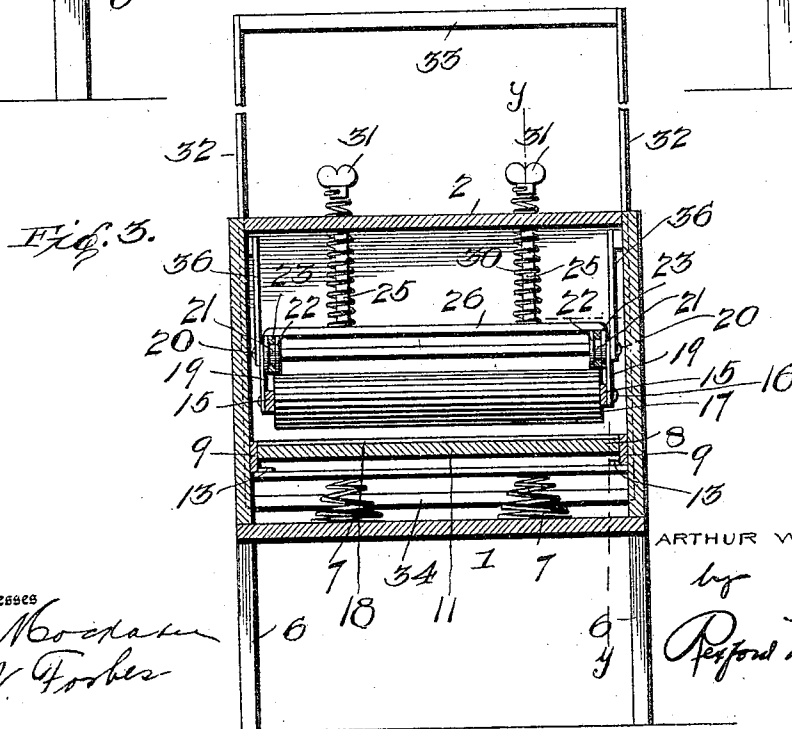
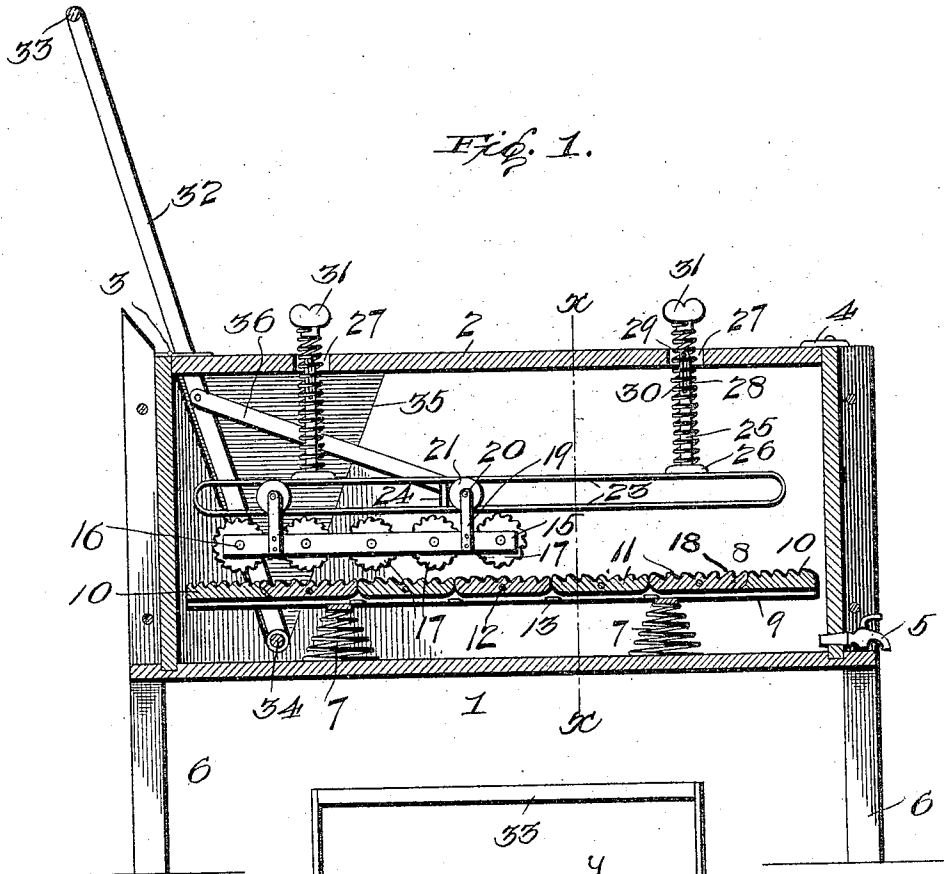


No. 817,826.

