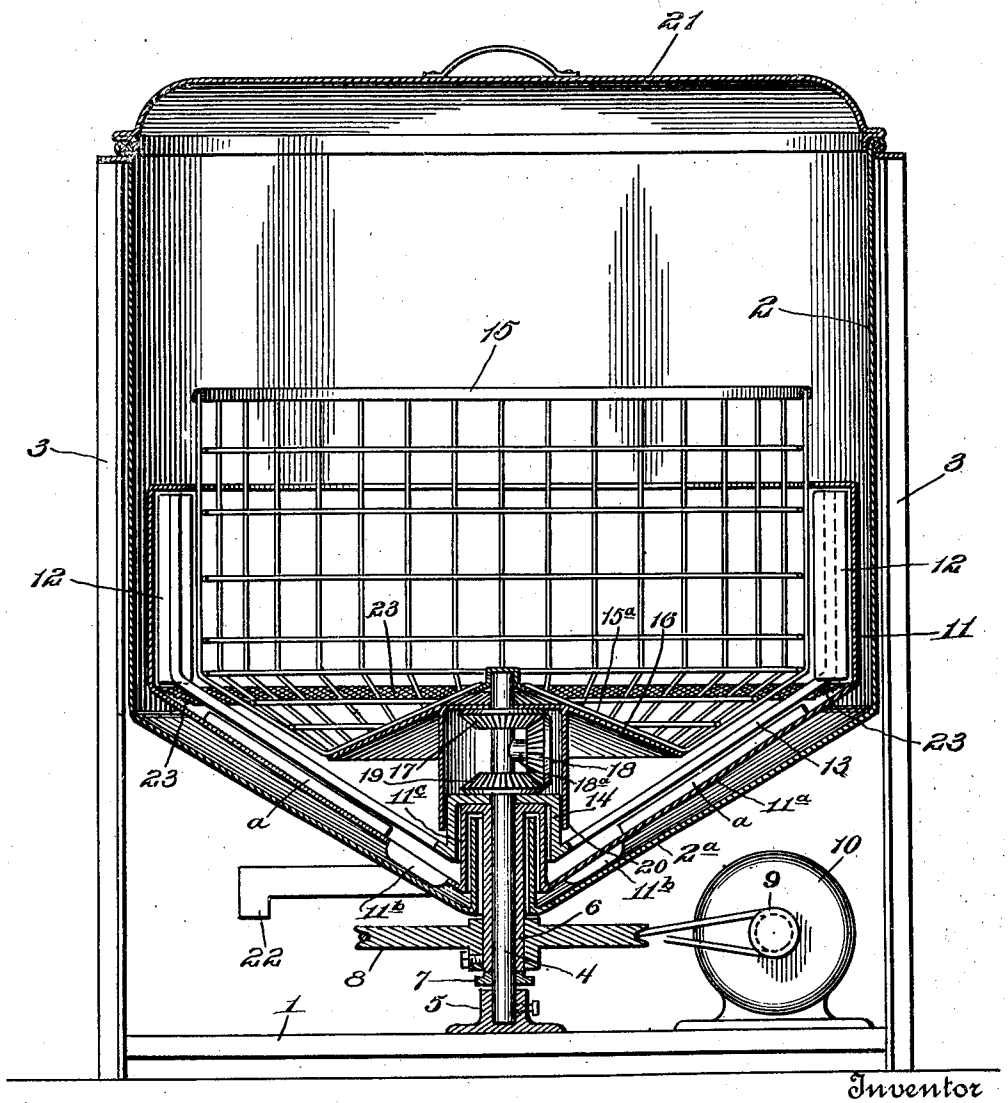
May 4, 1926. 1,583,236

W. U. MURRISH

DISHWASHING MACHINE

Filed Dec. 20, 1919 2 Sheets-Sheet 1

Fig. 1.



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Fig. 2.

