

O. S. LEE.
DISH WASHING MACHINE.
APPLICATION FILED NOV. 4, 1907.

911,052.

Patented Feb. 2, 1909.

3 SHEETS—SHEET 1.

Fig. I.

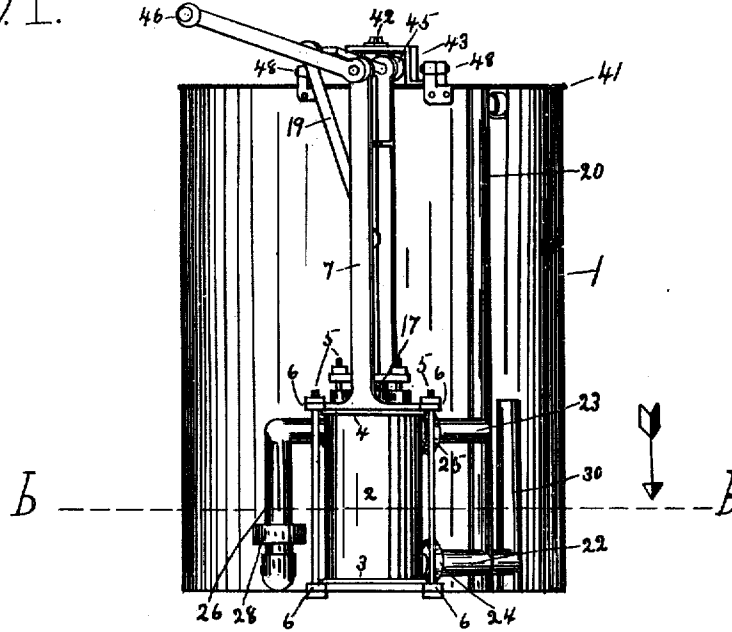
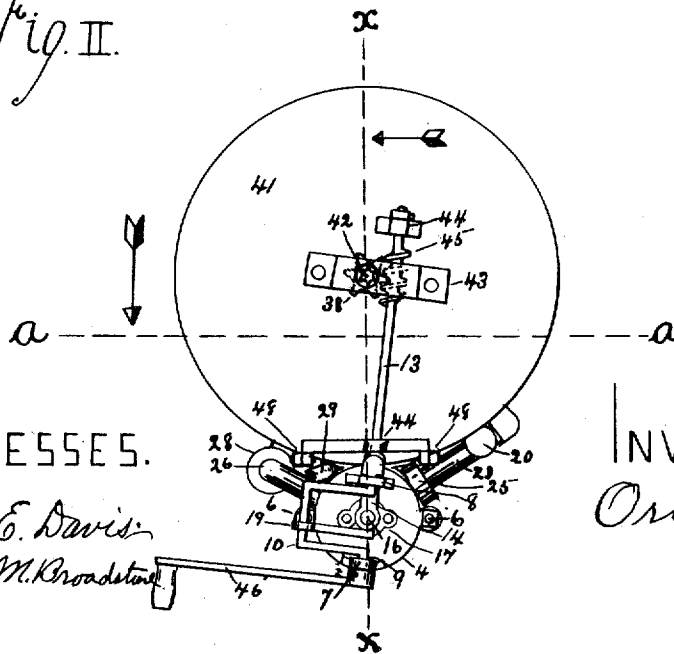


Fig. II.



WITNESSES.

Charles E. Davis
Bessie M. Broadstone

INVENTOR.

Orlan S. Lee

O. S. LEE.
DISH WASHING MACHINE.
APPLICATION FILED NOV. 4, 1907.

911,052.

Patented Feb. 2, 1909.

3 SHEETS—SHEET 2.

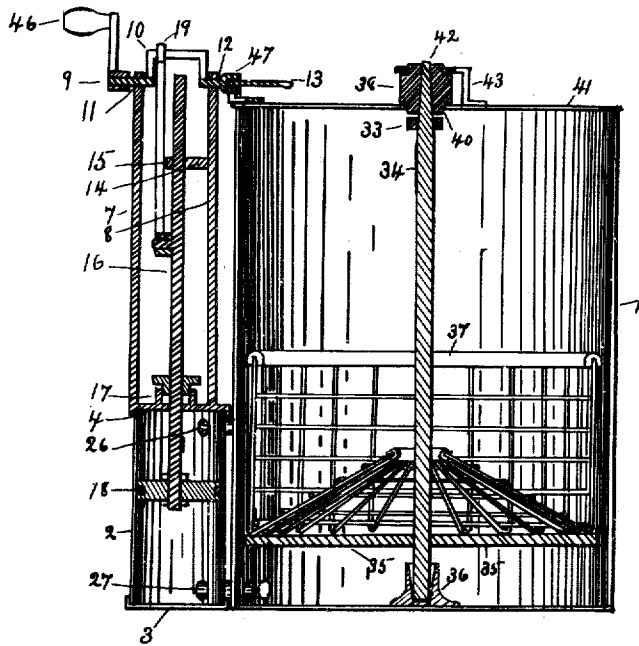
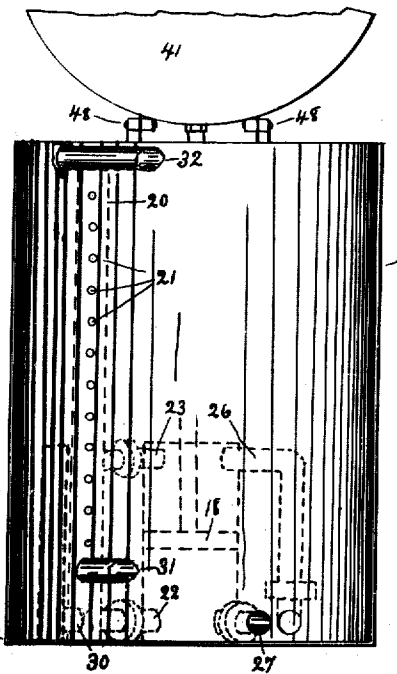


