No. 665,896. Patented Jan. 15, 1901.

C. E. FRICK.

WASHING MACHINE.

(Application filed Aug. 9, 1899.)

(No Model.)

Fig. 1.

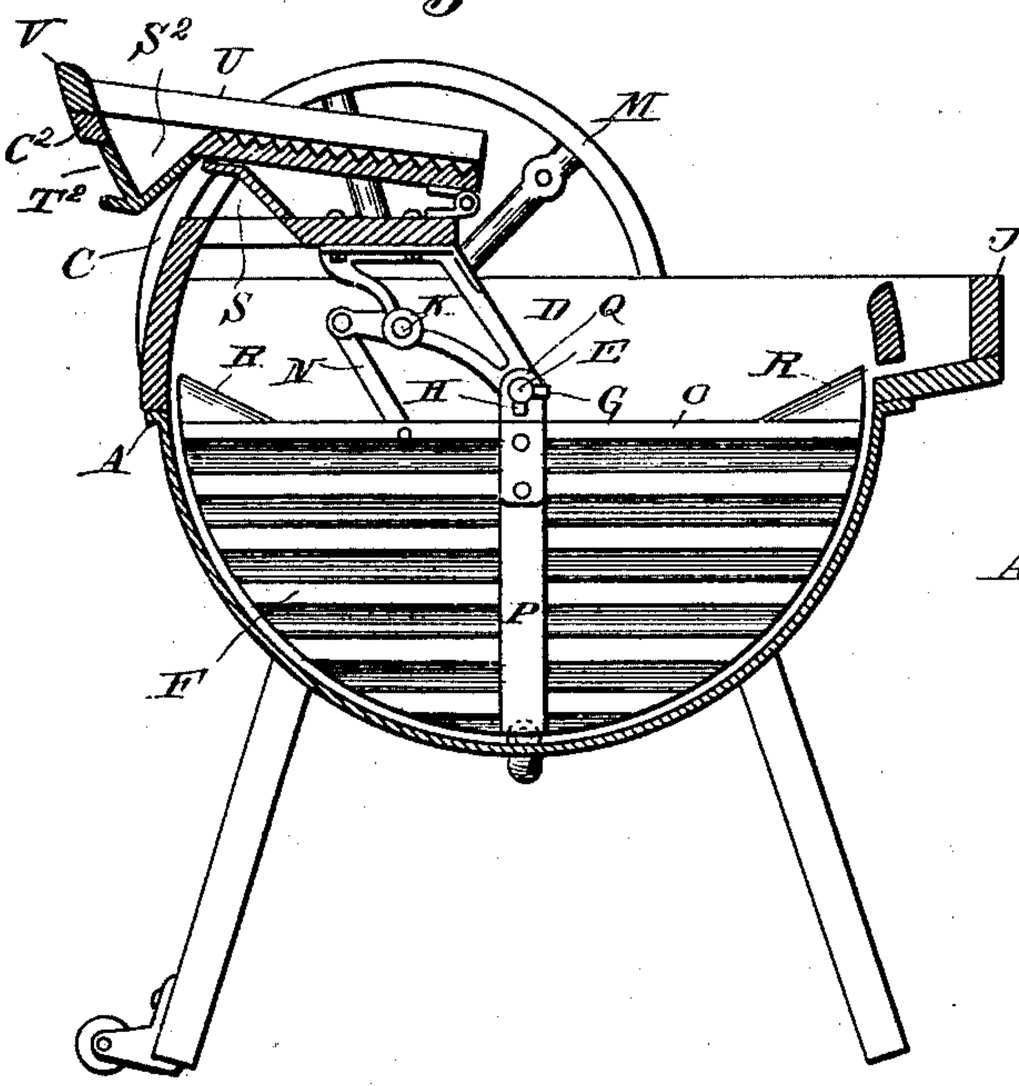


Fig. 2.

