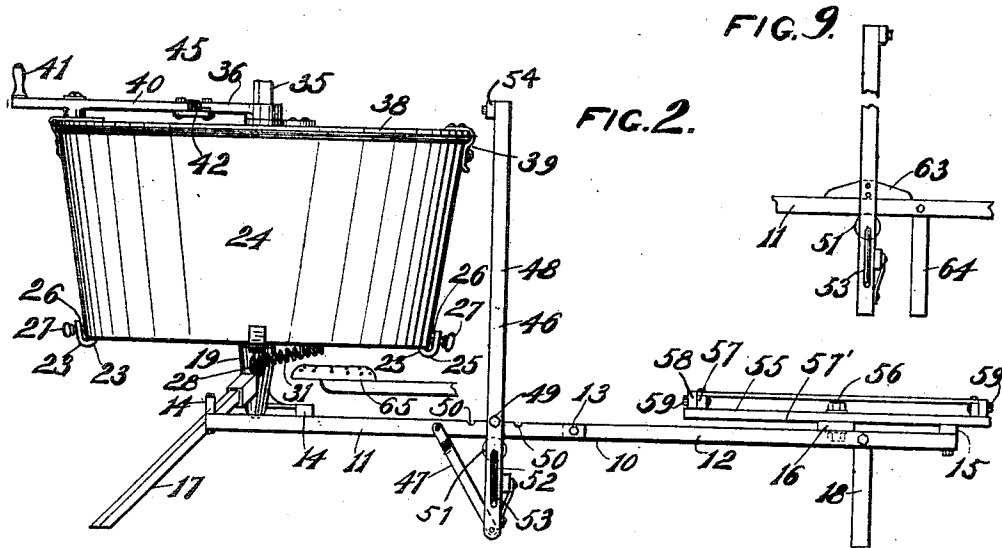
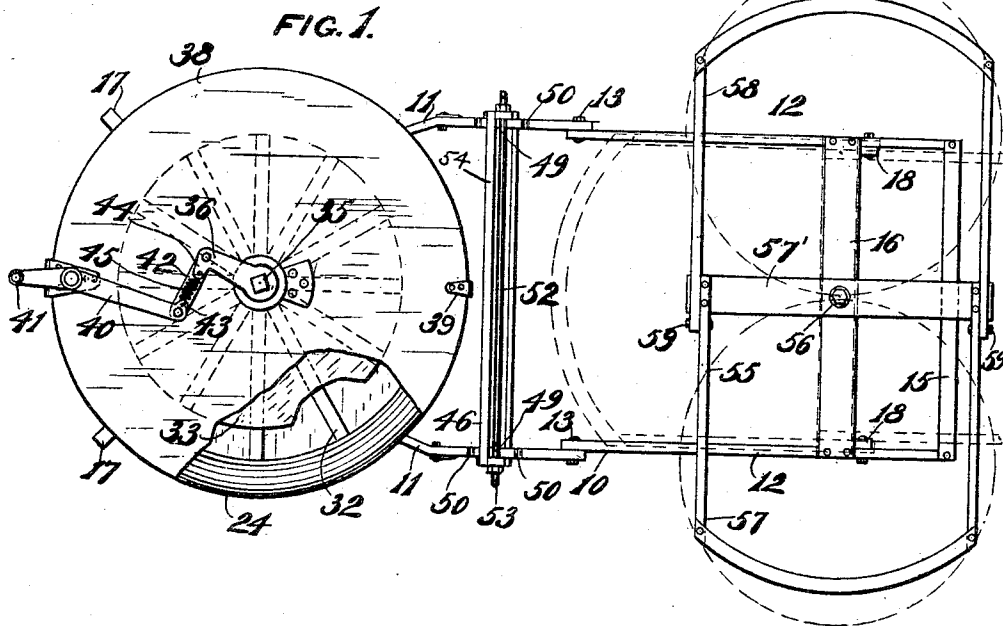


971,027.

J. P. DORAU.
WASHING MACHINE.
APPLICATION FILED OCT. 14, 1908.

Patented Sept. 27, 1910.

