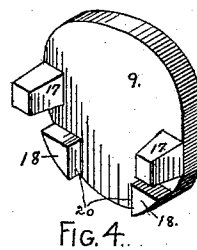
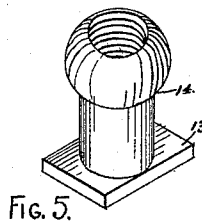
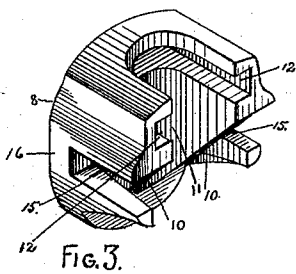
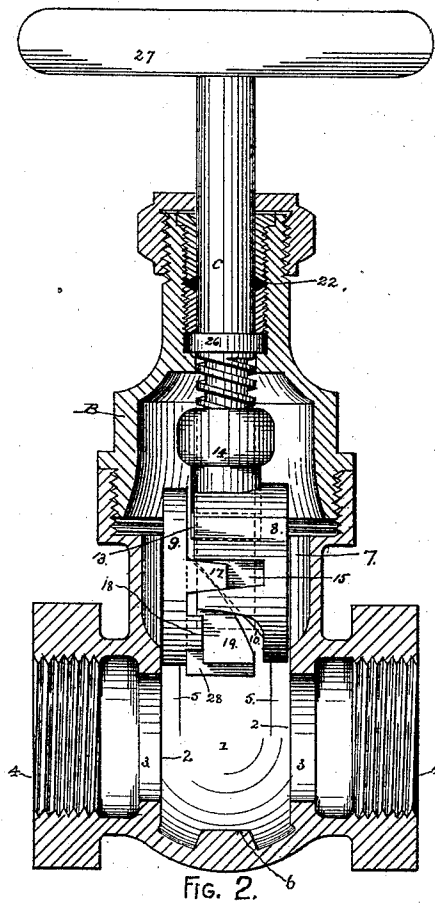
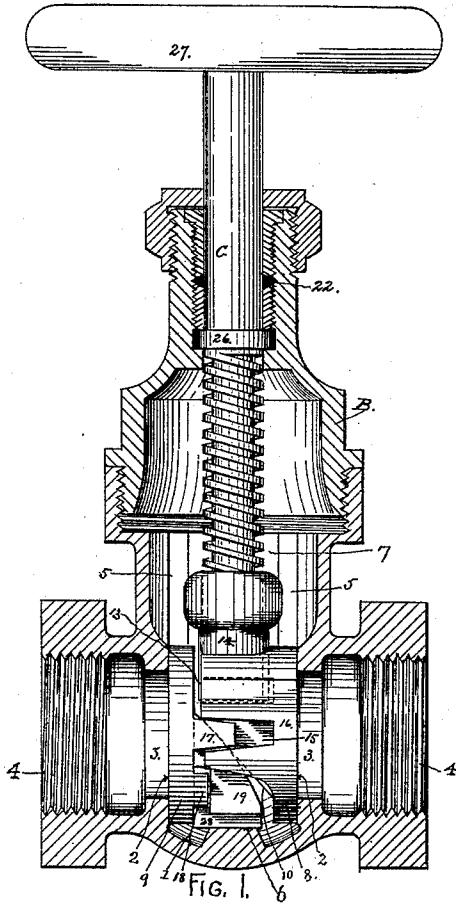


(No Model.)

G. P. VINCENT.
STRAIGHT WAY VALVE.

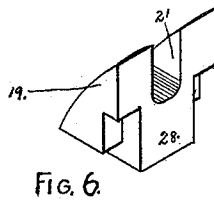
No. 463,016.

Patented Nov. 10, 1891.



WITNESSES:

S. B. Brown,
R. A. Gordon, Jr.



INVENTOR:
GEORGE P. VINCENT
by *William H. Low,*
ATTORNEY.

UNITED STATES PATENT OFFICE.

GEORGE P. VINCENT, OF LANSINGBURG, NEW YORK, ASSIGNOR OF TWO-THIRDS TO FRANK SHELDON, OF SAME PLACE, AND FRANK W. HORROBIN, OF COHOES, NEW YORK.

STRAIGHT-WAY VALVE.

SPECIFICATION forming part of Letters Patent No. 463,016, dated November 10, 1891.

Application filed January 15, 1891. Serial No. 377,858. (No model.)

To all whom it may concern:

Be it known that I, GEORGE P. VINCENT, of Lansingburg, in the county of Rensselaer and State of New York, have invented new and useful Improvements in Straight-Way Valves, of which the following is a specification.

My invention relates to improvements in that class of straight-way valves in which the water-way is opened and closed by means of sliding gates which are fitted to bear upon oppositely-located valve-seats; and it consists of the combination of parts shown in the drawings and described in this specification.

The object of my invention is to provide a simple, efficient and durable straight-way valve, and this object I attain by the means illustrated in the accompanying drawings, which are herein referred to and form part of this specification, and in which—

Figure 1 is a longitudinal section of the valve-casing, with the internal parts shown in elevation, the valve being shown in a closed condition. Fig. 2 is a like view showing the valve in an opened condition; and Figs. 3, 4, 5, and 6, are detached perspective views of the internal parts of my valve.

