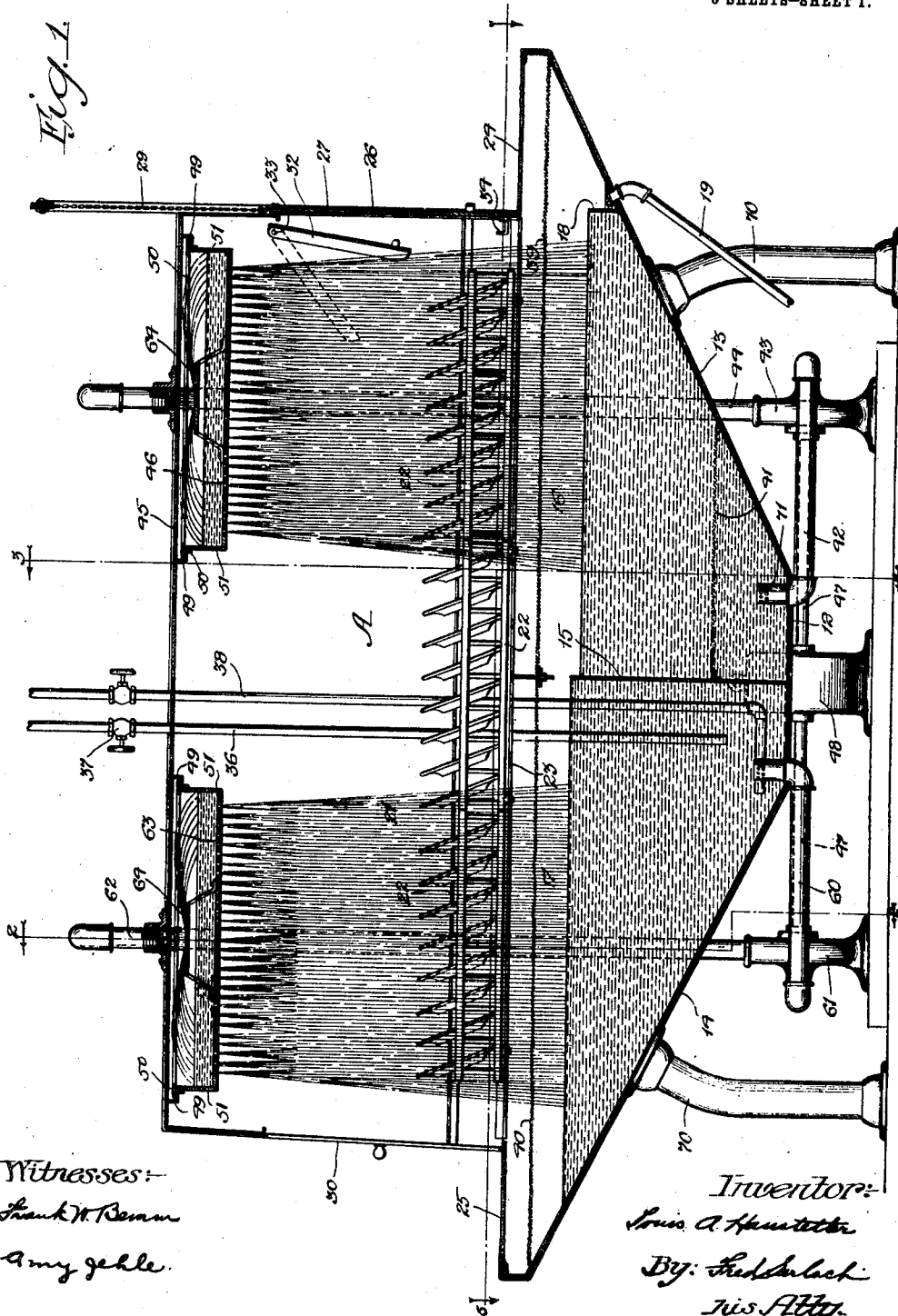


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APPLICATION FILED MAR. 29, 1911.

1,029,541.

Patented June 11, 1912.

