No. 701,428. Patented June 3, 1902.

L. J. WALSH.

AUTOMATIC VENT VALVE.

(Application filed June 20, 1901.)

(No Model.)

Fig. 1.

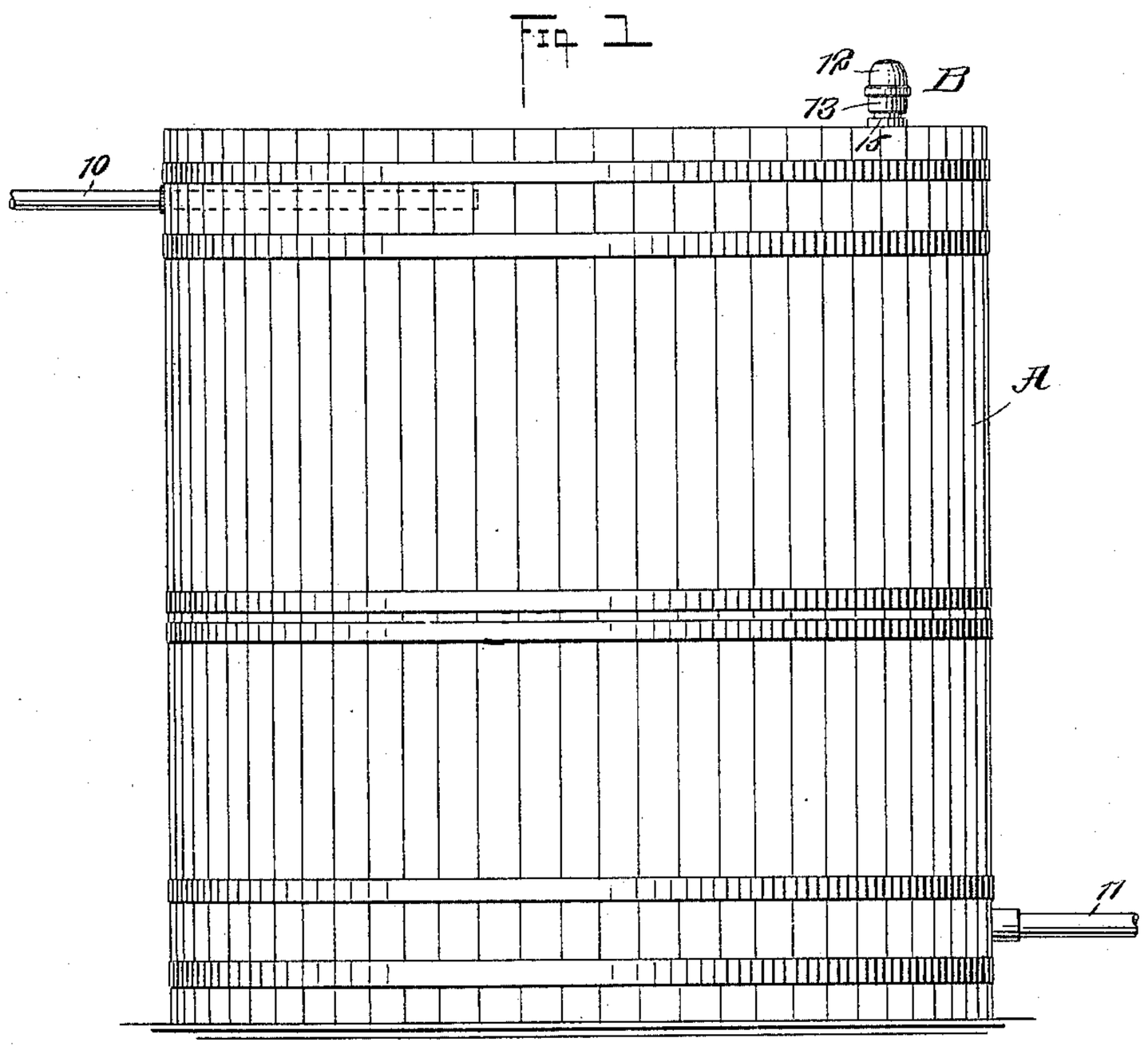


Fig. 2.

