H. D. MOÏSE.

FLUSH TANK APPARATUS.

APPLICATION FILED MAY 11, 1910.

Patented Apr. 16, 1912.

1,023,522.

2 SHEETS—SHEET 1.

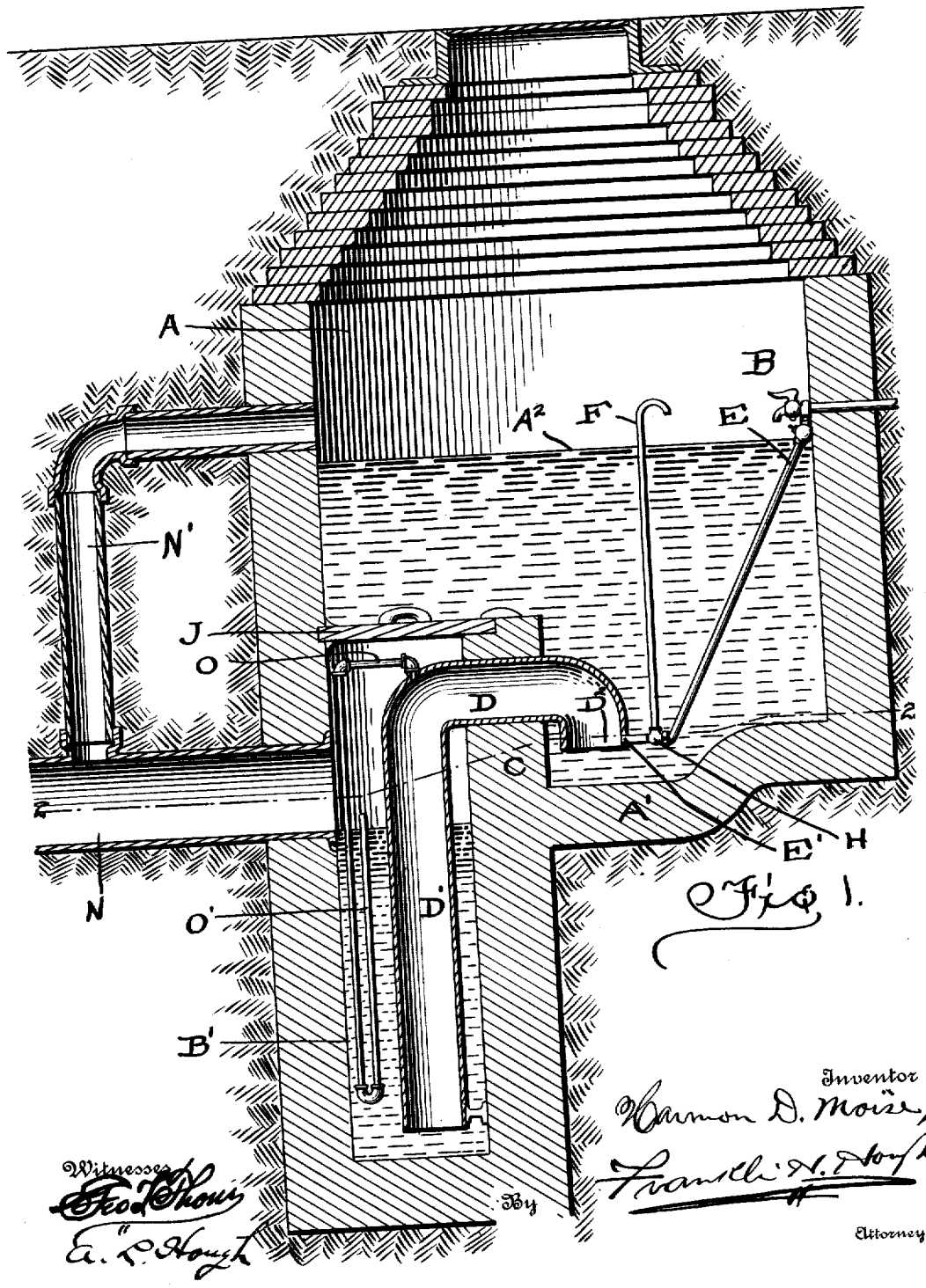

Fig. 1.

Witnesses
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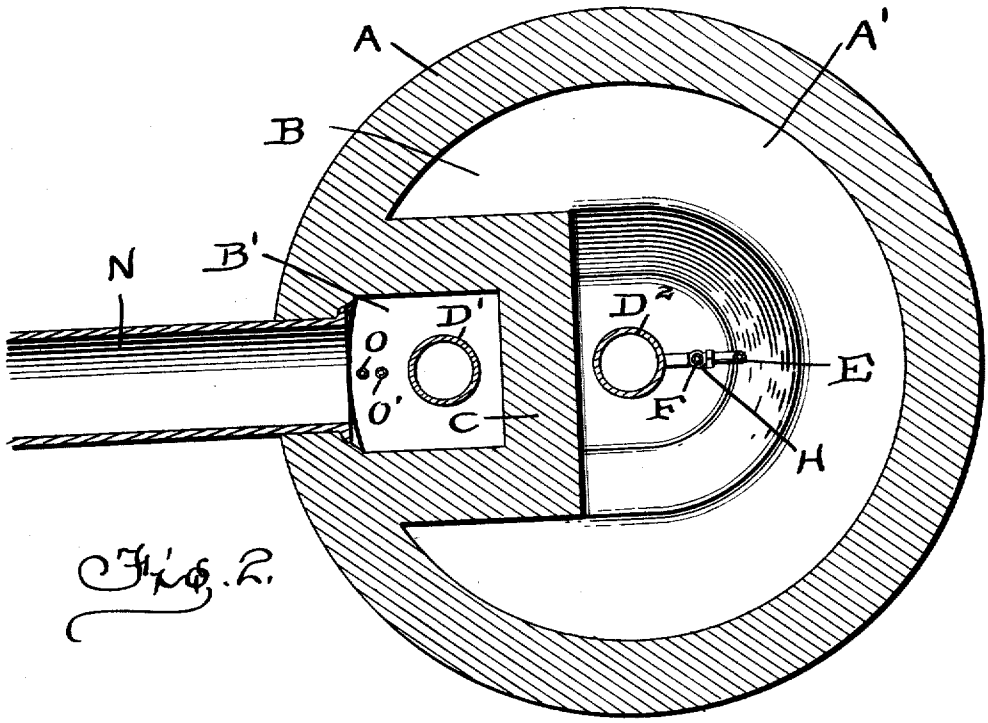

Fig. 2.

