

P. F. BERKEY.
 WASHING MACHINE.
 APPLICATION FILED MAY 24, 1910.

Patented Sept. 26, 1911.

2 SHEETS-SHEET 1.

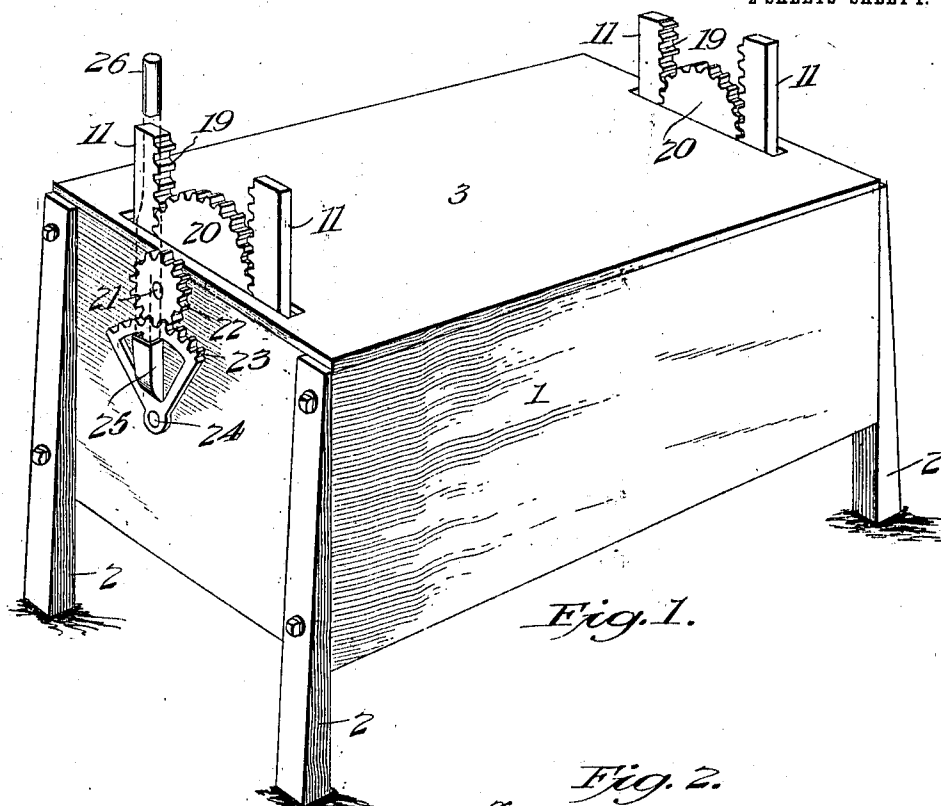


Fig. 1.



Fig. 2.

WITNESSES

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1,004,527.

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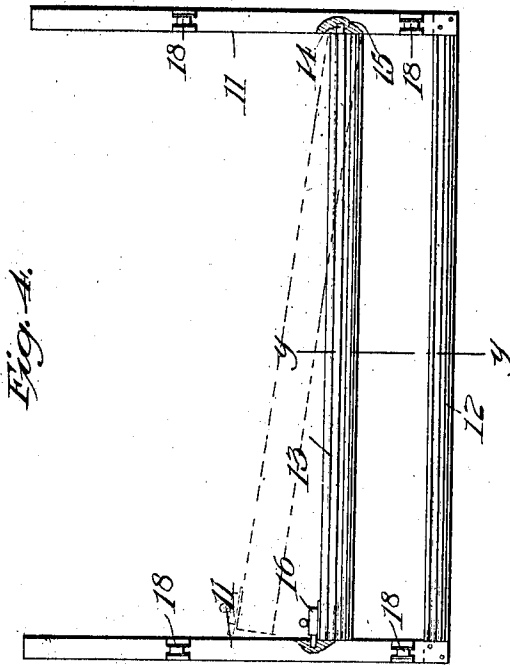


Fig. 4.

Fig. 6.

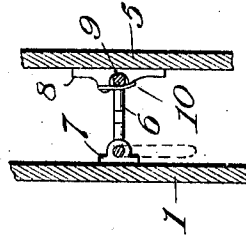


Fig. 5.

