

Nov. 26, 1935.

H. E. MARSH, JR

2,021,962

DISHWASHING MACHINE

Filed Jan. 23, 1934

2 Sheets-Sheet 1

FIG 1

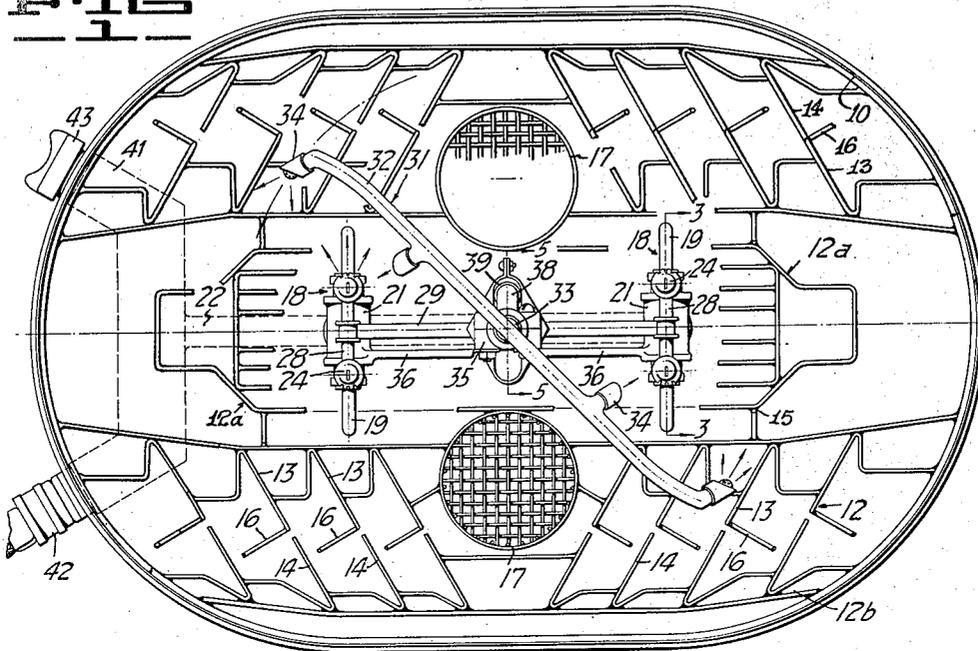
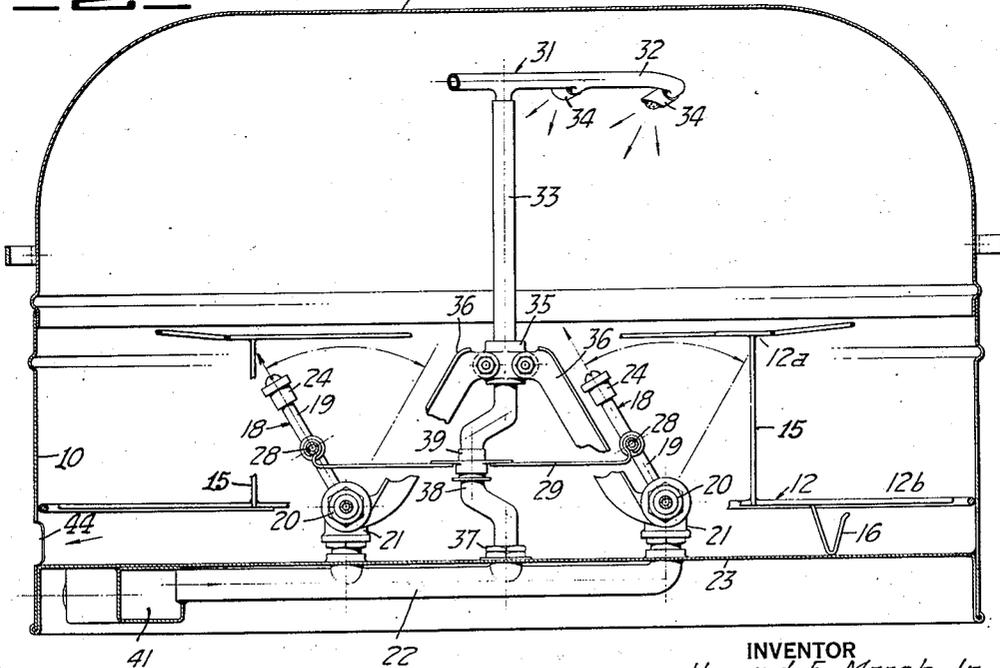


