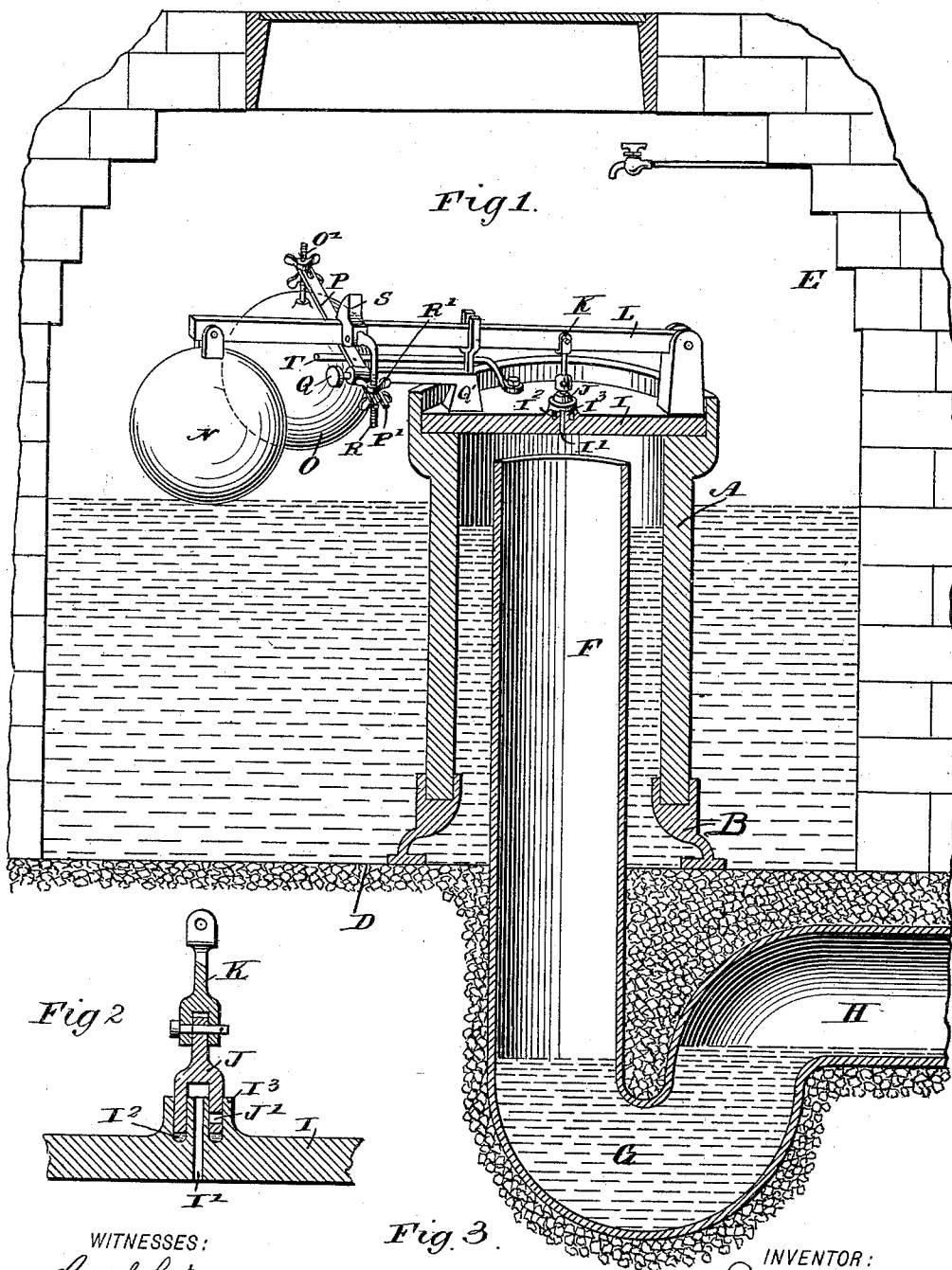


(No Model.)

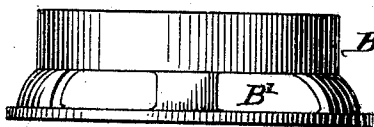
J. C. SPENCER.
FLUSHING DEVICE.

No. 465,567.

Patented Dec. 22, 1891.



WITNESSES:
Paul Johat
C. Sedgwick



INVENTOR:
J. C. Spencer
BY *Munn & Co*

ATTORNEYS

UNITED STATES PATENT OFFICE.

JOHN C. SPENCER, OF ANNISTON, ALABAMA.

FLUSHING DEVICE.

SPECIFICATION forming part of Letters Patent No. 465,567, dated December 22, 1891.

Application filed November 4, 1890. Serial No. 370,343. (No model.)

To all whom it may concern:

Be it known that I, JOHN C. SPENCER, of Anniston, in the county of Calhoun and State of Alabama, have invented an Improved Flushing Device, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved flushing device, specially designed for use in tanks, sewers, &c., and which is simple and durable in construction, very effective, and automatic in operation.

The invention consists of certain parts and details and combinations of the same, as will be hereinafter fully described, and then pointed out in the claims.

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

Figure 1 is a sectional perspective view of the invention, and Fig. 2 is an enlarged sectional side elevation of the valve. Fig. 3 is a side view of the base.

