

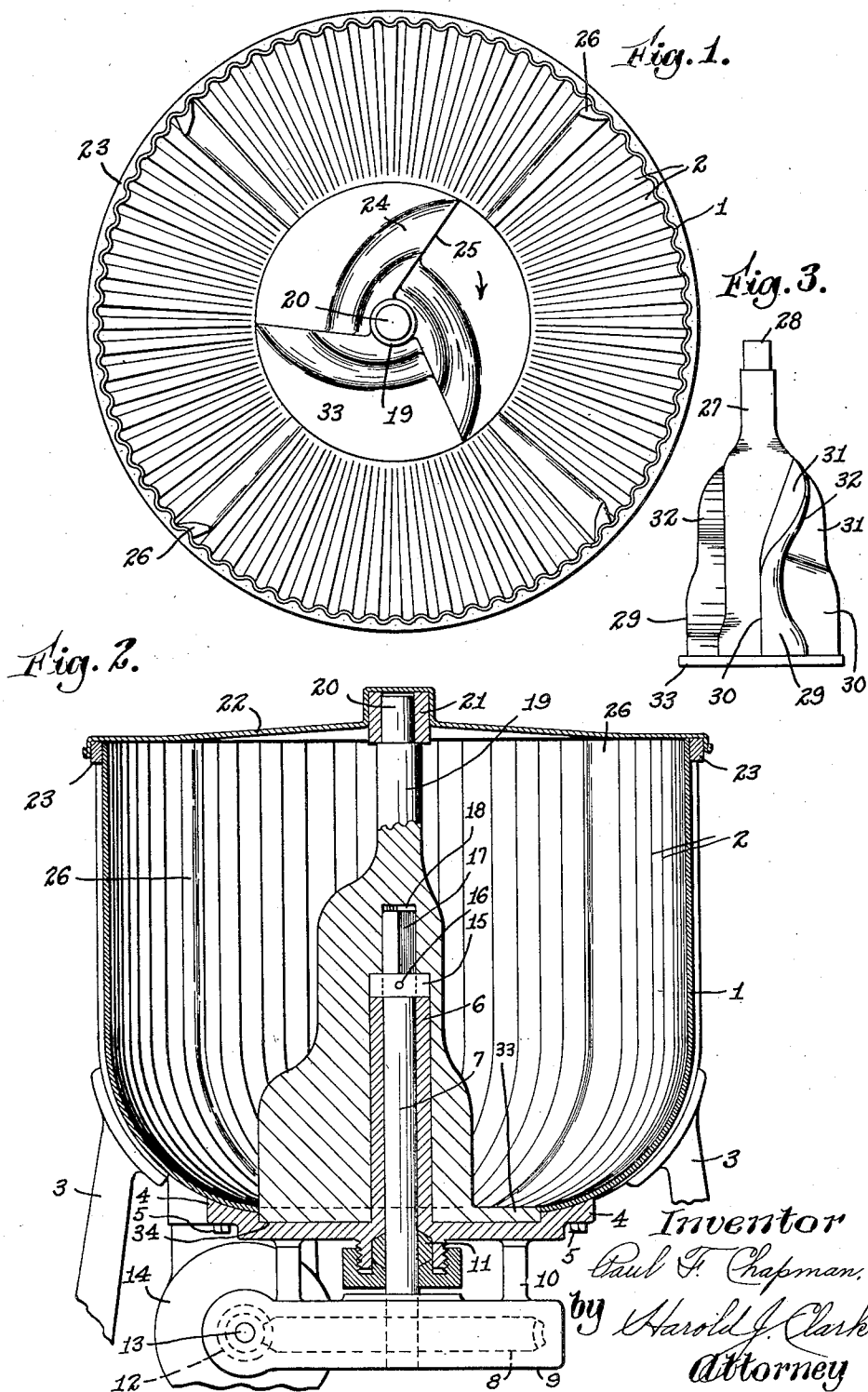
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CLOTHES WASHING MACHINE

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UNITED STATES PATENT OFFICE

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CLOTHES WASHING MACHINE

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My present invention relates to washing machines and more particularly to a novel and improved machine for use in the washing of clothes or other fabrics.

