(No Model.) 2 Sheets—Sheet 1.

F. H. LIPPINCOTT.

TUMBLER WASHER.

No. 575,066. Patented Jan. 12, 1897.

Fig. 1.

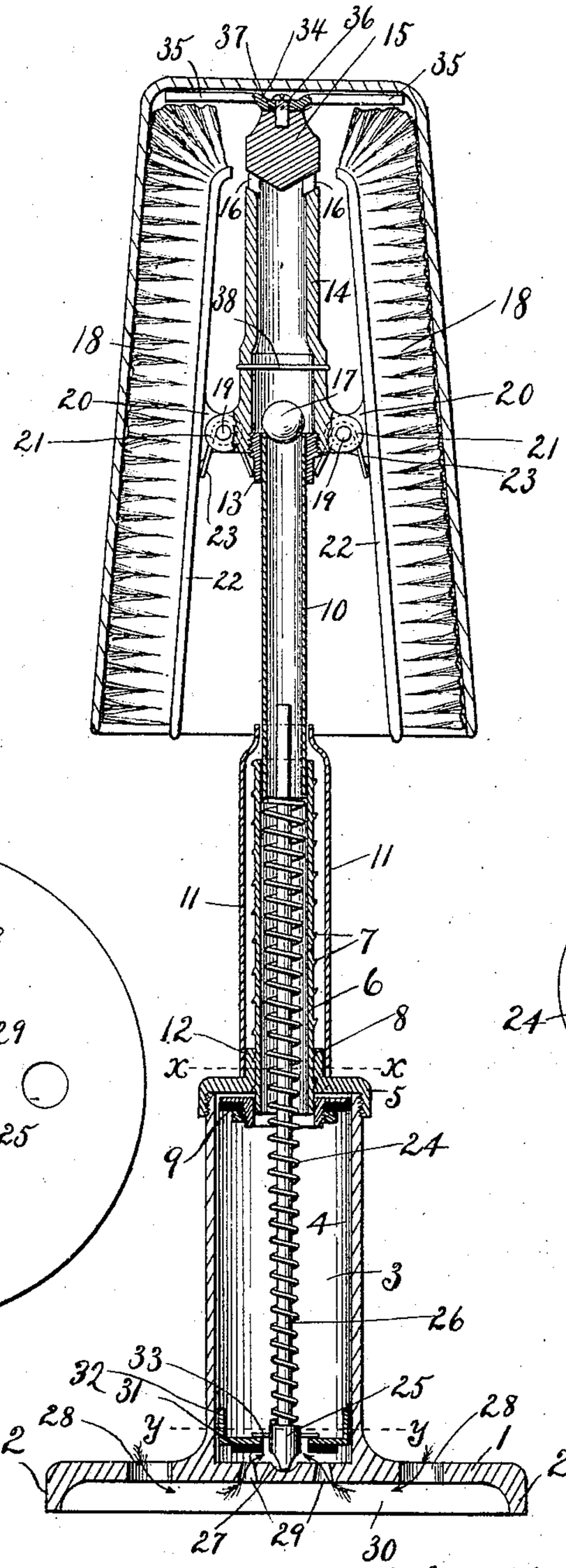


Fig. 3.

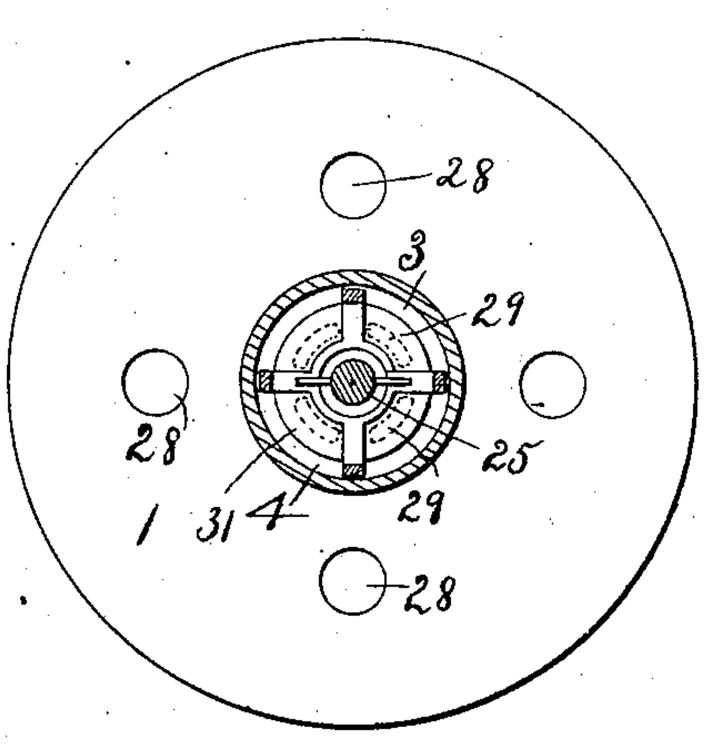
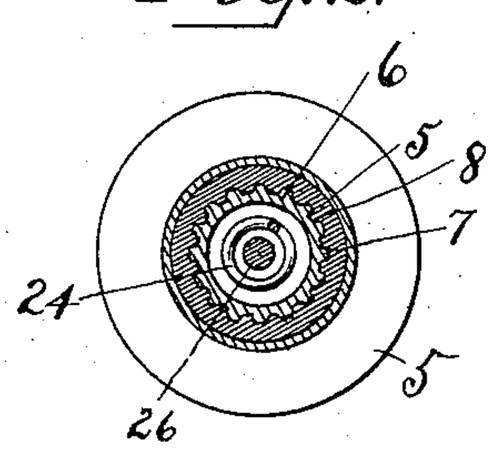


