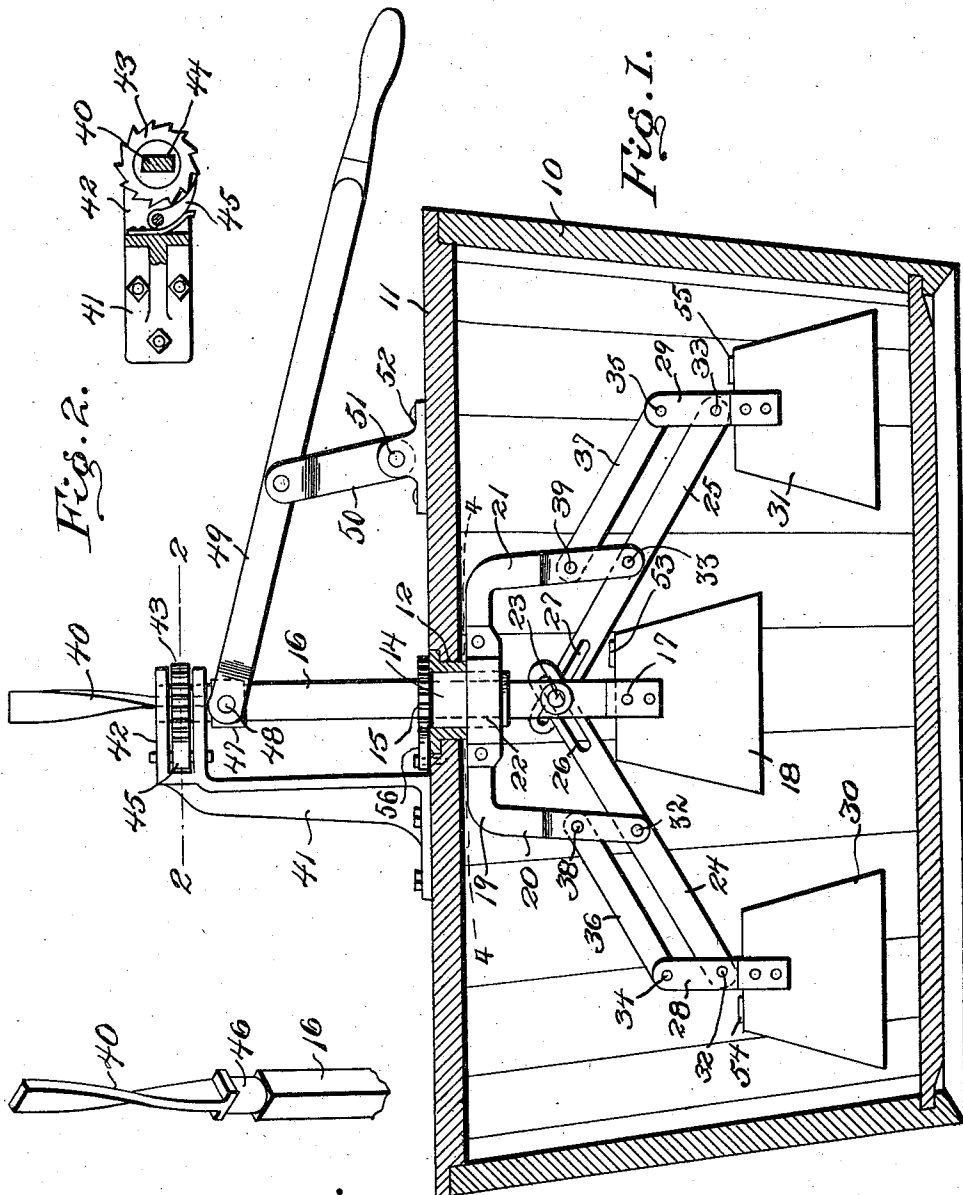


G. SAMPSON.
 WASHING MACHINE.
 APPLICATION FILED MAR. 7, 1911.

1,012,718.

Patented Dec. 26, 1911.
 2 SHEETS—SHEET 1.



Witnesses
M. N. Woodson.

