

No. 647,562.

Patented Apr. 17, 1900.

N. FLODING.
WASHING MACHINE.

(Application filed Oct. 24, 1899.)

(No Model.)

Fig. 1.

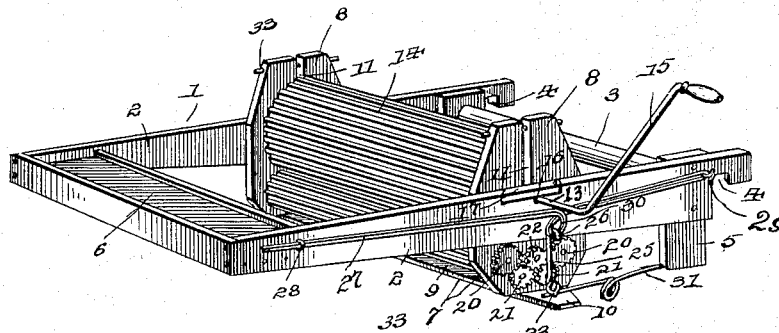


Fig. 2.

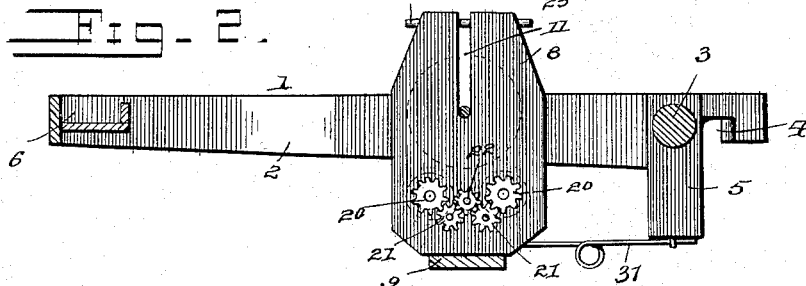


Fig. 3.

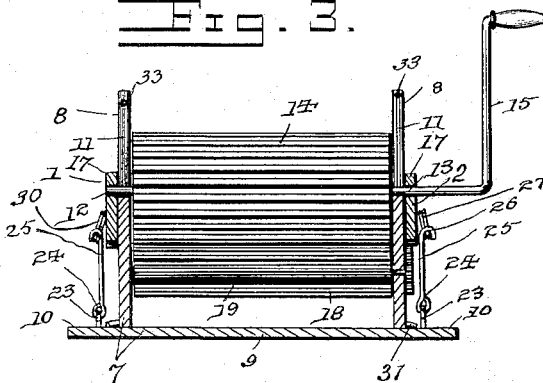
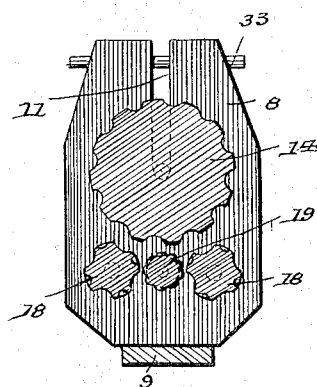


Fig. 4.



Witnesses

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NILS FLODING, OF ALEXANDRIA, MINNESOTA.

WASHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 647,562, dated April 17, 1900.

Application filed October 24, 1899. Serial No. 734,664. (No model.)

To all whom it may concern:

Be it known that I, NILS FLODING, a citizen of the United States, residing at Alexandria, in the county of Douglas and State of Minnesota, have invented a new and useful Washing-Machine, of which the following is a specification.

The invention relates to improvements in washing-machines.

10 The object of the present invention is to improve the construction of washing-machines and to provide a simple, inexpensive, and efficient one adapted to be readily placed on an ordinary tub and capable of enabling the operation of washing to be rapidly and thoroughly performed.

15 The invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended.

20 In the drawings, Figure 1 is a perspective view of a washing-machine constructed in accordance with this invention. Fig. 2 is a longitudinal sectional view of the same. Fig. 3 is a transverse sectional view. Fig. 4 is a detail sectional view taken transversely of the rolls and illustrating the arrangement of the same.

25 Like numerals of reference designate corresponding parts in all the figures of the drawings.

30 1 designates a substantially-rectangular frame designed to be placed upon a washtub and provided with parallel side bars, which are extended at one end of the frame beyond a transverse connecting-bar 3 and provided at the lower edges of such extensions with notches or recesses 4, adapted to engage the upper edge of a washtub or analogous receptacle, whereby the supporting-frame is maintained in position and is prevented from slipping. The supporting-frame is further held in position by depending arms or pieces 5, secured to the inner faces of the side bars 2, adjacent to the extensions thereof, and arranged to engage the inner face of the adjacent portions of the sides of the receptacle. By this construction the frame is held against both longitudinal and lateral movement. The other end of the frame 1 rests upon and extends beyond the receptacle or tub and is provided with a suitable soap-box 6, consisting

of a transverse bottom board and inner and outer transverse bars secured to and connecting the sides 2 of the supporting-frame.