Fig. 2.



Witnesses.

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(No Model.) 2 Sheets—Sheet 2.

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TUMBLER WASHER.

No. 575,066. Patented Jan. 12, 1897.

Fig. 4.

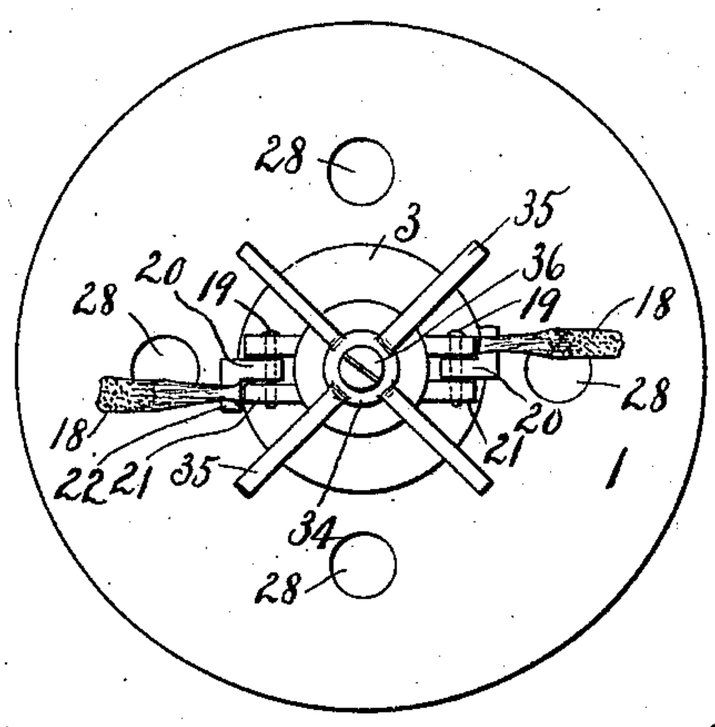


Fig. 6.