Fig. III.

Fig. IV.



WITNESSES.

Charles E. Davis,
Bessie M. Broadstone

INVENTOR.
Orlando Lee

O. S. LEE.
DISH WASHING MACHINE.
APPLICATION FILED NOV. 4, 1907.

911,052.

Patented Feb. 2, 1909.

3 SHEETS—SHEET 3.

Fig. V.

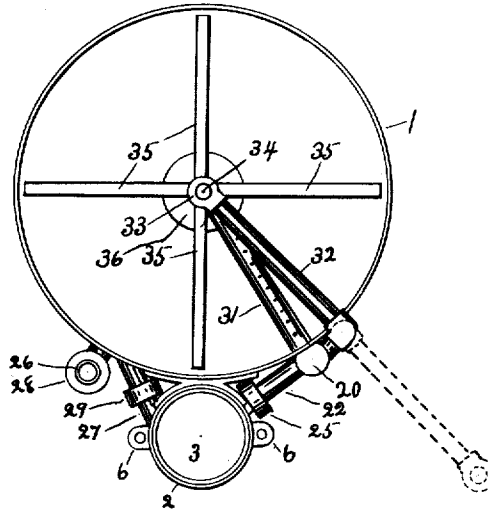
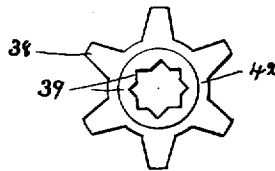


Fig. VI.



WITNESSES ✓

Charles E. Davis.
Bessie M. Broadstone.

INVENTOR.

Orlan S Lee

UNITED STATES PATENT OFFICE.

ORLAN S. LEE, OF YOUNGSTOWN, INDIANA.

DISH-WASHING MACHINE.

No. 911,052.

Specification of Letters Patent.

Patented Feb. 2, 1909.

Application filed November 4, 1907. Serial No. 400,704.

To all whom it may concern:

Be it known that I, ORLAN S. LEE, a citizen of the United States, residing at Youngstown, in the county of Vigo and State of Indiana, have invented a new and useful Improvement in Dish-Washing Machines, of which the following is a specification.

My invention relates to improvements in dish-washing machines in which streams of water from a pump operate in conjunction with revolving dish trays.

Figure I. is a side elevation. Fig. II. is a top view. Fig. III. is a vertical cut section on the line *x x* looking in direction of arrow, Fig. II. Fig. IV. is a vertical cut section on the line *a a* looking in the direction of arrow Fig. II. Fig. V. is a view of a horizontal cut section on the line *b b* looking in direction of arrow Fig. I. with the tube extended. Fig. VI. is a detail top view of gear.

The cylindrical tank 1. constitutes the body of the machine to which is secured the pump cylinder 2. The lower head 3 of the pump cylinder 2 may be integral with or secured to the cylinder in any suitable manner. The upper head 4 of the cylinder 2 fits over the top of the cylinder and is retained in position by means of bolts 5—5 Fig. I. passing through lugs 6—6—6—6 integral with cylinder heads. The upper cylinder head 4 has reared from two diametrically opposite points on its upper surface two upwardly extending arms 7 and 8 Fig. III. which extend a predetermined distance above the top of the tank 1. so that the crank shaft 9. when mounted in the bearings 11—12 at the extremities of said arms will be in alinement with the horizontal shaft 13 Fig. II. To arm 8 is secured the guide 14 with the eye 15 of said guide immediately above the center of the cylinder 2. The piston rod 16 passes through the eye 15 of the guide 14 through the stuffing box 17 and is secured to the piston 18 in any suitable manner. A pitman 19 is pivotally secured at its ends to the piston rod 16 and the crank portion 10 of the crank shaft 9.

