R. W. DONLEY.

WASHING MACHINE.

APPLICATION FILED FEB. 28, 1919.

1,318,981.

Patented Oct. 14, 1919.

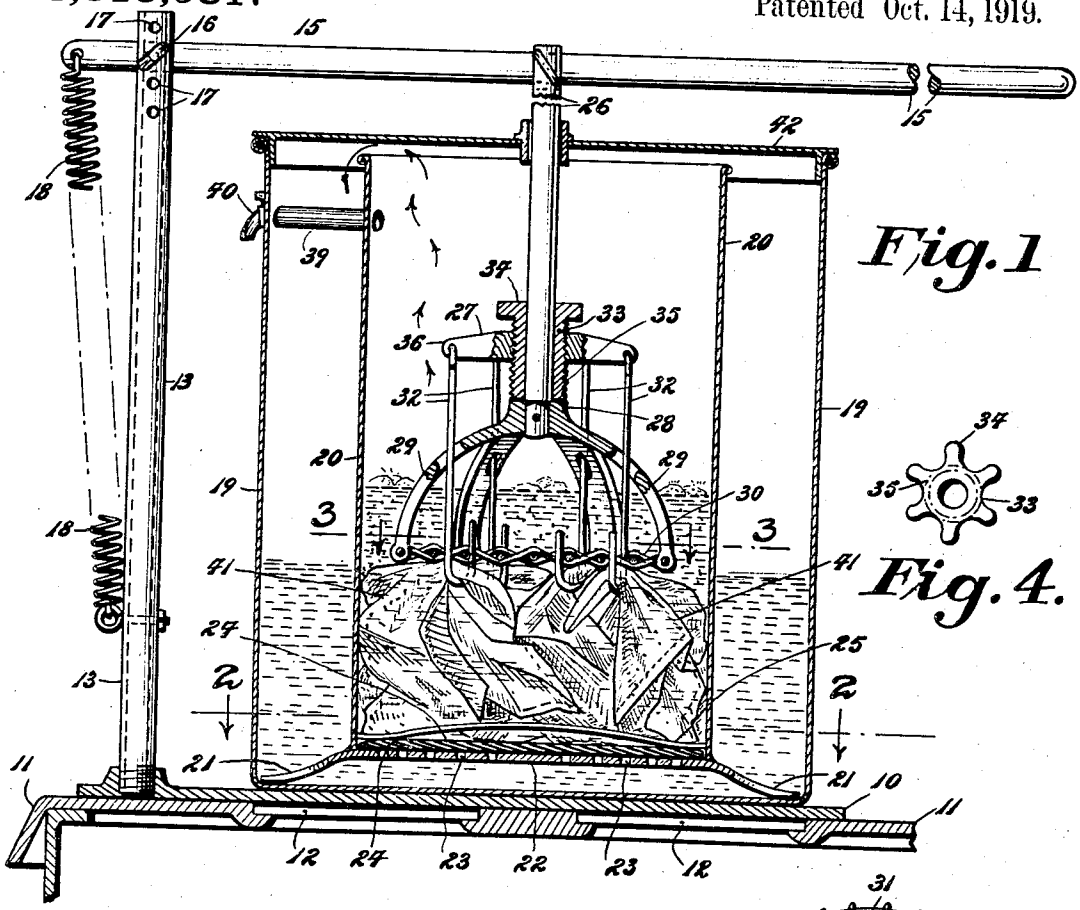


Fig. 1

Fig. 4.

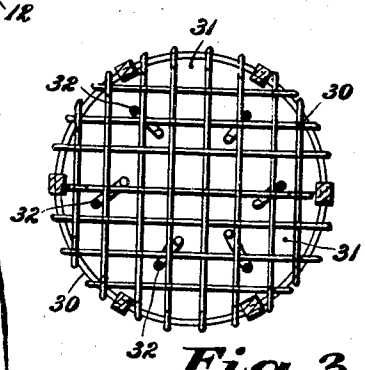


Fig. 3.

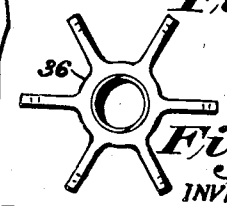


Fig. 5.

