(No Model.) 2 Sheets—Sheet 1.

D. R. BORNEMAN.

WASHING MACHINE.

No. 526,143. Patented Sept. 18, 1894.

Fig. 1.

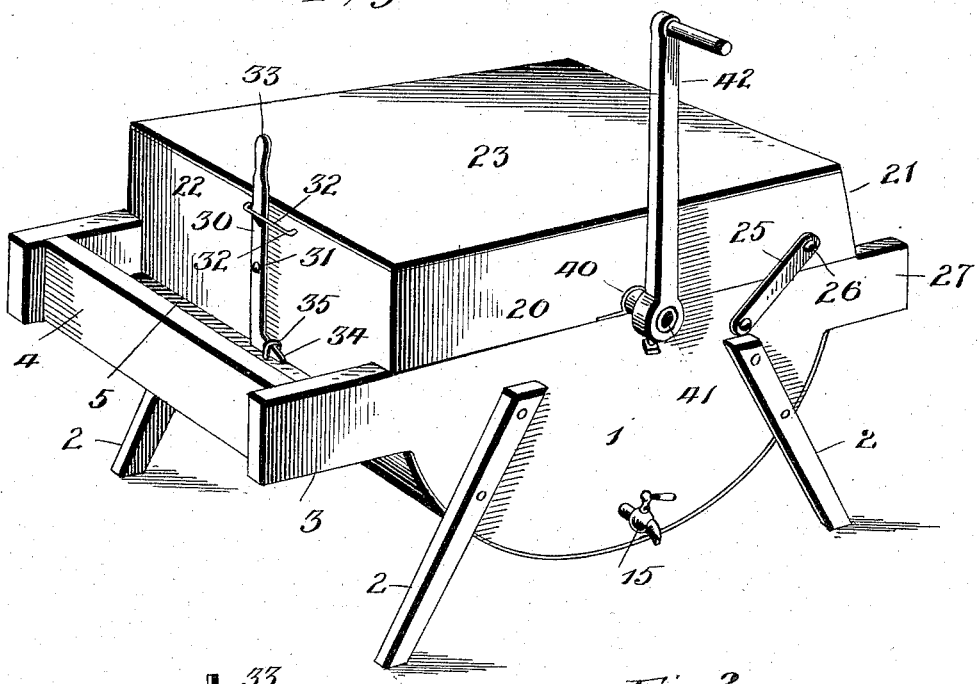


Fig. 2.

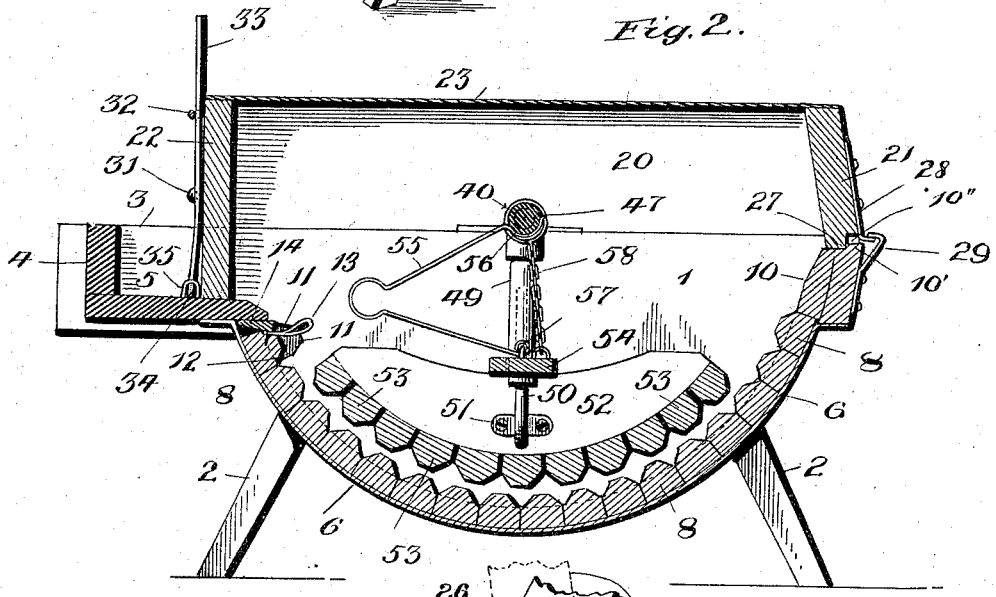
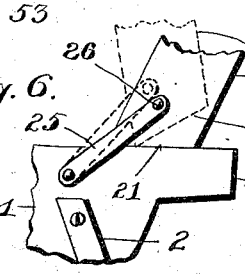


Fig. 6.



