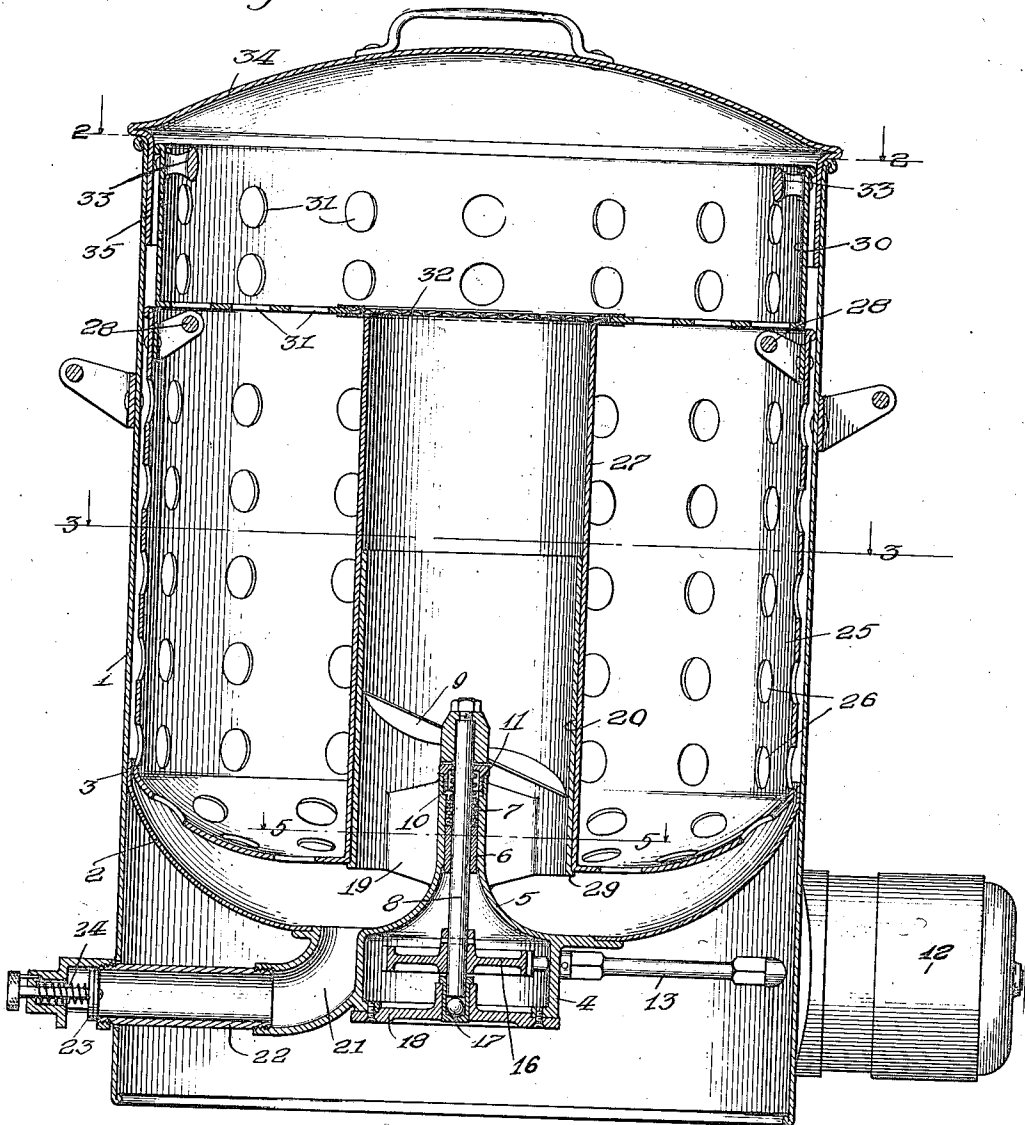


A. J. FISHER.
DISH WASHING MACHINE.
APPLICATION FILED JAN. 12, 1915.

1,295,470.

