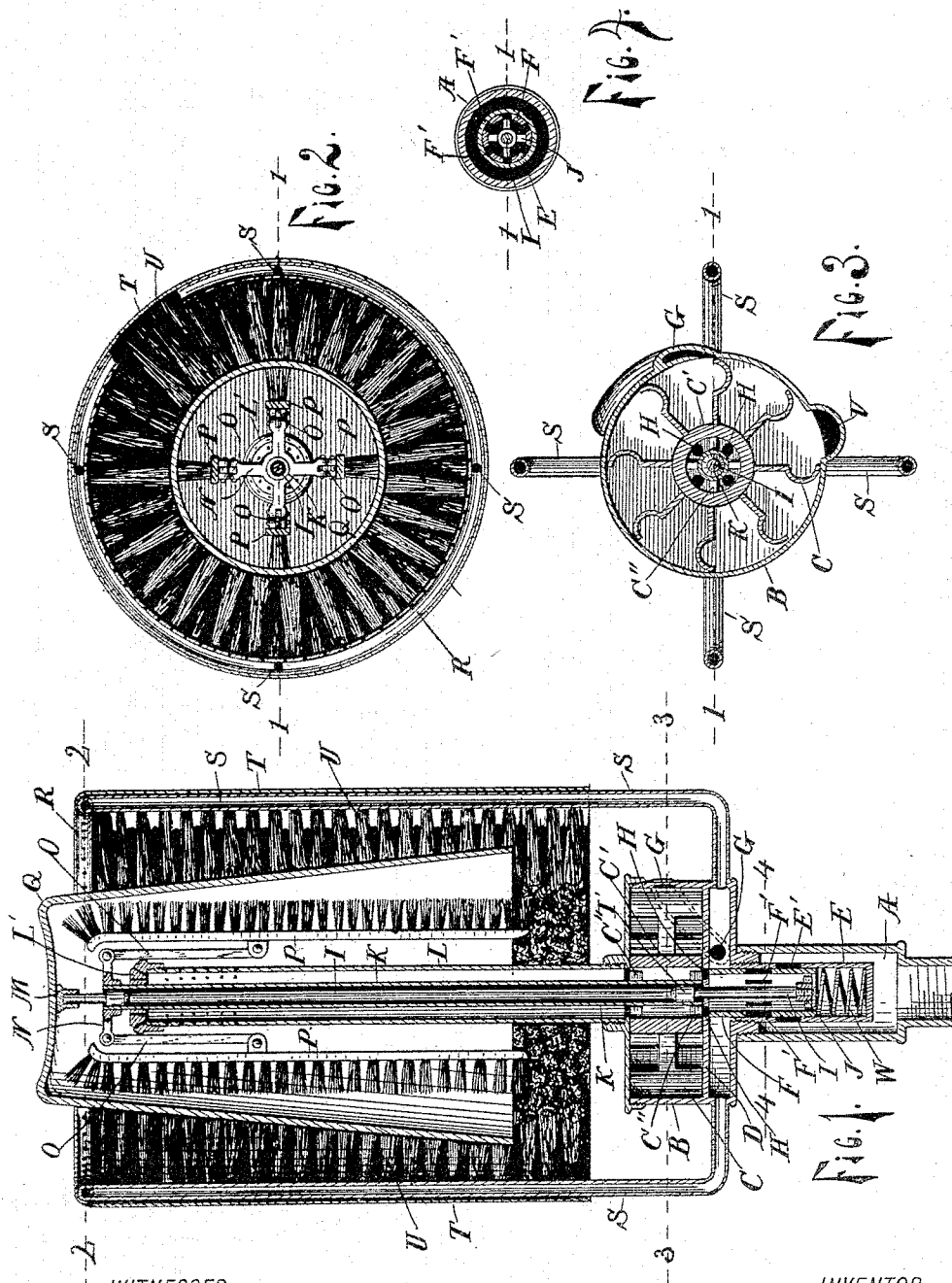


(No Model.)

O. H. ROBINSON.
TUMBLER WASHER.

No. 491,374.