PATENTED APR. 17, 1906.

A. WHEATLEY.
WASHING MACHINE.
APPLICATION FILED AUG. 5, 1904.

2 SHEETS—SHEET 1.



Witnesses
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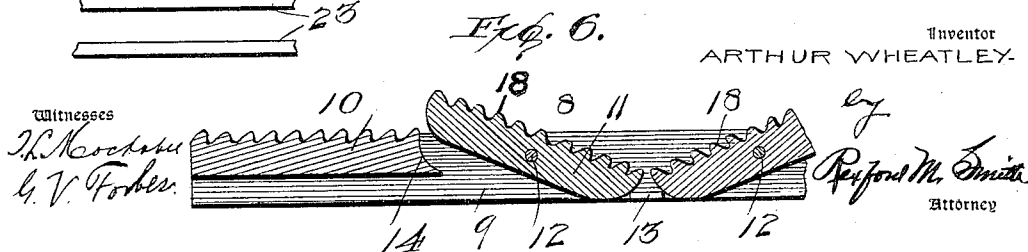
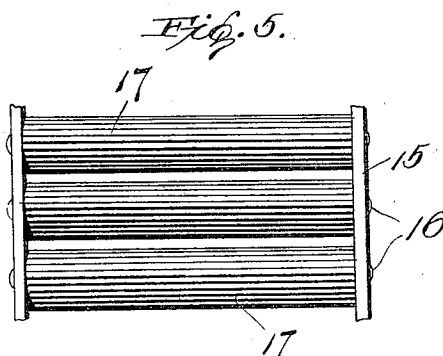
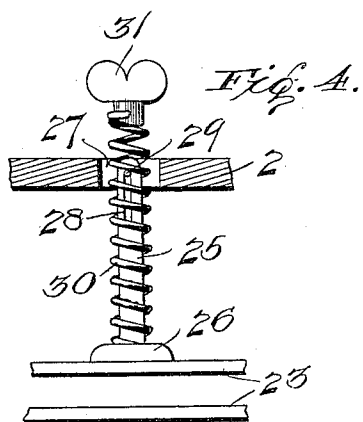
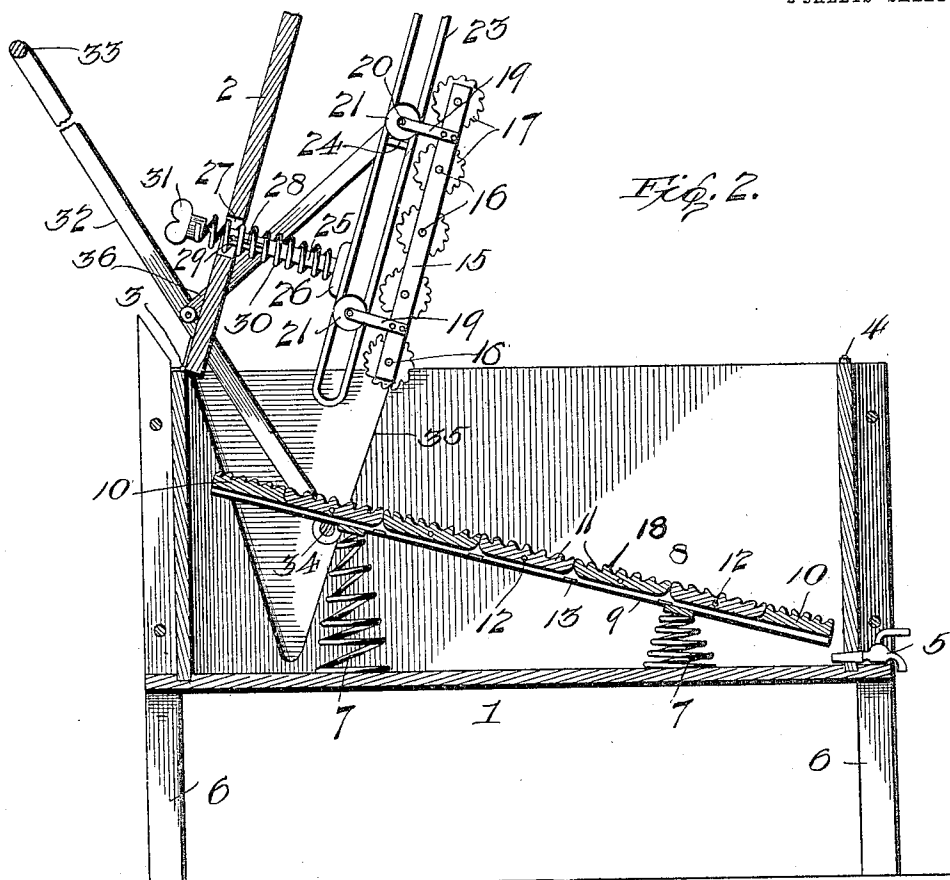
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APPLICATION FILED AUG. 5, 1904.

