Dec. 10, 1929. J. LUTOLF 1,739,404

MACHINE ADAPTED FOR THE WASHING OF DISHES AND OTHER TABLEWARE

Filed March 26, 1928 2 Sheets-Sheet 1

Fig. 3.

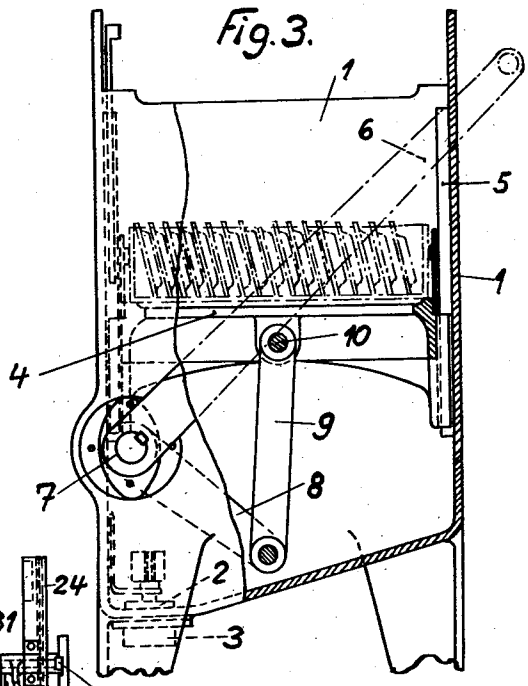
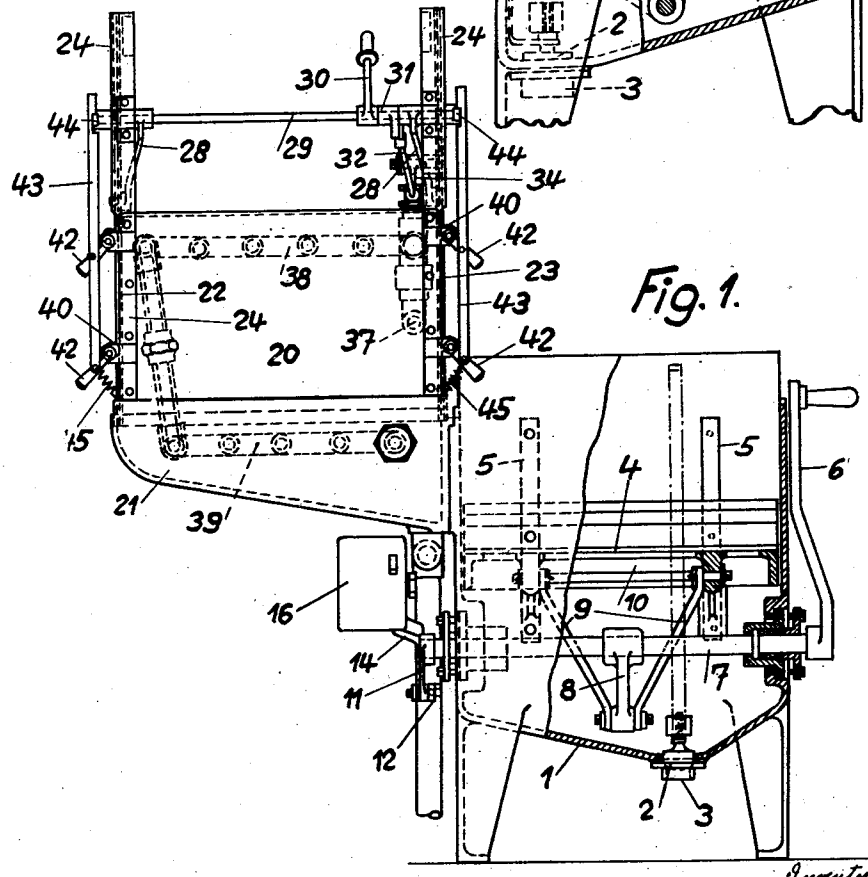


Fig. 1.



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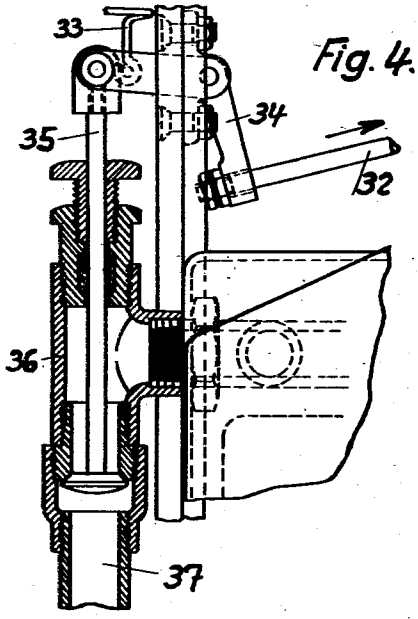


Fig. 4.

