

VALVE.

950,829.

Patented Mar. 1, 1910.

Fig. 2.

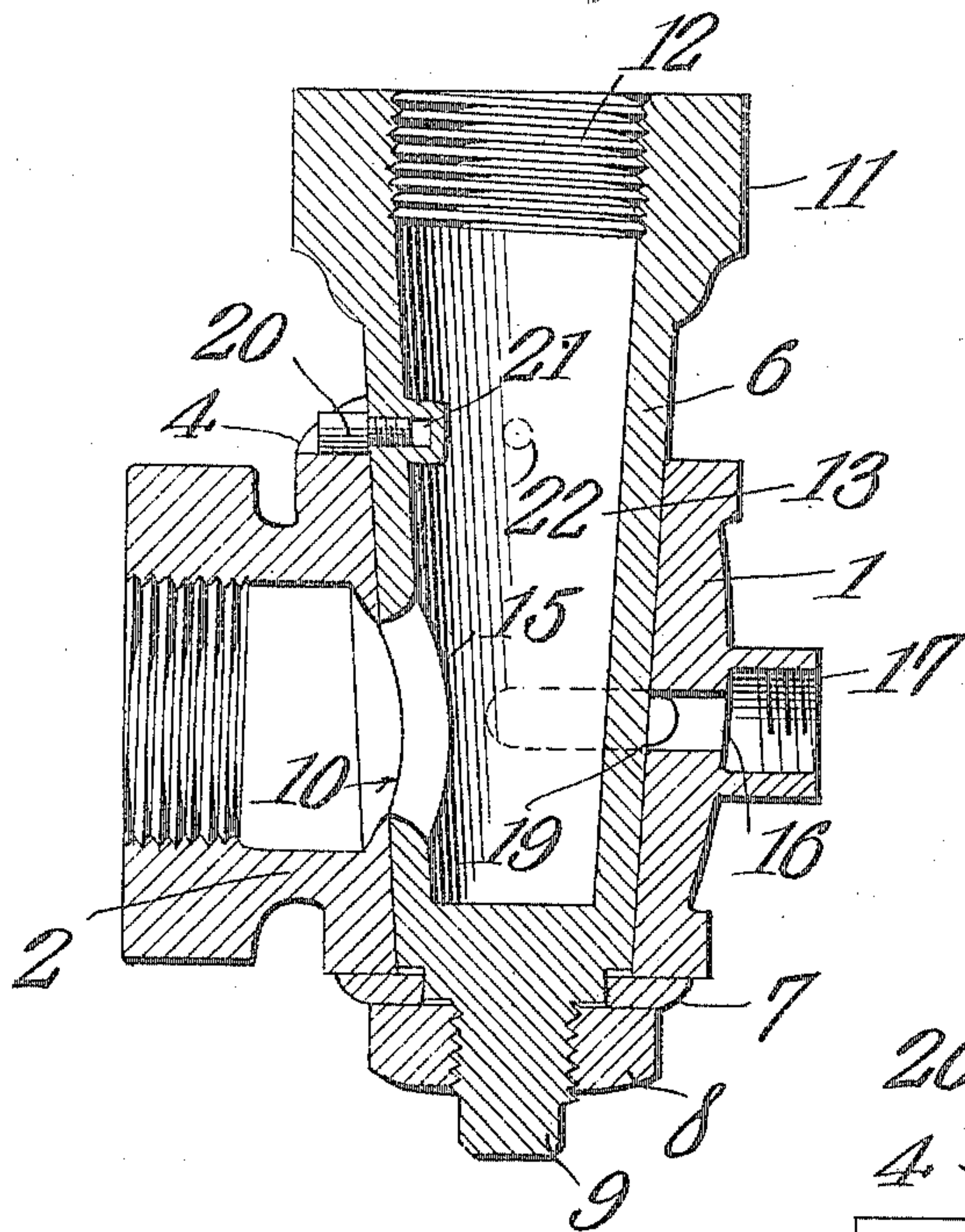


Fig. 1.

