

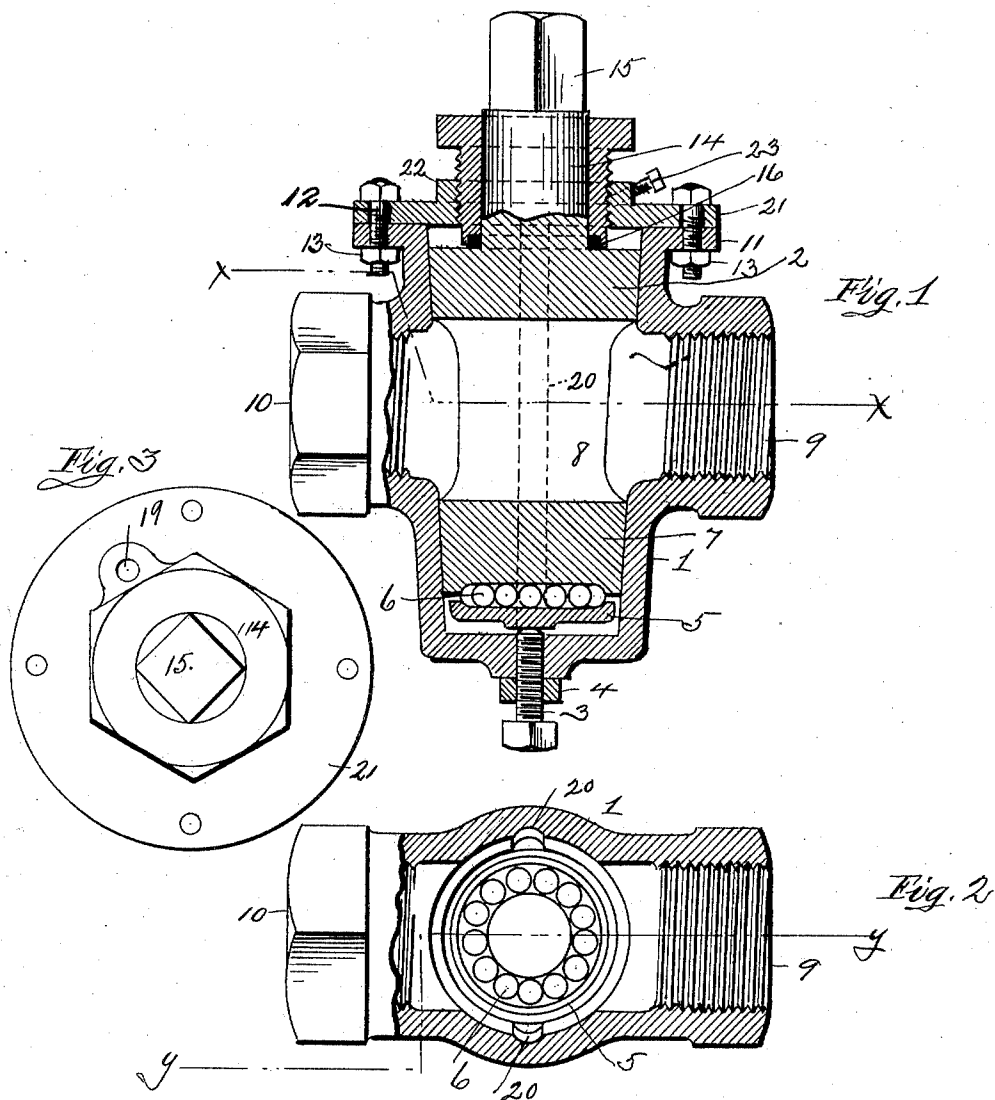
No. 760,546.

PATENTED MAY 24, 1904.

H. J. MORELAND.
VALVE OR COCK.

APPLICATION FILED DEC. 18, 1902.

NO MODEL.



WITNESSES:
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UNITED STATES PATENT OFFICE.

HENRY J. MORELAND, OF PITTSBURG, PENNSYLVANIA, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, OF ONE-FOURTH TO M. E. HARRISON AND JAMES I. GALBREATH, OF PARNASSUS, PENNSYLVANIA.

VALVE OR COCK.

SPECIFICATION forming part of Letters Patent No. 760,546, dated May 24, 1904.

