

No. 881,680.

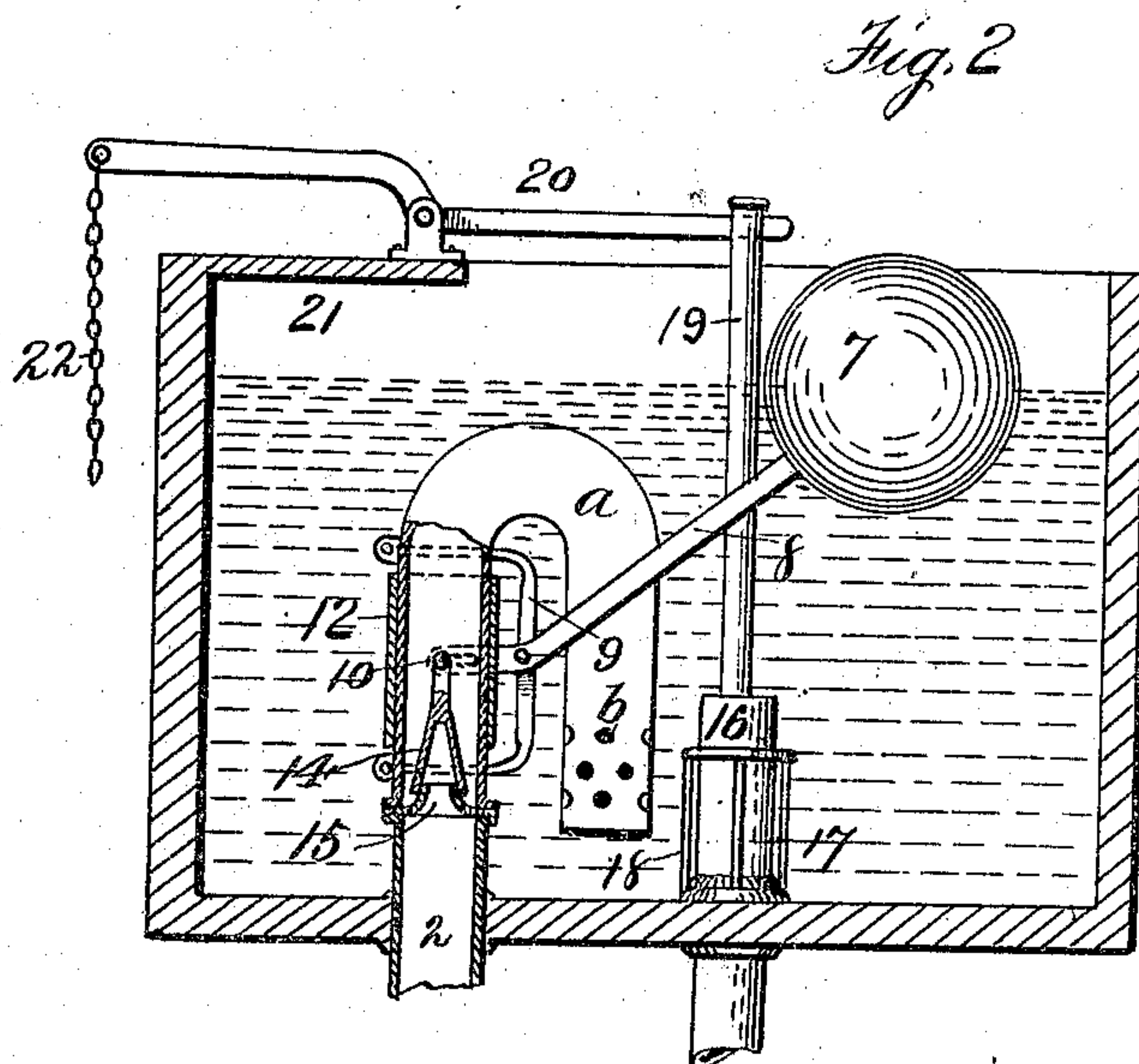
