(No Model.)

A. B. ROHNEY.

STRAIGHTWAY VALVE.

No. 262,985. Patented Aug. 22, 1882.

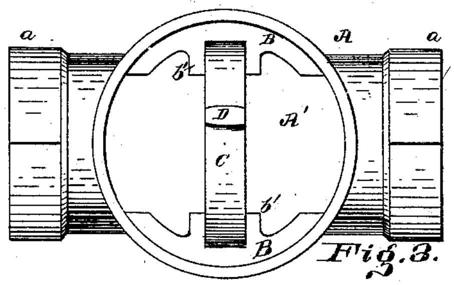

Fig. 3.

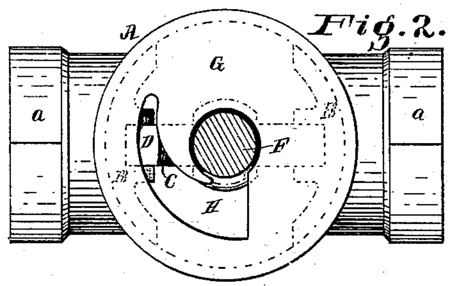

Fig. 2.

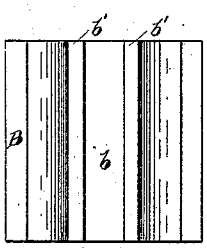

Fig. 4.

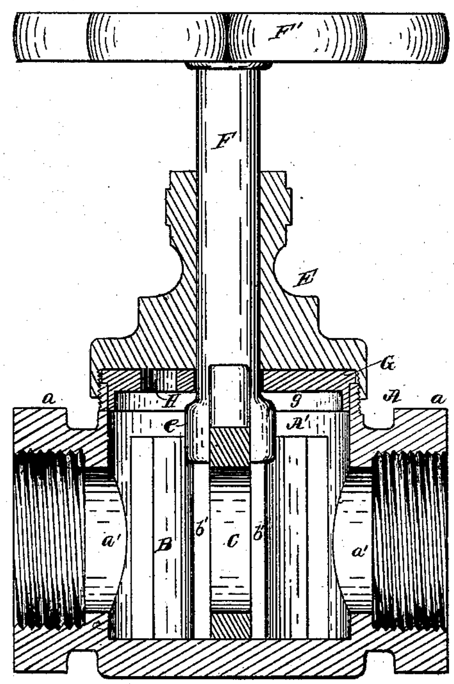

Fig. 1.

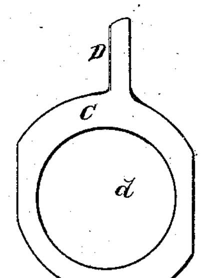

Fig. 5.

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UNITED STATES PATENT OFFICE.

ALEXANDER B. ROHNEY, OF CINCINNATI, OHIO.

STRAIGHT-WAY VALVE.

SPECIFICATION forming part of Letters Patent No. 262,985, dated August 22, 1882.

Application filed May 27, 1882. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDER B. ROHNEY, of Cincinnati, Hamilton county, Ohio, have invented certain new and useful Improvements in Straight-Way Valves, of which the following is a specification.

The object of my invention is to provide a straight-way valve for controlling the flow of fluids through pipes, which valve shall be cheap and simple in construction, efficient in operaion, and not liable to get out of order.

Referring to the drawings forming part of this specification, Figure 1 represents a central longitudinal section of a valve and valve-box embodying my invention. Fig. 2 is a top view of the valve-box, the cap being removed and the operating-spindle being in section. Fig. 3 is a top view, looking directly into the valve-box. Fig. 4 represents one of the gates of the valve, and Fig. 5 represents the cam-ring by the aid of which the gates of the valve are operated.

A is the valve-box, into the ends *a* of which may be screwed or otherwise secured the ends of the pipes through which the fluids are to pass. In the center of this valve-box is the circular chamber A′, in which the valve is located. This valve consists of the two gates B, the convex surfaces of which correspond in curvature to the inner surface of the chamber A′. The concave or inner face of each of these gates is provided with a channel, *b*, preferably formed by the two ridges *b′*. These gates are located within the chamber A′, and when in the position shown in Fig. 3 the fluid is allowed to pass freely through the valve-box, but when the gates are turned to a point at right angles to the position they occupy in Fig. 3 they occupy the position shown by dotted lines in Fig. 2, and the fluid is then prevented from passing through the valve.

When the gates are in the valve-box a cam, C, is placed between them, the edges of the cam being in the channels *b*. This cam is provided with an opening, *d*, preferably of an equal diameter to the inlet and outlet openings *a′*. This cam C is provided with an arm, D.

A cap, E, is screwed onto the valve-box, which closes the top of the chamber A′, and through this cap passes the valve-spindle F, which is operated by hand-wheel or other device, F′.