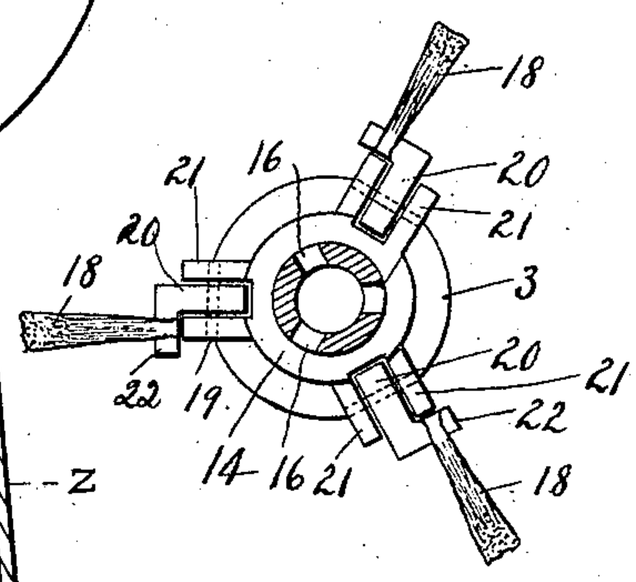
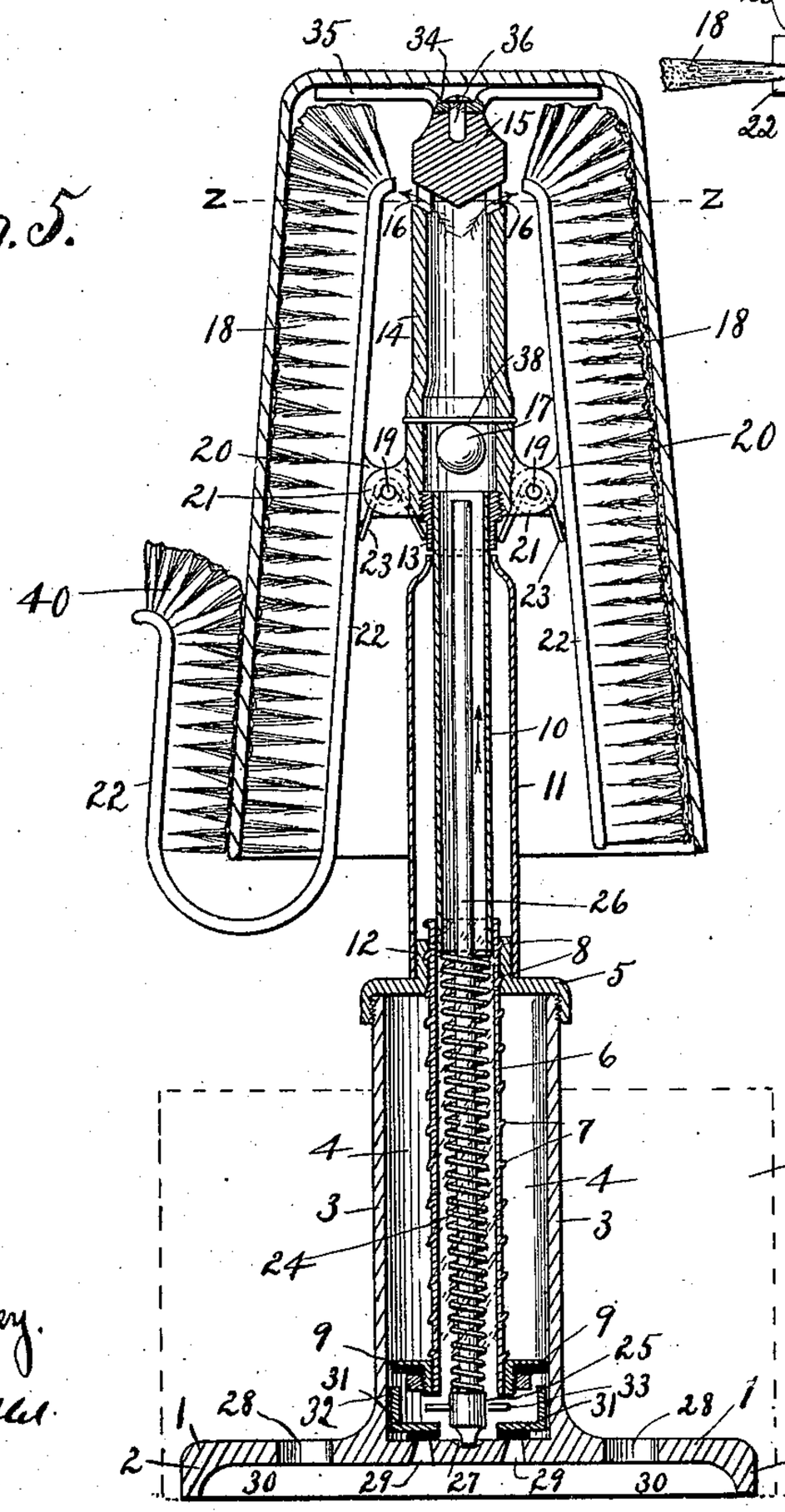


Fig. 5.



Witnesses.

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UNITED STATES PATENT OFFICE.

FISHER H. LIPPINCOTT, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO THE AMERICAN SODA FOUNTAIN COMPANY, OF TRENTON, NEW JERSEY.

TUMBLER-WASHER.

SPECIFICATION forming part of Letters Patent No. 575,066, dated January 12, 1897.

Application filed October 14, 1896. Serial No. 608,808. (No model.)

To all whom it may concern:

Be it known that I, FISHER H. LIPPINCOTT, a citizen of the United States, residing in the city and county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Apparatus for Cleansing Tumblers and the Like, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, of which—

Figure 1, Sheet 1, is a medial sectional elevation of my apparatus in the elevated position; Fig. 2, a horizontal section on line *x x*, Fig. 1; Fig. 3, a similar section on line *y y*, Fig. 1; Fig. 4, Sheet 2, a full plan view, the supplemental brush being omitted; Fig. 5, a sectional view similar to Fig. 1, but with the brushes and connections in the depressed position and showing a modified form of brush; Fig. 6, a plan view similar to Fig. 4, but showing three brushes instead of two.

