Jan. 15, 1929.

1,699,042

J. L. BELL ET AL

DISHWASHING MACHINE

Filed Nov. 24, 1925

2 Sheets-Sheet 1

Fig. 4.

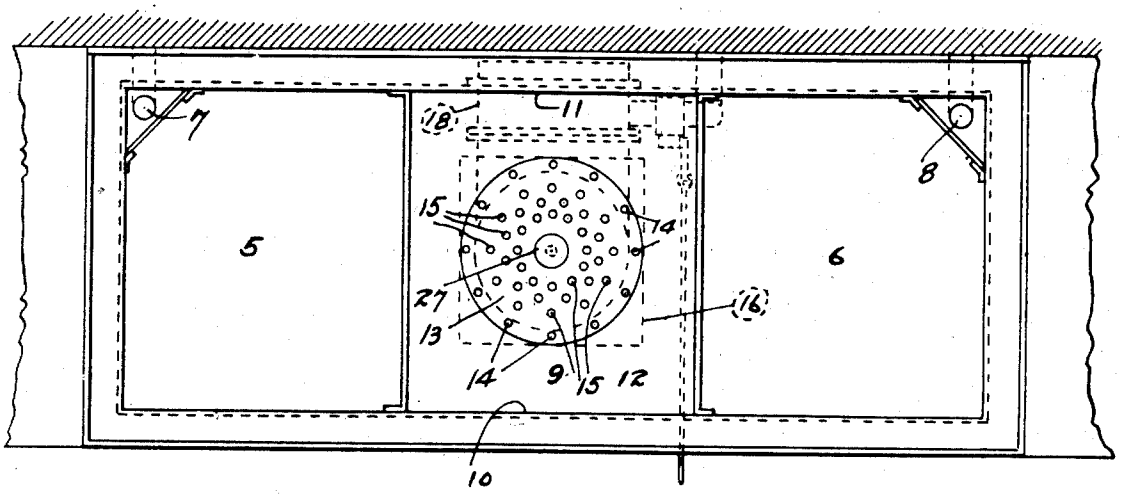


Fig. 2.

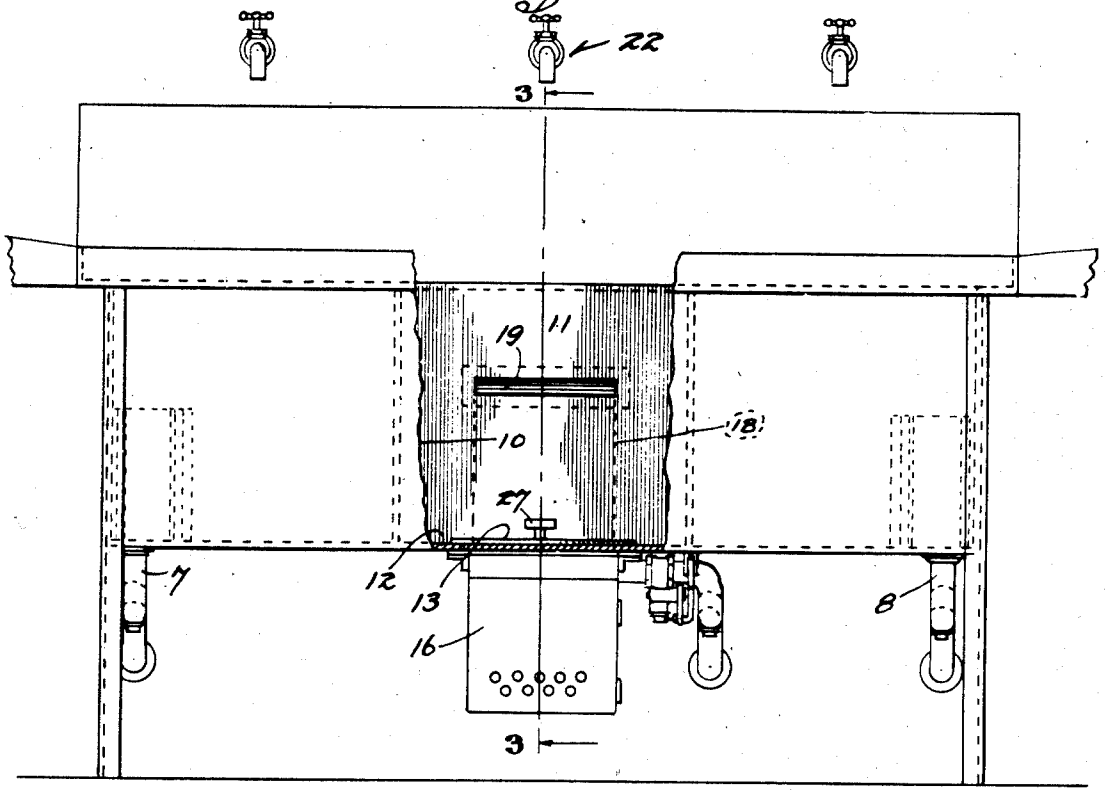
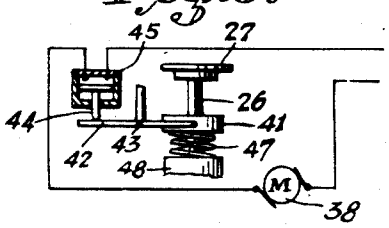


