

C. W. HILL.
WASHING MACHINE.
APPLICATION FILED MAR. 31, 1909.

953,087.

Patented Mar. 29, 1910.

2 SHEETS—SHEET 1.

Fig. 1.

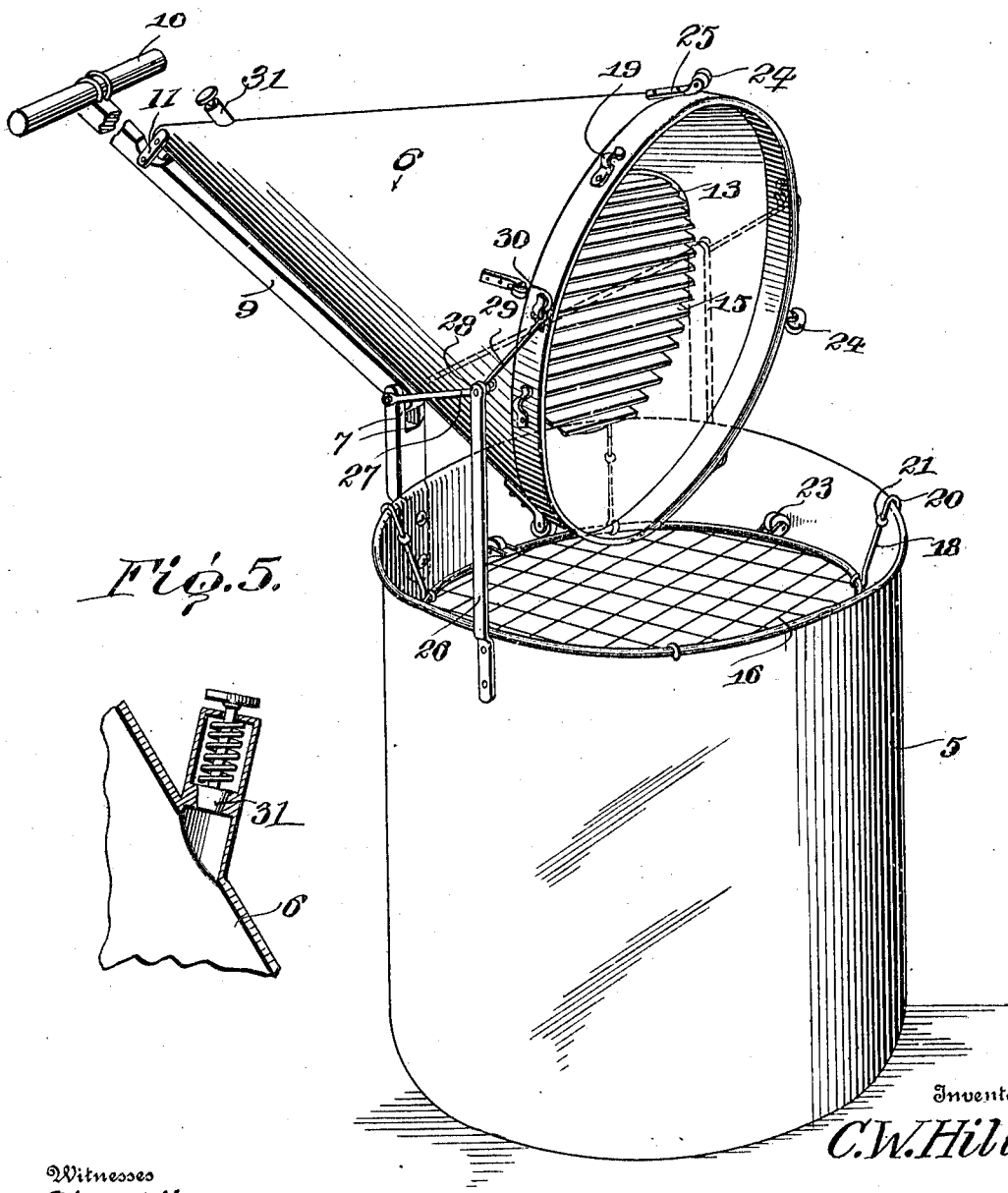


Fig. 5.

