No. 652,373. Patented June 26, 1900.

L. L. ROWE.

TUMBLER WASHER.

(Application filed July 3, 1899.)

(No Model.) 2 Sheets—Sheet 1

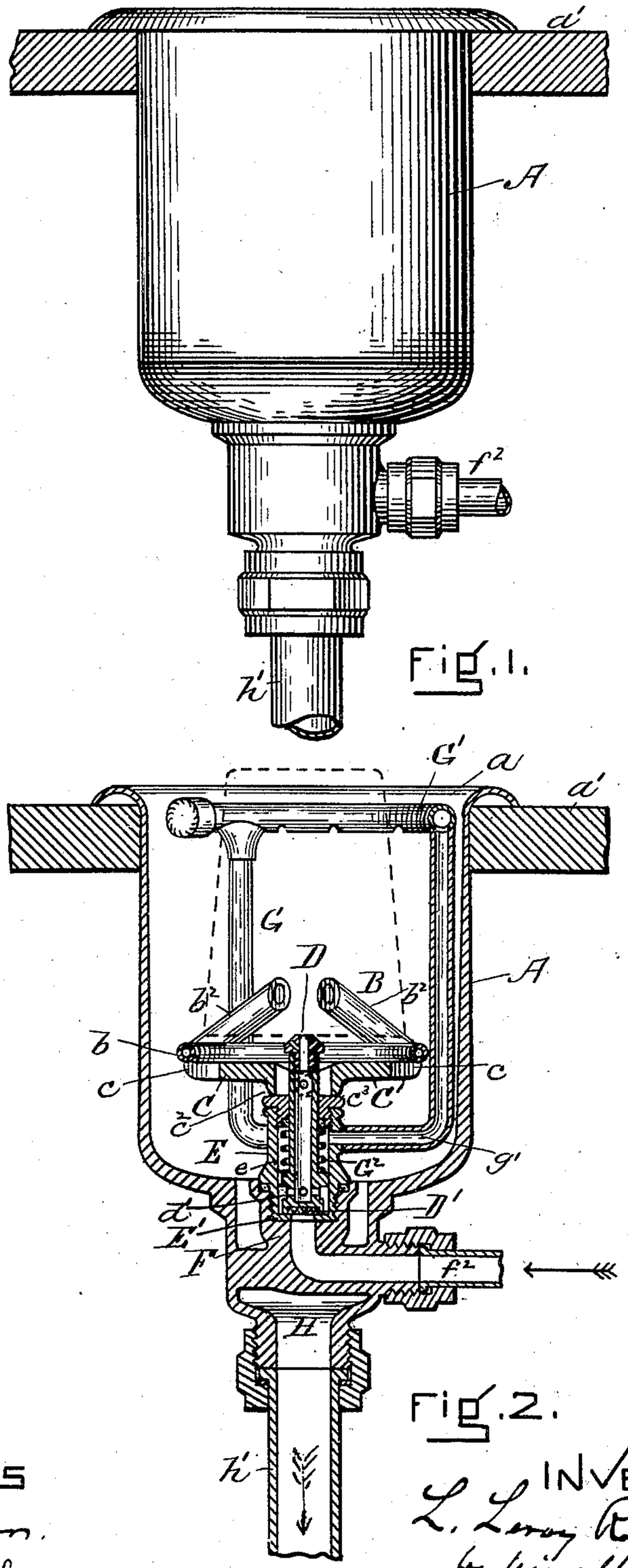

Fig. 1.

Fig. 2.

WITNESSES

J. M. Dolan.

L. A. Walsh.

INVENTOR

L. Leroy Rowe

by his attys

Clarke & Raymond

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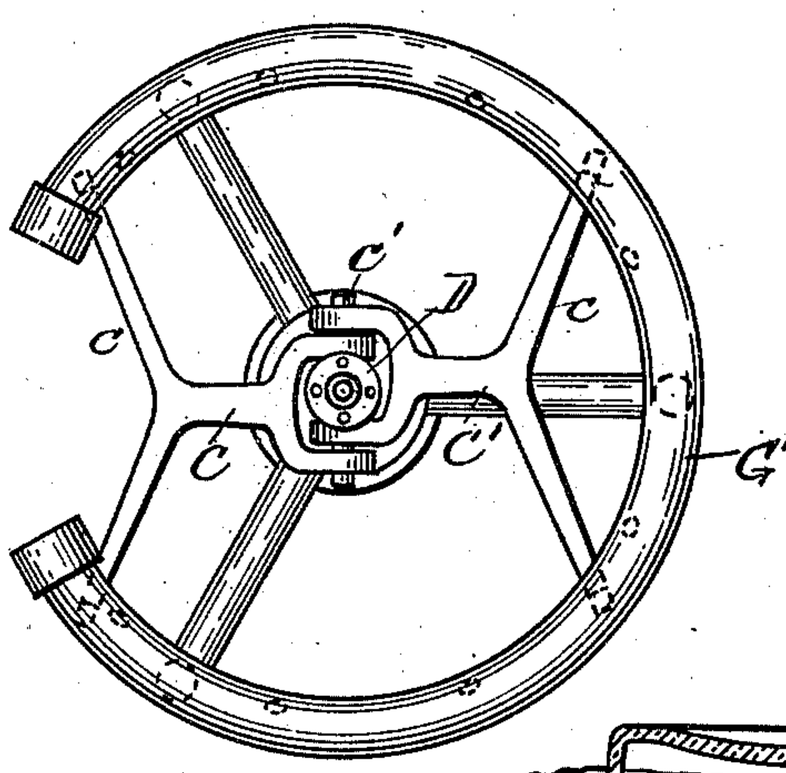