Fig. 5.



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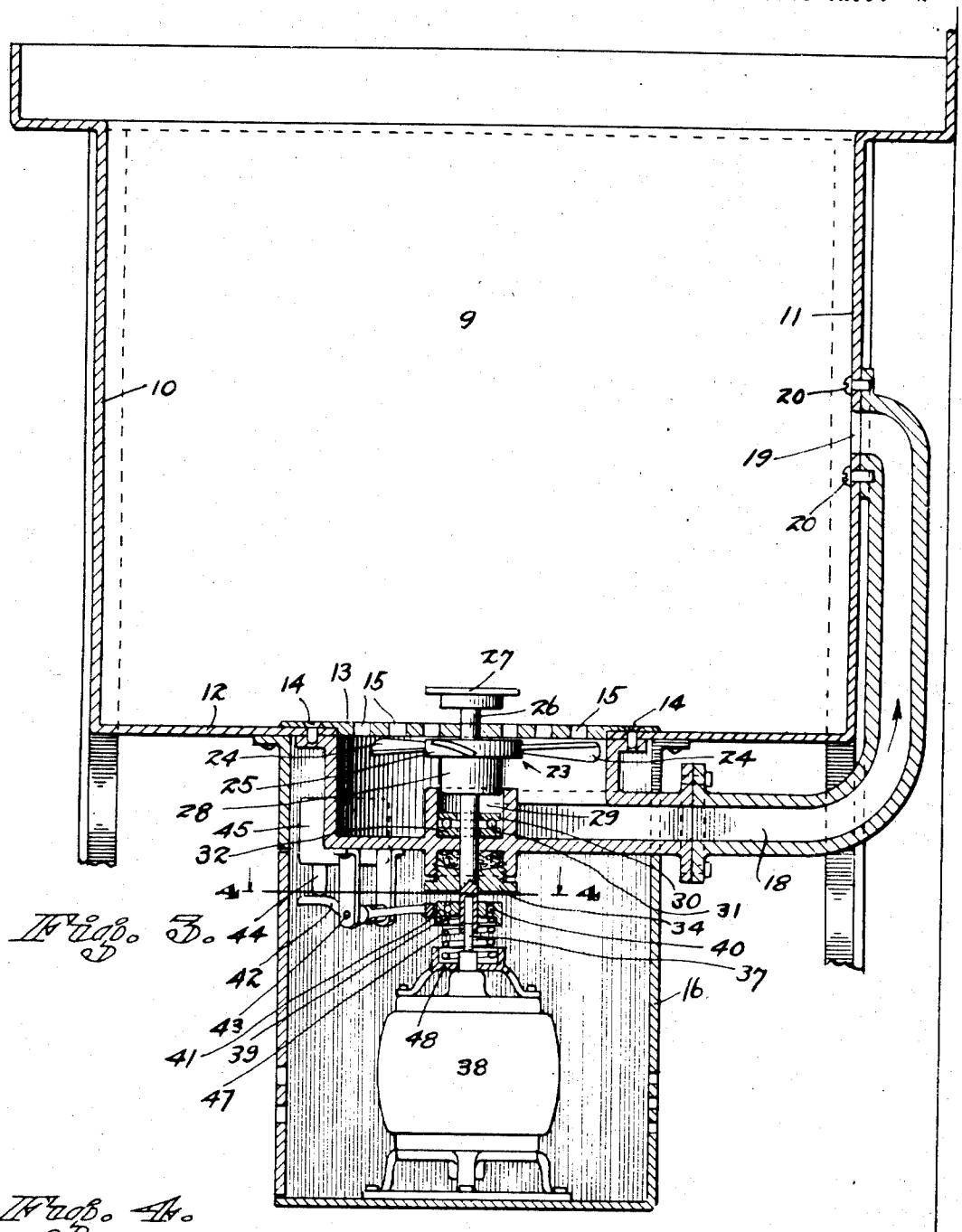