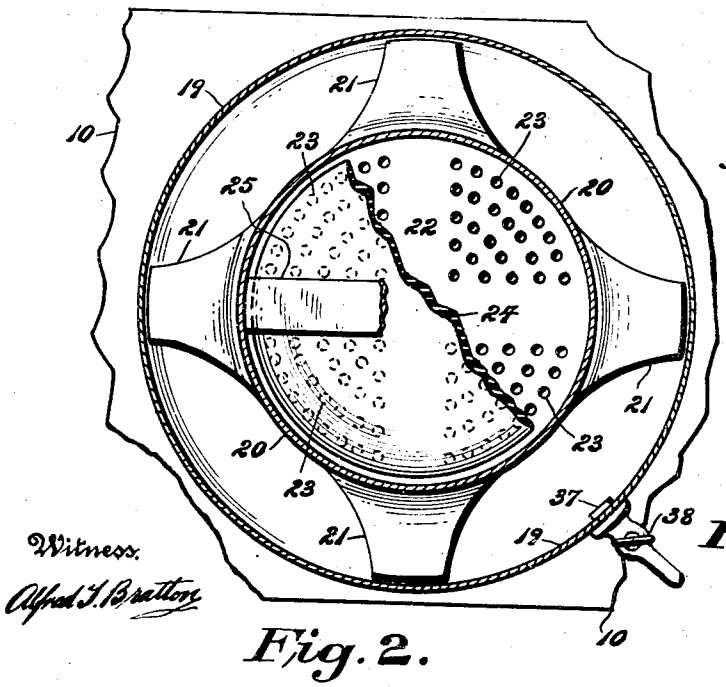


Fig. 2.

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WASHING-MACHINE.

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To all whom it may concern:

Be it known that I, ROBERT W. DONLEY, a citizen of the United States, residing at 347 North 6th street, Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented new and useful Improvements in Washing-Machines, of which the following is a specification.

The invention relates to washing machines and has for an object to provide a machine for quickly and effectively washing and cleansing clothes and other fabrics.

Among other features the invention comprehends a washing machine consisting of few and simple parts which cannot readily get out of order, the machine being so constructed that it can be readily operated with a minimum of manual or other labor and in which furthermore, the clothes or fabric, will be subjected to the action of the cleansing fluid so that the latter will be forced through the clothes or the fabric thereof and thus thoroughly cleanse the same.

Still further the invention provides a machine in which instead of having the clothes subjected to the action of a reciprocating dolly as in the case of a large number of washing machines now generally used, the clothes themselves are subjected to a reciprocating action, in order to effect the desired result.

In the further disclosure of the invention, reference is to be had to the accompanying drawings, constituting a part of this specification, in which similar characters of reference denote corresponding parts in all the views, and in which,—

Figure 1— is a vertical sectional view taken through the machine.

Fig. 2— is a horizontal sectional view taken on the line 2—2 in Fig. 1, looking in the direction of the arrow.

Fig. 3— is a detailed horizontal sectional view taken through the gripping members and showing the latticed frame in plan view, the section being taken substantially on the line 3—3 in Fig. 1.

Fig. 4— is a plan view of the operating member, and

Fig. 5— is a plan view of the holder for the gripping members.

Referring more particularly to the views the numeral 10 indicates a base which may be suitably disposed, if desired, on the top of a stove 11, having the usual openings 12 therein, an upright 13 being supported on the base of one end thereof, and carrying at its upper end a pivoted handle 15 which may be suitably adjusted upon the upright 13, by having a pin 16 adapted to pass through one of a series of openings 17 in the upright, said pin also passing through the handle. The extreme inner end of the handle is engaged by a contractile helical spring 18 which has its lower end suitably secured to the upright 13, and whereby when the handle 15 is swung or moved downwardly, the spring 18 will be placed under tension to facilitate the return of the upward movement of the handle.

Supported on the base 10 is an outer receptacle 19 within which is arranged an inner receptacle 20, the inner receptacle being supported on suitable feet 21, reposing upon the base of the outer receptacle within the latter, to space the bottom of the inner receptacle from the base or bottom of the outer receptacle. The inner receptacle has its bottom, indicated by the numeral 22, formed with sets of apertures 23, each set including a multiplicity of the apertures and disposed to lie over the bottom and normally close the apertures, is a rubber or other flexible disk 24, forming a valve on the order of a flap valve, a spring-like gripping or holding element 25 of a strip-like nature, being disposed over the valve, with the edges of the member 25 bearing against the inner wall of the inner receptacle, holding the flap valve in position, so that it will normally close the apertures 23.

Pivoted to substantially the medial portion of the handle 15 is a depending stem 26 carrying an adjustable clothes holding or gripping member or element 27 and which in detail, consists of a spider 28 secured to the lower end of the stem 26, and carrying on the extremity of the arms 29 thereof, a rigidly secured latticed frame 30. The arms 29 of the spider, are provided with a series of openings 31, through which loosely pass, gripping members 32, the lower ends of which pass through the interstices of the frame 30, and are hooked to have their extremities return through other interstices of the frame. Mounted to loosely rotate upon

the stem 26 and normally bearing against the upper end of the spider 28, is an operating member 33, having a suitable grip or handle 34 and an external thread 35, a holder 36, also of a spider like construction, being threaded on to the threaded part of the operating member 33, to move upwardly or downwardly thereon when said member is rotated by grasping the handle 34 thereof, and the upper ends of the gripping members 32 are suitably pivoted to the extremities of the holder 36, as shown in Fig. 1.

