

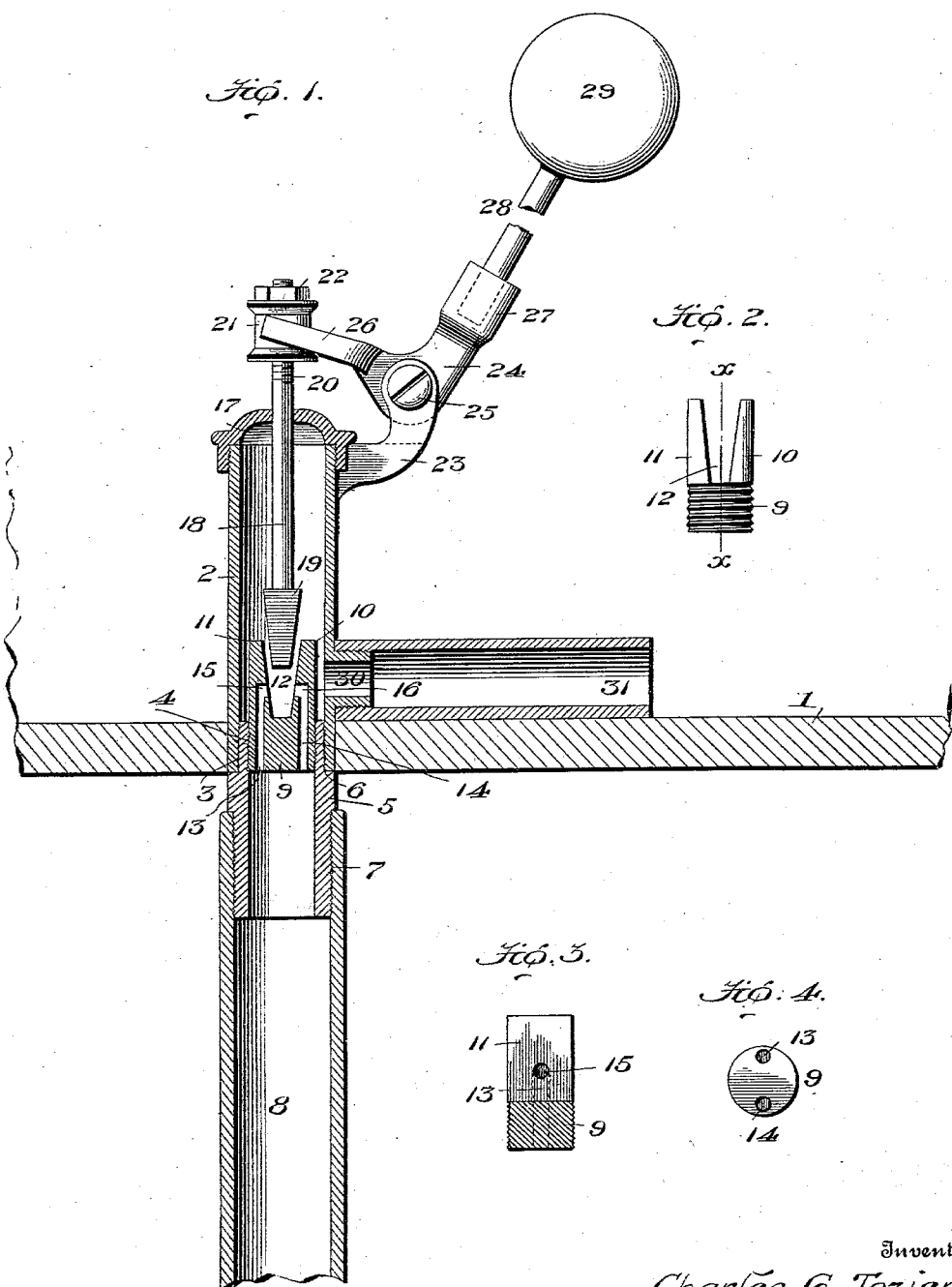
No. 752,314.

PATENTED FEB. 16, 1904.

C. C. TOZIER.
BALL COCK VALVE.

APPLICATION FILED NOV. 14, 1903.

NO MODEL.



Witnesses

Wm. D. ...
Geo. J. Thom.

By

Inventor
Charles C. Tozier.

E. M. Bond
Attorney

UNITED STATES PATENT OFFICE.

CHARLES C. TOZIER, OF SKOWHEGAN, MAINE, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO MAINE VALVE COMPANY, A CORPORATION OF MAINE.

BALL-COCK VALVE.

SPECIFICATION forming part of Letters Patent No. 752,314, dated February 16, 1904.

Application filed November 14, 1903. Serial No. 181,153. (No model.)

To all whom it may concern:

Be it known that I, CHARLES C. TOZIER, a citizen of the United States of America, and a resident of Skowhegan, in the county of Somerset, State of Maine, have invented certain new and useful Improvements in Ball-Cock Valves, of which the following is a specification.

This invention relates to certain new and useful improvements in ball-cocks; and it has for its objects, among others, to provide a simple and cheap yet durable and efficient construction of ball cock or valve wherein the parts may be readily assembled or separated for the purpose of repairs or otherwise, as for the renewal of worn parts or for economy of space in shipment or storage.

Another object of the invention is to so construct the fork and its passages that the force of the streams will be broken, and thus not wear on the plug. Thus its life is materially increased or lengthened. The plug is so disposed that when it is drawn back to allow the water to flow through the ball-cock it is out of the force of the water, and thus the wear is taken from the plug.

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

The invention in its preferred form is clearly illustrated 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 my invention. Fig. 2 is a side elevation of the fork removed. Fig. 3 is a longitudinal section through the same on the line *xx* of Fig. 2. Fig. 4 is a bottom end view of the same.

