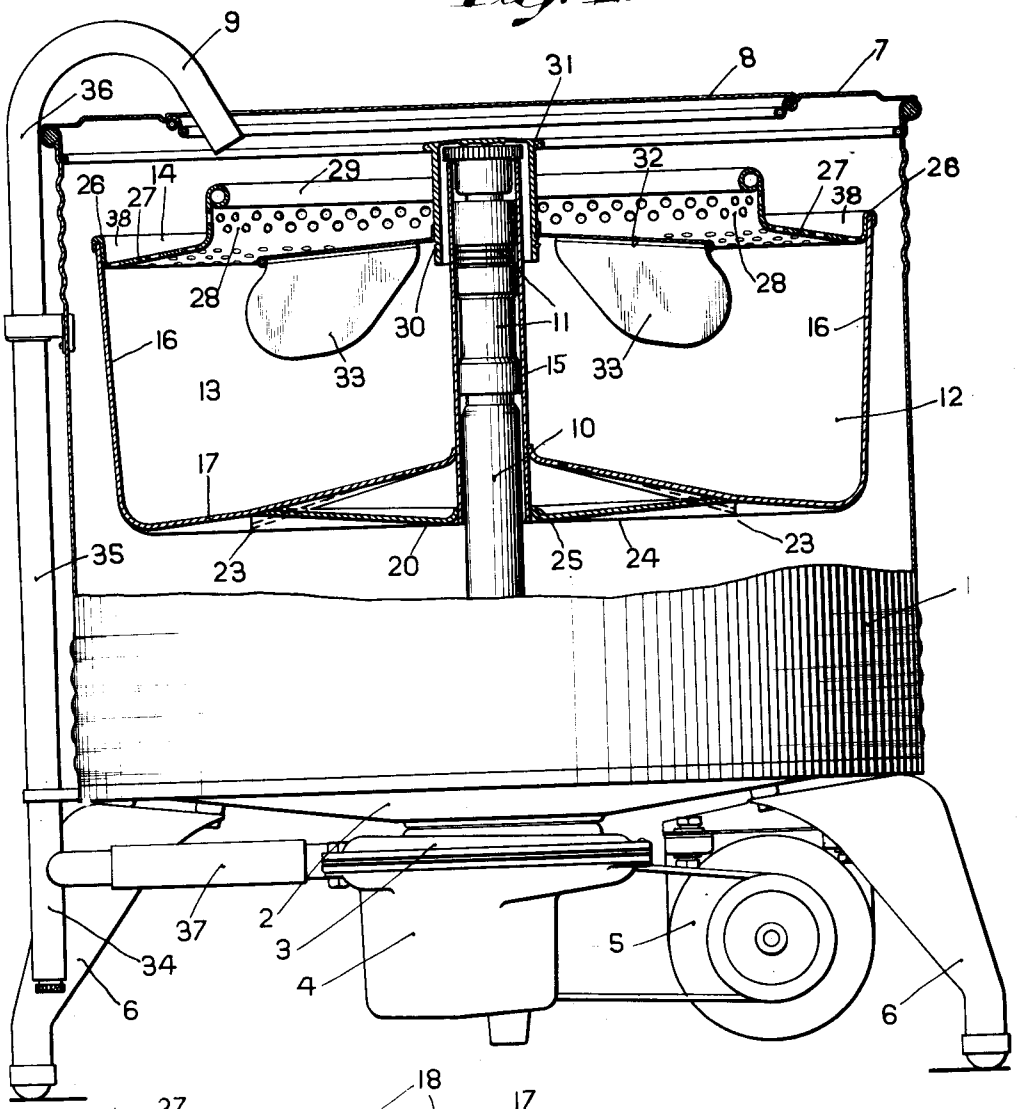
Feb. 18, 1930. G. W. DUNHAM 1,747,763

LAUNDRY MACHINE

Filed April 20, 1927

Fig. 1.



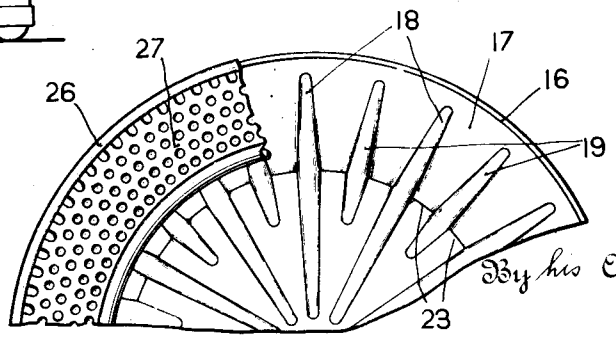


Fig. 2.

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Patented Feb. 18, 1930

1,747,763

UNITED STATES PATENT OFFICE

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LAUNDRY MACHINE

Application filed April 20, 1927. Serial No. 185,148.

The invention relates to laundry machines and, more particularly, to laundry machine baskets which hold the laundry during treatment.