5 An important object of the present invention resides in the provision of a container or receptacle provided over substantially its entire internal surface with corrugations, whereby a scrubbing effect is imparted to
10 clothes washed therein.

Another object of the invention resides in the provision of a novel dolly having a plurality of tangentially projecting blades or fins, diminishing in diameter from bottom to
15 top, said fins being operative to agitate and tumble clothes or other fabrics placed within the receptacle to insure proper cleaning.

A still further object of the present invention resides in the provision of vanes projecting inwardly from the internal surface of
20 said receptacle, and preferably tangential thereto. The function of these vanes is to turn the clothes, at least partially, as the clothes are brought into engagement there-
25 with during actuation of the dolly, thus constantly presenting different surfaces of the clothes or other fabrics to the scrubbing action of the corrugated interior of the recep-
30 tacle.

A still further object of the invention resides in so constructing the fins or blades of my novel dolly that, when oscillated in one
35 direction said fins will have a direct push against said clothes, and when oscillated in a reverse direction will tend to turn said clothes and force the same downwardly, thus
40 resulting in a constant shifting of the clothes within the receptacle and a thorough washing thereof.

Other objects and features of the present invention reside in the particular construction and arrangement of parts thereof, and
45 all of the foregoing, together with other objects and features of the invention, details of construction, combinations of parts, and advantages, will be hereinafter more fully pointed out, described and claimed.

Referring to the drawing, illustrating a preferred embodiment of the present inven-
50 tion,

Fig. 1 is a top plan view of my novel clothes washing machine with the cover removed;

Fig. 2 is a vertical central sectional view with the cover in place; and

Fig. 3 is a side elevation of an alternative dolly.

Referring now to the drawing, for a particular description of the invention, its construction and operation, 1 designates a receptacle having a corrugated interior 2. These corrugations, as will be readily understood, may be of any shape or design, that shown herein being for illustrative purposes only. Said receptacle 1 is mounted on legs or supports 3, and has a plate or casting 4 fixed thereto by bolts 5 or in any other desired manner. The plate 4 has projecting vertically therefrom a sleeve 6 through which projects a vertical shaft 7 driven by a worm gear 8, said worm gear being supported in the housing 9 and said housing 9 being fixed to the plate 4 as at 10. A stuffing box 11 is provided to prevent leakage past the shaft 7. The worm gear 8 is driven by a worm 12 mounted on a shaft 13 and driven by the motor 14. The means of operating the vertical shaft 7 is illustrated in conventional form only, as this may be any of the standard operating means for either rotating or oscillating the shaft 7.

A collar 15 is pinned to the shaft 7 at 16, and rests on the top of the sleeve 6 as a support. The upper end of the drive shaft 7 is squared, as at 17, the squared end of said shaft being seated in the squared recess 18 in the dolly 19. The upper end of the dolly 19 is reduced in diameter as illustrated at 20, and has a bearing in a bushing 21 carried by the cover 22. The said cover 22 seats over the reinforcing collar 23 surrounding the upper open end of the receptacle 1 and having a corrugated inner bore to cooperate with the corrugations 2. The dolly 19 is provided with a plurality of tangentially projecting fins 24 having the vertical faces 25. Thus, assuming that a charge of clothes or other fabrics is inserted in the receptacle 1 and that the dolly 19 is rotated in the direction of the arrow illustrated in Fig. 1, the vertical faces 25 of the

fins 24 will tumble the clothes around the interior of the receptacle, agitating the same and turning the same to present new surfaces to the scrubbing effect of the internal corrugations 2. From a glance at the drawing it will be evident that the fins 24 diminish in size or diameter from the bottom upwardly, thus increasing the agitating efficiency of the dolly.