2 SHEETS-SHEET 1.

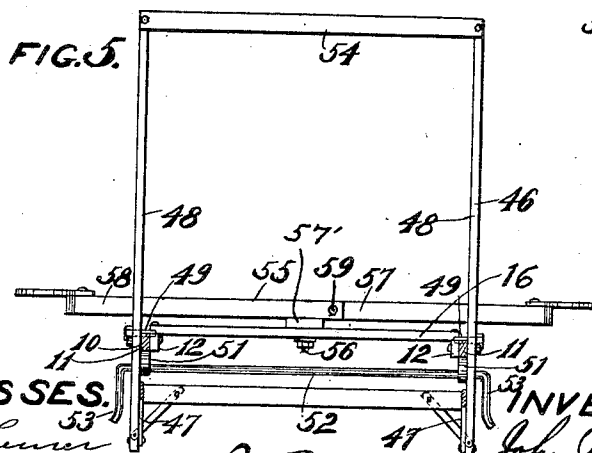
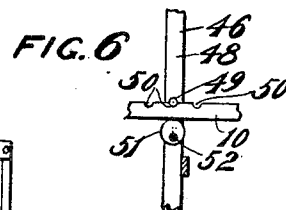
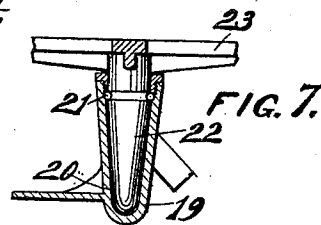
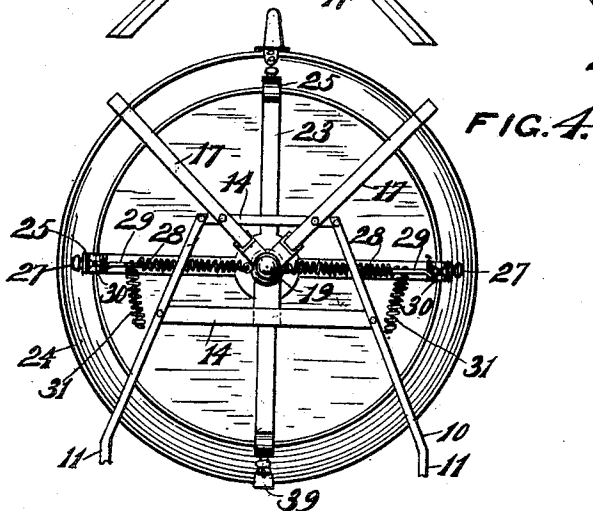
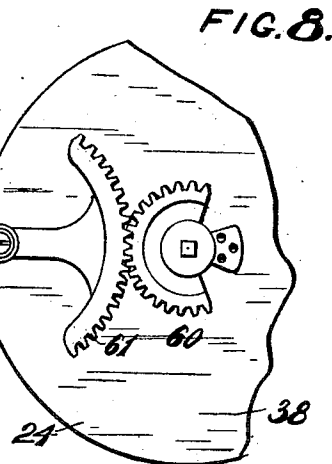
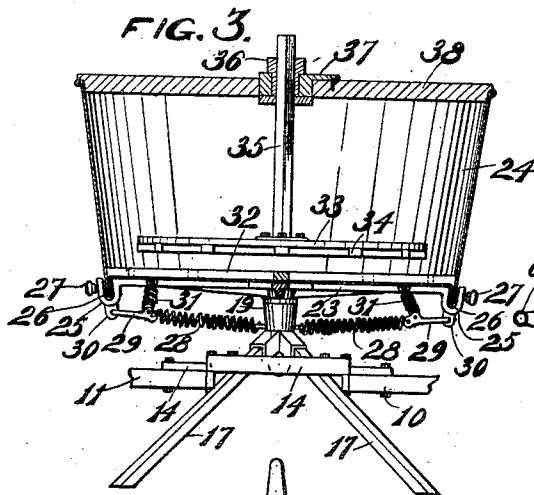


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JOHN P. DORAU, OF WAUKESHA, WISCONSIN.

WASHING-MACHINE.

971,027.

Specification of Letters Patent. Patented Sept. 27, 1910.

Application filed October 14, 1908. Serial No. 457,601.

To all whom it may concern:

Be it known that I, JOHN P. DORAU, residing in Waukesha, in the county of Waukesha and State of Wisconsin, have invented new and useful Improvements in Washing-Machines, of which the following is a description, reference being had to the accompanying drawings, which are a part of this specification.

15 This invention relates to improvements in washing machines and more particularly to that class of machines in which the tub oscillates on its pivotal connection to the frame.

15 The principal object of this invention is to provide a washing machine in which the rubber of the machine oscillates in a direction opposite to the movement of the tub and thereby facilitates the operation of washing.

20 With the above, and other objects in view, the invention consists of the devices and parts and all equivalents thereof.

25 In the accompanying drawings in which the same reference characters indicate the same parts in all of the views: Figure 1 is a plan view of the complete machine with parts broken away to show the interior construction; Fig. 2 is a side view of the complete machine, also showing a burner in connection therewith; Fig. 3 is a front view of the washing machine, the tub being in section; Fig. 4 is a plan view of the bottom portion of the washing machine; Fig. 5 is a transverse sectional view of the washing machine stand taken on a line immediately to the right of the tub of Fig. 2 looking toward the right; Fig. 6 is a detail of the wringer frame locking mechanism; Fig. 7 is a detail of the bearing partly in section; Fig. 8 shows a modified form of tub oscillating means; and Fig. 9 is a detail view of a modified form of wringer frame.

