

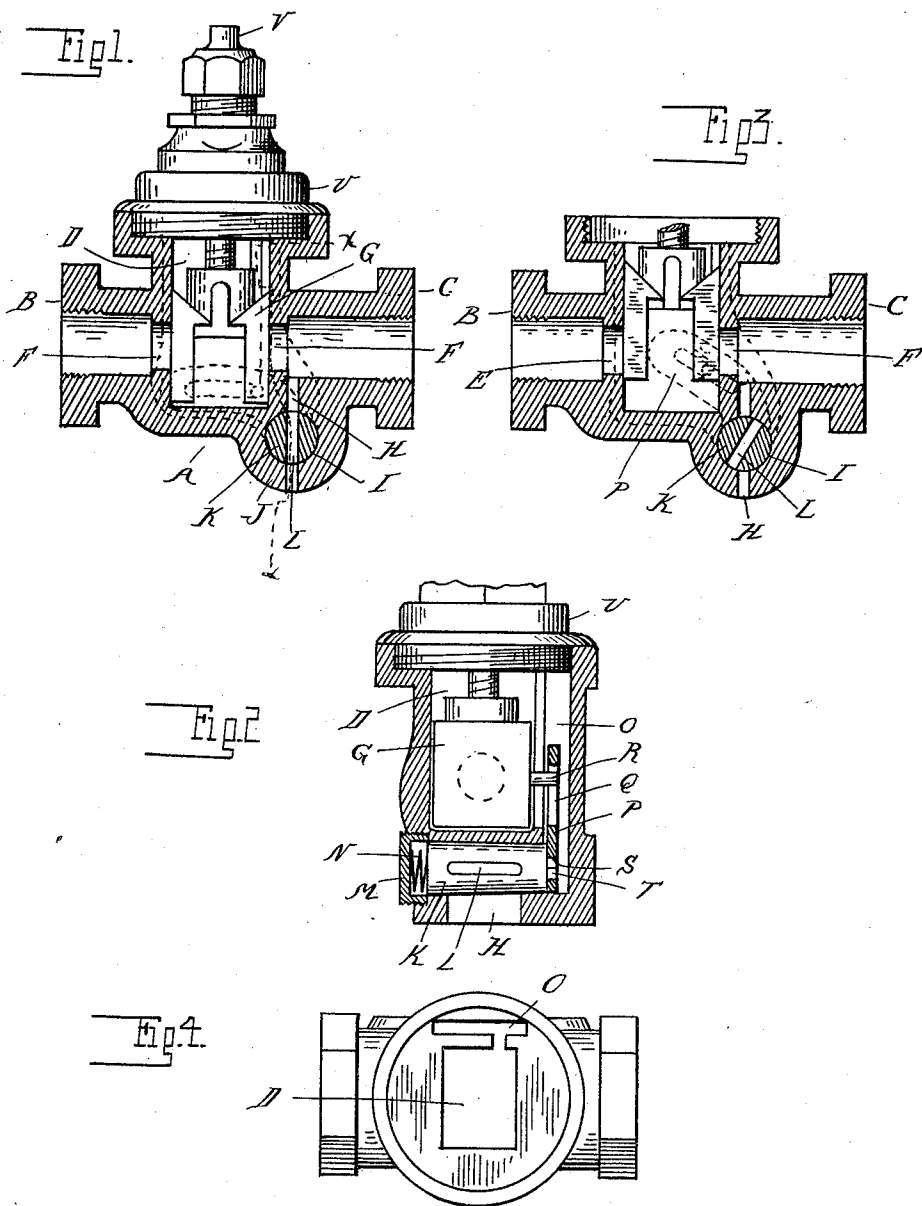
A. RABITAILLE.

VALVE.

APPLICATION FILED APR. 18, 1912.

1,053,434.

Patented Feb. 18, 1913.



Witnesses
H. K. Fad
James P. Barry.

Inventor
Ambrose Rabitaille,
By *[Signature]*
attys

UNITED STATES PATENT OFFICE.

AMBROSE RABITAILLE, OF DETROIT, MICHIGAN.

VALVE.

1,053,434.

Specification of Letters Patent.

Patented Feb. 18, 1913.

Application filed April 18, 1912. Serial No. 691,596.

To all whom it may concern:

Be it known that I, AMBROSE RABITAILLE, a citizen of the United States of America, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Valves, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to valves and particularly to that type of valve in which a vent is provided for the portion of the system beyond the valve and the vent controlled by an auxiliary valve actuated upon the opening and closing of the main valve.

The invention resides in the construction of a valve of this type whereby the main and auxiliary valves and the operating connection therebetween are contained within a single casing; to so arrange the parts that the case may be cast as a single piece structure; to provide for ready access to both the main and auxiliary valves; and to provide a simple and inexpensive yet highly efficient device.

Other objects of the invention will more fully hereinafter appear.

The invention consists in a peculiar construction, arrangement and combination of parts as herein set forth, and particularly pointed out in the claims.

As my invention is particularly adapted for gate valves I will show and describe the preferred form of my improvement as applied to a valve of the gate type.

In the drawings;—Figure 1 is a central vertical section through a gate valve embodying my invention; Fig. 2 is a section on line X—X of Fig. 1 with the drain plug closed; Fig. 3 is a section similar to Fig. 1 showing the parts in a different position of adjustment; and Fig. 4 is a top plan view of the valve casing with the parts removed therefrom.