Joana M. Tallin.

Fig. 3.

Inventor
G. Sampson.

By

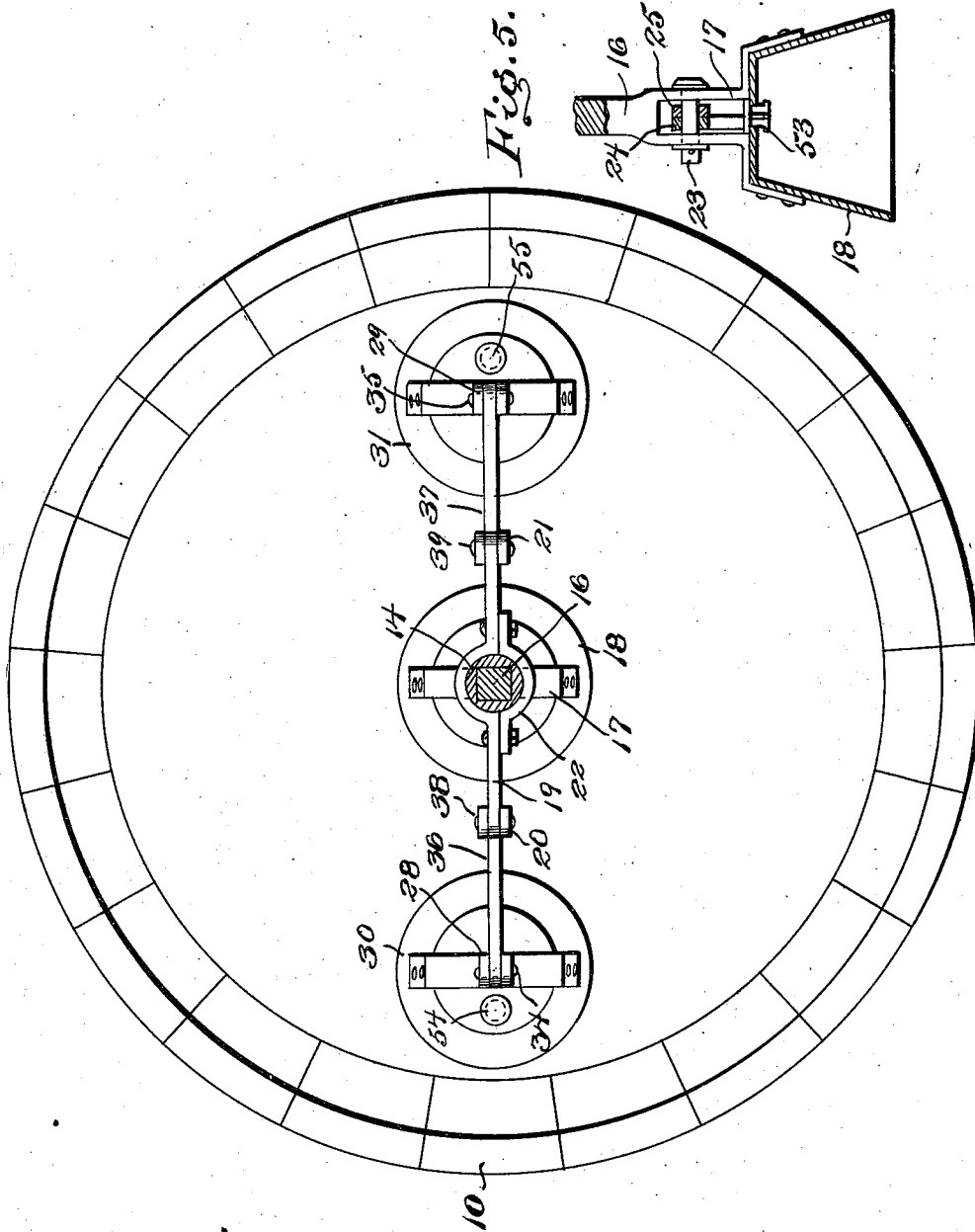
H. A. Macy, Attorneys.

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Fig. 4.

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UNITED STATES PATENT OFFICE.