2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

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WASHER CO., OF PHILADELPHIA, PENNSYLVANIA.

WASHING-MACHINE.

No. 817,826.

Specification of Letters Patent.

Patented April 17, 1906.

Application filed August 5, 1904. Serial No. 219,668.

To all whom it may concern:

Be it known that I, ARTHUR WHEATLEY, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a certain new and useful Washing-Machine, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention relates to washing-machines, the object of the invention being to provide a machine for washing clothes and fabrics embodying a construction in which the clothes or fabrics are subjected to a thorough compression or squeezing and rolling between relatively movable and yielding surfaces, while at the same time the clothes or fabrics are subjected to the cleansing action of the suds-water, which is passed repeatedly through the fabric.

20 The invention contemplates the use of a washboard composed of a plurality of automatically-tilting sections combined with a reciprocating rubber comprising rollers which operate in opposition to the washboard and serve to compress the fabric or clothes and squeeze and roll the same upon and against the tilting sections of the washboard while submerged in the suds-water.

30 The invention consists of the novel construction and arrangement of parts whereby the clothes are operated upon in the manner above described and whereby any desired tension or compressing power may be imparted to the reciprocating rubber, also whereby the machine may be opened up and the reciprocating rubber withdrawn simultaneously with a lifting of the machine-lid, also whereby the washboard upon which the clothes are placed and supported during the washing operation may be tilted and partially lifted, so as to deliver the washed clothes or fabrics above the surface of the suds-water, thereby obviating the necessity of putting the hands into the suds-water in the act of removing the clothes.

40 With the above and other objects in view, the nature of which will more fully appear as the description proceeds, the invention consists of the novel construction, combination, and arrangement of parts, as hereinafter fully described, illustrated, and claimed.

In the accompanying drawings, Figure 1 is

a vertical longitudinal section through a washing-machine embodying the present invention, showing the parts thereof in operative position, said section being taken on the line *y y* of Fig. 3. Fig. 2 is a similar view showing the lid partially elevated and the washboard elevated at one end by the operating-lever. Fig. 3 is a vertical cross-section through the machine, taken on the line *x x* of Fig. 1. Fig. 4 is an enlarged detail sectional elevation showing one of the tension devices for the reciprocating rubber. Fig. 5 is an enlarged detail plan view of a portion of the reciprocating rubber frame, showing several of the rollers. Fig. 6 is an enlarged vertical longitudinal section through a portion of the washboard.

Like reference-numerals designate corresponding parts in the several figures of the drawings.

The machine contemplated in this invention comprises, essentially, a tub 1, which is preferably in the form of a rectangular watertight box, as illustrated in the drawings, the same comprising a lid or top 2, which is hinged at one end to the tub, as shown at 3, in order that said lid may be elevated and thrown back from the position shown in Fig. 1 to the position shown in Fig. 2. The free end of the lid is normally held closed by means of any suitable fastening device, such as a button 4, and the tub is provided at or near its bottom with an outlet or drain cock 5 for the removal of the suds-water after the completion of the washing operation. The tub may be mounted at any suitable elevation on supporting-legs 6.