Patented Feb. 7, 1893.



WITNESSES:

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UNITED STATES PATENT OFFICE.

ORTON H. ROBINSON, OF GRAND RAPIDS, MICHIGAN.

TUMBLER-WASHER.

SPECIFICATION forming part of Letters Patent No. 491,374, dated February 7, 1893.

Application filed August 10, 1892. Serial No. 442,711. (No model.)

To all whom it may concern:

Be it known that I, ORTON H. ROBINSON, a citizen of the United States, residing at the city of Grand Rapids, in the county of Kent and State of Michigan, have invented a certain new and useful Device for Washing Tumblers and other Dishes, of which the following is a specification.

This invention has for its objects to provide new and improved means for washing tumblers or cups and to provide novel devices for cleaning the outside of such articles.

To accomplish these objects my invention involves the features of construction and the combination or arrangement of devices hereinafter described and claimed, reference being made to the accompanying drawings in which—

Figure 1 is a vertical sectional view on line 1—1 of Fig. (2); Fig. 2 is a horizontal sectional view on line 2—2 of Fig. (1); Fig. 3 is also a horizontal sectional view on line 3—3 of Fig. (1); and Fig. 4 is a horizontal sectional view on line 4—4 of Fig. (1).

Similar letters refer to similar parts throughout the several views.

A. represents a water space which receives the water from any suitable supply, having a sufficient amount of pressure to operate the parts of the mechanism hereinafter described.

B. is the shell which surrounds the water-wheel or water motor; the shell B. extends downwardly so as to inclose the water reservoir or space beneath the water-wheel chamber.

C. represents the wings or paddles of the water-wheel or motor. These paddles are attached to a hub, which hub is shown by C'; the hub C' is attached by arms or lug C'' to the revolving cylinder K., the water-wheel revolving with the cylinder K., as hereinafter more fully described.

D. is the partition between the water-wheel chamber, and the water space beneath such chamber.

E. is a shell or chamber within which the balance valve acted upon by rod I. is moved. Beneath the valve F. and within the shell E. is a spring W. The object of the spring being to lift the rod I., and with it the valve F.

so as to cut off the water from the case A., as hereinafter more fully described.

E' is an opening through the shell E. and F' is an opening through the cylinder balance valve F. When the balance valve F. is depressed, as hereinafter described, the openings E. and F' register with each other, and the water from the chamber A. passes upward into the water space beneath the water-wheel chamber.

G. is a water conduit opening from the water space beneath the water-wheel chamber, into the water-wheel chamber, the same being placed in substantially the position shown in Fig. (3), discharging water against the paddle C. so as to revolve the water-wheel rapidly.

H—H, &c. are openings which allow the water to flow upwardly through the partition D, from whence the water passes into the water space, between the tube L., and the revolving tube rod K.; the tube L. is stationary and is provided with the journal boxes L', in which the revolving tube K. is supported at its upper end. The rod I. passes through the tube rod K., and is attached to or rests upon the valve F., so that as the rod I. is depressed, the valve is opened, allowing the water to pass upwardly into the water-space beneath the water-wheel chamber, a portion of the water will then pass upwardly into the tube L., and a part will pass into the tubes S—S.

I' is an enlargement forming a bearing or journal for the revolving tube rod K.

J. represents a cross piece used for attaching the rod I. to the valve F.

M. is a cap, preferably of rubber, on the rod I., used to support the tumbler or cup.

The upper end of the revolving tube K. is provided with a collar rigid with the tube, having two or more radial arms N; to each of these arms is pivoted an arm O., and to each arm O., is pivoted intermediate its ends, a swinging brush or scrubber, shown by P. These brushes hang upon the arms O., so that when the tube K. is revolved, the brushes or scrubbers are also revolved with it.

Q. represents a cup or glass placed in position to be operated upon.

R. is a circular tube connected with the upright tubes S—S, and provided with small

openings so as to throw very small streams of water upon the inverted tumbler or dish. The tube K. is also provided with small openings so as to throw small streams of water against the inside of the dish from top to bottom.