As represented in the drawings, A designates the valve-casing, which includes a central valve-chamber 1, provided with oppositely-arranged valve-seats 2, each of the latter having an opening 3, leading into a nozzle 4, formed on the corresponding end of said valve-casing. The latter also includes a pair of guide-strips 5, formed on the face of each valve-seat at opposite sides of the opening 3, said guide-strips forming guideways on each valve-seat for the valve-gates to slide in, an abutment 6 at the bottom of the valve-chamber, and a throat 7, leading into said valve-chamber.

The valve is composed of two gates, which, for facilitating this description, are designated as 8 and 9, each of which is provided with a faced side, that is fitted to form a water-tight joint with the valve-seat 2, to which it is appropriated. The back of the gate 8 is provided with inclined planes 10, which incline upwardly and outwardly at opposite sides of a vertical groove 11, through which the screw-stem for operating the valve-gates

will pass when the valve is in an operative condition. At the upper end of said inclined planes there are oppositely-located grooves 12, which are fitted to receive a T-head 13 of a nut 14, hereinafter described. At the outer sides of the inclined planes 10 the gate 8 is provided with oppositely-located grooves 15, arranged at right angles to the face of said gate. The opposite edges of the latter are flattened, as at 16 on Fig. 3, so as to slide freely between the guide-strips 5 of the valve-face to which said gate is appropriated. The gate 9 has on its back a pair of arms 17, which are fitted to loosely engage in the grooves 15 of the gate 8, and below said arms a pair of stops 18 are formed to serve as an abutment, on which the shoulders of a wedge-piece 19 will have their bearing, and between said stops a groove 20 is formed to allow a rib or projecting end 28 of said wedge-piece to slide therein. The inclined face of said wedge-piece is preferably made slightly convex, and it is provided with a groove 21, in which the lower end of the screw-stem may enter when the valve is being opened. The nut 14 is provided with flanges, which form a quadrangular T-head 13 to enter the grooves 12 in such manner that said nut will be prevented from being rotated by the screw-stem; but said nut will be sufficiently loose in said grooves to allow the gate 8 to have a free movement toward and from the valve-seat to which it is appropriated.

The bonnet B is fitted to screw into or onto the outer end of the throat 7, and is provided with a stuffing-box 22, through which a screw-stem C passes. Said screw-stem engages in the nut 14 for the purpose of opening and closing the valve, and it is provided with a collar 26, which is retained in the stuffing-box 22 in such manner that said screw-stem will be prevented from acquiring an endwise movement. The outer end of the screw-stem C is provided with a hand-wheel 27 or other appliance by which said screw-stem can be rotated for the purpose of effecting the opening and closing movements of the valve.

My valve operates in the following manner: Premising that the valve is closed, as shown in Fig. 1, with the wedge-piece 19 bearing upon

the abutment 6, whereby said wedge-piece will be forced upwardly to force the gates 8 and 9 into close contact with the valve-seats 2, by turning the screw-stem C in the proper direction to effect the opening movement of the valve the gate 8 will be the first to begin its rising movement, this effect being produced by the lost motion of the grooves 15 on the arms 17, and thereby the pressure of said gate upon the wedge-piece 19 will be removed from the latter. The gates 8 and 9 will then be free from frictional contact with the valve-seats 2, so that by the continued rotations of the screw-stem C said gates can be readily drawn up to uncover the water-way through the valve-casing A. During the ascent of said gates the wedge-piece 19 will be freed and will remain resting on the abutment 6 until the stops 18 engage with said wedge-piece, and the latter will thereby be raised into the position shown in Fig. 2. To close the valve, the screw-stem C requires to be rotated in a reverse direction from that which effected the opening movement of the gates. The latter will descend without contacting with the valve-seats 2 until the point is reached where the wedge-piece 19 bears upon the abutment 6. Then the descending movement of the gate 8 will, by reason of the inclined planes 10 on the back of said gate being brought into contact with the inclined surface of said wedge-piece, cause the gates 8 and 9 to be pushed into contact with their respective valve-seats.

I am aware that straight-way valves have heretofore been constructed with gates which

were moved from each other by wedging, so as to form water-tight joints with oppositely-located valve-seats; but the construction of the operative parts of these earlier valves has been materially different from mine. I do not claim valves embodying said earlier construction; but

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

The combination of a valve-casing having a valve-chamber provided with oppositely-located valve-seats, a pair of sliding gates of dissimilar construction which loosely engage with each other and are fitted to move vertically in said valve-chamber, a nut having a loose engagement in one of said sliding gates, and an inverted wedge-piece having one of its faces on a vertical plane and its opposite face on an inclined plane fitted to press said sliding gates away from each other, one of said sliding gates having on its back an inclined plane sloping upward and outward and the other sliding gate having its front and back formed on plane surfaces which are parallel to each other, and having on its back stops fitted to carry said wedge-piece when the valve is open, and having arms which are fitted to engage in the back of the other sliding gate, as and for the purpose herein specified.

GEORGE P. VINCENT.

Witnesses:

WM. H. LOW,
S. B. BREWER.