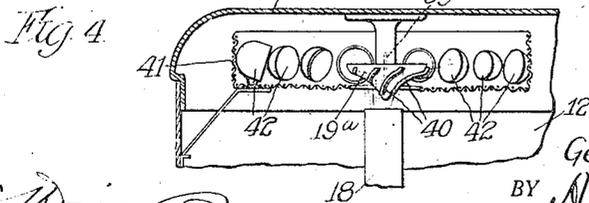
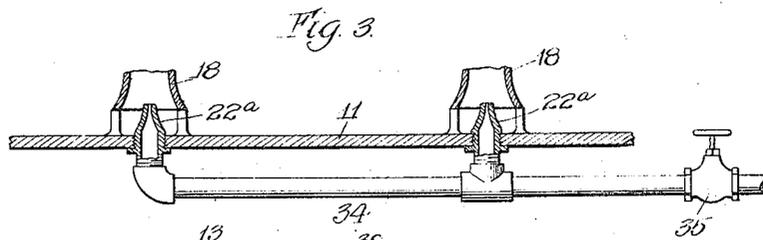
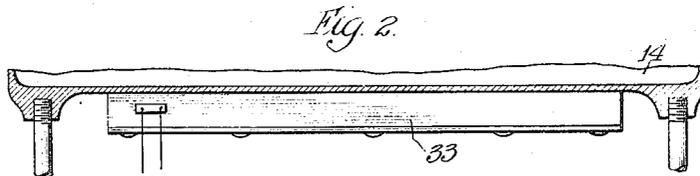
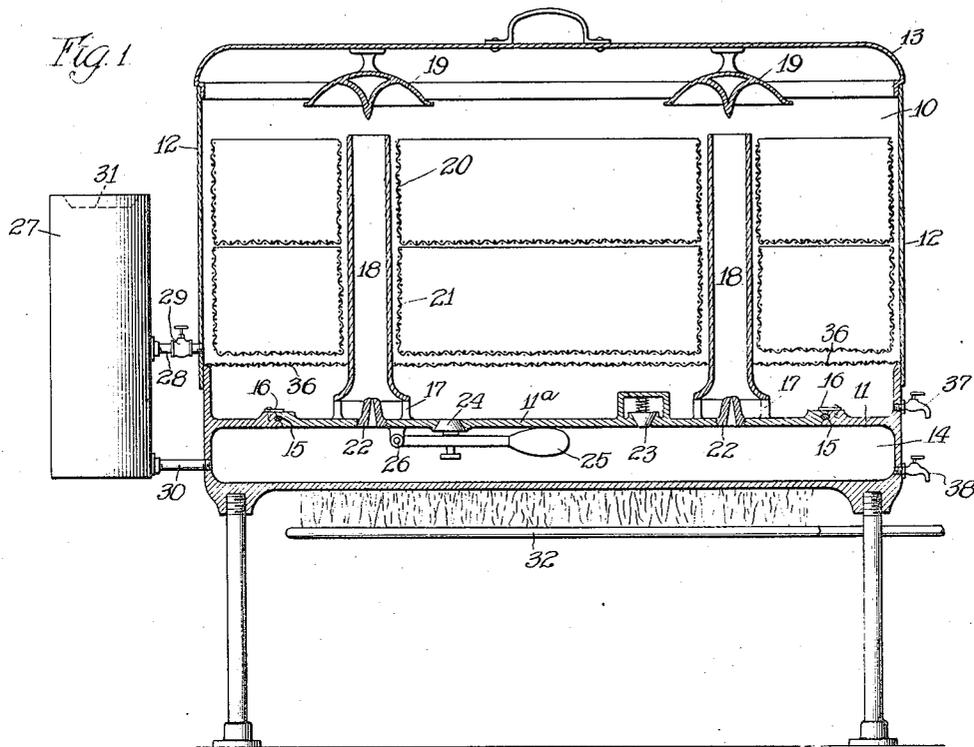


G. H. MYRICK.  
 DISH WASHING MACHINE.  
 APPLICATION FILED JUNE 18, 1917.

1,335,853.

Patented Apr. 6, 1920.



WITNESS  
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# UNITED STATES PATENT OFFICE.

GEORGE H. MYRICK, OF CHICAGO, ILLINOIS.