According to the invention a basket is provided which may be made up of a receptacle sufficiently imperforate to hold washing liquid, and a suitable guard ring. The receptacle may have parts thereof suitably corrugated or strengthened so that the receptacle may be made large to hold a large volume of laundry and liquid and yet will be light and strong. The receptacle may be provided with a continuous outer wall ending in a smooth upper edge or lip, over which liquid may flow out uniformly about the entire periphery. A guard ring may have a part disposed below the surface of the liquid and may effectively aid in holding the laundry submerged during washing. The guard ring may also act as a partition to separate off a collector space or chamber at the top of the receptacle in which scum may be collected. The guard ring may also operate to hold the laundry within the receptacle during drying in such manner as to prevent spotting the laundry. The guard ring may also have a part which will prevent smaller and lighter articles from being expelled into the scum chamber if they should accidentally escape from beneath the guard ring.

Various other features and advantages of the invention will be apparent from the following particular description and from an inspection of the accompanying drawings.

The invention also consists in certain new and original features of construction and combinations of parts hereinafter set forth and claimed.

Although the novel features which are believed to be characteristic of this invention will be pointed out with particularity in the claims appended hereto, the invention itself, as to its objects and advantages, the mode of its operation and the manner of its organization may be better understood by referring to the following description taken in connection with the accompanying drawings forming a part thereof, in which

Fig. 1 is an elevation partly in section of a well known type of laundry machine showing the novel basket arranged therewith; and

Fig. 2 is a detail with parts broken away showing a plan view of the basket.

In the following description and in the claims parts will be identified by specific names for convenience, but they are intended to be as generic in their application to similar parts as the art will permit.

Like reference characters denote like parts in the several figures of the drawings.

In the drawings, a well known type of laundry machine is shown for the purpose of illustrating the invention. It will be understood that the invention is not limited to the particular laundry machine disclosed, but may be used in any type of laundry machine which is of such a nature as to utilize the teachings of this invention.

The laundry machine shown comprises a generally cylindrical tank 1 having a conical bottom 2 sloping toward the center thereof, from which may be suitably suspended a horizontally disposed rotary pump 3. Suspended from the pump may be a gear box 4 in which may be disposed suitable gearing for operating the machine. Also suspended from the bottom of the tank is a suitable driving motor 5 having driving connections with the gearing in the gear box.

The laundry machine may also be provided with legs 6, preferably three in number, to provide a three-point support. A cover may also be provided comprising an annular outer ring 7 and an inner lid 8 having an opening in the top through which the discharge nozzle 9 may project, as hereinafter described. The lid 8 may be removed to give access to the basket and the outer ring 7 may be left in position to act as a liquid retaining ring to prevent liquid discharged from the basket from splashing out of the machine.

Projecting upwardly from the bottom of the tank, and preferably secured to the pump is a hollow pedestal 10. The construction is such that the hollow pedestal 10, pump 3 and gear box 4 form a unitary assembly. This construction together with the gearing in the gear box and other driving mechanism is disclosed in prior co-pending appli-

cation, Serial No. 18,086, filed March 25th, 1925, in the name of the present inventor.

Rotatably mounted on top of the pedestal 10 by suitable bearings 11 is the basket 12. The basket comprises an imperforate receptacle 13 and an upper guard ring 14. The imperforate receptacle 13 comprises a tubular hub 15 and an outer annular wall 16 flaring slightly upwardly, the annular wall generally curving into a bottom 17, which converges slightly upwardly and is connected to the hub by soldering, or in any other desired manner, at a point spaced from the lower end thereof. The bottom 17 is provided with a plurality of corrugations 18 extending from the side wall to the hub, the corrugations increasing in depth from the hub to a point 23 about two thirds way from the hub to the wall. The corrugations then decrease in depth from this point to the outer wall. Smaller corrugations 19 may be provided between the longer corrugations 18, the smaller corrugations extending from the outer wall part way to the hub.

A strengthening plate 20 may be provided connecting the lower end of the hub 15 and the point 23 on the bottom between the wall and the hub, the bottom at this point changing its slope slightly. The strengthening plate 20 may be provided with corrugations 24 extending from the hub 15 to the outer end thereof, the corrugations increasing in depth from the hub toward the outer edge of the plate and inter-fitting the corrugations on the bottom. The strengthening plate 20 may have its inner edge 25 turned slightly upwardly and suitably secured to the hub.

The guard ring 14 may comprise an annular hook portion 26 disposed over the upper edge of the receptacle wall 16, said hook portion extending downwardly a short distance. At the lower end of the hooked portion 26 a foraminous retaining portion 27 extends inwardly and slightly upwardly. Extending upwardly from the inner edge of the retaining portion 27 is a foraminous guard portion 28 having its upper edge turned into a bead 29 forming a hand ring, by means of which the receptacle may be stopped in its rotation after the power is turned off after drying. The guard ring is preferably fixedly secured by soldering, welding or otherwise, to the receptacle wall.

Disposed within the receptacle may be a suitable agitator 30 comprising a cap 31 having suitable connections with a drive shaft within the pedestal, and a conical plate 32 having a plurality of agitator blades 33 depending therefrom. The plate 32 may be free to move longitudinally of the cap 31, but is constrained to rotate therewith.

