

No. 807,924.

P. L. GUEST.
FLUSHING DEVICE.
APPLICATION FILED JAN. 14, 1905.

PATENTED DEC. 19, 1905.

2 SHEETS—SHEET 1.

Fig. 1,

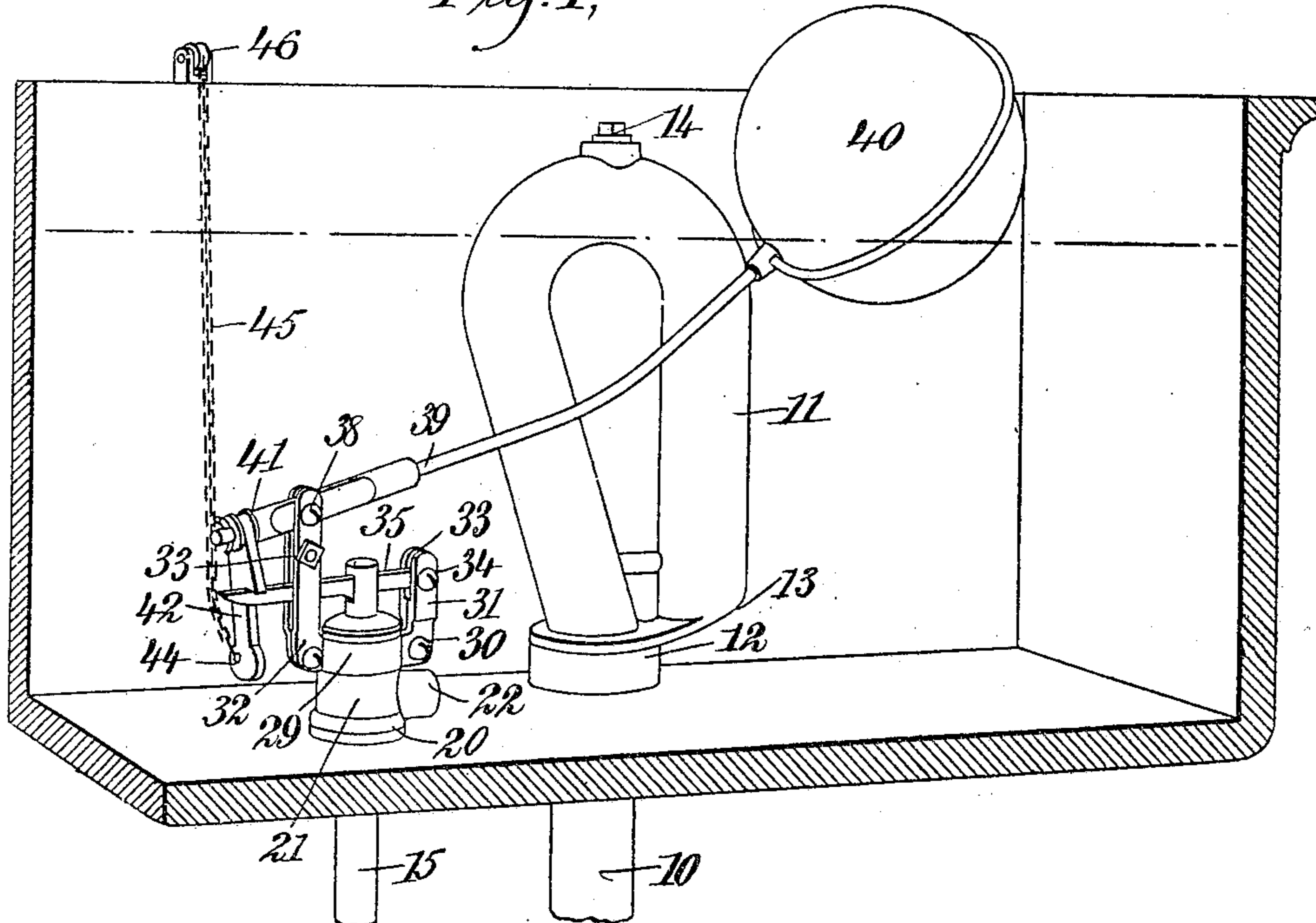