DISH-WASHING MACHINE.

1,335,853.

Specification of Letters Patent.

Patented Apr. 6, 1920.

Application filed June 18, 1917. Serial No. 175,286.

*To all whom it may concern:*

Be it known that I, GEORGE H. MYRICK, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented an Improvement in Dish-Washing Machines, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof.

My invention relates to an improved construction of dish washing machine in which I project hot water upon the dishes to be washed without the aid of pumps or moving parts of any kind. By my invention I provide a steam generating compartment from which the steam is projected at high velocity into vertical columnar columns of water in the washing compartment as a result of which the water is projected vertically against deflecting devices, which direct the water downwardly against the dishes to be washed. The water in the steam generating compartment may be heated in any desired manner and in cases where steam under pressure is available the steam generating compartment may be dispensed with and the steam projecting device may be connected directly with the steam heat, as a result of which my invention broadly contemplates any construction by which steam under pressure may be directed into the water contained in the washing compartment so that the water in the said compartment is circulated by the steam through the dishes to be washed.

My invention will best be understood by reference to the accompanying drawings showing preferred embodiments thereof in which;

Figure 1 is a vertical longitudinal central section through the preferred embodiment of my device,

Fig. 2 shows in a fragmental view similar to Fig. 1 a different means of heating the water in the steam generating compartment from the means provided in Fig. 1,

Fig. 3 shows in a fragmental view similar to Fig. 1 the construction of my machine where steam is used directly from a steam main, and

Fig. 4 shows a modified form of deflecting mechanism.

Similar numerals refer to similar parts throughout the several views.

As shown in Fig. 1 the device consists of a washing compartment 10, which may be

of rectangular or other horizontal cross section as desired, which compartment is preferably built up of a metal bottom 11 and metal side walls 12 secured thereto, the top being inclosed by a metal cover 13. Below the bottom 11 a steam generating compartment 14 is formed having a metal bottom and side walls, the bottom 11 of the washing compartment serving as the top of the steam generating compartment. As shown in the drawings the steam generating compartment and the bottom of the washing compartment are indicated as made of cast metal and the side walls and cover of the washing compartment as made of sheet metal although I do not limit myself to constructing the device in this manner. The central portion 11<sup>a</sup> of the bottom of the washing compartment is made removable as indicated to facilitate cleaning the steam generating compartment 14 and as it is desirable to prevent communication between the two compartments except as hereinafter specified a gasket 15 is inserted between the removable portion and the stationary portion of the bottom 11, the removable portion being held in place by any suitable clamping device, as for example the buttons 16.

The removable portion 11<sup>a</sup> of the bottom is secured thereto by spiders 17 vertical tubes 18 open at the top and bottom so that water contained in the washing compartment 10 may freely enter the bottom of the tubes through the spiders 17 and be projected from the top of the tubes against deflectors 19 carried by the cover 13 and directed by the deflectors downwardly upon the dishes held in place in the washing compartment by wire baskets 20 and 21. In the removable portion 11<sup>a</sup> of the bottom nozzles 22 are placed projecting upwardly to direct steam from the compartment 14 into the lower ends of the tubes 18. The nozzles are preferably located substantially in the axes of the tubes and extend somewhat above the lower ends of the tubes although I do not limit myself to any particular location of the nozzles or proportions of the nozzles and tubes as I may employ any arrangement of nozzles and tubes that will secure the intended result of projecting the steam into the lower ends of the tubes.

The steam generating compartment 14 is provided with a safety valve 23 and a water supply valve 24 controlled by a float 25 piv-

otally supported at 26 by the removable portion 11<sup>a</sup> of the bottom of the washing compartment. The valve 24 provides that there shall always be a supply of water in the steam generating compartment as long as there is water in the washing compartment, and the float 25 provides a ready means for maintaining the water in the steam generating compartment at a desired level.

