

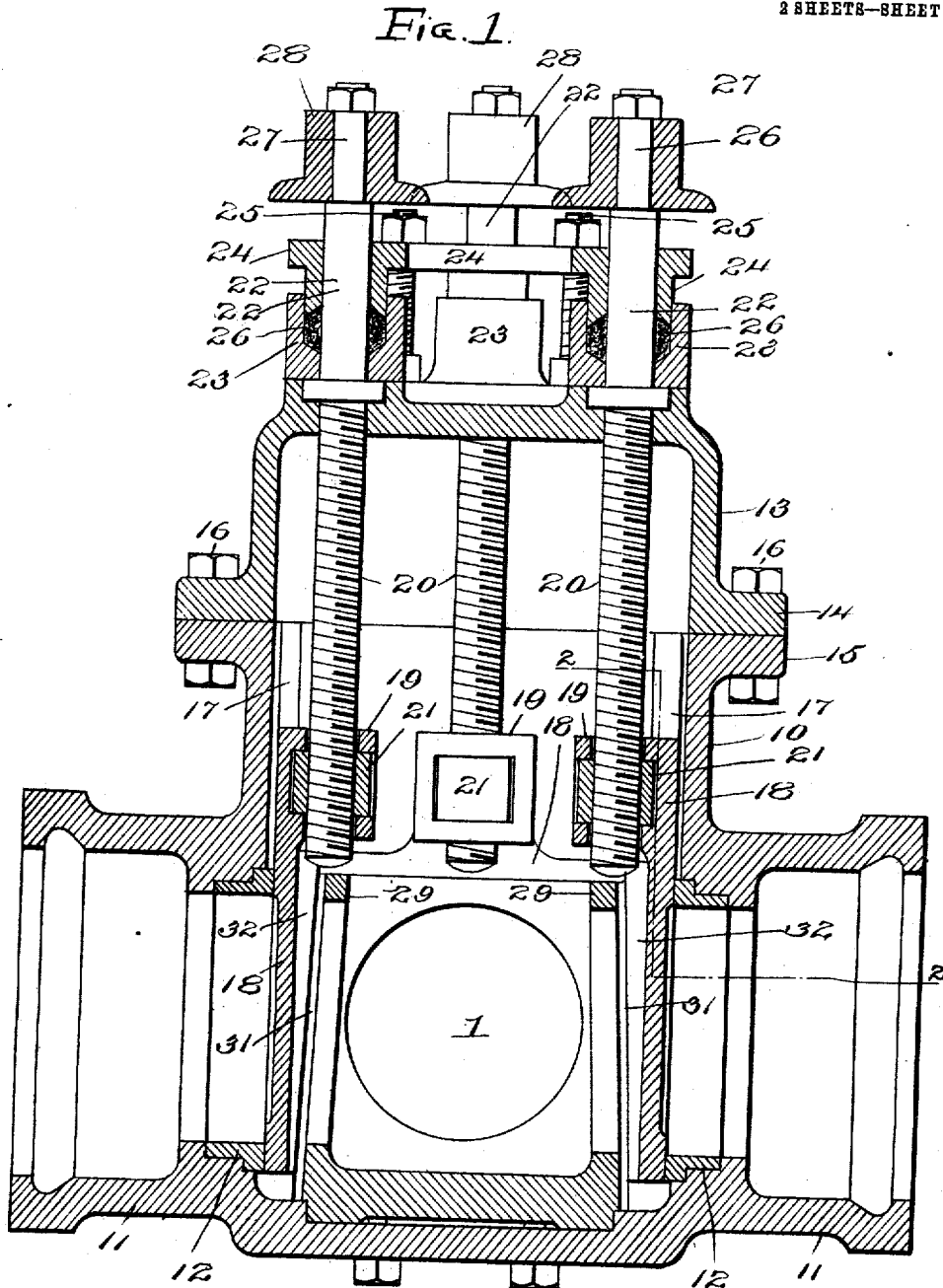
W. R. THOMAS.
VALVE.

APPLICATION FILED JAN. 12, 1909.

927,438.

Patented July 6, 1909.

