

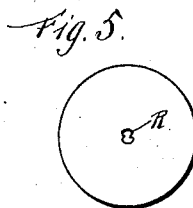
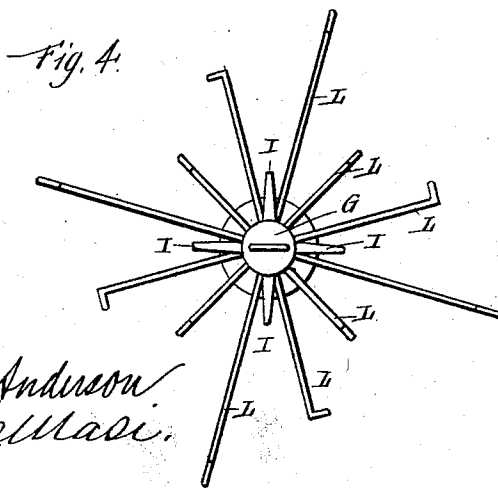
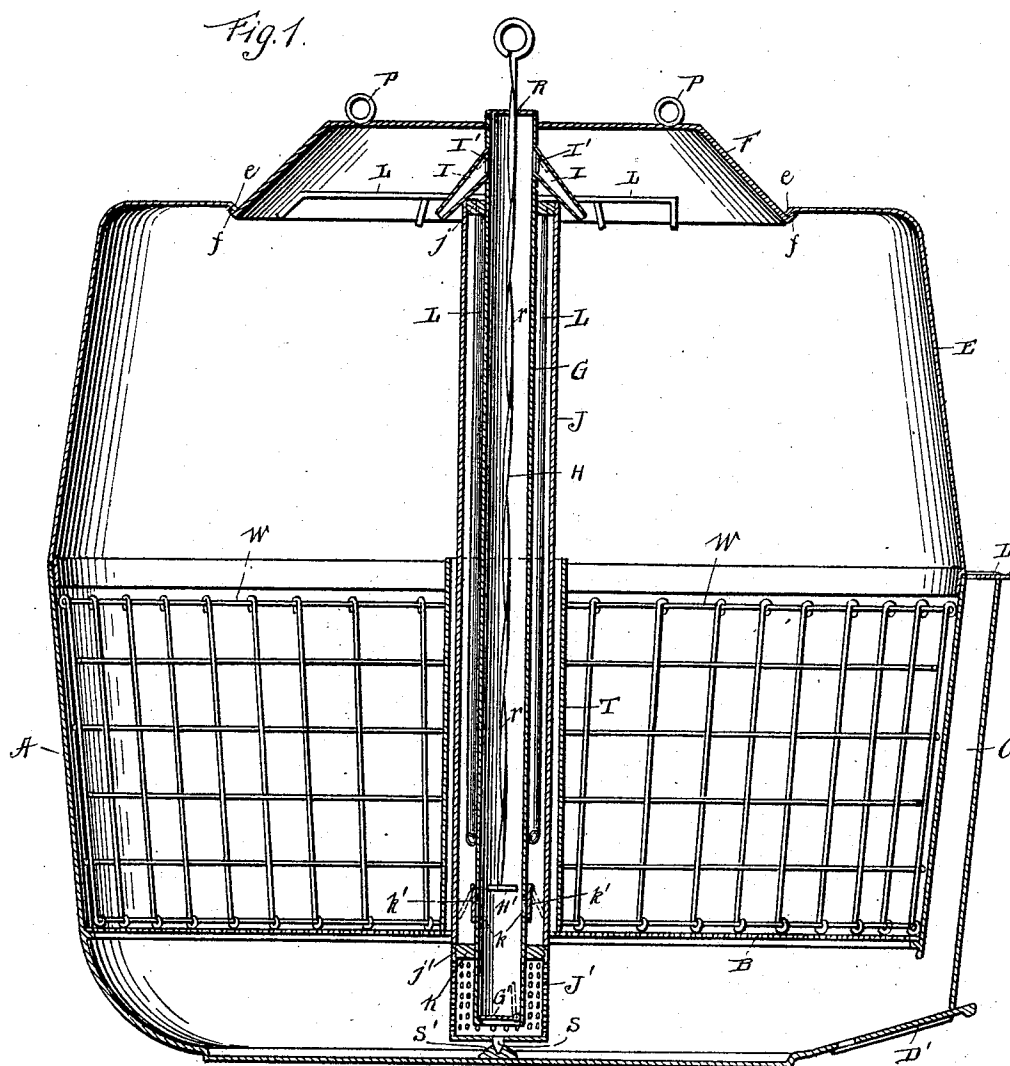
(No Model.)

2 Sheets—Sheet 1.

J. J. WALSH.
DISH CLEANER.

No. 539,317.