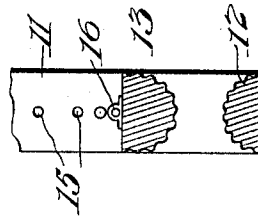
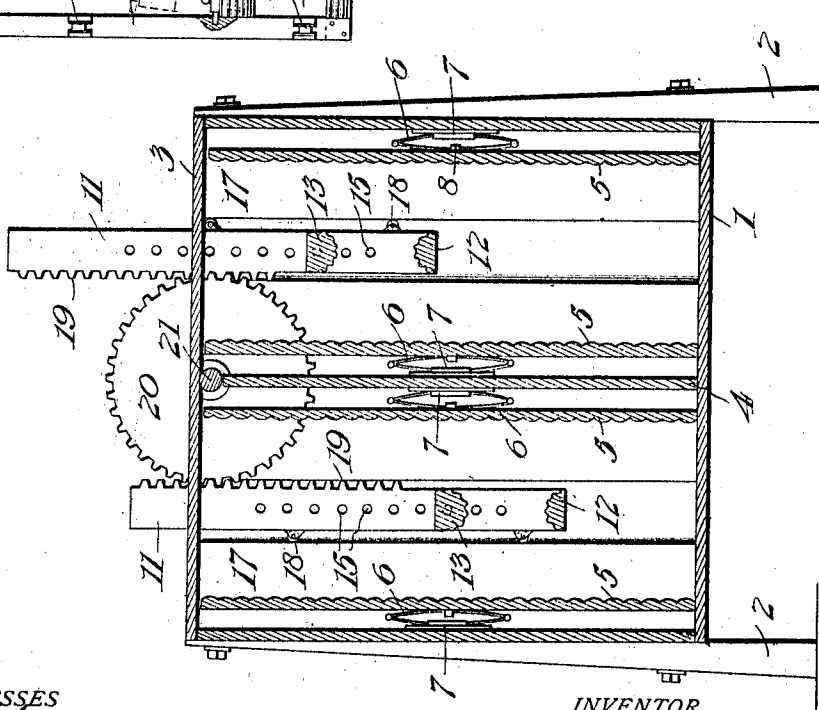


Fig. 3.



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WASHING-MACHINE.

1,004,527.

Specification of Letters Patent. Patented Sept. 26, 1911.

Application filed May 24, 1910. Serial No. 563,201.

To all whom it may concern:

Be it known that I, PETER F. BERKEY, a citizen of the United States, residing at Jennerstown, in the county of Somerset and State of Pennsylvania, have invented new and useful Improvements in Washing-Machines, of which the following is a specification.

The invention appertains to machines for laundry purposes and more particularly for removing soil from clothing and fabrics, the purpose being to provide a machine of the type embodying a box or receptacle for containing suds water, a rubber, and a movable part for agitating the clothing or fabrics to be cleansed, so as to remove the soil by a combined rubbing action and a circulation of the water through the meshes of the fabric.

The invention consists of the novel features, details of construction and combination of parts, which hereinafter will be more particularly set forth, illustrated in the accompanying drawings, and pointed out in the appended claims.

Referring to the drawings, forming a part of the specification, Figure 1 is a perspective view of a washing machine embodying the invention. Fig. 2 is a top plan view thereof, the cover being removed. Fig. 3 is a cross section on the line $x-x$ of Fig. 2. Fig. 4 is an elevation of the clothes clamp, the dotted lines showing the position of the clamp bar when released and moved to admit of clothes being placed in position or removed from the clamp. Fig. 5 is a cross section of the clothes clamp on the line $y-y$ of Fig. 4. Fig. 6 is a sectional detail showing more clearly the connections whereby the springs are attached to the rubber and wall of the suds box or receptacle. Corresponding and like parts are referred to in the following description, and indicated in all the views of the drawings, by the same reference characters.

The suds box or receptacle 1 for receiving the suds water may be of any construction and size according to the finish and capacity of the machine and may be mounted upon legs 2 which are extended along the sides of the box to materially stiffen and strengthen the same. The top of the box or receptacle is closed by means of a cover 3 so as to prevent splashing of the suds water upon the floor or other surface.

A partition 4 subdivides the box or re-

ceptacle 1 into two vertical longitudinal compartments of like size. Each of the compartments is similarly equipped, being provided with a clothes clamp and a pair of rubbers having the clothes clamp arranged between them. The rubbers 5 are of like formation and consist of boards having their rubbing surfaces corrugated or roughened in the usual manner. A pair of rubbers 5 is provided for each compartment of the box or receptacle 1 and the rubbers of each pair are spaced apart, the one being arranged adjacent the side of the box and the other near the partition. It is preferred to construct the rubbers so that they are movable, thereby admitting of the space between them varying according to the bulk of the clothes or fabric to be laundered or washed. Springs 6 are interposed between the rubbers 5 and the adjacent wall and these springs serve normally to press the rubbers inwardly toward each other to hold them in contact with the clothes or fabric secured to the clamp. The springs 6 are flat and preferably of elliptic form and are mounted so as to swing close against one of the parts when they are not required for service. As shown the plates 7 are secured to the inner walls of the sides of the box or receptacle and have one member of the elliptic springs 6 mounted therein in a manner to admit of the turning of the springs whereby they may lie close against the inner faces of the sides of the box or may stand outward at a right angle thereto. Plates 8 are secured to the rear sides of the rubbers 5 and are notched to provide seats 9 in which the other members of the springs 6 are adapted to be fitted and secured in any manner as by means of latches 10, which are secured at one end to the plates 8 and are adapted to be turned so as to extend across the notches or seats 9 and retain the inner portions of the springs when fitted therein. The springs 6 are constructed and arranged in a manner to equalize the pressure upon the rubbers, whereby they may be caused to exert an approximately uniform pressure upon the articles during the operation of the machine.