The nature of my invention is an apparatus for cleansing tumblers, cups, and the like by means of a combination of devices whereby by placing an inverted tumbler or similar article over and upon suitable brushes secured to a longitudinally-movable tube and pressing down the tumbler said tube and brushes will descend and water contained in a chamber with which the tube communicates, and which chamber communicates with a source of water-supply, will be ejected through suitable apertures in said tube against the interior of the tumbler, and at the same time the brushes will be caused to rotate automatically through suitable mechanism against the wall of the tumbler, and when the movement of the tube is reversed it and its adjuncts will return to the elevated position, and simultaneously therewith, through the operation of a valve mechanism, a further supply of water will be caused to enter said chamber, and so on as the reciprocations of the tube are repeated.

The construction and operation of the invention will clearly appear from the following description, reference being had to the accompanying drawings.

In the drawings, 1 designates the base of the apparatus, which in the present instance has a downwardly-extending circumferential flange 2.

3 is a vertical hollow cylinder, the interior of which constitutes a chamber 4. It rises vertically from the base and is closed at the top by a head 5, screwed or otherwise secured thereto. 6 is a tube above said cylinder, whose lower end extends through head 5 and is provided with an exterior screw-thread 7, of sharp pitch, that engages a corresponding thread 8 in the inner periphery of the cylinder-head. Secured to the lower end of this tube within the cylinder is a piston-head 9, that fits closely against the side of the cylinder.

10 is a second tube, whose lower end is secured to the upper end of tube 6, and is substantially a continuation of the latter tube, but devoid of a screw-thread. 11 is a casing around the latter tube. Its lower end is secured to a circumferential flange 12 of the cylinder-head and its contracted upper end forming a support and guide for the tube 10. Surrounding the upper part of the latter tube is fixed a head or enlargement 13, to which is screwed the lower end of a third tube 14, which is a continuation (enlarged) of tube 10, having a closing-cap 15 and orifices 16 for the exit of water, as hereinafter described. It will be observed that the said three tubes form a continuous communication with the chamber 4 of cylinder 3.

17 is a valve in the form of a ball of india-rubber or the like seated upon the wall of the top of tube 10 and thus normally closing the latter.

18 are brushes of bristles or other suitable material, two in number in the present instance, (three in Fig. 6,) of suitable width and length and of such distance apart as to accommodate a tumbler or the like when placed over them. These brushes are preferably pivoted about midway of their length to the tube 14. I usually pivot the same upon pins 19, passing through lugs 20 and 21, projecting from the backs 22 of the brushes and the side of tube 14, respectively. I also usually make use of springs 23, bearing against the backs of the brushes below the pivots, in order to maintain the brushes at their greatest possible inclination.

24 is an open helical spring contained partly within the threaded tube and partly within

the cylinder 3, its upper extremity bearing against the lower end of the tube 10, which, as seen, is entered in the threaded tube 6, and its lower extremity bearing against a head or offset 25 of a rod or spindle 26, resting in a depression 27 in that part of the base of the apparatus which forms the bottom of the cylinder, the said rod being encircled by the spring 24, as shown.

28 are apertures in the base 1, and 29 are ports in the bottom of the cylinder, which communicate between the latter and the space 30, beneath the top of the base.

31 is an annulus or valve of india-rubber or the like at the bottom of the chamber, that normally closes the ports 29. This valve is maintained in place and its proper working insured by means of a flanged plunger 32, that serves as a weight, and fitting loosely within the cylinder is free to move vertically therein. A cross-bar 33, projecting laterally from the rod 26, may be employed to limit the rise of the plunger and valve.

Although not indispensable, I generally use a broad support for the bottom of the tumbler, consisting of a head 34, from which extend horizontal arms 35. This head has a pin 36, that is entered in a socket 37 in the top of cap 15.