Patented May 14, 1895.



Witnesses

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Phileas.

Inventor
J. J. Walsh
by E. W. Anderson
his Attorney

(No Model.)

2 Sheets—Sheet 2.

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Fig. 2.

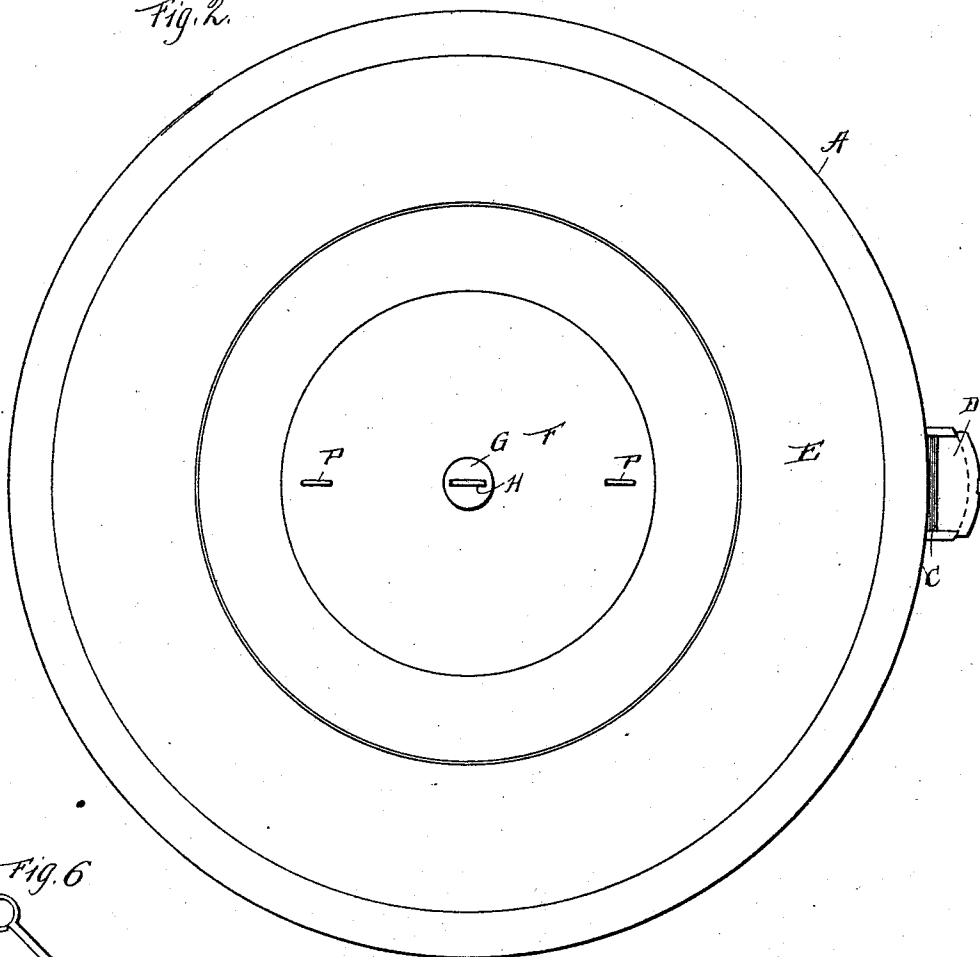


Fig. 6

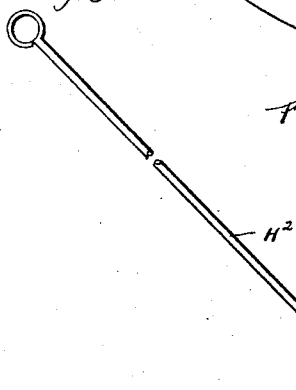
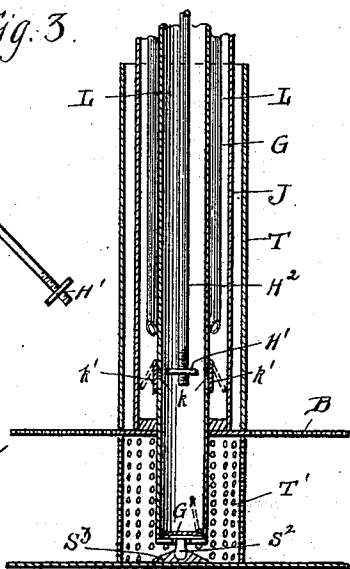


Fig. 3.



WITNESSES

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UNITED STATES PATENT OFFICE.

JAMES J. WALSH, OF OLYPHANT, PENNSYLVANIA.

DISH-CLEANER.

SPECIFICATION forming part of Letters Patent No. 539,317, dated May 14, 1895.