A suitable outlet pipe 37 is arranged to extend from the outer receptacle near its lower end, said outlet pipe being provided with a spigot 38, and a similar pipe 39 extends from the inner receptacle near the top thereof and passes through the outer receptacle to the exterior, said pipe 39 being also provided with a spigot 40.

In the use of the device described the outer receptacle is suitably filled with water or some other cleaning fluid and the clothes holding member 27 having been removed from the inner receptacle by raising the handle, rotation of the operating member will cause the holder to be screwed down thereon, thus bringing the gripping members into an extended position relative to the latticed frame 30 so that edges of the clothes, indicated by the numeral 41, can be inserted in the hook-like portions of the gripping members, after which a reversal of rotation of the operating member, causing the holder to be moved upwardly thereon, will bring the gripping members into gripping engagement with the latticed frame, thus securely gripping and holding the clothes against the underside of the latticed frame, as shown in Fig. 1. A suitable cover 42 is provided to close the outer receptacle and also cover the inner receptacle, and the stem 26 passes through the cover, as will be clearly seen in Fig. 1. The operator now actuates the handle 15 and on account of the clothes contained in the inner receptacle, an upward movement of the handle will create a suction which will raise the free portions of the flap valve, so that the water can pass through the apertures 23, into the inner receptacle and then when the handle is subsequently moved down again, the water received in the inner receptacle being unable to return to the outer receptacle through the apertures 23 on account of the closing of the flap valve thereon, will be forced up through the clothes, and should the inner receptacle become filled with water by this action, the water will flow over the edge of the inner receptacle back into the outer receptacle, indicated by a series of arrows in Fig. 1.

Therefore continued reciprocation of the handle will always bring in a new or fresh quantity of water to the inner receptacle from the outer receptacle and this water will be forced through the clothes to bring about the cleansing operation.

The outer receptacle will of course, be drained through the pipe 37 when the spigot 38 is opened, and in case it is desired to rinse the clothes by filling the outer receptacle with fresh water, the spigot 40 can be opened and the water drawn into the inner receptacle and through the clothes, will be ejected through the pipe 39.

From the foregoing description it will be seen that the device described is of a simple and durable construction and although I have shown a particular form of apparatus in the drawings, it will be understood that I do not limit myself to the precise construction thereof; that various slight changes may be made from the structure shown, without departing from the spirit of the invention, and that the scope of the invention is defined in the appended claims.

Having described my invention, I claim—

1. A washing machine comprising a base, a receptacle on the base and an inner receptacle contained in the outer receptacle and provided with a series of apertures in the bottom thereof with the bottom of the inner receptacle spaced from the bottom of the outer receptacle, a valve disposed in the inner receptacle and normally closing the apertures in the bottom thereof, a reciprocating handle, a stem on the handle, and a clothes gripping holder adjustably carried on the stem to operate in the inner receptacle and be reciprocated in the inner receptacle when the handle is actuated.

2. A washing machine comprising inner and outer receptacles, the inner receptacle having a series of apertures in the bottom thereof, with said bottom spaced from the bottom of the outer receptacle, a valve normally closing said apertures and adapted to be actuated to permit cleansing fluid to flow from the outer receptacle to the inner receptacle when a suction is created in the inner receptacle to actuate the valve, a reciprocating clothes holder in said inner receptacle, and means thereon for securely gripping the clothes to insure a reciprocation of the clothes in the inner receptacle when the holder is actuated, the said clothes, when the holder is actuated, producing the suction operating said valve.

3. In a washing machine for washing clothes, the combination with a fluid supply and a clothes receptacle, of a normally closed valve in the receptacle and means for gripping and reciprocating the clothes in the receptacle, said clothes thereby acting as a plunger and when actuated in one direction in the receptacle creating a suction operating said valve to admit fluid from the

fluid supply to the receptacle, and when actuated in the opposite direction closing said valve and forcing the fluid in the receptacle through the said clothes.

4. In a washing machine, a clothes holding and gripping member comprising a stem, an apertured spider on the stem, a latticed frame carried by the spider, gripping members passing through the apertures of the spider and through the latticed frame and adapted to grip the clothes and securely hold the same against the underside of the latticed frame and means for moving the said gripping members into or out of gripping engagement with the clothes.

In testimony whereof I affix my signature.

ROBERT W. DONLEY.