Patented Feb. 25, 1919.
3 SHEETS—SHEET 1.

Fig. 1.



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Inventor:
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Fig. 2.

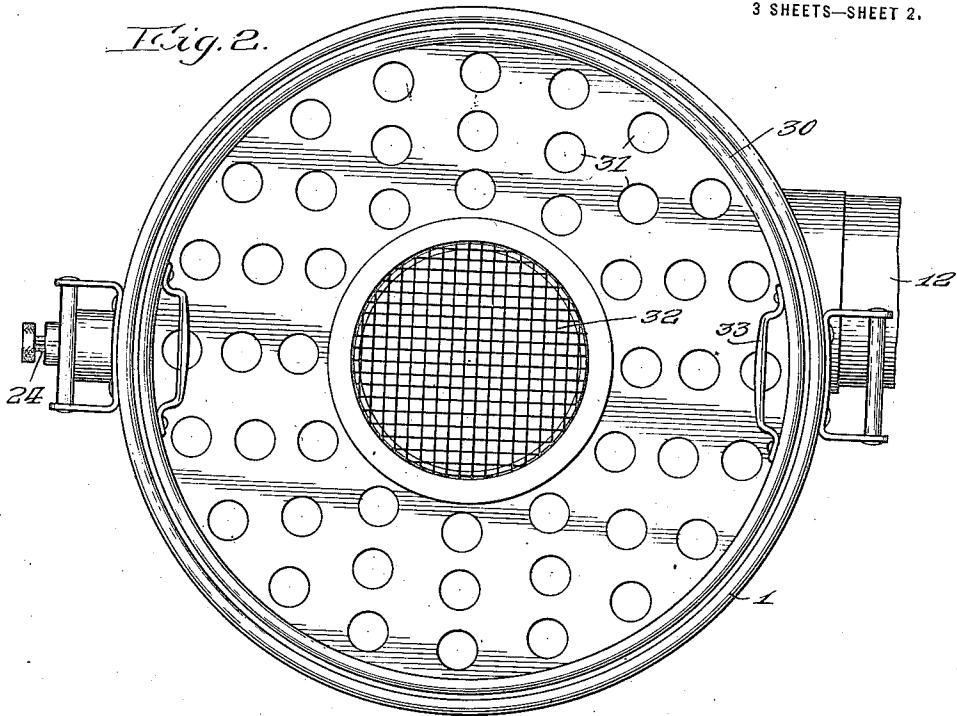
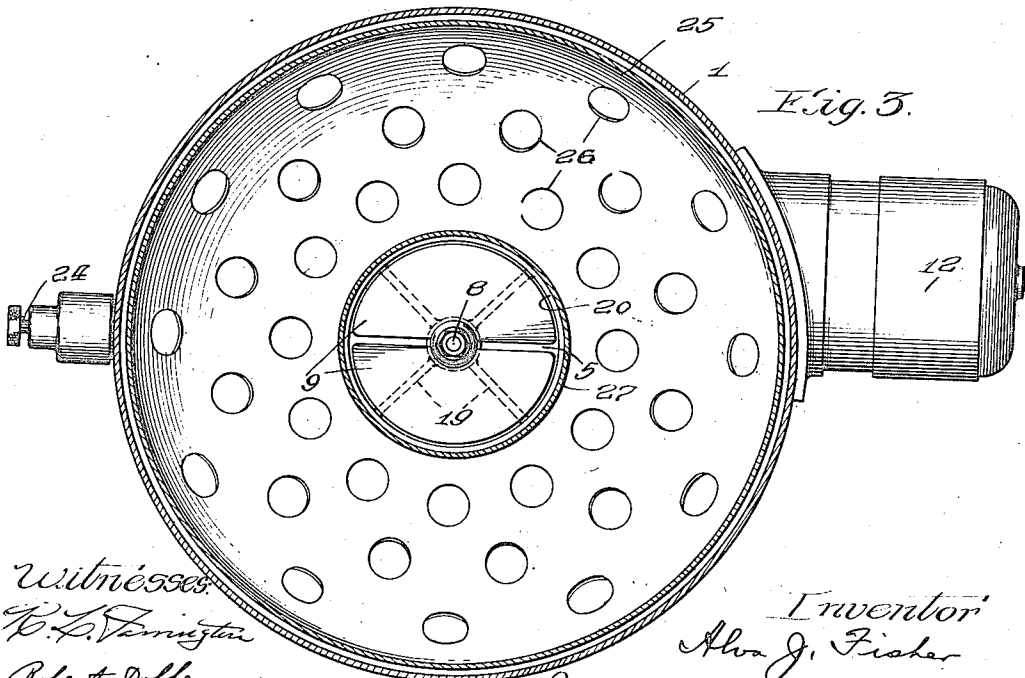


