No. 662,837. Patented Nov. 27, 1900.

E. A. VALIQUETTE.

FLOAT VALVE.

(Application filed Apr. 24, 1900.)

(No Model.)

Fig. 1.

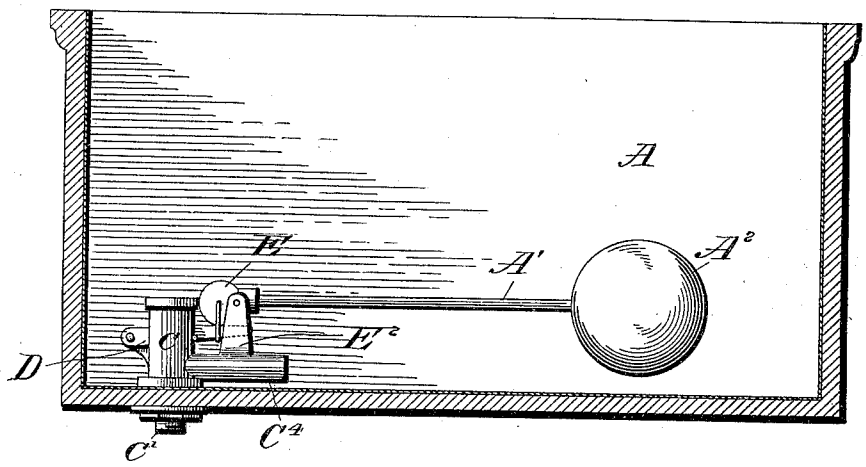


Fig. 2.

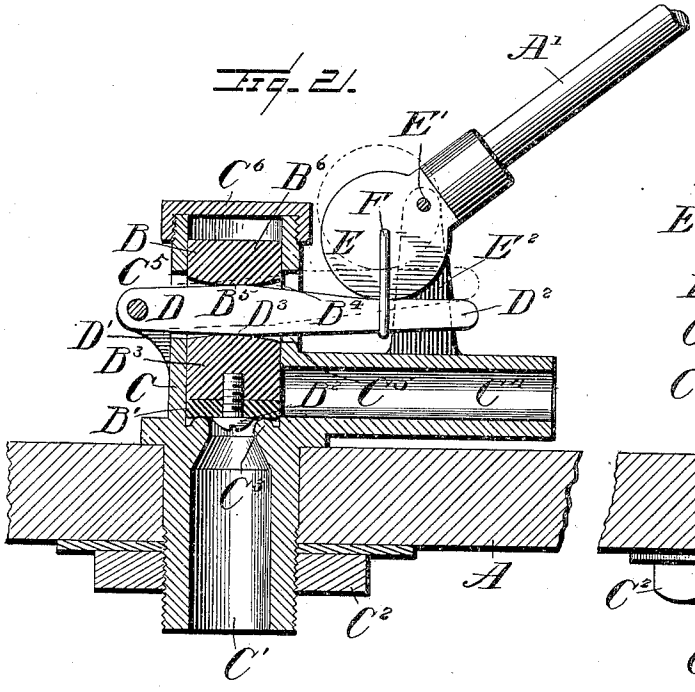
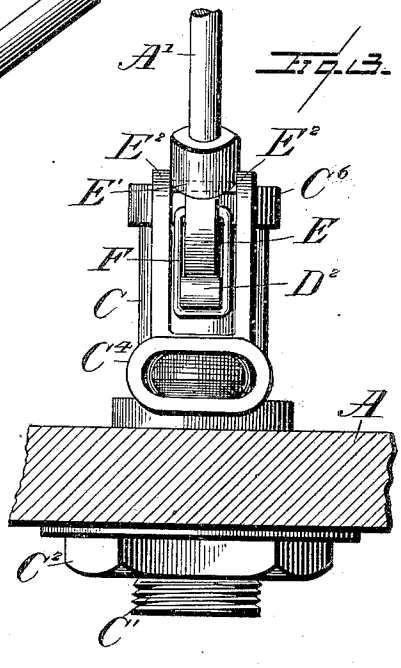


Fig. 3.



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FLOAT-VALVE.

SPECIFICATION forming part of Letters Patent No. 662,837, dated November 27, 1900.

Application filed April 24, 1900. Serial No. 14,163. (No model.)

To all whom it may concern:

Be it known that I, EDWARD A. VALIQUETTE, a citizen of the United States, residing at Rutland, in the county of Rutland, State of Vermont, have invented certain new and useful Improvements in Float-Valves, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to float-valves, and particularly to mechanism actuated by a float for locking the inlet-valve for a tank to prevent the same being opened by the pressure of water within a main or service-pipe.

The invention has for one object to provide an improved construction of valve and operating-lever by means of which it may be moved with but very little friction and also to provide a locking device or projection carried eccentrically to the pivotal point of the float-lever by means of which the valve when closed will be held against the pressure of water within the service-pipe.

A further object of the invention is to provide means for insuring the easy operation, convenient assemblage, and the economical construction of the several parts of the valve.

A further object is to provide means for positively opening the valve as the float-lever is depressed by the withdrawal of the liquid or water from the tank.

Other objects and advantages of the invention will hereinafter appear in the following description, and the novel features thereof will be particularly pointed out in the appended claims.

In the drawings, Figure 1 illustrates a vertical section through a tank having the improved valve applied thereto. Fig. 2 is a similar view through the valve itself, and Fig. 3 is an elevation looking toward the discharge from the valve-casing.

Like letters of reference indicate like parts throughout the several figures of the drawings.

This invention is intended to be applied to water or liquid tanks of any desired character; but for the purpose of illustration an ordinary tank A is shown, and the usual construction of float-lever A′ and float A^2 are shown as the actuating means for the valve mechanism, it being understood that the tank is provided with a discharge mechanism as common in this art and that the rising of the float A^2 closes and locks the valve, while the depression into the position shown in Fig. 1 opens the valve to permit the entrance of further water into the tank.

