W. H. HIGGINS.

WASHING MACHINE.

APPLICATION FILED NOV. 16, 1910.

999,647. **Patented Aug. 1, 1911.**

Fig. 1.

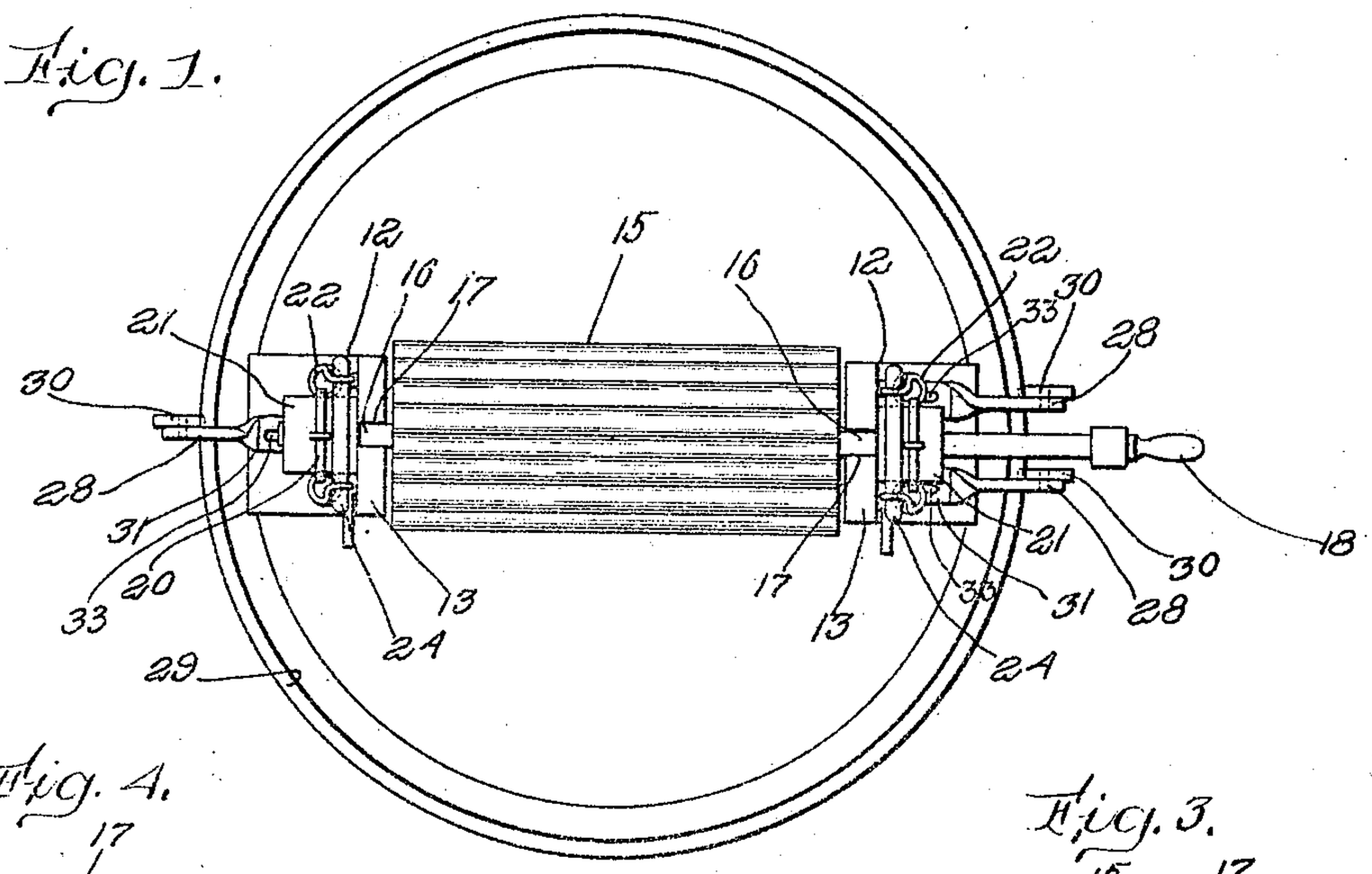


Fig. 4.

