W. T. RYMER.

FLOAT VALVE.

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Fig. 2

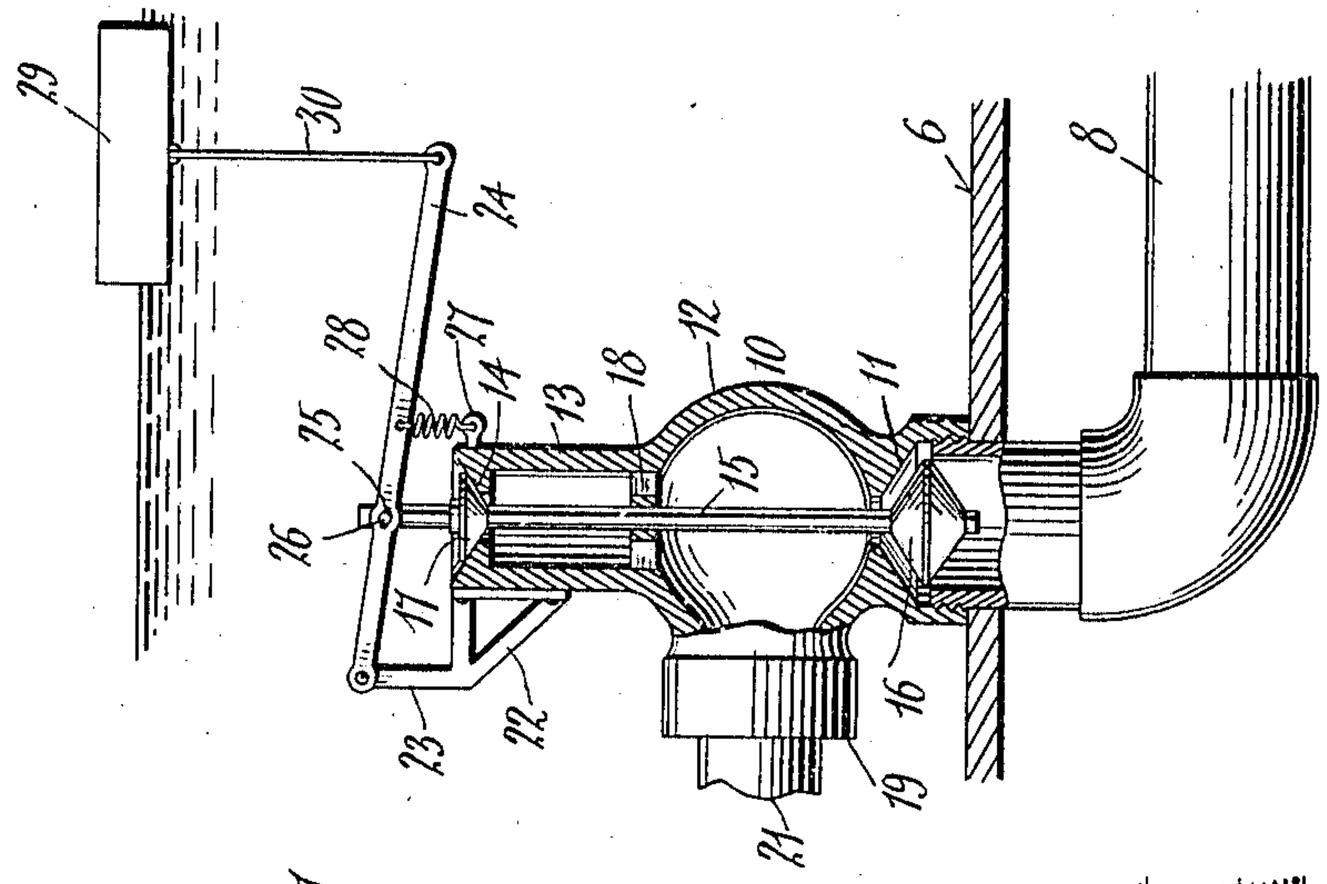

Fig. 1

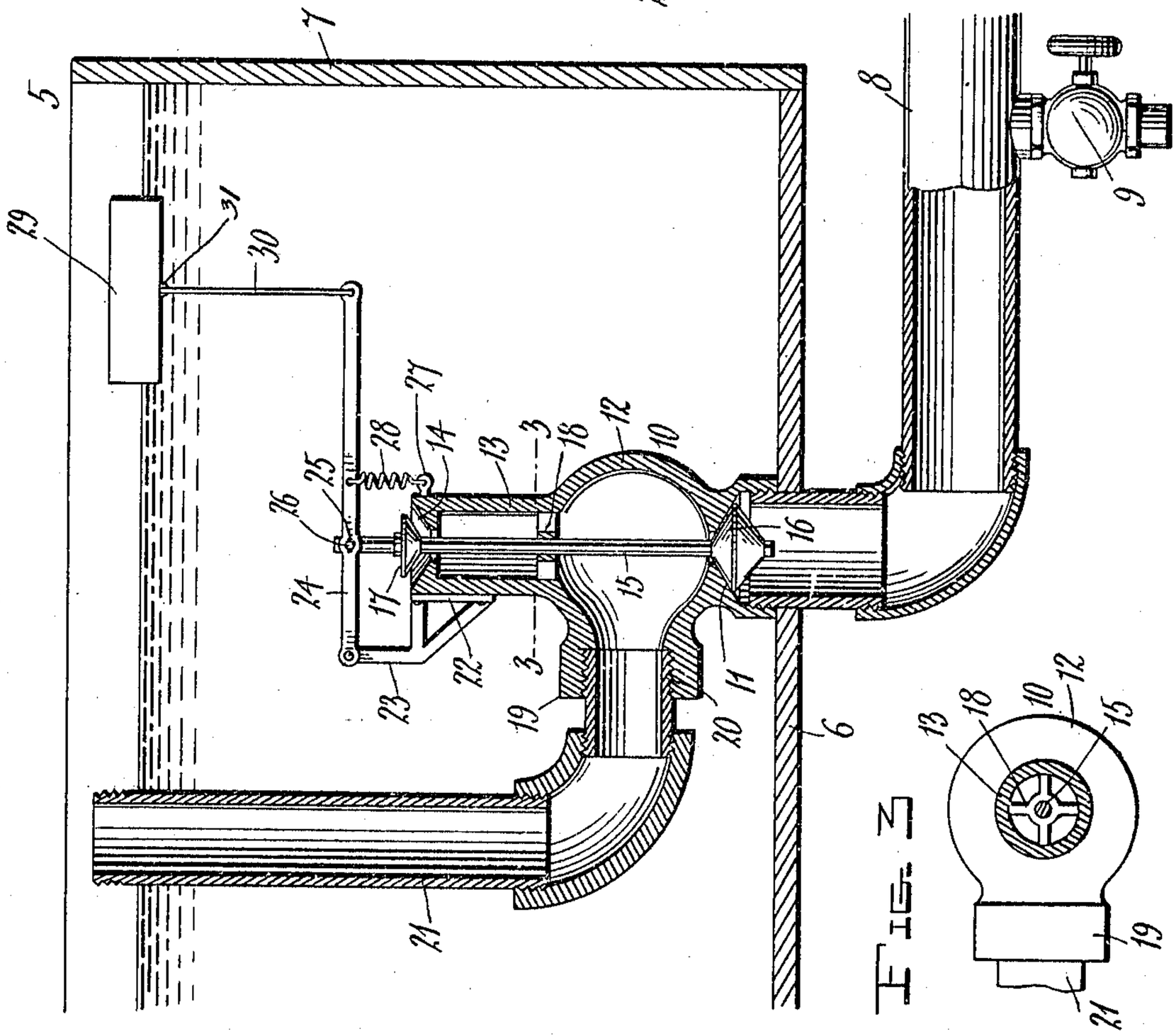

Fig. 3

Witnesses

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FLOAT-VALVE.

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To all whom it may concern:

Be it known that I, WILLIAM T. RYMER, a citizen of the United States, residing at Walnut Springs, in the county of Bosque, State of Texas, have invented certain new and useful Improvements in Float-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 improvements in valves for flushing and storage tanks and the same consists generally in a valve which is designed to permit liquid to be drawn from the supply pipe without in any way disturbing the liquid in the tank.

One object of the invention is an improved form of valve casing and a valve stem operating within the casing and having disks to slide through the ends of the valve casing.

Another object is the provision of a valve in which the employment of a stuffing box will not be necessary, whereby free movement will be given to the valve to open and seal the main inlet opening.

With these and other objects in view as will more fully hereinafter appear, the present invention consists in certain novel details of construction and arrangement of parts, hereinafter fully described, illustrated in the accompanying drawings and more particularly pointed out in the appended claim. It being understood that various changes in the form, proportion, size and minor details of the device may be made without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings forming part of the specification: Figure 1 is a vertical section taken through a tank and the valve casing showing the position of the parts when the water in the tank is at the mean high mark. Fig. 2 is a similar view showing the position of the parts when the water is flowing from the tank. Fig. 3 is a sectional plan view taken on the line 3—3, Fig. 1.

Similar numerals of reference are employed to designate corresponding parts throughout.