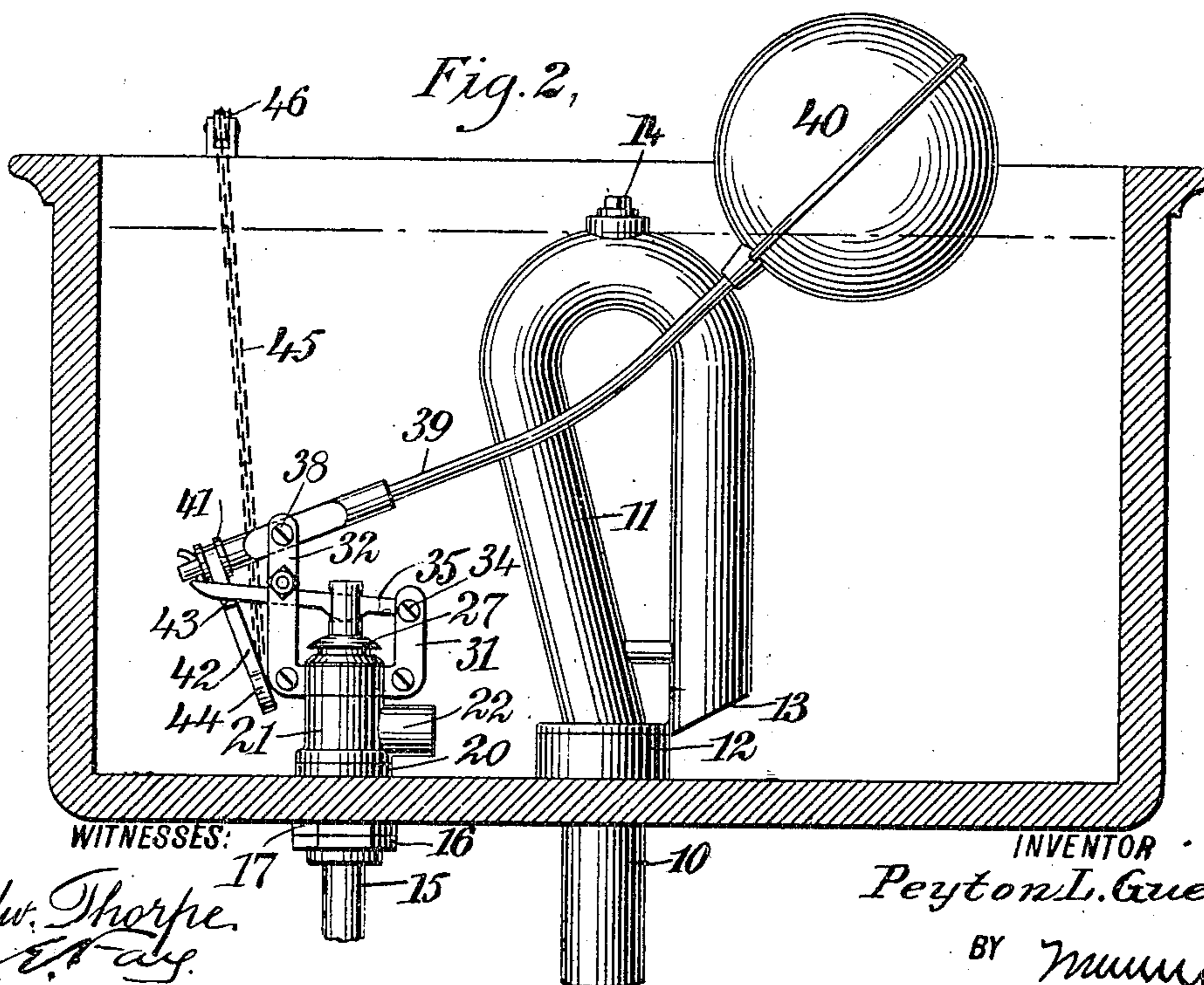


Fig. 2,



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2 SHEETS—SHEET 2.

Fig. 3.