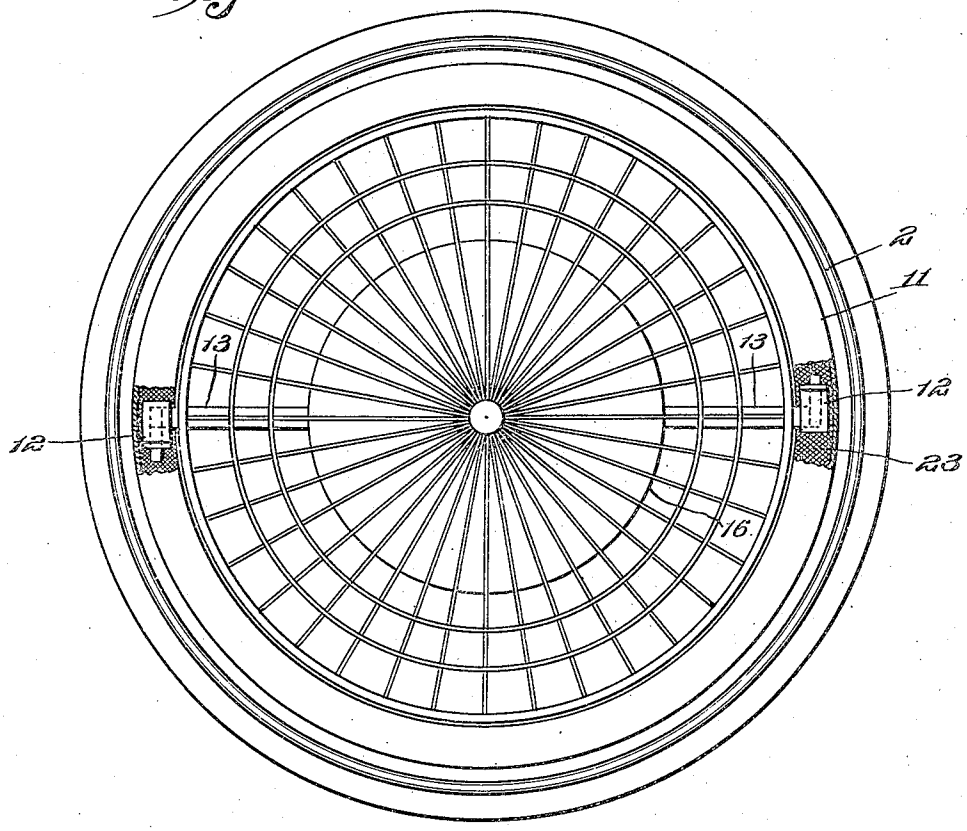
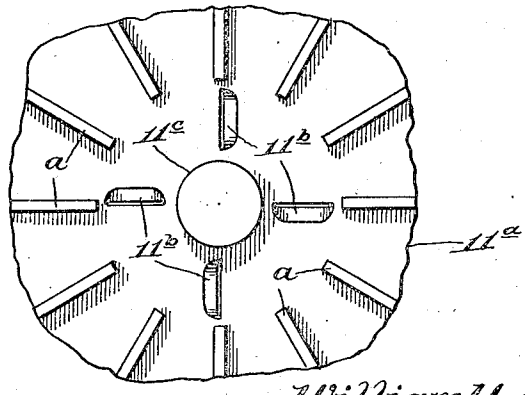


Fig. 3.



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UNITED STATES PATENT OFFICE.

WILLIAM U. MURRISH, OF DENVER, COLORADO.

DISHWASHING MACHINE.

Application filed December 20, 1919. Serial No. 346,332.

To all whom it may concern:

Be it known that I, WILLIAM U. MURRISH, a citizen of the United States, residing in Denver, Colorado, have invented certain new and useful Improvements in Dishwashing Machines, of which the following is a specification.

My present invention relates to improvements in dish washing machines and aims to provide a simple form of apparatus which may be economically manufactured and which which will subject the dishes to washing jets or streams of water delivered from or at constantly changing positions or angles and one wherein solid matter washed from the dishes is separated or screened from the water, the construction being such that the screening member is automatically flushed when the machine is brought to a standstill.

A further object is to provide self centering means for the dish basket whereby interferences between the dish basket and the rotating parts of the machine is prevented.

With these and other objects in view the invention includes the novel features of construction and arrangement and combination of parts hereinafter described and defined by the appended claims.

An embodiment of my invention is illustrated in the accompanying drawing in which—

Figure 1 is a transverse vertical section;
Figure 2 is a plan view, and
Figure 3 is a detail view.

Referring by reference characters to this drawing the numeral 1 designates a suitable base or platform upon which the washing machine parts are supported. These comprise an outer water containing tub 2 having a conical or tapered lower end indicated at 2^a which tub is preferably supported by the upright members 3, such members being conveniently extended below the platform or base to form legs therefor.

A vertical stationary post 4, secured in any suitable manner to the platform as for example by the socket plate 5, projects upwardly through the bottom of the tub and around the post is located a rotatable sleeve 6 supported at its lower end by bearing collar 7, the sleeve being designed to be rotated by any suitable means as for example by providing it with a belt pulley 8 driven thru belt pulley 9 from a prime mover such as an electric motor indicated conventionally at 10.

Revolubly supported from the sleeve is an inner revolving receptacle 11 of approximately the same shape as the outer receptacle but of less height, as shown, the conical or tapered lower portion 11^a of the receptacle 11 being secured to the portion of the sleeve 6 marked 11^c in any suitable manner.

