

Feb. 27, 1923.

1,446,905

J. J. KEHOE ET AL

DISHWASHER

Filed July 31, 1920

FIG. 2.

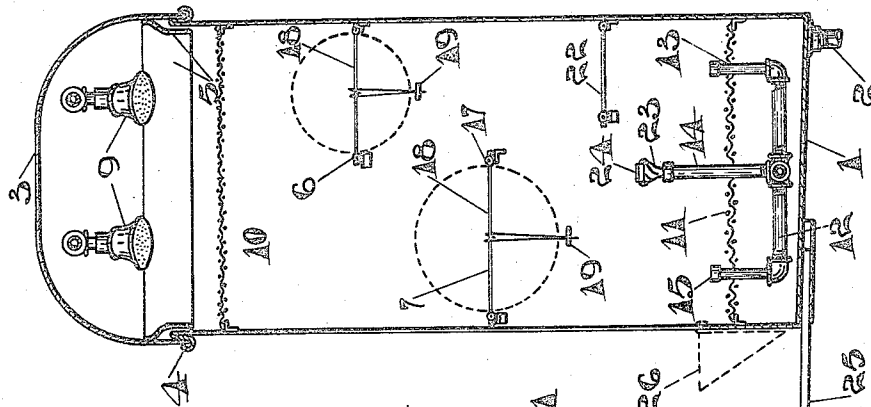


FIG. 1.

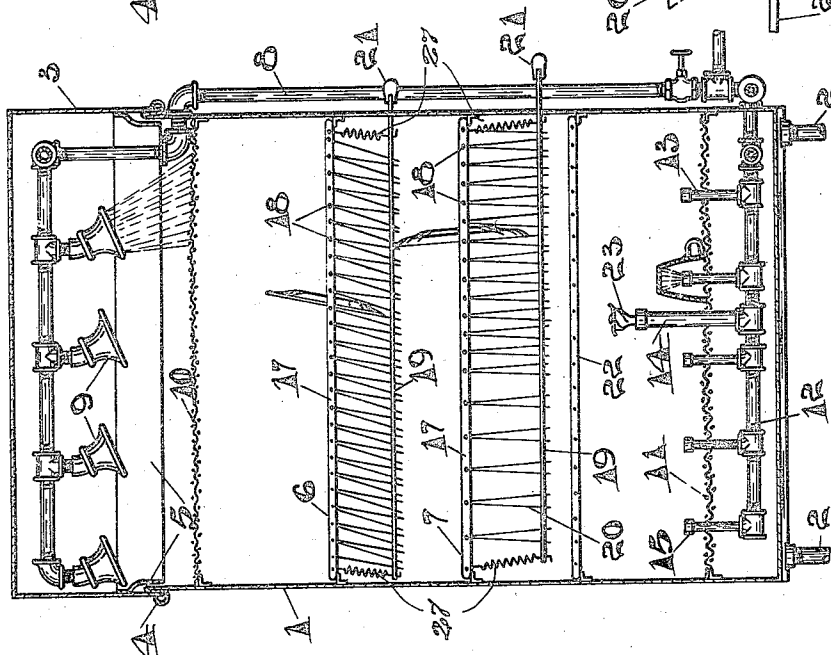


FIG. 3.

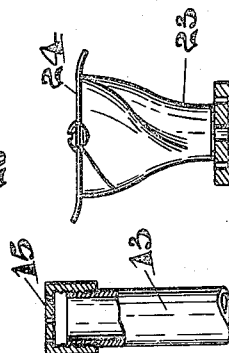
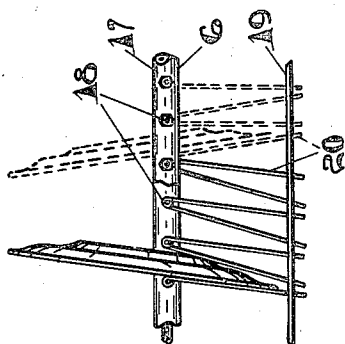
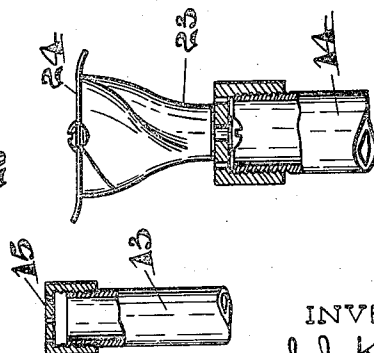


FIG. 4.

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FIG. 5.



UNITED STATES PATENT OFFICE.

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DISHWASHER.

Application filed July 31, 1920. Serial No. 400,417

To all whom it may concern:

Be it known that we, JAMES JOSEPH KEHOE and WILLIAM C. T. MORSON, of the city of Toronto, in the county of York, Province of Ontario, Canada, have invented certain new and useful Improvements in Dishwashers, of which the following is a specification.

This invention relates to dish washers of the type in which the dishes are supported in stationary racks and subjected to the action of jets of hot water and our object is to devise a dish washer of this type adapted for family use, which will be cheap to construct and effective in operation.