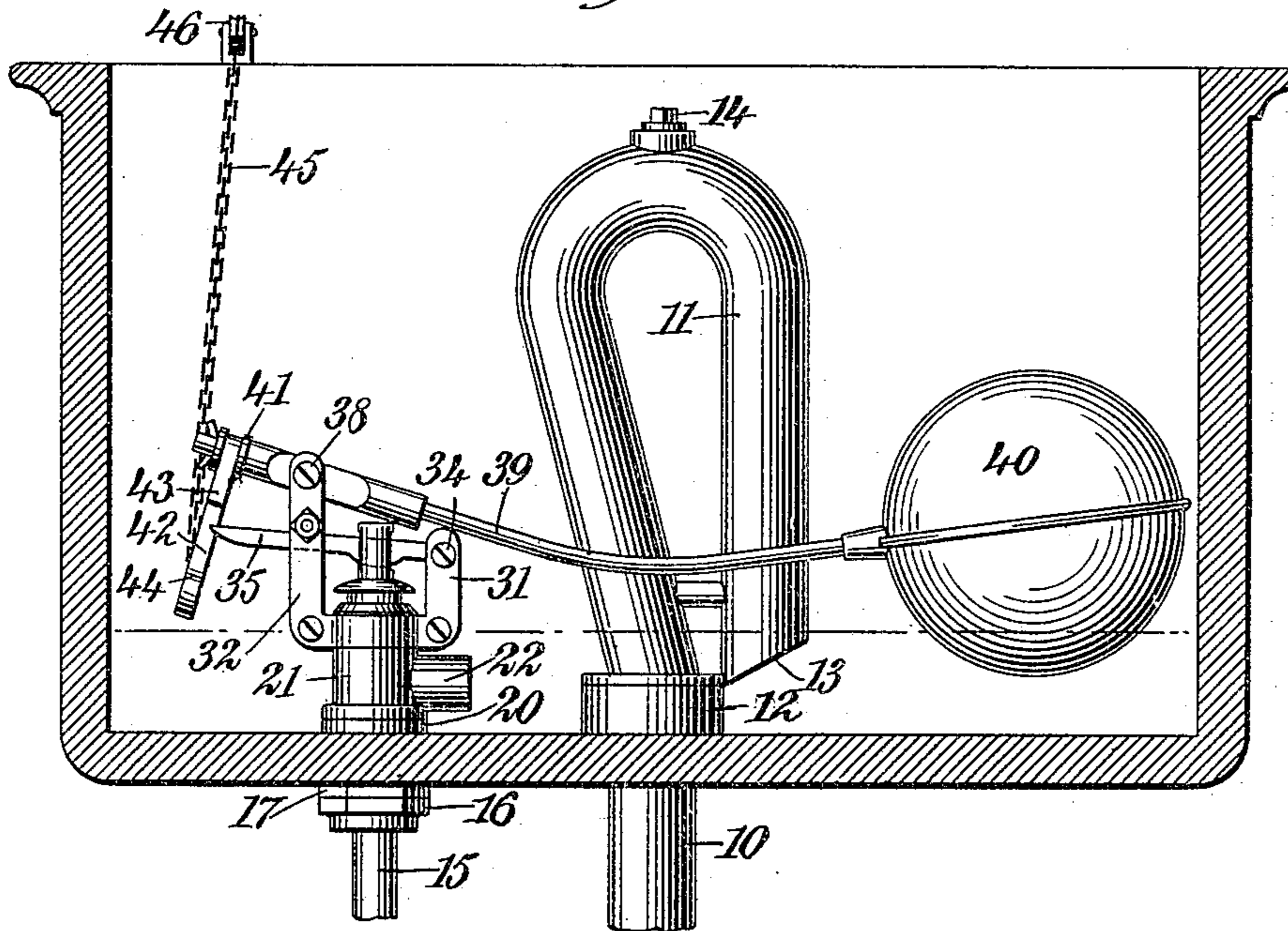