Application filed August 20, 1894. Serial No. 520,847. (No model.)

To all whom it may concern:

Be it known that I, JAMES J. WALSH, a citizen of the United States, residing at Olyphant, in the county of Lackawanna and State of Pennsylvania, have invented certain new and useful Improvements in Dish-Washing Machines; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others, skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

Figure 1 of the drawings is a representation of a central vertical section of the invention. Fig. 2 is a plan view of the invention. Fig. 3 is a fragmentary section showing modification of strainer. Fig. 4 is a plan view of tubes with radiating discharging-arms. Fig. 5 is a detail of bearing for spiral piston-rod. Fig. 6 is a detail of plain piston rod.

The object of this invention is to provide a practical and efficient device for washing dishes, and by means of which they can be readily, rapidly and thoroughly cleaned, and it consists in the novel construction and combination of parts, all as hereinafter described and pointed out in the appended claims.

Referring to the accompanying drawings, the letter A designates a receptacle, which may be made of tin or other suitable material, and of different shapes and dimensions. Supported in said receptacle a short distance above the bottom thereof, is a perforated false bottom B, which is designed to form a support for the dishes during the operation of washing, as hereinafter more fully described. Upon one side of said receptacle is formed an external spout or tube C, which may, as shown, extend the full height of the receptacle, or it may terminate at any desired point thereon. The lower portion of this spout or tube opens into the lower portion of the receptacle, and its upper and lower ends are closed by the respective slide gates D, D', which may be adjusted to permit the insertion of water to, or its drainage from, the receptacle. By the provision of this spout or tube I am enabled to introduce hot water into the receptacle without the necessity of pouring it upon and over

the dishes, a practice objected to by many housekeepers. The receptacle may be drained by tipping it slightly.

E designates the removable cover of the receptacle,—which is of considerable convexity or height, and which is cut away at its central portion to form an opening of considerable size, the marginal portion of the metal around such opening being bent or flanged inwardly, as indicated at e. Closing this central opening of the cover is a raised cap-piece F, which has a marginal depression f, arranged to receive the flange e of the cover as the latter is seated in the receptacle. Attached to this cap-piece is a central, vertical tube G which extends into the receptacle to a point near the bottom thereof, and is provided at its bottom with an upwardly opening valve G'. Through said tube G is arranged to reciprocate a piston rod H carrying at its lower portion a piston H'. k are a series of eduction ports in said tube controlled by outwardly opening valves k'. Projecting from the upper portion of this tube, below the cap-piece, are a series of radiating discharging or spraying arms I. Said arms where they join the tube G are shown as provided with outwardly opening valves I'. Said valves are not however considered to be essential to a successful operation of the invention.

J, J', show a second and larger tube which concentrically surrounds the tube G, and which extends to, or very near to, the bottom of the receptacle. Said tube J consists of an upper section whose upper end screws onto, or is otherwise connected to, a ring or cap j carried by the tube G, and which closes the upper end of tube J, and a lower perforated section J' which has a screw or other connection j' with the section J. Said section J' is closed at its upper end by an annular ring K. At the upper portion of the section J are a series of discharging or spraying arms L, said arms in the form of pipes extending down between the two tubes to a point slightly above the ports k, where they terminate in open ends.

The operation of the machine as thus far described, is as follows: The dishes are arranged upon the perforated false bottom, and a suitable quantity of hot water is introduced into the receptacle through the external fill-

ing spout or tube. This water enters the section J' of the outer tube through the perforations thereof. The piston rod and piston are now reciprocated, the latter working somewhat loosely in the tube G, so that upon the down stroke, considerable water will be forced up around and above it. Upon the up stroke, the valve G' is opened and water is drawn up into the inner tube which, upon the down stroke escapes through the ports k into the space between the two tubes. After a few reciprocations of the piston, this space becomes filled, or nearly filled, with water, which is then forced up into the arms L, and is discharged therefrom upon each down-stroke. Upon the up-stroke the accumulated water above the piston is discharged from the arms I, and in this manner a continual discharge upon the dishes is kept up so long as the piston is reciprocated, the discharged water draining down through the false bottom. The operation is greatly facilitated by the action of the steam from the hot water rising through such bottom the receptacle usually being placed upon a stove or other heater during the operation. The space between the two tubes being at the outset filled with air, it is obvious that as this space becomes filled with water, this air is compressed, forming at the upper portion of the space an elastic cushion, the effect or reaction of which assists in the discharge of water from the arms L. The arms I and L will preferably be made of different lengths and will have their nozzles bent at different angles so that the discharge will be upon practically the entire area of the false bottom.

It will be observed that all water entering the pump must come through the perforated section J' of the outer tube, the result being that the dirt from the dishes is kept outside, and the water entering the pump is kept comparatively clean.

