

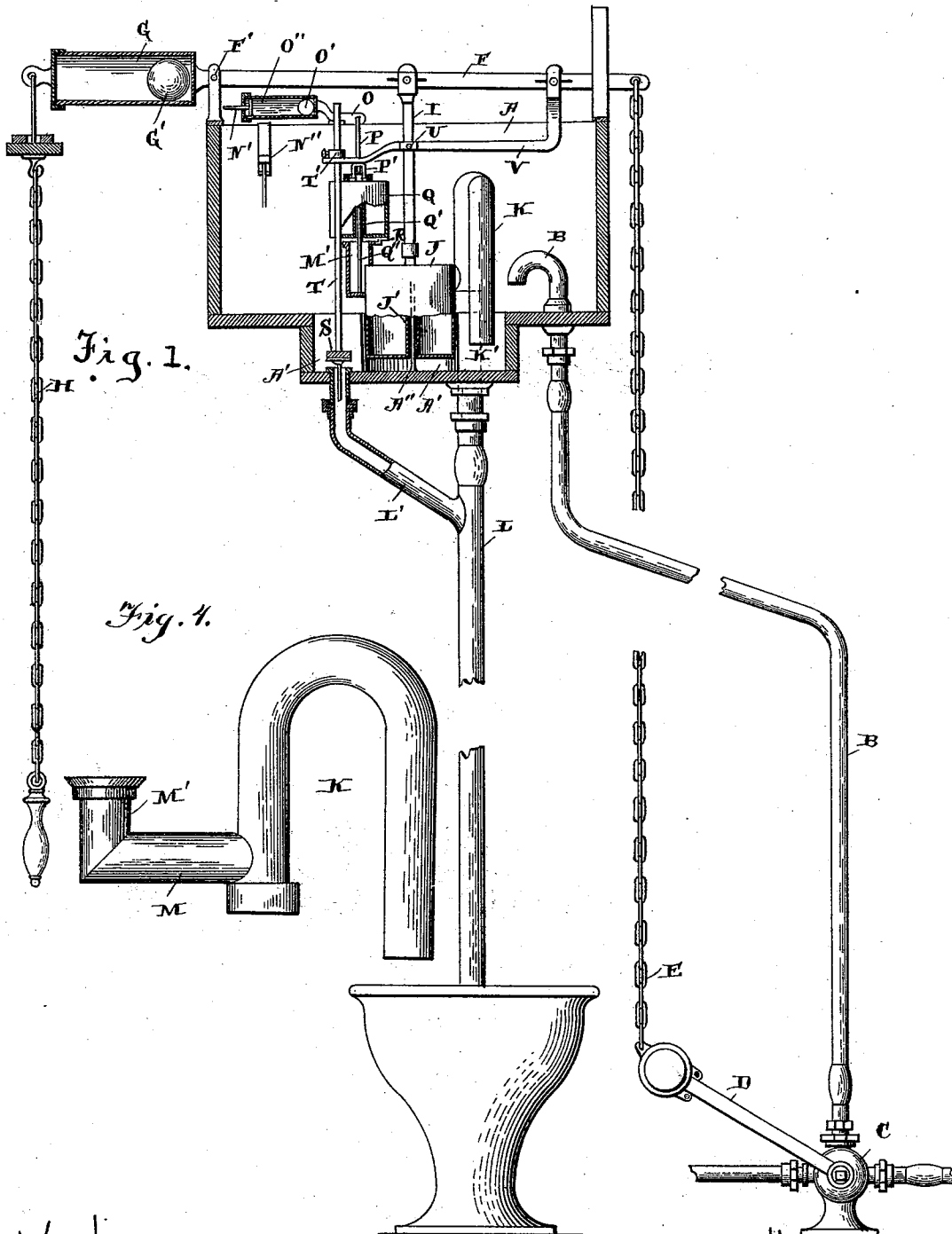
(No Model.)

2 Sheets—Sheet 1.

G. D. ACKLEY.
FLUSHING APPARATUS.

No. 517,718.

Patented Apr. 3, 1894.



WITNESSES.
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Fig. 2.