A case T. is used to surround the tubes S—S, and is provided with brushes or scrubbers N. extending inward so as to come in contact with the outside of the tumbler or dish.

V. represents a port or opening for the discharge of the water from the water-wheel chamber.

The operation of my invention is as follows:—The water from the source or head is introduced into the chamber A., the tumbler is placed upon the rod I. in the position shown in Fig. (1), the rod I is depressed until the openings E' register with the openings F', allowing the water to pass into the chamber beneath the water-wheel chamber; a portion of the water passes upward into the tube K., and is forced outwardly through small openings against the inside of the tumbler or cup. A portion of the water passes upward through the tubes S—S, &c., filling the circular tube R, and is thrown against the outside of the tumbler or cup through small openings in the circular tube R. A portion of the water passes through the conduit G., strikes the wings or paddles of the water-wheel, revolving the same with suitable rapidity, this revolves the tube K, and with it, the pivoted brushes or scrubbers P; the scrubbers P. being forced outwardly by the centrifugal motion, are operated in contact with the inside of the tumbler or cup from top to bottom, quickly and effectively cleansing the tumbler or cup on the inside. The dish may be turned or partially turned by hand, when the brushes or scrubbers on the outside of the tumbler or cup, with the aid of the small streams of water playing upon it, will quickly cleanse the outside of the tumbler or cup. The waste water from the water-wheel will pass out of the port V., and the water which is thrown through the small openings will drop down into the reservoir provided for its reception.

I have shown in the drawings four pivoted brushes or scrubbers; the number, however, may be varied, as may also the number of tubes S. which are used on the outside. Each scrubber or brush P. should be pivoted intermediate its end, so that the centrifugal force caused by the revolution of the tube K. will move the scrubbers outwardly so as to come in contact with the inside of the dish from top to bottom.

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

1. The combination in a tumbler or cup washer, of a water conducting tube adapted to enter the tumbler or cup and discharge water therein, a rotary tube provided with pivoted arms, a series of oscillating brushes each of which is pivoted intermediate its

ends to one end of one of the pivoted arms and with the latter thrown outward by centrifugal force when the tube rotates, means for delivering water into the water conducting tube, and mechanism for revolving the arm carrying tube, substantially as described.

2. The combination in a tumbler or cup washer, of a water conducting tube adapted to enter a tumbler or cup and discharge water therein, a support provided with pivoted arms, a series of oscillating brushes each of which is pivoted intermediate its ends to one end of one of the pivoted arms and with said arms thrown outward by centrifugal force when the arm support rotates, means for delivering water into the water conducting tube, and mechanism for revolving the arm support, substantially as described.

3. The combination in a tumbler or cup washer, of a stationary water conducting tube having perforations, a rotary tube extending through the water conducting tube and provided with pivoted arms, brushes or scrubbers carried by the pivoted arms and with the latter thrown outward by centrifugal force by the movement of the rotary tube, a water motor for operating the rotary tube, a valve mechanism for controlling the passage of water to the water motor, and a rod connected with the valve of the valve mechanism and extending through the rotary tube, substantially as described.

4. The combination of pivoted swinging brushes or scrubbers; arms supporting said brushes; a collar to which said arms are pivoted; a revolving tube or rod connected to said collar; a tube containing water and having small openings for directing small streams of water against the inner surface of the article to be operated upon; and a water-wheel or motor connected to the revolving rod or tube which supports the brushes or scrubbers, substantially as described.

5. The combination in a tumbler or cup washer, of a water conducting tube adapted to enter the tumbler or cup for discharging water therein, a rotary support provided with pivoted arms, brushes or scrubbers carried by the pivoted arms and thrown outward by centrifugal force, means for supplying water to the water conducting tube, mechanism for operating the rotary support, a case surrounding the brushes on the pivoted arms and provided with brushes for cleaning the outside of the tumblers or cups, and water conduits for delivering water to the outside of said tumblers or cups, substantially as described.

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

ORTON H. ROBINSON. [L. S.]

Witnesses:

EDWARD TAGGART,
MARY E. HEANEY.