A designates the valve casing having the usual inlet and outlet threaded nipples B and C and the intermediate or valve chamber D therebetween which communicates with the nipples by ports E and F.

G is the gate valve within the chamber D for controlling the ports E and F. One of the nipples, as C, has a vent H extending to without the casing. This vent leads through a valve chamber I formed in an integral enlargement J at the bottom of the casing A. The chamber I is in the nature

of a tapering bore within which is fitted a correspondingly tapered oscillatory valve K having a through bore L for controlling the vent H; this valve being secured within the bore by means of a cap M. Preferably a coil spring N is interposed between the outer end of the valve and the cap to yieldably press the valve inwardly. Since the valve and its seat taper, wear between the same will be automatically taken up by the spring.

In one side of the casing A is formed a narrow chamber O for receiving a lever P, one end of which is secured to the valve K and the other end slotted as at Q to engage a pin or lug R projecting laterally from one of the gates of the main valve. The connection between the lever and the valve may be formed in any suitable manner as by providing the lever with a polygonal aperture S for receiving a lug T of complementary configuration on the inner end of the valve. Such a connection permits the valve K to be readily detached from the lever.

U is a cap for closing the upper end of the casing and which forms a closure for both the main chamber and the chamber O.

In operation, assuming that the main valve is closed, the auxiliary valve is then in position to open the vent, the parts being arranged as shown in Fig. 1—to open the valve G the handle V is turned which raises the gates in the usual manner. Upon the rising of the gates the pin R rocks the lever to close the vent H, the parts being so proportioned that before the gates start to uncover the ports E and F, the port in the valve K will be moved out of registration with the vent, as shown in Fig. 3. Likewise, upon the closing of the gate valve the vent is not opened until the main valve is closed.

From the foregoing description it will be understood that the main and auxiliary valves as well as the connection therebetween are contained within the valve casing and that the size of the latter is not materially increased over a gate valve in which a valve controlled vent is not provided. Furthermore, the relation of the chambers in the casing is such as to permit the same to be formed by casting and also to facilitate ready access to the parts.

What I claim as my invention is:

1. The combination with a casing having

inlet and outlet nipples and an intermediate chamber, a main gate valve arranged in said chamber and controlling communication between said nipples, an operating connection for said gate valve extending outwardly to one side of the nipples, said casing being provided with an auxiliary valve chamber upon the opposite side of the nipples communicating with and arranged below the plane of the nipples forming a drain connection, an auxiliary valve in said auxiliary valve chamber, and a connection inclosed in the valve for actuating the auxiliary valve upon the operation of the main valve.

2. The combination with a casing having inlet and outlet nipples and an intermediate chamber, a main gate valve arranged in said chamber and controlling communication between said nipples, an operating connection for said gate valve extending outwardly to one side of the nipples, said casing being provided with an auxiliary valve chamber upon the opposite side of the nipples communicating with and arranged below the plane of one of the nipples, there being a passage leading from said nipples through the auxiliary valve chamber forming a drain, an oscillatory auxiliary valve arranged in said chamber and controlling said passage, and a connection between the valves inclosed in the valve casing for actuating the auxiliary valve upon the operation of the main valve.

3. The combination with a casing, having inlet and outlet nipples, of a gate valve controlling communication therebetween, said casing being provided with an auxiliary valve chamber having a vent leading from the outlet nipple to without the casing, an oscillatory valve in the chamber controlling said vent, a lever having one end connected to the valve and the other end slotted, and a pin on the gate valve for engaging the slotted portion of the lever said lever being arranged within the casing.

4. The combination with a casing, having inlet and outlet nipples, a main gate valve controlling communication between said nipples, said casing having a transverse bore at the bottom thereof forming a valve chamber, and a narrow vertical chamber at the

side slotted to communicate with the main valve chamber, the casing being also provided with a vent extending through said auxiliary valve chamber, an oscillatory valve within said bore, a lever arranged within said vertical chamber and having one end secured to the oscillatory valve, and a projection on the gate valve arranged to travel in said slot and positioned in operative relation to said lever.

5. The combination with a casing, having inlet and outlet nipples, a main gate valve controlling communication between said nipples, said casing having a transverse tapering bore at the bottom thereof forming a valve chamber, and a narrow vertical chamber at the side slotted to communicate with the main valve chamber, the casing being also provided with a vent extending through said auxiliary valve chamber, an oscillatory valve within said bore, and tapered complementary to the tapering of the bore, a cap for closing said bore and a spring intermediate the cap and the outer end of said oscillatory valve for yieldably pressing the latter inward, a lever arranged within said vertical chamber and having one end secured to the oscillatory valve, and a projection on the gate valve arranged to travel in said slot and positioned in operative relation to said lever.

6. The combination with a casing having inlet and outlet nipples, a main gate valve controlling communication between said nipples, said casing being provided with a chamber having a longitudinally tapering bore and there being a drain vent leading from one of said nipples to without the casing, an oscillatory longitudinally tapering valve arranged in said chamber and controlling the drain vent, means for yieldably pressing the oscillatory valve inward, and a connection inclosed in the casing for actuating the oscillatory valve upon the operation of the main valve.

In testimony whereof I affix my signature in presence of two witnesses.

AMBROSE RABITAILLE.

Witnesses:

GEORGE B. CARTER,
J. LOUIS HORN.