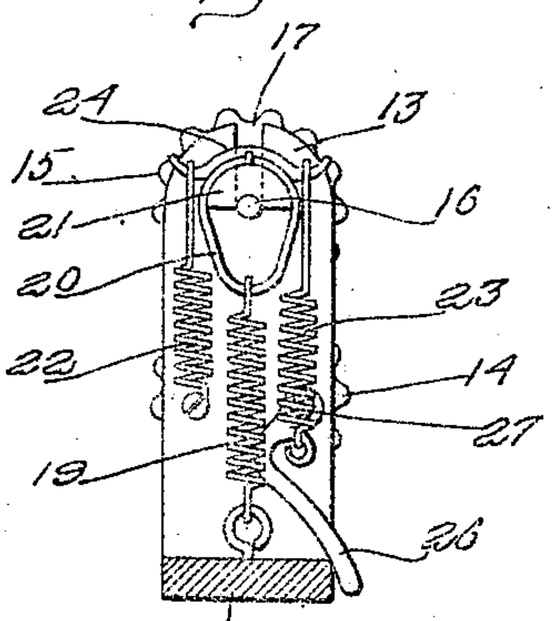


Fig. 3.

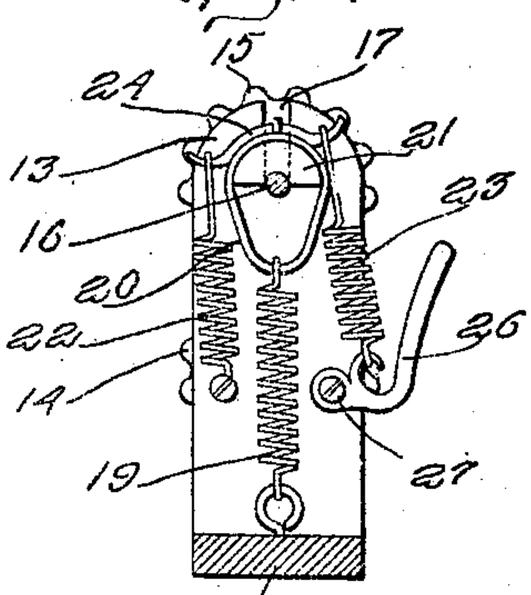
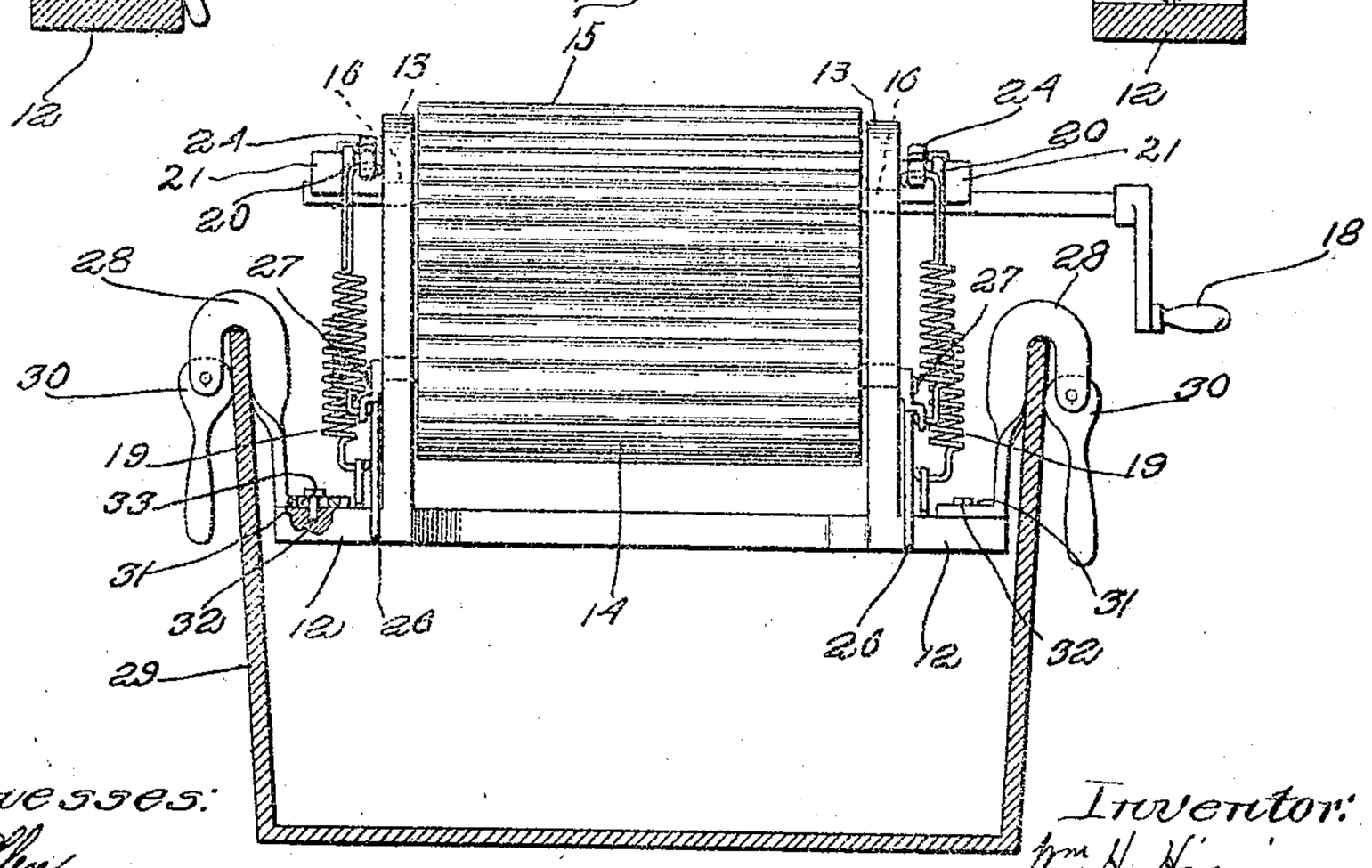


