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LAUNDRY MACHINE HAVING ROCKABLE TUBS

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Fig. 1.

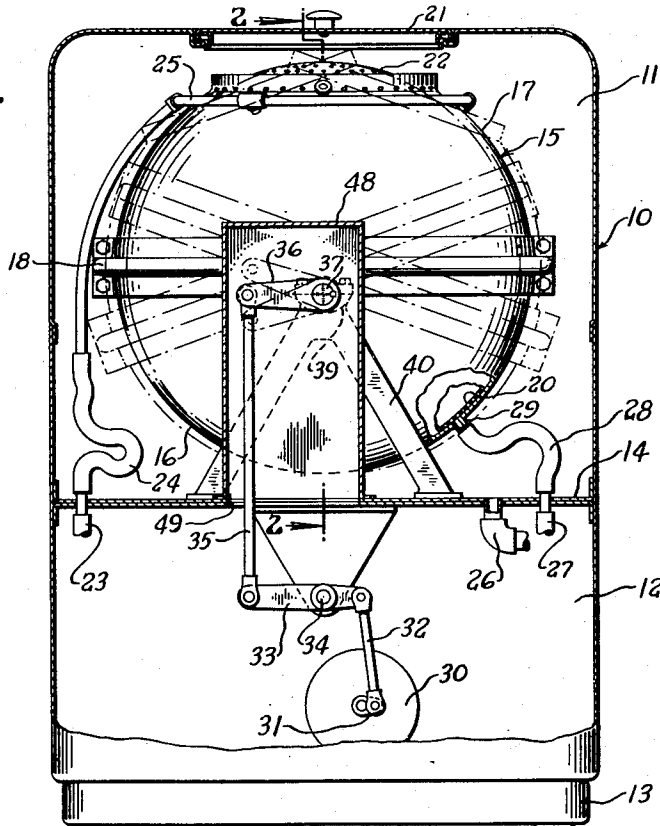
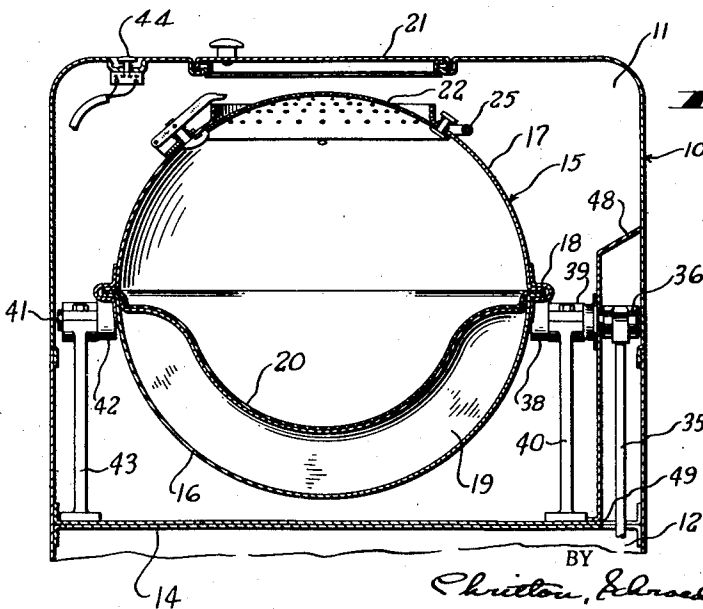


Fig. 2.



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LAUNDRY MACHINE HAVING ROCKABLE TUBS

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3 Claims. (Cl. 68—21)

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The present invention relates to a laundry machine, and more particularly to a novel tub construction, and the means for cleaning materials therein.

The present invention is particularly adapted for use with a laundry machine of the type disclosed in my co-pending application, Serial No. 637,964, filed Dec. 29, 1945, but may be used with laundry machines of other kinds and types.

An object of the invention is to provide a substantially spherical laundry tub and means for oscillating it about a horizontal axis. Another object is to provide an improved means for agitating the clothes and materials in the laundry tub.