Fig. 3.



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Fig. 4.

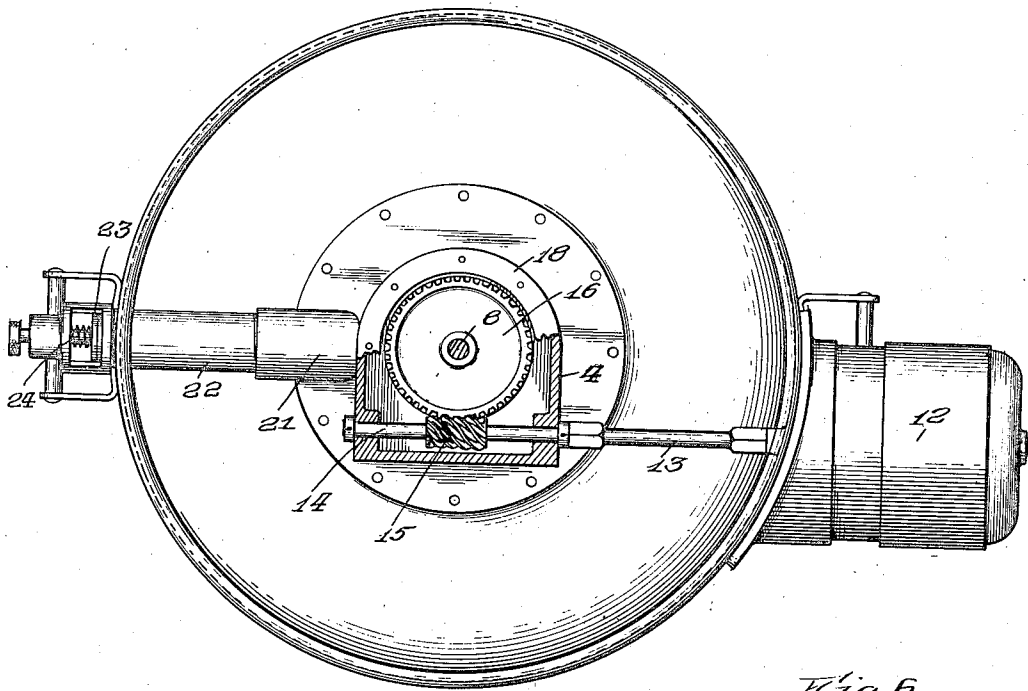


Fig. 5.

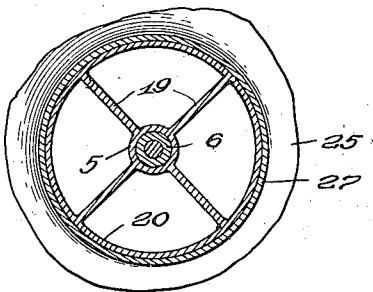
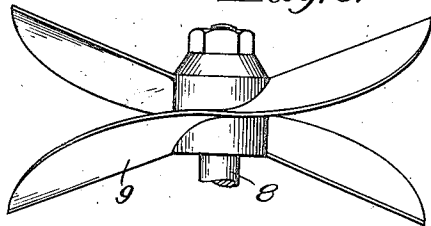


Fig. 6.