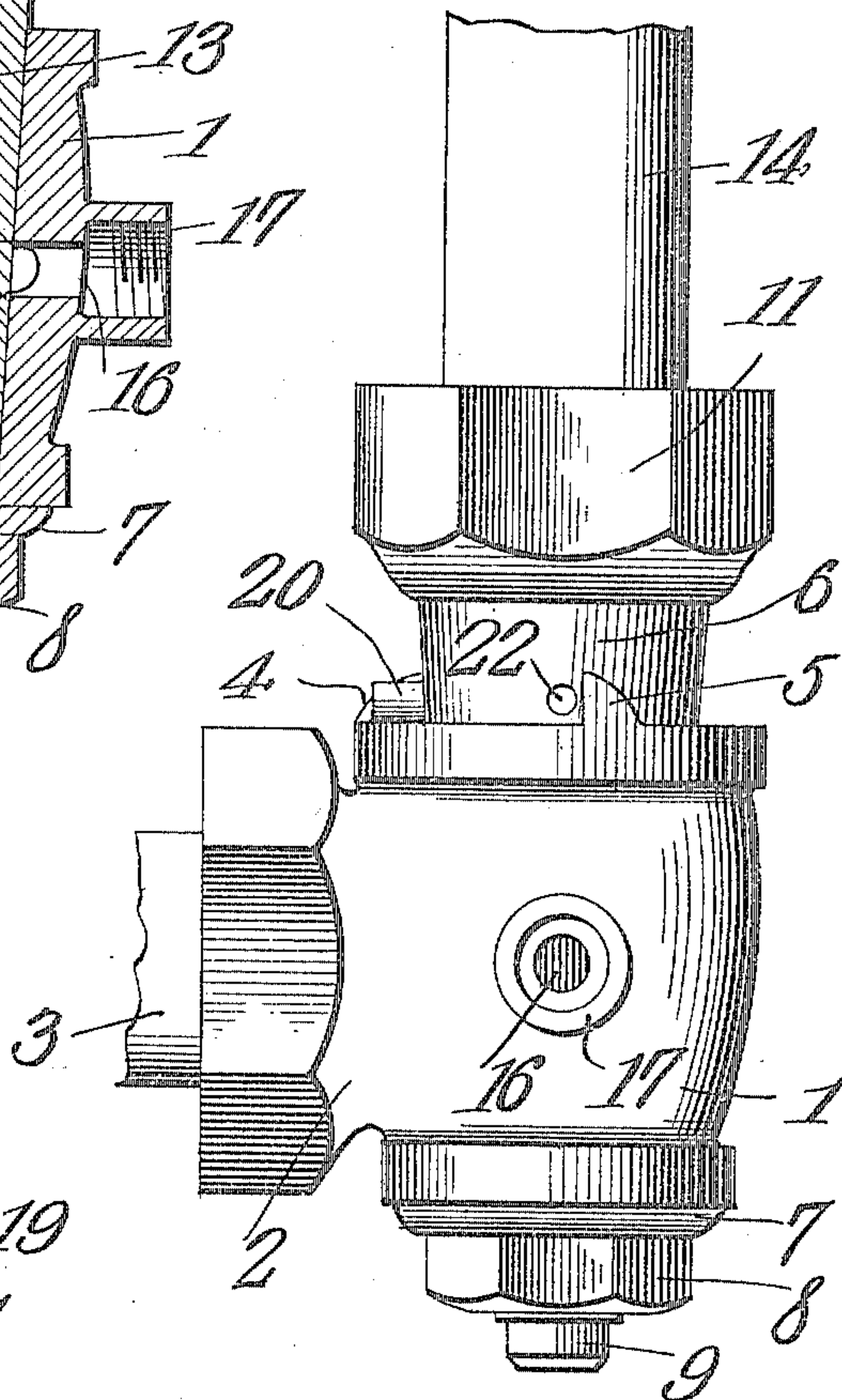
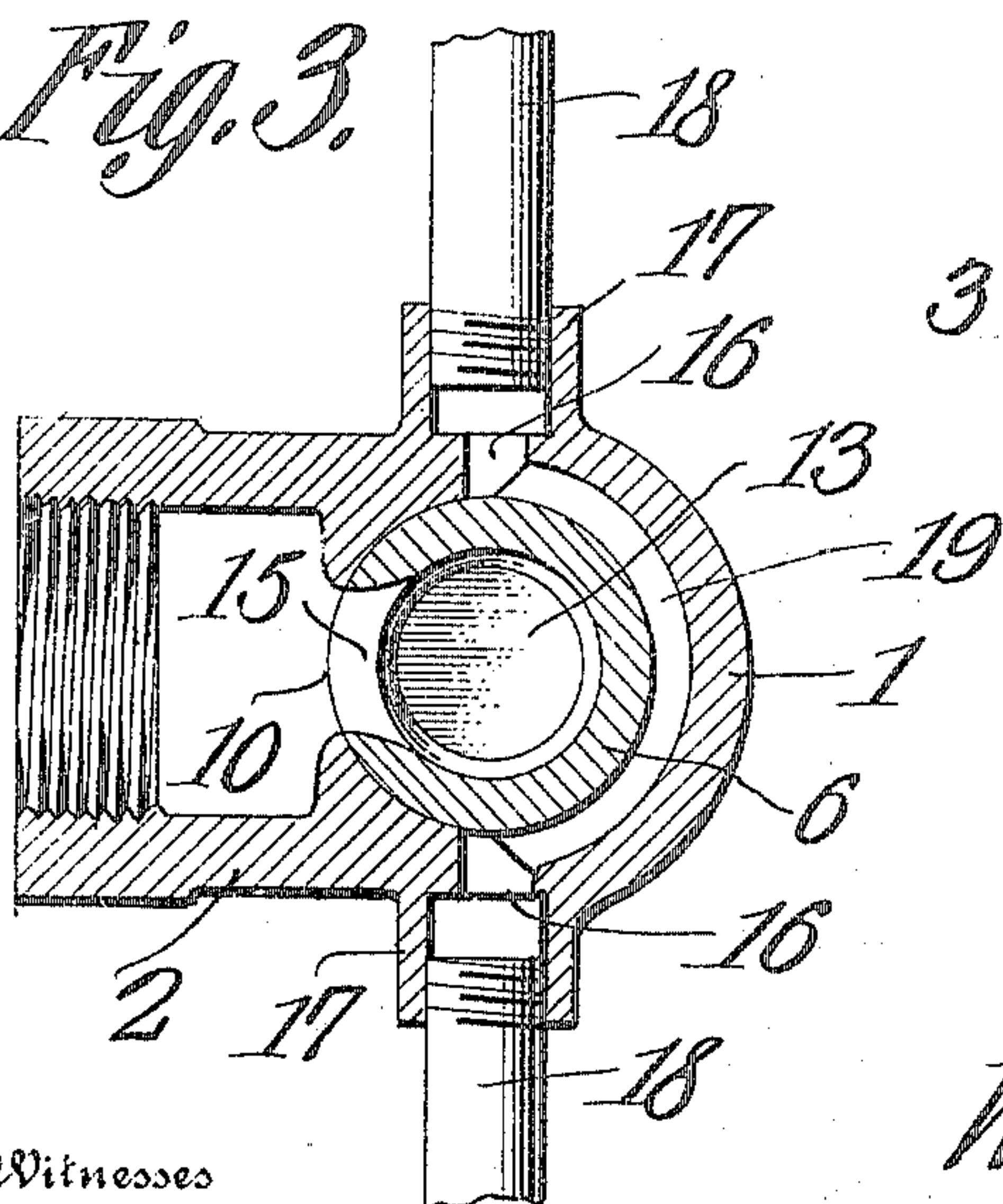


