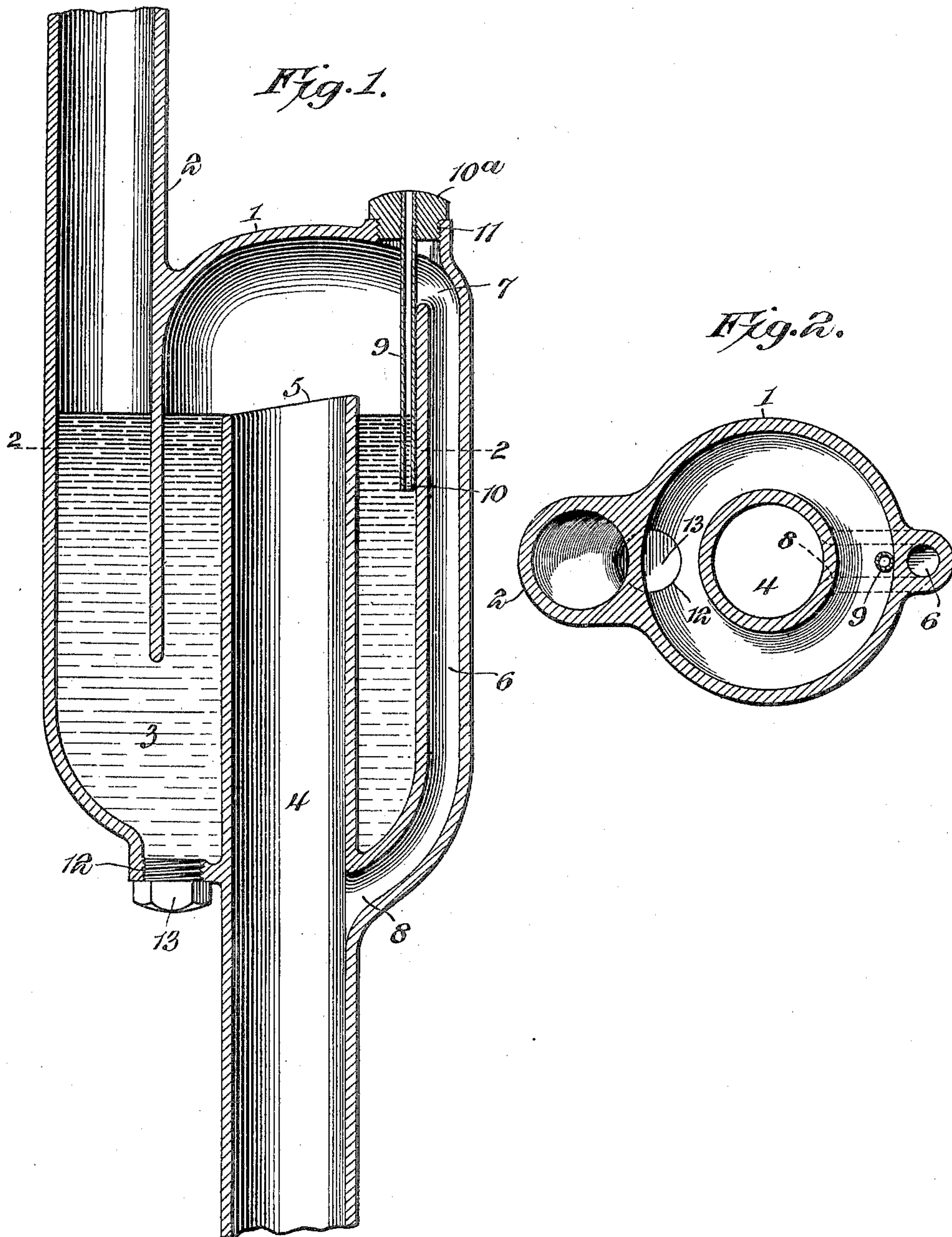


No. 817,469.

PATENTED APR. 10, 1906.

E. A. CLELAND.
NON-SIPHONING TRAP.
APPLICATION FILED JUNE 29, 1905.



Witnesses

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EDWARD ALEXANDER CLELAND, OF LYNCHBURG, VIRGINIA.