The improved flushing device is formed with an exterior pipe A, resting at its lower end on a suitable skeleton base B, set on the bottom or floor D of a tank E, containing the water necessary for flushing. Within the pipe A is held another pipe F with its lower end extending through the bottom or floor D and communicating with a trap G, from which leads the pipe H to the sewer or other place to be flushed. The upper end of the pipe F extends to within a short distance of the top plate I, held air-tight on the upper end of the pipe A. In this plate I is formed an opening I', adapted to be connected with the outer air or shut off therefrom by a suitable valve, preferably in the shape of a bell-valve J, fitted to slide in an annular groove I², formed in an offset I³, formed on the top of the plate I. The bottom of the annular groove I² is preferably filled with mercury, so as to make an air-tight seal for the opening I'.

In the lower end of the bell-valve J is formed an opening J', which, when the bell-valve J is raised, as hereinafter more fully described, opens to the outer air so as to establish a connection between the upper end of the pipe A and the outer air through the opening I', the interior of the bell and the said opening J'.

The upper end of the bell-valve J is pivotally connected by a link K with the lever L, fulcrumed on a post L', secured to the plate I. The free end of the lever L carries a float N, adapted to be raised by the water in the tank E, so as to lift the bell-valve J upwardly to establish the previously-mentioned connection between the interior of the pipes A and F and the outer air. When the water in the tank E rises, the float N lifts the valve J, so that the air within the pipe A escapes, thus causing the water to flow from the interior of the pipe A over the upper end of the pipe F into this pipe F. The water from tank E then passes into the trap G and passes through the pipe H into the sewer or other device, so as to flush it. When the water in the tank E falls, the lever L moves to its former position, so that the bell-valve J again hermetically seals the opening I', thus permitting the two pipes A and F to act as a siphon.

In order to cause the lever L to act more suddenly on the valve J to raise it, the following device is provided: A second float O is connected by a screw O' with the free end of the lever P in such a manner that the float O is several inches above the float N. The lever P is fulcrumed on a pivot Q, secured in the end of a bracket Q', projecting from the plate I. The end of the lever P opposite the float O is formed with a fork P', engaging a screw-rod R, which is held in place by two wing-nuts R', at the top and bottom of the said fork. The upper end of the screw-rod R is pivotally connected with the latch S, adapted to engage the top of the lever L, so as to lock the same in place. The screw-rod R is pivotally connected with the latch S to allow the lever L to push the latch S sufficiently back to fall back into its proper place, when the latch, by its own gravity, resumes its position over the lever L to hold it. A rod T, secured to the plate I, is adapted, normally, to support the lever P between the float O and its fulcrum Q. When the latch S engages the lever L, the latter is prevented from rising when the water in the tank E acts on the float N, as is previously described. When the water has risen so as to lift the float O, then the latter in swinging upward causes the forked end P' of the lever P to swing

downward, whereby the latch S is disengaged from the lever L, and the latter now suddenly flies upward by the action of the submerged float N. The bell-valve J is thus suddenly moved upward, whereby the compressed air within the pipe A is suddenly released, and the water flows readily over the upper end of the pipe F into the casing G, as is previously mentioned, to flush the sewer.

10 The box or trap G always contains sufficient water to form a seal on the pipes F and G. The water in the trap prevents the escape of air from the pipe F to the pipe H. Thus as the water rises in the tank it com-
15 presses the air in the tank until the float O is reached, which releases the lever, as described, and thus allows the air to escape by raising the valve J in its seat in the offset I³. When this happens, the pressure inside of
20 pipes F and A is equalized with the pressure in the tank E, and the water consequently rises in the pipe A and flows to the pipe F, both pipes A and F then acting as a siphon to discharge the water in the tank E into the
25 pipe H to flush the sewer. This sudden escape of the compressed air and the like sudden rise of water in the pipe F causes a sudden fall of water in the tank E, so that the floats will fall and close the bell-valve to per-
30 mit the siphon action to continue, which it could not do if the valve were left open.

The screw-rod R is held adjustably in the fork P' by the nuts R', so that the lever L can be set to be released sooner or later by the
35 action of the float O. By thus releasing the air suddenly a positive action is given to the siphon, and it is bound to act, no matter what the condition of the water in the tank E is, be it muddy or clear, or its supply a drop
40 at a time, or running on the full head from a suitable source of supply.

As the several working parts are on the

top of the tank E, they can be easily repaired in case of necessity.

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

1. The combination, in a flushing device, of the outer pipe open at its lower end and having a valved outlet at its upper closed end, an inner pipe extending at its upper end within a short distance of the closed upper end of the outer pipe and trapped at its lower end, and a horizontal lever mounted on top of the outer pipe, connected to its valve and provided with a float for suddenly raising it, with a lock engaging the said lever and holding it depressed, and a second float for operating said lock and lying in a higher plane than the first float, substantially as set forth.

2. The combination, with a valve, a lever, and a float adapted to actuate the valve, of a second float arranged above the first-named float, a lever carrying the said second float, an adjustable screw-rod held on the said second lever, and a latch on said rod adapted to engage the first lever to lock the same with its float in place, substantially as shown and described.

3. The combination, with a valve, a lever, and a float adapted to actuate the valve, of a second float in a higher plane than the first float, a lever carrying the second float and slotted at P', a screw-rod R, extending at its lower end through the said slot and provided with binding-nuts, and a latch S, pivoted on the upper end of the screw-rod and engaging the first-named lever, substantially as set forth.

JOHN C. SPENCER.

Witnesses:

J. D. HUNTER,
P. H. LANG, Jr.