Further objects will become apparent from the following detailed description taken in connection with the accompanying drawings illustrating a preferred form of the invention wherein Fig. 1 is a side elevational view of a laundry machine embodying my invention, including only a diagrammatic showing of part of the operating mechanism, and showing a portion of the outer casing in vertical section. Fig. 2 is a vertical sectional view of the upper part of the laundry machine taken at right angles to the plane of the view in Fig. 1.

While the invention is susceptible of embodiment in various forms, there is shown in the drawings, and herein described in detail, a preferred form, with the understanding that it is to be considered as an exemplification of the principles of the invention. The scope of the invention will be pointed out in the appended claims.

In the drawings there is shown a laundry machine casing 10 provided with an upper compartment 11 for the laundry machine tub and a lower compartment 12 for the operating mechanism. The casing is preferably provided with a base member 13 and a partition member 14 separating the compartments 11 and 12.

As shown herein, the laundry tub 15 is of spherical formation, comprising a lower section 16 and an upper section 17. These sections are formed with laterally extending flanges which are adapted to be locked together by means of a clamping ring 18. The lower section 16 is provided with an inwardly extending rib 19, and a flexible member 20 is arranged normally to fit against the inner surface of the lower tub section and snugly over the rib 19. This flexible member is preferably of rubber or other suitable material and its edge is secured between the flanges on the tub parts 16 and 17 and clamped therebetween by the ring 18. The casing 10 is pro-

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vided with a central opening in its top adapted to receive a cover 21. The tub is provided with a central opening in its upper portion adapted to register with the opening in the top of the casing, and an apertured closure 22 is mounted on the interior of the tub and adapted to be rotated to open and close this opening for the loading of the tub with materials to be cleaned.

The means for cleaning the materials in the tub is fully set forth in my above-mentioned co-pending application, Serial No. 637,964. Reference should be made to that application for a complete understanding of such apparatus. As shown herein, the tub is adapted to be filled with a cleaning or rinsing fluid by means of a fluid pipe 23 extending from the compartment 12 through the partition member 14 where it is connected to a flexible hose 24 which is suitably connected to a pipe 25 leading to openings in the tub to permit the flow of fluid therethrough. Means are also provided to flow pressure fluid to the lower part of the tub to raise the flexible member 20 to force the cleaning or rinsing fluid out of the tub and then press the materials against the upper section of the tub and the perforated cover to extract and squeeze out the fluid in such material. The fluid from the tub and material flows through the openings in the apertured cover 22 and down the side of the tub to the partition member 14 where it flows out through a drain opening 26. The means for conducting this pressure fluid to the lower part of the tub includes a pipe section 27 extending from the compartment 12 through an aperture in the partition 14 and which is connected to a flexible hose 28 which in turn is connected to a fitting 29 in a suitable opening in the bottom of the tub.

The tub is oscillated continuously during the cleaning operations and the rib 19 in the tub during such oscillation acts to agitate the material in the tub except when the flexible member forces the material to the top of the tub. The means for oscillating the tub comprises a speed reducer mechanism 30 suitably connected to a power means, such as an electric motor (not shown). On the shaft extending from this speed reducer is a crank arm 31, on the free end of which is mounted one end of a link 32, the other end of which is attached to one end of an arm 33 pivotally mounted adjacent such end on a shaft 34, the other end of the arm having loosely mounted thereon a link 35, the other end of which is connected to one end of a crank arm 36, the other end of which is fixed in any suitable manner to a shaft 37. The shaft 37 extends into

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and is fixed to a bracket 38 attached to the side of the tub 15 and below the equator thereof and adjacent said bracket this shaft is journaled for rotation in a bearing 39 mounted on an inverted V-shaped support member 40, the legs of which are suitably secured to the partition member 14. Directly opposite the shaft 37 and on the other side of the tub 15, is another shaft 41, the inner end of which is fixed in a bracket 42 on the side of the tub, the shaft 41 being rotatable in a bearing 43, the feet of which are also secured to the partition member 14.

It will be apparent that as the speed reducer shaft rotates, it will alternately raise and lower the link 32 and thereby oscillate the arm 33 about its pivot 34, which will in turn raise and lower the link 35 and thereby oscillate the shaft 37, which in turn will cause oscillation of the tub in the manner shown in dotted lines in Fig. 1.