NON-SIPHONING TRAP.

No. 817,469.

Specification of Letters Patent.

Patented April 10, 1906.

Application filed June 29, 1905. Serial No. 267,574.

To all whom it may concern:

Be it known that I, EDWARD ALEXANDER CLELAND, a citizen of the United States, residing at Lynchburg, in the county of Campbell and State of Virginia, have invented a new and useful Non-Siphoning Trap, of which the following is a specification.

The invention relates to improvements in traps.

The object of the present invention is to improve the construction of traps and to provide a simple and comparatively inexpensive one designed for use in various kinds of plumbing and adapted to effectually prevent siphonal action without employing the ordinary ventilating-pipe, and thereby greatly lessening the expense of installing it.

With these and other objects in view the invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended, it being understood that various changes in the form, proportion, size, and minor details of construction within the scope of the claims may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings, Figure 1 is a vertical sectional view of a non-siphoning trap constructed in accordance with this invention. Fig. 2 is a horizontal sectional view on the line 2 2 of Fig. 1.

Like numerals of reference designate corresponding parts in both figures of the drawings.

1 designates the body of the trap, designed to be constructed of any suitable material—such as brass, lead, or the like—and provided at one side with an inlet-pipe 2, which for simplicity and compactness preferably has its lower portion formed integral with the body of the trap, the inner side of the lower portion of the inlet-pipe constituting a portion of the wall of the body of the trap. The inlet-pipe communicates at its lower end with the body of the trap by means of a suitable opening 3, and the upper end of the inlet-pipe may be connected with a sink, washbowl, or other plumbing by means of any desired construction of joint or coupling.

The body of the trap is provided with an outlet-pipe 4 of greater diameter than the in-

let-pipe 2, and the carrying capacity of the discharge-pipe is greater than the inlet-pipe, so that the former will carry off the water without permitting the same to rise to the top of the body of the trap and tend to form the siphon. The discharge-pipe 4 extends to the upper portion of the body of the trap, and it is provided with an inclined upper edge 5, which will also tend to prevent siphonal action of the trap. As illustrated in Fig. 1 of the drawings, the surface of the water of the water seal is on a level with the lowest portion of the inclined upper edge 5 of the discharge-pipe, and water entering through the inlet-pipe will readily flow over the lower portion of the inclined edge 5 into the discharge-pipe. The upper portion of the inclined edge of the discharge-pipe tends to hold the water back and in this manner will assist in preventing the formation of a siphon. Instead of having a straight inclined edge, as illustrated in Fig. 1 of the drawings, the upper end of the discharge-pipe may be shaped in any other manner to provide a low portion at one side and a high or projecting portion at the opposite side.

The body of the trap is provided with an air-passage 6, consisting of a pipe formed integral with the body of the trap and having its inner side or portion constituting a portion of the adjacent wall of the body of the trap; but it may be constructed in any other desired manner, as will be readily apparent. The upper end 7 of the air-passage, which is preferably located at a point diametrically opposite the inlet-pipe, communicates with the body of the air-passage at the top thereof, and the lower end 8 of the air-passage is connected with the discharge-pipe 4 at a point below the bottom of the body of the trap. The lower end of the air-passage is in communication with the discharge-pipe 4 in order that air may pass upward through the air-pipe, and thereby prevent the water flowing through the trap from entirely filling the same and forming a siphon, and thereby breaking the water seal. As the water passes through the discharge-pipe air contained within the same will pass upward through the air-passage. This flow of air through the air-passage will be positively caused by the water flowing into the upper end of the discharge-pipe, and should there be any tendency of the water to entirely fill the upper

portion of the trap the suction of air through the air-passage will be increased and the air will rush into the upper portion to prevent the formation of a vacuum as the water flows through the discharge-pipe. The air-passage obviates the necessity of providing the ordinary ventilating-pipe commonly used in connection with water-seal traps to prevent siphonal action, and the cost of installing the trap is thereby greatly lessened. Also the trap may be installed without the skill and expense required to install a trap employing a ventilating-pipe.