GUSTAVE SAMPSON, OF MONTEVIDEO, MINNESOTA.

WASHING-MACHINE.

1,012,718.

Specification of Letters Patent.

Patented Dec. 26, 1911.

Application filed March 7, 1911. Serial No. 612,836.

To all whom it may concern:

Be it known that I, GUSTAVE SAMPSON, citizen of the United States, residing at Montevideo, in the county of Chippewa and State of Minnesota, have invented certain new and useful Improvements in Washing-Machines, of which the following is a specification.

This invention relates to improvements in washing machines of the class wherein a plurality of suction devices are employed to extract the dirt from the garments, and has for one of its objects to improve and simplify the construction and increase the efficiency and utility of devices of this character.

Another object of the invention is to provide a device of this character wherein a plurality of suction devices are continuously rotated and alternately compressed against and elevated from the garments.

With these and other objects in view, the invention consists in certain novel features of construction as hereinafter shown and described and then specifically pointed out in the claims, and in the drawings illustrative of the preferred embodiment of the invention, Figure 1 is a vertical sectional elevation of the improved machine; Fig. 2 is a sectional detail on the line 2—2 of Fig. 1; Fig. 3 is a perspective view of the upper portion of the operating rod; Fig. 4 is a plan view of the tub with the cover removed, and with the suction devices likewise in plan view, the operating rod being in section on the line 4—4 of Fig. 1; and Fig. 5 is a sectional detail of the central suction cup.

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

The tub portion of the improved device is represented conventionally at 10 and may be of any suitable size or form and of any suitable material, but for the purpose of illustration is shown of the ordinary construction of a wash tub and circular in outline, with tapered sides, and provided with a cover 11.

The cover 11 is provided with a central opening in which a stationary bushing 12 is secured by screws or other suitable fastening devices, and mounted for rotation through the stationary bushing 12 is another bushing or sleeve 14, the sleeve having an annular shoulder 15 provided with ratchet teeth and

bearing upon the bushing 12 and by which it is supported, the teeth of the shoulder being engaged by a pawl 56 connected to the cover 11.

The sleeve 14 is provided with a square aperture, and slidable through this aperture is a square shaft or rod 16. At its lower end the rod 16 is forked, as represented at 17, and connected by the forked portion to a suction cup 18. Connected to the sleeve 14 below the bushing 12 is a bar 19 having depending ends 20—21. The bar 19 is clamped to the sleeve, as represented at 22, so that it can be readily detached, to enable the parts to be assembled or disconnected, as required.

Extending through the rod 16 below the sleeve 14 is a pin 23, and mounted to swing upon this pin are two arms 24—25, the arms being provided respectively with slots 26—27 through which the pin passes. At their outer ends the arms 24—25 are connected respectively to standards 28—29 having forked lower ends by which they are connected respectively to the suction cups 30—31. The depending portions 20—21 of the bar 19 are forked and extend upon opposite sides of the arms 24—25 to which they are pivotally united, as shown at 32—33. The standards 28—29 extend upwardly a considerable distance, and pivoted respectively to the standards at their upper ends, at 34—35, are other shorter arms 36—37, the inner upper ends of the latter being pivoted respectively, at 38—39 in the forked terminals of the depending portions 20—21. The arms 24—36 extend in parallel relation, while the arms 25—37 also extend in parallel relation. By this simple arrangement it will be obvious that as the rod 16 is moved downward the suction cup 18 will be also moved downwardly, while the suction cups 30—31 will be elevated through the action of the pin 23 and the arms 24—25, and the cups 30—31 retained in their vertical position through the action of the arms 36—37 and the standards 28—29. Then as the rod 16 is moved upwardly the movements will be reversed, the suction cup 18 being moved upwardly and the suction cups 30—31 being moved downwardly and retained in their vertical position. Means are provided in the improved apparatus for intermittently rotating the rod 16 and its attachments at the same time that it is moved vertically, and this portion of the apparatus will now be described.