Referring to the drawings the numeral 10 indicates the supporting frame which consists of horizontal bars 11 and 12 connected together by pivot bolts 13, cross bars 14, 15 and 16 and supporting legs 17 and 18. A bearing 19 provided with a tapered socket 20 and with anti-friction balls 21 is connected to the supporting frame and is the bearing in which the tapered pivot pin 22 is mounted. This tapered pin depends from the medial portion of a tub supporting spider frame 23 upon which the metal tub 24 rests. The outer ends of the spider frame arms 25

are curved downwardly and then upwardly to form recesses 26 to fit the bottom flange of the metal tub. The tub is securely fastened to the spider frame by means of thumb screws 27 which are threaded into the up- standing portions of the spider frame arm and impinge against the tub flange. Opposed coiled springs 28 connected at one end to the bearing 19 are provided with eyed hook members 29 at their outer ends and the outer ends of these hook members are connected to eyes 30 formed on two of the spider frame arms. These springs serve to yieldingly hold the spider frame and its connected tub in a medial position of oscillation with relation to the supporting frame. Coiled springs 31 removably connected to eyes formed on the bottom of the tub and to the eyed hook members are adapted to assist the springs 28 in easing the jar or shock due to the reversal of movement during the oscillation of the machine.

Radial ribs 32 are disposed within the tub 24 and connected to the bottom thereof and a rubber or disk 33 provided with like radial ribs 34 is positioned above the radial bottom ribs and is adapted to rub and wash clothes placed therebetween. A squared shaft 35 rigidly connected to the medial portion of the rubber extends upwardly therefrom and passes loosely through a square opening provided in an oscillating arm 36 pivotally mounted in a bearing 37 extending through the cover 38. This cover is hinged to the top of the tub 24 and is held in a closed position by means of an ordinary spring catch 39.

An operating lever 40 provided with a cranked handle 41 is pivotally mounted on top of the tub cover and its inner end is pivotally connected to the oscillating arm 36 by means of a link 42. The arm and the lever are both provided with eyed right angled extensions 43 and 44 respectively and a coiled spring 45, the ends of which are connected to the extensions, tends to hold the parts in medial position and prevent undue noise while in operation.

A rectangular wringer frame 46 straddles the supporting frame and is pivotally connected thereto by a link 47. The vertical members 48 of the wringer frame are provided with inwardly extending pins 49 which are adapted to be brought into engagement with the transverse notches 50 provided in the upper edges of the horizontal bars of

the supporting frame. The inwardly extending pins are locked in engagement with the notched portions of the bars by means of eccentrics 51 positioned beneath the horizontal bars of the supporting frame and connected to a transverse rod 52 extending through the vertical members of the wringer frame and provided with bent operating handles 53. The horizontal bar 54 of the wringer frame is the bar to which the wringer (not shown) is clamped when in use. The lower ends of the vertical members 48 also serve as additional legs for the supporting frame 10.

A revoluble tub supporting frame 55 pivotally mounted on top of the cross bar 16 of the supporting frame by a pivot bolt 56 is adapted to support two wash tubs thereon and to permit either tub to be swung around into close proximity to the washing machine tub and the wringer frame so that in washing, clothes may be conveniently passed from one tub through the wringer, and into the other tub without removing the same from the washing machine. In order to occupy but a minimum amount of space when not in use the revoluble tub frame is formed of two parts 57 and 58 hinged together by pivot bolts 59 which may be conveniently folded together and swung over the supporting frame when not in use. The pivotal connection of the two portions of the revoluble frame is positioned to one side of the portion 57' of the frame so that when in an open position the bars of the frame 58 will rest upon the portion 57' and hold it in horizontal alinement with the frame 57.

Fig. 8 shows a modified form of oscillating device in which the lever and the arm are omitted and in lieu thereof segmental gears 60 and 61 are used. The gear 61 is provided with an operating handle 62.

Fig. 9 shows a modified form of wringer frame in which the frame slides bodily on the horizontal bars of the supporting frame and held in upright position by means of the slide 63 rigidly connected to the vertical members 48 and resting on top of the bars 11 and is clamped thereto by the eccentrics 51. When this form of wringer frame is used the bars 11 are provided with legs 64 to take the place of the lower ends of the wringer frame used in the principal form. If desired a burner 65 may be positioned beneath the washing machine tub and the water within this tub heated without removing from the tub.