We attain our object by means of the constructions hereinafter described and illustrated in the accompanying drawings in which

Fig. 1 is a front elevation, partly in section, of our improved apparatus;

Fig. 2 a vertical section of the same;

Fig. 3 a side elevation on an enlarged scale of part of one of the plate racks;

Fig. 4 a sectional detail of one of the nozzles used in cleaning the inside of cups and the like; and

Fig. 5 a similar view of the nozzle for supplying water for cleansing the outsides of cups and the like.

In the drawings like numerals of reference indicate corresponding parts in the different figures.

1 is a casing, preferably constructed of sheet metal, and provided at the bottom with one or more drainage tubes 2. The top of the casing is box-shaped open at its under side and rests on trough-shaped ledges 4 formed at the top of the casing. An apron 5 is secured inside the cover extending down below the top of the lower part of the casing to prevent water passing out between the top and the lower part of the casing.

In the casing are supported plate racks 6, 7 and 22, these racks being designed to support plates, saucers and the like of various sizes, and they are arranged in echelon so that the plates carried by each rack may directly receive water from the water spraying devices hereinafter described.

8 is a water supply pipe which extends into the casing and communicates with a plurality of spray nozzles 9, which are located within the top or cover 3. Supported below these spray nozzles is a fine wire screen 10, which breaks up and distributes

the heavy streams of water from the spray nozzles so as to better reach all parts of the plates and dishes beneath. Preferably also the nozzles are directed diagonally and laterally, so that the water therefrom is best directed to reach the surfaces of the plates supported on the racks 6 and 7, the plates standing in said racks on their edges as shown.

At the bottom of the casing is arranged a flat rack 11 of more or less open construction such as a woven wire rack. A pipe 12 extends below this flat rack and is connected with the water supply pipe 8. A plurality of spray nozzles 13 extend up from this pipe and project a short way through the rack 11. A whirling spray nozzle 14 is also provided which extends up considerably above the flat rack as shown.

While any ordinary jets may be employed, we prefer to arrange the spray nozzles 13 as shown in Fig. 4. The nozzle is formed as a tube on which is screwed a cap 15 having perforations therein. Water may thus pass out through the holes in the cap. Preferably these holes are drilled to produce a spray. The nozzle 14 comprises a cap screwed on a tube and in which is journaled a whirling head 23, the cap being provided with holes to allow the water to spray upwardly to engage spiral grooves in the head, which causes the latter to rotate and forms a spray. To obtain a lateral spray the head is provided with a plate 24 having its ends projecting in the path of the spray, one end being curved upwardly and the other end curved downwardly.

If the racks 6 and 7 be fixed as is ordinarily the case, it is evident that the water from the spraying devices can only directly strike one side of each plate. We therefore so arrange these racks that the position of the plates may be shifted to alternately present their faces and their backs to the direct action of the water. In the preferred arrangement the upper member of each rack is formed of longitudinal side bars 17 which are preferably covered with a rubber tube and connected by transverse bars 18, and the lower member of the rack is formed of a bar 19 on which the lower edges of the plates may rest, though usually the edges of the plates will rest on the longitudinal side bars 17. It is evident then that by shifting the relative positions of the top and bottom members of the rack longitudi-

nally that the plates may be tilted either way as shown, if the lower edges of the plates are held from longitudinal movement relative to the bar 19, and we therefore pivotally connect wires 20 with the upper and lower members of the rack. The preferable arrangement is to loop the wires round the transverse bars as shown and to extend their ends through holes formed in the bar 19.

10 These wires are tilted by relative movements of the bars 17 and 19 and thus tilt the plates. While it is evident that either the upper or lower members of each rack might be movable, we prefer to move the lower

15 member and therefore extend the bar 19 through a hole in the side of the casing, the projecting end of each bar 19 being provided with a handle 21 whereby it may be operated. The ends of each bar 19 are

20 yieldably supported from the upper member by tension springs 27, each spring having one end connected with the bar and the other end connected with a transverse bar 18.

25 The device is used by placing the different sized plates in the racks 6 and 7 and saucers in the stationary rack 22. Cups are placed on the flat rack 11 over the nozzles 13. Dishes of various kinds may also be

30 placed on this rack. If desired, cutlery and small articles may be placed on the screen 11. Water is then turned on until everything is thoroughly cleansed, and to facilitate this cleansing, as hereinbefore described, the bars 19 are operated to expose

35 each side of each plate to the action of the water.

We provide a sliding table 25 on which dishes may be placed while the operator is loading the racks. A removable garbage receptacle 26 is also provided. The former may be slid under the casing and the latter removed after the dishes are placed in the racks.

What we claim as our invention is:—

1. A dish washer comprising a casing, a rack for plates and the like comprising a top member formed of side bars and transverse bars between which the plates are placed, a bottom member, means for shifting the relative positions of the top and bottom members, and means preventing the shifting of the lower edges of the plates relative to the bottom member comprising wires having a pivotal engagement with both top and bottom members and a spray nozzle adapted to discharge water on the plates.

2. A dish washer comprising a casing, a rack for plates and the like comprising a top member formed of side bars on which plates may rest and transverse bars between which the plates are placed, a bottom member yieldably supported from the top member, means for shifting the position of the bottom member relative to the top member, means preventing the shifting of the lower edges of the plates relative to the bottom member, and spray nozzles adapted to discharge water on the plates.

Signed at Toronto, Canada, this 19th day of July 1920.

J. JOSEPH KEHOE.
WILLIAM C. T. MORSON.