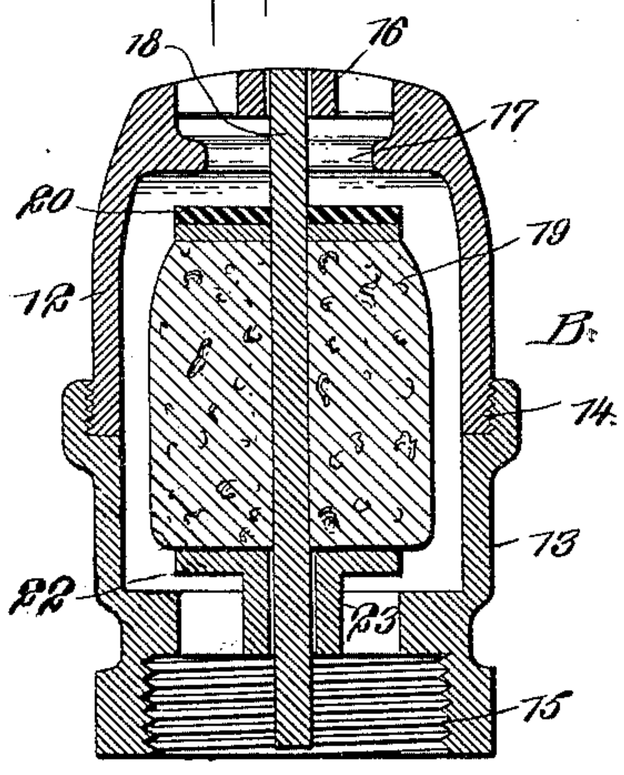
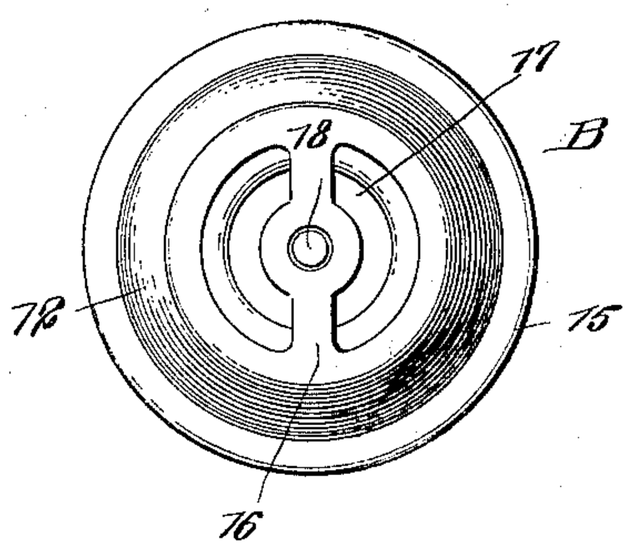


Fig. 3.



WITNESSES:

INVENTOR

Laurence J. Walsh

BY

ATTORNEYS

UNITED STATES PATENT OFFICE.

LAURENCE J. WALSH, OF NEW YORK, N. Y., ASSIGNOR OF ONE-FOURTH TO MICHAEL J. SULLIVAN, OF BUTTE, MONTANA.

AUTOMATIC VENT-VALVE.

SPECIFICATION forming part of Letters Patent No. 701,428, dated June 3, 1902.

Application filed June 20, 1901. Serial No. 65,293. (No model.)

To all whom it may concern:

Be it known that I, LAURENCE J. WALSH, a citizen of the United States, and a resident of the city of New York, borough of Manhattan, in the county and State of New York, have invented a new and Improved Automatic Vent-Valve, of which the following is a full, clear, and exact description.

The purpose of the invention is to provide a vent-valve for tanks and other receptacles to be filled with liquid, which valve will permit air in the tank or receptacle to pass out while the liquid is flowing in until such time as the receptacle is filled, at which time the valve will automatically close the air-vent and cause the liquid to back into the supply-pipe, and thereby indicate at the source of liquid-supply that the tank or other receptacle has been filled and that the supply should be cut off.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

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

Figure 1 is a side elevation of the tank and the improved vent-valve attached. Fig. 2 is a vertical section through the valve, the float being in its normal position; and Fig. 3 is a plan view of the valve.