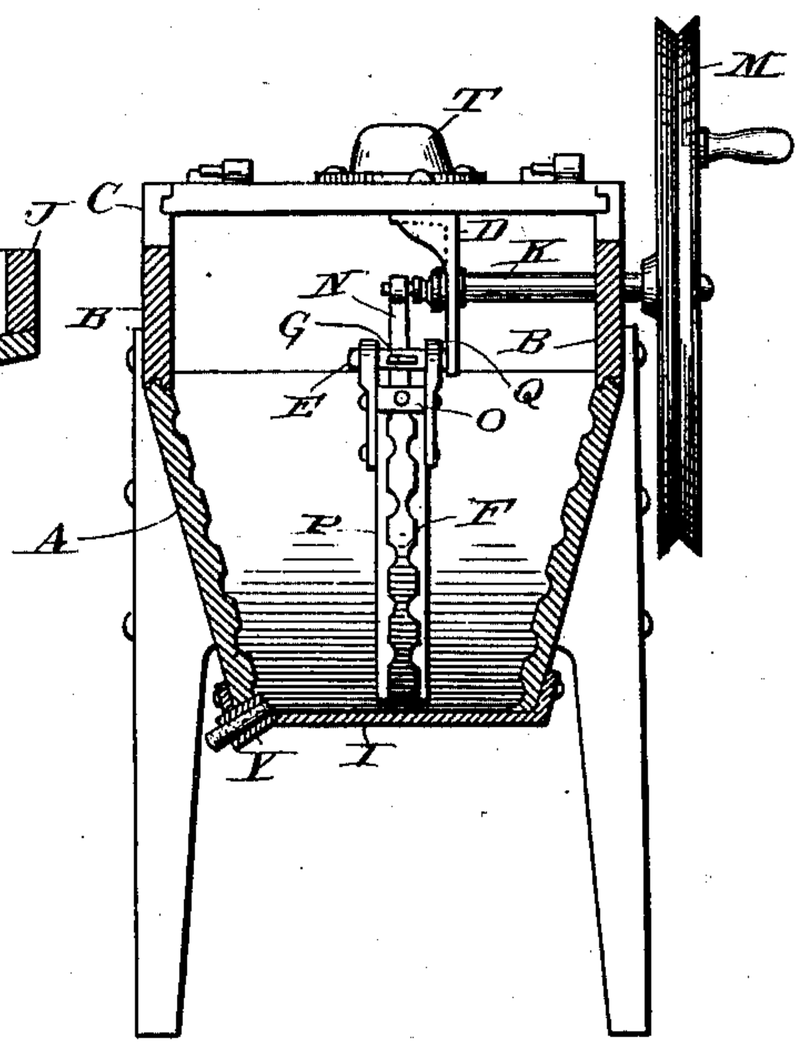


Fig. 3.

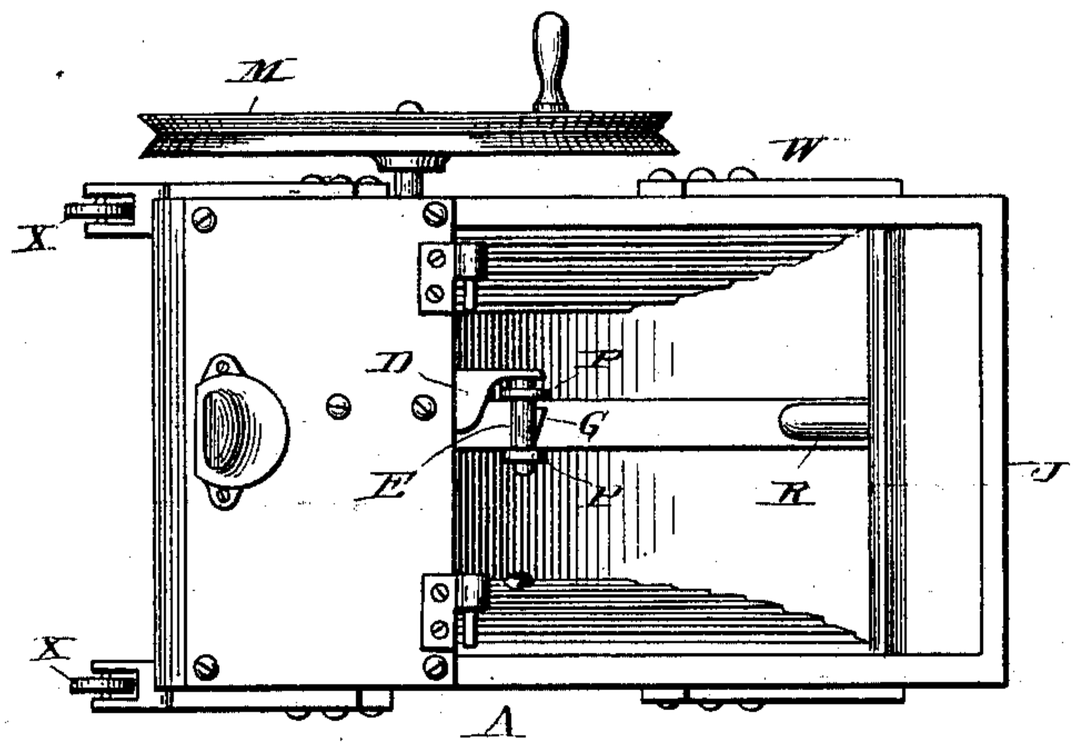
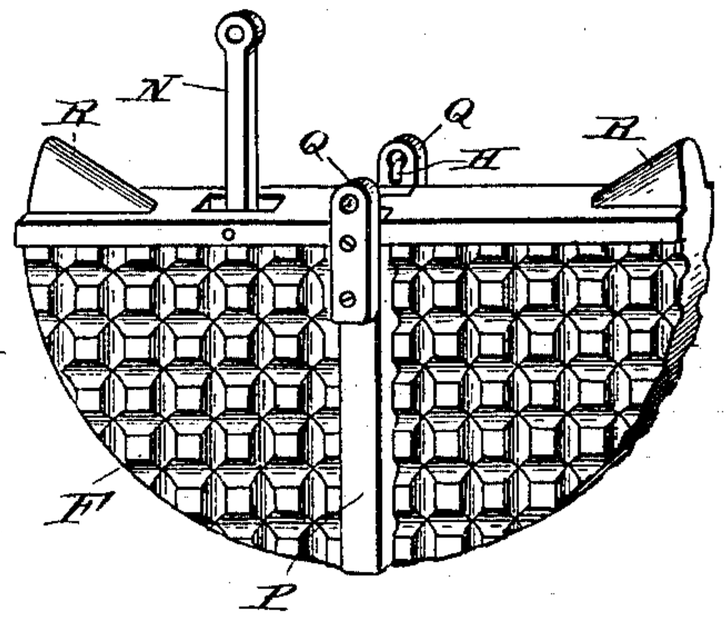


