Aug. 4, 1953 W. BUTLER 2,647,527

DISHWASHING MACHINE

Filed Oct. 2, 1952

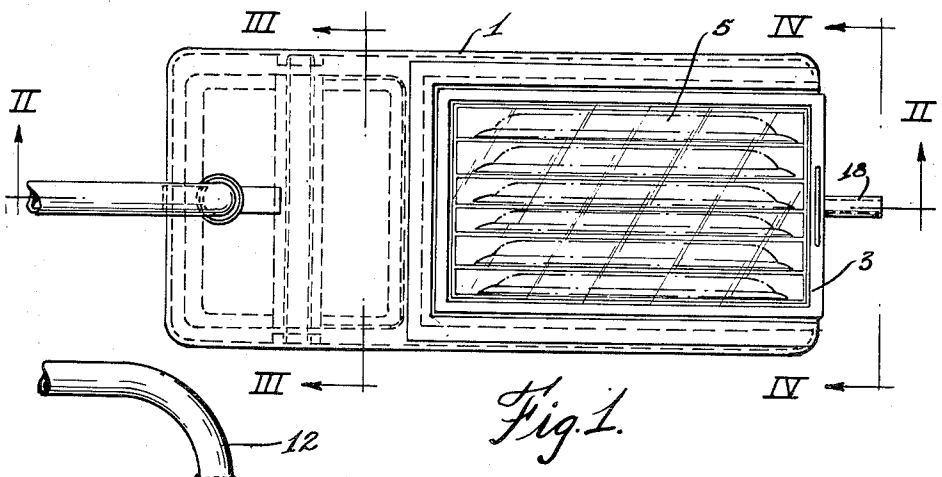


Fig. 1.

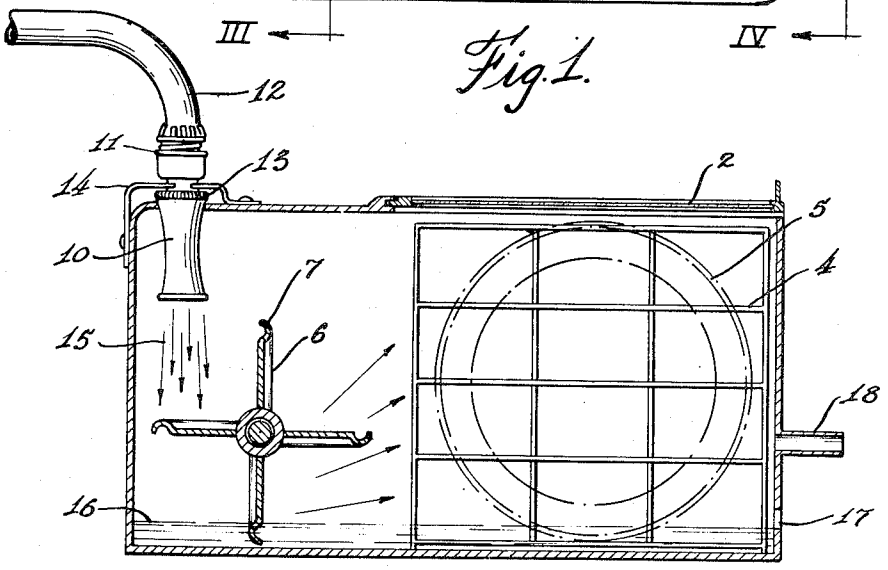


Fig. 2.

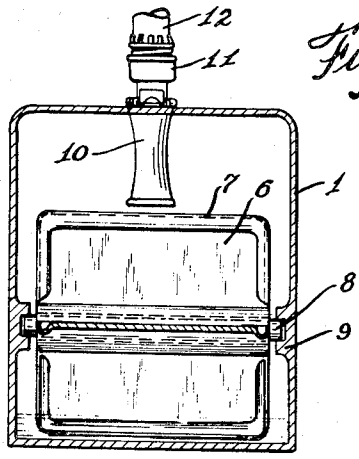


Fig. 3.

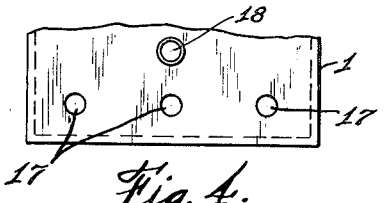


Fig. 4.

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Patented Aug. 4, 1953

2,647,527

UNITED STATES PATENT OFFICE

2,647,527

DISHWASHING MACHINE

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Application October 2, 1952, Serial No. 312,699

4 Claims. (Cl. 134—188)

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This invention relates to an automatic dishwashing machine and more particularly one which requires no source of power such as electrical power for its operation.

Automatic dishwashing machines embodying a power operated rotor for splashing water against dirty dishes enclosed within a housing are known in the art. An outstanding disadvantage of such machines is that they require a source of energy such as an electrical power line source for operating an electric motor to effect rotation of the agitating vanes. In many rural communities electricity is unavailable. Moreover in many kitchens an electrical outlet is oftentimes not close to a sink.

A still further and important disadvantage of conventional automatic dishwashers is that they require electrical driving motors for their operation which, of course, adds appreciably to the cost as well as to the overall size of the unit.

An object of my invention is to provide a dishwashing machine which is devoid of the above named disadvantages of conventional machines and which requires no source of electrical power for its operation.