At its upper end the rod 16 is flattened and the flattened portion twisted one fourth around, as represented at 40. Connected to the cover 11 is a standard 41 having a forked upper portion 42 within which a ratchet wheel 43 is mounted for rotation, the ratchet wheel having an oblong aperture 44 through which the flattened and twisted portion 40 of the rod extends. Pivoted between the forked bearings 42 of the standard is a pawl 45 which constantly engages the ratchet 43 from one side. The teeth of the ratchet wheel are reverse to those of the shoulder 15 so that the latter together with its pawl 56 constitutes a "backing ratchet" device. The rod 16 is provided near the juncture of the flattened portion 40 and the body of the rod with a circular bearing, indicated at 46, around which a collar 47 is connected and provided with trunnions 48 to receive the forked end of an operating lever 49. The lever is supported intermediate its ends by a swinging standard or fulcrum 50, the latter being pivoted at 51 in a bracket 52 upon the cover 11. By this simple arrangement it will be obvious that when the lever 49 is depressed to elevate the rod 16, the suction cup 18 will be elevated and the suction cups 30—31 depressed, and the twisted portion 40 of the rod moved upwardly through the ratchet wheel 43. Then when the lever 49 is moved to depress the rod 16, the positions of the suction cups will be reversed, and the twisted portion 40 of the rod caused to pass downwardly through the ratchet wheel 43 and rotate the latter one-fourth of a revolution, the pawl 45 yielding to permit this movement of the ratchet wheel. At the return stroke of the lever, however, the ratchet wheel will be held from rotation by the pawl and thus cause the rod 16 to be rotated one fourth of a revolution, carrying the suction cups with it a corresponding distance within the tub 10. Thus at each downward stroke of the rod 16, the suction cup 18 will be compressed upon the garments in the tub and the suction cups 30—31 elevated above the garments, and then at the return stroke, the suction cups 30—31 will be caused to move around in the tub one-fourth of a revolution as they are moved downwardly, thus causing them to compress all portions of the garments as the operation proceeds, and producing the requisite uniform action of the suction cups. Thus the suction cups 30—31 are simultaneously elevated and depressed, while the cup 18 is elevated and depressed intermittently therewith. By this arrangement an intermittent rotary motion is imparted to the suction cups, while at the same time an alternating elevating and depressing action

is likewise produced simultaneously with the rotary motion. Thus the cups are alternately pressed against and removed from the garments and produce the requisite suction action. The suction cup device 18 is provided with an outwardly opening valve, represented at 53, while similar valves, represented at 54—55, are connected to the suction cup devices 30—31, the object of which will be obvious.

The improved device is simple in construction, can be inexpensively manufactured, and operates effectually for the purposes described.

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

1. In a washing machine, a rod mounted for rotation and movable vertically, a suction-cup carried by said rod, means for rotating said rod, arms carried by said rod and including downwardly directed portions, a lever mounted to swing intermediate its ends on each of said arms and each pivoted at its inner end to said rod, and a suction-cup carried by each of said levers.

2. In a washing machine, a rod mounted for rotation and movable vertically, a suction-cup carried by said rod, means for rotating said rod, arms carried by said rod and including downwardly directed portions, a lever mounted to swing intermediate its ends on each of said arms and each pivoted at its inner end to said rod, a standard pivoted at its outer end to each of said levers, a link pivoted at one end to each of said standards and at the other end to said arms, and a suction cup carried by each of said standards.

3. In a washing machine, a rod having rotative and longitudinal movement and provided with a twisted portion, a ratchet wheel through which said twisted rod portion is slidably disposed, a pawl engaging said ratchet wheel, a sleeve through which said rod is slidably disposed and partaking of its rotary motion, a bar carried by said sleeve and having depending portions, a suction cup carried by said rod, other suction cups spaced from said first mentioned cup, a standard carried by each of said spaced suction cups, an arm pivoted to each of said standards and to said rod and likewise pivoted to said depending bar portions, other arms pivoted to said standards and to said depending bar portions, and means for imparting longitudinal movement to said rod.

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

GUSTAVE SAMPSON. [L. S.]

Witnesses:

SALVATOR SAMPSON,
E. S. RHODES.