Fig. 3.

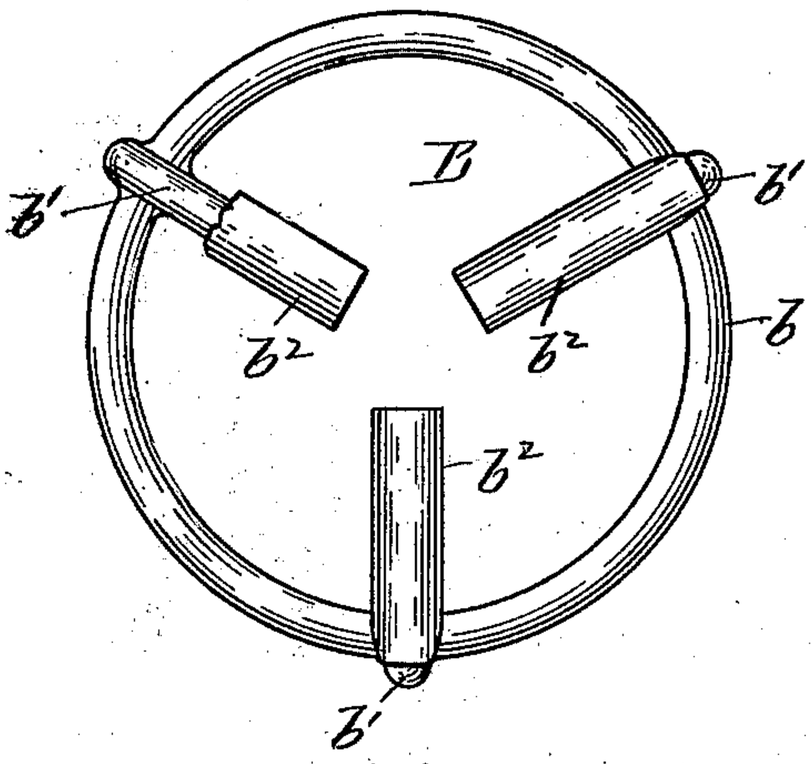

Fig. 4.