A push button 44 controlling a switch in the main control circuit to the motor is located on the top of the tub and is pushed to start and stop the motor. It may also be intermittently pushed to make the tub "inch" around its axis to align the openings in the casing and tub to load and unload the tub.

In order to prevent leakage from the compartment 11 to compartment 12 around the link 35, there is provided a housing 48 mounted on the partition member 14 and enclosing three sides of the link 35 and the opening 49 in the partition member 14 through which the link extends. The side wall of the casing 10 adjacent the housing 48 comprises the fourth wall thereof.

I claim:

1. A laundry machine having in combination a casing having transverse partition providing a tub compartment thereabove and an operating mechanism compartment therebelow, a substantially spherical tub in said tub compartment for containing cleaning fluid and materials to be cleaned, said tub having a fluid discharge opening in its upper portion, an agitating rib in its lower portion and extending a substantial distance up its sides and a fluid extracting diaphragm having a portion overlying said rib, means for forcing said diaphragm upwardly to extract fluid from the tub through said opening, means for pivotally supporting said tub substantially on its horizontal axis, means for oscillating the tub, power means, means for connecting said power means with said oscillating means, and means housing a part of said connecting means, and providing a leak-proof compartment in said tub compartment and communicating with said operating mechanism compartment, said partition having an opening at one side, said housing means having leak-proof connection around the major portion of the edge of said opening and with the adjacent side of the casing.

2. A laundry machine comprising a casing having a transverse partition having an opening and dividing the interior of the casing into an upper tub compartment and an operating mechanism compartment therebelow, a substantially spherical tub in the tub compartment for containing cleaning fluid and material to be cleaned, an agitating rib extending across the bottom of the tub and upwardly at each end to adjacent the middle of the side of the tub, a support on each side of the tub mounted on the partition, a bracket

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fixed to the tub on each side thereof, each of said brackets having a trunnion pivotally connected to the upper end of the adjacent support, one of said trunnions having an extension projecting laterally beyond its support, an arm fixed to said extension, a link pivotally connected to said arm, a pivoted lever having one end attached to said link, another link pivotally connected to the other end of said lever, a crank arm pivotally connected to the opposite end of the last mentioned link, power means in the operating mechanism compartment for rotating said crank arm for rocking the tub about its horizontal axis, and means for preventing passage of cleaning fluid from the tub compartment to the operating mechanism compartment around said first mentioned link, said last mentioned means comprising a housing over said partition opening and extending upwardly therefrom, said first mentioned link passing through said opening from the lower compartment to the upper compartment and extending into said housing.

3. A laundry machine comprising a casing having a transverse partition dividing the interior of the casing into an upper tub compartment and an operating mechanism compartment therebelow, a substantially spherical tub in the tub compartment for containing cleaning liquid and material to be cleaned, an agitating rib in the bottom of the tub, supporting means mounted on the partition on each side of the tub, said tub being rockably connected with said supporting means, power means in the operating mechanism compartment, connecting linkage between the power means and the tub for rocking the tub, said partition having an opening through which part of said linkage movably extends, a housing fixed in leak-proof manner to edges of said opening and to the casing side and extending above the top of said linkage, said housing having a top cover and forming a leak-proof chamber to permit movement of part of said linkage therein and prevent leakage of liquid from the tub compartment through the partition into the operating mechanism compartment.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
821,850	Bierley	May 29, 1906
1,118,210	Mills	Nov. 24, 1914
1,122,969	Mattice	Dec. 29, 1914
1,168,028	Portsche	Jan. 11, 1916
1,200,619	Johnson	Oct. 10, 1916
1,531,674	Martin	Mar. 31, 1925
1,565,585	Nelson	Dec. 15, 1925
1,638,965	Sherbondy	Aug. 16, 1927
1,686,657	Getz	Oct. 9, 1928
1,758,594	Carroll	May 13, 1930
2,187,770	Chamberlin	Jan. 23, 1940
2,265,516	Chayle	Dec. 9, 1941
2,335,560	Crane	Nov. 30, 1943
2,354,208	Haberstump	July 25, 1944
2,396,105	Kirby	Mar. 5, 1946
2,407,660	Graham	Sept. 17, 1946

FOREIGN PATENTS

Number	Country	Date
648,293	Germany	July 28, 1937