Arranged in the lower portion of the tub and supported above the bottom thereof by means of supporting-springs 7 is a substantially horizontal washboard 8, the same comprising a frame embodying longitudinal side bars 9 and a washboard proper fitted between the side bars and composed of a plurality of sections 10 and 11, 10 designating the two end sections, which are stationary or, rather, bear a fixed relation to the side bars 9. The sections 11 are pivotally mounted at 12 intermediate their sides, so as to tilt automatically under the influence of the reciprocating rubber hereinafter described, and under the stress of the clothing or fabrics placed thereon. These tilting sections 11

may be of any suitable width and number. The relative number of sections and rollers may be varied at will without departing from the scope of this invention.

5 In order to limit the tilting movements of the sections 11, suitable stops 13 in the form of lugs projecting inwardly from the side bars 9 are provided at suitable points, as shown in Figs. 1, 2, and 6. As the sections 11 tilt,
10 the ends thereof come in contact with the stops 13 and prevent further movement. The inner edges 14 of the fixed end sections 10 also act as stops in conjunction with the edges of the tilting sections lying adjacent
15 thereto, as clearly shown in Fig. 6.

Located above the washboard 8 is a reciprocating rubber, which is composed of a frame embodying longitudinal side bars 15, connected by suitable cross-bars and also connected
20 by a series of rods or journals 16, upon which are mounted ribbed or corrugated rollers 17. The ribs or corrugations of these rollers extend lengthwise, and the tilting sections 10 and 11 of the washboard
25 are also provided with corresponding ribs or corrugations 18, which extend in the same direction as the ribs on the rollers.

Extending upward from the reciprocating rubber frame 15 are hangers 19, which carry
30 at their upper ends stud-shafts or journals 20, upon which are mounted guide-rollers 21, each of which is flanged at opposite sides, as shown at 22 in Fig. 3, thus adapting said rollers to be retained by the upper and lower
35 parallel runs of an oblong guide 23. It will be understood that two of such guides 23 are employed, one at each side of the tub and within the same, and these guides are suitably connected by one or more cross-bars 24,
40 which serve as braces for the guides and retain the upper and lower runs thereof in parallel relation to each other.

The guide-frame is supported and controlled by a plurality of tension devices, each
45 of which comprises a post 25, one end of which is connected to the guide-frame, as shown at 26, said post extending upward through an opening 27 in the tub-lid and being slotted, as shown at 28, to receive a guide-
50 pin 29, connected with the lid 2 and preferably arranged in the slot or opening 27, as best illustrated in Fig. 4. Each post 25 has a coiled tension-spring 30, which extends through the opening 27 and has fixed to its
55 outer end a thumb-piece 31, by means of which the spring may be turned. It will be noted that the inner end of the spring bears against the guide-frame. Therefore by rotating the spring by means of the thumb-piece
60 31 the coils of the spring successively engage the combined guide-pin and spring-seat 29, thus placing more or less of the coils of the spring between the pin 29 and the guide-frame, which results in imparting more or
65 less tension to the guide-frame, and conse-

quently to the rubbing-rollers 17. In this way the degree of compression of the clothing or fabrics during the washing operation is easily regulated.

In order to impart a reciprocating move- 70 ment to the rubber, I employ an operating-lever consisting of the two side bars 32, which are connected at the top by a cross handle-bar 33 and at the bottom by another cross-bar 34, which extends beneath one end of the 75 washboard 8, as clearly shown in Figs. 1, 2, and 3. The sides of the tub 1 are mortised out or cut away upon their inner surfaces, as shown at 35, to receive the bars 32 and the lower cross-bar 34 and permit the vibrating 80 movements of the operating-lever as a whole, also to admit of the partial or entire withdrawal of the operating-lever when the lid of the tub and the parts connected therewith are thrown open, as shown in Fig. 2. 85

Connecting-rods or pivotal links 36 are arranged at opposite sides of the tub and connected at one end to the side bars 32 of the operating-lever and at their opposite ends to the stud-shafts or journals 20 of one set of 90 guide-rollers 21. By this means as the operating-lever is rocked back and forth reciprocating motion is imparted to the rubber and the rubbing or compression rollers 17 given a corresponding movement over the 95 surface of the clothing on the washboard.