FIG 2



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2 Sheets-Sheet 2

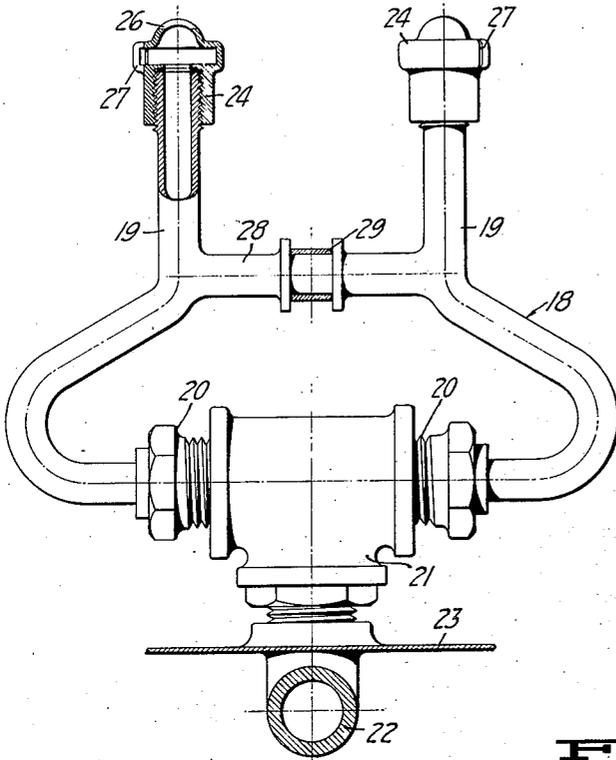


FIG
-3-

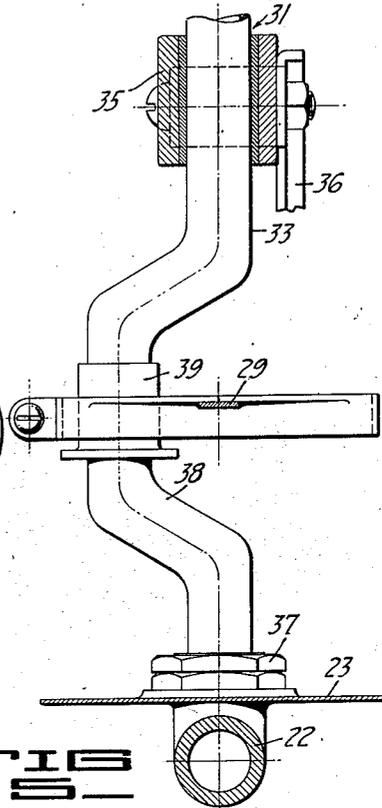


FIG
-5-

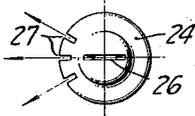


FIG
-4-

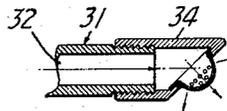


FIG
-6-

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2,021,962

DISHWASHING MACHINE

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Application January 23, 1934, Serial No. 707,885

2 Claims. (Cl. 141-9)

The invention relates generally to machines for the washing of dishes, particularly machines of the type in which the dishes or like articles are subjected to jets or sprays of water while disposed within a receptacle.

It is an object of the invention to provide a machine of the above character which will be simple to operate and relatively cheap to manufacture.

It is a further object of the invention to provide a dish washing machine suitable for domestic use, which will operate upon ordinary city water supply pressure, without the use of a motor driven pump.

Further objects of the invention will appear from the following description of the preferred embodiment of the invention which has been set forth in detail in conjunction with the accompanying drawings.

Referring to the drawings:

Figure 1 is a plan view, showing a machine incorporating the present invention.

Figure 2 is a side elevational view, in cross-section, of the machine illustrated in Figure 1.

Figure 3 is a detail taken along the line 3-3 of Figure 1.

Figure 4 is a plan detail, illustrating an arrangement of openings which can be utilized in the nozzles of Fig. 3.

Figure 5 is a cross-sectional detail taken along the line 5-5 of Figure 1.

Figure 6 is a cross-sectional detail of one of the rotary nozzles.

The machine as illustrated in the drawings consists of a receptacle 10, formed of suitable material such as sheet metal. In this instance, the receptacle, as viewed in Figure 1, is oval in contour, although it is apparent that other shapes can be employed if desired. The receptacle is fitted with a removable dome-shaped cover 11, which likewise can be formed of sheet metal.