Witnesses.

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J. H. Jochum Jr.

Inventor:

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(No Model.) 2 Sheets—Sheet 2.

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Fig. 3.

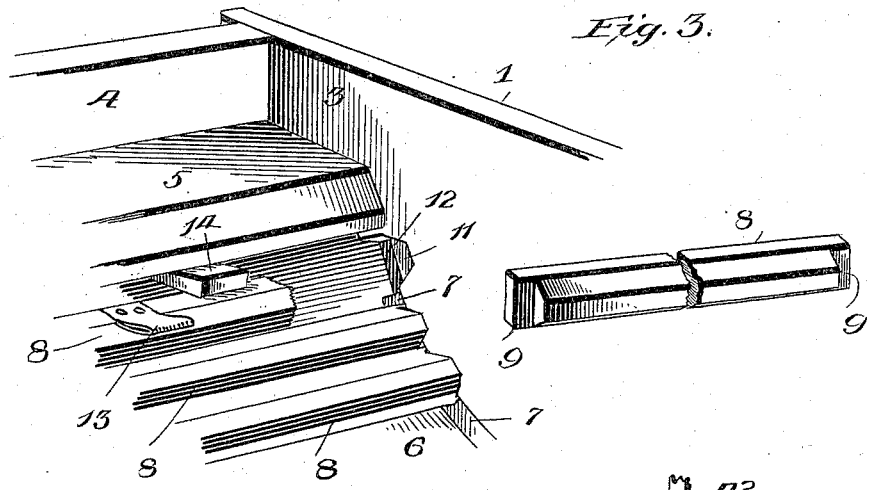


Fig. 4.

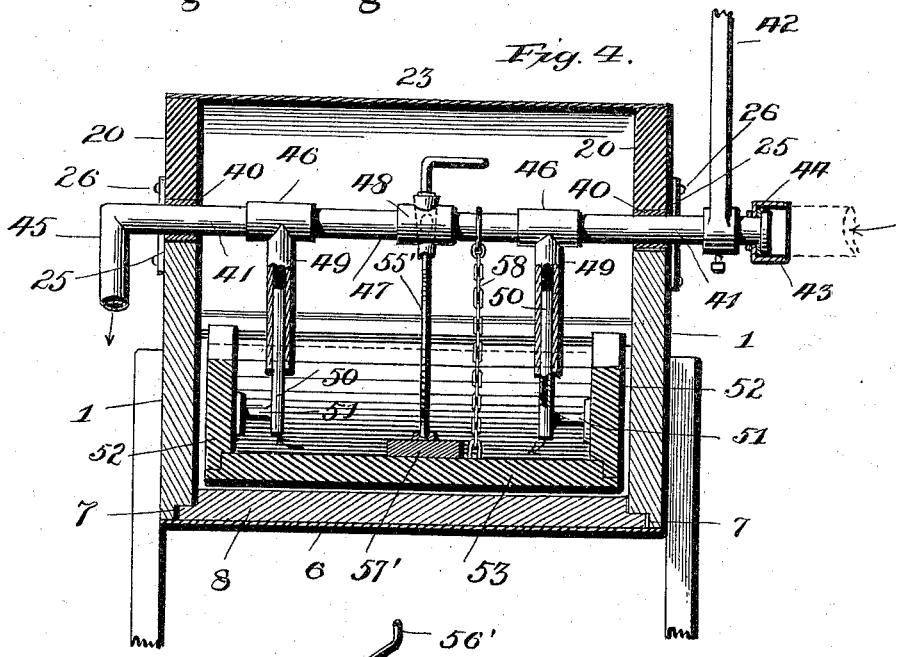
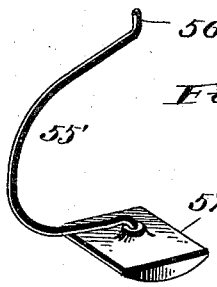


Fig. 5.



Witnesses:
L. C. Hills.
J. H. Jochum Jr.

Inventor:
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UNITED STATES PATENT OFFICE.

DANIEL R. BORNEMAN, OF POTTSTOWN, PENNSYLVANIA.

WASHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 526,143, dated September 18, 1894.

Application filed May 18, 1894. Serial No. 511,667. (No model.)