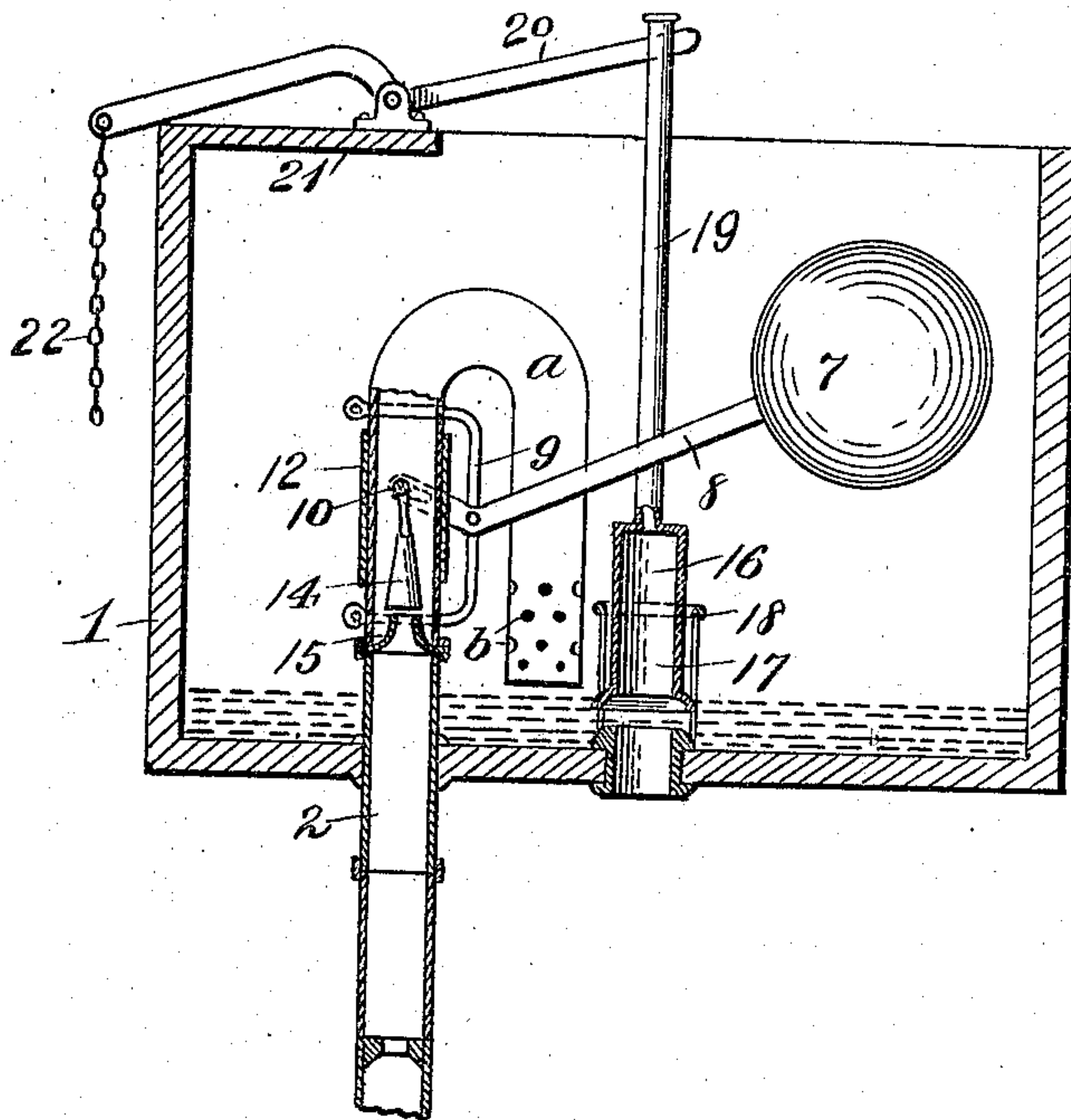
PATENTED MAR. 10, 1908.

