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S. DYKTOR ET AL

DISHWASHING MACHINE

Filed Jan. 26, 1925

Fig. 1.

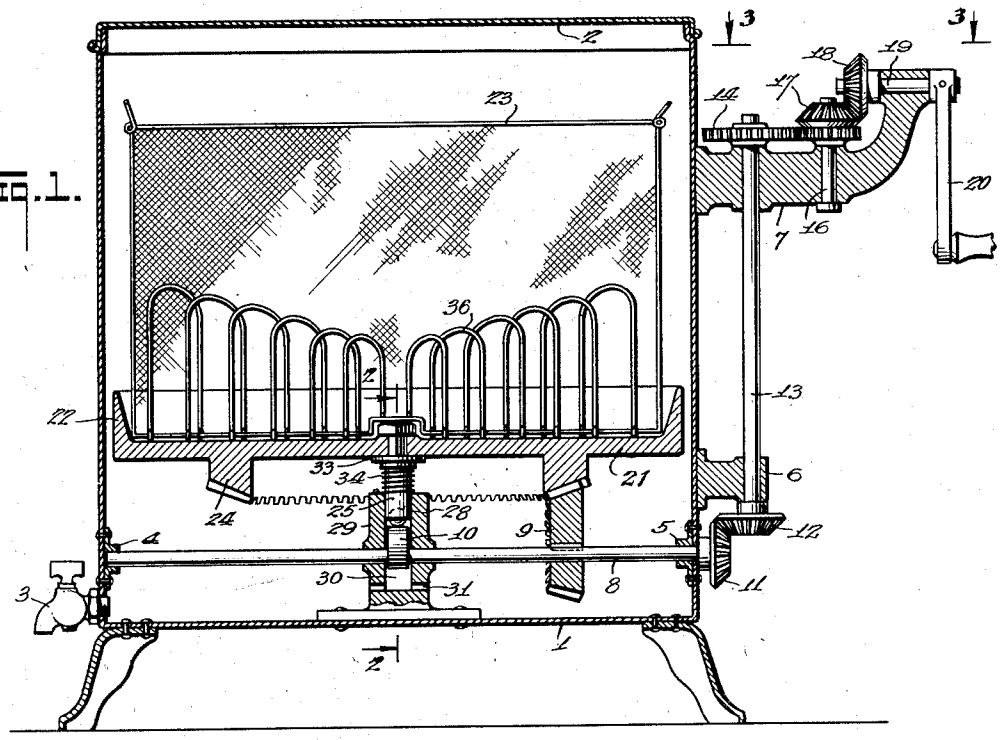


Fig. 2.

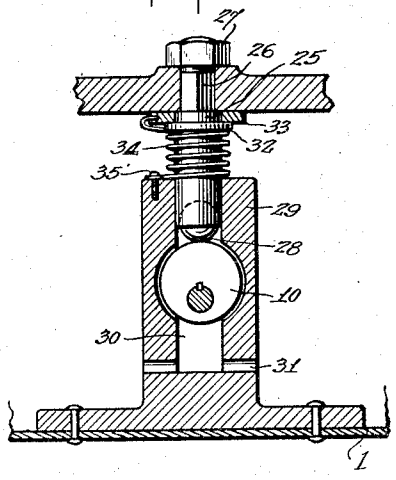
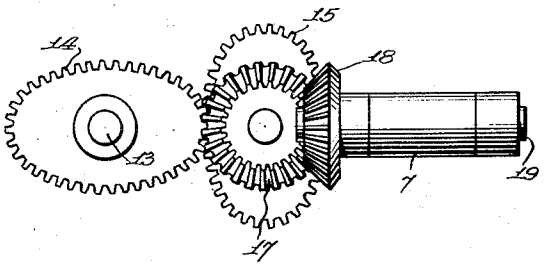


Fig. 3.



WITNESSES

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UNITED STATES PATENT OFFICE.

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DISHWASHING MACHINE.