To all whom it may concern:

Be it known that I, DANIEL R. BORNEMAN, a citizen of the United States, and a resident of Pottstown, Montgomery county, State of Pennsylvania, have invented certain new and useful Improvements in Washing-Machines; and my preferred manner of carrying out the invention is set forth in the following full, clear, and exact description, terminating with a claim particularly specifying the novelty.

This invention relates to washing machines, and more especially to that class thereof having a swinging rubber; and the object of the same is to effect certain improvements in machines of this character.

To this end the invention consists in the specific details of construction hereinafter set forth, and as illustrated in the drawings, wherein—

Figure 1 is a perspective view of this washer with its cover closed. Fig. 2 is a central longitudinal section thereof. Fig. 3 is a perspective detail illustrating the shape of the removable ribs in the bottom and the manner of their insertion. Fig. 4 is a section taken longitudinally through the center of the rubber, showing how the shaft is of tubing to supply hot water or steam and to permit the exit of cooler water or dirty water. Fig. 5 is a detail of my preferred form of spring. Fig. 6 is a detail in side elevation showing the cover in dotted lines as partly raised and in full lines as completely raised.

The body of this washing machine comprises two sides 1 supported by legs 2 and which sides are extended at one end as at 3 and connected by a transverse end piece 4 forming a support for the wringer as well as a small box having a flat bottom 5 for the reception of soap, &c. The lower edges of the sides 1 are struck on curved lines and are connected by a sheet of metal 6 forming a smooth tight bottom for the body, and just above said edges the inner walls of the sides are provided with grooves 7.

8 are removable ribs of about the shape shown in Fig. 3 and having tenons 9 at their ends. The length of the bodies of these ribs is the same as the distance between the inner faces of the sides 1, and their tenons 9 extend beyond their bodies and are adapted to fit in the grooves when the bodies rest on the upper face of the bottom 6. At one end of the curved sheet 6 and at one end of the body a strip 10 is secured across the body to close this end of the groove 7, and the other end of these grooves is closed by the inner edge of the bottom 5 of the soap-box. Just beneath one end of this bottom 5 one side of the body is provided with a recess 11 communicating with the groove 7, which latter is here also made a little deeper than elsewhere as seen at 12 in Fig. 3. The ribs 8 are inserted by passing one extremity into this recess 11 with its tenon into the deep portion 12 of the groove. The body of the rib is then laid upon the curved bottom 6. The entire rib is then moved longitudinally until its opposite tenon 9 engages its groove, and then the rib is slid laterally along the curved bottom 6. The first rib put in place is moved around under and against the strip 10, and subsequent ribs are then inserted to cover the entire sheet 6; and the last rib put in place has a strap or handle 13 attached thereto and which projects slightly beyond the inner edge of the soap-box-bottom 5 so that it may be grasped by hand. A block or wedge 14 is then inserted between this last rib and the bottom 5 to hold all the ribs in place. This construction obviously permits the removal of the ribs when desired as for cleansing, repair, or substitution. One side 1 of the bottom may be further provided with a vent hole 15 closed by a plug or a short pipe having a faucet for drawing off the contents of the body.

The cover of this machine comprises two sides 20, an outwardly inclined end piece 21 at one end, an end piece 22 at the other end depending sufficiently below the sides 20 to rest upon the soap-box-bottom 5, and a flat top 23 as of sheet metal covering the whole. Links 25 are pivoted at 26 to the sides 20 of the cover near the rear end of the machine and on its outer face, and extend obliquely downward and inward, their lower ends being pivoted to the sides of the body. These links are of sufficient length so that when the cover is raised the rear corners of the sides 20 slide as seen in dotted lines in Fig. 6, inward on the upper edges of the sides 1 beneath the pivots 26 and permit the oblique rear ends of said sides 20 to rest squarely on the flat upper edges of the sides 1 so as to

hold the cover raised and inclined slightly to the rear. The lower edge of the rear end 21 has a shoulder 27 which, when the cover is closed, engages a similar shoulder 10′ at the upper edge of the strip 10; and on the rear face of the end piece 21 is a metal strap 28 having a hooked lower end standing slightly below the lower edge of this end piece and normally within a notch 10″ in the shoulder 10′. 29 is another strap secured to the outer face of the rear end of the body and having an inwardly hooked upper end standing opposite said notch. By this construction, when the cover is closed, the shoulder 27 tightly engages the shoulder 10′, and the two hooks engage each other so as to prevent the cover from rising from the body and so as to cause the cover to be closed upon the body by a water-tight joint at all points. 30 is a latch pivoted between its ends at 31 to the front end 22 of the cover with its body moving under a keeper 32 and rising above the cover to form a handle 33, and its lower end provided with a hook 34 adapted to be moved laterally into engagement with a staple 35 rising from the bottom of the soap-box. By this means when the cover is closed down, its rear end is locked as above described, and its front end piece 22 passes down into and forms a water-tight joint with the soap-box, and it is locked closed by means of the latch and staple.