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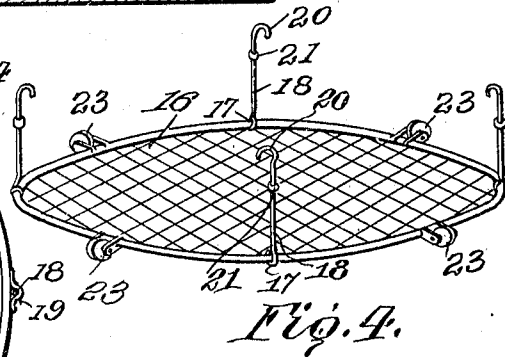
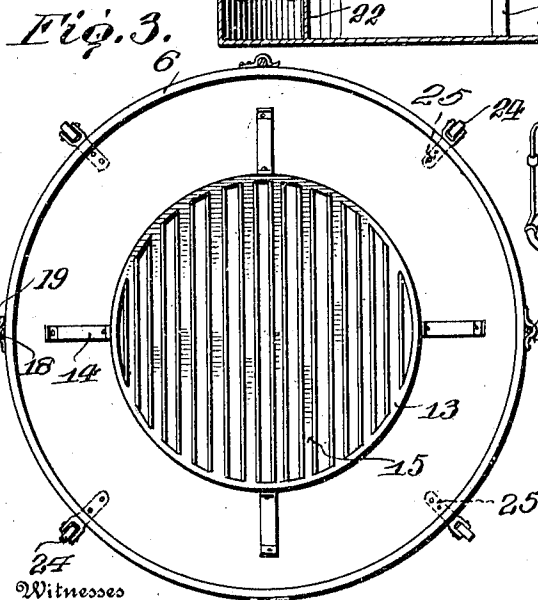
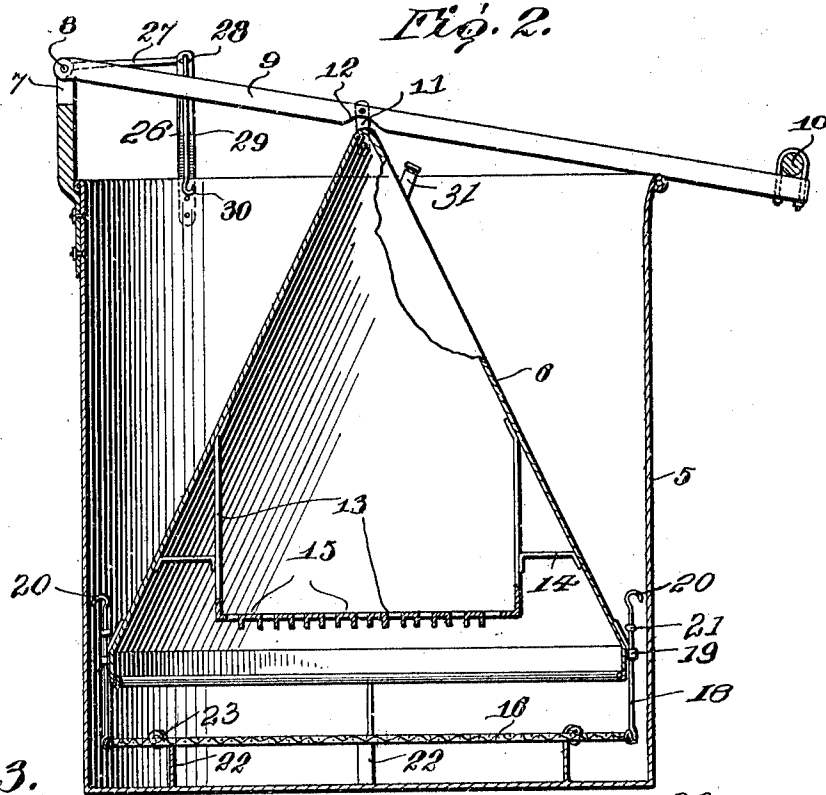
W. H. Hill, Attorneys.

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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

CHARLES W. HILL, OF ATLANTA, GEORGIA.

WASHING-MACHINE.

953,087.

Specification of Letters Patent. **Patented Mar. 29, 1910.**

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To all whom it may concern:

Be it known that I, CHARLES W. HILL, citizen of the United States, residing at Atlanta, in the county of Fulton and State of Georgia, have invented certain new and useful Improvements in Washing-Machines, of which the following is a specification.

This invention relates to washing machines of that general class in which a vertically movable pounder is employed to effect cleaning the clothes.