The valve proper, B, is illustrated as located within a casing C, which is provided with a depending inlet-pipe C′, adapted for connection to a service-pipe, and also has a means for clamping the casing in position in an aperture through a portion of the tank A. This is accomplished by any desired means—for instance, a locking-nut C^2, threaded upon the inlet connection C′. This connection is also provided at its upper portion with a valve-seat C^3, having a curved face which prevents the collection of sediment thereon and the consequent wear of the face, so that an accurate seating of the valve is always insured. The discharge-neck C^4 from the valve-casing may be of oval shape, if desired, as shown in Fig. 3, and thus spread the water in a desirable manner upon the bottom of the tank and prevent the undue agitation of the float when the water enters the tank. The vertical portion of the valve-casing is provided at opposite sides with slots C^5 and with a cap C^6, suitably secured thereon. Within the portion C and slidably fitting the same is located the valve B, which at its lower portion carries a packing B′, removably secured in position by any desired means—for instance, by a screw B^2. The lower portion B^3 of the valve B is formed solid for a sufficient height to cover the outlet-passage C^4 when the valve is closed, as shown in Fig. 2, and thus prevent the pressure of the water within the tank from acting upon the valve and causing a resistance in the opening of the same. Above the portion B^3 a slot B^4 is formed through the valve and provided with walls B^5, either curved or angularly disposed, so as to present the smallest possible contact-surface with the lever D, used to actuate the valve. The upper portion B^6 or head of the valve is formed solid and so closely fits the walls of the casing C as to form a guide for the reciprocation of the valve.

The operating-lever D is pivoted in a suitable support D′, adjacent to one of the slots C^5 in the casing C, and is provided at its free end with an extended portion D^2, adapted to

be actuated by means of the projection carried by the float-lever. This lever is so formed as to present a bearing-point or contact-surface D^8, adapted to coincide with the contact-face B^5 of the valve, thus insuring the minimum of friction and practically a pivotal connection in the contact of the lever with the center of the valve to insure the accurate seating thereof.

In order to properly actuate and lock the lever D to hold the valve in its closed position against the pressure of water in the service-pipe, a projection E is extended eccentrically beyond the pivotal point E′ of the float-lever A′. This projection may be of various shapes; but a very desirable form is shown in Fig. 2, wherein the portion E is cam-shaped and bears against the upper surface of the free end D^2 of the valve-lever. It will be obvious that this cam and the float-lever may be supported in any desired manner—for instance, by means of standards E^2, rising from the discharge-pipe C^4. It has also been found desirable to provide means for positively opening the valve through the raising of its lever when the float descends in the tank owing to the withdrawal of the water therefrom. This is positively accomplished by means of a pivoted link or bail F, mounted centrally of the cam portion E and forming a loop beneath the lever D^2, so as to raise said lever when the float A^2 is depressed, as shown by dotted lines in Fig. 2, which indicates the position of the parts when the valve is open. The full lines in said figure indicate the parts when the valve is closed and locked.

The operation of the several parts will be apparent to one skilled in the art from the foregoing description, and it need only be stated that the eccentrically-disposed projection from the float-lever A′ when engaged with the valve-lever locks the same against any opening of the valve by the pressure of water in the main, while the means provided for positively opening the valve prevent any sticking of the same to its seat and insures a regular and positive operation of the parts under all conditions of service. Furthermore, the structure of valve-casing provides a simple attachment for tanks carrying the several parts in a single casting and one in which the valve may be conveniently removed from position by withdrawal of the lever D from the valve and lifting the valve from its seat after the cap C^6 has been removed. The structure of the valve-body B^3 also prevents the water-pressure within the tank from acting upon the valve to resist the opening thereof, and insures a positively-guided and easily-operated reciprocating valve especially adapted to this class of inventions. It will also be observed that the locking function is largely due to the use of the pivoted lever, the free end of which would travel in an arc, while the pivotal point of the float-lever is so disposed as to bring the lines of force in position to positively lock the valve when the float is raised into the position shown in Fig. 2.

It will be obvious that changes may be made in the details of construction and configuration of the several parts without departing from the spirit of the invention as defined by the appended claims.

Having described my invention, what is claimed is—

1. A float-valve comprising a casing, a valve therein, a pivoted valve-lever adapted to operate said valve, a float-lever pivoted above said valve-lever, and a valve-lever-locking contact-face carried by said float-lever beyond its pivotal point at the opposite side from said float to travel and press downward upon a face of said valve-lever to close and lock said valve during the upward movement of said float; substantially as specified.

2. A float-valve comprising a casing provided with oppositely-disposed vertical slots, a reciprocating valve fitting said casing, a lever pivoted adjacent to one of said slots and passing through said valve and opposite slot, and a pivoted float-lever provided with a cam projection beyond its pivotal point at the opposite side from said float to travel upon and depress the free end of said valve when the float is elevated; substantially as specified.

3. A float-valve comprising a casing provided with an inlet portion having a valve-seat at its upper part, a lateral discharge extending therefrom, a vertical valve-case provided with oppositely-disposed slots, a slotted valve located within said casing, an operating-lever pivoted adjacent to one of the slots in said casing and passing through said valve and the opposite slot, a float-lever and float pivotally mounted above the free end of said valve-lever, a projection beyond the pivotal point of the float-lever disposed at the opposite side from said float and adapted to travel upon said valve-lever, and a bail pivoted in said projection and embracing the valve-lever to elevate the same; substantially as specified.

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

EDWARD A. VALIQUETTE.

Witnesses:
FRED. R. PATCH,
FRED. H. RICH.