A represents a tank to which the improved vent-valve B is applied, the tank being provided with a supply-pipe 10, connected therewith at its upper portion, and an offtake-pipe 11, which extends from the bottom portion of the tank. The upper portion of the tank is closed, except where the vent-valve B is located, and this vent-valve is secured in the top of the tank in any suitable or approved manner. The vent-valve B is shown in detail in Fig. 2, in which a casing is provided in two sections 12 and 13, connected by a lap-screw joint 14. At the bottom of said casing an interiorly-threaded sleeve 15 is usually formed for attachment to a coupling or exteriorly-threaded collar carried by the upper head of the tank A. The top of the casing is closed only by a spider 16, and below the said spider an interior annular valve-seat 17 is formed. A valve-stem 18 has free movement in the hub-section of the spider 16, and this valve-stem carries a float-valve 19, of cork or other suitable material, provided with an upper face 20, of rubber or other suitable material, so that when the valve is carried upward by water entering the casing the rubber or yielding face 20 of the valve will close against the seat 17 and prevent the outward passage of water or liquid.

The lower end of the valve-stem 18 is passed down through the hub-section of a lower spider 23, formed integral with or attached to the lower portion of the lower section 13 of the valve-casing, as is also shown in Fig. 2. The hub of the spider 23 extends upward and carries a baffle-plate 22, on which the float 19 rests when in its lower position. It will be observed that the valve-stem 18 has free upward and downward movement and is guided in such movement. The float-section 19 of the valve is of such dimensions that a space is provided between its side and the inner face of the valve-casing, and while a tank or receptacle is being filled with water the float-section 19 of the valve will occupy the lower position, (shown in Fig. 2,) and the air will pass upward from the tank through the lower spider 23 into the space between the float-section 19 of the valve and the casing and will find an exit at the top portion of the casing; but when the tank is filled with water a slight surplus will enter the valve-casing and will carry the float-section 19 of the valve upward, causing it to engage with the seat 17, and thus become water-tight, whereupon any liquid that may have been introduced into the tank will back into the supply-pipe 10 up to the source of supply, thus giving notice that the tank has been completely filled.

The baffle-plate 22 is provided in order to prevent spasmodic gusts of air coming from the tank or other source from striking full against the bottom of the float 19 and causing the said float to prematurely close the opening at the top of the valve. This baffle-plate serves to direct the air from the tank or other source to the side portions of the float, and consequently the air thus directed will have no influence on the float, as said float is to be

operated only by the surplus liquid which may be received in the tank or other receptacle to which the valve is applied.

When the improved valve is placed upon a tank, as shown in Fig. 1, the head of the tank may be made water-tight, and dust, dirt, &c., are prevented from falling into the water. In the event the tank is used as a house-tank there will be no occasion to use a ball-cock to shut off the supply, and, further, there is no occasion for an overflow-pipe. In the event a pump is used to supply the tank a gage provided at the pump will indicate the excess of pressure, and one can readily see by the pressure-gage when the tank is full.

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

1. As an article of manufacture, an automatic vent-valve, comprising a casing having upper and lower sections provided with spiders and normally secured together by a lap-screw joint, the upper section being provided with an annular valve-seat and the lower section being provided with a baffle-plate, a cylindrical float mounted centrally inside of the casing and provided with a flat disk secured upon the upper surface of the said cylindrical member for the purpose of engaging said annular valve-seat, said cylindrical member being also provided with a guide-rod extending through said spiders.

2. As an article of manufacture, an automatic vent-valve, comprising a casing having upper and lower sections provided with spiders and normally secured together by a lap-screw joint located midway between the ends of said casing, the upper section being concave and provided internally with an annular valve-seat, a baffle-plate located at the bottom of the lower section, a cylindrical member having one of its ends covered with a flat disk for engaging said annular valve-seat, and a guide-rod located centrally through both said cylindrical member and said disk.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

LAURENCE J. WALSH.

Witnesses:

J. FRED. ACKER,

JNO. M. RITTER.