The object of the invention is to provide a strong, durable, and thoroughly efficient machine of this character, by means of which the clothes may be thoroughly cleaned with very little exertion on the part of the operator.

A further object is to provide means for suspending the clothes tray from the lower end of the pounder during the washing operation, and means for supporting said tray at the top of the liquid containing vessel when the tray is detached from the pounder, thereby to permit the ready removal of the clothes.

A still further object of the invention is generally to improve this class of devices so as to increase their utility, durability, and efficiency.

Further objects and advantages will appear in the following description, it being understood that various changes in form, proportions, and minor details of construction may be resorted to within the scope of the appended claims.

For a full understanding of the invention and the merits thereof and also to acquire a knowledge of the details of construction and the means for effecting the result, reference is to be had to the following description and accompanying drawings, in which:

Figure 1 is a perspective view of a washing machine constructed in accordance with my invention, the reciprocating plunger or pounder being shown in elevated or inoperative position and the clothes tray supported at the top of the liquid containing receptacle; Fig. 2 is a vertical sectional view showing the plunger or pounder disposed within the liquid containing receptacle and at the limit of its downward movement; Fig. 3 is a bottom plan view of the pounder; Fig. 4 is a perspective view of the clothes receiving tray detached; Fig. 5 is a detail longitudinal sectional view showing the con-

struction of the spring actuated valve of the plunger or pounder.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

The improved washing machine forming the subject matter of the present invention comprises a liquid containing vessel 5 preferably formed of galvanized iron and having its upper end flared laterally to permit the ready removal of the plunger or pounder 6.

Extending vertically from one wall of the receptacle 5, are spaced uprights or standards 7 between which is pivotally mounted at 8, an operating lever 9, the latter being formed with a terminal cross bar 10 constituting a handle.

The pounder or plunger 6 is preferably conical in shape, as shown and is pivotally connected at its apex with the intermediate portion of the lever 9 by means of spaced links 11, the lower longitudinal edge of the lever 9 being cut away at 12 to permit free pivotal movement of the lever with relation to said pounder.

Disposed within the plunger 6 is an annular member 13, the lower or free end of which terminates short of the lower end of the plunger and is connected to the latter by means of a series of horizontally disposed braces 14.

Extending transversely across the open or lower end of the member 13, are a series of cross bars 15, each preferably stamped or otherwise formed from a single piece of metal, the opposite longitudinal edges of which are bent downwardly to produce spaced flanges adapted to bear against the clothes and form a rubbing surface.

Arranged below the open end of the pounder or plunger 6, is a perforated tray 16 adapted to receive the clothes or garments to be washed, and preferably comprising a ring connected by intersecting wires to permit the ready passage of water through the same.

Pivotally connected at 17 with the frame of the clothes tray 16, are a plurality of vertically disposed rods 18, the free ends of which extend through suitable spring clips 19 secured to the lower edge of the pounder 6, said rods terminating in hooks 20 adapted to engage the upper edge of the receptacle 5

when the tray is detached from the pounder for the purpose of supporting the tray in convenient position to permit the ready removal of the clothes from said tray.

5 The rods 18 are formed with intermediate offset portions or projections 21 which bear against the clips 19 when the pounder is elevated so as to cause the tray to travel with the plunger during the operation of the latter.

10 The tray 16 is normally supported in spaced relation to the bottom of the receptacle 5 by means of one or more spacing members 22 so as to permit the water to pass through the clothes and tray and flow outwardly against the sides of the receptacle 5 to effect cleaning of the clothes.

15 Journaled on the supporting frame of the clothes tray 16, are a series of rollers 23 which bear against the interior walls of the receptacle 5 and serve to reduce friction between the parts, there being similar anti-friction rollers 24 carried by suitable arms 25 extending laterally from the exterior walls of the pounder at the lower end thereof, as shown.

20 As a means for supporting the pounder or plunger in an inoperative position during the removal of the clothes from the tray 16, there is provided a frame or rest 26 comprising spaced supports connected at their upper ends with the uprights 7, by means of inclined bars 27.

25 Pivotaly mounted at 28 on the uprights of the rest or support, are rods 29 having terminal hooks 30 adapted to engage the spring clips 19, thereby to hold the pounder or plunger to its seat and thus prevent accidental movement of the same during the removal of the clothes from the receiving tray.