10 While the necessary amount of water for washing the dishes may be introduced into the compartment 10 in any manner I find it convenient to supply a water supply tank 27 connected by a pipe 28 through a control  
15 valve 29 with the washing compartment 10 and this tank may also be connected by a second pipe 30 with the lower portion of the compartment 14 so that by providing the tank with a tight cover 31 which is closed  
20 after filling the tank the tank will serve as a safety device for preventing the compartment 14 from running dry since when the level of the water in the compartment 14 becomes lower than the outlet of the pipe 30  
25 water will flow from the tank 27 through the pipe 30 until the end of the pipe is sealed by the water in the compartment 14. The water in the compartment 14 may be heated in any desired manner, the means employed  
30 for doing this in connection with the construction shown in Fig. 1 being diagrammatically indicated as a gas burner 32, while in the construction shown in Fig. 2 which is similar in other respects to that shown in  
35 Fig. 1 the heating means is indicated diagrammatically as an electric heating unit 33.

In cases where steam under pressure is available in a steam main the steam generating compartment may be dispensed with as  
40 indicated in Fig. 3 and the nozzles 22<sup>a</sup> may be connected by a pipe 34 through a controlling valve 35 directly with the steam main, it being understood that the rest of the device is of the same construction as  
45 that shown in Fig. 1. In operating my device the water to be used for washing the dishes is placed in compartment 10 mixed with the soap or other cleaning agent which it is desired to employ, the level of the water  
50 being preferably just below the pipe 28. The dishes are then stacked in the usual manner in the wire trays 20 and 21 and placed in the washing compartment and the cover 13 is put in place to inclose said  
55 compartment. The water in the compartment 14 is at the level determined by the controlling device referred to above or possibly at a higher level through some of it flowing into the lower compartment through the noz-  
60 zles. The application of heat to the lower compartment produces steam which is projected through the nozzles 22 either with or without the water depending upon the level of the water in the lower compartment and  
65 after the steam has been generated for a

brief interval steam is delivered at high velocity from the nozzles 22 into the lower ends of the tubes 18 which are sealed at this time by the water in the washing compartment. The effect of the steam delivered at  
70 high velocity into the pipes 18 is to carry the water contained therein upwardly in the tubes to project it forcibly against the deflectors 11 by which it is directed downwardly in all directions upon the dishes to  
75 be washed. This operation is continued until the dishes have been cleaned and it will be noted that the continuous circulation of the water in the compartment is effected. A screen 36 is preferably disposed across the  
80 lower portion of the washing compartment below the tray 21 to prevent dirt and refuse from finding its way into the lower portion of the compartment 10 and thus in due course into the compartment 14 since said  
85 dirt and refuse would tend to interfere with the proper operation of the nozzles 22 and the valve 24.

After the dishes are washed the water in the compartment 10 may be drained off  
90 through the drain cock 37 and the dishes may be rinsed either by projecting steam from the nozzles 22 into the compartment 10 or introducing fresh water into the compartment 10 from the tank 27 through the  
95 valve 29 before beginning the rinsing operation. After the rinsing operation the dishes may be removed from the device by means of the trays containing them and will dry as a result of their highly heated condition.  
100

The drain cock 38 is provided for removing the water from the compartment 14 in cleaning the device and since the screen 36 is readily removable and the portion 11<sup>a</sup> of  
105 the compartment 10 is also readily removable access may be had to all parts of the device to thoroughly clean the same. If but a small quantity of water is desired in the compartment 14 the valve 24 and its controlling mechanism may be dispensed with  
110 and the pipe 30 alone relied upon to maintain a supply of water in the steaming compartment.

The effect of connecting the tank 27  
115 through the pipe 30 as described, to the steam generating compartment is to heat the water in the tank, due to its circulation as the water in the compartment is heated, and thus a supply of hot water is available  
120 for rinsing the dishes after they have been washed. Furthermore, the water in the washing compartment is heated and maintained in heated condition by the steam projected into it.  
125

In the construction shown in Fig. 4, the deflector 19<sup>a</sup> is rotatably supported on a vertical rod 39 from the cover 13 and this deflector is provided with a plurality of curved  
130 vanes 40, so inclined that when the water

projected from the tube 18 strikes them, the deflector is rapidly rotated. This results in spraying the water outwardly and slightly in an upward direction, which I take advantage of to thoroughly wash articles such as cups or bowls. These articles may be supported in partially inverted position by a wire basket or tray 41 in the upper part of the washing compartment as indicated at 42 and since the direction of the sprayed water is inclined upwardly, it strikes against the upper portion of the inner surface of the cups, bowls, etc., and washes across said inner surface and drains from the lower edges of said articles thus effectively cleaning them.