Fig. 2.



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UNITED STATES PATENT OFFICE.

WILLIAM H. HIGGINS, OF SPRINGFIELD, VERMONT.

WASHING-MACHINE.

999,647. Specification of Letters Patent. **Patented Aug. 1, 1911.**

Application filed November 16, 1910. Serial No. 592,692.

To all whom it may concern:

Be it known that I, WILLIAM H. HIGGINS, of Springfield, in the county of Windsor and State of Vermont, have invented certain new and useful Improvements in Washing-Machines, of which the following is a specification.

This invention relates to an attachment for a washtub adapted for use in washing fabrics contained in the tub, the attachment comprising a frame adapted to be secured to the tub and a pair of pressure rolls journaled in the frame, one of the rolls being yieldingly pressed against the other and provided with a crank whereby it may be rotated to feed the fabrics between the rolls, the contact of the corrugated rolls with the fabrics passing between them, having a tendency to remove dirt from the fabrics.

The invention has for its object first, to provide an attachment of the character above stated adapted not only to apply constant yielding pressure to the upper roll for washing purposes, but also to temporarily apply an increased pressure for wringing or squeezing purposes, the increased pressure being applicable and removable at the will of the operator.

The invention also has for its object to provide improved means for securing a washing attachment to washtubs of different sizes.

The invention consists in the improvements which I will now proceed to describe and claim.

Of the accompanying drawings which form a part of this specification,—Figure 1 represents a top plan view of a washing machine or attachment embodying my invention applied to a washtub; Fig. 2 represents a side elevation of the same, the tub and parts of the attachment being shown in section; and Figs. 3 and 4 represent end views of the attachment under different adjustments.

Similar reference characters indicate the same or similar parts in all the figures.

My improved washtub attachment comprises a frame composed of a base piece 12, and uprights 13 attached thereto, the ends of the base piece projecting outwardly from the uprights, a lower corrugated roll 14 journaled in bearings in the uprights 13, and an upper corrugated roll 15, the journals 16 of which extend through vertical slots 17 in the frame uprights so that the upper roll is movable toward and from the lower roll, one of said journals being extended to form a crank 18.

19, 19 represent springs preferably of helical form, attached at their lower ends to the base piece 12, and connected at their upper ends by means of eyes or loops 20 with saddles 21 bearing on the journals 16 of the upper roll. The springs 19 exert a constant downward pressure on the upper roll through the loops 20 and saddles 21, so that fabrics passing between the two rolls are squeezed during their passage, the corrugations of the two rolls acting also to rub the fabrics passing between the rolls. To distinguish the springs 19 from the additional springs hereinafter described, I hereinafter term the same the "primary" springs.