In the lower edges of the sides of the cover 20 are formed bearings 40 in which is journaled a transverse tubular shaft 41 extending across and beyond the cover and carrying at one end a handle 42 for rocking this shaft. In Fig. 4 I have shown the one extremity of the shaft as extending into a box 43 and there surrounded by packing 44, while the other extremity is turned down as at 45 and connects, where broken away, with a suitable waste pipe. Within the cover this shaft is provided with two T-joints 46 between which is a short section 47 of pipe having a cock 48. To the lower branches of the T's are connected vertical pipes 49 within which slide smaller pipes 50, and the latter have brackets 51 on their outer sides which are connected with the sides 52 of the rubber. Said sides are curved on their lower edges and connected by ribs 53 of any suitable construction and section; and the upper edges of the sides may also be connected by a strip 54 having holes through which pass the vertical pipes 49 and their inclosed pipes 50. In some instances I may form a spring 55 of V-shape having a bend 56 in its upper end which rests beneath the short pipe 47 and having an eye in its lower end connected by a staple 57 with the cross strip 54; but my preferred form of spring is shown in Fig. 5, and consists of a U-shaped spring 55′ having its upper end 56′ pointed and resting removably in a seat or hole in the lower end of the cock 48, and its lower end resting removably in a socket in the upper end of a block 57′ which rests upon and is secured to several of the ribs 53—this construction of spring omitting the cross strip 54 entirely. A chain 58 connects the short pipe 47 with the strip 54 when the spring 55 is used, or with one of the ribs 53 when the spring 55′ is used, which chain prevents the dropping of the rubber too low.

In the use of this improved washing machine, hot water is fed from a suitable source to the box 43, and if the cock 48 is closed the water will pass through the inlet end of the pipe 41, down one vertical pipe 49, out its inclosed pipe 50, into the body of the washing machine, across and around within the same, up the other pipes 50 and 49, out the pipe 41, and down the outlet 45; whereby a continuous flow of hot and clean water or steam can be kept up within the washing machine while in use, since the cover is closed upon the body by a water-tight joint at all points. If the cock 48 is open the hot water will, of course, pass directly across without circulating within the body of the washer. In many instances, however, it may be found undesirable to pass water through the machine in this manner, and in that event the box 43 need not be used but the tubular construction of the shaft and connections will not deteriorate from the successful operation of the whole. In operation, the latch is disconnected from the staple and the cover thrown back, and the clothes are inserted in the body, after which the cover is closed and locked tightly to the body. Water is then passed in through the pipe 47, and if a constant flow is desired it is kept up by the means set forth. The closing of the cover bears the rubber down upon the clothes and compresses the spring so that the inner pipes 50 slide up within the vertical pipes 49; and when the rock-shaft 41 is oscillated in its bearings by means of the handle 42 (or by steam power if the machine is a large one) it will be seen that the rubber will move within the body over the ribs 8 forming the bottom thereof and will be constantly pressed downward upon the clothes by means of the spring, yet with a yielding force accommodating it to the inequalities of the thickness of the articles being washed.

All parts of this device are of the desired sizes, shapes, materials, and proportions, and considerable change may be made therein without departing from the principle of my invention.

What is claimed as new is—

In a washing machine, the combination with a body having a curved bottom provided with ribs, a cover therefor, and means for locking the cover closed upon the body; of a tubular rock-shaft journaled across the cover, means for oscillating this shaft, a box at the inlet end thereof in which the shaft is journaled with surrounding packing, an exit pipe at the outlet end thereof, two T-joints on the pipe within the machine, an interposed short pipe having a cock, vertical pipes depending from

the T's, smaller pipes sliding within said vertical pipes and open at their lower ends, a rubber connected with said smaller pipes, and an expansive spring interposed between the rubber and the rock-shaft, as and for the purpose set forth.

In testimony whereof I have hereunto subscribed my signature on this the 10th day of May, A. D. 1894.

DANIEL R. BORNEMAN.

Witnesses:
ZEPH. SCHAFFER,
JACOB R. MILLER.