

(No Model.)

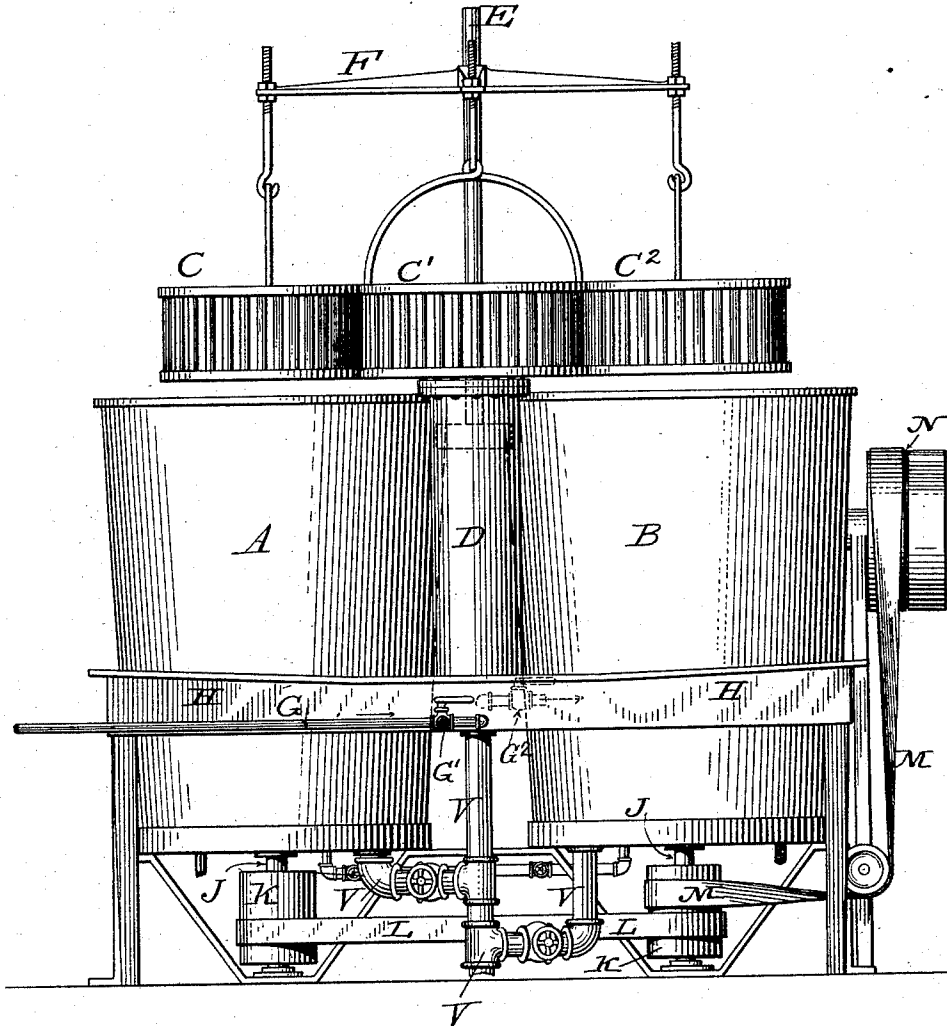
2 Sheets—Sheet 1.

A. A. WRIGHT.
DISH CLEANER.

No. 524,409.

Patented Aug. 14, 1894.

Fig. 1.



