

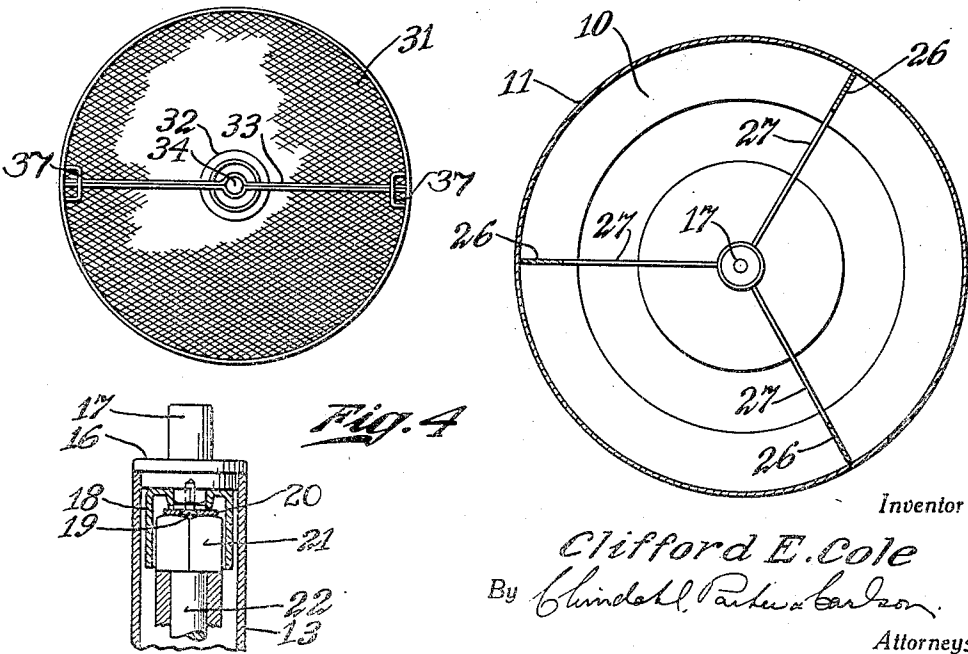
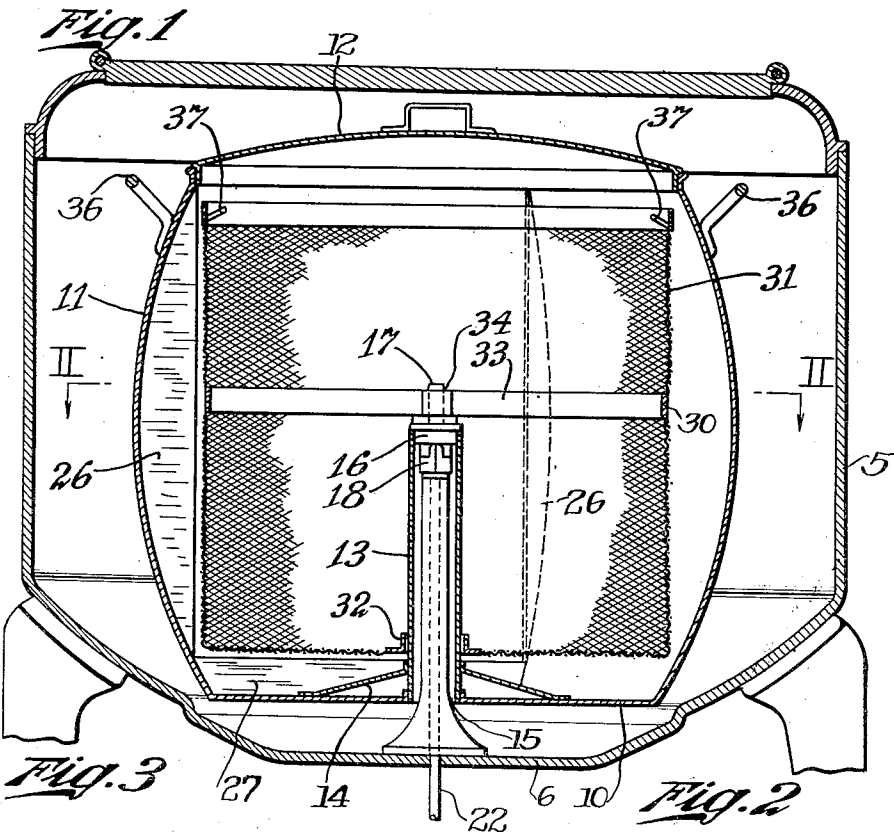
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DISHWASHING ATTACHMENT

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DISHWASHING ATTACHMENT

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My invention relates generally to dishwashers and more particularly to a dishwashing attachment for a washing machine of the type having a dolly or agitator disposed in the tub and arranged for oscillation about a vertical axis by a shaft projecting up through the bottom of the tube.

