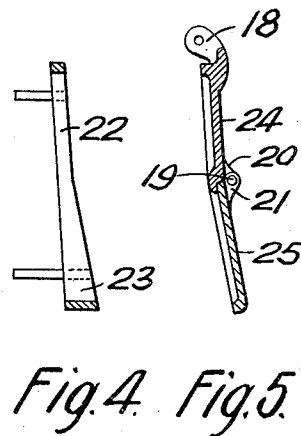
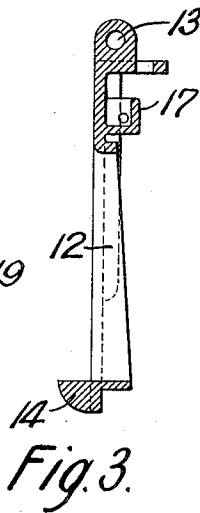
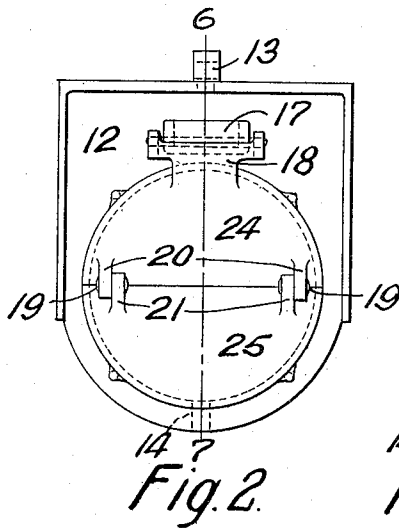
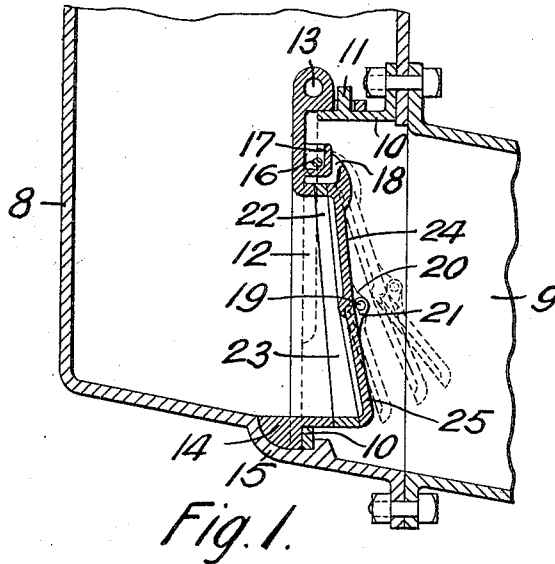


L. LAVERGNE DIT RENAUD.
VALVE.

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1,057,435.

Patented Apr. 1, 1913.



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UNITED STATES PATENT OFFICE.

LOUIS LAVERGNE DIT RENAUD, OF MONTREAL, QUEBEC, CANADA.

VALVE.

1,057,435.

Specification of Letters Patent.

Patented Apr. 1, 1913.

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To all whom it may concern:

Be it known that I, LOUIS LAVERGNE DIT RENAUD, of the city of Montreal, in the Province of Quebec and Dominion of Canada, have invented certain new and useful Improvements in Valves, of which the following is a full, clear, and exact description.

This invention relates to valves, and particularly to valves such as are used in gullies for delivering street drainage into sewers.

The main object of the invention is to provide a valve which will operate to open and close with great ease and rapidity in order that, on the one hand, foul odors may be prevented from escaping from the sewer into the gully and thence into the street, and, on the other hand, that fresh air may be admitted through the gully to the sewer at certain intervals to ventilate same.

In the operation of drainage or sewer systems, the constant flow of water through certain parts of the system will tend to create a back draft at certain times and a suction or down draft at other times. Unless the gully valve is tightly seated and operates quickly, foul odors will be emitted in the former case, and unless the valve is more or less delicately balanced, fresh air will not be permitted to enter the sewer in the latter case.

My invention is designed to eliminate the difficulties heretofore experienced and it consists essentially of a comparatively light construction, having a double hinge or suspension, in order that it may be operated in two parts, thus requiring less than half the pressure to lift the lower portion off its seat than is ordinarily required to operate the valve proper.

