(No Model.)

P. G. VAN WIE.

STRAIGHT WAY VALVE.

No. 286,656. Patented Oct. 16, 1883.

Fig. 1.

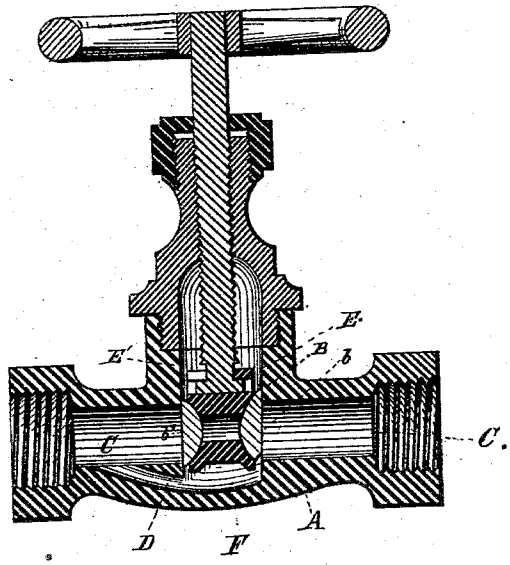


Fig. 2.

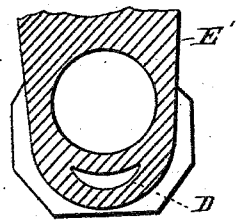


Fig. 3.

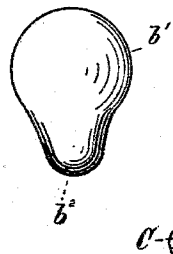


Fig. 4.

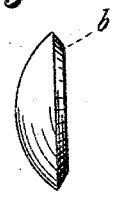
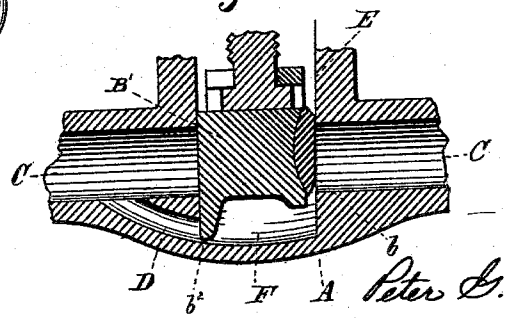


Fig. 5.



WITNESSES

C. A. Dorier

W. Engel

INVENTOR

Peter G. Van Wie

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UNITED STATES PATENT OFFICE.

PETER GARRETT VAN WIE, OF CLEVELAND, OHIO.

STRAIGHT-WAY VALVE.

SPECIFICATION forming part of Letters Patent No. 286,656, dated October 16, 1883.

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

To all whom it may concern:

Be it known that I, PETER GARRETT VAN WIE, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Straight-Way Valves; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

My invention relates to improvements in stop-valves, and more especially to that class of valves known as "straight-way valves," commonly used for water pipes and mains; and it consists of certain features of construction and combination of parts, hereinafter described, and pointed out in the claims. In the use of this kind of valve much difficulty is encountered by sediment—usually sand and mud—settling in the bottom of the central chamber of the valve in such a manner as to obstruct the working of the valve, and also by the sand getting between the seat and the valve, thereby cutting and greatly injuring the parts.

It is for the purpose of preventing the accumulation of sediment, as aforesaid, that I have invented this new device.

One embodiment of my new device is intended also as an improvement on a former invention for which I applied for Letters Patent and the claims were allowed December 5, 1882, Serial No. 70,857, and to which reference is made in this specification.

In the drawings, Figure 1 is a vertical sectional view of a valve in which is embodied my invention. Figs. 2, 3, and 4 are enlarged detailed drawings illustrating parts of Fig. 1. Fig. 5 is a vertical sectional view, showing one manner of constructing a portion of my new device.

A represents the body or casing of the valve; B, the valve-head; C C, the main passage-way through the valve, and F the central chamber of the valve.

E is the valve-seat on the inlet side of the valve, and E′ is the valve-seat on the outlet side of the valve.

D is a passage-way under the main opening in the seat E′ and leading from the chamber F into the passage C beyond the said valve-seat E′. In Fig. 2 is shown the valve-seat E′, and also the opening of the passage-way D.

The valve-head B is provided with the self-adjusting plano-convex disks *b* and *b′*, the former on the inlet side of the valve and the latter on the outlet side of the valve. The disk *b*, as shown in the enlarged detailed drawing Fig. 4, is beveled on the flat side, thereby diminishing the surface that comes in contact with the seat E, but leaving still a sufficient surface to cover the opening in the said seat.

It will be seen that by beveling or diminishing the face of the disk *b* the said disk will not extend downward as far as the disk *b′*, and hence in closing the valve the opening in the seat E′ will be closed before the closing of the opening in the seat E.

The operation of my device is as follows: When, in closing the valve, the head B is forced down just far enough so that the disk *b′* closes the opening in the seat E′, there will still remain an opening around the bottom of the beveled disk *b*. This will cause a strong current to flow into the chamber F and through the passage-way D, removing all sediment from the chamber of the valve, after which, by forcing down the head B still farther, the disk *b* will close the opening in the seat E, and thus entirely close the valve. In opening the valve the inlet side will be first opened, again causing a strong current to flow through the passage-way D, as before described.

The disk *b′*, as shown in Fig. 3, may be provided with a lip, b^2, extending downward far enough to close the passage-way D at the same time that the disk *b* closes the opening in the seat E; also, when the valve is open the lip b^2 will extend down far enough to cover a small portion of the opening in the seat E′, thereby causing a strong current to flow through the passage-way D. When it is desired to use a lip, as aforesaid, a cheap and convenient way of making this point of the device is shown in Fig. 5, where the head B′ may be made solid, with a flat face on the outlet side and terminating in the lip b^2. The other side of the head may be concaved in a suitable manner to form a seat for the beveled plano-convex disk *b*, as before described.

The disk *b* might be made with a face of the required size without beveling the edges; but I prefer the beveled edges for the reason that they give such direction to the water as will

more thoroughly cleanse the chamber of the valve.

Although I have described a preferable way of applying my new device to my former invention patented as aforesaid, I do not limit myself to that peculiar construction, as my device is equally applicable to any straight-way valve. Any adjustment of the valve with the valve-seats whereby the outlet side of the valve will close sooner or open later than the inlet side of the valve, in combination with a passage-way, as at D, will embody my invention.

What I claim is—

1. The combination, with a valve-chamber having a passage-way, D, of a valve-head provided with a plano-convex disk on the inlet side thereof, and provided on the outlet side with a flat surface for closing the outlet side of the valve, and terminating in a lip or projection of such shape and length as will close the passage-way D at or about the same time that the inlet side of the valve is closed, substantially as described.

2. The combination, with the valve-chamber provided with the passage-way D, of a valve-head provided on the inlet side of the valve-chamber with a disk having a flat outer face and lower beveled edge, while the opposite side of the said valve-head on the outlet side is made with a flat surface and terminates in a depending lip or projection of such shape and length as will close the passage-way D at or about the same time that the inlet side of the valve is closed, substantially as set forth.

3. In a straight-way valve, the valve-chamber provided with the passage-way D, in combination with the plano-convex disk *b*, having a beveled edge on the flat side thereof to give suitable direction to the water, so as to more thoroughly cleanse the chamber of the valve, substantially as set forth.

In testimony whereof I sign this specification, in the presence of two witnesses, this 18th day of December, 1882.

PETER GARRETT VAN WIE.

Witnesses:

C. H. DORER,

A. E. LYNCH.