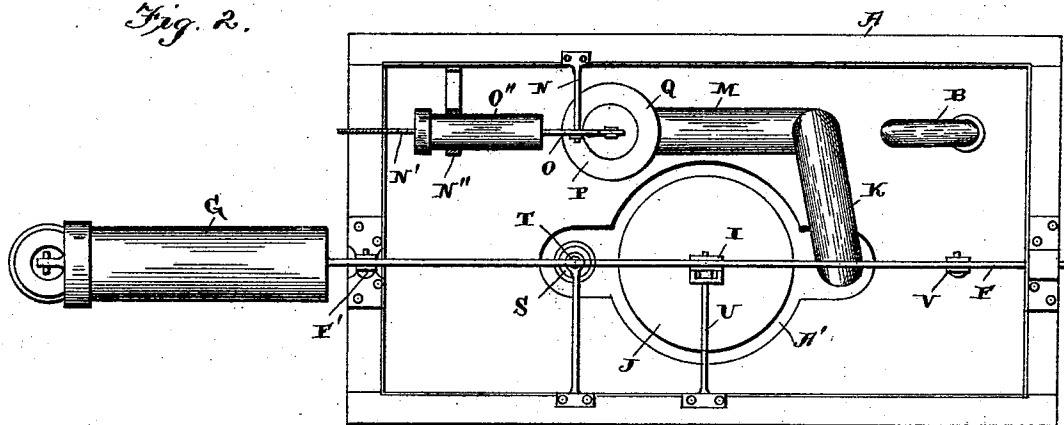
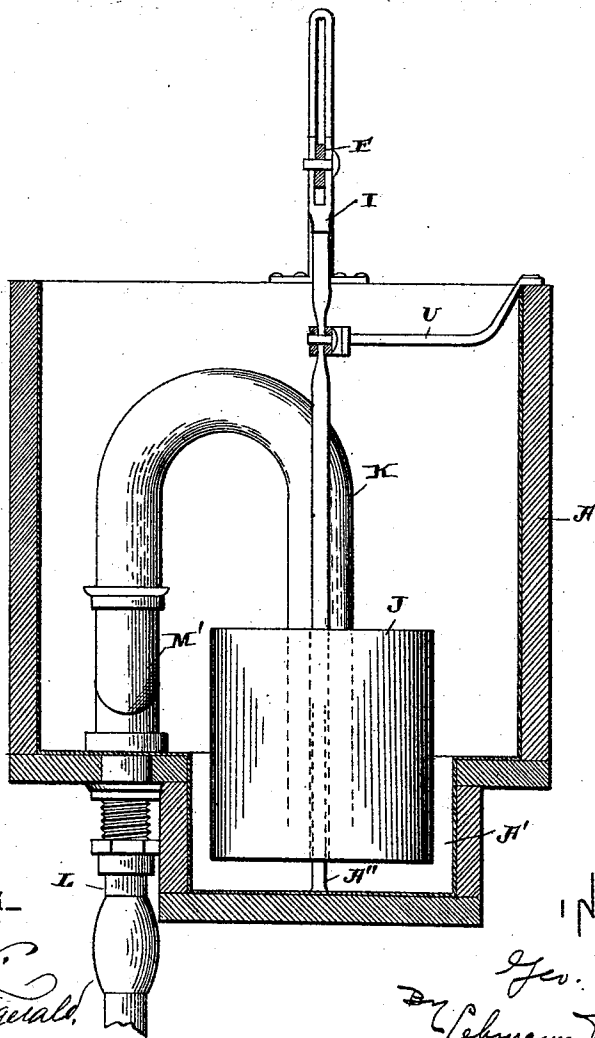


Fig. 3.



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UNITED STATES PATENT OFFICE.

GEORGE D. ACKLEY, OF FORT WORTH, TEXAS.

FLUSHING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 517,718, dated April 3, 1894.

Application filed August 23, 1893. Serial No. 483,822. (No model.)

To all whom it may concern:

Be it known that I, GEORGE D. ACKLEY, of Fort Worth, in the county of Tarrant and State of Texas, have invented certain new and useful Improvements in Flushing Apparatus; 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 pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to an improved flushing apparatus, and it consists in the novel combination and arrangement of parts which will be fully described hereinafter and especially referred to in the claims.

The object of my invention is to provide an improved flushing apparatus in which the tank shall be normally empty, water remaining therein only when the apparatus is in use.

A further object of my invention is to provide an improved siphon for emptying the tank, and also an improved mechanism for starting the siphon.

Referring to the accompanying drawings: Figure 1, is a vertical sectional view of my improved apparatus. Fig. 2, is a plan view of the same. Fig. 3, is a vertical cross sectional view. Fig. 4 is a detail view of the siphon.

A is the tank proper having the depression A' in its bottom.

B is the water supply pipe leading to the tank and C is a valve for admitting water thereto from the main or other source, which is operated by weighted arm D connected to the lower end of chain E. The upper end of this chain is connected to lever F extending longitudinally across the top of the tank and which is fulcrumed at F' as shown between its ends, and at its opposite end provided with the casing G containing the rolling weight G'. From the outer end of this casing depends the pull chain H. Rod I is pivoted at its upper end in a slot in the lever F, and has secured to its lower end float J formed with the tubular guide-way J' extending upward from its bottom, and into which guide-way projects rod A'', which serves to hold the float in place thereby preventing any lateral movement. Float J is sufficiently heavy to counteract the pull of weight G', so that unless the float is

lightened by water within the tank the same will serve to draw downward lever F, even after the weight has run to the outer end of casing D. In operation therefore, the pull chain H is drawn downward, thus rolling the weight to the outer end of its casing and elevating the opposite end of the lever, thereby opening valve D and admitting water through pipe C to the flush tank and in a moment the level of the same has risen sufficiently to support float J, and thereby release lever F of its downward pull and permitting weight G' to sustain the outer end of lever F in an elevated position.