Projecting inwardly from the interior of the receptacle 1, and tangentially thereto, are a plurality of fixed vanes 26, in vertical register with the fins 24. Thus, as the dolly 19 is rotated, the clothes, actuated by the fins 24, will encounter the projecting vanes 26 and be turned, or partially turned thereby, this action also presenting new surfaces to the scrubbing effect of the corrugated interior 2.

Clothes subjected to a washing operation in my novel machine will thus be thoroughly cleansed in a minimum of time, because of the many cleaning, agitating, turning and scrubbing elements.

A machine of this type is extremely simple and economical to build, and yet is highly efficient in operation.

The sleeve 6 projects above the internal bottom of the receptacle 1 a distance preferably as great or greater than the normal height of the water or cleaning fluid carried by said receptacle, thus minimizing possibility of leakage.

In Fig. 3 I have illustrated an alternative form of dolly 27 having a reduced end 28 to engage the bushing 21 in the cover 22, and having the projecting fins 29. Each of these fins has a vertical face 30 and an inclined or rounded face 31, on one side thereof, and on the opposite side thereof is provided with an overhang 32, preferably arcuate in shape. Each of the dollies 19 and 27 is provided with a base 33 to seat within the recess 34 in the plate 4.

Now, assuming the dolly 27 to be substituted for the dolly 19, and a charge of clothes positioned within the receptacle 1. The movement of the dolly 27 will preferably be an oscillatory movement, rather than rotational. Thus, on oscillation to the left, Fig. 3, the vertical face 30 will have a pushing effect on the clothes in said receptacle, cooperating with the corrugated interior 2 and vanes 26 in the same manner as the fins 24. The inclined faces 31 will have a tendency to raise the clothes, increasing the agitation thereof. On oscillation in the opposite direction, or to the right, Fig. 3, the overhang 32 will turn said clothes and force the same downwardly, thus thoroughly tumbling the clothes during the washing action, and resulting in a complete washing and cleaning thereof. Either of the dollies 19 or 27 may be utilized in my novel machine with equal facility, being readily interchangeable.

I believe that the washing machine and

dolly illustrated in this application are novel and have therefore claimed the same broadly in the present application.

While I have necessarily described my present invention somewhat in detail, it will be appreciated that I may vary the size, shape and arrangement of parts within reasonably wide limits without departing from the spirit of the invention.

My invention is further described and defined in the form of claims as follows:

1. In a washing machine, a receptacle, a cover therefor, a power shaft extending upwardly into said receptacle from the bottom thereof and terminating at its upper end below the cover, a dolly removably mounted on the upper end portion of said shaft, the receptacle cover having a bearing, the upper end of the dolly having a journal formation received within said bearing when the cover is applied to the receptacle, whereby the upper end of the dolly is supported against lateral movement.

2. In a washing machine, a receptacle, a casting secured to and closing the bottom of said receptacle, a sleeve integral with said casting and extending upwardly into the receptacle, the upper face of said casting having a circular depression surrounding said sleeve, a stuffing box formation integral with said casting and extending downwardly therefrom, a power shaft extending upwardly through said stuffing box formation and through said sleeve, a packing nut threaded onto said stuffing box formation, a dolly mounted on said shaft within the receptacle and extending downwardly over said sleeve, and an annular formation on the bottom of said dolly closely fitting into the circular depression of the casting and having bearing contact against the walls defining the side and the bottom of the depression whereby the dolly is supported and guided and whereby the power shaft is relieved of lateral thrusts imposed on the dolly.

3. In a washing machine, a receptacle, a cover therefor, a drive shaft extending upwardly into the receptacle from the bottom thereof and terminating below the cover, the receptacle having a circular depression at its bottom surrounding the shaft, the cover having a bearing, a dolly removably mounted on the upper end portion of said shaft, an annular formation on the bottom of said dolly seated in said depression and having bearing contact with the walls defining the side and the bottom thereof, the upper end portion of the dolly having a journal formation received within the bearing of the cover when the cover is applied to the receptacle.

In testimony whereof, I have signed my name to this specification.

PAUL F. CHAPMAN.