The tube 20 shown in Figs. I. II. and V is closed at its ends and is secured to the outside of the tank 1. said tube is provided with a series of perforations 21 Fig. IV which open into the tank 1. Pipes 22 and 23 connect the upper and lower ends of the cylinder with the tube 20. Said pipes are provided with valves 24 and 25 of any suitable design which per-

mit of the passage of water from the cylinder 2 into the tube 20 and prevent its return flow.

Pipes 26 and 27 connect the upper and lower end of the cylinder 2 with the tank 1 and are provided with valves 28 and 29 which permit of the passage of water from the tank 1. into the cylinder 2 and prevent its return.

It is evident that the revolution of the crank shaft 9 will produce an oscillating movement of the piston 18 and a consequent movement of water from the tank 1. through the pipes 26—27—22 and 23 and cylinder 2 into the tube 20 through the perforations 21 back to the tank 1. In order to secure more uniformity of pressure on the water in the tubes and consequently more uniformity of flow through the perforations a tube 30 connects at its lower end to tube 20 and has its ends closed forming an air bulb.

It is desired that streams of water may be brought in contact with the dishes from above and below. To provide for this a horizontal tube 31 Fig. IV and V connects near the bottom of the tank 1. with the tube 20; said tube extends a suitable distance toward the center of the tank 1. It is provided with a series of perforations on its upper side and has its inner end closed. A horizontal tube 32 having its inner end closed is provided with a series of perforations on its under side and is hinged to the upper end of tube 20 so that it may be turned upwards and outward to position shown in dot Fig. V. To the free end of the tube 32 is secured an eye 33, which is designed to pass over the upper end of the perpendicular shaft 34 thereby retaining said shaft in position. In order that the eye may 33 readily pass over the upper end of shaft 34 said shaft is slightly beveled at its upper end and the socket 36 is shaped like an inverted cone which will provide for sufficient lateral movement of shaft 34. Means are provided to bring the dishes in contact with the streams of water coming from the perforations.

The perpendicular shaft 34 Fig. III. and V. having the horizontal arms 35—35—35—35 secured thereto is rotatably mounted within the tank 1. by means of a socket 36 in the center of the bottom of the tank 1. which forms a bearing for the lower end of the shaft 34. The upper end being adjustably mounted later described. A dish tray 37 is sup-

ported on the arms 35—35—35—35 from the shaft 34. Said trays are constructed of wire and are circular with a diameter a little less than the diameter of the tank 1. so that the shaft 34 and trays 37 may be revolved without coming in contact with the sides of the tank 1. The bottoms of the trays are convex, and are provided with openings at their centers adapted to pass over the shaft 34 Fig. III. The gear 38 is slidably mounted on the upper end of shaft 34 by means of sutures 39 Fig. VI. in said gear interlocking with similar sutures on said shaft. The lower hub 40 of the gear 38 is mounted in a circular opening in the center of the lid 41 of the tank 1. and the upper hub 42 is similarly mounted in the bar 43 secured to the lid 41 Fig. II. Said lid is hinged to the tank 1. and when it is opened said gear is retained in its position on the lid 41 but the sutures 39 of the gear 38 and shaft 34 disengage. Said gear sliding off of the beveled end of shaft 34. The horizontal shaft 13 is rotatably mounted in the bearings 44—44 Fig. II. and is in alinement with the crank shaft 9 with the screw 45 integral with said shaft 13 in engagement with the gear 38. The crank shaft 9 terminates at its outer end in the crank 46. The inner end of shaft 9 is recessed forming a slot 47 Fig. III. adapted to admit the flattened end 51 of the shaft 13 forming a joint which serves to transmit motion from the crank shaft 9 to the shaft 13 and also to per-

mit of the free movement of the hinge 48 of the lid 41 when said slot assumes a vertical position.

Having described my invention what I claim as new and desire to secure by Letters Patent is,

The combination in a dish-washing machine of a tank, a vertical shaft rotatably mounted within said tank, horizontal arms on said shaft, a circular dish tray supported on said arms, a pump and perforated outlet tubes providing for a plurality of streams of water from said pump to said tray with means for operating said pump and revolving said vertical shaft in conjunction, said means comprising a horizontal shaft 13 rotatably mounted on the cover of said tank, said horizontal shaft having a flattened end 51 for engaging a slot 47 in a crank shaft 9 whereby the revolution of said crank shaft will transmit motion to said horizontal shaft and provide for the opening of said cover when said slot occupies a vertical position, a screw gear 45 on said horizontal shaft engaging a gear 38 centrally mounted in said cover and, sutures in said gear for engaging sutures in the upper end of a vertical shaft 34 substantially as and for the purpose described.

ORLAN S. LEE.

Witnesses:

W. T. LITTLEFIELD,
JAMES B. MULLIKIN.