Application filed January 26, 1925. Serial No. 4,773.

To all whom it may concern:

Be it known that we, STANISLAS DYKTOR, a citizen of the United States, and HERBERT G. DYKTOR, a citizen of Poland (having taken out first United States citizenship papers), and residents of the city of New York, borough of Manhattan, in the county and State of New York, have invented a new and Improved Dishwashing Machine, of which the following is a full, clear, and exact description.

This invention relates to dishwashing machines and has for an object to provide an improved construction wherein the dishes are moved through a washing solution in such a manner as to cause the dishes to engage the solution while moving in a circle and while moving up and down.

Another object of the invention is to provide a dishwashing machine wherein the dishes are given an up and down movement and also a movement in a circle while submerged in water or other washing liquid.

A further object, more specifically, is to provide a dishwashing machine wherein means are provided for receiving the dishes capable of being removed and replaced while the dishes are positioned therein.

In the accompanying drawing—

Figure 1 is a longitudinal vertical sectional view through a dishwashing machine, disclosing an embodiment of the invention.

Figure 2 is an enlarged fragmentary sectional view through Figure 1, approximately on line 2—2.

Figure 3 is an enlarged fragmentary view taken on line 3—3 of Figure 1.

Referring to the accompanying drawing by numerals, 1 indicates a receptacle of sheet metal or any other desired material open at the top but provided with a cover 2 removably arranged in position. A draw off cock 3 is provided near the bottom of receptacle 1 so that the washing liquid may be drawn off from time to time as desired. The receptacle 1 also is provided with bearing members 4 and 5 and brackets 6 and 7. The bearing members 4 and 5 accommodate the shaft 8 which has keyed or otherwise rigidly secured thereto an eccentric bevel gear 9 and an eccentric cam 10. The shaft 8 carries a bevel gear 11 to which it is rigidly secured, said bevel gear meshing continually with the bevel gear 12 rigidly secured to the vertical shaft 13 journaled in the brackets 6 and 7. At the upper end of shaft 13, an oval gear 14 is provided, said gear being rigidly secured to shaft 13 and continually in mesh with an oval gear 15 rigidly connected with the rotatable shaft 16 to which the bevel gear 17 is rigidly secured. The bevel gear 17 meshes continually with the bevel gear 18 rigidly secured to the shaft 19, which shaft is rotatably mounted in bracket 7 and to which a crank 20 is rigidly secured whereby whenever crank 20 is rotated, the various gears mentioned will be operated and shaft 8 will be rotated but by reason of the oval gears 14 and 15, this shaft will be rotated at different speeds notwithstanding the fact that the crank 20 is moving at a continuous even speed. This quick and slow movement causes the dishes to be alternately moved slowly and quickly through the washing solution.

Arranged in the container 1 is a rotatable platform 21 having an annular flange 22 which holds the foraminous container 23 in place and with an annular depending flange 24 formed with bevel teeth on the lower face meshing with the teeth of the gear 9. A shaft or rod 25 is rigidly secured to the table 21 as shown in Figure 2, the same being provided with a square portion 26 fitting a square aperture in the table 21. A nut 27 acts to clamp the parts rigidly together so that the shaft 25 will move upwardly and downwardly with the table 21 or rather the table 21 will be moved upwardly and downwardly with the shaft, which shaft at the lower end is provided with an anti-friction member or ball 28 engaging the outer surface of the cam 10 continually. The lower part of the shaft 25 is slidingly mounted in a fitting or bracket 29, which fitting or bracket presents journal members for the shaft 8 and also presents a chamber in which the cam 10 operates. The lower part of the chamber 30 is provided with vent holes 31 whereby the parts may freely operate, notwithstanding the presence of washing fluid.