The clothes clamps, one for each compartment of the box or receptacle 1, are of like formation and are mounted in the respective compartments to have a vertical reciprocatory movement imparted thereto. The clothes clamp consists of uprights 11, a

fixed longitudinal bar 12 secured at its ends to the lower ends of the uprights 11 and a clamp bar 13, the latter being adjustable between the uprights 11 so that the space between the two bars 12 and 13 may be regulated to suit the bulk of clothes or the fabric held between the bars 12 and 13. The clamp bar 13 may be secured in the adjusted position in any manner, and as shown it is provided at one end with a tenon 14 to enter any one of a series of openings 15 provided in the uprights 11. A spring actuated bolt 16 is provided at the opposite end of the clamp bar 13 and is designed to engage any one of a series of openings 15 provided in the outer upright. The opposing or clamping faces of the bars 12 and 13 are preferably made rounding and corrugated or roughened so as to positively grip the clothes or fabric and prevent slipping thereof. The clothes clamps are mounted in suitable guides 17, which direct them in their reciprocatory movements. To prevent binding of the clothes clamps in their guides and to reduce the friction to the smallest amount possible rollers 18 are provided, the same being preferably attached to the sides of the uprights 11.

Any means may be devised for imparting a reciprocating movement to the clothes clamps and it is preferred to devise operating means for moving the clothes clamps in opposite directions so that as one of the clamps is rising the other clamp is descending and vice versa. The uprights 11 are provided upon their inner sides with cog teeth 19, which mesh with the cog teeth of a gear wheel 20, it being understood that a gear wheel 20 is provided for the uprights of the clothes clamps at each end of the machine. A shaft 21 is mounted in bearings provided upon the ends of the machine and is in line with the partition 4 and has the gear wheels 20 secured thereto, with the result that both gear wheels move in unison, thereby causing the clothes clamps to move uniformly throughout their length. Pinions 22 are secured to the projecting ends of the longitudinal shaft 21 and mesh with toothed segments 23, which are mounted at 24 upon the ends of the box or receptacle 1, each segment having a socket 25 in which is fitted a handle or lever 26. It will be understood that the machine may be operated from either or both ends by means of the levers 26, which are grasped at their upper ends and oscillated, thereby causing the clothes clamps to reciprocate vertically through the instrumentality of the connec-

tions herein disclosed. The clothes or fabric to be washed are secured between the bars 12 and 13 of the clothes clamps and are moved up and down between the rubbers when the machine is in operation and are at the same time pressed into and withdrawn from the suds water contained in the box or receptacle and as a result of this combined action, that is the rubbing of the clothes and the forcing of the same through the suds water, the dirt and soil is quickly removed. By having the receptacle or box subdivided into separate compartments table linen or fine clothing or fabrics may be washed in one compartment and coarse heavy clothing laundried in the other compartment, the two being kept separated.

From the foregoing description, taken in connection with the accompanying drawing, the advantages of the construction and of the method of operation will be readily apparent to those skilled in the art to which the invention appertains, and while I have described the principle of operation of the invention, together with the device which I now consider to be the embodiment thereof, I desire to have it understood that the device shown is merely illustrative, and that such changes may be made when desired as are within the scope of the claims appended hereto.

Having thus described the invention what is claimed as new, is:—

1. In a washing machine, the combination of a receptacle for receiving suds-water, a rubber located within the receptacle, a flat spring interposed between the rubber and the adjacent side of the receptacle, said spring being mounted on one of the parts to turn so as to lie flat against said part or to occupy a position at a right angle to said parts to exert a pressure upon the rubber to hold the same in working position.

2. In a washing machine, the combination of a receptacle for receiving suds-water, a rubber located within the receptacle, a flat spring arranged between the rubber and adjacent side of the receptacle and pivotally connected to one of the parts, and means applied to the other part for engaging with the flat spring to hold the same when turned to occupy a position at a right angle to the rubber and supporting side of the receptacle.

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