3 SHEETS—SHEET 1.

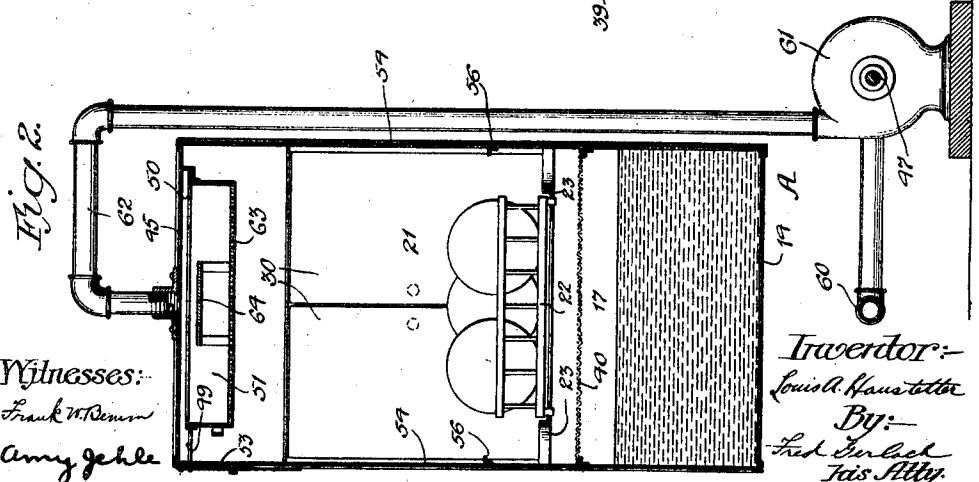
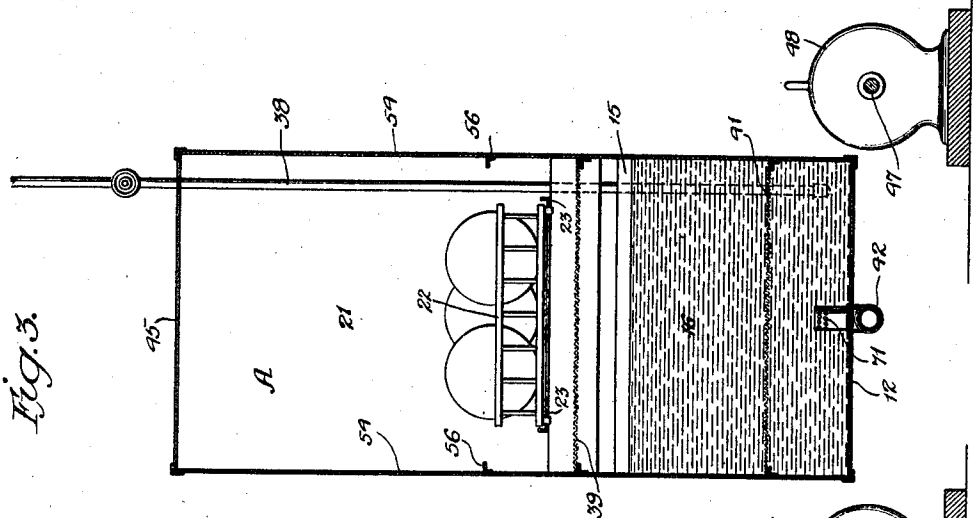
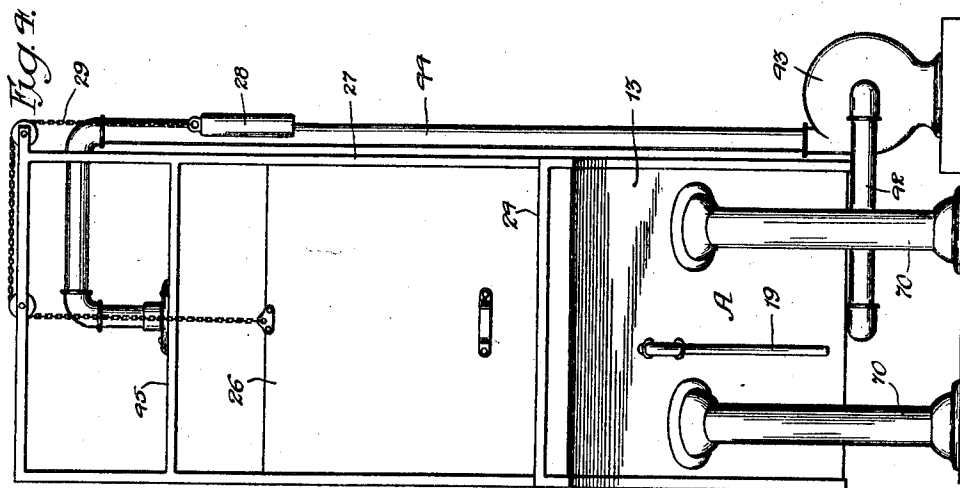


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3 SHEETS—SHEET 2.