Fig. 4.



Witnesses:
L. M. Adams.
E. R. Frick

Inventor:
C. E. Frick.

UNITED STATES PATENT OFFICE.

CHARLES EDW. FRICK, OF NORWOOD, OHIO.

WASHING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 665,896, dated January 15, 1901.

Application filed August 9, 1899. Serial No. 726,653. (No model.)

To all whom it may concern:

Be it known that I, CHARLES EDW. FRICK, a citizen of the United States, and a resident of Norwood, in the county of Hamilton and State of Ohio, have invented a new and useful Improvement in Washing-Machines, which improvement is fully set forth in the following specification and accompanying drawings, in which—

Figure 1 is a vertical longitudinal section of my invention; Fig. 2, a transverse view, partly in section, with the lid removed; Fig. 3, a top view with the lid removed; Fig. 4, a perspective view of the oscillating rubber.

My invention relates to improvements in washing-machines; and its object is to provide a machine having a removable washboard-lid and removable oscillating rubber simple in construction, light in weight, of large operative capacity, very efficient in its work, which will by its own action bring the massed articles under thorough treatment in all their parts and which will at the same time avoid injury to the fabric under treatment, easy of operation, divided so that different kinds of clothing may be cleansed at the same time without coming in contact with each other, absolutely closed while in operation, keeping all steam, &c., within, and rendered easily movable, but resting firmly while being operated by being mounted on rollers which are elevated when not required.

Referring to the drawings, A represents the body of the washer, which by reference to Fig. 2 has its side portions downwardly convergent, and these side portions are preferably cross-corrugated to form rubbing-faces. Above the corrugated side sections are vertical sections B B, joined on preferably by a tongue-and-groove joint, and within this upper portion are disposed the main operating mechanism and its support.

C is a fixed top portion to which is hinged the lid C^2. Secured under the fixed top portion is a bracket D, whose forward portion is provided with an axial pin E to support the oscillating rubber F. The axial pin E is provided with a projection G, and the axial bearing of the oscillating rubber F is formed with a corresponding recess H to pass over the projection and lock behind the same when the rubber is in its normal position.

The under portion of the body I is preferably of sheet metal. The vertical sides B B are extended at one end to form an attaching-point J for a clothes-wringer. A shaft K, provided on its inner end with a crank L, passes through a bearing formed in the bracket D and through one of the vertical sides B and extends sufficiently beyond to form an attaching-point for a crank, wheel, or lever M. A pitman N is connected at one of its ends to the crank L and at its other end to the cap-piece O of the oscillating rubber F.

