(No Model.)

P. HANSEN.

TANK SUPPLY REGULATING VALVE.

No. 382,301. Patented May 8, 1888.

Fig 1.

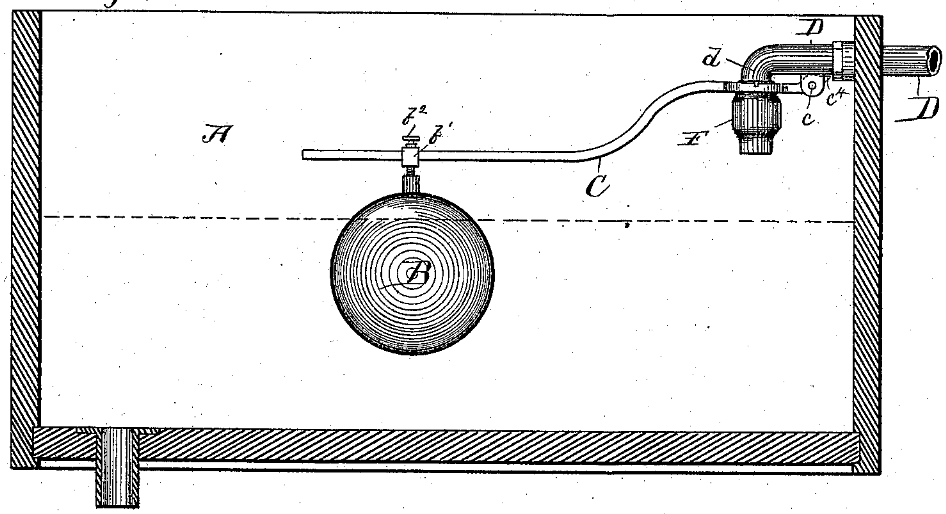


Fig. 2.

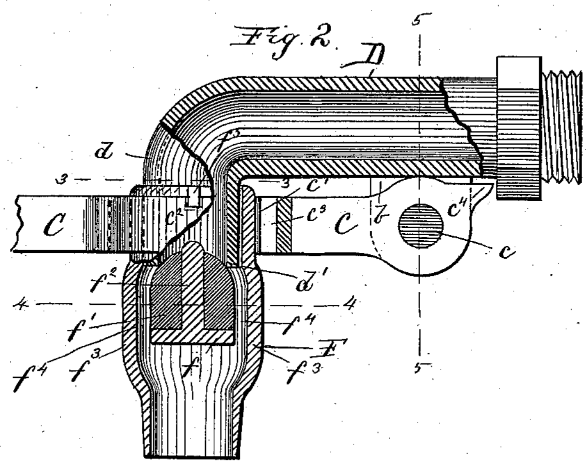


Fig. 4.

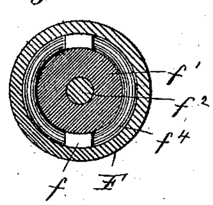


Fig. 5.

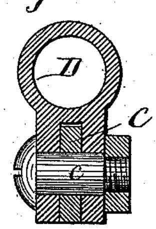
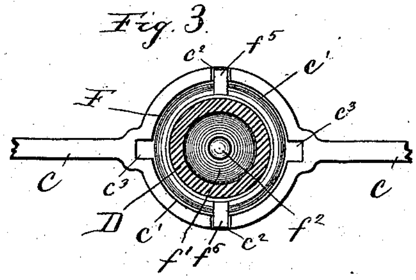


Fig. 3.



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UNITED STATES PATENT OFFICE.

PEDER HANSEN, OF CHICAGO, ILLINOIS.

TANK-SUPPLY-REGULATING VALVE.

SPECIFICATION forming part of Letters Patent No. 382,301, dated May 8, 1888.

Application filed October 25, 1887. Serial No. 253,312. (No model.)

To all whom it may concern:

Be it known that I, PEDER HANSEN, a citizen of the United States, residing in Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Tank-Supply-Regulating Valves, of which the following is a specification.

My invention relates to devices for regulating the supply of water to tanks or reservoirs.

My invention consists in the novel devices and novel combinations of devices herein shown and described, and more particularly pointed out in the claims.

In the accompanying drawings, which form a part of this specification, and in which similar letters of reference indicate like parts, Figure 1 is a side elevation of a device embodying my invention. Fig. 2 is an enlarged central vertical longitudinal section. Figs. 3, 4, and 5 are sections on lines 3 3 4 4 5 5, respectively, of Fig. 2.

In said drawings, A represents a tank or reservoir, B the float, and C the valve-lever operated by the float to close the valve when the water in the tank reaches a certain height.

D is the supply-pipe, through which the water is delivered into the tank. The end of the supply-pipe D is bent about at right angles, as shown at d, and its mouth d' serves as the valve-seat.