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UNITED STATES PATENT OFFICE.

ALVA J. FISHER, OF EVANSTON, ILLINOIS, ASSIGNOR TO HURLEY MACHINE COMPANY,
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DISH-WASHING MACHINE.

1,295,470.

Specification of Letters Patent. Patented Feb. 25, 1919.

Application filed January 12, 1915. Serial No. 1,754.

To all whom it may concern:

Be it known that I, ALVA J. FISHER, a citizen of the United States, residing at Evanston, Cook county, Illinois, have invented certain new and useful Improvements in Dish-Washing Machines, of which the following is a specification.

My invention relates to machines for washing dishes, silverware and the like and the object thereof is to provide a simple and efficient machine of this character.

In the drawings Figure 1 is a central vertical sectional elevation of my machine; Fig. 2 a plan view on the line 2—2 of Fig. 1; Fig. 3 a horizontal section on the line 3—3 of Fig. 1; Fig. 4 a bottom plan view of the machine showing a portion broken away; Fig. 5 a detail section on the line 5—5 of Fig. 1, and Fig. 6 an elevation of the propeller.

Referring to the embodiment of my invention as herein shown, the different receptacles containing the washing or cleansing liquid and for containing the dishes and silverware are made of suitable dimensions and of suitable material, such material being for the most part sheet metal. The water is kept in circulation by means of a motor, the water rising vertically through a central conduit and flowing over the dishes placed in the surrounding annular space after passing through the silverware compartment at the upper end.

Referring to the machine in detail as herein shown, the same includes an outer shell 1 which is here cylindrical in form and provided at a point above its lower edges with a bottom 2 which may be of suitable sheet metal attached at its upper edges at 3 to the inner walls of the shell. The bottom has a central opening through which projects a casting forming a mounting and support for a propeller and also providing an outlet or drain for the compartment or receptacle formed by the outer shell. This casting includes a casing 4 having an upwardly extending tubular member or stem 5 having a bushing 6 and packing 7 through which extends the vertical drive shaft 8 of a propeller 9. This shaft extends upwardly beyond the end of the stem 5 and the propeller is secured to such extended end. The packing is subjected to the yielding pressure of a spring 10 and the proper tension

is secured by the adjusting nut 11 screwing into the upper end of the stem 5. The propeller is driven by a suitable motor such as the electric motor 12 secured to one side of the shell 1 and with its armature shaft extended or provided with a drive shaft 13 and operatively connected with a shaft 14 which is journaled in the casing 4 and provided with a worm or spiral pinion 15. This pinion meshes with a spiral gear 16 located within the casing 4 and secured to the propeller shaft 8. The lower end of the latter shaft has a thrust bearing against the ball 17 which is arranged in the removable end cap 18 secured to the lower end of the casing 4.

The stem 5 is provided with a series of radial webs 19 which support the conduit or pipe 20 within which the propeller operates. This pipe is open at top and bottom, communicating at its lower end with the bottom of the dish washing compartment. The casting also is provided with the outlet or drain 21 communicating with a short horizontal pipe 22 which passes through one side of the outer shell where its end or outlet is controlled by manually operated valve 23. This valve is normally held closed by the spring 24 but adapted to be opened by the operator.

The dish receptacle comprises an inner shell 25 which is slightly less in diameter than the outer shell so as to leave a space between it and such outer shell and which is provided with a series of openings or perforations 26 for the free passage and circulation of the water. The bottom of this dish receptacle is also curved downwardly but not to the extent of the bottom 2 and such bottom is provided with a central vertical standpipe 27 which fits around the central pipe 20 and also extends thereabove and flush with the plane of the top edges of the dish receptacle. This dish receptacle is removable upwardly being provided with handles 28 for this purpose and such receptacle is supported when in working position upon the annular flange 29 at the lower end of the pipe 20.