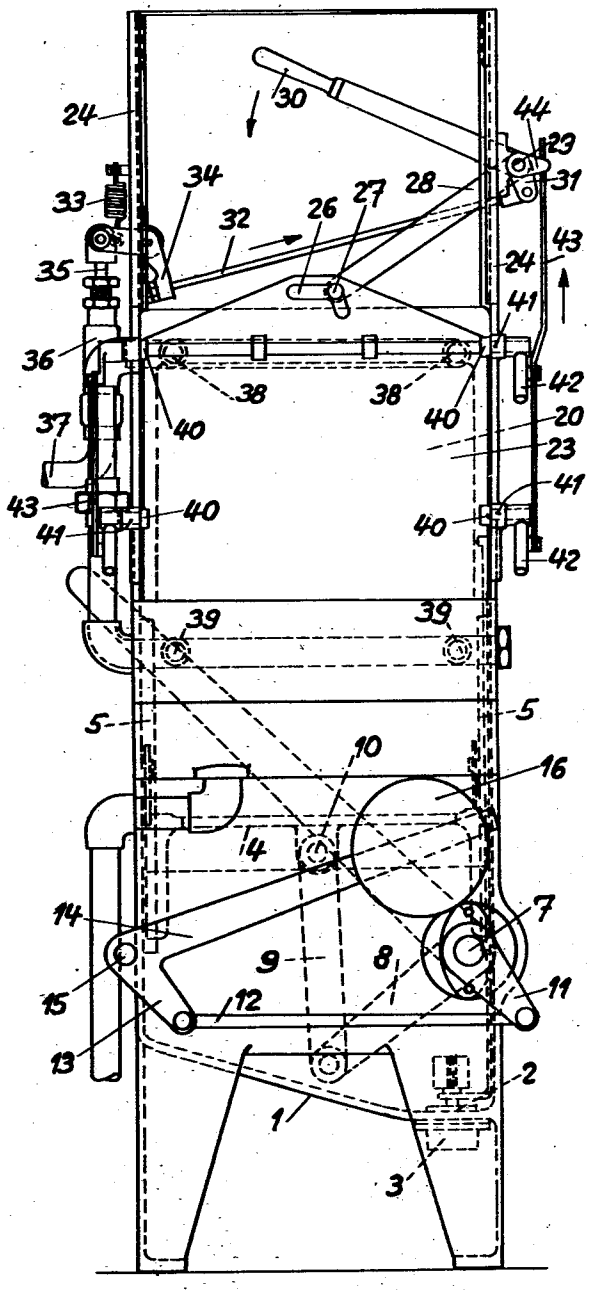


Fig. 2.

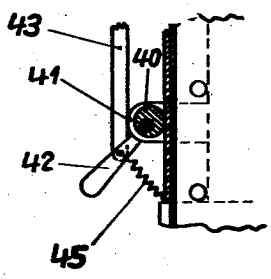


Fig. 5.

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UNITED STATES PATENT OFFICE

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MACHINE ADAPTED FOR THE WASHING OF DISHES AND OTHER TABLEWARE

Application filed March 26, 1928, Serial No. 264,651, and in Germany March 28, 1927.

The present invention relates to improvements in machines adapted for the washing of dishes and other tableware.

There has been proposed a type of dish washing machines which provides separate tanks for the washing and the rinsing of the dishes etc. and a chamber supported above the tanks to receive the dishes, the said chamber being provided with a spraying device adapted to direct a shower of fluid down upon the dishes. Washing machines of this type are very largely used in hotels, and possess a very high efficiency.

The primary object of my invention is to provide a dish washing machine of medium size which is especially adapted for hospitals, sanatoriums and so on to wash, rinse and sterilize the dishes say of one floor of the building or some sick rooms of the hospitals.

Other and more specific objects of the invention are to provide a dish washing machine of the type described which needs little space and which may be operated by hand and with but little experienced operators and by means of which a thorough cleaning and sterilizing of the dishes may be effected.

A further object of the invention resides in the provision, construction, arrangement and assemblage of the parts hereinafter specifically described whereby the machine as a whole is adapted to more efficiently perform the functions required of it.

In the accompanying drawing the dish washing machine is shown by way of an example.

Fig. 1 is a side elevation of the dish washing machine parts being shown in section.

Fig. 2 is an end view of the machine.

Fig. 3 illustrates in sectional elevation the means to reciprocate the tray.

Fig. 4 shows the valve of the spraying device with part of its spraying gear.

Fig. 5 shows a detail of construction.

