

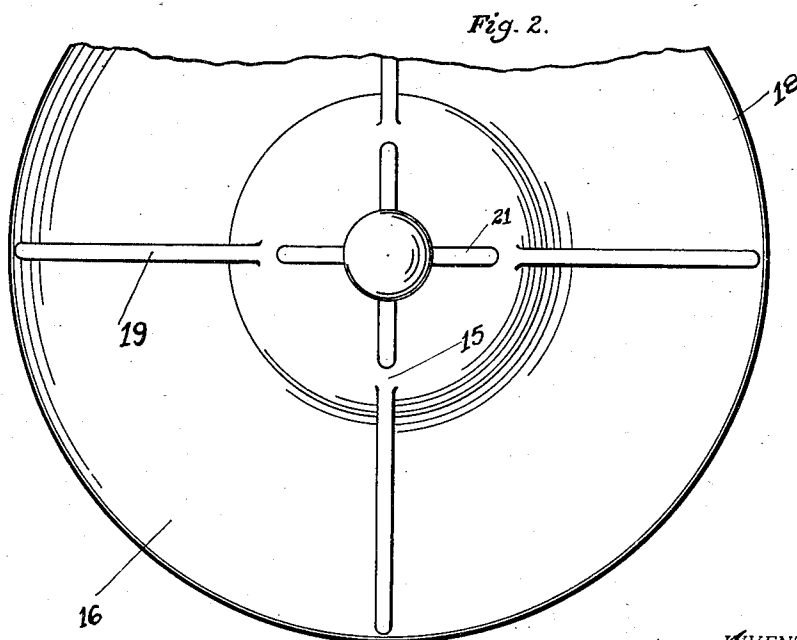
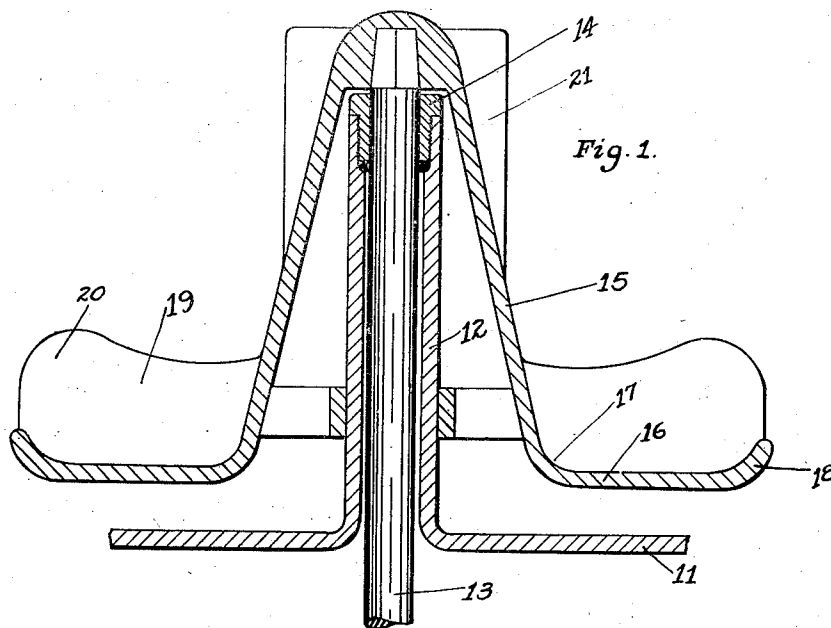
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T. SIMMONS

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WASHING MACHINE AGITATOR

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INVENTOR.
Theodore Simmons

UNITED STATES PATENT OFFICE

THEODORE SIMMONS, OF MOUNT VERNON, NEW YORK, ASSIGNOR TO ALTORFER BROTHERS COMPANY, OF EAST PEORIA, ILLINOIS, A CORPORATION OF ILLINOIS

WASHING-MACHINE AGITATOR

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My invention relates to washing machines and more particularly to clothes washing machines wherein the clothes and water are subjected to agitating action.

5 One object of my invention is to provide means for agitating the clothes and water whereby a free circulation of the clothes is obtained and the tendency to "ball" or tangle is eliminated.

10 Another object of my invention is to provide a centrally disposed oscillating agitator with means for preventing the clothes from concentrating in the center of the machine about the agitator.

15 A still further object of my invention is to provide an agitator that will cause the clothes to circulate in the body of liquid about two non-intersecting axes.

20 In washing machines of the type having a centrally located inverted dolly or agitator, the clothes become entangled about the agitator and tend to "ball" and tangle thereby greatly impairing the efficiency of the washing operation and injuring the fabric of the clothes.

25 Several attempts have been made to remedy this difficulty with more or less indifferent success. In the more successful attempts the remedy has had the drawback of increasing the size and weight of the agitator and increasing the difficulty of manufacture or assembly.