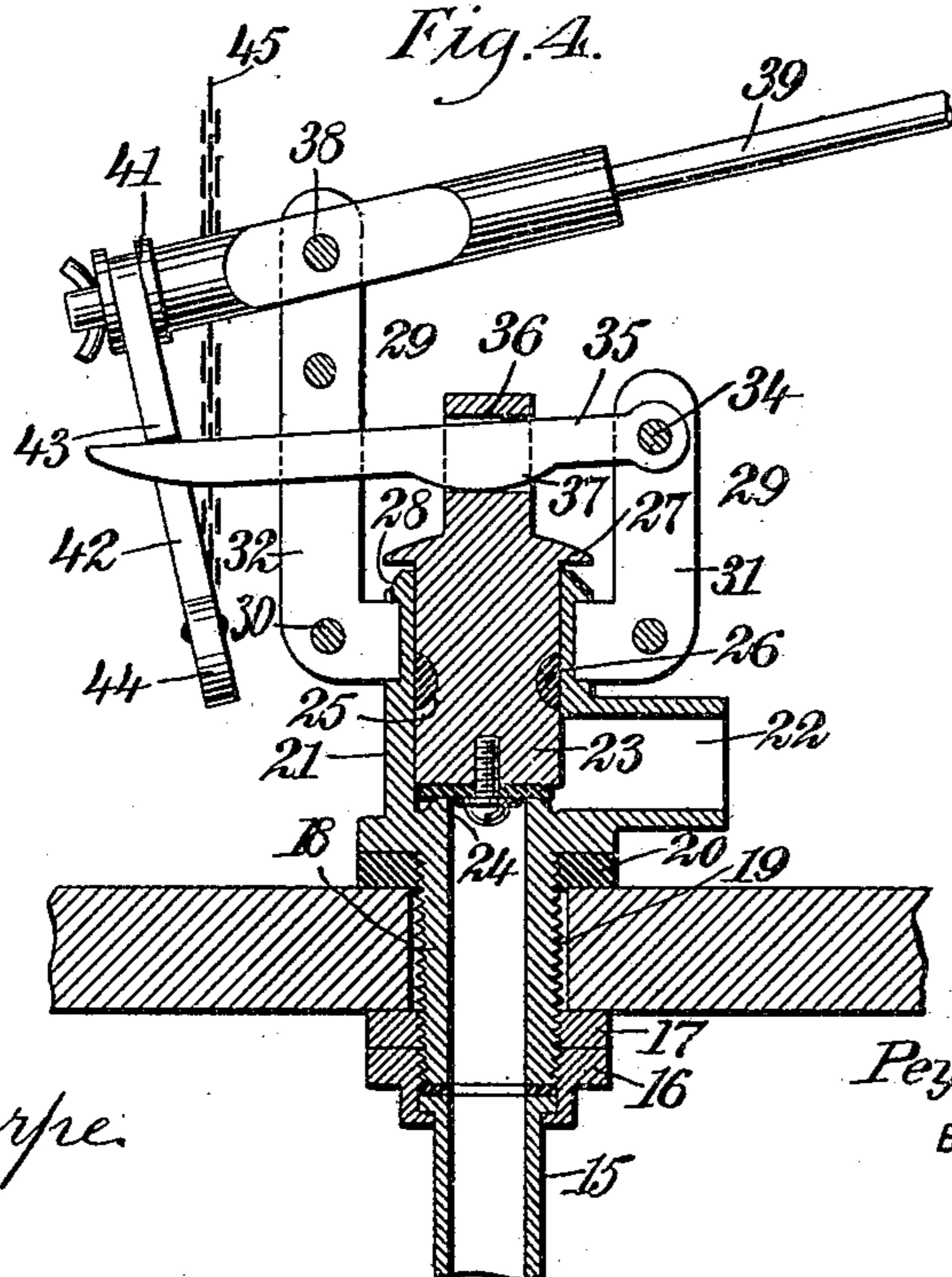


