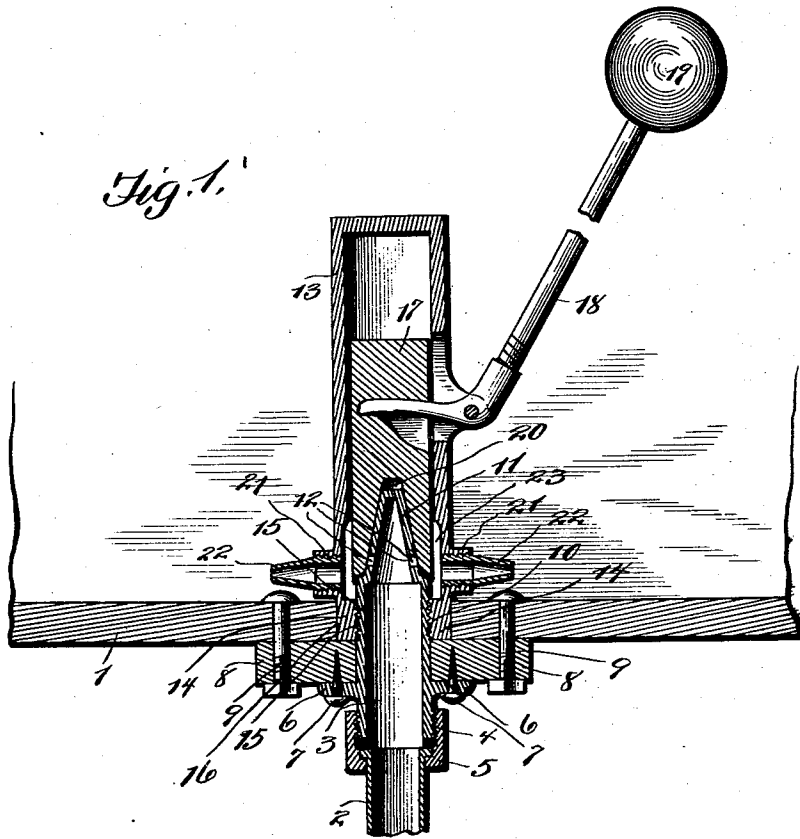
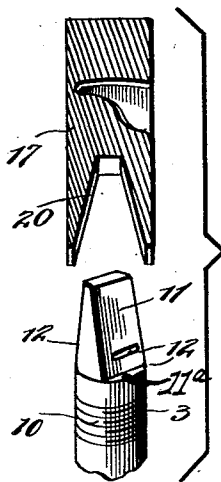


No. 833,672.

PATENTED OCT. 16, 1906.

A. K. BUTLER.
VALVE.

APPLICATION FILED APR. 12, 1905.



Witnesses

T. A. Boswell.
M. A. Bond.

Inventor

Amos W. Butter.

E. A. Bond Attorney

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UNITED STATES PATENT OFFICE.

AMOS K. BUTLER, OF SKOWHEGAN, MAINE, ASSIGNOR OF ONE-TWELFTH TO ALBERT G. BLUNT, ONE-TWELFTH TO J. WALLACE BLUNT, THREE FORTY-EIGHTHS TO ERNEST C. BUTLER, ONE-SIXTH TO CHARLES A. MARSTON, AND ONE-TWELFTH TO JOHN P. CLARK, OF SKOWHEGAN, MAINE.

VALVE.

No. 833,672.

Specification of Letters Patent.

Patented Oct. 16, 1906.

Application filed April 12, 1905. Serial No. 255,135.

To all whom it may concern:

Be it known that I, AMOS K. BUTLER, a citizen of the United States of America, and a resident of Skowhegan, in the county of Somerset and State of Maine, have invented certain new and useful Improvements in Valves, of which the following is a specification.

This invention relates to certain new and useful improvements in valves, and more particularly to ball-cock valves, although, as will be readily understood as the description proceeds, it is applicable to other uses and is not restricted in this description or in the claim to its use as a ball-cock valve.

The present invention has for its objects to provide an all-metal valve which shall be perfectly tight without packings, thus rendering it exceedingly durable, and, further, it is so constructed as to be noiseless as the water passes therethrough. Being submerged, it has equal pressure in all directions, gives a free flow to liquids or gases, is easy to operate under high water-pressure, and can be manufactured at minimum cost. It can be used on a main from a pumping-station without transmitting the noise occasioned by pumping.

