

UNITED STATES PATENT OFFICE.

ISAAC G. WATERMAN, OF SANTA BARBARA, CALIFORNIA.

MECHANICAL PUSH-BUTTON VALVE.

No. 802,954

Specification of Letters Patent.

Patented Oct. 24, 1905.

Original application filed June 2, 1903, Serial No. 159,806. Divided and this application filed January 12, 1904. Serial No. 188,783.

To all whom it may concern:

Be it known that I, ISAAC G. WATERMAN, a citizen of the United States, residing at Santa Barbara, in the county of Santa Barbara and State of California, have invented new and useful Improvements in Mechanical Push-Button Valves, of which the following is a specification.

This invention relates to mechanical push-button valves and is a division of my copending application, Serial No. 159,806, filed June 2, 1903.

The object of the invention is the provision of an improved, simple, inexpensive, and reliable push-button mechanism for opening and closing rotary or plug valves to control the flow of water or other fluids at bath-tubs, lavatories, or other places, which will operate positively to alternately open and close the valve on alternate operations of the push-button by hand.

My invention comprises certain improved features and novel combinations of elements set forth fully hereinafter and embodied in the appended claims.

In the accompanying drawings, Figure 1 is a plan view of the complete push-button valve; Fig. 2, a section through the valve-casing, showing the valve in full lines; Fig. 3, a section on line X X of Fig. 2, and Fig. 4 a section on line Y Y of Fig. 1.

The valve shell or casing 1 has the supply and delivery pipes 2 and 3 screwed thereto.

The numeral 38 represents a rotary or plug valve provided with the fluid passage or port 39 and suitably seated to turn in the valve-casing to cause the port 39 to afford communication between the pipes 2 and 3 or cut off communication therebetween. (See Fig. 3.) On the square stem 40' of the valve is a ratchet-wheel 40, held against backward movement by a spring-pressed pawl or dog 41, pivoted to the valve-casing at 41'.

The slab or support to which the push-button mechanism is connected is shown at 8. Fitted in the slab 8 is a bushing 42, against the ends of which is fitted the face-plate 11 and the cap 6, held together by fastenings 10. The push-button 12 works through the face-plate and cap and has a flange 13 to limit its outward movement as urged by the coil-spring 17', contained within the bushing 42 and bearing against the cap 6. The stem 14 of the push-button has a keyway 14', into which projects the lug 6' on cap 6, thus preventing turning of the stem. A toothed bar

or rack 17, hinged to the stem at 18', is held in engagement with the ratchet-wheel 40 by a spring 18, secured to the stem 14.

On pushing in the push-button until the lug 6' strikes the end of keyway 14' the rotary valve 38 is turned to cause the port 39 therein to align with the openings or ports in the valve-casing, and on releasing the push-button said push-button returns to normal position and the valve remains where turned, backward turning thereof on the retraction of the rack 17 being prevented by the dog or pawl 41. A succeeding depression of the push-button turns the valve another quarter-revolution to the off position, (shown in Fig. 3,) where it remains. Successive hand operations of the push-button turn the valve on and off, so that if the valve is closed the push-button is operated once to turn the valve a quarter-revolution and open it, and if the valve is open one depression of the push-button turns the valve a quarter-revolution and closes it. The distance between the end of keyway 14' and the lug 6' is such that the valve is turned exactly one quarter-revolution on each complete operation of the push-button.

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

1. The combination with a rotary valve, of a ratchet-wheel for turning said rotary valve, an independent spring-retracted push-button reciprocatably slidable relatively to the valve, and a pawl carried by the push-button which is adapted to positively engage the ratchet-wheel and turn the valve on one of its movements and to disengage from said ratchet-wheel on the other of its movements.

2. The combination with a rotary valve, of a ratchet-wheel for turning said rotary valve, an independent spring-retracted slidable push-button reciprocatably slidable relatively to the valve, and a toothed member carried by the push-button and pivoted or hinged thereto adapted for yielding engagement with the ratchet-wheel, said toothed member engaging the ratchet-wheel and turning the valve on one movement of the push-button and riding idly on the ratchet-wheel on the other movement of the push-button.

3. The combination with a rotary valve, of a ratchet-wheel for turning said rotary valve, an independent spring-retracted push-button reciprocatably slidable relatively to the valve, a pawl carried by the push-button which is

adapted to positively engage the ratchet-wheel on one of its movements and turn the valve and to disengage from said ratchet-wheel on the other of its movements, and a dog or
5 pawl adapted to prevent backward turning of the valve.

4. The combination with a rotary valve, of a ratchet-wheel for turning said rotary valve, an independent spring-retracted push-button
10 reciprocatably slidable relatively to the valve, a spring-pressed toothed pawl carried by the push-button which is adapted to positively engage the ratchet-wheel on one movement

of the push-button and turn the valve and to disengage from said ratchet-wheel on the
15 other movement of the push-button, and a spring-pressed dog or pawl engageable with the ratchet-wheel and preventing backward turning of the valve.

In testimony whereof I have signed my name
20 to this specification in the presence of two subscribing witnesses.

ISAAC G. WATERMAN.

Witnesses:

ELMER SEAVEY,
WALLACE R. SEAVEY.