In the drawings 1 denotes a tank supported by legs and containing hot water for washing the dishes. At the bottom a discharge opening 3 is provided which is closed by a hand operated valve body 2. In vertical guides 5 fixed to the side walls of the tank 1 a horizontal platform 4 adapted to receive a tray with the dishes is slidably arranged. In downwardly projecting lugs of the platform 4 a shaft 10 is rotatably mounted. The shaft 10 is connected to a crank arm 8 of shaft 7 by means of two links 9. The arm 8 is rigidly connected to the shaft 7 which passes through stuffing boxes in two opposite side walls of the tank 1. On one end of the shaft 7 a hand lever 6 is fixed, and to the other end of shaft 7 a short crank arm 11 is attached. The arm 11 is linked to the arm 13 of a double armed lever 13^a by means of a rod 12. The double armed lever is pivoted at 15. On the second arm 14 a weight 16 is adjustably mounted. The platform 4 and the tray with the dishes (not shown in the drawings) is counterbalanced by the weight 16 and may be raised and lowered by rocking the shaft 7 by means of lever 6. The dishes by being moved up and down in the water of tank 1 are cleaned in the well known manner.

To the side wall of the tank 1 a hollow bracket 21 is fastened which supports a vessel 20 adapted to receive a tray with the dishes. The vessel 20 is provided with two sliding doors 22, 23, running in vertical guide rails 24, arranged at opposite walls of the vessel 20. Each door 22, 23 is provided with a horizontal slot 26 at its upper end. A stud 27, arranged at the end of an arm 28 engages said slot 26. The arms 28 are rigidly connected to a shaft 29 which is journalled in bearings fastened to the guide rails 24. By means of a hand lever 30 keyed to shaft 29 the sliding doors 22, 23 may be simultaneously raised and lowered to permit the operator to introduce a tray in vessel 20 or to remove it therefrom. In the upper portion of vessel 20 spraying pipes 38 are arranged extending across the vessel 20 and connected to another set of spraying pipes 39 arranged within the hollow bracket 21 below the vessel 20. The pipes 38, 39 are connected by means of a valve 36 to a supply pipe 37. The valve body 35 is linked to a double armed lever 34 pivoted to a rail 24. Lever 34 is connected by a rod 32 to an arm 31 rigidly fixed to shaft 29. A coiled spring 33 attached with one end to said lever 34 and with the other end to a rail 24 tends to close the valve 33.

By pressing lever 30 down the doors 22, 23 are closed and simultaneously the valve 36 is opened, the valve body 35 being lifted from its seat against the action of spring 33. The pipe 37 is connected by a three-way valve (not shown in the drawings) to a supply pipe for rinsing water, and to a steam pipe. According to the position of said three way valve either rinsing water or steam may be sprayed on the dishes from above and from below by the spraying pipes 38, 39. To close the vessel 20 hermetically, cams 40 are rotatably mounted in lugs 41 of the side wall of chamber 20, each cam 40 being provided with a handle 42. Moreover the cams are interconnected by a rod 43. To operate the cams 40 arms 44 are rigidly fixed to the shaft 29 which arms 44 enter in engagement with the rods 43 after the sliding doors 22, 23 have been brought into their closing position. The cams 40 are returned to the initial position by springs 45 fixed with one end to the vessel 20 and with the other end to the cams. By lifting the doors 22, 23 the arms 44 are brought out of the engagement with the rods 43, and the latter are turned by the springs 45 leaving the doors 22, 23 free to follow the arms 28.

The dishes to be cleaned are arranged in a tray which is put on the platform 4. By reciprocating the hand lever 6 the tray is moved up and down the water passing between the dishes takes off the fat etc. The tray is then introduced in the chamber 20. The hand lever 30 is pressed down and the arms 28 move the sliding doors 22, 23 downward. As soon as they have assumed their lowermost position, the arms 44 turn the cams 40 which press the sliding doors 22, 23 on to the faces of chamber 20. By pressing down lever 30 the valve 36 has been opened and rinsing water is sprayed on the dishes in the tray. By turning the three way valve the rinsing water supply is cut-off and steam is projected on to the dishes, the latter being sterilized thereby.

While I have disclosed a preferred embodiment of my invention, I do not wish to be limited to the exact details of construction and arrangement shown and described as it is my intention to make such changes in the construction, arrangement and combination of parts as I may desire, providing that the same come within the scope of the appended claim and do not depart from the spirit of the invention.

What I wish to secure by U. S. Letters Patent is:—

In a washing machine of the class described, a vessel for the reception of articles to be washed and provided with a vertically movable door forming one side thereof and also with means to supply steam or water to said vessel and a valve to control the supply of steam or water, common operating means for said door and said valve arranged to open the valve when the door is closed and vice versa, and means also actuated by said common operating means to hermetically secure the door in closed position.

In testimony whereof I affix my signature.

JOSEF LÜTOLF.