I find that the effect of the device is greatly increased by a rotary action of the discharge from the spraying arms, and to obtain this action, the cap piece F may be rotated with one hand (by means of suitable handles or rings P) while the piston is actuated with the other hand; or, the action may be effected mechanically by the construction shown in the drawings, wherein the piston is formed with a twist or spiral r, which engages a corresponding bearing R in the cap of the inner tube. This arrangement will cause both tubes, the cap-piece, and the discharging arms to rotate upon the reciprocation of the piston, the bearing for the cap-piece being at its marginal engagement with the cover. The character of the twist or spiral r, is preferably such as to cause a single complete rotation to each stroke of the piston.

In Figs. 3 and 6, I have shown the piston H' as threaded upon the shaft H² in order that it may be adjusted vertically to vary the stroke.

The outer tube may be provided at its lower end with a bearing stud S working in a step

S', as seen in Fig. 1, or the inner tube may have a similar stud S² working in step S³, as seen in Fig. 3.

In order to permit the tubes G and J, J' to be removed when desired without disarranging the dishes on the false bottom, the said bottom may be provided with an upward sleeve T, which extends up and loosely around the outer tube. This sleeve will retain the dishes when the tubes are removed. Said sleeve may be extended down to the true bottom of the receptacle as shown at T' in Fig. 3, the extension being perforated. Such extension will take the place of the section J'. In this form the perforated false bottom has an imperforated annular central portion surrounding the inner tube which separates the chamber of the perforated section from the chamber of the outer tube.

In larger sizes of the machine it may be advisable to provide a crib or crate W which is placed into the receptacle upon the false bottom, and into which the dishes are then placed. Such crib or crate will save considerable handling of the dishes, and will also permit them to be packed in such a manner as to be more thoroughly washed.

The washing devices can all be readily removed from the receptacle, which can then be utilized for other purposes.

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

1. A dish washing machine, comprising essentially a receptacle having a perforated false bottom therein, a vertical tube supported therein, said tube having a water inlet valve at its lower portion and a series of spraying arms at its upper portion, a second tube surrounding the first and also having a water inlet at its lower portion and a series of spraying arms at its upper portion, the lower portion of the outer tube having no communication with the upper portion except through ports in the inner tube, and a double acting piston arranged to reciprocate in said inner tube, substantially as specified.

2. A dish washing machine comprising a receptacle, a perforated false bottom some distance above the true bottom, a hollow vertical tube supported centrally within said receptacle, and having a perforated lower section, a second valved tube inside the first tube, a series of spraying arms upon each tube, and a double acting piston arranged to reciprocate in said inner tube, substantially as specified.

3. A dish washing machine comprising a receptacle having a false bottom, a cover and a rotary cap piece forming part of the cover, a double acting pump attached to said cap piece, and having two series of spraying arms, and means whereby said cap-piece may be rotated substantially as specified.

4. A dish washing machine, comprising a receptacle, a false bottom therein, a cover a rotary cap piece forming part of the cover, a

hollow tube having a perforated lower section, a second tube inside of the first and attached to the cap piece, and provided with induction, and eduction ports and valves, a piston within the inner tube, a spiral piston rod attached to said piston, and a bearing for said piston rod in the upper end of the inner tube, whereby the tube and the cap piece are rotated substantially as specified.

5 5. A dish washing machine, comprising a receptacle having a false bottom therein, a cover having a cut-away central portion, a cap-piece around which said cover fits and upon which it loosely bears, the tube G attached to said cap-piece, and having a valved induction port in its bottom, the piston rod and piston working in said tube, the spraying or discharging arms carried by said tube, the outer and larger tube around said tube G, said tube being closed at its upper end, a perforated section at the lower portion of said tube, and closed from the upper portion thereof, and a series of valved eduction ports from the inner into the outer tube above said perforated section, 15 substantially as specified.

6. In a dish washing machine, a receptacle, a cover therefor, a double acting pump arranged to operate in said receptacle and within said cover, said pump having two series of spraying arms, one series of said arms being 30 arranged to discharge upon one stroke of the pump, and the other series upon the opposite stroke, and means whereby said pump with its spraying arms may be rotated as the piston is operated, substantially as specified. 35

7. In a dish-washing machine, the combination of the receptacle, the cover, the cap piece rotatably fitted to said cover, the double-acting pump having a connection with said cap piece, the piston rod of said pump having a 40 spiral thereon, and a bearing in said cap piece engaged by said piston rod whereby as the latter is reciprocated, the cap and pump are rotated, substantially as specified.

In testimony whereof I affix my signature 45 in presence of two witnesses.

JAS. J. WALSH.

Witnesses:

M. J. HEALEY,
J. S. KELLEY.