A flushing or storage tank is designated in general by the numeral 5 and may be of any approved construction having a bottom 6 from the edges of which rise the side and end walls 7. The main supply pipe is designated by the numeral 8 and enters the bottom 6 as shown in Figs. 1 and 2. Adjacent that portion of the pipe joining the bottom a bleeding valve 9 is disposed, the function of which will appear later. Threaded to that terminal of the supply pipe 8 extending into the body of the tank is the lower end of a valve casing 10. The latter is of an improved construction and at its lower or threaded end is provided with a concaved seat or depression 11 which opens into the globular body 12 of the valve. The hood or upper end of the valve casing is preferably formed integral with the upper end of the globular portion 12 and in the present instance extends for a considerable distance above the globular portion as designated at 13. The upper end of the hood 13 is, on its outer face, provided with a concaved depression or seat indicated by 14. The said seat has a central opening which communicates with the interior of the valve and in direct alinement with the seat 11 at the lower end of the casing. The valve stem 15 is of considerably greater length than the length of the casing and at its lower end is provided with a cone shaped disk 16 which forms a water tight fit in the concaved seat 11 at the lower end of the valve. The body of the stem extends through the opening in the lower and upper seats and adjacent its upper end is provided with a cone shaped disk 17 which seats in the concaved depression 14 at the upper end of the hood 13; the distance between the opposed conical surfaces of the disks 16 and 17 is somewhat greater than the distance between the inner ends of the seats 11 and 14, this construction permitting one of the disks to be unseated while the other is disposed within its seat, as shown in the drawings. The stem 15 is held against lateral movement by means of a spider 18 disposed within the hood 13 and adjacent the lower end thereof. The valve outlet is shown at 19 and extends laterally from the globular portion 12, and is threaded in the usual manner for the reception of the threaded end 20 and inlet pipe 21. The latter rises to a height above the mean water level of the tank, as shown in Fig. 1, so that when the parts are in position as shown at Fig. 2 water entering the supply pipe 8 will flow through the lower seat 11 and past the valve 16 into the globu-

lar portion 12 and out of the upper end of the inlet pipe 21. During this operation it will be observed that the upper disk 17 is disposed within its seat 14, whereby liquid will be prevented from flowing through this end of the valve casing. When it is desired to drain the supply and inlet pipes of water, which is frequently done in extremely cold weather, the main supply valve is first closed and the bleeding valve 9 opened; by operating the flush a certain amount of water is allowed to flow out of the tank whereby the float is lowered and the retraction of the spring 28, closes the valve 17, thus permitting the water to flow out of the valve and pipe system. It will be observed, however, that the water in the tank will not be disturbed owing to the fact that the valve 17 will be in its seat 14 whereby water will be prevented from passing through the valve body. This construction will be found very advantageous when the device is used in connection with storage tanks which are fed from Artesian wells and the like, since it will always insure a supply of water in the tank without danger of the supply pipes freezing and bursting as they frequently do in extremely cold weather.

By referring now to Figs. 1 and 2 it will be seen that secured to the outer face and disposed on one side of the hood 13 is a bracket 22 having a vertical arm extending above the end of the hood. Pivoted to the vertical arm 23 is one end of an operating lever 24. An elongated opening 25 is formed in that portion of the lever substantially intermediate its horizontal center and pivoted end, and which is designed to receive a lateral stud 26 extending from the extreme upper end of the valve stem 15. Thus it will be seen as the lever 24 is moved on its pivot the valve stem 15 will be reciprocated within the casing 10. An eye bolt 27 extends from that side of the hood 13 directly opposite the bracket 22 and connection between the eye 27 and lever 24 is established by means of a helical spring 28 one terminal of which enters the eye 27 and the opposite terminal fitted in an opening formed in the body of the lever 24. A float designated by the numeral 29 is provided on its lower end with the eye 31 and connection between the latter and the free end of the lever is established by means of a link 30. Thus it will be seen when the parts are in position as shown in Fig. 1 and it becomes necessary to open the outlet (not shown) of the tank, the water flowing from the tank will cause the float 29 to lower to the position shown in Fig. 2; as the float lowers the free end of the arm 24 will be moved downwardly by the action of the spring 28, whereby the disk 17 will enter the seat 14 and the lower disk will leave the seat 11 as shown in Fig. 2; in this position water from the supply pipe will be permitted to enter the tank through the inlet 21, as before explained. When the water has reached its high level the float will occupy the position shown in Fig. 1, and this upward movement of the float will draw the valve stem and disk 16 upwardly against the action of the spring 28.

Thus it will be seen that I have provided a device which is exceedingly simple in construction and one in which the usual stuffing box employed with valves of this kind is not needed for it can be seen that the employment of the disk 17 at the upper end of the valve stem forms a water tight joint with the seat 14 so that no liquid will pass when the disk is within its seat. By eliminating the stuffing box the valve stem is given comparatively free movement so that the tendency of the parts to bind will be reduced to a minimum.

Having thus described my invention, what is claimed as new, is:

In a valve for flushing and storage tanks the combination with a valve casing, having openings at its opposite ends, a valve stem having disks arranged to seal one of said openings while the other is unsealed, an operating lever combined with said valve stem and a spring combined with said operating lever and serving to depress said valve stem and unseat one of said disks and a float combined with said lever and operable by the water column of the tank to unseat the first mentioned disk and unseat the other of said disks against the action of the spring.

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

WILLIAM T. RYMER.

Witnesses:
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