J. R. HALL.

CISTERN FOR WATER CLOSETS.

APPLICATION FILED SEPT. 24, 1906.

2 SHEETS—SHEET 1.



Inventor :

John R. Hall.

Witnesses:

He. J. M^c. K^{er}.

J. H. Miller

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354 Louis Ruggier Leo

Attorneys

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2 SHEETS—SHEET 2.

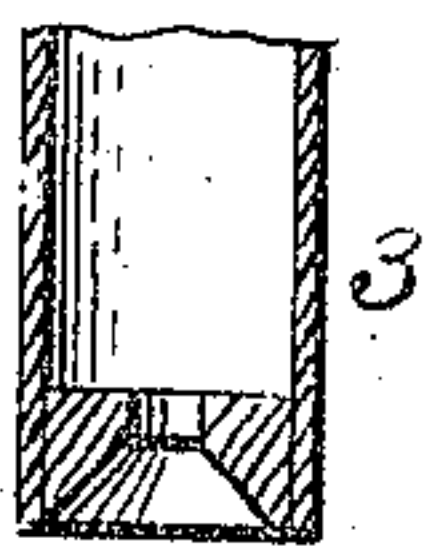
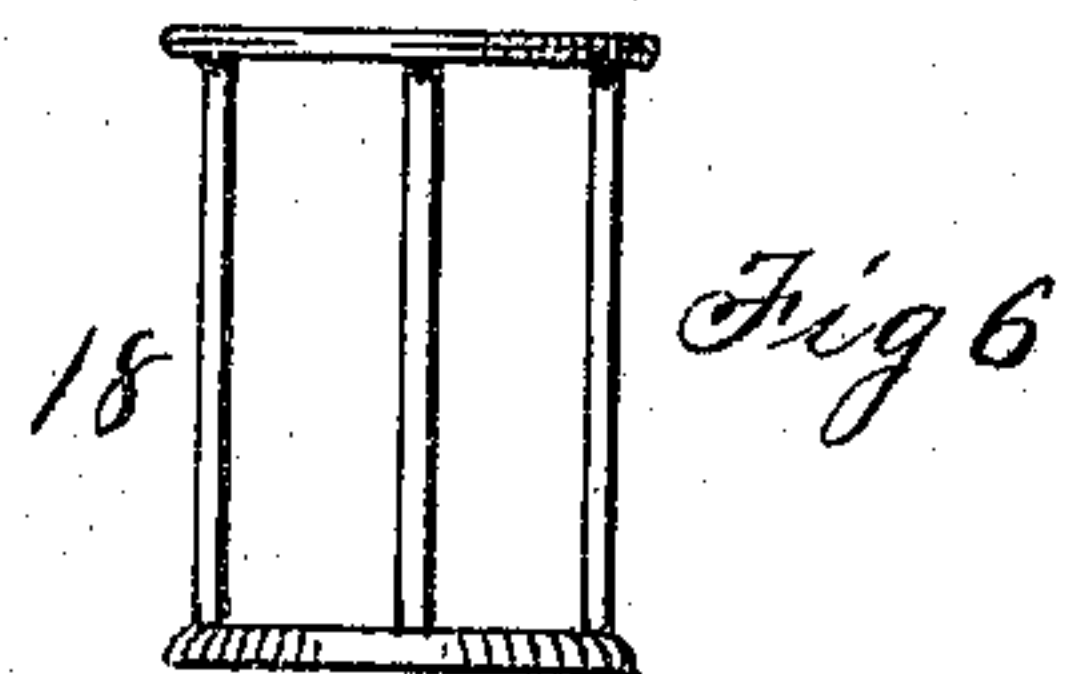
