from the position indicated in Fig. 2 to the position indicated in Fig. 3. In the latter position, the clothing can be taken out or put into the lower leaf.

It will be noted that the lower leaf 5 is composed of two sections 13 and 14, hinged together at 15. This permits the device to be folded up in a small compass, and permits a more ready access to the interior of the leaf 5 and also permits access to be had to the outlet of the set tub without entirely removing the machine. For the purpose of maintaining the sections 13 and 14 in a working position, there are provided hooks 16, which are pivoted at one of their ends to section 14, and engage in slotted openings 16′ in the other section 13.

For the purpose of adjusting the leaf 6

toward and from the leaf 5, there is provided a handle frame 17, which may be pivoted to the leaf 6 in any well known manner, as by means of hinges 18, and which is provided with a plurality of suitable handles 19. The relative motion of the leaf 6 to the leaf 5, for the purpose of washing the clothes, may be accomplished either manually or by power. In case the motion is obtained by power, I provide a connecting rod or member 20, which is pivotally connected in any well known manner to the leaf 6 at one end, and connected at its opposite end to a crank 21 on a shaft 22. The shaft 22 may be rotatably supported in any well known manner, as by means of brackets 23, and is provided with a gear 24, which meshes with a gear 25, which in turn meshes with a pinion 26 driven by any suitable type of motor, such as an electric motor 27. The connecting rod 20 is preferably of a peculiar form, so that it may be adjusted and readily disconnected. For this purpose, it comprises a shaft 28, which telescopes into a sleeve 29, and is locked in any adjusted position relative thereto by means of a pin 30, which can be inserted in any one of a plurality of openings 31, which are adapted to be brought into alinement with similar openings in the sleeve 29.

For the purpose of permitting a limited relative motion of the connecting member 20 and the leaf 6, and also to absorb the shock of the motion, the sleeve 29 is provided at its lower end with a slot 32, in which slides a pin 33 on a bar 34, which is pivotally connected at its opposite end to the leaf 6. A spring 35 is provided, which is interposed between the end of the sleeve 29 and a collar 36 on the bar 34, so as to absorb the shock of the operating parts.

For the purpose of preventing the leaf 6 from swinging over too far when tilted up into the position indicated in Fig. 3, there are provided rests 37, pivotally connected in any well known manner to the leaf 5, as by means of hinges 38. Any suitable type of soap-holder or retainer 39 may be provided on the rear upper edge of the leaf 5.

The operation of the device will be readily understood from the above description. The clothes are placed between the leaves 5 and 6 and subjected to the squeezing action due to the relative movement of the leaves 5 and 6, which action also causes a strong circulation of the cleaning solution through the fiber of the clothing, thereby removing all the dirt and grease. When it is desired to remove the clothing, the leaf 6 can be swung up into the position indicated in Fig. 3, where access may be readily had to the interior of the leaf 5.

It will be seen that, inasmuch as the various parts are hinged together, they can be folded up into a small space when it is desired to store them or ship them to a distant point.

While I have shown one embodiment of my invention, I do not wish to be limited to the specific details thereof, but desire to be protected in various changes, modifications and alterations which may come within the scope of the appended claims.

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

1. A washing machine, comprising a pair of leaves hinged together at one side and free at their opposite sides, one of said leaves comprising a plurality of sections hinged together, each of said sections comprising a plurality of slats secured together, the other of said leaves comprising a plurality of slats secured together.

2. A washing machine, comprising a concave lower leaf, a convex upper leaf, each of said leaves comprising a plurality of slats secured together, means for moving one of said leaves relative to the other of said leaves, said lower leaf comprising also a plurality of sections hinged together, and hooks for securing said sections against relative movement.

3. A washing machine, comprising a plurality of leaves hinged together at one end, each leaf comprising a plurality of spaced slats, the alternate slats being beveled on their working surfaces and arranged in staggered relation with respect to the opposed slats, and means for imparting a relative motion to said leaves, including a shock absorber and means for adjusting the motion of the upper leaf.

4. A washing machine, comprising a plurality of leaves hinged together at one end, each leaf comprising a plurality of spaced slats, the alternate slats being beveled on their working surfaces and arranged in staggered relation with respect to the opposed slats, means for imparting a relative motion to said leaves, including a shock absorber and means for adjusting the motion of the upper leaf, rests for supporting one of said leaves in one of its adjusted positions, hangers adapted to engage stationary tubs to support said leaves, and struts on one of said leaves for engaging said tubs to prevent lost motion.

5. A washing machine, comprising a plurality of relatively-movable leaves hinged together, one of said leaves being concave, and the other of said leaves being convex, one of said leaves comprising a plurality of sections hinged together, hooks for securing said sections rigidly together, said leaves comprising a plurality of slats, the alternate slats having respectively beveled and flat working surfaces, the beveled surfaces on one leaf being staggered relative to the beveled surfaces on the opposite leaf, hang-

ers hinged to said leaves adapted to engage stationary tubs to support the leaves, and means for moving one of said leaves relative to the other of said leaves, including a shock absorber and an adjustable connection for varying the motion of said last-mentioned means.

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

SARAH F. O'CONNOR.

Witnesses:

HORATIO WHITING,

PHILIP D. ROLLHAUS.