In forming the shaft 25, the same is provided with a collar 32 which may be integral therewith or may be rigidly secured thereto in any desired manner. This collar is spaced a sufficient distance from the table 21 to permit the washer 33 to freely rotate. One end of the coil spring 34 is fitted into the washer 33 and the opposite end is rigidly connected with the bracket 29 by a suitable screw 35. This spring acts to hold the gear 9 and toothed flange 24 in mesh and also acts to

hold the cam 10 and roller 28 in constant contact whereby there will be no unnecessary noise or loose motion.

In operation, when it is desired to wash a quantity of dishes, the cover 2 is removed and also the container 23, which container may be made of wire mesh or any suitable foraminous material. A quantity of water and soap or other washing liquid is then inserted until the container 1 is half or two-thirds full. The dishes are then arranged in the container 23 and are held preferably in a vertical position by looped supports 36 connected to the bottom of the container 23 by being clinched around certain parts of the bottom and if desired soldered. After the dishes have been positioned in the container 23, the container and dishes are then placed in position in the container 1 as indicated in Figure 1. The cover 2 is then again placed in position and crank 20 rotated. The rotation of this crank will cause a slow and fast movement of shaft 8, which in turn will cause a slow and fast movement of the cam 10 and gear wheel 9 whereupon the dishes, table 21 and associated parts will be given a rotated movement and an up and down movement, which movement will be fast or slow as shaft 8 moves. This movement is almost a gyratory movement and causes the dishes to strike the fluid at different angles whereby a thorough washing action is secured. After the dishes have been subjected to the washing action for a desired time, the container 23 and dishes may be removed and clean water poured thereover for rinsing, after which the dishes may be dried in any desired manner.

The gear wheel 9 is mounted eccentrically and meshes continually with the toothed flange or rack 24 as the same is moved upwardly under the action of gear 9 and cam 10 and downwardly under the action of gravity. The eccentricity of gear 9 and cam 10 are identical independently of their respective diameters.

In operation, the crank 20, through the gears 18 and 17, imparts a constant rotatory movement which the elliptical gears 14 and 15 break up into a slow and fast rotatory movement. It is the latter movement which is imparted to gear wheel 9 which, in rotating the rack 24, adds thereto an up and down movement while the cam 10 with its associated parts, takes up the thrust and acts as a pivot. The combination of these movements will break up the washing liquid into a multitude of eddies and effect a more thorough cleansing of the plates and the like articles placed within the container.

The gears 14 and 15 are preferably timed so that the maximum lift of the rack 24 will take place when the rotatory movement will be slowest but this may be changed without in any way affecting the invention.

What we claim is:

1. A dishwashing machine, comprising a receptacle adapted to receive a washing liquid, a platform arranged in said receptacle, a constant speed driving member and means actuated by said driving member for causing said platform to be rotated and reciprocated, said last mentioned means also causing the platform to be rotated and moved up and down at varying speeds, said means including a pair of meshing elliptical gears.

2. A dishwashing machine, comprising a receptacle, a platform arranged in said receptacle formed with an annular flange on its upper face and a gear ring on the lower face, a dish container mounted within said flange, a gear wheel meshing with said ring, a cam co-acting with said platform for raising the same at stated intervals, and driving means for simultaneously actuating said gear and said cam for causing the platform to be rotated and vertically reciprocated.

3. In a dishwashing machine, a rotatable platform provided with an annular gear ring, a shaft extending centrally from the platform, a rotatable cam for moving said shaft upwardly, said shaft moving downwardly by gravity, an eccentrically mounted bevel gear continually meshing with said gear ring, and a driving shaft connected with said bevel gear and with said cam for simultaneously rotating and reciprocating said platform.

4. A dishwashing machine, comprising a receptable, a rotatable dish supporting table arranged in the receptacle, said dish supporting member being provided with a gear ring, a gear wheel meshing with said gear ring, a shaft extending from said dish supporting member, a cam engaging said shaft and acting to raise the same as the cam is rotated, a shaft secured to said cam and said gear for rotating the same simultaneously, a constant speed driving member, and means connecting said member and said shaft, said means including a pair of meshing oval gears for causing said shaft to move fast and slow as said driving member moves at a constant speed.

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