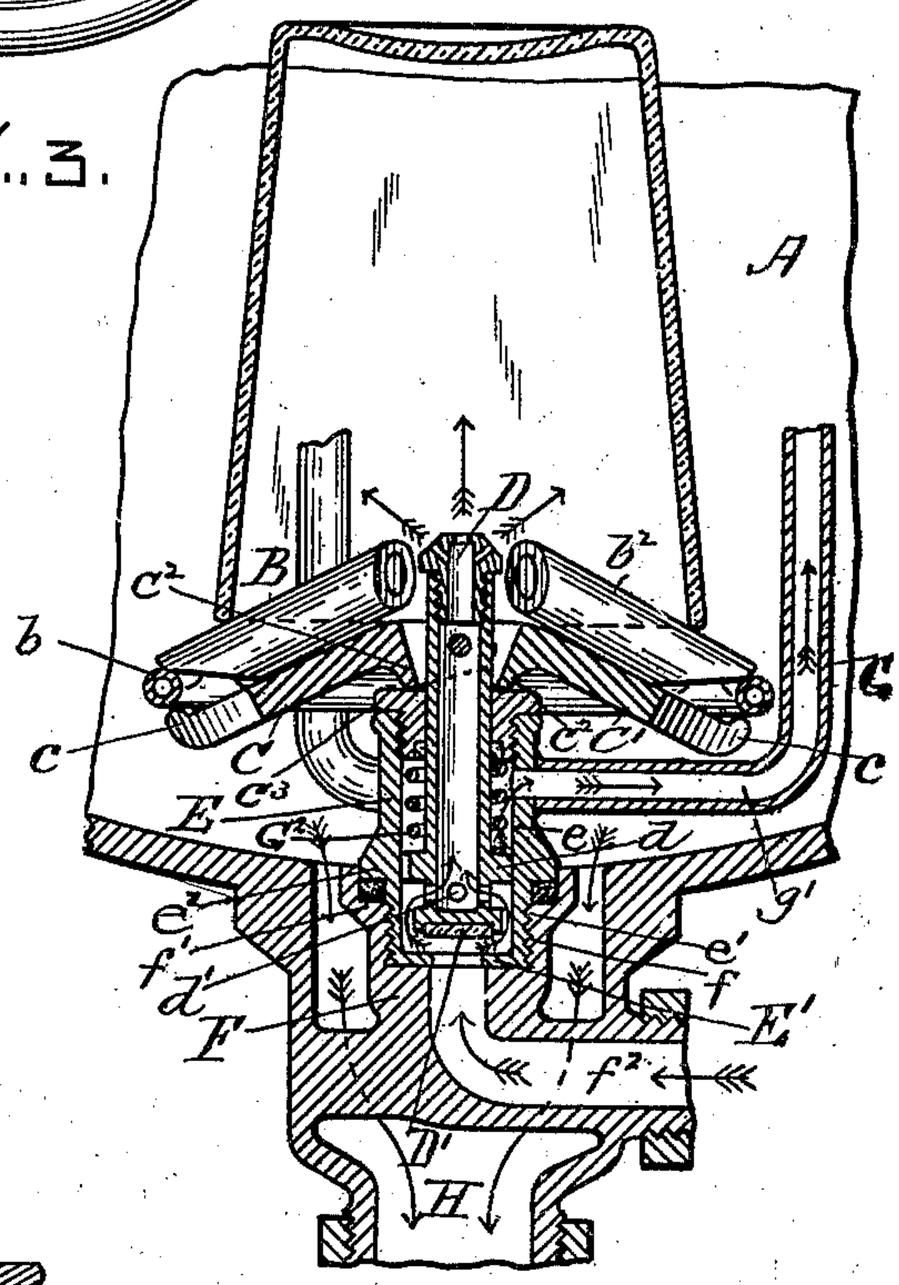

Fig. 5.

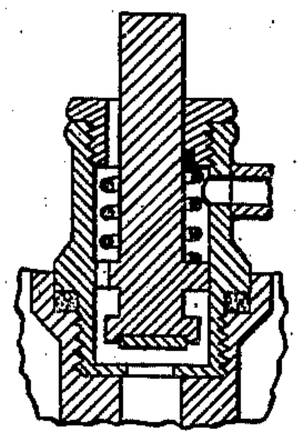

Fig. 6.

WITNESSES
J. M. Dolan
L. A. Walsh

INVENTOR
L. Leroy Rowe
by his attys
Clarke & Raymond

UNITED STATES PATENT OFFICE.

LEVI LEROY ROWE, OF BOSTON, MASSACHUSETTS.

TUMBLER-WASHER.

SPECIFICATION forming part of Letters Patent No. 652,373, dated June 26, 1900.

Application filed July 3, 1899. Serial No. 722,644. (No model.)

To all whom it may concern:

Be it known that I, LEVI LEROY ROWE, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Tumbler-Washers, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification, in explaining its nature.

The invention relates to a tumbler-washer having means herein described for operating a valve adapted to open with the water-pressure and to close against it.

In the drawings, Figure 1 is a view in elevation of my tumbler-washer. Fig. 2 is a view in vertical central section through the same. Fig. 3 is a view in plan of a portion of the valve-operating mechanism and also of the washing device. Fig. 4 is a view in plan of a tumbler-support which is adapted to be mounted on the valve-levers, hereinafter described. Fig. 5 is a detail view, enlarged, principally in vertical section, to show the operation of the tumbler-rest, valve-levers, and valve when the valve is opened. Fig. 6 is a view of a modified form of the valve-stem and waterway, to which reference will be made.

The washer comprises a bowl A, of any convenient shape, the opening a of which preferably is about flush with the upper surface a' of a counter. It is of suitable depth and has near its bottom a rest B for the edge of the inverted tumbler. This rest comprises a metal ring b, from the edge of which extends inward and upward arms b', which are covered with cushions b^2, of rubber tubing. This produces a conical support which will receive tumblers having mouths varying in size and which will also prevent injury thereto. The rest B is mounted upon the outer ends c of the two levers C C'. These ends c are forked, as represented in Fig. 3, to furnish suitable support for the rest. The levers are attached at c' to the nozzle D, which also serves as a valve-stem, and each lever also has a foot or fulcrum c^2, which rests upon the upper surface of the threaded cap c^3.