2 SHEETS—SHEET 1.



Inventor

Witnesses
J. N. Fowler Jr.
A. F. Gilman

William R. Thomas
By Mason Smith Lawrence,
Attorney

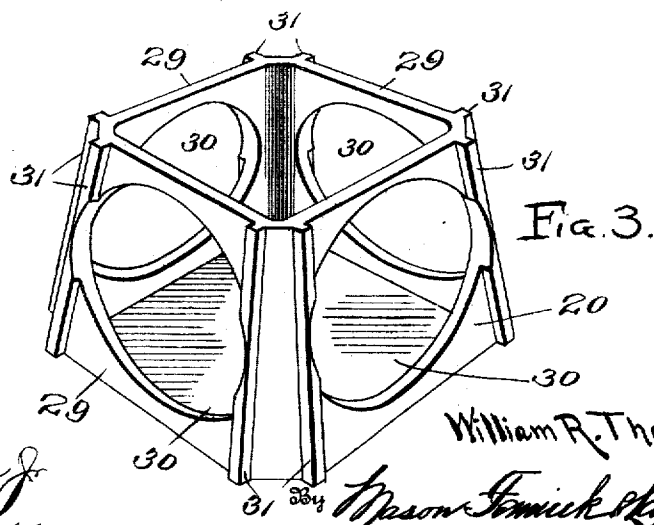
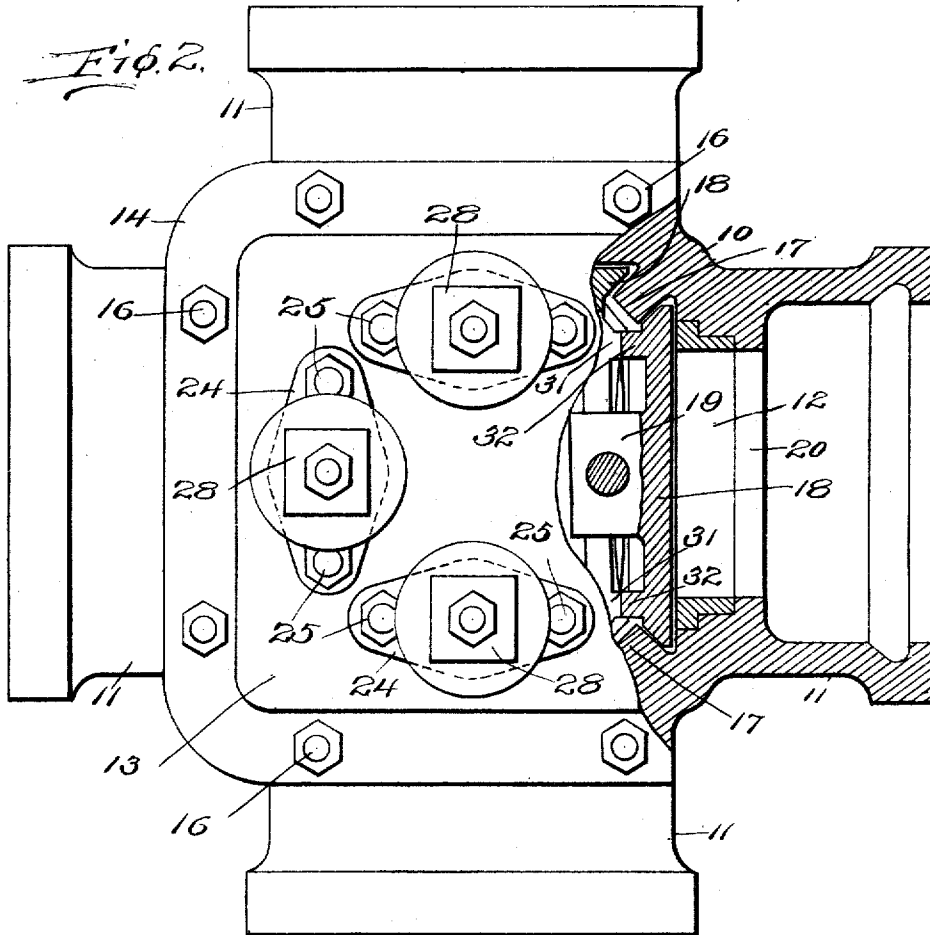
W. R. THOMAS.
VALVE.

APPLICATION FILED JAN. 12, 1909.

927,438.

Patented July 6, 1909.

2 SHEETS—SHEET 2.



Witnesses
J. M. Fowler Jr.
A. F. Gilmore

Inventor
William R. Thomas
Mason F. Lawrence,
Attorneys

UNITED STATES PATENT OFFICE.

WILLIAM R. THOMAS, OF CATASAUQUA, PENNSYLVANIA.

VALVE.

No. 927,438.

Specification of Letters Patent.

Patented July 6, 1909.

Application filed January 12, 1909. Serial No. 471,963.

To all whom it may concern:

Be it known that I, WILLIAM R. THOMAS, a citizen of the United States, residing at Catasauqua, in the county of Lehigh and State of Pennsylvania, have invented certain new and useful Improvements in 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 appertains to make and use the same.

This invention relates to valves, and especially to valves adapted to direct the flow of liquid or fluid in any of a number of different ways.