This conical bottom portion is provided with a plurality of annularly arranged scoops 11^b, preferably arranged adjacent the sleeve 6. The scoops 11^b are preferably formed by punching holes in the bottom of the receptacle 11 and forcing tongues of metal out in the form of the scoops 11^b. If the scoops are otherwise formed, such perforations will also be otherwise formed. But, however, the scoops are made, perforations, preferably adjacent the bottom of the conical receptacle 11 will be formed.

As the inner receptacle is rotated water is drawn from the outer container by the scoops, the water passing into the inner container and being thrown by centrifugal action outward until it rises up against the inner face of the cylindrical wall 11. This lifting action may be facilitated by providing the inclined wall 11^a with ribs or baffles *a*.

Adjacent this cylindrical wall are located one or more inclined blades 12 or water deflecting means (two being shown as a convenient number, diametrically arranged) which are supported by arms 13 carried by a thimble 14. Such blades are inclined to the axis of rotation of the receptacle 11 as shown particularly in Figure 2. This thimble is mounted for free rotation about the shaft which projects therethrough, and said thimble is also freely rotatable relative to the hub 11^c of the receptacle 11, upon the upper end of which the thimble bears and by which it is supported.

The dishes to be washed are designed to be supported in any suitable manner as for example by removable racks (not shown) within an openwork or wire basket 15 which has a conical bottom portion 15^a designed to removably rest upon a conical basket supporting platform 16 which is rotatably mounted on the upper end of the post 4.

Some such means as the conical portions 15^a and 16 must be provided to center basket 15 to prevent contacting with the rapidly revolving receptacle.

Platform 16 carries a bevel gear 17 which meshes with an idle pinion 18 journaled on a stub shaft 18^a carried by the post 4, this

pinion 18 meshing with a gear 19 fast on the upper end of thimble 14.

The platform 16 may be provided with a depending skirt 20 to form a casing for the gears. A drain pipe is provided as indicated at 22 for drawing off the water after the washing operation is complete.

A suitable cover is provided for the outer receptacle as indicated at 21. A screen 23, preferably of copper, may be provided to intercept particles of food washed from the dishes. Screen 23 is secured to and revolves with receptacle 11. The function of this screen is to separate from the water solid matter washed from the dishes. This screen 23 will be automatically flushed and washed clean when the machine is stopped, since any particles adhering thereto will be washed off by water returning from the vertical part of receptacle 11 as the machine slows down to stop.

From the foregoing description it is believed the operation of my improved washing machine will be obvious, but it may be briefly stated as follows:—

The requisite amount of water having been placed in the tank or receptacle 2 and the dishes in the basket in the manner hereinbefore indicated, the motor is started which revolves the receptacle or rotor 11.

This causes water to be drawn by the scoops 11^b into the rotor when it is at once thrown out by centrifugal action, rising up against the cylindrical sides of the rotor in the form of a film or layer which revolves with the rotor. This revolving film of water strikes the inclined blades or deflectors 12 and is deflected thereby towards the center of the basket and against and among the dishes therein. Simultaneously the impact of the water against the blades 12 causes the latter to be revolved, rotating gear 19 and through idle gear 18 and gear ring 17 effecting the rotation of the platform and basket supported thereby, in a reverse direction, which constantly presents the dishes in varying positions to the action of the water streams or sprays coming from the deflector blades.

It will be understood that minor changes in construction, combination and arrangement of parts may be made without departing from the spirit and scope of the invention as claimed.

Having thus described my invention what I claim is:

1. A washing machine comprising a stationary water receptacle, a second receptacle rotatably mounted therein with means for operating it, said second receptacle having imperforate side walls and water passages at the bottom for admitting water thereto, a basket supported within said receptacle and inclined deflector means arranged between said second receptacle and said basket.

2. A washing machine comprising a stationary water receptacle, a second receptacle rotatably mounted therein with means for operating it, said second receptacle having water passages for admitting water thereto, a basket rotatably supported within said receptacle and deflector means arranged between said second receptacle and said basket, and means for rotatably supporting said deflector means.

3. A washing machine comprising a stationary water receptacle, a second receptacle rotatably mounted therein with means for operating it, said second receptacle having water passages for admitting water thereto, a basket supported within said receptacle, deflector means mounted to freely revolve between said second receptacle and said basket, and gearing interposed between said deflector means and said basket whereby revolution of the deflector means in one direction causes the basket to rotate in the opposite direction.

4. In combination an outer receptacle having a conical bottom, an inner receptacle having a conical bottom provided with water scoops near the lower part thereof, means for rotating said inner receptacle, one or more inclined deflector blades located in proximity to the wall of said inner receptacle, means for revolubly supporting said blades, a basket support within said inner receptacle, and means whereby rotation of the deflector blades in one direction effects rotation of the basket support in the opposite direction, and a basket carried by said support.