Witnesses:
Frank W. Benson
Amy Gehle

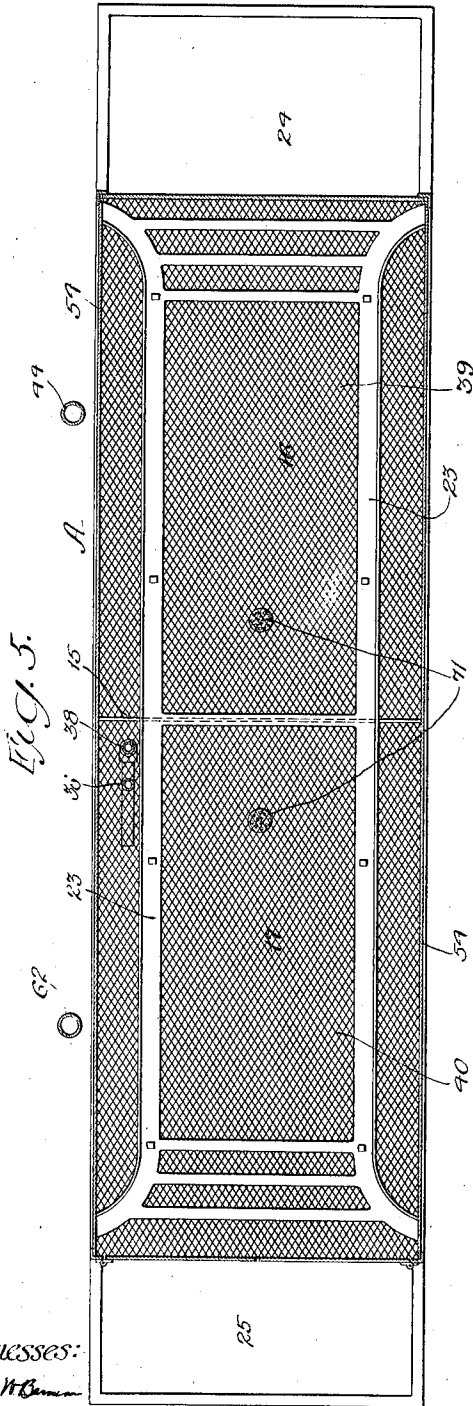
Inventor:
Louis A. Haustetter
By:
Fred C. Schuch
His Atty.

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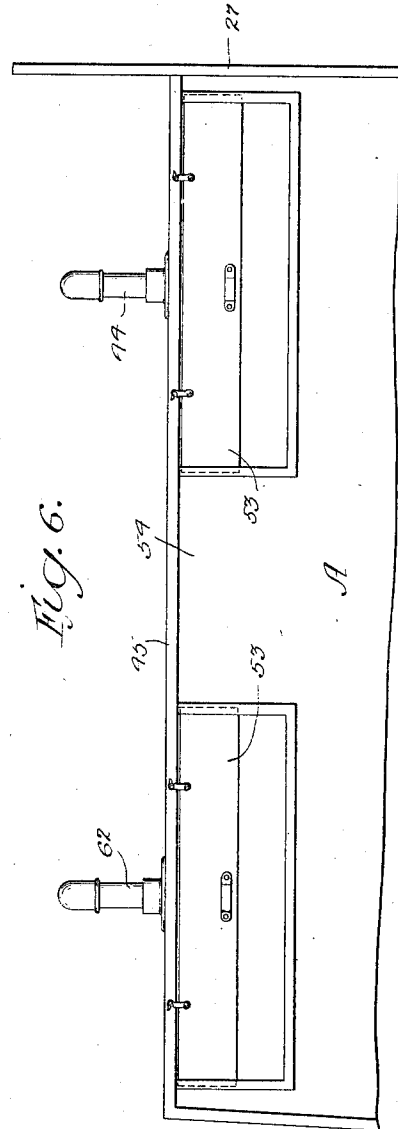
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3 SHEETS-SHEET 3.



Witnesses:
Fred M. Brown
Amey Zehle



Inventor:
Louis A. Haustetter
By: Fred Berlach
his Atty.

UNITED STATES PATENT OFFICE.

LOUIS A. HAUSTETTER, OF CHICAGO, ILLINOIS.

DISH-WASHING MACHINE.

1,029,541.

Specification of Letters Patent.

Patented June 11, 1912.

Application filed March 29, 1911. Serial No. 617,759.

To all whom it may concern:

Be it known that I, LOUIS A. HAUSTETTER, a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Dish-Washing Machines, of which the following is a full, clear, and exact description.