30 Disposed at the apex of the member 6, is a spring pressed valve 31 which serves to permit the escape of air within the pounder on the downward movement of the latter thus to produce suction in the lower end thereof and cause a portion of the water in the containing vessel 5 to be drawn upwardly through the clothes in the tray 16.

35 One end of each spring clip 19 is normally and yieldably supported in engagement with the exterior wall of the plunger 6 so that the rods 18 may be readily positioned within the clips when it is desired to suspend the clothes tray from the plunger or disconnect it from said clips when it is desired to support the clothes tray at the top of the containing vessel 5 to permit the removal of the clothes from said tray. Thus it will be seen that on the initial downward movement of the member 6, the air will be partially compressed within the plunger and forced downwardly through the clothes in the tray and upwardly through the water in the vessel 5 at the sides of the latter. As the plunger continues its downward stroke, the

pressure of the air in the pounder will automatically open the valve 31 to permit the escape of the air, thereby producing a partial suction in the plunger and causing the water in the lower portion of the tank or 70 receptacle to pass upwardly through the clothes in the tray and thoroughly clean the same. On the return or upward stroke of the pounder, the stops or projections 21 on the rods 18, will bear against the adjacent 75 clips 19 and form a support for the clothes tray 16 so that the latter will be carried upwardly together with the clothes through the water in the containing vessel 5, this operation being repeated at each stroke of the 80 lever 9.

In order to remove the clothes from the receptacle, the lever 9 is swung laterally on the pivot 8 to the position shown in Fig. 1 of the drawings, with the plunger or 85 pounder 6 resting on the inclined connecting bars 27 of the supporting frame or rest, and in which position it may be locked against accidental displacement by inserting the hooks 30 in the adjacent spring clips or eyes 90 19 of said plunger. After the rods 18 have been detached from the spring clips 19 of the plunger and the latter supported on the rest, the hooked ends 20 are inserted over the upper edge of the vessel 5 so that the 95 operator may readily remove the clothes from the tray 16.

Attention is here called to the fact that the inrush of water to the interior of the member 6, due to the opening of the valve 100 31, causes the clothes to bear against the transverse bars 15 and thus assist in relieving the clothes of dirt and other foreign matter, the cleansing or rinsing of the clothes being effected by the downward passage of the latter through the water in the 105 containing vessel on the down stroke of the pounder.

Having thus described the invention, what is claimed as new is:

1. A washing machine including a liquid containing vessel, a pounder operating within the vessel, a clothes tray depending from and detachably secured to the pounder, and means for supporting the tray at the 115 top of the vessel when the pounder is in inoperative position.

2. A washing machine including a liquid containing vessel, a pounder operating within the vessel and provided with clips, a 120 clothes receiving tray disposed beneath the pounder, rods carried by the tray and passing through the clips on the pounder, stops formed on the rods for engagement with the clips, and means operatively connected to 125 the pounder for reciprocating the latter.

3. A washing machine including a liquid containing vessel, a pounder operating within the vessel, a clothes receiving tray suspended from the pounder and provided with 130

terminal hooks, means for supporting the pounder in inoperative position, and anti-friction rollers carried by the pounder and clothes tray for engagement with the interior walls of the liquid containing vessel.

4. A washing machine including a liquid containing vessel, a pounder operating within the vessel and provided with spaced clips, a tray suspended from and movable with the pounder, rods pivotally connected with the tray and provided with stops for engagement with the clips, means for supporting the pounder in inoperative position, and hooks carried by the rods and adapted to engage the upper edge of the vessel for supporting the tray in elevated position when the latter is detached from the pounder.

5. A washing machine including a liquid containing vessel, a pounder operating within the vessel, clips carried by the pounder, a clothes tray suspended from the pounder, rods carried by the tray and extended

through the clips, stops formed on the rods and adapted to bear against the clips on the upward stroke of the pounder, a lever operatively connected with the pounder for reciprocating the latter, means for supporting the pounder in inoperative position, and means carried by the rods for engagement with the upper edge of the vessel when the pounder is in inoperative position.

6. A liquid containing vessel, a pounder mounted for reciprocation within the vessel, and a detachable clothes receiving tray carried by and mounted for sliding movement on the pounder, said tray remaining relatively stationary during a portion of the stroke of the pounder.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES W. HILL. [L. S.]

Witnesses:

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PAUL REYNOLDS.