To insert or remove the clothing, the lid 2 is lifted or thrown back, as shown in Fig. 2, and at the same time the operating-lever is raised, causing the lower cross-bar 34 to operate against the bottom of the washboard and elevate the latter at one end, as shown in Fig. 2. This enables the clothing to be placed upon or removed from the washboard without inserting the hands in the suds-water and also gives access to all operative parts 105 of the machine.

From the foregoing it will be understood that the fabric or clothing is subjected to pressure or compression and suction, the pressure 110 upon the fabric or clothing being equalized and distributed by the compression-rollers and the tilting sections of the washboard. In this way a thorough crushing, squeezing, and mangling of the fabric is accomplished 115 simultaneously with the passage of the suds-water through the fabric, the washboard-sections in their rocking movement serving in connection with the compression-rollers to forcibly bend or reflect the clothes and at the 120 same time thoroughly squeeze them, which causes the suds-water to pass through and act with greater effect on the clothes. By reason of the fact that the washboard and the reciprocating rubber are both yieldable 125 and the tension of the reciprocating rubber adjustable heavy or thick fabrics, such as horse-blankets, may be cleansed equally as well as light or thin and delicate fabrics.

If desired, ordinary clear hot water may be 130

placed in the tub to a suitable depth, and a bar of soap may then be placed between any of the rubbing or compression rollers 17 and the machine operated upon the clothing until the water has taken up a sufficient amount of soap, after which the bar of soap may be removed, thus doing away with the preparation of the suds-water before beginning the washing operation.

The machine may be manufactured in various sizes to suit requirements and is susceptible to various changes in the form, proportion, and minor details of construction, which may accordingly be resorted to without departing from the principle or sacrificing any of the advantages of the invention.

Having thus described the invention, what is claimed, and desired to be secured by Letters Patent, is—

1. A washing-machine comprising a tub, a yieldingly-supported washboard therein, a lid, a guide-frame yieldingly connected to the lid and carried thereby, and a reciprocating rubber frame slidingly coupled to and carried by the guide-frame.

2. A washing-machine comprising a tub, a washboard therein embodying tilting sections, a yielding guide-frame, and a reciprocating rubber operatively associated with said guide-frame, and movable back and forth over the tilting sections.

3. A washing-machine comprising a tub, a hinged lid thereon, constituting a support or carrier for parts of the washing apparatus, a yieldingly-supported washboard, a guide-frame yieldingly connected to and carried by the hinged lid, tension mechanism interposed between the guide-frame and lid, and a reciprocating rubber operatively coupled to and carried by said guide-frame.

4. A washing-machine comprising a tub, a lid therefor, a yieldingly-supported washboard therein, a guide-frame, a reciprocating rubber operatively associated with said guide-frame, and a tension device for the guide-

frame embodying a post connected with the guide-frame and provided with a slot, a pin connected with the lid and passing through said slot, a spring encircling the post and having a portion thereof held between the guide-frame and said pin, and means for revolving the spring.

5. A washing-machine comprising a tub, a lid therefor, a yieldingly-supported washboard therein, a yieldingly-supported guide-frame, a reciprocating rubber operatively associated with the guide-frame, an operating-lever connected with the reciprocating rubber and having means for engaging and lifting the washboard, and means permitting said operating-lever to be raised, substantially as and for the purpose specified.

6. A washing-machine comprising a tub, a lid therefor, a yieldingly-supported washboard therein, a yieldingly-supported guide-frame, a reciprocating rubber associated with said guide-frame, and an operating-lever connected with the reciprocating rubber and embodying a cross-bar which extends beneath the washboard, the sides of the tub being mortised or recessed to receive the operating-lever and to provide a fulcrum therefor and also to admit of the operating-lever being raised, substantially as and for the purpose described.

7. A washing-machine comprising a tub, a lid therefor, a yieldingly-supported washboard therein, a yieldingly-supported guide-frame connected to and movable with the lid and comprising upper and lower parallel runs and a reciprocating rubber frame embodying flanged guide-rollers which lie between and engage the upper and lower runs of the guide-frame.

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

ARTHUR WHEATLEY.

Witnesses:

E. ROBT. STACKHOUSE,
WM. A. ALLISON.