A more specific object of my invention is to provide a readily portable dishwashing machine of relatively small and compact design which includes an agitating rotor operable solely by jet action of a stream of water which is controllable to vary the speed of a rotor or paddle wheel.

Other objects and advantages of my invention will become apparent from a study of the following specification taken with the accompanying drawing wherein:

Figure 1 is a top view of a dishwashing machine embodying the principles of my invention.

Figure 2 is a longitudinal cross sectional view taken along lines II—II of Figure 1.

Figure 3 is a transverse cross sectional view taken along lines III—III of Figure 1, and

Figure 4 is a fragmentary view of a bottom portion of the housing as viewed from lines IV—IV of Figure 1.

Referring more particularly to the drawing, numeral 1 denotes a substantially rectangular housing of sheet metal or other suitable material having an opening at the top thereof which is covered by a glass panel 2 contained within a frame 3. The frame 3 by tongue and groove connection is slidably mounted on the top of the housing so as to provide access into the interior, dish containing portion of the housing. In such portion there is removably supported a dish rack 4 which may be made of metal or plastic material

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of grid-like configuration so as to provide a plurality of pockets for receiving dishes 5. Of course, the rack may be shaped differently to accommodate cups and other items to be washed.

A paddle wheel 6 comprising a plurality of radially extending vanes terminating in curved agitators or extensions 7 is rotatively mounted within the housing. The paddle wheel may be keyed or otherwise rigidly secured to trunnions 8 which are rotatively supported in bearing portions 9 of the housing. Through a hole in the top of the housing there extends a nozzle 10 which may be of substantially the same construction of the well known garden hose type of nozzle which includes a threaded coupling 11 for attachment to a hose 12, and which includes a knurled nozzle adjusting collar portion 13. The nozzle is mounted on a bracket 14 in a manner so as to permit grasping and turning of collar portion 13 to vary the velocity or force of the stream 15 emerging from the nozzle. Stream or jet 15 is directed at right angles to the surfaces of the paddles, thereby impelling the paddle wheel 6 to rotate and expose successive surfaces to the stream. The agitators or extensions 7 which project from the ends of the paddle wheel dip into the layer of water 16 and splash the water against the soiled dishes. By turning or adjusting the collar portion 13 the force of the stream may be varied so as to selectively cause rotation of the paddle wheel at a higher or lower speed. The paddle wheel scoops up water and splashes it against the dishes forcibly and as a widely scattered spray so as to effectively wash the dishes. A predetermined level of water layer 16 is maintained by providing outlet holes 17 near the bottom of the housing. An overflow outlet 18 at a higher level is provided to insure drainage in the event of clogging of outlet holes 17. Soap powders and similar cleansing materials may be added to the water after sliding glass panel 2 open.

Variation in speed of rotation of the paddle wheel may also be obtained by selectively tilting the nozzle relative the paddle blades to vary the angle of incidence.

Thus strong sprays of variable intensity may be provided by the paddle wheel as a consequence of jet action by the controlled impinging stream of water which will thoroughly wash the dishes. Of course continued spraying without cleaning solutions added will thoroughly rinse the dishes.

The unit requires no electrical motor or other source of power, and is not limited to use to the vicinity of an electrical outlet. Furthermore, it

is light and readily portable and may be placed on a sink only when washing dishes and afterwards stored elsewhere if so desired.

Thus it will be seen that I have provided an efficient, relatively simple and inexpensive automatic dish washing machine which requires no electrical driving motor or similar source of motive power, therefore which is inexpensive to operate and maintain; also, I have provided a machine which is readily portable and which provides a controllable spray of water for varying the speed of rotation of the agitating paddle for washing soiled dishes and the like with a regulatable spray so as to vary the action of the spray on the dishes.

While I have illustrated and described a certain specific embodiment of my invention, it will be understood that this is by way of illustration, and that various changes and modifications may be made within the contemplation of my invention and within the scope of the following claims.

I claim:

1. A dish washing machine comprising a housing, a paddle wheel rotatably mounted in said housing and having blades adapted to scoop up water in the bottom of said housing and spray it on soiled dishes contained therein, and means for directing a spray of water against the blades of said paddle wheel to effect rotation thereof.

2. A dish washing machine comprising a housing, a paddle wheel rotatably mounted in said housing and having blades adapted to scoop up water in the bottom of said housing and spray it on soiled dishes contained therein, and a nozzle for directing a stream of water at high velocity against said blades.

3. A dish washing machine comprising a housing, a paddle wheel rotatably mounted in said housing and having blades adapted to scoop up water in the bottom of said housing and spray it on soiled dishes contained therein, and a nozzle including means for varying the force of the emerging stream of water for directing said stream against said blades to effect rotation of the paddle wheel at variable speeds.

4. A dish washing machine comprising a housing having an openable door at the top thereof through which a rack of soiled dishes may be introduced, a garden type hose nozzle mounted on and projecting through the wall of said housing and including means for varying the force of the emerging stream, a rotatably mounted paddle wheel in said housing having radially outwardly extending blades terminating in agitator elements which are adapted to dip into a bottom layer of water in said housing and spray it against the dishes as the result of jet action of water emerging from said nozzle, and a water outlet near the bottom of said housing for maintaining said bottom layer at a predetermined level.

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No references cited.