April 8, 1930. A. W. HIGGINS ET AL 1,753,416

WASHING MACHINE

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Fig. 2.

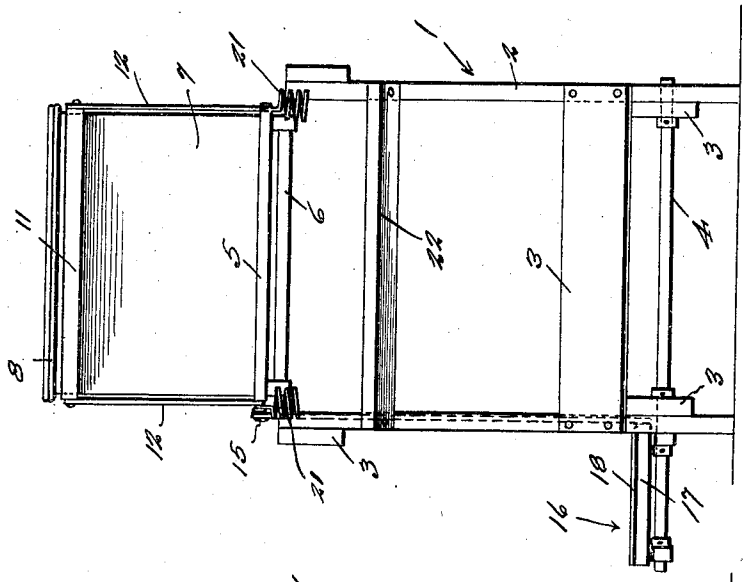
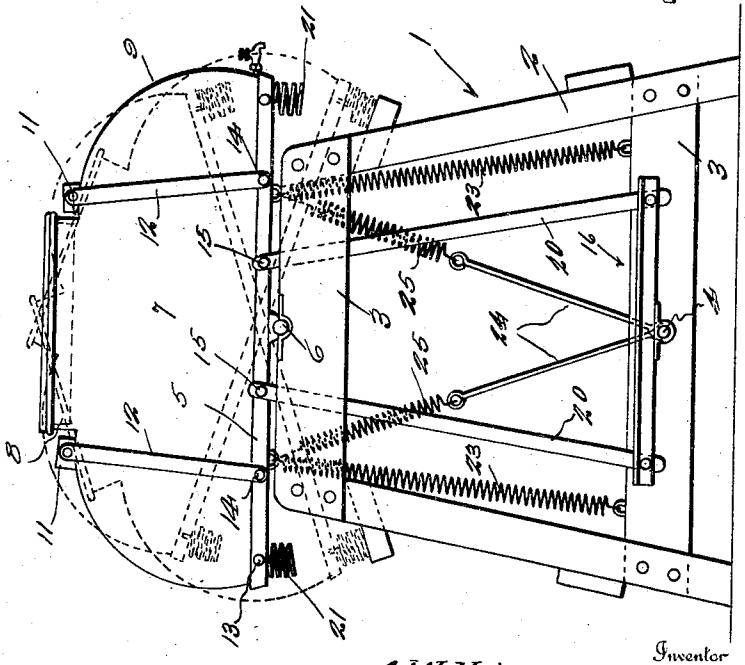


Fig. 1.



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Fig. 5.

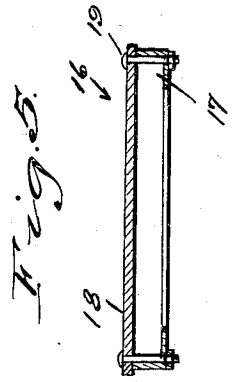


Fig. 3.