Any suitable connection between the valve-spindle and the cam-ring may be employed. A preferred means is as follows: The lower end of this valve-spindle is forked, forming a yoke, *e*, into which the edge of the cam C fits when the parts are in position, and by which the cam and the gates B are turned.

Between the cap E and the upper end of the chamber A′ is a cam-plate, G, which is provided with a flange, *g*, fitting into said chamber, and when the cap is screwed into position this cam-plate is firmly clamped. In this cam-plate is an opening or curved slot, H, one end of which is near the center of the plate, the other end being nearer the periphery of the plate, as shown in Fig. 2, and into this slot is placed the end of the arm D of the cam C. This cam C is of the shape shown, so that when it is in position in the valve-box A and between the two gates B, if the arm D is moved away from the valve-stem F, the cam will have a tendency to spread the gates—that is, cause them to fit more tightly against the inner surface of the chamber A′.

The purpose of the cam-plate G is to cause the cam C to be turned in the direction of its periphery when the passage through the valve is to be closed, so as to cause the gates B to fit tightly against the inner wall of the chamber A′ when the said gates are to close the openings *a′*. To accomplish this the plate is turned before the cap E is screwed on, so that the end of the slot H which is farthest away from the center of the plate shall be in a line with the passage through the valve, as shown in Fig. 2.

When the passage-way through the valve is open the cam C stands at right angles to the length of the valve-box A, occupying the position shown in Fig. 3. In this position the arm D of the cam is in the end of the slot H which is nearest to the center of the plate G, and the gates B are not therefore caused to fit very tightly against the inner face of the chamber A′. When, now, it is desired to close the passage through the valve-box, the valve-stem F is turned, and this, in consequence of the yoke *e* engaging the cam C, causes said cam to be turned, which in turn causes the gates B to be moved around in the chamber A′ until they close the openings *a′*, occupying the position shown by dotted lines in Fig. 2. As the cam

C is turned the arm D moves around in the curved slot H, constantly moving farther away from the valve-stem F, and in this manner the pressure against the gates B is constantly increased as the cam and gates are turned, until when the gates have closed the openings a' the gates are caused to press so tightly against the inner face of the chamber A′ that no fluid can escape. When the passage-way is to be opened the valve-stem is turned in an opposite direction, and the arm D moving in the slot H and toward the valve-stem, the pressure of the cam C is removed from the gates B, and they may thus be easily turned.

These valves, constructed after the above plan, are very simple, and may be employed in connection with steam-pipes, gas-pipes, water-pipes, or any other pipes through which fluid of any description is to pass.

What I claim as new and of my invention, and desire to secure by Letters Patent, is—

1. In a valve-box, the combination of the gates B and the cam-ring located between and holding apart said gates, and means for turning the said cam-ring axially and also in the plane of a circle whose axis is substantially at right angles to the axis of the ring, substantially as and for the purposes specified.

2. In a valve-box, the combination of the gates B and the cam-ring located between said gates, and means for turning the said cam-ring axially and also in the plane of a circle whose axis is substantially at right angles to the axis of the ring, substantially as and for the purposes specified.

3. The combination of the valve-box A, the gates B, and the cam-ring C, and means for turning said cam-ring and gates, substantially as and for the purposes specified.

4. The combination of the valve-box A, the gates B, and the cam-ring C, and the means for turning said cam-ring in the plane of a circle whose axis is substantially at right angles to the axis of the ring, and the stem F, provided with yoke e, adapted to fit over and engage the cam-ring, substantially as and for the purposes specified.

5. In a valve-box, A, the combination of the gates B, provided with the channels b and the cam-ring whose periphery fits into said channels, and means for turning the said cam-ring axially and also in the plane of a circle whose axis is substantially at right angles to the axis of the ring, substantially as and for the purposes specified.

6. In a valve-box, the combination of the gates and the cam-ring provided with orifice d, furnishing a water-way when the valve is open, the said cam-ring located between said gates, and means for operating said ring so as to open and close the valve and tighten the gates against the valve-chamber when the valve is closed, substantially as and for the purposes specified.

7. The valve-box A, having chamber A′ and passages a', and the cap E, in combination with the gates B, cam-ring C, provided with arm D, and the cam-plate G, provided with curved slot H, and means for turning said cam-ring and gates, substantially as and for the purposes specified.

8. The valve-box A, constructed substantially as described, and provided with a cap, E, through which passes the valve-stem F, in combination with the cam-ring C, provided with arm D, and the gates B, and the cam-plate G, having curved slot H, said plate being clamped between the cap E and the valve-box, the arm D of the cam-ring being located in said curved slot, substantially as and for the purposes specified.

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Witnesses:
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E. R. HILL.