Like numerals of reference indicate like parts throughout the several views.

Referring now to the details of the drawings, 1 designates a portion of a tank of usual construction to which my improvement is applied in any well-known way. It may be applied to the side, or, as in the present instance, the numeral 1 indicates the bottom of the tank,

into which is secured the vertical pipe 2, which is screw-threaded, preferably interiorly, as shown at 3, to receive the threaded portion 4 of the short pipe or coupling 5, which has a shoulder 6, against which the lower end of the pipe 2 abuts, the lower end of the coupling or pipe 4 being screw-threaded, as at 7, to receive the surface or supply pipe 8. All this, however, is a matter of detail that may be varied as circumstances may require or as it may be found most desirable.

The pipe or coupling 4 has screwed therewith, so as to be readily removed when desired, the plug 9, which is forked at its upper end to form the two forks or branches 10 and 11, the V-shaped or tapered chamber 12 thus formed being readily seen in Figs. 1 and 2.

13 and 14 are vertical passages through the lower portion of the plug. These extend to a point above the bottom of the chamber or recess 12 and thence extend horizontally, opening into the said chamber, as at 15 and 16, respectively. While I have chosen to show in this instance the openings 15 and 16 as opposite each other and show only two such openings, it is apparent that they may be otherwise disposed and that a greater number may be provided; but in all cases they are so disposed as to break the force of the current, and thus relieve the parts of the wear that would otherwise occur.

The pipe 2 has a cap 17, through which is mounted to reciprocate the stem or rod 18, the lower end of which has formed integral therewith or rigidly affixed thereto and movable therewith the valve or plug 19, which, as seen in Fig. 1, is tapered or wedge-shaped to correspond to the shape of the chamber 12, so that when forced down into said chamber it makes a tight fit and effectually shuts off the flow of water through the cock.

The rod or stem 18 is screw-threaded at its upper end, as seen at 20, and this end receives a grooved roller 21, the end of the rod or stem above the roller being provided with a nut 22, by which the relative position of the roller on the rod can be adjusted as may be desired.

23 is an arm or bracket extending from the upper end of the pipe 2, and in the outer end

of this bracket is pivoted the bell-crank lever or arm 24, its pivot 25 being made removable, and the horizontal arm of this lever is bifurcated, and the bifurcations (only one of which, 5 26, is seen in Fig. 1) embrace loosely the grooved roller to decrease the frictional contact of these parts, and thus lessen the friction as the parts are operated.

The arm 24 has its other branch provided 10 with a socket 27, into which is received one end of the float-stem 28, which carries at its free end the float or ball 29 of usual construction.

The pipe 2 has the lateral nipple or branch 30, which receives on its threaded end a short 15 piece of pipe 31, extending into the tank.

The operation will be readily understood from the foregoing description when taken in connection with the annexed drawings, and a further detailed description thereof does not 20 seem necessary further than to state that as the ball is lifted by the water in the tank the wedge-shaped member 19 is forced down into the chamber 12, so as to close the ports or openings 15 and 16, and as the water in the 25 tank lowers the ball drops and the member 19 is raised out of its chamber 12, and when in position to disclose or open the ports 15 and 16 it is up out of the way of the force of the incoming water, and the force of the latter is 30 brought by reason of the right-angled passages through which it has to pass, and the ports 15 and 16 being disposed so that the water coming therethrough must of necessity strike the one stream against the other the force of 35 such streams will be broken and the wear on the parts thus prevented.

The proportions of the parts may be varied at will without affecting the operativeness of the device.

40 Modifications in detail may be resorted to without departing from the spirit of the invention or sacrificing any of its advantages.

What I claim as new is—

1. In a device of the character described, a 45 member having vertical and lateral passages disposed to cause the water flowing there-through to intersect, of a member controlled by the float and adapted to open and close the lateral passages, as set forth.

50 2. In a device of the character described, the combination with a member having vertical and lateral passages and a tapered chamber

into which the lateral passages discharge, of a wedge-shaped member controlled by the float and fitted to said chamber. 55

3. In a device of the character described, the combination with a member having vertical and lateral passages and a tapered chamber into which the lateral passages discharge, of a pipe supporting said member and having 60 lateral discharge, a stem movable in said pipe, a wedge-shaped member carried by said stem and fitted to said chamber, and a connection between said stem and the float.

4. In a device of the character described, the 65 combination with a pipe and a coupling, of a member detachably connected with the coupling and having vertical and lateral passages the latter being oppositely disposed, said member having a tapered chamber into which the 70 lateral passages discharge, and a wedge-shaped member fitted to said chamber and controlled by the float.

5. In a device of the character described, the combination with a service or supply pipe and 75 a member detachably connected therewith and having vertical passages and lateral passages disposed to break the force of the current flowing through said member, said member having a tapered chamber into which the lateral 80 passages discharge, and a wedge-shaped member fitted to said chamber and controlled by the float.

6. In a device of the character described, the combination with the member with its vertical 85 and lateral passages, of a movable plug adapted to control the flow of water through such passages, a stem carrying said plug, a grooved wheel on said stem, a pivoted bell-crank lever having bifurcated end loosely embracing said wheel, and a float connected with 90 said lever, as and for the purpose set forth.

7. In a device of the character described, a member having screw-threaded end, tapered 95 forks with a chamber therebetween, and vertical passages through the body portion of said member and lateral passages leading therefrom and communicating with said chamber.

Signed by me at Skowhegan this 12th day of November, 1903.

CHARLES C. TOZIER.

Witnesses:

MYRTIS E. GEUTHNER,
ERNEST C. BUTLER.