The relation of the levers to the nozzle, cap, and rest when in horizontal position is represented in Fig. 2, and the valve is then closed. Upon the downward movement of the rest, caused by pressing a tumbler downward upon it, the levers are moved to the position represented in Fig. 5, and this causes them to lift the nozzle, which then acts as a valve-stem and opens the valve. The valve-stem or nozzle is guided in the cap c^3 and also by the wall e of the chamber formed by the sleeve E. This sleeve has a threaded section e' at its lower end, which screws into the threaded hole or recess f in the coupling F. The sleeve E also has a shoulder e^2, between which and the shoulder f' of the coupling a packing may be placed. The waterway f^2 extends through the coupling to a hole in the lower end of said sleeve E. A valve-seat E' surrounds this opening, and a compressible valve D' at the lower end of the valve-stem closes upon this seat when the valve is shut. This compressible packing is contained in a recess in the lower end of the valve-stem, which is there made tight. A closing-spring G^2 bears against the enlargement d of the valve-stem and against the cap c^3 and serves to move the valve-stem downward, press the valve to its seat against the water-pressure, hold it closed against the water-pressure, and also serves to lift the levers to their horizontal position. Upon the lifting of the valve-stem and valve the water flows about the valve and enters the waterway of the nozzle through the holes d' therein just above the valve. Water then flows upward and escapes at the upper end of the nozzle in the form of a jet into the interior of the tumbler and also at the same time passes through the holes in the passage g' in the pipes G, by which it is conducted to the perforated ring G' near the top of the basin and the perforations of which throw the water in the form of jets upon the outer surface of the inverted tumbler. The water escapes from the basin through the passage H to the waste-pipe h'.

I would say that while I have described the valve-stem as hollow and have termed it a "nozzle" I would not be understood as limiting the invention to a construction employing a hollow valve-stem, as the valve-stem may be solid or may not contain a waterway, and one or more waterways or passages—the equivalent of the one in the stem—may be arranged in the cap c^3, which surrounds the stem, and which would permit the escape in an upward

direction of water from the chamber about the valve-stem below the cap and to which cap the water flows upon the opening of the valve through or about the guiding extension upon the lower end of the valve. (See Fig. 6.) The size of the waterway in or about this extension will of course govern the extent of pressure in the chamber above it.

While I have shown the tumbler-supports as inclined, they may be straight or of any other desired shape so long as there is opportunity for the vertical movement of the end of the valve-stem with respect to their inner ends.

I prefer that the inner ends of the tumbler-rest be above the nozzle or stem when in its highest position in order that the rest may also be used for supporting a tumbler in its upright position and the valve be operated to wash the bottom; but I do not confine myself to this arrangement of the support with respect to the valve.

Having thus fully described my invention, I claim and desire to secure by Letters Patent of the United States—

1. In a tumbler-washer, a basin provided with a water-inlet, a vertically-movable combined nozzle and valve-stem, a valve connected with said stem and adapted to act in opposition to the water-pressure to close said water-inlet, a spring adapted to close said valve and hold it closed, and means actuated by the tumbler for lifting the nozzle and valve-stem, as and for the purposes set forth.

2. In a tumbler-washer, a valve-stem, a valve attached thereto and a water-inlet adapted to be closed by said valve, a spring adapted to move said valve and valve-stem in the direction of said water-inlet, a cap surrounding said stem and suitably supported to act as a guide therefor, two or more levers pivoted to said stem and each provided with a foot resting on said cap whereby the downward movement of the extending arms of said levers will move said stem in one direction against the force of said spring tending to move it in the opposite direction, as and for the purposes set forth.

3. In a tumbler-washer, the combination of a nozzle, a valve, a valve-seat, said valve being located between said nozzle-outlet and said valve-seat, a spring for holding said valve on its seat and levers connected with said valve to open it against the stress of said spring upon the downward movement of the outward ends of said levers, as and for the purposes set forth.

4. The combination, in a tumbler-washer, of a vertically-movable nozzle, a valve, a spring for closing the valve against the water-pressure and for holding it closed, levers connected with the nozzle and means for supporting one end of each of said levers, and a tumbler-rest mounted on the other ends of said levers, in substantially the manner and for the purposes set forth.

5. The combination in a tumbler-washer of a valve-stem, a valve mounted thereon, levers for moving the valve in one direction, means whereby said levers are supported and fulcrumed, a spring for moving said valve in the opposite direction, and a tumbler-rest mounted upon the levers in a manner to permit the levers to be movable with respect thereto and having converging arms, as and for the purposes set forth.

6. The tumbler-rest herein described comprising the metal ring *b*, having the converging metal arms *b'* provided with suitable cushions, substantially as and for the purposes set forth.

7. The combination of a vertically-movable valve-nozzle with a tumbler-rest, consisting of a metal ring having converging metal arms, the inner ends of said arms being above said nozzle when said nozzle is in its highest position, as and for the purposes set forth.

L. LEROY ROWE.

In presence of—
J. M. DOLAN,
F. F. RAYMOND, 2d.