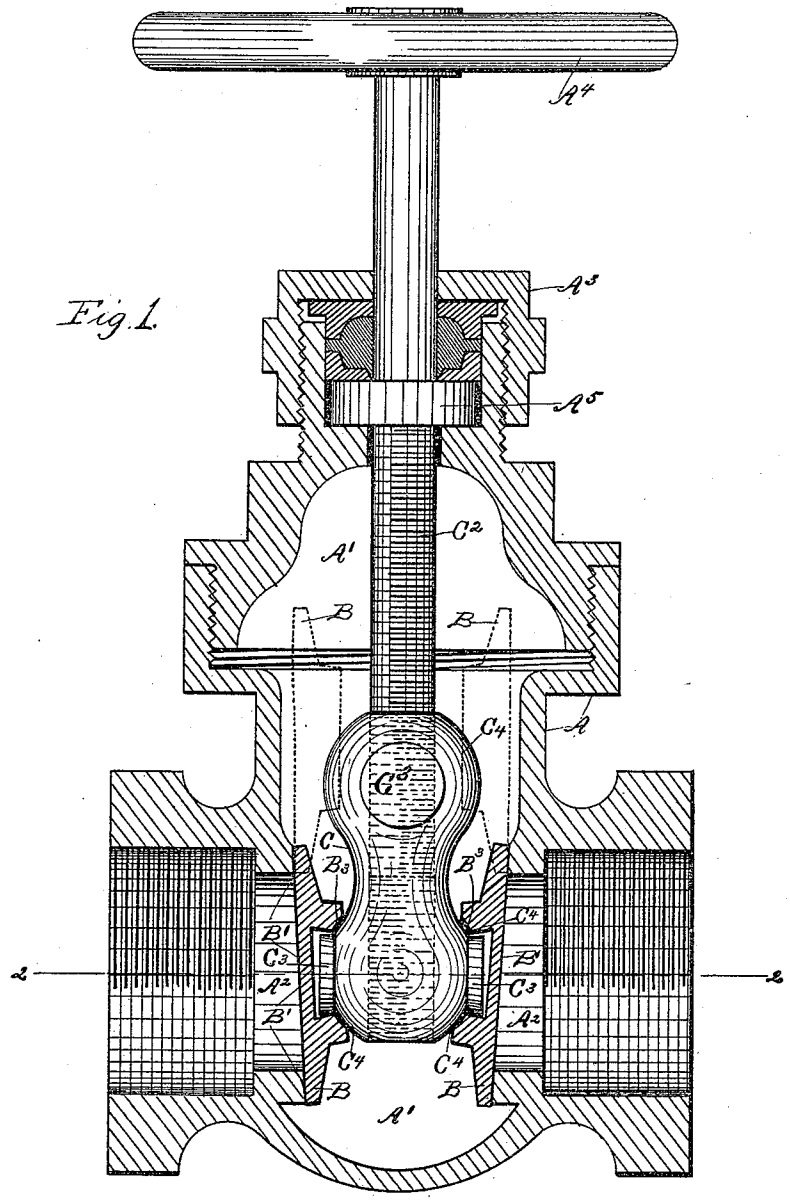
(No Model.) 2 Sheets—Sheet 1.

# A. T. WALDRON.

## VALVE.

No. 447,590. Patented Mar. 3, 1891.

Fig. 1.




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Inventor:
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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

(No Model.) 2 Sheets—Sheet 2.

# A. T. WALDRON.

## VALVE.

No. 447,590. Patented Mar. 3, 1891.

Fig. 2.

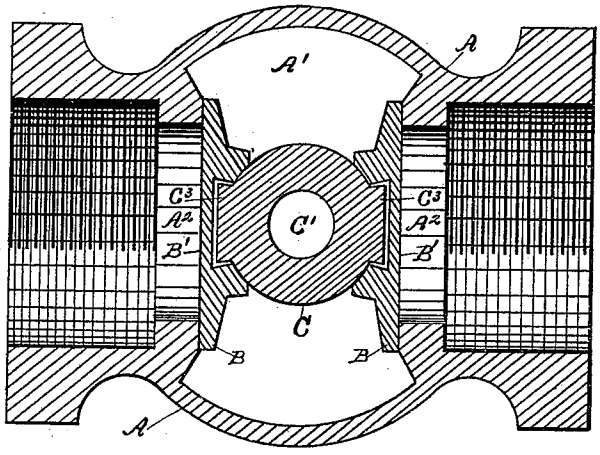



Fig. 3.

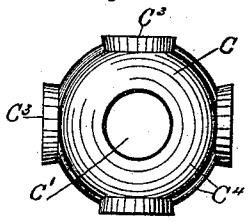



Fig. 4.

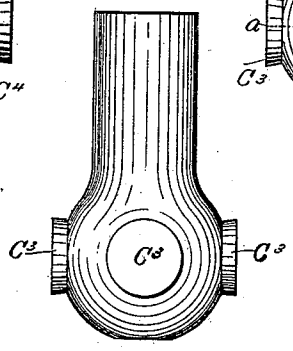
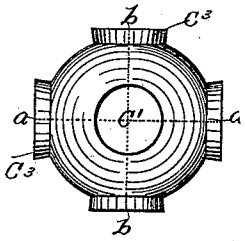



Fig. 5.




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# UNITED STATES PATENT OFFICE.

ASA T. WALDRON, OF WATERFORD, NEW YORK, ASSIGNOR TO THE MOHAWK AND HUDSON MANUFACTURING COMPANY, OF SAME PLACE.