5. In combination an outer receptacle having a post projecting upward thru its bottom, a sleeve journaled on said post, means for rotating said sleeve, an inner receptacle supported from said sleeve and having water scoops, a thimble rotatably carried by said post above the bottom of said inner receptacle, one or more arms carried by said thimble, one or more deflector blades carried by said arms adjacent the walls of the inner receptacle, a gear carried by said thimble, an idle gear journaled on the post and meshing with said gear, a basket support rotatably supported by the post, a gear carried by said basket support meshing with said idle gear, and a basket supported upon said basket support.

6. A washing machine comprising a stationary water receptacle, a second receptacle rotatably mounted therein with means for operating it, said second receptacle having water passages in its lower part for admitting water thereto, a basket rotatably supported within said receptacle, water deflecting means arranged between said second receptacle and said basket with means for rotating said deflector means, and a screen interposed between said second receptacle

and basket for intercepting solid particles or materials.

7. A dish washing machine comprising a water receptacle, a dish enclosing means rotatably mounted therein, with means for operating it, said dish enclosing means provided with projections adapted to draw water from the stationary water receptacle, and provided with deflectors adapted to withdraw liquid from said dish enclosing means and to direct it inwardly against the dishes therein enclosed.

8. A dish washing machine comprising a water receptacle, a dish enclosing means rotatably mounted therein, with means for operating it, said dish enclosing means provided with projections adapted, in response to its rotation to draw water from the stationary water receptacle, and provided with deflectors adapted to withdraw liquid from said dish enclosing means and to direct it inwardly against the dishes therein enclosed.

9. A dish washing machine comprising a water receptacle, a dish enclosing means mounted therein, and means for supporting dishes therein, means for operating the first mentioned means, means on said dish enclosing means for drawing water from the receptacle in response to rotation of said dish enclosing means, and means for deflecting water from said dish enclosing means and for directing said water upwardly and inwardly against the dishes therein enclosed in response to said rotation.

10. A dish washing machine comprising a water receptacle, a dish enclosing means mounted therein, and means for supporting dishes therein, means for operating it, means on said dish enclosing means for drawing water from the receptacle in response to rotation of said dish enclosing means, and means for directing said water upwardly and inwardly against the dishes therein enclosed in response to said rotation, comprising water deflecting means rotatably mounted within said dish enclosing means.

11. A dish washing machine comprising a water receptacle, a dish enclosing means mounted therein, and means for supporting dishes therein, means for operating it, means on said dish enclosing means for drawing water from the receptacle in response to rotation of said dish enclosing means, and means for directing said water upwardly and inwardly against the dishes therein enclosed in response to said rotation, means for rotating the dishes in contrary direction to the rotation of the dish enclosing member.

12. A dish washing machine comprising a water receptacle, a dish enclosing means mounted therein, and means for supporting dishes therein, means for operating it, means on said dish enclosing means for drawing water from the receptacle in response to rotation of said dish enclosing means, and means for directing said water upwardly and inwardly against the dishes therein enclosed in response to said rotation, comprising water deflecting means rotatably mounted within said dish enclosing means, and means for rotating the dishes in contrary direction to the rotation of the dish enclosing member.

13. A dish washing machine comprising a receptacle, means for supporting dishes mounted therein, means for raising and projecting liquid against said dishes, and means comprising a screening member for separating solid particles from the liquid while being raised but before projection against the dishes.

14. A dish washing machine comprising a receptacle, means for supporting dishes mounted therein, rotating means for raising liquid from the receptacle, a screen carried by said rotating means, deflecting means for directing said liquid from said rotating means toward said dish supporting means, the screen adapted to separate solid matter from the liquid, and located in position to separate solid particles from the liquid while being raised but before projection against the dishes.

15. A dish washing machine comprising a receptacle, means for supporting dishes mounted therein, rotating means for raising liquid from the receptacle, a screen carried by said rotating means, and deflecting means for directing liquid from said rotating means toward said dish supporting means.

16. In a dish washing machine, the combination with a vessel containing a cleansing fluid, of means to support the dishes in the vessel above the fluid, a support rotatable about a vertical axis, a deflecting apron carried by said support, means co-operating with said deflecting apron to project the cleansing fluid upwardly against the dishes, and a screen arranged to separate the solid insoluble matter from the cleansing fluid which is thrown upwardly.

17. In a dish washing machine, the combination with a vessel containing a cleansing fluid, of means to support dishes in the vessel above the fluid, a support rotatable about a vertical axis, a deflecting apron carried by said support, means co-operating with said deflecting apron to project cleansing fluid upwardly against the dishes and a screen carried by said apron and constructed to separate the solid insoluble matter from the cleansing fluid.

In testimony whereof, I affix my signature.

WILLIAM U. MURRISH.