Fig. 4.



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UNITED STATES PATENT OFFICE.

PEYTON L. GUEST, OF COLUMBUS, GEORGIA.

FLUSHING DEVICE.

No. 807,924.

Specification of Letters Patent.

Patented Dec. 19, 1905.

Application filed January 14, 1905. Serial No. 241,013.

To all whom it may concern:

Be it known that I, PEYTON LEE GUEST, a citizen of the United States, and a resident of Columbus, in the county of Muscogee and State of Georgia, have invented a new and Improved Flushing Device, of which the following is a full, clear, and exact description.

In most flush-tanks of the type using a siphon there is a valve or seat upon which the siphon rests, and the latter is movable, being raised by a lever when the flushing action is desired. This valve frequently fits poorly and wears rapidly, causing leakage.

One of the principal objects of my invention is to avoid the use of the movable siphon, and consequently do away with the seat or valve therefor. Accordingly a stationary siphon is provided, and a regulating device for the inlet-valve of the tank is so arranged as to provide for shutting off the inlet when the water reaches a certain height and before the siphon commences to operate. The device is provided with means for releasing the inlet-valve, so as to admit water upon manipulation by hand. This permits the water to rise sufficiently to start the siphon, and when the water is removed from the tank through the siphon the inlet-valve is then again engaged in such a manner that the further introduction of water will automatically close the inlet-valve in the same position as before.

Further objects of the invention will appear in the course of the subjoined description.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a perspective view showing the inside of a tank provided with a preferred form of my invention, the parts being indicated in the position assumed when the tank is full of water up to the normal level. Fig. 2 is a longitudinal sectional view of a tank provided with the same mechanism and showing the parts in the position assumed when the device has been manipulated to allow additional water to enter the tank and the siphon to operate. Fig. 3 is a view similar to Fig. 2, showing the parts in the position occupied when the level of the water is nearly at the bottom of the tank; and Fig. 4 is a vertical sectional view through the center of the inlet-

valve and the operating parts therefor which constitute a part of my invention.

The outlet 10 of the tank is connected with a siphon 11 by means of a flanged coupling 12, located near the bottom of the tank or in any other convenient position. The siphon extends upwardly from the outlet, and its inner end 13 is open and unobstructed. The siphon may conveniently be provided with a removable plug 14 for use in cleaning the interior thereof. An inlet-pipe 15 is provided with a coupling 16 and a washer 17 upon the outside of the tank for connecting a bushing 18, which passes through an opening 19 in the wall of the tank, with the interior portion of the valve mechanism. A washer or packing 20 is preferably provided upon the interior of the tank. The bushing 18 is connected with a valve-casing 21, having an outlet 22, which is designed to direct the water from the inlet-pipe 15 into the interior of the tank when a valve 23 therein is lifted from its seat 24. This valve is provided with a circumferential groove 25, having a packing 26, and is also provided with a cap 27 upon its upper portion, this cap being adapted to cover the top of the casing.

In a groove 28 around the upper part of the casing a pair of standards 29 are adapted to fit. These standards are preferably of such form that each one extends half-way around the casing, and they are secured together by screws 30 or in any other desired manner. Each of these standards has two upwardly-projecting portions 31 and 32, preferably located upon opposite sides of the valve-casing, and they are separated from each other at certain points to provide spaces 33 for the reception of certain parts of the apparatus now to be described. At the point 34 a lever 35 is pivoted, this lever passing through the two spaces 33 and also through a passage 36 in the top of the valve 23. This lever is preferably provided with a bearing-surface 37 for engaging with the valve and forcing it downward. At the point 38 an arm 39 is pivoted. This arm is rigidly connected with a float 40, located in the tank, and upon that portion which projects beyond its pivotal point in the other direction it is provided with a collar 41. On this collar is pivotally mounted a detent 42, adapted to swing transversely with respect to the arm

39. This detent is provided with a tooth 43, adapted to engage the upper surface of the lever 35, and with an eye 44, with which is connected a chain 45 or other flexible connection adapted to pass over a pulley 46 or the like and to extend downwardly upon the outside of the tank for affording means for manually operating the device.

The operation of the embodiment of the invention which I have illustrated will now be described.