30 In my improved construction I propose to provide an agitator having a downwardly extending conical wall which is joined to a flat bottom portion by means of a curved section, with a plurality of sets of ribs. The sets of ribs comprise one set extending radially from the side wall along the bottom of the agitator and a second set extending from the apex of the cone vertically along the side wall. The outer ends of the radial ribs are of larger area and greater height than the inner ends thereof. The vertical ribs are of greater width at their upper ends than at the lower ends thereof. It will be noted that the radial ribs terminate at a point about half way between the apex of the cone and the bottom thereof and that the vertical ribs are in vertical alignment with the radial ribs.

The driving member for the agitator is secured thereto at the apex of the cone. This is preferably an oscillatory shaft.

By this construction of agitator I not only accomplish the improved washing action desired but also reduce the number of parts thereby reducing the wear on the clothes as well as securing an agitator that is lighter in weight and easier to manufacture.

Referring to the drawings,

Figure 1 is a vertical section of my improved agitator and a portion of the tub in which the same is mounted, and,

Fig. 2 is a top plan view of my improved agitator.

65 Referring to the drawings, 11 is a portion of the tub of a washing machine which is representative of any of the well known types of washing machines. The tub 11 has a centrally located, upstanding tubular post 12 through which extends a shaft 13. The shaft is adapted to be oscillated from any suitable power means and train of mechanism such as the well known electric motor, sector and gear arrangement. At the upper end of the post 12 is a bearing 14. The shaft 13 extends above the top of the post 12 and has secured thereto the apex of a cone 15 that comprises the side wall of the agitator. The agitator also has a bottom portion 16 to which the side walls 15 are joined by a curved portion 17. The upper end of the bottom portion 16 may terminate in an upturned lip 18 as indicated or this upturned lip 18 may be omitted.

The conical structure is not essential, but is preferable.

The bottom portion 16 is provided with a plurality of upright, narrow vertical ribs or veins 19 that extend from the side wall 15 radially to the upper edge of the bottom portion 16. Each vertical rib is constructed with an enlarged outer end 20 that is of greater height than the other portions of the rib 19. The agitator is also provided with a set of vertical ribs 21 that extend downwardly from the apex of the cone 15 and radially from the side wall. The ribs 21 are of greater width at their upper ends than at their lower ends.

The lower ends of the vertical ribs 21 terminate in

minate at a point above the radial ribs 19. The vertical ribs are independent of the radial ribs in both physical structure and in washing action. However, it will be noted that the vertical ribs are in vertical alignment with the radial ribs.

In the washing action, the radial ribs will impart an upward movement and a back and forth movement which will result in progressive movement of the body of the clothes about the vertical axes of the agitator, which washing action is insufficient and inefficient of itself.

The tendency of the clothes will be to snarl around the center post. By the addition of the vertical ribs, independent of but in vertical alignment with the radial ribs, the clothes have simultaneously imparted thereto a beating and washing action away from the center of the tub and from the agitator so that the whole body of clothes is maintained in free agitation and circulation in the body of liquid. By properly proportioning the vertical ribs with respect to the radial ribs, a circulation of the clothes can be secured around a horizontal axis. By placing the vertical ribs in vertical alignment with the radial ribs, the number of vertical ribs necessary to efficient operation is reduced and the effectiveness thereof to prevent snarling about the agitator is increased.

Modifications may be made in the arrangement and location of parts within the spirit and scope of my invention and such modifications are intended to be covered by the appended claims.

I claim:

1. In a washing machine the combination with a container of an agitator supported within said container and having a conical wall, a bottom portion and an outwardly curved connection therebetween, ribs extending radially along said bottom, ribs extending vertically along said wall and spaced vertically from said radial ribs, the width of said vertical ribs decreasing from the top thereof downwardly.

2. In a washing machine the combination with a container, a tubular post mounted therein, and a movable shaft extending through said post, of an agitator mounted on said shaft having a downwardly extending conical wall, a bottom portion, an outwardly curved connection between said wall and said bottom, ribs extending radially along said bottom, and vertical ribs extending along said wall and spaced vertically from said radial ribs, said radial and vertical ribs being of greater area at their respective outer ends than at the inner ends thereof.

3. In a washing machine the combination with a tub, an oscillatable shaft mounted therein and a tubular post surrounding said shaft, of an agitator mounted on said shaft and comprising an inclined side wall, a bot-

tom portion cooperating therewith, ribs extending radially along said bottom portion, additional ribs extending vertically along said side wall in vertical alignment with and independent of said radial ribs, and a bearing for said agitator mounted near the bottom thereof and engaging said post.

4. In a washing machine the combination with a tub, and an oscillatable shaft mounted therein, of an agitator mounted on said shaft and comprising an inclined side wall, a bottom portion cooperating therewith, ribs extending radially along said bottom portion and ribs extending vertically along said side wall in vertical alignment with and independent of said radial ribs.

5. In a washing machine, the combination with a container, of an agitator supported immediately above the bottom thereof and having an inclined vertically extending wall, a bottom portion cooperating therewith, ribs extending radially along said bottom, the outer ends thereof being of larger area than the immediately adjacent portion thereof, ribs extending vertically along said inclined wall and spaced vertically from said radial ribs, the outer ends of said vertical ribs being of larger area than the immediately adjacent portion thereof.

In testimony whereof I affix my signature.
THEODORE SIMMONS.

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