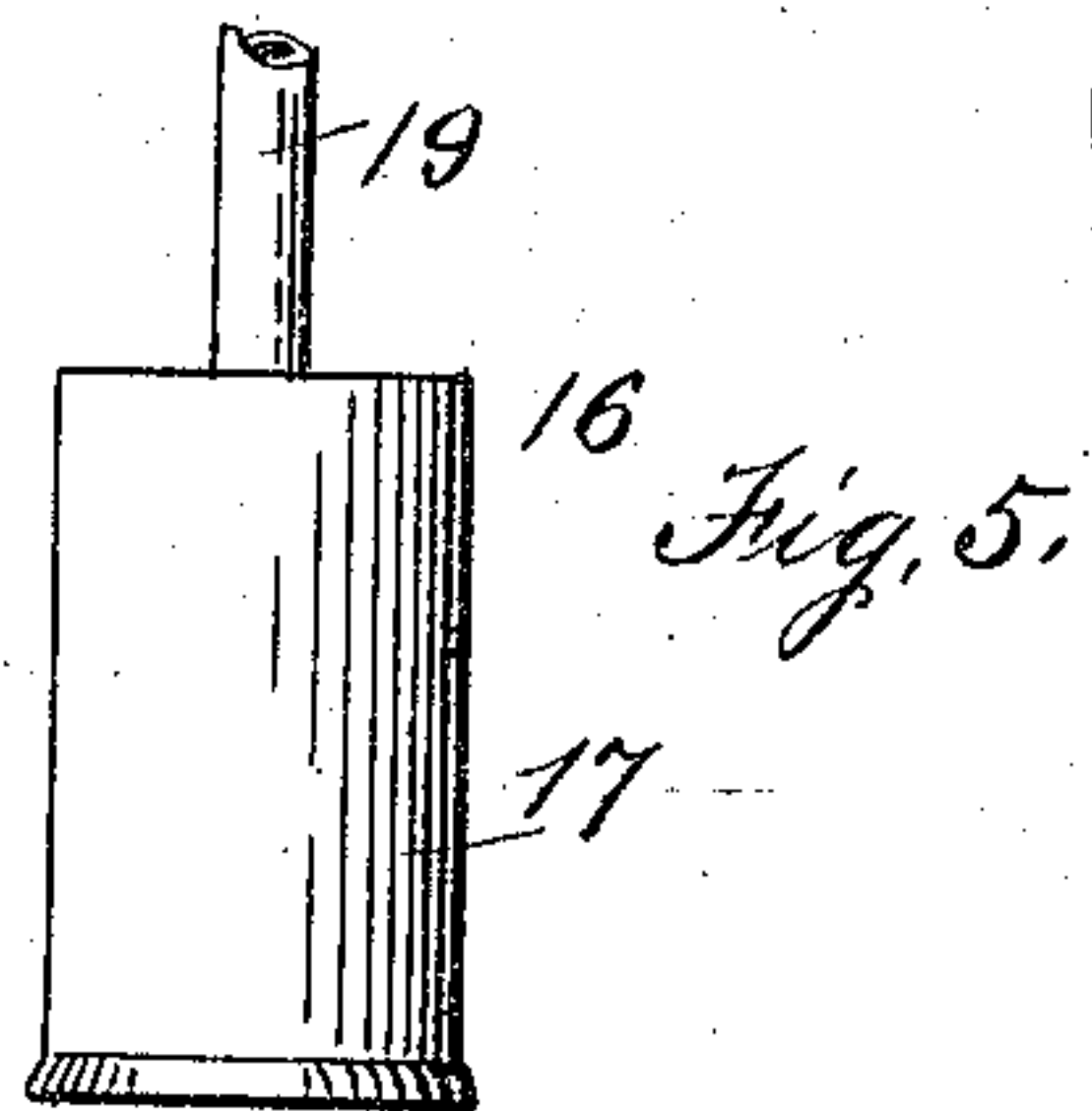
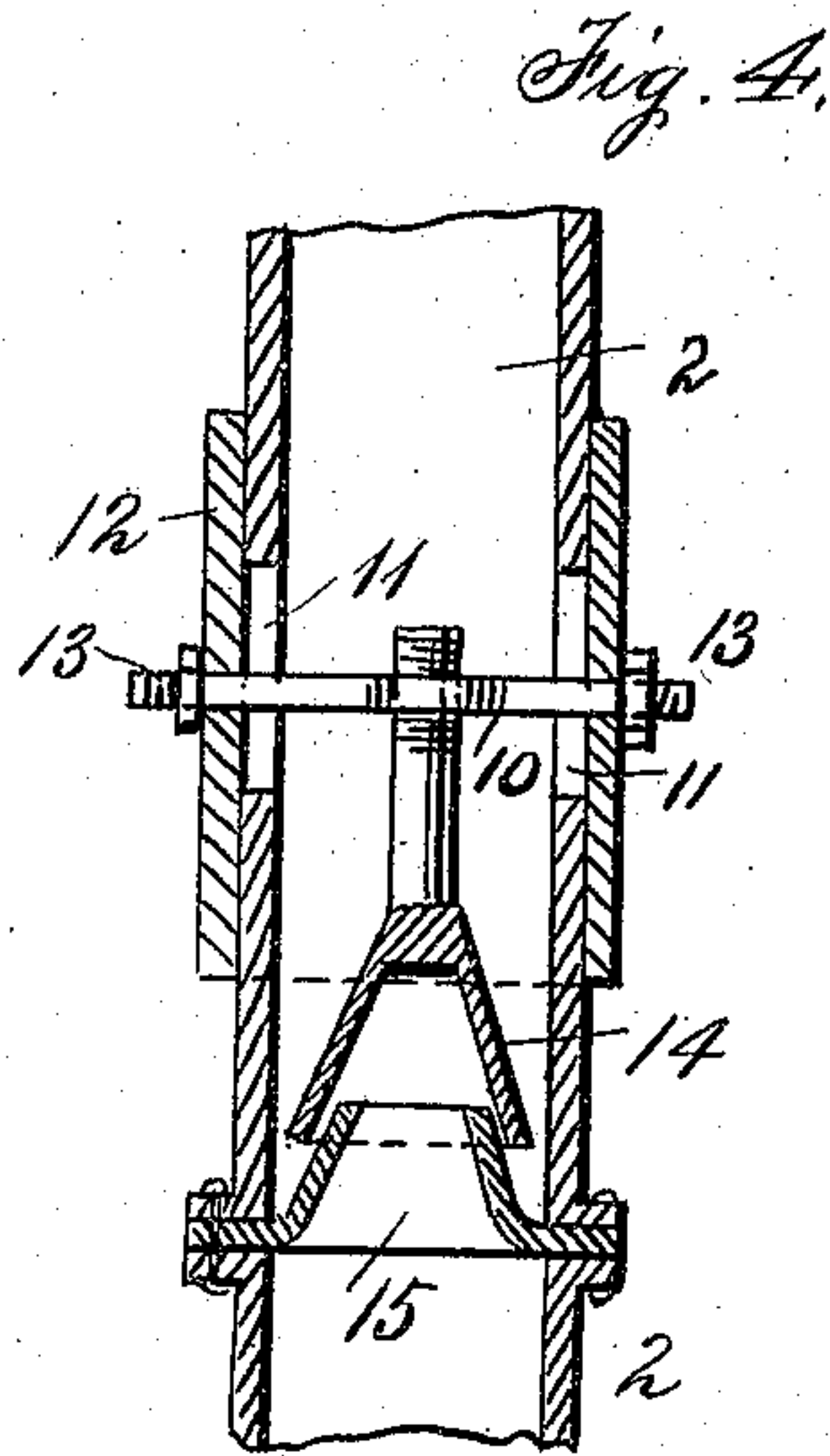
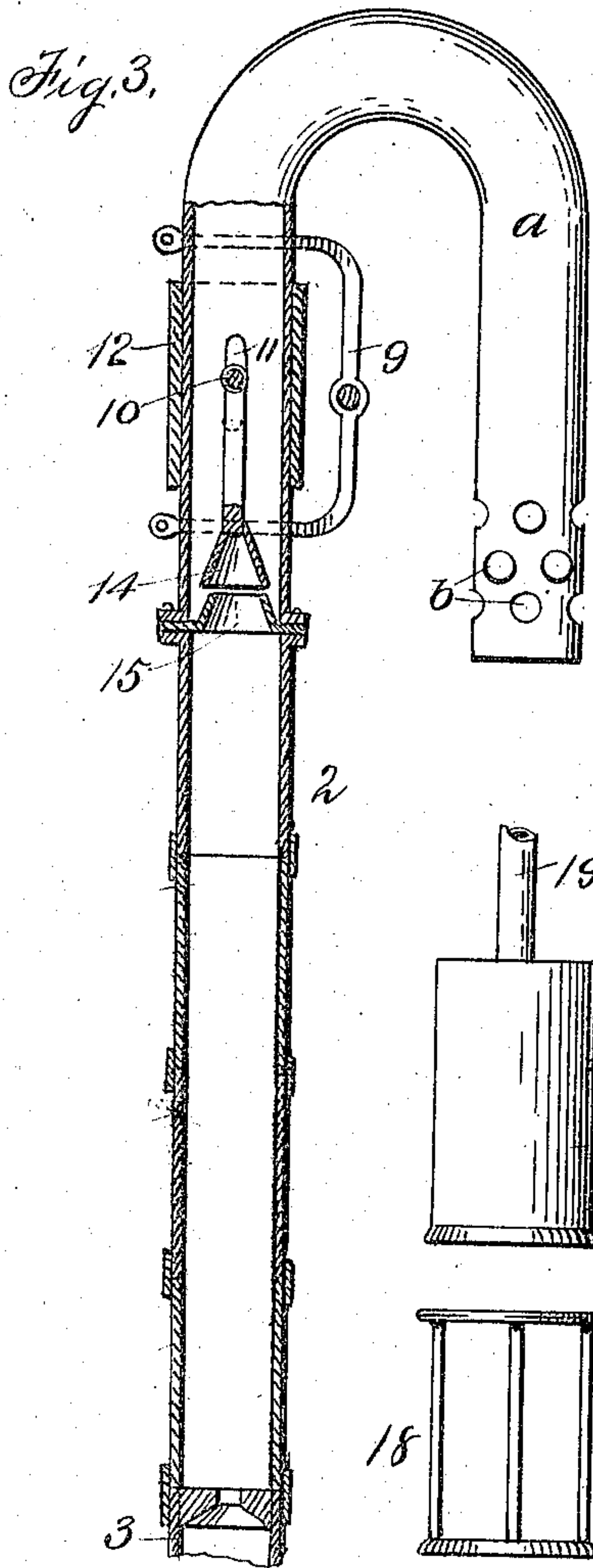