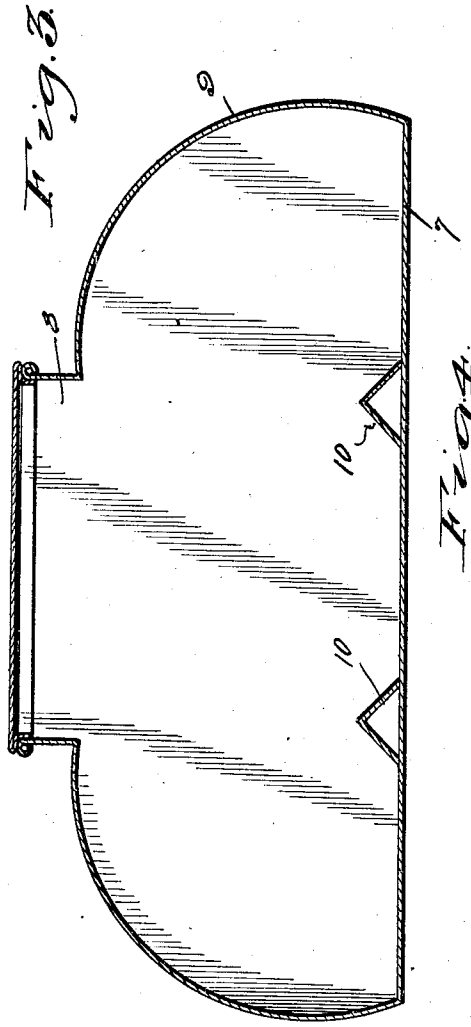
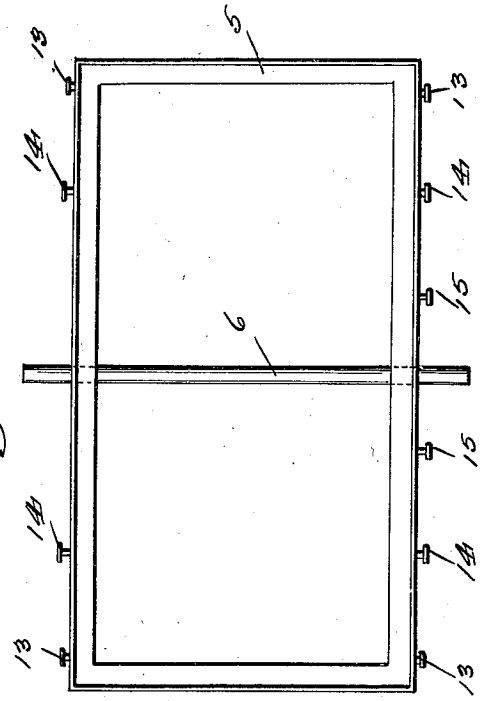


Fig. 4.



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UNITED STATES PATENT OFFICE

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WASHING MACHINE

Application filed October 20, 1928. Serial No. 313,854.

The present invention relates to improvements in washing machines, and has for its principal object to provide a simple and efficient means for effecting the oscillatory movement of the clothes container or receptacle whereby to thoroughly agitate the contents of the container.

A further object is to provide a washing machine of the above mentioned character which includes a container or receptacle adapted for oscillatory mounting on a suitable stand, a foot treadle being operatively connected with the container or receptacle for oscillating the same, spring means being further associated with the receptacle to aid in the oscillatory movement of the same.

A further and important object of the invention is to provide a washing machine of the above mentioned character wherein the parts are so arranged as to permit the same to be readily and easily assembled or disassembled, the machine being further simple in construction, inexpensive, strong and durable and further well adapted to the purpose for which it is designed.

Other objects and advantages of the invention will become apparent from the following description when taken in connection with the accompanying drawings.

In the accompanying drawings wherein like reference characters indicate like parts throughout the several views:

Figure 1 is a side elevation of the washing machine embodying our invention.

Figure 2 is an end elevation thereof.

Figure 3 is a longitudinal sectional view through the clothes container or receptacle per se.

Figure 4 is a top plan view of the frame upon which said container or receptacle is secured, and

Figure 5 is a sectional view through the foot treadle forming a salient part of the present invention.

In the drawings wherein for the purpose of illustration is shown the preferred embodiment of our invention, the numeral 1 designates generally a supporting stand, the same comprising four leg members 2 that are arranged in pairs, and these leg members are disposed in downwardly diverging relation. Suitable cross bars 3 extend between the leg members to provide a rigid structure as is clearly illustrated in Figures 1 and 2. An elongated shaft 4 is supported transversely in the lower portion of the stand 1, and one end portion of the shaft projects beyond the front side of the stand as indicated in Figure 2, and the purpose thereof will hereinafter be more fully described.

A substantially rectangular shaped frame 5 constructed of angle iron material has a shaft 6 extending transversely of the intermediate portion of this frame, the ends of the shaft projecting beyond the respective sides of the frame and being adapted for disposition across the uppermost front and rear cross bars 3 of the stand 1, whereby the frame 5 is capable of oscillatory movement between the upper ends of the front and rear pairs of the legs of the stand, as indicated by the dotted lines in Figure 1. It will also be observed that the frame 5 is of a greater length than that of the upper portion of the stand.

A galvanized iron clothes container or receptacle denoted by the reference character 7 is supported on the frame 5, the flat bottom of this container or receptacle being adapted to set within the angle iron frame. This container or receptacle is formed in its top with an open neck portion 8 while the ends of the adjacent portions of the top of the container are rounded as indicated at 9. The neck portion 8 provides a means whereby the container may be filled with water and the clothes to be washed are placed in the container through the neck portion 8, and any suitable lid is provided for closing the neck 8 in order to prevent the splashing of the water out of the container during the operation of the washing machine. Upon referring to Figure 3 it will be noted that triangular shaped ribs 10 are arranged transversely in the bottom of the container or receptacle for agitation purposes, well known in the art.

The container or receptacle is removably secured on the frame 5, and to this end, we provide a pair of locking bars 11 that are secured between the upper ends of suitable links 12 which links are disposed on opposite

sides of the frame and one pair of these links is secured at their lower ends on the respective sides of the frame 5 adjacent one end thereof, while the other pair of links are connected at their lower ends in a pivoted manner to the respective sides of the frame adjacent the opposite end thereof.