## VALVE.

SPECIFICATION forming part of Letters Patent No. 447,590, dated March 3, 1891.

Application filed July 5, 1890. Serial No. 357,775. (No model.)

*To all whom it may concern:*

Be it known that I, ASA T. WALDRON, a citizen of the United States, residing at Waterford, county of Saratoga, and State of New York, have invented certain new and useful Improvements in Valves, of which the following is a specification.

My invention relates to such improvements; and it consists of the novel construction and combination of parts hereinafter described and subsequently claimed.

Reference may be had to the accompanying drawings and the letters of reference marked thereon, which form a part of this specification.

Similar letters refer to similar parts in the several figures therein.

My invention relates particularly to improvements in that class of valves shown in United States Patent No. 140,407, issued July 1, 1873, to G. W. Eddy, wherein two disks or gates located on opposite sides of an inclosing chamber are moved by a gate-carrier transversely across the water-channel to their respective seats surrounding the oppositely-located channel-openings in the chamber-walls. The oppositely-located gate-seats occupy converging planes, and the gates being movable angularly to their carrier, which is interposed between them, are forced to their inclined seats by the transverse movement across the channel. Long experience in the manufacture and use of such gates has enabled me to observe that the bearings between the gates and their carrier, as well as that portion of the gates which engages with their seats, are first to wear away. As soon as the wear is sufficient to allow the gates to be moved past the channel-openings or to the end of the chamber the openings cannot be tightly closed and the valve becomes worthless. I have ascertained that the carrier can be easily and cheaply provided with two or more sets of bearing-surfaces adapted to engage with and support the gates, whereby the life of the valve can be prolonged without substituting any new parts or repairing any old ones.

Figure 1 of the drawings is a central vertical section of my improved valve, showing the gate-carrier and carrier-stem in full. Fig. 2 is a horizontal section of the same, taken on the broken line 2 2 in Fig. 1. Fig. 3 is an end view of the carrier detached with the small end uppermost. Figs. 4 and 5 are respectively side and end views of a detached carrier, showing a modified form of construction.

A is the valve-case, which is provided with a chamber A′, adapted to receive the gates B and gate-carrier C. The water-channel passes across the lower end of the chamber and through the openings $A^2$ in the valve-case. The gate-seats B′ are formed on the inner side of the case or chamber walls around the openings and occupy inclined planes, which converge at the lower part of the valve as shown in Fig. 1.

The carrier is provided with a central aperture C′, threaded to receive the threaded end of the carrier-stem $C^2$, the other end of which stem passes up through the stuffing-gland $A^3$ in the usual manner and is provided with the usual operating hand-wheel $A^4$ and supporting-collar $A^5$. The gates are shown in engagement with their seats to close the channel-openings. By turning the carrier-stem backward the carrier is drawn upward upon the threaded portion, and the carrier trunnions or bosses $C^3$, resting in sockets $B^2$ in the backs of the gates, lift the gates from their seats up into the chamber to the position indicated by the dotted lines in Fig. 1. By turning the stem forward in the opposite direction the gates are forced downward by the trunnions until they are securely seated by the spherical part $C^4$ of the carrier, which engages with the concaved surfaces $B^3$ on the gate-backs to seat the gates upon the inclined seats.

I have shown the body of the carrier provided with trunnions and partly spherical in form and the gate-backs socketed and concaved to receive and fit the trunnions and spherical form of the carrier, thereby providing for the angular adjustment of the gates

relatively to the carrier, as well as for their vertical movements, whereby the gates are free to move upon their supporting-bearings to conform in position to the inclination of their seats.

Any known form of bearing-supports may be employed which will support the gates and permit of their vertical and angular movements. I prefer to make the bearing parts on one end of the carrier a little larger than those on the other end to compensate for the wear of the carrier-bearings located upon the gates when the carrier is reversed. I have shown such parts larger on the upper end of the carrier than those on the lower end in Fig. 1, while in Fig. 3 the relative positions of the two sets of bearings are reversed.

In Figs. 4 and 5 I have shown the two sets of bearings arranged in the same horizontal plane upon the carrier. When thus arranged the body of the carrier may be so formed that a central horizontal section would be slightly elliptical in form, as will appear from inspection of Fig. 5, the major axis (represented by the dotted line *a a*) passing through the larger set of bearings, and the minor axis *b b* through the smaller set of bearings. To alter the position of the carrier, so as to change from one set of bearings to another, the carrier shown in Fig. 1 is reversed end for end on the stem and that shown in Figs. 4 and 5 given a quarter-turn upon the stem.

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

1. In a valve, the combination, with a pair of oppositely-located gates, each provided with a carrier-bearing on its back, and converging gate-seats, of a carrier-stem, with means for operating the stem, and a gate-carrier provided with two sets of gate supporting and seating bearings, substantially as and for the purposes set forth.

2. In a valve, the combination, with a pair of oppositely-located gates, each provided with a carrier-bearing on its back, and converging gate-seats, of a carrier-stem, with means for operating the stem, and a gate-carrier provided with two sets of gate supporting and seating bearings differing from each other in size, for the purpose of providing a compensation for the wear of the carrier-bearings upon the backs of the gates, substantially as described.

In testimony whereof I have hereunto set my hand this 3d day of July, 1890.

ASA T. WALDRON.

Witnesses:
CHARLES H. COLE,
EDGAR C. MCKALLOR.