Within the receptacle 10 there is a dish rack designated generally as 12. While various materials can be utilized in the construction of this rack, it is desirable to employ lengths of wire joined by suitable weld connections. As illustrated, the rack is formed of two distinct portions 12a and 12b. The intermediate portion 12a forms an elevated support for cups, glasses and the like. It has been shown formed of parallel wires, secured together at their ends, and connected to side portions 12b by the upright wires 15. The two side portions 12b are at a lower elevation, and are provided with spaced parallel wires 13 and 14, between which the lower edges

of the plates can be accommodated. Wires 13 are provided with hooks 16 to engage the lower edges of the plates. The rack also includes a pair of foraminous cups 17, mounted upon the sides of the intermediate portion 12a, and adapted to receive articles of silver-ware, such as knives, forks, spoons and the like.

In order to spray water upwardly from the under side of intermediate portion 12a, I provide a pair of nozzle structures 18. A suitable construction for each of these structures is shown in Figure 3. As illustrated, each of the structures consists of a pair of tubes 19, having their ends bent inwardly and journaled within suitable glands 20. Glands 20 are carried by a T-coupling 21, which in turn is connected to a water supply pipe 22 beneath the receptacle bottom wall 23. The upper ends of tubes 19 are provided with suitable spray heads 24. As illustrated in Figures 3 and 4, each spray head 20 consists of a cup provided with an end slot 26 and side slots 27. In order that the structures 18 may be caused to swing in unison, each structure is provided with a cross member 28 and these cross members are pivotally connected to the ends of a link 29.

In addition to the nozzle structures 18, I provide a rotary nozzle structure 31, which is mounted above the rack. As illustrated, this structure consists of a tube 32, having its intermediate portion connected to the upper end of an upstanding tubular shaft 33. Carried by the tube 32 are spray heads 34, which may be constructed as illustrated in Figure 6, and which are set at a suitable angle to cause rotation. Tubular shaft 33 is supported in vertical position by a journal 35, which in turn is carried by the fixed arms 36. The lower end of the shaft is journaled within a suitable gland 37 and is in communication with the lower water supply pipe 22. Intermediate the journal 35 and the gland 37, the shaft is provided with an offset to afford a crank 38. This crank is connected to link 29 by means of journal 39.

Pipe 22 is adapted to be connected to a city water supply system to provide wash or rinse water to the nozzles described above. Thus, this pipe is connected to header pipe 41, at one end of which is provided a suitable fitting 42 for attachment to a water supply hose. The other end 50 of header 41 is closed by a removable cap 43, to permit introduction of soap or like ingredients to aid in the washing action. Water may drain from the receptacle through opening 44.

Operation of my machine is as follows:—

After dishes have been placed upon the rack 12, the cover is placed upon the receptacle and hot water under city supply pressure is applied to the pipe 22. Jetting of water from the spray heads 34 causes rotation of tube 32, so that all of the articles carried by the rack are subjected to a downwardly directed washing spray. Rotation of shaft 33 together with tube 32 causes simultaneous oscillating movement of the lower nozzle structures 18. Therefore the sprays of water delivered by the spray heads 24 impinge upon the lower sides of cups, glasses and the like positioned upon the intermediate rack portion 12a, and also impinge laterally upon plates and the like carried by the outer rack portions 12b. While the washing proceeds, water collected within the receptacle is drained out through opening 44. In the event soap is introduced with the first water, operation is permitted to proceed until the water is free of soap, to provide an adequate rinse.

I claim:

1. In a dish washing machine, a receptacle, a

dish rack carried within the receptacle, a spray nozzle mounted within the receptacle below said rack and adapted to have oscillatory movement, a reaction spray nozzle rotatably mounted above said rack, said last-mentioned nozzle being adapted to rotate upon application of water under pressure to the same, and mechanical means interconnecting said nozzles whereby rotation of said last-mentioned nozzle causes oscillatory movement of the first-mentioned nozzle.

2. In a dish washing machine, a receptacle, a dish rack carried within the receptacle, the intermediate portion of said rack being at a relatively higher elevation than the side portions thereof, nozzles mounted below the intermediate portion of said rack, said nozzles being adapted to have oscillatory movement, a rotary liquid spray nozzle mounted above said rack, and mechanical means interconnecting said nozzles whereby upon rotation of the last-named nozzle said first-named nozzles are caused to oscillate.

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