Fig. 7.

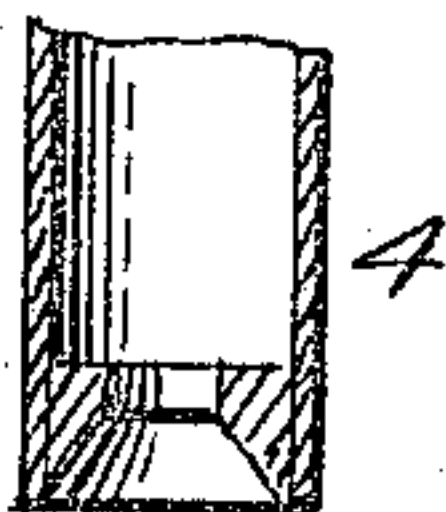


Fig. 8.

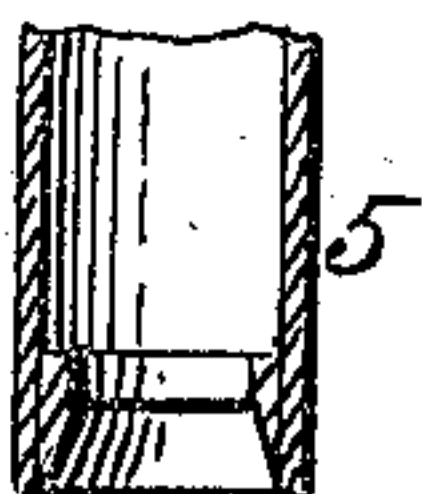


Fig. 9.

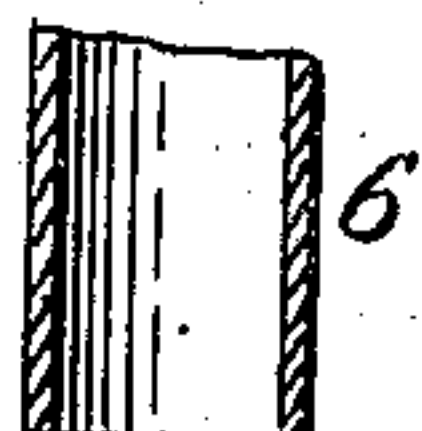


Fig. 10.

Witnesses:

H. J. M. Keener.

J. W. Minter.

Inventor:
John R. Hall,

By *Sam R. Ruggie, Esq.*
Attorney

UNITED STATES PATENT OFFICE.

JOHN R. HALL, OF FOREST GROVE, OREGON, ASSIGNOR OF ONE-HALF TO ROBERT J. GINN,
OF LONGBEACH, CALIFORNIA.

CISTERN FOR WATER-CLOSETS.

No. 881,680.

Specification of Letters Patent.

Patented March 10, 1908.

Application filed September 24, 1906. Serial No. 335,970.

To all whom it may concern:

Be it known that I, JOHN R. HALL, a citizen of the United States, residing at Forest Grove, in the county of Washington and State of Oregon, have invented certain new and useful Improvements in Cisterns for Water-Closets, of which the following is a specification.

My invention pertains to improvements in cisterns for water-closets, more especially the valve-mechanism employed in connection therewith.

It has for its object primarily to control the action of the intrushing water to the tank or cistern for relatively reducing the pressure thereof and its delivery into said tank or cistern to render such action noiseless and carry out these ends in a simple, economic and effective manner.

Said invention consists of certain features or instrumentalities substantially as herein-after fully disclosed and specifically pointed out by the claims.

In the accompanying drawing illustrating the preferred embodiment of my invention—Figures 1 and 2 are sectional elevations thereof showing the action of the parts previous to the filling of the tank or cistern and the action of such parts when the latter has been filled.

Fig. 3 is an enlarged detailed vertical section showing more particularly the sectional supply or delivery pipe for the tank or cistern.

Fig. 4 is a like view, with parts broken away, showing more especially the float-valve actuated sleeve, together with the supply and cut-off valve for the cistern or tank. Figs. 5 and 6 are disassembled views of the manually actuated discharge valve and its cage or guide of the tank or cistern, respectively.

Figs. 7, 8, 9 and 10 are detailed vertical sections of pipe-sections of the delivery or supply pipe for reducing pressure.