In the operation of washing, the soiled clothes are put into the tub of the washing machine between the radial ribs of the tub bottom and the radial ribs of the rubbing disk which will rest on top of the clothes. Boiling water is then poured into the tub or the water heated by means of the burner 65 beneath, or the tub may be removed from

the frame and put on a stove for heating. The cover is closed, and the operating handle is then swung back and forth causing the tub to be likewise moved, and at the same time the rubbing disk will be caused to oscillate in the opposite direction due to the lever arm and link connection.

The adjustable wringer frame may be swung and locked in different positions of adjustment over the tubs by means of the pins, notched bars and the eccentrics, from either side of the machine.

The rubbing disk is adapted to accommodate different quantities of clothes by means of the squared shaft playing freely through the squared opening in the oscillating arm which permits the disk to raise and lower without interfering with its partial rotation. The coiled springs beneath the tub serve to assist in changing the direction of oscillation and to eliminate the jolt and noise incident to this change.

From the foregoing description it will be seen that a washing machine is provided which is simple in construction and operation and is well adapted to perform the functions desired.

What I claim as my invention is:

1. A washing machine, comprising a supporting frame, a tub pivotally mounted on said frame, a rubber positioned within the tub, and tub oscillating means free from connection with the frame and mounted on the tub and connected to the rubber to cause the rubber to oscillate in a direction opposite to the oscillation of the tub.

2. A washing machine, comprising a supporting frame, a tub pivotally mounted on said frame, a rubber positioned within the tub and free from connection with the frame, a tub oscillating lever mounted on the tub and a connection between the lever and the rubber to cause the rubber to move in a direction opposite to the movement of the tub.

3. A washing machine, comprising a supporting frame, a tub pivotally mounted on said frame, a rubber positioned within the tub, an arm connected to the rubber, and a tub oscillating lever pivotally mounted on the tub free from connection with the frame and pivotally connected to the arm to cause the rubber to move in a direction opposite to the movement of the tub.

4. A washing machine, comprising a supporting frame, a tub pivotally mounted on said frame, a rubber positioned within the tub, an arm connected to the rubber, a link connected to the arm, and a lever mounted on the tub and connected to the link to cause the rubber to move in a direction opposite to the movement of the tub.

5. A washing machine, comprising a supporting frame, a tub pivotally mounted on said frame, a rubber positioned within the

tub, an arm connected to the rubber, a link connected to the arm, a lever mounted on the tub and connected to the link to cause the rubber to move in a direction opposite to the movement of the tub, and a spring connected to the lever and the arm to hold the parts in medial position.

6. A washing machine, comprising a supporting frame, a tub pivotally mounted on said frame, coiled springs connected to the frame and to the tub, a rubber positioned within the tub, an arm connected to the rubber, a link connected to the arm, and a lever mounted on the tub and connected to the link to cause the rubber to move in a direction opposite to the movement of the tub.

7. A washing machine, comprising a supporting frame, a spider frame pivotally mounted on the supporting frame, coiled springs connected to the supporting frame and to the spider frame, a tub connected to the spider frame, a rubber positioned within the tub, an arm connected to the rubber, a link connected to the arm, a lever mounted on the tub and connected to the link to cause the rubber to move in a direction opposite to the movement of the tub, and a spring connected to the lever and the arm to hold the parts in medial position.

8. A washing machine, comprising a supporting frame, a spider frame pivotally mounted on the supporting frame, a tub connected to the spider frame, radial ribs positioned within the tub and connected thereto, a rubber positioned within the tub, radial ribs connected to the rubber, an arm connected to the rubber, a link connected to the arm, and a lever mounted on the tub and connected to the link to cause the rubber to move in a direction opposite to the movement of the tub.

9. A washing machine, comprising a supporting frame, a spider frame pivotally mounted on said supporting frame, a tub resting on said spider frame, means for securely fastening the tub to the spider frame, a cover provided with a bearing hinged to said tub, an arm provided with a squared opening mounted in said bearing, a rubber positioned within the tub and provided with ribs and a squared shaft which extends through the squared opening in the arm, a link connected to the arm, and a lever pivotally mounted on the tub and connected to the link to cause the rubber to move in a direction opposite to the movement of the tub.

10. A washing machine, comprising a supporting frame, a spider frame pivotally mounted on said supporting frame, coiled springs connected to the supporting frame and to the spider frame, a tub resting on said spider frame, adjustable means for securely fastening the tub to the spider frame, a cover with a bearing hinged to said tub, an arm provided with a squared opening mounted in said bearing, a rubber positioned within the tub and provided with ribs and a squared shaft which extends through the squared opening in the arm, a link connected to the arm, a lever pivotally mounted on the tub and connected to the link to cause the rubber to move in a direction opposite to the movement of the tub, and a coiled spring connected to the arm and to the lever.

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

JOHN P. DORAU.

Witnesses:

C. H. KEENEY,

ANNA F. SCHMIDTBAUER.