The respective pairs of links and the locking bars carried by the upper ends thereof are capable of vertical swinging movement, so that said locking bars may be swung upwardly over the rounded end portions 9, and for rest upon the top portion of the container adjacent the opposite sides of the neck portion 8 as shown in Figure 1 so that the container or receptacle will be positively secured on the frame. Whenever it is desired to remove the container or receptacle from its supporting frame, said bars are forcibly disengaged from the top portion of the container and are swung outwardly and downwardly in a manner readily obvious from the construction shown in the drawings.

With reference now to Figure 4, there is secured on the outer faces of the respective sides of the frame adjacent the corners thereof, the trunnions 13. Similar trunnions 14 are arranged inwardly of the respective corner trunnions 13. Additional trunnions 15 extend from the front side of the frame on opposite sides of the shaft 6. The purpose of all the aforementioned trunnions will be described in detail later on in the specification.

A treadle denoted generally by the numeral 16 forms a salient part of the present invention, and this treadle includes an angle iron frame unit 17 on the top of which is secured a foot board 18, the securing means therefor being shown at 19 with reference more particularly to Figure 5. The treadle 16 is supported intermediate its ends on the projecting end of the shaft 4 for oscillatory movement thereon.

A lever 20 is pivotally secured at its lower end on the inner side edge portion of the treadle 16 adjacent each end thereof, and the upper ends of these upwardly converging levers are connected to the respective trunnions 15 as indicated very clearly in Figure 1 whereby the frame 5 and the container or receptacle 7 supported thereon will be operatively connected with the treadle 16.

The trunnions 14 afford a means for operatively connecting the lower ends of the link members 12 to the respective sides of the frame 5, while attached to the corner trunnions on the upper ends of rebound coil springs 21. Adapated for cooperation with the coil springs 21 are the transversely extending slightly inclined boards 22 that are arranged between the front and rear pairs of leg members. The lower ends of the coil springs are free, and are normally spaced with respect to the boards 22, as clearly indicated in Figures 1 and 2.

A pair of coil springs 23 are secured at their upper ends to the front side of the frame 5 inwardly of the respective ends thereof, and the lower ends of these coil springs are connected to the lowermost cross bar that connects the front pair of leg members together, and these coil springs normally maintain the frame 5 and the container or receptacle 7 mounted thereon in a normal horizontal position.

A pair of rod members 24 are connected at their lower converging ends on the shaft 4 adjacent the front side of the stand and coil springs 25 are connected at their lower ends to the upper eyed ends of the downwardly converging rod members, while the upper ends of these coil springs are secured to the frame 5 at the same places where the upper ends of the coil springs 23 are connected to said frame, and this is clearly shown in Figure 1.

The spring units 23 and 24 normally maintain the parts in their normal positions so that the treadle as well as the frame and the clothes container or receptacle mounted thereon will be arranged in a horizontal position. In the operation of the machine, the foot treadle 16 is operated whereby to effect the oscillatory movement of the frame 5 and the clothes container or receptacle mounted thereon so as to cause the proper agitation of the clothes submerged in the water in the container or receptacle.

During the oscillatory movement of the frame and the clothes container arranged thereon, the coil springs 21 will alternately strike their respective boards 22, thereby effecting a rebound action, and the other coil springs will provide for a rebound action in the opposite direction.

It will thus be seen from the foregoing description, that we have provided a washing machine that will at all times be positive and efficient in its operation, and furthermore the machine can be actuated without difficulty. The parts of our improved washing machine are arranged in such a manner so as to permit the same to be readily and easily assembled or disassembled.

While we have shown the preferred embodiment of our invention it is to be understood that minor changes in the size, shape and arrangement of parts may be resorted to without departing from the spirit of the invention, or the scope of the appended claims.

Having thus described the invention, what we claim as new and desire to secure by Letters Patent is:—

1. In a washing machine, a stand, a substantially rectangular shaped frame mounted for movement on the stand, a closed receptacle having rounded end portions, means for securing the receptacle on the frame including pairs of links pivotally connected at their lower ends on the respective sides of the

frame, locking bars mounted transversely between the upper ends of each pair of links and adapted to be forcibly engaged across the top of the receptacle, said locking bars being capable of swinging movement outwardly over the rounded ends of the receptacle to an inoperative position.

2. In a washing machine, a stand, a frame mounted for oscillatory movement thereon, a clothes receptacle secured on the frame, a foot treadle rockably supported intermediate its ends on the stand, levers operatively connecting the ends of the foot treadle with the frame, springs connecting the frames with the stand for normally maintaining the frame and the receptacle carried thereon in a horizontal position, angularly disposed boards arranged transversely at the opposite ends of the stand, and rebound coil springs connected to the respective ends of the frame for cooperation with the respective boards during the oscillatory movement of the frame and the receptacle mounted thereon.

In testimony whereof we affix our signatures.

AVERY W. HIGGINS.
SETH G. RUDD.