Having thus described the construction of my apparatus, I will now proceed to explain its mode of operation, as follows:

The brushes, &c., being in the elevated or normal position, (seen in Fig. 1,) the tumbler to be operated upon is placed, inverted, over and upon the brushes, its bottom resting upon the arms 35, as seen in Fig. 1. It (the tumbler) is now pressed down and the continuous tube 6 10 14 descends against the stress of the spring, and by reason of the threaded tube 6 engaging the thread of the cylinder-head the conjoined tubes, and consequently the brushes, are caused to rotate, the latter against the inside of the wall of the tumbler. The pressure upon the tumbler is now released, whereupon the rotation of the tubes and brushes is reversed, and simultaneously the ball 17, which had risen from its seat in the top of the tube 10 until arrested by a suitable stop, such as a cross-bar 38, as seen in Fig. 2, falls and closes the top of said tube, as seen in Fig. 4, and the valve 31 of the cylinder rises and water that has entered the apertures 28 of the base from a water-containing vessel 39, (indicated by dotted lines in Fig. 5,) in which the base rests, is drawn by the suction caused by the rise of the piston-head 9 through the ports 29 into the cylinder-chamber 4. The vertical reciprocation of the tumbler, &c., is repeated until the water fills the entire space of the latter and the tube 14 to the top. The reciprocations being then continued, the water will be forced out through the orifices 16, near the top of tube 14, against the sides of the tumbler. When the latter has been sufficiently cleaned, another tumbler is substituted and the described operation repeated as often as may be desired. The function of the spindle or rod 26 is merely to support the spring 24, that is, to prevent it from bending sidewise under pressure, and at the same time to avoid friction on the bearing ends of the spring.

I sometimes use a supplemental brush 40, Fig. 5, on the outside of one or more of the main brushes 18, but with its bristles or wiping-surface directed inwardly and adjacent to the free ends of the bristles or the like of the main brush.

As will be seen in Fig. 5, the wall of the tumbler or a portion thereof, as the case may be, will be embraced between the main and the supplemental brush, and thus as the brushes rotate the latter will wipe the outside of the tumbler, which is the object of this supplemental brush, at the same time that the interior is cleaned.

I remark that the head 33, with its arms 34, may be dispensed with and the tumbler rest directly upon cap 15, in which case the tops of the brushes may impinge against and thus cleanse the inside of the bottom of the tumbler as they rotate.

I do not wish to be understood as confining myself to the precise construction shown and described, as mechanics skilled in the art to which the invention appertains may readily make various modifications of the essential and important features or elements without departing from the principle of the invention.

Having thus described my invention and its mode of operation, I claim as new and desire to secure by Letters Patent—

1. In an apparatus for cleansing and washing tumblers, or the like, the combination of the reciprocating tube, a water-containing vessel or chamber, with which the tube communicates, the brushes secured to the tube, the apertures in the tube, means whereby a rotary motion is imparted to the latter when reciprocated, together with means for forcing water from said water vessel or chamber into said tube and through the apertures therein by and simultaneously with the reciprocation of the tube, substantially as and for the purpose set forth.

2. In an apparatus for cleansing and washing tumblers or the like, the combination of the movable apertured tube the brushes secured thereto, a chamber with which said tube communicates, the piston-head, within said chamber and carried by said tube, means for causing a rotary movement of said tube when reciprocated, and suitable valves, whereby when the tube is moved in one direction water will be caused to enter said chamber, and when moved in the opposite direction the water will be forced out through apertures in said tube against the interior of the tumbler or vessel to be washed and cleansed, simultaneously with the rotation of the brushes on the tube, substantially as described.

3. In an apparatus for washing and cleansing tumblers, or the like, the combination of

the vertically-movable apertured tube, the brushes secured thereto, the chamber communicating therewith, the piston-head carried by said tube, a spring adapted to maintain the tube and adjuncts normally in the elevated position, means for causing the rotation of the tube, simultaneously with the reciprocation thereof, by pressure upon an inverted tumbler, or the like, applied thereto, the valve within the tube, and the inlet orifice and valve in said chamber, all combined constructed and adapted to operate substantially as and for the purpose set forth.

4. In an apparatus for cleansing and washing tumblers, or the like, the combination of the vertically-movable apertured and spring-controlled tube, a chamber communicating therewith, the piston-head carried by said tube, the brushes pivotally connected to the tube, means for causing the rotation of the latter simultaneously with the reciprocation thereof, by pressure upon an inverted tumbler, or the like, applied thereto, together with the coacting valves, substantially as and for the purpose set forth.

5. The combination of the water-containing cylinder, the movable, apertured, spring-controlled tube communicating with said chamber, and having a screw-thread engaging a corresponding thread in the head of said cylinder, brushes or the like, connected to said tube, the piston-head within the cylinder and adapted to be operated by the movement of said tube, together with the coacting valves, substantially as and for the purposes set forth.

In testimony whereof I have hereunto affixed my signature in the presence of two subscribing witnesses.

FISHER H. LIPPINCOTT.

Witnesses:
WALTER C. PUSEY,
LOUISE DIXON.