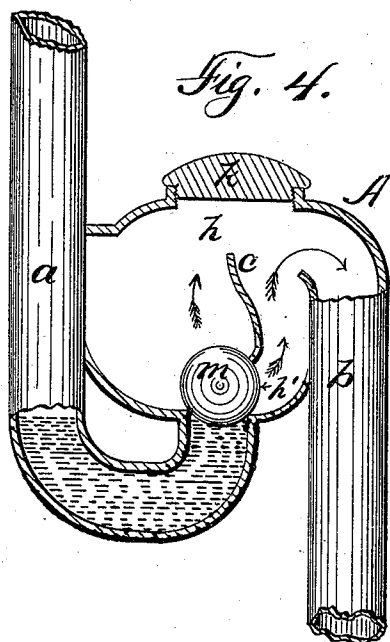
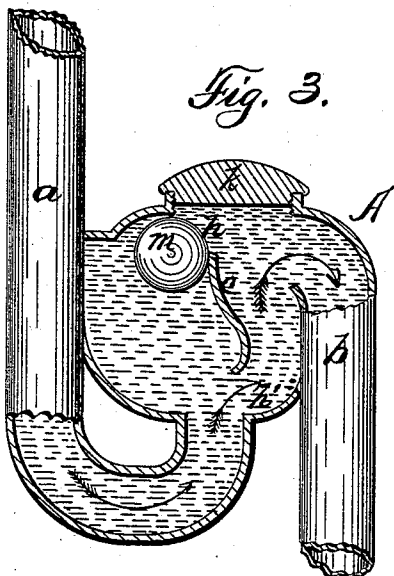
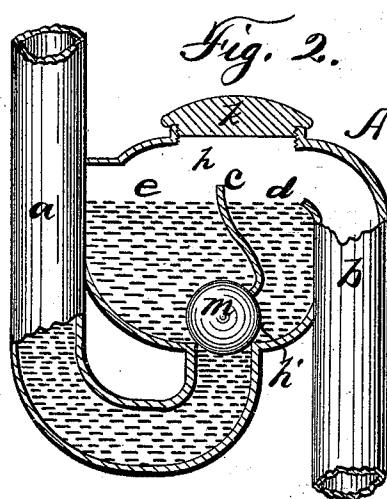
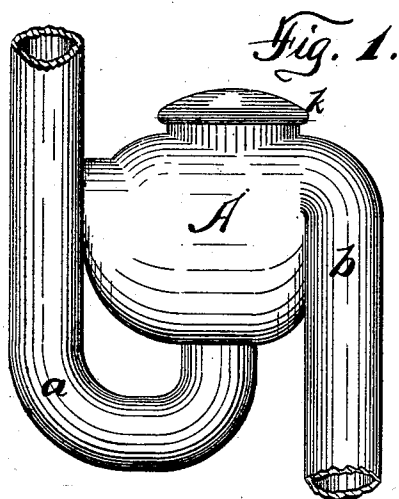


(No Model.)

E. E. KROWL & J. A. WALKER.
SEWER TRAP.

No. 534,563.

Patented Feb. 19, 1895.



WITNESSES:

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UNITED STATES PATENT OFFICE.

EDGAR EUGENE KROWL AND JOHN A. WALKER, OF ELMIRA, NEW YORK.

SEWER-TRAP.

SPECIFICATION forming part of Letters Patent No. 534,563, dated February 19, 1895.

Application filed March 5, 1894. Serial No. 502,328. (No model.)

To all whom it may concern:

Be it known that we, EDGAR EUGENE KROWL and JOHN A. WALKER, of Elmira, in the county of Chemung, in the State of New York, have invented new and useful Improvements in Sewer-Traps, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

10 Our invention relates to traps for use in waste or sewer pipes, and is designed to prevent the backing up of sewer-gas, and which are automatically sealed against siphoning or the escape of gas into a house.

15 Our object is to produce a trap which comprises a body, an inlet pipe opening into the bottom thereof, an outlet pipe opening outward from said body near the top thereof, a partition across said body forming part of a valve seat at both the upper and the lower edges thereof, and a ball of somewhat greater specific gravity than water, said ball being adapted to seal the inlet pipe as soon as the head of the liquid in the inlet pipe is removed, and also to have a bearing as a valve against the lower edge of said partition; and to be lifted from its seat, out of the path of the direct flow through the trap body, and to close the passage through between the top of said partition and the upper part of the valve body; and in which said partition is inserted so as to divide the trap body into two chambers, one of which is the direct passage, and the other is a storage chamber, the latter operating to retain a sufficient quantity of the liquid to off-set any siphon action through the direct passage, and to refill and re-seal the inlet pipe, as soon as the siphon suction ceases and thereby prevent any back-flow of sewer gas, aided by the ball which also seals the opening of the inlet pipe into the trap body.

Our invention consists in the several novel features of construction and operation hereinafter described and which are specifically set forth in the claim hereunto annexed. It is constructed as follows, reference being had to the accompanying drawings, in which—

Figure 1, is a side elevation of the trap. Fig. 2, is a vertical sectional elevation of the same, in its normal condition, after the flow of liquid has ceased. Fig. 3, is a like view of

the same during the flow of liquid through it. Fig. 4, is a like view of the same, showing it after the suction force of a siphon action has expended itself.

—A— is the body of the trap, into which the curved inlet pipe —a— opens at the bottom, and from which the discharge pipe —b— opens outwardly near the top.

A partition —c— divides said body interiorly into the direct-passage or direct-flow chamber —d—, and the auxiliary or liquid storage chamber —e—, said partition being cut away so that said chambers are connected through the openings —h— and —h'—, above and below the partition. A screw cap closes the top of said body. A ball —m— is placed in the chamber —e— and is adapted to seat itself in the inner end of the inlet pipe and against the lower edge of the partition, whenever the flow of liquid stops under ordinary conditions, said ball being of somewhat greater specific gravity than water, so that it will sink therein and seat itself as shown in Fig. 2, both of the chambers then remaining filled to substantially the level of the lower edge of the discharge pipe, or opening.

In Fig. 3, the ball is shown as raised to close the upper passage between the chambers, by the head of the liquid flowing through the trap, the body being then wholly filled therewith, the flow being indicated by the arrows; and when the flow stops, the liquid will ordinarily subside to substantially the level shown in Fig. 2, and the ball will assume the position there shown, on account of its rolling down the inclined bottom of the chamber —e—.

Whenever the suction through the discharge pipe is sufficient a siphonage occurs; but in this trap such siphonage action, while it may empty the chamber —d—, and more or less empty the bend in the inlet pipe, yet it will not suck out the liquid in the chamber —e—, but will leave therein a sufficient quantity to at least re-fill the bend in the inlet pipe, as shown in Fig. 4, which absolutely seals the trap and prevents all back-flow of sewer gas. Also the back-pressure of said gas being equalized, the ball cannot be rolled to one side to open the inlet pipe, even if there is no liquid in its bend.

What we claim as our invention, and desire to secure by Letters Patent, is—

A trap comprising a body, a diaphragm across it creating passages above it and below
5 it, an inlet pipe opening into the bottom of said body, and a ball valve on one side of said diaphragm normally closing said inlet and the lower passage, and adapted to close the upper one and open the lower one with the inflow of
10 water and to close the lower one when the

water is shut off and avoid siphoning, in combination.

In witness whereof we have hereunto set our hands this 21st day of February, 1894.

EDGAR EUGENE KROWL.
JOHN A. WALKER.

In presence of—

J. E. LARKIN,
WM. S. WALKER.