A distinction has sometimes been made between a dolly and an agitator but as used herein the word "agitator" is intended to signify broadly the movable element adapted to accomplish the washing whether said element acts directly to produce circulation of the water or stirs the clothes around in the water.

The general object of my invention is to provide a novel dish-washing attachment for a washing machine of the above general character, said attachment being adapted to be removably supported within the tub and driven by the oscillatory agitator mechanism.

Another object is to provide a dish-washing attachment adapted to be driven from and entirely supported by the oscillatory mechanism of the agitator type washing machine.

A further object is to provide a dish-washing attachment for a washing machine in which the basket supporting the dishes remains relatively stationary due to its inertia, and which has new and improved means for effecting a strong and turbulent circulation of the water relative to the dishes.

Other objects and advantages will become apparent from the following description taken in connection with the accompanying drawing, in which:

Figure 1 is a vertical sectional view of a washing machine of the agitator type equipped with a dish-washing attachment embodying the features of the present invention.

Fig. 2 is a sectional view of the water receptacle of the dish washer taken along the line II—II of Fig. 1.

Fig. 3 is a plan view of the dish-supporting basket.

Fig. 4 is an enlarged fragmentary view in section of the driving connection between

the dish-washing attachment and a part of the agitator mechanism.

While the invention is susceptible of various modifications and alternative constructions, I have shown in the drawing and will herein describe in detail the preferred embodiment, but it is to be understood that I do not thereby intend to limit the invention to the specific form disclosed, but intend to cover all modifications and alternative constructions falling within the spirit and scope of the invention as expressed in the appended claims.

In Fig. 1 there is illustrated a washing machine of the agitator type having a tub with a side wall 5 and a bottom 6. Machines of this type usually have a dolly or agitator (not shown) removably mounted on a shaft 22 projecting upwardly from the bottom of the tub and arranged to be oscillated by power driven means located beneath the tub. To form a driving connection with the agitator, the shaft 22 is ordinarily formed with a squared upper end 21.

The unitary dish-washing attachment constituting the present invention is constructed to be removably mounted within the tub of the washing machine and comprises generally a water-containing receptacle and a dish-supporting receptacle, one of which receptacles is oscillated relative to the other by power derived from the oscillatory agitator mechanism, and means operable in the relative movement between the receptacles to produce motion of the water relative to the dishes.

In the present instance, the water receptacle is formed with a substantially flat bottom 10 and a peripheral side wall 11, which, for a purpose to be later described, bulges outwardly so as to form an inner surface the upper and lower portions of which converge toward its center. The open end of the receptacle is adapted to be closed by a removable cover 12. Rigidly attached to and projecting upwardly from the bottom 10 is a sleeve 13 enclosing a central opening 15 in the bottom wall 10 and adapted to receive the shaft 22 in the act of placing the water receptacle in the tub.

To form a driving connection between the sleeve 13 and the squared upper end 21 of the shaft 22, the sleeve is, in the present embodiment, closed by a head 16 rigidly secured to the sleeve 13 as by welding. A cup-shaped member 18 is attached to the under side of the head 16 as by means of a screw 19 and provides a downwardly-opening squared socket fitting over the upper end 21 of the shaft 22 and coacting therewith to prevent relative rotation between the sleeve and shaft at the same time permitting removal of the water-receptacle simply by lifting the same off from the shaft. The sleeve 13 is held in the receptacle in a truly concentric position relative to the water receptacle by means such as a conical brace 14. Handles 36 are provided so that the attachment may be readily lifted from the washing machine.

A plate 20 provides a downwardly-facing surface within the cup-shaped member 18, which rests upon the upper end surface of the shaft 22. Thus, the entire weight of the water-receptacle is sustained by the shaft.

Herein the receptacle for carrying the dishes to be washed is in the form of a cylindrically-shaped basket 31 constructed of any foraminous material, such as wire netting. The basket is mounted within the water-receptacle in a manner such that it will remain relatively stationary during oscillation of the water-receptacle by reason of its inertia. To this end, a circular reinforcing hoop 30 is secured to the side wall of the basket and fastened to opposite ends of a bar 33 extending diametrically across the basket at approximately its vertical midpoint. As shown in Figs. 1 and 3, the bar 33 is formed at its center with an eye 34 which fits loosely over a projection 17 rigid with and extending upwardly from the head 16. Thus, the under surface of the bar rests upon the top of the head 16 which forms a supporting surface permitting of relative rotation between the basket and the water-receptacle. To provide lateral support for the basket, the bottom thereof is apertured to receive the sleeve 13 and is fitted with a collar 32 in which the sleeve is journaled.