In the drawings which illustrate my invention:—Figure 1 is a sectional view of the valve shown in position at the bottom of a gully or the like. Fig. 2 is an elevation of the outer side of the valve. Fig. 3 is a sectional view of the valve frame on the line 6—7 of Fig. 2. Fig. 4 is a sectional view of the valve seat on the line 6—7 of Fig. 2. Fig. 5 is a sectional view of the valve proper on the line 6—7 of Fig. 2.

Referring to the drawings, 8 designates a gully frame connected with a sewer pipe 9, and having a bracket 10 secured thereto adapted to support the valve thereon. This bracket 10 is provided with a small up-

wardly projecting lug 11, on which the valve frame is seated, said frame having a recess adapted to fit over the lug 11. The valve frame 12 has a horizontal top piece which rests on the supporting bracket 10, and an eye 13 by means of which the valve frame may be raised or lowered. At the bottom the valve frame 12 is provided with a curved projection 14, which fits into a depression 15 in the bottom of the gully, in order to prevent the valve from becoming displaced. The frame is shaped approximately as shown in Fig. 2, having a rectangular upper portion and curved lower portion. It will be obvious that the construction and shape of the valve and valve frame may, however, be varied to suit any requirements and that, although I have shown the valve positioned in the bottom of a gully, it may be located in any position wherever a valve may be used. The gully construction may also be varied as it does not form any part of this invention.

The valve proper consists of a clap having two hinged or suspension joints. The upper hinge, which holds the entire weight of the valve, comprises a pin 16 journaled within a small box or receptacle 17 mounted on the frame 12. This receptacle is designed to contain oil or lubricating material so that the hinge 16 will not rust and will always operate freely. The pin 16 is pivotally mounted in an apertured lug 18 at the top of the clap valve. At or near the center of the valve, I provide a secondary hinge which consists preferably of a pin or pins 19 passing through lugs 20 on the upper part of the clap valve, and through lugs 21 on the lower part. The whole clap valve, as well as the hinge pins, are preferably constructed of aluminum, which is light and not susceptible to rust. The valve seat, also, designated 22, which is fitted on to the frame, is preferably of aluminum, and is machine or otherwise formed to fit closely on to the valve. This valve seat 22, is secured to the valve frame immediately under the outer peripheral edge of the valve, and is circular to conform to the shape of the valve. From the hinge joint 19, however, this valve seat is tapered or thickened toward the bottom, as indicated at 23. When the valve is suspended in a preferably vertical position, the upper half 24 of said valve will remain vertical. The lower half 25, unless weighted

at the bottom, would tend to swing, but with the thickened seat 23, the lower half will rest upon the seat, closing tightly at all times. Should water in small quantities
5 enter the gully, the lower half 25 of the valve will open readily, as it is light and delicately balanced. Furthermore, when a down draft of air is caused by any movement of the water in the sewer, the air will
10 open this delicately balanced portion 25 and will flow into the sewer pipes to ventilate same. When a large volume of water enters the gully, the whole valve will open. When there is a back draft of gases in the sewer
15 caused from any movement of the water in the sewer, this valve will immediately close tightly on its seat and remain in this position to prevent the escape of foul odors. The hinged joint at the top will always be
20 lubricated and the oil reservoir will be protected under the flange of the frame.

Although I have shown the clap valve made in two sections, it will be obvious that the valve may be made in any number of
25 sections. Various modifications in the details of construction may also be made with-

out departing from the spirit of my invention.

Having thus described my invention, what I claim is:— 30

1. A device of the character described comprising a suitable frame, a lubricant reservoir mounted thereon, a clap valve composed of a plurality of sections hinged intermediate the top and bottom of the
35 valve, lugs on the top section of the valve embracing said reservoir, and a hinge pin for the upper section of said valve passing through said lugs and through the lubricant reservoir. 40

2. A valve of the character described comprising a frame having at the top an apertured supporting flange and at the bottom a positioning lug, an apertured lifting lug at the top of said frame, and a clap valve
45 pivoted to the frame.

In witness whereof I have hereunto set my hand in the presence of two witnesses.

LOUIS LAVERGNE DIT RENAUD.

Witnesses:

C. W. TAYLOR,

STUART R. W. ALLEN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."