22 and 23 represent secondary springs adapted to be adjusted to apply additional pressure to the upper roll, and to remove such pressure. The springs 22 are attached at their lower ends to the uprights 13, and at their upper ends to yokes 24, which are seated on and extend across the saddle 21, and are adapted to oscillate thereon. The upper ends of the springs 23 are attached to the opposite ends of the yokes 24, and their lower ends are attached to levers 26 which are pivoted at 27 to the frame uprights, and are so formed that when the levers are raised, as shown by Fig. 3, the springs 22 and 23 are loose, and when depressed, as shown by Fig. 4, the springs are extended and caused to exert an added downward pressure on the upper roll. It will be seen by Fig. 4 that when the levers 26 are depressed they act to swing the yokes 24 from the position shown by Fig. 3 to that shown by Fig. 4, and simultaneously extend the springs 22 and 23. When the levers 26 are depressed, the upward pull of the springs 23 on said levers tends to hold said levers against the base piece 12, as shown by Fig. 4. The tension of the springs therefore holds the levers 26 in their depressed positions so that the added pressure is maintained until the levers are tripped or raised to release the pressure. It will be seen that by thus simultaneously adding the pressure of four secondary springs, two at each end of the attachment, the pressure of the rolls against the increased fabric is greatly augmented, the rolls being thus adapted to wring or squeeze water from the fabrics.

The base piece 12 is provided at one end with two upwardly projecting hooked arms 28, the upper portions of which are formed to bestride the edge of a washtub 29. To the said arms are pivoted cam levers 30 adapted when depressed, as shown by Fig. 2, to engage the outer surface of the tub and thus clamp the attachment in place. I prefer to provide two of the arms 28 at one end of the frame and one arm at the opposite end, thus providing three bearings on the edge of the washtub, which is sufficient to prevent the attachment from tipping. The arms 28 are provided with feet 31 which are secured by bolts 32 to the base piece 12. Said feet are provided with slots 33 through which the bolts pass, said slots enabling the arms to be adjusted to tubs of different sizes. The upward projection of the arms 28 from the base of the frame, and the hooked form of their upper ends, enable the arms to support the base below the upper edge of the tub, with the rolls conveniently near the contents of the tub.

In operating the described washing machine for washing purposes, the levers 26 are raised so that the upper roll is pressed downward only by the primary springs 19. The operator inserts the fabrics between the rolls and rotates the same first in one direction and then in the opposite direction, the fabrics being thus passed between the rolls under a relatively light washing pressure until they are suitably cleansed. When it is desired to wring the fabrics, the levers 26 are depressed so that the upper roll is under pressure of all the springs, the rolls being thus adapted to expel all the free water from the fabrics.

I claim,—

1. A washing machine comprising a frame provided with means for detachable engagement with a wash tub, upper and lower corrugated rolls journaled in said frame, the upper roll being free to move toward and from the lower roll and provided with a crank, primary springs for exerting a constantly yielding pressure on said upper roll, secondary springs disposed on opposite sides of each of said primary springs also in engagement with said upper roll but normally exerting no tension thereon, and a lever mounted on said frame and connected with the lower end of one of said secondary springs for placing said secondary springs under tension.

2. A washing machine comprising a frame having means for detachable engagement with a washtub, upper and lower corrugated rolls journaled in the frame, the upper roll being movable toward and from the lower roll and provided with a crank, saddles mounted on the journals of the upper roll, yokes mounted to oscillate on the saddles, primary springs connected with the saddles and with the frame to exert a constant yielding pressure on the upper roll, secondary springs connected with the opposite ends of said yokes, and levers fulcrumed on the frame and connected with the secondary springs, said levers being adapted to alternately extend and release the secondary springs and thereby alternately increase and diminish the yielding pressure on the upper roll.

3. A washing machine comprising a frame having means for detachable engagement with a washtub, upper and lower corrugated rolls journaled in the frame, the upper roll being movable toward and from the lower roll and provided with a crank, saddles mounted on the journals of the upper roll, primary springs connected with the saddles and with the frame and exerting a constant yielding pressure on the upper roll, yokes mounted to oscillate on the saddles, secondary springs on either side of said primary springs connected with the opposite ends of said yokes and extending downwardly therefrom, the springs on one side being attached at their lower ends to the frame, and levers pivoted to the frame and connected with the lower ends of the opposite springs, said levers being adapted to simultaneously extend the secondary springs and hold said springs extended to increase the yielding pressure on the upper roll, and to simultaneously release said springs and remove the added pressure from the upper roll.

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

WILLIAM H. HIGGINS.

Witnesses:

WILLIAM WALKER,

A. M. WHEELER.