Assuming the parts to be in the position shown in Fig. 1, it will be obvious that the water is not high enough to cause the siphon to work. The float 40 is forced into an elevated position and the trigger 42, by means of its tooth 43 resting on the top of the lever 35, forces the lever down, and consequently closes the valve 23. Water therefore cannot enter when the parts are in this position and that already in the tank will be retained up to the height of the lower portion of the bend at the top of the siphon. If now the chain 45 is pulled, it will be obvious that the detent 42 will be swung rearwardly upon its pivot, so that the tooth 43 will become disengaged from the lever 35. The pressure of water in the pipe 15 will then force the plunger upwardly and unseat the valve, so as to permit water to flow into the tank through the passage 22. This will increase the height of water in the tank until it reaches a point indicated by the dotted line in Fig. 2, when the siphon will begin to operate, and as the cross-section of the outlet-pipe and siphon is larger than that of the inlet-pipe the water will be quickly discharged from the tank, it being understood that it will continue to enter until the level of the water descends below the inlet 13 of the siphon. Air will then be admitted to the siphon, and no more water can pass through it until the level again reaches that indicated in Fig. 2. As the water continues to flow in through the passage 22 the level of the water will gradually rise until the float reaches the point indicated in Fig. 1. At its lowest position, however, the float, as shown in Fig. 3, descends sufficiently to allow the detent 42 to move back by gravity into such a position that the tooth 43 will be adapted to engage the top of the lever 35, when the float is again raised. In other words, the detent is automatically set by gravity in position to engage the lever. As the float rises the detent gradually approaches the lever, and when the water reaches the lower portion of the bend at the top of the siphon it will operate to close the valve, as has been indicated above.

It will thus be seen that the disadvantages of the movable siphon are entirely overcome by my invention and that a quick and rapid flow is secured, while the parts are simple and not likely to get out of repair.

While I have illustrated and described a

particular embodiment of my invention, it is to be understood that the latter is not limited thereto, but that many modifications may be made therein and the invention can be embodied in other forms.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination of a valve-casing, a valve therefor, a standard on the casing, a float pivotally mounted, a valve-lever pivoted to the standard, and a detent connected with the float for engaging said lever.

2. The combination of a valve-casing, a valve therefor, a standard rigidly mounted with respect to the casing, a rod pivotally mounted on the standard, a float on the rod, a valve-lever pivotally mounted, and a detent mounted on said rod and adapted to engage said lever for holding the valve in closed position.

3. The combination of a valve-casing, a valve therefor, a standard on the casing comprising two upwardly-extending portions on opposite sides of the casing, one of said portions terminating at a point near the top of the valve, a lever pivoted to the upper part of the last-named portion and connected with the valve, said lever extending through and beyond the other portion, said other portion extending to a height above that of the first-named portion, a float, a rod pivoted to the highest portion of the standard, and a detent mounted on said rod for engaging said lever.

4. The combination of a valve-casing, a valve therefor, a standard rigidly mounted with respect to the casing, a rod pivotally mounted on the standard, a float on the rod, a valve-lever pivotally mounted, a detent mounted on said rod and adapted to engage said lever for holding the valve in closed position; said detent being pivoted on a line coincident with the axis of said rod, and said rod being pivoted on a line transverse thereto, whereby the motion of the rod will move the detent into engaging position with respect to the lever; and means for disengaging the detent from the lever.

5. The combination with a valve-casing, a plunger therein constituting a valve, a standard connected with said casing and having a pair of projections extending upwardly therefrom, a lever pivoted to one of said projections and connected with the plunger, a float pivotally mounted upon the other of said projections, and a detent connected with said float and adapted to engage said lever.

6. The combination with a valve-casing having a valve-seat therein, a plunger in the casing constituting a valve for said seat, a pair of standards mounted on the exterior of said casing and each provided with a pair of projections, the projections of one standard registering with those of the other and having spaces between them, a lever pivotally

connected with one of said projections on
each standard and passing through the spaces
between the other two projections, said lever
being connected with the plunger for operat-
5 ing it, and means for forcing said lever to-
ward the plunger to seat the valve, said means
comprising a detent adapted to engage the
lever.

In testimony whereof I have signed my
name to this specification in the presence of 10
two subscribing witnesses.

PEYTON L. GUEST.

Witnesses:

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HOWELL HOLLIS.