Fig. 3.



Witnesses

E. J. Stewart
S. P. Hulingsworth

William Volkhart. Inventor

By *C. Howble*,
Attorneys

UNITED STATES PATENT OFFICE.

WILLIAM VOLKHARDT, OF STAPLETON, NEW YORK.

VALVE.

950,829.

Specification of Letters Patent.

Patented Mar. 1, 1910.

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To all whom it may concern:

Be it known that I, WILLIAM VOLKHARDT, a citizen of the United States, residing at Stapleton, in the county of Richmond and State of New York, have invented a new and useful Valve, of which the following is a specification.

This invention relates to valves of that type in which liquid passes from an inlet pipe to a delivery pipe through a valve plug attached to said delivery pipe, the latter pipe being in concentric relation to the axis of rotation of said plug.

The object of the invention is to provide a simple valve of this class which when opened admits water freely to the valve plug and thence to the delivery pipe, and when closed will drain all water from the delivery pipe whether the valve be turned to the right or left. The construction is such that the inflow of water must be wholly cut off before the delivery pipe can be drained.

To more clearly understand the construction and arrangement of the invention, attention is directed to the following detailed description and claim, and the accompanying drawing forming a part of this specification, in which:—

Figure 1 is an exterior view of the valve; Fig. 2 a vertical sectional view of the same, and Fig. 3 a cross sectional view on the line 3—3 of Fig. 1.

Like reference characters are used for the same parts in all the figures.

In the drawing, 1 indicates a valve casing of usual form with a neck 2 projecting from one side thereof in which the inlet pipe 3 is adapted to be screwed. The top of the casing 1 is flat with the exception of two upwardly projecting lugs 4 and 5 each with a straight vertical side at an angle of ninety degrees to each other.