K is the curved pipe forming the siphon having its open end reaching nearly to the bottom of the depression A', while its opposite end is connected to the flush pipe L. Leading into pipe K just above the connection with said flush pipe, is the horizontal pipe M having its outer end turned upward to form an elbow M'.

Extending inward from one side of tank K is arm N, and fulcrumed thereon between its ends, is the lever O, having the rolling weight O' at its outer end. Connected to its opposite end is rod P having a screw threaded lower end P', which is adjustably secured to the upper end of float Q, as shown. This float is arranged immediately over the open end of elbow M', and is formed with a tubular guideway Q' into which extends a rod Q'', which projects vertically from the interior of the elbow. In this way the said float is held from lateral displacement. Formed upon its bottom is the packing R to form a valve seat, which prevents leaking when the said float is resting upon the elbow.

In operation, water is admitted to the tank as before described, and continues to rise in the same until float Q is reached, which is lifted thereby, thus releasing lever O of its weight and permitting the same to respond to the action of rolling weight O' which tilts the end of the lever which is connected to the float. The float having thus been raised from its seat upon the pipe, and while being held thus raised by said weight, the water rushes downward through pipe M into the lower portion of pipe K and from thence downward through flushing pipe L. This operation serves to create a suction in the open

portion K' of the siphon and by this means a flow of water is started therethrough as will be readily understood. The suction caused by water running into elbow M' is sufficient to counteract the tendency of weight O', so that float Q is drawn downward upon said elbow, which is therefore effectually closed so that no water can enter. The siphon having been started as above described, continues to flow and having its source very near the bottom of tank A, in fact beneath the bottom of the same and very close to the bottom of the depression A', it will be seen that the tank is soon emptied permitting float J to descend, thus lowering lever F and cutting off a supply of water by the closing of valve D. The water will drain from the tank A and the depression A' to the level of the lower end of the siphon, when of course the latter will cease to flow. In order to empty the lower end of the tank of all water therein contained, I provide the small branch pipe L' leading from flush pipe L to the bottom of the siphon, as shown, and arranged over the upper end of the same is a valve S secured to the lower end of vertical rod T, which latter is provided with an adjustable stop T'. A rod U extends from one side of the tank and journaled thereon between its ends is lever V, which at one end embraces rod T beneath stop T' engaging the latter, while the opposite end of the lever is turned upward and pivoted in a slot in lever F. Thus it will be seen that when the lever is elevated for the purpose of admitting water to the supply pipe, the turned up end of lever V will also be elevated, thereby depressing its opposite end, permitting rod T to drop and valve S at its lower end to close the upper end of pipe L'. In this way the said last named pipe is effectually closed until the lever F is lowered by the withdrawal of the water from beneath float J, when the said lever V will have a reverse movement from that above described, and rod T will be raised and valve S opened, thus permitting all water remaining in depression A' to drain therefrom into the flush pipe. A screw N' adjustable in the end of the casing confining weight O', serves to regulate the run of the latter, while an adjustable rest N'' beneath the same serves to regulate the vertical movement of the same.

Thus it will be seen that the operation of the flushing apparatus is entirely automatic, and that float Q acting as a float valve, serves to set the siphon in operation and also to effectually close the siphon starting pipe after the operation has been commenced. The tank is entirely empty of water before the flushing operation and at the completion of the

same all water in the tank has been removed. No standing water is therefore permitted as in the ordinary reservoir flush, which is apt to freeze.

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

1. The combination of a tank, a water supply, a valve for controlling the same, a vertically moving lever for operating the valve, a second lever fulcrumed between its ends and connected at one end to the first named lever, and a valve in the bottom of the tank operated by the opposite end of the said second lever, whereby when the first named lever is elevated for the purpose of opening the supply valve the said valve in the tank bottom is closed and vice versa, substantially as shown and described.

2. The combination of a tank, a valved supply, a lever adapted to swing vertically over the tank for operating the valve of the supply, a means for automatically controlling the downward movement of the lever, lever V connected at one end to the said first named lever, and a valve in the tank bottom adapted to be operated by the said lever V, whereby when the said first named lever is elevated the said valve will be closed and when lowered automatically the valve will be opened, substantially as shown and described.

3. The combination of a tank, a valved supply, a lever adapted to swing vertically over the tank for operating the valve of the supply, a float in the valve for controlling the downward movement of the lever, a means for discharging the water from the tank, lever V fulcrumed between its ends and connected at one end to the said first named lever, a valve in the bottom of the tank, a vertically movable rod to which it is secured and an adjustable connection between the said rod and the free end of lever V, substantially as shown and described.

4. The combination of a tank, a vertically swinging lever controlling the water supply, lever V connected at one end to the first named lever and forked at its opposite end, a valve controlling a discharge in the tank bottom, a stem therefor, an adjustable stop carried by the rod which is engaged by the fork of lever V and a siphon discharge independent of the valved discharge, substantially as shown and described.

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

GEORGE D. ACKLEY.

Witnesses:

J. F. MADDEN,

A. H. BRAJELTON.