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Inventor

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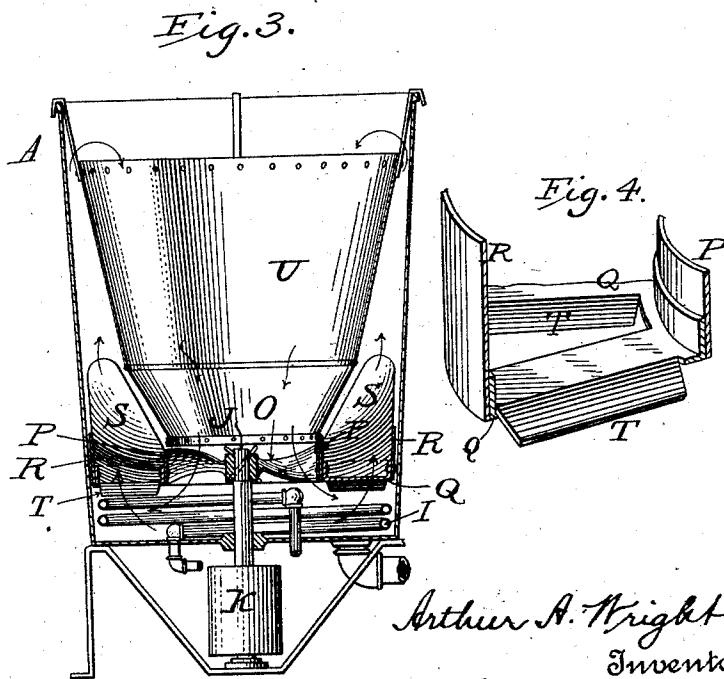
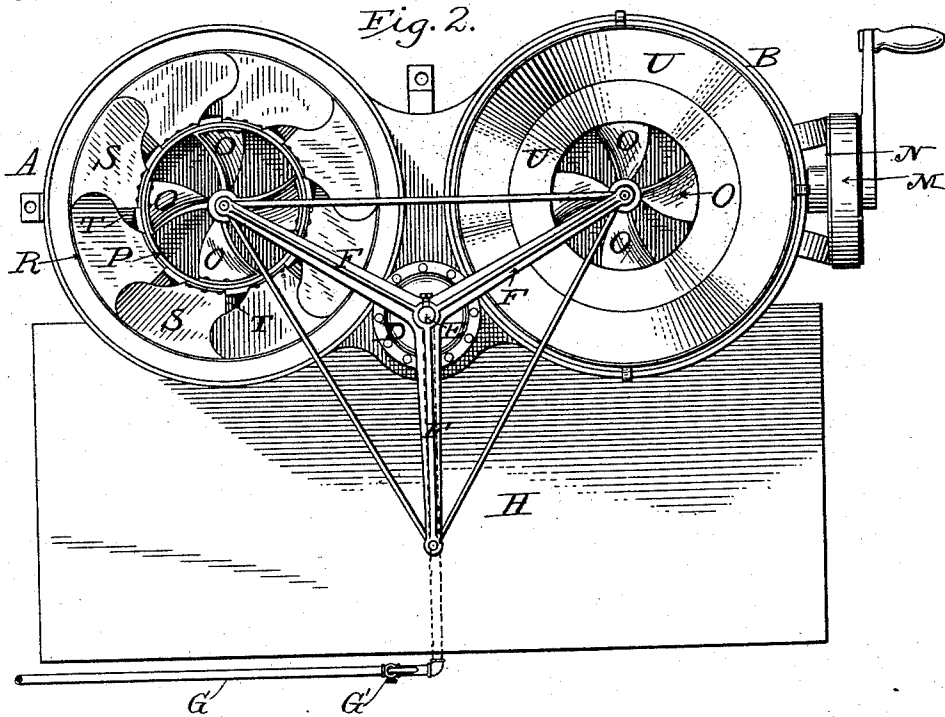
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2 Sheets—Sheet 2.

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UNITED STATES PATENT OFFICE

ARTHUR A. WRIGHT, OF BENNINGTON, VERMONT.

DISH-CLEANER.

SPECIFICATION forming part of Letters Patent No. 524,409, dated August 14, 1894.

Application filed March 16, 1894. Serial No. 503,936. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR A. WRIGHT, a citizen of the United States, residing at Bennington, in the county of Bennington and State of Vermont, have invented certain new and useful Improvements in Dish-Washing Machines, of which the following is a specification.

My invention relates to machines for washing dishes, &c., and consists first, in a novel means for insuring a positive circulation of the water within the tubs; and second, in a novel arrangement of devices for elevating and lowering the dish-holding baskets.

In the drawings,—Figure 1 is a front face view of my machine; Fig. 2, a top plan view with the baskets and one of the aprons removed; Fig. 3, a vertical sectional view through one of the tanks; and Fig. 4, a sectional perspective view illustrating a detail of construction of the water-forcing devices.

A and B indicate two upright tubs, tanks, or vessels, in which the dishes are suspended by means of baskets C, C', C², as usual, said tanks being supported upon or by a suitable framework.

Between the two tanks is an upright cylinder D in which is mounted a piston (shown in dotted lines in Fig. 1), whose rod or stem E projects out through the top or upper end of the cylinder, where it is provided with a frame F, shown in Figs. 1 and 2, the said frame serving to support the baskets C in which the dishes are placed.

A pipe G communicates with the lower end of the cylinder, and by means of a valve G' in said pipe, the flow of steam to and from the cylinder may be controlled. This valve will preferably be an ordinary three-way valve, but if desired, a separate pipe G², and valve may be employed, as indicated by dotted lines in Fig. 1.

When steam, or any other suitable fluid, is admitted below the piston, the latter, with the attached frame F, will rise and lift the baskets containing the dishes, up out of the tanks A, B, and while in this elevated position, the frame may be swung around horizontally to bring the basket C that was just

raised from tank A, over the top of tank B, so that when the device is lowered, this basket C will be carried into the rinsing tank B.