55 Within the supporting-frame is arranged an adjustable or vertically-movable frame 7, composed of vertical side pieces 8 and a horizontal bottom bar or piece 9, which has its ends 10 extending beyond the lower edges of the vertical side pieces 8, as clearly illustrated in Figs. 1 and 2 of the accompanying drawings. The side pieces 8 are provided at their upper portions with vertical slots 11, receiving journals 12 and 13 of an upper corrugated roll 14, beneath which the clothes are passed during the operation of washing, and the journal 13 is extended and shaped to form a crank-handle 15. These journals 12 and 13 may be formed by a continuous shaft or they may be composed of separate pieces secured to the ends of the upper roll 14. The journals 12 and 13 are detachably secured within bearings 16 of the sides 2 of the supporting-frame by pivoted buttons 17, as clearly illustrated in Fig. 1 of the accompanying drawings.

70 The upper roll coöperates with a series of lower rolls 18 and 19, which are yieldingly supported by the means hereinafter described, whereby the upper and lower rolls are adapted to separate to permit thickened portions of the clothes being washed to pass through them without injury, the rolls being adapted to adjust themselves automatically to the varying thickness of the clothes, so that there will be no liability of injuring the same or breaking buttons or the like. The lower rolls 18, which are corrugated, are arranged at opposite sides of an intermediate roll 19 and are connected with outer pinions 20, which mesh with intermediate pinions 21, and the latter, which are mounted on suitable stub-shafts or journals, mesh with a central pinion 22 of the roll 19. By this arrangement of gears the three lower rolls rotate in the same direction and are adapted to be operated by the rotation of the upper roll.

85 The extended ends 10 of the vertically-movable frame is provided with eyes 23, which are engaged by lower hooks 24 of links 25, which are provided at their upper ends with hooks 26 for engaging longitudinal side springs 27. The side springs 27, which extend longitudinally of the sides 2 of the sup-

porting-frame, are arranged on the exterior of the same, and each is composed of two leaves or portions of resilient wire or other suitable material and is permanently secured at one end to the supporting-frame, and its other end is slidingly connected with the supporting-frame by being arranged within an eye 28. The resilient wire or other material of which the spring is constructed is doubled, and the bend thus formed is linked into an eye or staple 29, whereby the spring is permanently attached to the supporting-frame at that end. The spring is coiled between its ends to form a depending eye 30, which is engaged by the upper hook of the link, and the lower hook of the same is preferably closed to secure the link to the eye 23. The extensions 10 of the bottom of the vertically-adjustable frame are also engaged by springs 31, secured at their outer ends to the depending arms or pieces 5 and provided between their ends with coils. The side springs by being arranged to slide in the eyes 28 are adapted to permit the frame 7 to move vertically, and they cause the rolls to engage the clothes yieldingly. By rotating the crank-handle the clothes are caused to pass through the rolls, which expel the suds and dirty water from them, thereby quickly and effectually removing the dirt.

The side pieces 8 of the vertically-movable frame are provided with rods or pins 33, extending across the slots 11 and arranged in suitable perforations of the said side pieces. These pins or rods prevent the upper roll and the frame from becoming separated when the parts are detached, and they also prevent the frame from becoming separated from the rest of the machine when the links are disengaged from the side springs. By this arrangement the vertically-movable frame may be disconnected from the side springs to relieve the latter of strain when the washing-machine is not in actual use.

It will be seen that the washing-machine is exceedingly simple and inexpensive in construction, that it is adapted to be operated in connection with an ordinary washtub, and that it will enable clothes to be quickly and thoroughly washed.

What is claimed is—

1. A washing-machine comprising a horizontal rectangular supporting-frame, designed to be arranged on a tub or analogous receptacle and provided at one end with recesses for engaging the upper edges of the said receptacle, arms 5 depending from the sides of the supporting-frame and located adjacent to the re-

cesses and engaging the inner face of the receptacle, a vertically adjustable or movable frame located within the supporting-frame, washing mechanism consisting of rolls connected respectively with the supporting-frame and the movable frame and located within the latter, and horizontal springs extending from the lower ends of the arms 5, and engaging the vertically-movable frame, substantially as described.

2. A washing-machine comprising a horizontal supporting-frame, a vertically-movable frame located within the supporting-frame and extending below the same, an upper roll arranged within the movable frame and journaled on the supporting-frame, lower rolls carried by the vertically-movable frame, gearing connected with the lower rolls and located on the exterior of the movable frame at a point below the supporting-frame, and means for yieldingly connecting the frames, substantially as described.

3. A washing-machine comprising a horizontal supporting-frame designed to be arranged on a tub, a vertically-movable frame located within the supporting-frame and provided at its bottom with extensions 10, located beneath the supporting-frame, an upper roll journaled on the supporting-frame, lower rolls carried by the vertically-movable frame, the longitudinal side springs provided between their ends with loops and secured at one end to the supporting-frame and having the other end slidingly connected therewith, and hooks secured to the extensions 10, and engaging the loops of the springs, substantially as described.

4. A washing-machine comprising a supporting-frame, a vertically-movable frame provided at opposite sides with slots and having extensions 10, at its bottom, an upper roll journaled on the supporting-frame and having its journals arranged in the said slots, lower rolls carried by the vertically-movable frame, springs mounted on the upper portion of the supporting-frame, hooks connected with the extensions 10 and engaging the said springs, and lower springs connected with the supporting-frame and engaging the extensions of the vertically-movable frame, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

NILS FLODING.

Witnesses:

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