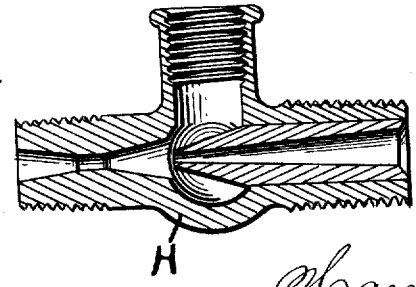

Fig. 3.

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UNITED STATES PATENT OFFICE.

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FLUSH-TANK APPARATUS.

1,023,522. Specification of Letters Patent. Patented Apr. 16, 1912.

Application filed May 11, 1910. Serial No. 560,696.

To all whom it may concern:

Be it known that I, HARMON D. MOÏSE, citizen of the United States, residing at Sumter, in the county of Sumter and State of South Carolina, have invented certain new and useful Improvements in Flush-Tank 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 appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to new and useful improvements in flushing tank apparatus and particularly to the provision of an air jet attachment for supplying air to be trapped within the siphon discharge pipe and of a liquid trap communicating with the portion of the siphon in which the air is trapped, affording means whereby, as the water rises to a predetermined height within the tank, the flushing of the latter may be automatically accomplished by the displacement of the air within the siphon being forced through the liquid trap.

The invention comprises various details of construction, combinations and arrangements of parts which will be hereinafter fully described and then specifically defined in the appended claim.

I illustrate my invention in the accompanying drawings, in which:—

Figure 1 is a sectional view through a tank showing the various details of the invention, and Fig. 2 is a sectional view on line 2—2 of Fig. 1. Fig. 3 is a sectional detail.

Reference now being had to the details of the drawings by letter, A designates a tank of any size and in the drawings I have shown the same as adapted for use in connection with flushing sewers and said tank has two compartments B and B′ the former of which is the main tank and the latter forming a well extending below the bottom of the main compartment and having a surrounding wall C extending a slight distance above the bottom A′.

D designates a siphon discharge pipe, the long leg D′ of which extends down into said compartment B′ with its end opening a slight distance from the bottom thereof. Said siphon pipe passes through the wall C and its short leg D^2 is positioned with its open end a slight distance above the bottom A′ of the compartment B.

E designates a water supply pipe leading through the wall of the tank and has its exit end E′ positioned underneath the open end of the short leg of the siphon pipe.

F designates an air supply pipe, the lower end of which communicates with a jet H adjacent to the exit end of the water supply pipe and affording means whereby air may be drawn through the jet as an additional supply of air to the air trap in excess of the supply of air trapped by the rise and fall of the liquid. Said wall portion C, it will be noted, is entirely separate from the main tank A and has a cover or closure J fitted over the top thereof. Leading from the upper portion of the siphon is an air pipe O which extends downward in the compartment B′ and has its lower end upwardly turned forming a liquid trap O′, the discharge end of which extends above the normal surface of the liquid within the compartment B′. A sewer discharge pipe N leads from the upper portion of the compartment B′ and an air vent pipe N′ leads from the sewer pipe and communicates with the main tank A at a location above the normal liquid line A^2 within the tank.

In operation, as the liquid is slowly fed through the supply pipe E to the main compartment B, it will rise within the latter and trap air within the upper portion of the siphon in which it is trapped while the tank refills and serving to prevent a premature discharge of the liquid from the tank. As the liquid rises within the compartment B to a predetermined height, the pressure of the liquid will be sufficient to blow out the pipe O, destroying the liquid seal of the air trap, and the tank will discharge the liquid from the main compartment B into the compartment B′, making exit through the sewer pipe N. After the tank has been flushed, it will be replenished through the pipe E, the air accumulating within the siphon forming an air trap, and the liquid trap filling with liquid and the apparatus being in readiness for flushing again after the liquid within the tank rises to a predetermined level, sufficient to expel the air within the siphon and thereby repeating the operation.

By the provision of the features of my invention, it will be observed that this type

of apparatus will be greatly improved, simplified in construction, eliminating nearly the entire short leg of the siphon and reducing to minimum the wall surrounding the well in which the long leg of the siphon is positioned and, by the provision of the air jet, thorough reliability of operation of the apparatus will be assured.

What I claim to be new is:—

A flush tank apparatus having a well in the bottom thereof with the upper portion of the wall of the same extending above the bottom of the tank, an exit passageway leading from said wall, a vent pipe communicating between said passageway and the interior of the tank, a closure to said well, a siphon discharge pipe passing through said wall and having its long leg extending into said well and its short leg opening into the lower portion of the tank, a liquid seal trap communicating with the siphon and extending into the well with its lower end above the bottom of said passageway, a liquid supply pipe within the tank and communicating with the short leg of the siphon, and a vent pipe communicating with said supply pipe adjacent to its point of connection with the short leg of the siphon.

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

HARMON D. MOÏSE.

Witnesses:
A. L. HOUGH,
FRANKLIN H. HOUGH.