The dish receptacle when in position extends below the top line of the outer shell 1 leaving a space which is occupied by the tray 30 intended more particularly for silverware, etc. This tray is formed as a

somewhat shallow pan except that it is provided with openings 31 in its sides and bottom and also with a central opening provided with a screen or gauze 32 registering with the top of the standpipe 27. This tray rests upon such standpipe and is removable upwardly for which purpose the handles 33 are provided. The machine is closed by means of the removable cover 34 having downwardly extending flanges 35 fitting between the shell 1 and tray 30.

Describing the operation of the machine, the dishes are placed vertically, that is resting on their edges, in the dish compartment 25 and the silverware is placed in the bottom of the tray. The machine having been supplied with hot water or other washing or cleansing liquid, the motor is started whereupon the liquid will be forced upwardly in the standpipe by means of the propeller and will first enter the tray 30, washing the silverware therein and will then be showered from the bottom of the tray over the dishes in the dish compartment. The liquid collecting in the bottom 2 will again be circulated by means of the propeller acting as a pump. The radial wings 19 not only support the pipe 20 but also serve to prevent any whirling movement of the liquid below the propeller to compel the liquid to move upwardly in a straight line. When the contents have been subjected a sufficient length of time to the action of the liquid the motor is stopped and the tray and dish receptacle removed from the machine and emptied of their contents.

I claim:

1. A dish washing machine comprising an outer shell from whose lower portion rises a pipe open at top and bottom, a perforated dish holding receptacle in such shell having a standpipe fitting around said first named pipe, the latter pipe having means for supporting the standpipe, and means for forcing the washing liquid upwardly through the pipes from which it overflows upon the dishes placed in such receptacle.

2. A dish washing machine comprising an outer shell, a perforated dish holding receptacle therein having a standpipe open at top and bottom, a removable perforated tray adapted to receive articles to be washed and placed within the shell and above the dish receptacle, and means for forcing the washing liquid upwardly through the pipe

from whence it overflows through the tray and then into the dish receptacle.

3. A dish washing machine comprising an outer shell having a bottom provided with a central opening, a casing secured in such opening and having a vertical stem, a vertical pipe secured to the stem concentrically thereof, a propeller having a shaft mounted on such stem, and a dish receptacle arranged within the shell and surrounding the pipe.

4. A dish washing machine comprising an outer shell having a bottom provided with a central opening, a casing secured in such opening and having a vertical stem, a pipe secured to the stem concentrically thereof, a propeller located within said pipe and having a drive shaft mounted in such stem, means for driving such shaft, and a dish receptacle arranged within the shell and surrounding the pipe.

5. A dish washing machine comprising an outer shell having a bottom provided with a central opening, a casing secured in such opening and having a vertical stem, said stem having radial webs, a vertical pipe carried by such webs concentrically of the stem, a propeller having a shaft mounted on the stem, and a dish receptacle arranged within the shell.

6. A dish washing machine comprising an outer shell having a bottom provided with a central opening, a casing secured in such opening and having a vertical stem, a vertical pipe secured to the stem concentrically thereof, a propeller having a shaft mounted on such stem, mechanism in such casing for rotating said propeller and a dish receptacle arranged within the shell and surrounding the pipe, said casing having a valve governed drain opening.

7. A dish washing machine comprising an outer open ended shell having a bottom intermediate its height, a pipe rising from said bottom and open at both ends, a dish receptacle in such shell and around such pipe, a propeller for forcing the water upwardly through the pipe and into the dish receptacle, means common to the pipe and propeller for supporting the same, and mechanism located within the lower portion of the shell and below its bottom for operating the propeller.

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