The invention relates to machines for washing dishes and designs to provide an improved machine by which the dishes will be thoroughly cleansed and which has a great capacity, so that it will be particularly advantageous in hotels and restaurants where speedy dish-washing is desirable or necessary. The invention attains this object by providing means for subjecting the dishes to voluminous but finely divided sprays of liquid, the initial washing being for the purpose of removing all the refuse and matter from the dishes and the subsequent spraying being for the purpose of rinsing them with clean water. If the entire volume of water used in the machine was fresh water, the cost of maintenance would be too great to render the device of much practical value and for that reason the invention makes provision for continuously circulating the water and deluging the dishes. The sediment and grease is carried off through an overflow and a small supply of fresh water is constantly added to cause the sediment and grease to overflow into the sewer. In practice it has been found that by causing large volumes of water to be sprayed upon the dishes continuously and successively to wash and then to rinse them, the machine may be economically operated, and will, furthermore, most thoroughly clean and wash the dishes.

The invention further designs to provide a dish-washing machine of improved construction, in which the dishes will be rapidly and thoroughly cleansed and through which the dishes may be readily passed in succession, and under successive sprays.

In the drawings Figure 1 is a central vertical longitudinal section of a washing machine embodying the invention. Fig. 2 is a section on line 2—2 of Fig. 1. Fig. 3 is a section on line 3—3 of Fig. 1. Fig. 4 is a view of the front end of the machine. Fig. 5 is a section on line 5—5 of Fig. 1. Fig. 6 is a side view of the upper portion of the machine.

The inclosing case A of the machine comprises a base which has a horizontal bottom-

portion 12 and inclined bottom-portions 13 and 14. A central transverse wall 15 divides the compartment in the base into tanks 16 and 17, and separates the liquid in one end of the base from that in the other. Tank 16 is adapted to contain the initial washing water, and tank 17 contains the rinsing water. This wall 15 is of sufficient height to retain a large body of water in tank 17 and permits the overflow to pass into tank 16, the water-line of which is slightly below the water-line in tank 17, and is maintained at the proper level by a wall 18 in tank 16 which controls the flow of the water and matter floating on the top thereof into a drain-pipe 19 which leads to the sewer. Above these tanks 16 and 17, extends a chamber 21 through which the dishes are passed. These dishes are usually placed in suitable racks 22, which are adapted to travel on rails 23, which extend longitudinally from end to end of the upper portion of the case and between extensions or tables 24 and 25 at the ends thereof. These racks are adapted to be placed on table 24 and pushed into the machine through an end-door 26 which is suitably mounted to slide vertically in guides 27. A counter weight 28 is connected to said door by a chain 29 to hold the door in raised position when a tray of dishes is to be pushed into the chamber 21. At the exit-end, chamber 21 is closed by a double door 30, the members of which are hinged at their sides to swing about an inclined axis, so the doors will be automatically held close, but may be pushed open and outwardly by the trays in the machine. In operation the racks are successively fed into the machine through door 26. By pushing a rack into the inlet-end, the entire series of trays will be advanced, causing the rack adjacent the outlet-end to be forced out of the machine through door 30.

In this machine one attendant or operator will be sufficient to keep the machine supplied with dishes to be washed, because he may after inserting a tray and closing door 26 step around to the other end and remove the dishes which have been washed and rinsed. A baffle 32 is pivotally hung at its upper end, as at 33, and when door 26 is closed this baffle hangs approximately parallel and adjacent to the door, and the latter is provided with an abutment 34 which is adapted to strike the baffle as the door is raised and to tilt the baffle inwardly so that

while the door is open the spray will be directed inwardly and prevent the operator from being splashed with the water descending in chamber 21.

5 A hot-water supply-pipe 36 leads to tank 17, adjacent the bottom thereof, to supply a regulated quantity of water to the machine, being provided with a valve 37 by which the supply may be regulated, as well as cut
10 off, when desired. A pipe 38 supplies steam to the tanks in the case and extends to, and terminates near, the bottom of tank 17, which contains the supply of rinsing water, or that which is used for final washing.
15 From tank 17 the hot water overflows into tank 16, which contains the supply of hot water for the initial washing. Screens 39 and 40 are removably held above tanks 16 and 17 respectively, to catch the solid matter and refuse removed from the dishes, and are disposed below the dish-racks and above the liquid in the base. A screen 41 is also
20 removably held above the bottom of tank 16 to prevent solid matter and sediment from passing to an intake pipe 42 which leads to a centrifugal pump 43. A pipe 44 conducts the discharge from said pump to the top 45 of the case and discharges the water above a box embodying a large spray-plate 46, which divides the stream of water entering the case under pressure, so that all portions of the dishes above tank 16 will be thoroughly subjected to a downwardly rushing flood-like spray or divided stream. A
30 screen 71 prevents refuse from entering the intake pipe 42. Pump 43 is continuously driven by a shaft 47, which is operated by a suitable motor 48 usually an electric motor. As a result of the construction the
40 large body in tank 16 provides a liquid-supply which will be forced by pump 43 to circulate continuously through the end of chamber 21 above tank 16 to deluge the dishes therein.
45 For convenience in cleaning the spray-plate 46 is mounted in a frame 50 which is slidably sustained by angle-iron guides 49 which are secured to the top 45. This frame comprises imperforate sides 51, the same, together with plate 46, forming a box, and it will be understood that the volume of water entering from pipe 44 will be sufficient and under pressure to flood the spray-plate 46, and cause the water to flow through
55 all of the perforations therein and through its entire area. Frame 50 with the spray-plate therein may be removed through a suitable door 53 in one of the side-walls 54 around chamber 21. Angle iron strips 56 are secured to the side walls, adjacent the dishes and cause the spray to be deflected and splashed inwardly and laterally.