Disposed at the side of the tank may be a standpipe 34 made up of a riser tube 35 in which is telescopically mounted a flow pipe 36 ending in a return bent discharge nozzle 9, which is shown as projected through the hole in the lid 8 to discharge liquid into the top of the receptacle. The lower end of the standpipe 34 is connected by means of flexible tubing 37 to the discharge side of the pump 3, the intake of the pump communicating with the bottom of the tank.

In order to wash a batch of laundry, the laundry is placed in the receptacle 13 together with suitable laundry liquid which should fill the receptacle to overflowing, and a sufficient extra amount should be placed in the bottom of the tank so that the pump may keep the liquid continuously circulating during washing from the bottom of the tank into the top of the receptacle, whence it overflows back into the tank. The agitator 30 will be in the position shown, and the operating mechanism is such as to give the agitator a rotary oscillatory motion, the receptacle being stationary during washing.

The agitator suitably agitates the laundry and laundry liquid, and the supply of liquid into the receptacle keeps the receptacle overflowing simultaneously with the mechanical agitation. As the scum and other impurities are loosened from the laundry they float to the top of the liquid through the foraminous guard ring 14 and into the scum collector chamber 38 above the guard ring, whence they overflow into the bottom of the tank, where they are trapped in the comparatively quiet pool of liquid in the tank bottom. It will be understood that the suction from the pump 3 is taken from the extreme bottom of the tank so that the scum and other impurities are not recirculated.

The retaining portion 27 of the guard ring being below the liquid level together with the agitator, effectively holds the laundry submerged, preventing air bubbles from carrying portions of the laundry above the surface of the laundry liquid. At the same time, if the suds should happen to carry small articles, such as handkerchiefs, above the surface of the liquid, the guard portion 28 will prevent them from being discharged into the scum chamber 38.

For drying, the liquid circulation through the standpipe is stopped in any desired manner, and the agitator is removed by lifting it out of the receptacle. Suitable mechanism is provided for continuously rotating the receptacle. As the receptacle begins to pick up speed, the laundry and liquid settle at the center and there is an initial flow of the mass, just beneath the guard ring, toward the center. This causes a radial circulation until the speed and remaining volume become such as to stop the circulation when the mass assumes a cup-like form and feeds liquid over the side. The heavier laundry is then thrown outwardly against the annular wall and the surplus liquid leaves the tank from the inside of the laundry and is discharged upwardly through

the foraminous guard ring into the collector chamber, thence over the lip of the receptacle into the surrounding tank.

By the provision of a guard ring according to this invention, spotting of the laundry due to straining the liquid through limited portions thereof during drying is practically eliminated. An additional advantage of the guard ring is its action in preventing the laundry from climbing during centrifugal extraction, this naturally keeping the center of gravity low.

Thus it will be seen that a receptacle is provided which is light but yet large and strong enough to carry a comparatively large amount of laundry and laundry liquid. The guard ring, together with the agitator, during washing holds the laundry effectively submerged. During drying the guard ring holds the laundry in such position that it is practically impossible for the laundry to become spotted due to a large portion of water being discharged through a very limited area of laundry. In addition, the laundry is kept from climbing, thereby keeping the center of gravity low and reducing the vibration due to uneven loading of the receptacle. The construction according to the invention washes laundry with maximum efficiency, the laundry, after washing and drying being practically free from scum and other impurities.

While certain novel features of the invention have been shown and described and are pointed out in the annexed claims, it will be understood that various omissions, substitutions and changes in the forms and details of the device illustrated and in its operation may be made by those skilled in the art without departing from the spirit of the invention as claimed.

What is claimed is:

1. In a laundry machine, an imperforate receptacle adapted to be rotated and having an annular side wall, a guard ring comprising a foraminous retaining portion extending from said wall inwardly and below the normal liquid level in said receptacle, and a foraminous guard portion extending upwardly from the inner edge of said retaining portion and ending in a hand ring.

2. In a laundry machine, a receptacle adapted to be rotated, a guard ring comprising a foraminous retaining portion disposed below the normal liquid level in said receptacle and a guard portion extending upwardly from the inner edge of said retaining portion.

3. In a laundry machine, an imperforate receptacle adapted to be rotated and having an annular side wall ending in a substantially even, upper edge, a guard ring comprising an annular hooked part disposed over the edge of said receptacle and a depending portion, a foraminous retaining portion extending from the lower edge of said depending portion inwardly and slightly upwardly, and a foraminous guard portion extending upwardly from the inner edge of said retaining portion and ending in a hand ring.

4. In combination, a receptacle sufficiently imperforate to hold laundry liquid and having an overflow level, means for rotatably mounting said receptacle, a guard ring below said level for holding laundry in said receptacle, and agitator devices disposed in said receptacle within said ring.

5. In a laundry machine, a receptacle, means for rotatably mounting said receptacle, means for maintaining a predetermined liquid level in said receptacle, a guard ring for holding laundry in said receptacle, said ring being disposed below said liquid level, and agitator devices for agitating said laundry during washing, said agitator devices being disposed within said ring and acting to assist said ring in keeping said laundry submerged during washing.

In testimony whereof I have hereunto set my hand.

GEORGE W. DUNHAM.