The basket C' that was elevated from tank B was, by the same horizontal movement, brought over the top of the table H so that the dishes may drain.

Basket C², which was upon the table while the baskets C C' were in the tanks A B, has had the washed dishes removed, and it, or another basket, has been supplied with a new lot of soiled dishes. When, therefore, the baskets were raised and swung around, as before stated, this basket C² was moved from over the table to the tank A. In other words, each basket is brought successively over the table H, and tanks A and B. The frame F may turn with the rod or stem E or independently thereof, as may be preferred. The steam used for elevating the frame F is preferably derived from the same pipe which supplies the heating coils hereinafter referred to. This table H to which I have referred, extends across the front of the machine from one side to the other, and will be provided, as are the tanks, with suitable pipes V for carrying off the dirty water.

As the two tanks A and B are similar in all respects, only one of them will be described in detail.

In the bottom of the tank there is a steam coil I by means of which the water in the tank is kept at the proper temperature. Extending upwardly through the center of the tank bottom is a shaft J having beneath the tank a band or sprocket wheel K, the band wheels of the two shafts being connected by a chain or belt L. One of these shafts J (in the present instance that of tank B) receives motion from a belt M which receives its motion from a band wheel N, which is turned by hand or power.

At the upper end of the shaft J are the inclined blades or wings O which are attached at their outer ends to the circular band P, see Fig. 3. Band P is connected at its lower edge to an annular plate Q, which in turn is connected to a second band R, so that the blades or wings O, the bands P R, and the in-

tervening plate Q constitute one structure and turn or rotate together with shaft J.

Between the bands P and R, but firmly united thereto, are the blades S which incline at an angle of from forty-five degrees to sixty degrees, but in a direction the reverse of the blades O.

The plate Q connecting the bands P and R is made open or provided with openings in order that the water may pass upwardly there-through, and to assist in the movement of the water, the plate will be provided on its under side with depending and inclined wings T, Figs. 3 and 4, adjacent to the openings. A convenient way of making these wings is to cut or slit the plate at different points, and turn the tongues thus formed, down below the plate, as in Fig. 4.

Suspended within each of the tanks is an apron U which, at its lower end, is of the same diameter as the band or ring P, while its upper end is flared and made of a size slightly less than the diameter of the tank, as shown in Fig. 3. This apron divides the tank into two chambers, a central chamber in which the dishes are placed and down which the water is drawn, and an outer chamber up which the water is forced.

It will be noticed upon reference to Fig. 3 that the upper end of the apron terminates below the upper end of the tank so that the water may pass over the top of the apron without splashing over the tank. In Fig. 2 the apron is omitted from tank A.

When the dishes are lowered into the apron, and the shaft J rotated rapidly, the blades O will draw or force the water downward through the center, while the blades S will, at the same time, take the water drawn down by blades O and force it upward around and outside the apron over the top of the same.

By reason of the band P the water is caused to pass down below the blades O before it can be acted upon by the blades S, thereby preventing the latter from interfering with the operation of the blades O. The wings or lips T act as scoops and give to the water discharged downward by blades O, an upward movement, which movement is continued by the blades S.

From the foregoing it will be seen that I

secure a positive circulation of the water through the dish-baskets and the tanks in which they are placed.

The number of tubs may be increased if desired, the form of frame F being varied as required.

Having thus described my invention, what I claim is—

1. In a washing machine, the combination with a tub and a table; of a cylinder provided with a piston and piston rod, and fixed relatively to the tub and table; a basket-supporting frame carried by the piston rod and adapted to be swung horizontally; and means for controlling the flow of a fluid to and from the cylinder.

2. In combination with two tanks, a cylinder provided with a piston and piston rod; a table below the top of the tanks; means for controlling the flow of a fluid to and from the cylinder; and a basket-supporting-frame carried by the rod, said frame being capable of horizontal movement, substantially as shown and described.

3. In combination with two tanks and a table; a fluid-pressure-mechanism arranged centrally with reference to the tanks and table; and a basket-supporting-frame capable of horizontal movement, and adapted to be raised and lowered by the fluid-pressure mechanism.

4. In combination with the tank and the apron therein; the shaft J provided with the inclined blades O; bands P and R connected by an open plate Q; and the blades S between the bands P and R, substantially as shown and described.

5. In combination with the tank and the apron therein; the shaft J provided with the blades O; bands P and R; the open plate Q connected with said bands and provided with wings or lips T on the under side; and the blades S between the bands, substantially as shown and described.

In witness whereof I hereunto set my hand in the presence of two witnesses.

ARTHUR A. WRIGHT.

Witnesses:

JAMES H. FIELD,
LEWIS L. STEVENS.