Upon oscillation of the water-receptacle, the basket 31 remains relatively stationary due to the fact that its inertia and that of the dishes supported thereby is too great to be overcome by the frictional force between the bearing surfaces of the sleeve and basket tending to move the basket during oscillation of the water-receptacle. Two handles 37 are placed conveniently near the top of the basket 31 so that it may be lifted out of the water-receptacle without removing the latter from the washing machine.

The means above mentioned for producing a strong and turbulent motion of the water in the receptacle relative to the dishes in the basket 31 comprises one or more surfaces

projecting inwardly from the inner surface of the receptacle and so disposed that they will move broadwise through the body of water during oscillation of the receptacle. In the present instance, two classes of surfaces are provided, one extending vertically and the other horizontally. The vertically extending surfaces are formed by radial vanes 26 rigidly attached to the side wall 11 and projecting inwardly therefrom, terminating along a vertical line closely adjacent to the side wall of the basket. As these vanes are moved broadwise through the water, the water is agitated and a strong current is induced through the basket and around the dishes. The water also tends to move upwardly and downwardly along the vanes 26 and is diverted inwardly by the upper and lower portions of the concave surface of the receptacle thereby causing circulation in a vertical direction.

The horizontally disposed surfaces above referred to are provided by vanes 27 rigidly attached to the bottom 10 of the water-receptacle and project upwardly therefrom to a line closely adjacent the bottom of the basket. Upon oscillation of the vanes broadwise through the water, a still further upward circulation is induced which combined with action of the vanes 26 produces an extremely efficient washing action while the dishes remain relatively stationary.

In the operation of washing dishes with the attachment thus provided, the water-receptacle is lowered into the tub of the washing machine with the sleeve 13 receiving the shaft 22 which thereby becomes automatically connected to the squared end 21 of the shaft 22. The basket 31 is then placed in the water-receptacle with the collar 32 fitting around the sleeve 13 and the eye 34 of the bar 33 positioned on the projection 17. After this the dishes to be washed may be stacked in the basket and water or washing solution placed in the receptacle in an amount substantially covering the dishes. The power means for driving the agitator shaft 22 is then started and oscillation of the water-receptacle continued until the dishes are sufficiently cleansed. During the oscillation, the basket 31 remains relatively stationary due to its inertia and the vanes 26 and 27, sweeping through the body of water act in conjunction with the inner surface of the receptacle to induce a strong circulation of the water upwardly and inwardly through the basket and over the surfaces of the dishes contained therein.

After the dishes are washed and the power means shut off, the basket 31 and the dishes contained therein may be removed from the water receptacle which is later removed and emptied.

I claim as my invention:

1. The combination with a washing ma-

chine of the agitator type having a tub and an oscillatory agitator shaft projecting up from the bottom of the tub; of a unitary dish-washing attachment removably mounted within the tub, said attachment comprising a water receptacle with a central sleeve projecting up from the bottom thereof and fitting over said shaft to form a driving connection therewith, a dish supporting basket having a rigid cross member rotatably received on said sleeve and resting upon a horizontal bearing surface on said sleeve, and means at the bottom of said basket surrounding said sleeve to provide lateral support for said basket.

2. The combination with a washing machine of the agitator type having a tub and an oscillatory agitator shaft projecting up from the bottom of the tub; of a unitary dish-washing attachment removably mounted within the tub, said attachment comprising a water receptacle, a central sleeve rigid with and projecting upwardly from the bottom of the receptacle, said sleeve being open at its lower end and fitting over said shaft in the act of placing the receptacle in said tub, means providing a driving connection be-

tween said sleeve and the upper end of said shaft, and a dish-supporting basket within said receptacle rotatably supported by the upper end of said sleeve and adapted to remain relatively stationary during oscillation of said shaft.

3. The combination with a washing machine of the agitator type having a tub and an oscillatory agitator shaft projecting up from the bottom of the tub; of a unitary dish-washing attachment supported within the tub and readily removable therefrom, said attachment comprising a water receptacle with concave inner side surfaces, said receptacle having a driving connection with said shaft, a basket for the dishes rotatably mounted within said receptacle and adapted to remain relatively stationary during the oscillation of said receptacle, and vanes rigid with the bottom and side surfaces of said receptacle and adapted in conjunction with the side surfaces to produce circulation of the water upwardly and inwardly through the basket.

In testimony whereof, I have hereunto affixed my signature.

CLIFFORD E. COLE.

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