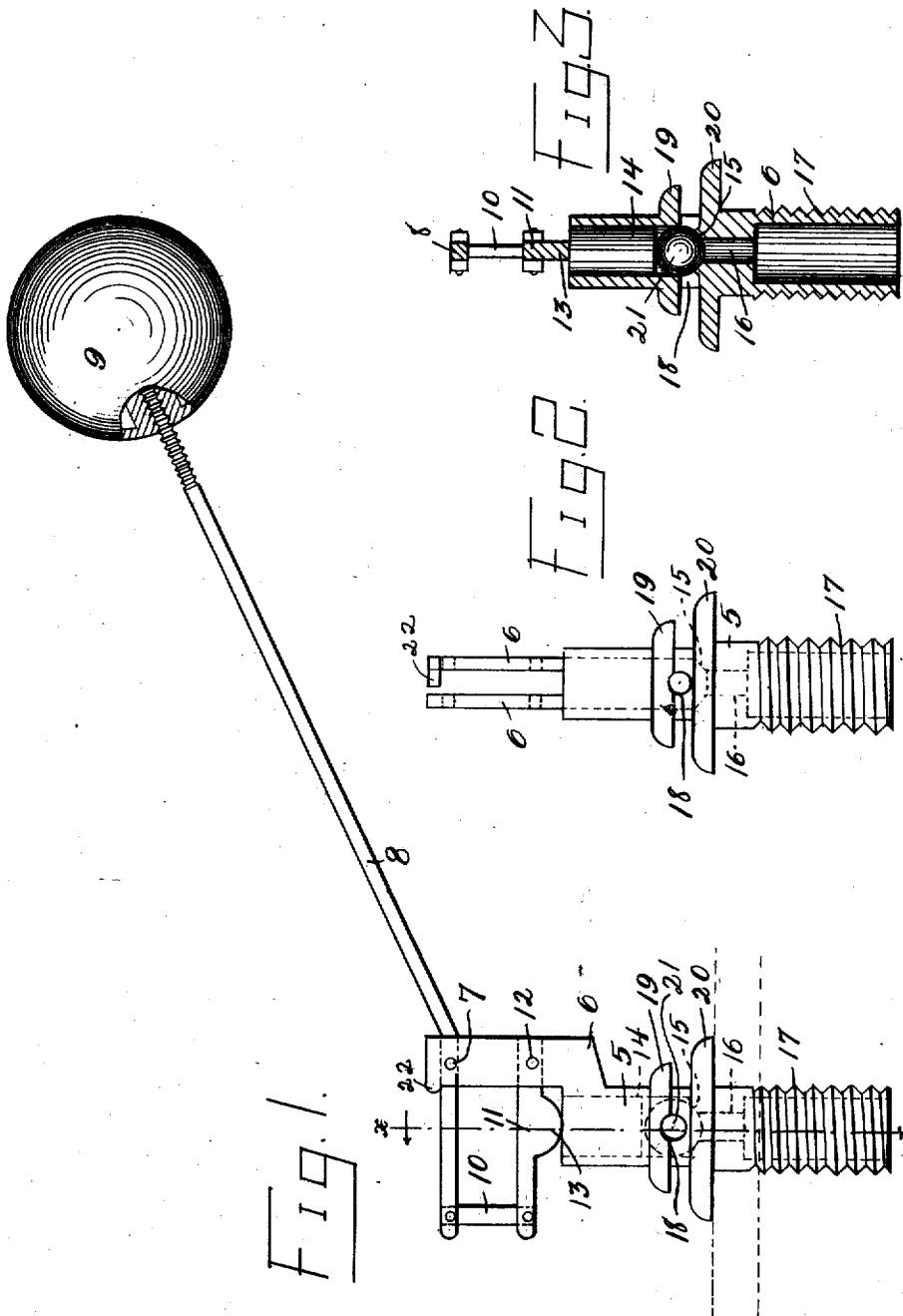


G. O. THOMPSON.  
BALL COCK.  
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Patented Dec. 19, 1911.



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# UNITED STATES PATENT OFFICE.

GEORGE OTIS THOMPSON, OF MINNEAPOLIS, MINNESOTA.

BALL-COCK.

1,012,029.

Specification of Letters Patent.

Patented Dec. 19, 1911.

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*To all whom it may concern:*

Be it known that I, GEORGE O. THOMPSON, a citizen of the United States of America, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Ball-Cocks, of which the following is a specification.

This invention relates to ball cocks or valves of the character commonly employed in connection with flushing tanks, the object of the invention being to provide an improved device of this character of simple and economical construction.

Some of the ball cocks now in use require considerable machining and in their construction large pieces of brass are employed.