The oscillating rubber will now be more specifically described. The main section is of half-disk shape, with each face corrugated in any desired manner; but experience has shown that cross-corrugation is most satisfactory. The rubber is vertically recessed on its opposite sides to partially admit of a pair of cleats P P, which being across the grain of the wood strengthen the rubber and serve as an attaching-point for metal axial bearings. These cleats have also an important function in connection with the manipulation of the clothes under treatment, which function will be referred to later.

O is a cap-piece along the top of the oscillating rubber, giving stability to the construction and also participating in the manipulation of the clothes. Projections R are formed on the ends of the cap-piece O or attached thereto to prevent articles from sliding down the inclined top and getting caught between the rubber and the sheet-iron bottom I when the end of the rubber is dipped below the water-line.

The openings S S^2 in the top allowing clearance for the ends R of the rubber are covered by the hoods T T^2 to prevent the escape of steam. The hood T^2 is so constructed as to form a handle by which to raise the lid, and the hood T serves to rest the lid on when open at an incline, this incline being necessary to drain the lid perfectly when used as a shelf for the wet articles taken from the machine or to be placed within it or when used as a washboard.

The lid C^2 is attached by means of separable hinges to the fixed portion C, so as to be readily removable. It is corrugated on the under surface like a washboard, with battens U U fastened to the side edges to pre-

vent the lid from warping, and these battens project beyond the corrugated face of the lid to prevent the side overflow of water. At the end of the lid a head V, somewhat wider, is attached to prevent overflow and also to hold the lid from side movement when closed. The opening in the lid S^2 covered by the hood T^2 forms a convenient soap-dish for the wash-board.

The legs W, on which the machine rests, are so constructed and attached to the body of the machine as to secure the top and bottom side sections firmly together and prevent their warping.

The rollers X, used to render the machine easily movable, are so attached to the legs as to be elevated when not required and project rearwardly, so that when the front end of the machine is slightly raised the rollers are brought in contact with the floor and the weight of the machine transferred from the legs to the rollers.

A spout Y for drawing off the water is secured to the machine, so as to perfectly drain it.

The operation of my invention is as follows: The articles to be washed are placed in the tub on either or both sides of the rubber F with a sufficient quantity of water, and the rubber is then oscillated by means of the operating-handle. The central rubber, with its corrugated surfaces and battens, while agitating the water carries the articles back and forth through the agitated water from the wider space above to the contracted space beneath and back again, compressing and releasing them and rubbing them against the corrugated sides of the machine, while the articles are also being rubbed by the corrugations on the oscillating rubber itself. The articles nearest the rubber have an upward tendency superinduced by the action of the rubber with its battens, while those farthest from the rubber are simply drawn downward by gravitation. The space within the body of the machine being enlarged at the top and there being no pressure greater than the weight of the clothes suspended in the agitated water, the clothes never pack in the machine by being rolled under pressure into a ball too large for the space, and consequently there is an evenness of action requiring a uniform amount of exertion at all times for the operation of the machine and all the articles within the machine are continually traveling and being equally acted upon.

As no machinery is attached to the lid, clothes can be added to or taken from the machine at any time without interfering with the action. This is of especial service where a wheel is used driven by power.

The advantages gained by dividing the washing-chamber by the vertical rubber are: double the amount of rubbing-surface, separate compartments for the different kinds of articles, and the reduction of the space between the two rubbers, so that a small quantity of articles may be more thoroughly and quickly cleansed. The converging sides still further assist in handling small amounts by reducing each chamber at the bottom, thus bringing the rubbing-surfaces much nearer to each other.

Having thus described my invention and set forth its merits, what I claim as new is—

1. In a washing-machine the combination of a clothes-receptacle having convergent walls with corrugated inner faces, a pendulous rubber supported in said receptacle so as to divide the receptacle into two compartments, irregular rubbing-surfaces upon the sides of said rubber, a link connecting said rubber at one side of its pivot to the crank-arm of a driving-shaft, and means for driving said shaft to reciprocate the rubber substantially as specified.

2. In a washing-machine the combination of a clothes-receptacle having convergent walls, with irregular inner surfaces, a depending bracket secured to the lid, a pendulous rubber pivotally suspended from said bracket, and provided with irregular rubbing-surfaces, a link connected at one end to said rubber at one side of its pivot, and at the other end to the crank-arm of a driving-shaft, said driving-shaft projecting through the side wall of the receptacle and being provided with means substantially as shown for driving the shaft, substantially as specified.

In testimony that I claim the foregoing I have hereunto set my hand this 5th day of August, 1899.

CHARLES EDW. FRICK.

Witnesses:
EDW. MOULINIES,
SHERMAN T. MCPHERSON.