In the disclosure of my invention, I suitably provide the usual water-closet cistern or tank 1 with an inlet or supply pipe 2 passing up through the bottom of said tank or cistern and having its upper portion curved downward as at *a* and terminating contiguous to said bottom. Said supply or delivery pipe 2 provides for lessening or reducing the pressure of the water entering the discharge end of the pipe and finally entering the cistern

or tank, accordingly lessening the intrushing force of the water, whereby the noise, usually attending this action thereof, is wholly overcome, as is obvious. This is effective as follows: A nozzle-equipped pipe-section 3 with its nozzle, say three-sixteenths of an inch in diameter, may be applied to said supply-pipe 2 when the pressure of the water in the service pipe is from seventy-five to one hundred pounds to the square inch; or should the water pressure be from fifty to seventy-five pounds a like-equipped pipe-section 4 with its nozzle, say five-sixteenths of an inch in diameter may be employed in lieu of the pipe-section 3; or should the water pressure be twenty-five pounds still a like third pipe-section 5 with its nozzle, say three-eighths of an inch in diameter, may take the place of the pipe-section 4; and when the pressure is under twenty-five pounds the diameter of the pipe-section 6 for substituting any of the aforesaid pipe-sections is a half inch or the same as that of the pipe 2 discharging directly into the tank or cistern. Said downward curved portion *a* of said pipe has a number of lateral water-outlets *b* through which it discharges, as well as through its lower end or terminal, into the cistern or tank, thus dividing up the discharge of the water under abated pressure and accordingly aiding in avoiding the noise caused by the releasing of the water under pressure and its delivery into the tank or cistern.

The float-valve 7, arranged within the tank 1, has its bent or angular arm 8 fulcrumed at its angle upon and between, and about at the midlengths of the vertical portions of brackets or bars 9 suitably bolt-held upon the pipe 2. The float-valve arm 8 has the inner ends of prongs or branches formed in continuation thereof pivotally connected to the opposite ends of a cross-bar or yoke 10 passing through opposite vertical slots 11 in the pipe 2 and through apertures in a sleeve or slide 12 arranged upon the latter, said yoke being suitably held from displacement by nuts 13 screwed upon their ends, outside of, and against said sleeve.

A supply and cut-off valve 14, arranged within the pipe 2 and flared at its lower or effective end, and which is adapted to be seated upon and close an upward tapered

seat or port 15 also arranged within, and secured to the inner surface of said pipe, is secured centrally to, and carried by the yoke 10, and therefore capable of actuation by the float-valve 7 as is apparent.

A suitable manually operated valve 16, also arranged within the tank or cistern 1, is adapted to control the delivery of the water from said cistern or tank to the closet-bowl as required for flushing purposes. Said valve has its lower enlarged cylindric terminal 17 arranged to have movement within, and is guided by a corresponding cage or guard 18 secured to the tank or cistern bottom around the discharge opening therein, said valve also having a tubular stem 19 fixed to, and opening into the part 17 thereof out through its upper end thus serving, in addition, for venting purposes as well understood. A centrally fulcrumed lever 20, arranged upon a suitable support 21 in the top end of the tank or cistern 1 and suitably connected to the stem 19 of the valve 17 near its upper end, has attached to its outer end a dangling hand-hold equipped chain 22, or like suitable means, for ready grasping and actuation as in operating said valve as appreciated.

From the foregoing description of the construction and operation of the aforesaid parts, it is thought that no further elaboration of

this matter is in order for the full understanding of my invention.

I claim—

1. A device of the character described, employing a supply pipe, a float-valve lever fulcrumed from said pipe, a sleeve slidingly arranged upon said pipe, a yoke or member arranged to slide with said sleeve and controlled by said float-valve lever, and a supply valve for controlling the inlet of the water to said pipe and itself controlled by said float-valve lever said supply-valve being connected by said yoke to said sleeve.

2. A device of the character described, employing a supply pipe equipped with a ported seat within, a downward flared valve engaging said seat, a sliding sleeve arranged upon said pipe, a yoke or cross-bar connected to said sleeve and passing through opposite vertical slots in said pipe and through said sleeve, said valve being connected to said yoke, a bracket secured to said pipe, a float-valve lever having its arm connected to said yoke and fulcrumed upon said bracket.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN R. HALL.

Witnesses:

GEO. C. CLARK,
LE ROY VAN KIRK.