An object of the present invention is to provide in a multiple way valve improved means for operating the gates closing the ports of such valve independently.

A further object of the invention is to provide in a multiple way valve improved means for seating the gates.

With these and other objects in view, the invention comprises certain novel constructions, combinations and arrangements of parts, as will be hereinafter fully described and claimed.

In the drawings:—Figure 1 is a vertical, sectional view of the improved valve. Fig. 2 is a top plan view of the valve, one side being broken away. Fig. 3 is a perspective view of the pyramidal seating member.

Like characters of reference designate corresponding parts throughout the several views.

The valve illustrated in the drawings forming a part of the present application shows a four-way valve, and while it will ordinarily be employed in the production of a four-way valve, it is to be understood that the principle involved herein is applicable to an application embodying more or less ports according to circumstances and that the description here given as to a four-way valve is only illustrative of the invention. As shown the casing 10 is provided with a plurality of nipples 11 here shown adapted for connection with a cast pipe, the valve ordinarily being employed for controlling large mains, but it is to be understood, of course, that the means for connecting the casing has nothing to do with the present invention.

The nipples 11 communicate with the interior of the valve casing 10 and at such communications bushings 12 are preferably inserted, such bushings, of course, being

ground or otherwise with means for proper engagement with the gates.

Above the casing 10 a housing 13 is secured in any approved manner as by being flanged at 14 and secured to a flange 15 of the casing by the bolts 16.

Within the corners of the casing 10 ribs 17 are formed producing guide-ways for gates 18, movable vertically therein. The gates 18 are provided with faces adapted for engagement with the bushings 12 so that when the gates are forced tightly against such bushings a water or other liquid-tight joint is produced. The gates 18 are provided at their upper ends with socket members 19, through which screws 20 extend and with nuts 21 seated within the socket members 19 and embracing such screws 20. The screws 20 extend upwardly and are provided with shaft portions 22 passing through stuffing boxes composed of socket members 23 and followers 24, the latter being forced to seat in any usual and ordinary manner as by the bolts 25 and with packing material 27 within such stuffing boxes. At their upper ends the shaft portions 22 are reduced in size as at 27 and flanged nuts 28 are secured thereon.

It will be apparent that the employment of a tool upon the nuts 28 and the rotation thereby of the screws 20 will move the gates 18 upwardly or downwardly dependent upon the direction of rotation of such screws.

Within the casing and at the bottom thereof a member called a pyramid member, being in fact a frusto-pyramid, is secured, such member being shown in perspective at Fig. 3. The member comprises a number of sides equaling the number of nipples 11 and here numbered 29. The pyramid member is provided with openings or passages 30 registering with the openings of the bushings 12 and with the nipples 11 and having ribs 31 disposed upon opposite sides of the openings 30, such ribs 30 being parallel in pairs upon each side of the pyramid but partaking of the inclination of that side of the pyramid. The gate members 18 are provided along their sides with ribs 32 produced at an incline, the same as the inclination of the sides of the pyramid and of the ribs 31, and as shown particularly in Fig. 2, and so positioned that the said ribs 32 move slidably upon the surface of the ribs 31 and when the gates are at their downward limit as shown in Fig. 1, the wedging ribs 32 bear-

ing against the ribs 31 force the gate 18 into intimate and close contact with the bushings 12 and thereby close the passage through the nipples 11.

5 It will be apparent that either one of the gates 18 may be raised to admit fluid through any one of the nipples 11 and that any other one of the gates 18 may also be raised to permit the discharge of fluid through the corresponding nipple 11. In this way all of the
10 passages leading to or from the valve casing 10 are provided with independently movable gates so that either one may be opened or closed independently of all the others as may
15 be found necessary or desirable.

What I claim is:—

1. In a multiple way valve, a casing provided with a plurality of ports, an equal number of gates slidably disposed within the
20 casing and adapted to close the ports, a frusto-pyramidal member disposed within the casing and adapted to wedge the gates to seat, and means to manipulate the gates.

2. In a multiple way valve, a casing provided with a plurality of passages, a similar
25 number of gates adapted to close the passages, a pyramidal member disposed within the casing and provided with passages registering with the passages of the casing and adapted to force the gates to seat, and means
30 to move the gates.

3. In a multiple way valve, a casing provided with a plurality of passages, a pyramidal member disposed intermediate the passages and provided with openings registering
35 therewith, a plurality of gates adapted to be forced between the pyramidal member and the entrance to the passages, and means to move the gates.

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

WILLIAM R. THOMAS.

Witnesses:

FRED. THOMAS AGTHE,
F. J. WEHRLE.