After being initially washed, the racks with the dishes therein, will be forced on-
55 wardly in succession, to bring the dishes

therein beneath a rinsing apparatus similar in construction to that for the initial washing. This apparatus comprises an intake-pipe 60, communicating with the bottom of tank 17, a centrifugal pump 61 which is
70 driven by motor-shaft 47 and forces liquid from tank 17 through a pipe 62 through top 45 of the case and onto a divider or spray-plate 63 which is similar in construction to plate 46 and is removable, in the
75 same manner. A baffle plate 64 is mounted on and above each of the spray-plates 46 and 63, to distribute the stream of water over the spray plates. Resultantly, in transit through the case from one end to the other
80 the dishes will be thoroughly rinsed subsequent to washing by the continuous circulation of water from tank 17. It will be understood that these pumps are of sufficient force and capacity to circulate a large
85 volume of water so that the dishes will be thoroughly cleaned in a short period. The case is supported by standards 70.

The operation of the improved machine will be as follows: The racks containing
90 dishes to be washed, are successively fed into the machine through door 36 and in transit through chamber 21 in the case, they are successively washed and thoroughly rinsed and then pass out through door 30. As one
95 rack is pushed into the case the one adjacent the door 30 will be forced out. In practice it has been found that in the present machine the dishes will be washed about as fast as they can be fed into the machine by
100 an operator. When first placed in the machine the dishes will be subjected to a forcible divided voluminous spray of hot water from tank 16. This washing will remove the solids and refuse from the dishes, and
105 screen 39 will catch the refuse. The water after passing over the dishes will descend into tank 16, carrying the grease and finer particles of refuse with it, and these will float on top of the water in said tank and
110 pass over wall 18 to the drain pipe 19. This circulation of water will be continuous so that the water in said tank will be repeatedly used. Overflow of the grease and floating refuse will be caused by a supply of
115 water flowing from tank 16, over wall 15 and into tank 16. Tank 17 will be constantly supplied with water by pipe 36, the supply being merely sufficient to cause the grease and fat to overflow and pass out of tank 16.
120 As each tray is advanced through the machine and after the dishes have been initially washed they will be thoroughly rinsed by the fresher and cleaner water from tank 17, the voluminous divided stream from
125 plate 63 causing the dishes to be thoroughly rinsed and all greasy matter to be removed therefrom. The regulated supply of water from pipe 36 causes the water in tank 17 to overflow into tank 16 and to carry the
130

floating grease with it to tank 16 and thence to the drain pipe 19. It will be understood that the steam supplied through pipe 38, keeps the tanks and water hot.

5 The invention thus provides an improved dish washing machine in which provision is made for a continuous circulation of water and for voluminous streams sufficient to successively wash and rinse the dishes, and in
10 which the water is continuously cleansed by a regulated and comparatively small addition of water, so that the machine will be economic in its operation. There are no
15 moving parts in the machine so that there is no danger of breaking the dishes and large quantities of dishes may be quickly and thoroughly washed and rinsed.

The invention is not to be understood as restricted to the details shown and described
20 since these may be modified within the scope of the appended claims without departing from the spirit of the invention.

Having thus described the invention what

I claim as new and desire to secure by Letters Patent is:

25 1. In a dish-washing machine, the combination of a case having a plurality of tanks in its base, said tanks being adapted to discharge one into the other, means for supporting dishes in said case, a spraying device for each tank disposed above the dishes
30 and discharging into its tank only, means for forcing water from each of said tanks to its spraying device, and means for supplying fresh water to one of said tanks. 35

2. In a dish-washing machine, the combination of a case, a spraying-device at the top thereof comprising a box slidably mounted in said case and having a perforated bottom, means for supporting racks beneath said device, and means for supplying water to said
40 spraying-device.

LOUIS A. HAUSTETTER.

Witnesses:

FRED GERLACH,

FRANK W. BEMM.