It is an object of the present invention to avoid the necessity of a great deal of machining and to so construct the device that small pieces of brass may be used and the necessity for employing rubber or leather gaskets is avoided.

Further objects and advantages of the invention will be set forth in the detailed description which now follows:

In the accompanying drawing, Figure 1 is a side elevation of a ball cock constructed in accordance with the invention, Fig. 2 is a front elevation of the casing thereof, and Fig. 3 is a vertical section upon line *x-x* of Fig. 1, looking in the direction of the arrow.

Like numerals designate corresponding parts in all of the figures of the drawing.

Referring to the drawing, the numeral 5 designates a cylindrical casing having a pair of upstanding ears 6, 6, between which at 7 is pivoted a float lever 8 upon which a float 9 is threaded. The otherwise free end of the float lever is connected by a link 10 with an arm 11 that is pivoted at 12 between the ears 6, 6. The arm 11 has a downwardly extending boss 13 formed thereon, the lower face of which is rounded and this lower face bears upon the upper end of a plug 14, said plug being slidably mounted in the upper portion of the casing 5. This plug in turn bears upon a ball 21 preferably of bronze which has a close and accurate seating upon the valve seat 15. A passage-way 16 leads downwardly from this valve seat into the lower and enlarged part of the casing 5 and the exterior of the lower part of the casing is threaded at 17 for the

reception of the usual water conducting pipes (not shown). Ports 18 are formed through the side walls of the casing adjacent the ball valve. Flanges 19 and 20 are preferably formed upon the exterior of the casing though this is not absolutely essential. The lowermost of these flanges 20 bears against the bottom of the tank (not shown) and the ports 18 open between the flanges so that the water is discharged from between the flanges in a sheet and in such manner that it will not strike violently against the sides of the tank and splatter.

The operation of the device is as follows: As the level of the water in the flushing tank falls, the float 9 descends and the link 10 lifts the arm 11 as will be readily understood. This relieves the pressure of this arm upon the plug 14 and permits the ball 21 to be lifted from its seat by the pressure of the water beneath it. The water then passes through the channel 16 and through the ports 18 to the interior of the tank. As the water level rises, the float 9 also rises and the pressure arising from the buoyancy of this float transmitted through link 10, arm 11, and plug 14 to the ball valve 21, forces said valve against its seat and prevents further in-flow of water. A stop 22 formed upon one of the ears 6, 6, serves to limit the movement of said float lever.

From the foregoing description, it will be seen that simple and efficient means are herein provided for accomplishing the objects of the invention, but while the elements shown and described are well adapted to serve the purposes for which they are intended, it is to be understood that the invention is not limited to the precise construction set forth, but includes within its purview such changes as may be made within the scope of the appended claims.

Having described my invention, what I claim is:

1. A ball cock comprising a casing having a water channel formed vertically therethrough, a ball valve and a seat therefor, said seat being located in said water channel and said ball valve controlling the passage of water through said water channel, bearing extensions formed upon said casing, a float lever pivoted in said bearing extensions, a stop member carried by said bearing extensions and disposed in the path of movement of said float lever, a plug having a slidable mounting within the casing above

the ball valve, and bearing loosely upon said ball valve, an arm pivoted in said bearing extensions and comprising a boss having a rounded lower face which bears loosely upon  
5 said plug, said plug having no positive connection with either said arm or the ball valve, and a link connecting the free end of said arm with the free end of the float lever.

10 2. The combination with a valve casing having a threaded lower end and an opening therethrough, said opening having a reduced portion therein and there being a  
15 valve seat formed at the upper end of said reduced portion of the opening, of a ball valve adapted to rest upon said valve seat, ports formed in the wall of the casing adjacent said ball valve, a plug slidably mounted in the casing and bearing upon said ball  
20 valve, upstanding ears formed upon said casing, a float lever pivoted between said ears, an arm pivoted between said ears, a boss formed upon said arm and bearing loosely upon said plug and a link pivotally  
25 connecting the end of said arm and the end of said float lever.

3. The combination with a valve casing having a threaded lower end and an opening therethrough, said opening having a reduced portion therein and there being a  
30 valve seat formed at the upper end of said reduced portion of the opening, of a ball valve adapted to rest upon said valve seat, ports formed in the wall of the casing adjacent said ball valve, a plug slidably mounted in the casing and bearing upon said ball  
35 valve, upstanding ears formed upon said casing, a float lever pivoted between said ears, an arm pivoted between said ears, a boss formed upon said arm and bearing  
40 loosely upon said plug, a link pivotally connecting the end of said arm and the end of said float lever, and a pair of horizontally disposed flanges formed upon said casing  
45 between which said ports are located.

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

GEORGE OTIS THOMPSON.

Witnesses:

RICHARD A. MABEY,  
GEO. W. SMITH.

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