While I have shown my invention in the particular embodiments above described I do not, however, limit myself to these exact constructions as I may employ equivalents known to the art at the time of the filing of this application without departing from the scope of the appended claims.

What I claim is:

1. In a dish washing machine, the combination of a first compartment having imperforate bottom and side walls and a top wall inclosing said compartment, a nozzle projecting upward from said top wall with its lower end in communication with the upper portion of said compartment, a vertical straight tube open at both ends, an open support for the lower end of said tube for holding said tube above said top wall in line with said nozzle, side walls extending upward from said top wall to form a second compartment, said top wall forming the bottom wall of said second compartment and preventing communication between said compartments excepting through said nozzle, and means for heating said first compartment.

2. In a dish washing machine, the combination of a first compartment having imperforate bottom and side walls and a top wall inclosing said compartment, a nozzle projecting upward from said top wall with its lower end in communication with the upper portion of said compartment, a vertical straight tube open at both ends, an open support for the lower end of said tube for holding said tube above said top wall in line with said nozzle, side walls extending upward from said top wall to form a second compartment, said top wall forming the bottom wall of said second compartment and preventing communication between said compartments excepting through said nozzle, and means for heating said first compartment, said top wall having a separable joint around its edge portion with said side walls, packing material in said joint, and devices for holding said top wall in place against said packing material.

3. In a dish washing machine, the combi-

nation of a first compartment having imperforate bottom and side walls and a top wall inclosing said compartment, a nozzle projecting upward from said top wall with its lower end in communication with the upper portion of said compartment, a vertical straight tube open at both ends, an open support for the lower end of said tube for holding said tube above said top wall in line with said nozzle, side walls extending upward from said top wall to form a second compartment, said top wall forming the bottom wall of said second compartment and preventing communication between said compartments excepting through said nozzle, means for heating said first compartment, a valve in said top wall opening into said first compartment, a float in said first compartment, and operating devices carried by said top wall connecting said float and valve.

4. In a dish washing machine, the combination of a first compartment having imperforate bottom and side walls and a top wall inclosing said compartment, a nozzle projecting upward from said top wall with its lower end in communication with the upper portion of said compartment, a vertical straight tube open at both ends, an open support for the lower end of said tube for holding said tube above said top wall in line with said nozzle, side walls extending upward from said top wall to form a second compartment, said top wall forming the bottom wall of said second compartment and preventing communication between said compartments excepting through said nozzle, means for heating said first compartment, said top wall having a separable joint around its edge portion with said side walls, packing material in said joint, devices for holding said top wall in place against said packing material, a valve in said top wall opening into said first compartment, a float in said first compartment, and operating devices carried by said top wall connecting said float and valve.

5. In a dish washing machine, the combination of a first compartment having imperforate bottom and side walls and a top wall inclosing said compartment, a nozzle projecting upward from said top wall with its lower end in communication with the upper portion of said compartment, a vertical straight tube open at both ends, an open support for the lower end of said tube for holding said tube above said top wall in line with said nozzle, side walls extending upward from said top wall to form a second compartment, said top wall forming the bottom wall of said second compartment and preventing communication between said compartments excepting through said nozzle, means for heating said first compartment, a cover for said second compartment,

and a deflector carried by said cover above the upper end of said tube.

6. In a dish washing machine, the combination of a first compartment having imperforate bottom and side walls and a top wall inclosing said compartment, a nozzle projecting upward from said top wall with its lower end in communication with the upper portion of said compartment, a vertical straight tube open at both ends, an open support for the lower end of said tube for holding said tube above said top wall in line with said nozzle, side walls extending upward from said top wall to form a second compartment, said top wall forming the bot-

tom wall of said second compartment and preventing communication between said compartments excepting through said nozzle, means for heating said first compartment, said top wall having a separable joint around its edge portion with said side walls, packing material in said joint, devices for holding said top wall in place against said packing material, a cover for said second compartment, and a deflector carried by said cover above the upper end of said tube.

In witness whereof I hereunto subscribe my name this 11th day of June, A. D. 1917.

GEORGE H. MYRICK.