Fig. 3.

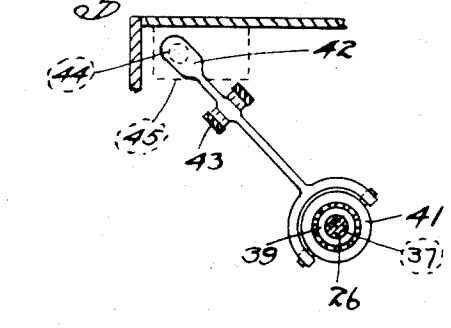


Fig. 4.

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UNITED STATES PATENT OFFICE.

JAMES L. BELL AND HERMANN EUWECKE, OF OAKLAND, CALIFORNIA.

DISHWASHING MACHINE.

Application filed November 24, 1925. Serial No. 71,235.

This invention relates to dishwashing machines, and has for its object provision of an efficient dishwashing machine.

With the foregoing object in view, together with such other objects as may subsequently appear, this invention resides in the construction and arrangement of parts hereinafter described and claimed, and illustrated in the accompanying drawings, in which

Figure 1 is a plan view of the improved dishwashing apparatus of our invention.

Figure 2 is a front elevation, partly broken away, of the apparatus shown in Figure 1.

Figure 3 is a vertical section taken on the line 3—3 of Figure 2, and looking in the direction of the arrows thereof, and

Figure 4 is a view taken on the line 4—4 of Figure 3.

Figure 5 shows the combination of a motor and switch and mechanism for operating the switch.

Referring to the drawings for more detailed description thereof, the dishwashing apparatus shown comprises end rinsing compartments 5 and 6 provided respectively with drains 7 and 8. The apparatus also comprises a dishwashing compartment 9. The dishwashing compartment 9 comprises a front 10, a back 11, and a bottom 12. The bottom 12 of the compartment 9 has an aperture cut in it, which aperture is covered by a disk 13 secured to the bottom 12 by means of screws 14 and having apertures 15 therein. A housing 16 has its upper end secured to the lower surface of the bottom 12 of the compartment 9, this housing being substantially as wide as the perforated disk 13. A duct 18 has one end secured to the undersurface of the bottom 12 of the compartment 9 by means of the screws 14. The duct 18 passes through a side wall of the housing 16 beyond the back 11 of the compartment 9, and runs vertically upward to an aperture 19 in the back wall 11 of the compartment 9. The walls of the duct encircle the aperture 19 and are secured to the back 11 by means of screws 20.

It will thus be seen that the disk 13 and the duct 18 provide for a circulation of water from the compartment through the apertures 15 of the disk 13 through the duct 18 and into the compartment again.

Since the dishes are washed in the compartment 9, a faucet 22, shown in Figure 2, is provided above the compartment 9 to let water into the mentioned compartment. Our invention provides means for circulating water through the compartment 9 and the duct 18, and such means comprises a propeller 23 having blades 24 adapted to propel water in the direction of the arrow shown within the duct 18. The blades 24, which are adapted to turn horizontally, are secured at one end to a hub 25 which is fixedly mounted on a vertical, rotatable shaft 26. The vertical shaft 26 has its upper end extending into the compartment 9.