Other objects and advantages of the invention will hereinafter appear, and the novel features thereof will be specifically defined by the appended claim.

The invention in one of its modes of use is clearly shown in the accompanying drawings, which, with the numerals of reference marked thereon, form a part of this specification, and in which—

Figure 1 is a substantially central vertical section through the bottom of a tank, showing the application of the invention to such use. Fig. 2 is a detail, partly in perspective and partly in section, showing the plunger and its cooperating member.

Like numerals of reference indicate like parts in the different views.

As above stated, in the present instance I have chosen to illustrate my present invention as applied to a tank for use as a ball-cock valve, and I shall now so describe it.

Referring to the details of the drawings, 1 designates the bottom of a tank of usual construction and to which the valve may be ap-

plied either at the bottom, as shown, or in any other preferred position.

2 designates a portion of the main to which is connected the hollow metal casting or member 3, which in this instance is shown as provided with the screw-threads 4 for a coupling 5 in a well-known way. This casting or member 3 is formed with lugs or the like 6 for the reception of its attaching means, as 7, in this instance the said lugs being shown as attached to the bar or plate 8, which is secured to the wall 1 of the tank, as by the bolts and nuts 9; but it is evident that this is but one of the various ways in which it may be attached. The hollow casting or member 3 is further formed with the exterior screw-threads 10 and with the wedge-shaped end portion 11, which may or may not be truncated, as shown, and this wedge-shaped end portion is provided with a plurality of ports 12, although I should consider one port or opening an equivalent, and it may serve under some conditions.

13 is a casing having a portion 14 provided with interior threads 15, engaged with the threads 10 of the member 3, as shown, the said portion 14 being shown as engaged within an opening 16 in the wall 1 of the tank, although this is not necessary.

17 is the plunger movably mounted within the casing 13 and designed to be actuated in any suitable manner, dependent upon the circumstances and use to which the valve is put. In the present instance it is shown as adapted to be actuated by the float-arm 18, carrying the float 19, disposed within the tank and designed to be actuated by the rise and fall of the water in the tank in a manner which will be readily understood. The plunger 17 has a wedge-shaped socket or cavity 20, as seen best in Fig. 2, to receive the wedge-shaped end of the member 3, as seen in Fig. 1.

The casing 13 should be provided with a suitable aperture or apertures for the out-flow of the water. In the present instance I have shown it as provided with a plurality of them, which may or may not correspond with the number of ports or openings 12 in the wedge-shaped end 11 of the member 3, and for the purpose of conducting the water laterally as it flows through the openings or ports 12 I provide the casing near its inner

end with nipples 21, into which are screwed the short nozzles 22, and in order to provide increased capacity for the water within the casing the latter is enlarged interiorly at 5 points about or opposite the said nipples, and consequently opposite the ports, such enlargement being seen in Fig. 1 at 23. These features of the construction, however, are not necessarily present, or other means for 10 accomplishing the end subserved thereby may be employed in their stead.

The operation will be apparent from the foregoing description, especially when taken in connection with the annexed drawings, it 15 being understood that as the float rises the plunger is lowered and when the plunger is forced down to its limit the lower portions of the walls of the wedge-shaped socket or cavity close over the ports 12 in the member 3 20 and completely shut off the flow from the main into the tank. As the water in the tank falls the float falls and gradually moves the plunger to disclose the ports 12, and the water is again admitted.

25 As seen clearly in both views, the member 3 at the base of its wedge portion 11 is formed with the shoulders 11^a, against which the lower ends of the tapered sides of the plunger

abut to limit the movement of the plunger and prevent its becoming unduly wedged 30 thereupon.

The proportions of the parts and the means for operating the plunger may be varied, and other like changes may be made without affecting the operativeness of the device, and 35 modifications in detail may be resorted to without departing from the spirit of the invention or sacrificing any of its advantages.

What is claimed as new is—

In a valve, a fixed member with exterior 40 threads for a coupling, an integral wedge-shaped end with port and threads intermediate said end and the first-named threads, and securing-flange intermediate the first and 45 last named threads, a plate resting on said flange combined with a plunger having a wedge-shaped socket, and a casing inclosing said plunger and secured to the last-named threads and resting on said plate.

Signed by me at Skowhegan, Maine, this 50 8th day of April, 1905.

AMOS K. BUTLER.

Witnesses:

FRED F. LAWRENCE,
MYRTIS E. GENTNER.