Through the axis of the valve casing 1 and from end to end thereof, is a tapered hole forming a seat for a valve plug 6 ground to fit said seat and held in place therein against endwise movement by the usual washer 7 and nut 8 secured to a threaded stem 9 on the lower and smaller end of the valve plug 6. The valve plug 6 is hollow from a point below the inlet opening 10 in the casing to and through the upper end of the valve plug which latter extends above the casing 1 and terminates in the usual exterior polygonal collar 11. An interior thread 12 extends a short distance

within the opening 13 in the valve plug into which is screwed the lower end of the delivery pipe 14 prolonged upwardly in the axial line of the valve plug 6.

Through the wall of the valve plug 6 is made an opening 15, elongated in the direction of the length of the plug and somewhat narrow transversely. Through this opening fluid enters the valve, when the plug is turned to bring the openings 10 and 15 into coincidence, and passes up the delivery pipe 14.

When the valve is used as a hydrant valve, it is placed below ground sufficiently far to prevent water therein from freezing. The outlet or delivery pipe extends above the surface of the ground and any water therein, during cold weather, is liable to freeze, thus stopping the flow of water and probably bursting the pipe. To prevent these accidents many ways have been devised to drain the delivery pipe as soon as the flow of water therethrough has been stopped, but as far as known, these previous devices have been provided with limiting means for preventing the plug being turned too far and thus defeat the object for which they were designed. In the present structure although a limiting means is shown for convenience, this may be omitted and the delivery pipe will be drained in whatever position the valve plug may be turned, either to right or left, as soon as it has cut off the inflow of water from the inlet pipe. In fact, at no point in an entire rotation of the valve plug is there any possibility of communication between the inlet opening 10 and the waste outlet.

On each side of the valve casing 1 as in Figs. 1 and 3, or on the side opposite the inlet neck 2 as in Fig. 2 is a draining opening 16 each in a plane passing through the inlet opening 15 in the valve plug: These draining openings pass through the valve casing and are each surrounded by a short hollow stem 17, preferably threaded interiorly for a drain pipe 18. The drain openings 16 on each side of the casing are connected by a channel 19 formed in the inner side of the valve plug seat opposite the inlet opening 10 therein. A similar channel 19 extends one half way around the valve seat in a similar position when only a single outlet 16 is used, as in Fig. 2. The widths of the water inlets 10 and 15 are a fraction less than the width of channel wall between said inlet 10 and the beginning of the channel 19

on either side so that before the inlet opening 15 in the valve plug can connect with the channel 19, it has closed the inlet opening 10 in the casing. As soon, therefore, as the valve plug has made a quarter turn the opening 15 in the valve plug is in full communication with the channel 19 and all water in the delivery pipe passes out through both drain openings 16 by way of the channel, or, where but one drain opening is used, the water will travel along the channel and out through said single drain opening. It will thus be seen that if the valve plug be placed in any position between one quarter and three quarters of a revolution, no impediment is offered to the rapid and complete emptying of the delivery pipe. When the valve plug has been turned to the three quarter position, instead of reversing the movement to open the valve, the valve plug may be turned from its three quarter position to the full open position by moving it through the last quarter, the drain opening being cut off, as heretofore described before the edges of the two inlet openings 10 and 15 pass each other.

When it is desired to limit the rotation of the valve plug 6 to one quarter of a turn, a stop pin 20 is screwed into the hole 21 in the valve plug above the casing 1 to positively limit the movement of said plug in

either direction through striking the lugs 4 and 5. By this arrangement the valve is opened when the plug is turned to the right, this movement causing the pin to move toward the left. Should it be desired to open the valve by turning the plug in the opposite direction, the pin 20 is removed from the hole 21 and fastened in the hole 22.

What is claimed is:—

In a valve, a casing having an inlet port, and a continuous circumferential groove in its inner wall opposite the inlet port, said groove having an outlet port, and said groove extending from a point adjacent to one side of the inlet port, and around to a point adjacent to the opposite side of said inlet port, the respective ends of the groove being spaced equidistant from the inlet port, and a hollow turning plug working in the casing, and having an inlet opening in the plane of the inlet port, the width of said inlet opening being a fraction less than the distance between the inlet port, and either end of the aforesaid groove.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

WILLIAM VOLKHARDT.

Witnesses:

JOHN B. CORNELL,
D. T. CORNELL.