F is the sleeve or short section of pipe, having a central internal bridge, f, upon which the rubber valve f' is secured by the central pin or projection, f^2, which projects into or through a central hole or socket in the rubber valve. The valve-supporting sleeve F is furnished with a central swell or enlargement, f^3, so as to give an ample annular way or passage, f^4, for the water around the valve f' and valve support or bridge f. The upper end of the sleeve F fits upon the bent end d of the supply-pipe D. The lower end or mouth of the sleeve should be somewhat contracted, as indicated in the drawings, so as to deliver the water in a solid stream; but it should not be contracted to a less diameter than that of the supply-pipe.

The valve-lever C is pivoted at c to an ear or projection, b, on the supply-pipe, and it is furnished with an opening or socket, c', through which the upper end of the sleeve F fits. The sleeve F is provided at its upper end with a pair of outwardly-projecting bearing lugs or projections, f^5 f^5, which rest upon the lever C at diametrically-opposite points of the socket or opening c' therein, the lever being preferably furnished with recesses c^2 c^2 at such points to receive the bearing-lugs f^5. The socket c' is further provided with recesses or notches c^3, to permit the bearing-lugs f^5 to pass through the socket when the sleeve is turned to bring the bearing-lugs longitudinally of the sleeve. After the valve-sleeve is thus inserted through the socket of the lever it is given one quarter-turn to bring the bearing-lugs into place in their recesses c^2. The lever C is provided with a cam or stop projection, c^4, at its pivoted end, to limit the movement of the lever and of the valve-sleeve F on the end d of the supply-pipe.

The float B is adjustably secured to the valve-lever by means of a socket, b', and a set-screw, b^2, so that the pressure of the valve against its valve-seat may be regulated as desired, and the float-lever prevented from exerting an excessive pressure thereon when the device is used in tanks or reservoirs subject to varying conditions.

The valve-sleeve F, with its central enlargement or annular water-passage around the valve, confines the stream of water as it issues from the supply-pipe and prevents splashing, while at the same time the valve-lever, by reason of its socket or opening through which the bent end of the supply-pipe projects, is entirely free from contact with the issuing stream of water. The diametrically-opposite bearing-lugs on the valve-sleeve F, and by which the valve is pivotally suspended from the valve-lever, serve to permit the pendent valve to automatically adjust itself to and bear evenly against the valve-seat d' all around its circumference.

The necessary rocking movement of the pendent pivoted valve sleeve F on the valve-lever C is of course comparatively slight. The bearing-lugs f^5 should not and do not fit the notches or recesses c^2 in the lever C tight enough to prevent the requisite rocking movement of the valve-sleeve. To permit of this pivotal movement of the pendent valve-sleeve F on its supporting-lever C, the socket or hole c' through the valve-lever is made slightly larger in diameter than the valve-sleeve F. The valve-sleeve F may also be made to fit somewhat loosely on the downwardly-bent end d of the pipe D; but this is not necessary in order to give the pendent valve-sleeve a free pivotal movement in respect to the valve-lever C, by which it or its valve is operated and forced against the valve-seat. It will of course be understood that the valve-seat d' (consisting in the end of the pipe D) will always be cut off at right angles to the bent portion d of the pipe on which the valve-sleeve fits.

My tank-regulator valve is thus not only of a simple but of a very durable and efficient construction.

I hereby disclaim as not of my invention the devices shown and described in the following patents, to wit: English Patent No. 2,643 of 1872; United States patent to Smith, No. 46,862, of March 14, 1865; United States patent to Weber, No. 234,735, of November 23, 1880, and United States patent, No. 274,833, of March 27, 1883, to Shephardson.

I claim—

1. The combination, with a supply tank or reservoir and its supply-pipe having a bent end, d, and a valve seat, d', consisting of the end of said pipe, of a float, a float valve-lever operated by said float, a valve-sleeve fitting loosely and exteriorly the bent end of said supply-pipe and projecting through a socket or opening in said lever, said valve-sleeve being provided with lugs or projections f^5, bearing against said lever, and with an internal central bridge and an elastic valve resting upon said bridge, substantially as specified.

2. The combination, with a supply-pipe having a bent end, the extremity of which constitutes the valve-seat, of a float valve-lever and a pendent valve-sleeve pivotally connected to said lever and fitting loosely and exteriorly the bent end of said pipe, and provided with an internal valve adapted to bear against said valve-seat, the pivotal connection between said pendent valve-sleeve and lever being above said valve-seat, substantially as specified.

3. The combination of supply-pipe D, having bent ends d, with valve-sleeve F surrounding the bent end of said supply-pipe, float valve-lever C, having a socket or opening, c', for the end of said valve-sleeve, bridge f, rubber valve f', pins f^2, and bearing-lugs f^5, substantially as specified.

4. The combination of supply-pipe D, having bent ends d, with valve-sleeve F, surrounding the bent end of said supply-pipe, float valve-lever C, having a socket or opening, c', for the end of said valve-sleeve, said valve-sleeve being provided with an internal bridge, f, having a pin, f^2, and rubber valve f', resting on said bridge and held in place by said pin, and said lever C having a cam or stop projection, c^4, on its end adapted to limit the movement of said lever, substantially as specified.

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