The trap is also provided with a supplemental air-passage 9, having a normally sealed lower end 10 and extending through one of the walls of the trap and communicating with the outside atmosphere, so that should the water within the body of the trap fall below and uncover the normally sealed lower end of the supplemental air-passage air will be drawn into the body of the trap and the siphonal action interrupted before the water seal is broken.

The trap may be of any desired size to suit the character of the plumbing in which it is to be employed, and the lower end is located a sufficient distance above the opening 3 at the lower end of the inlet-pipe to interrupt the siphonal action before the lower end of the inlet-pipe is uncovered. By this construction an effective water seal is provided, and there is no liability of any noxious gases backing up through the inlet-pipe.

The pipe which forms the supplemental air-passage may be mounted in any desired manner; but it is preferably carried by a threaded plug or cap 10^a, which engages a threaded aperture 11 in the top of the body of the trap. The opening 11 is located at a point above the main air-passage 6, and the threaded cap or plug is adapted to be removed should the air-passage become clogged. When the cap or plug is removed, a wire or other instrument may be readily introduced into the main air-passage for removing any accumulation therein. Also in detaching the cap or plug 10^a the supplemental air-pipe is removed and may be conveniently cleaned. The aperture 10 also affords access to the interior of the body of the trap and will enable the same to be easily cleaned. The pipe which forms the supplemental air-passage in practice is preferably located contiguous to one of the side walls of the body of the trap, as clearly illustrated in Fig. 2 of the drawings, so that it will in a measure be braced by the same. Also to facilitate cleaning the trap the body thereof is provided at the bottom with a threaded aperture 12, which is normally closed by a cap or plug 13, arranged as clearly shown in Fig. 1 of the drawings.

It will be seen that the trap is exceedingly simple and inexpensive in construction, that

it is adapted to greatly simplify plumbing, and that, as it dispenses with the ordinary ventilating-pipe, the cost of installing it is much less than traps requiring a ventilating-pipe.

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

1. A trap of the class described, comprising a body having inlet and discharge pipes, and an air-passage communicating with the interior of the body of the trap and connected with the discharge-pipe at a point below the body of the trap.

2. A trap of the class described, comprising a body, an inlet-pipe communicating with the body at the lower portion thereof, a discharge-pipe extending into the body and terminating at a point above the lower end of the inlet-pipe, and an air-passage extending from the discharge-pipe and communicating with the body of the trap at a point above the upper end of the said discharge-pipe.

3. A trap of the class described, comprising a body, an inlet-pipe communicating with the body at the lower portion thereof, a discharge-pipe extending into the body and terminating at a point above the lower end of the inlet-pipe, and an exteriorly-arranged air-passage communicating at its upper end with the top of the body of the trap and connected at its lower end with the discharge-pipe at a point below the body of the trap.

4. A trap of the class described, comprising a body having inlet and discharge pipes, and an air-passage communicating with the interior of the body of the trap and connected with the discharge-pipe at a point below the body of the trap, said discharge-pipe being extended into the body and provided at its upper end at one side with a projecting portion located above the normal line of the water and adapted to cause water flowing through the discharge-pipe to pass along the side opposite that at which the projecting portion is arranged.

5. A trap of the class described, comprising a body, an inlet-pipe communicating with the body at the lower portion thereof, and a discharge-pipe extending into the body and having its upper end located at a point above the lower end of the inlet-pipe, the upper end of the discharge-pipe being inclined to provide a projecting portion, said projecting portion being located above the normal line of the water, and adapted to cause water flowing through the discharge-pipe to pass along the side opposite that at which the projecting portion is arranged, whereby an air-space is maintained at the side having the projecting portion.

6. A trap of the class described, comprising a body having inlet and discharge pipes, a main air-passage communicating with the

body of the trap and with the discharge-pipe,
said body having an aperture, a closure for
the aperture, and a supplemental air-pipe
carried by the closure and extending through
5 the same, the inner end of the supplemental
air-pipe being extended below the upper end
of the discharge-pipe so as to be submerged
in the water seal.

In testimony that I claim the foregoing as
my own I have hereto affixed my signature in 10
the presence of two witnesses.

EDWARD ALEXANDER CLELAND.

Witnesses:

R. J. JOHNSON

A. H. LIGHT.]