A rest 27 adapted to hold a dish pan is freely mounted on the upper end portion of the shaft 26. The hub 25 has formed integral with it and below it a reduced member 28 adapted to rotate within a circular chamber 29, the bottom of which is part of the duct 18, and the circular vertical wall of which rises from the bottom of the duct. The circular vertical wall of the chamber 29 thus functions as a guide for the member 28 which rests when rotating on a disk 30 supported by ball bearings 31 which run on a disk 32 resting on the bottom of the chamber 29. The shaft 26 passes through the bottom of the chamber 29 and has a recess in its lower end portion. A stuffing box 34 is provided to prevent water from running from the duct 18 into the housing 16. The recess in the lower end portion of the shaft 26 is preferably square and fits over the upper end portion of a shaft 37 of an electric motor 38 which is supported on the bottom of the housing 16. The shaft 26 is vertically slidable endwise relative to the shaft 37 of the electric motor. The recess in the lower end portion of the shaft 26 and the upper end portion of the electric motor shaft 37 may be square so that the motor shaft will turn the shaft 26 and thereby turn the propeller 23.

An inner ring 39 is fixedly mounted on the lower end portion of the shaft 26 so that it turns therewith. Ball bearings 40 are disposed between the member 39 and the member 41 concentric with the member 39. A lever 42, pivoted at 43, is pivotally secured to the member 41, as shown in Figure 4. The outer end portion of the lever 42 contacts with a member 44 of a switch 45 which is placed in the circuit of the electric motor 38. A coiled spring 47 encircles parts of the shafts 26 and 37, and has its lower end bearing on a plate 48 supported on the

casing of the motor 38. The upper end of the coiled spring 47 bears against the member 39 so that it pushes the latter and therewith the shaft 26 to an uppermost position and, at the same time, pushes up on the inner end of the lever 42, so that the outer end of the lever is depressed to its lowermost position, whereby the member 44 of the switch 45 is also in its lowermost position and the switch 45 is open, so that no current is suplied to the electric motor 38.

When a dish pan containing dishes is placed on the rest 27, however, the weights of these are sufficient to overcome the action of the spring 47 so that the shaft 26 and the inner end of the lever 42 are depressed; the outer end of the lever 42 is thereby raised with the result that the member 44 of the switch 45 is raised to close the switch, whereby the electric current is automatically supplied to the motor.

It will thus be seen that we have provided means for automatically supplying power for driving the propellor 23 as soon as dishes are placed in the dish washing compartment.

In the operation of the device, dishes are placed in a dish pan and the latter placed on the rest 27. This action as seen from the explanation given above, turns the propellor and circulates the water through the compartment and through the duct 18, the water from the upper end of the duct 18 being thrown outwardly from the duct onto the dishes.

Although we have shown and described one embodiment of our invention, it is to be understood that the same is susceptible to various changes; and we reserve the right to employ such as may come within the scope of the appended claims.

We claim:

1. In a dishwashing machine, a dishwashing compartment, a vertical first shaft extending from within said compartment downwardly through the bottom thereof and adapted to support a dishpan on its upper end, resilient means for holding said shaft in raised position, said shaft being adapted to be pushed downwardly by the weight of a dishpan and dishes therein against the force of said resilient means, a second shaft, a motor for driving said second shaft, said first shaft being slidably connected endwise to said second shaft and adapted to be rotated thereby, an electric switch in the circuit of said motor, and means actuated by the downward movement of said first shaft for closing said switch.

2. In a dishwashing machine, a dishwashing compartment, a revolvable and a longitudinally movable shaft mounted in said compartment, a propeller carried by said shaft for circulating water through the compartment, a dishpan support carried by said shaft, said shaft being moved downwardly by the weight of the dishpan, an electric motor for rotating said shaft, and a switch for closing the circuit to said motor when said shaft is moved downwardly.

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