Application filed December 18, 1902. Serial No. 135,782. (No model.)

To all whom it may concern:

Be it known that I, HENRY J. MORELAND, a citizen of the United States, residing at Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Valves or Cocks, of which

Improvement the following is a specification. This invention relates to an improved valve or cock; and it consists in the certain details of construction and combination of parts, as will be fully described hereinafter.

The object of the invention is to provide a self-lubricating valve or cock, thereby preventing the plug of the same from becoming set or difficult to move, also to provide the same with ball-bearings to reduce the friction, also to provide a means of adjusting the plug in the casing to the proper position and holding the same in this position, whereby the plug may not work down and become tight, and also to provide oil-ducts in the shell or casing to properly lubricate all the working parts of the cock.

In the accompanying drawings, Figure 1 is a side sectional elevation of my improved cock or valve, a part of which is shown in elevation, the same being constructed and arranged in accordance with my invention. Fig. 2 is a sectional plan view, the said section being taken on the line X X of Fig. 1. Fig. 3 is a plan view of the top cap or cover of the valve.

To put my invention into practice, I provide a shell 1 of a suitable size and form of construction having an inner annular tapering bore open at the top and closed at the base and being provided with the usual inlet 9 and outlet connections 10 and also with a flange 11 about the top. Operating through the center of the base is a threaded set-screw 3, having a jam-nut 4 and entering the inner chamber of the valve-casing 1. Resting upon the top of this set-screw 3 is a disk 5, loosely arranged within the casing 1 and having formed in the top surface near the periphery a shallow groove, in which a series of balls 6 are placed in order that a ball-bearing may be formed between the lower end of the plug 7

and the said disk 5. This plug 7 is tapered and circular in cross-section and is provided with the usual opening 8, registering with the inlet and outlet openings 9 and 10, and the top of the said plug formed with a cylindrical portion 14 and a square end 15, the said end being used for turning the plug either with a wrench or other means.

Arranged upon the top of the casing 1 and attached thereto by means of bolts 12 and nuts 13 is a cap-piece 21, having an annular threaded boss 22, in which a gland is made to operate, the said gland being counterbored and fitted with a metallic packing 16. The bolts attaching the top piece 21 to the flanges of the casing operate in threaded openings formed in the said flange 11 and are fitted with nuts 13, by which construction the said cap-piece may be locked in a position above the flange should the top of the plug 2 project above the surface of the same. An opening 19 is formed in the top piece, by means of which oil may be introduced to the parts of the valve, and formed at suitable points at the inner side of the casing are oil-ducts 20, leading from the top of the bore to the base, permitting the lubricant access to the lower working parts of the valve. A small set-screw 23 is arranged in the base of the boss of the top piece or cap for the purpose of impinging against the threads of the gland 16 to prevent the same from turning.

In operation a suitable lubricant is introduced into the casing 1, filling the ducts and all intervening space not occupied by the parts of the valve. The plug may be adjusted to any height by means of the set-screw at the base and held in the desired position by the gland at the top, the ball-bearings reducing the friction at the base to the minimum. The ducts in the side walls of the casing lubricate the plug, preventing corrosion, making the plug easy to operate, and acting as a seal and preventing any slight imperfections between the walls of the casing and that of the plug.

Various modifications and changes may be made in the details of construction without departing from the spirit of the invention,

such as providing a ball-bearing between the top of the plug and cap-piece, also providing gearing in connection with plug in case the invention is in use on large valves. Therefore
5 I do not confine myself to the exact construction shown and described.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

10 The combination with a shell having an opening in its top and side walls, a plug mounted in said shell and being formed with a transverse opening adapted to register with the openings in the side wall of said shell, the upper and lower ends of said plug being spaced
15 from the top and bottom of said shell, a gland projecting through the opening in the top

wall of said shell and engaging said plug, the interior of said shell being formed with vertical grooves, the lower end of said plug being formed with a groove, a disk supported
20 on a screw projecting through the bottom of the shell, and balls arranged in said plate and engaging the groove in the lower end of the plug, said top wall of the shell being provided
25 with an oil-opening.

In testimony whereof I have hereunto signed my name in the presence of two subscribing witnesses.

HENRY J. MORELAND.

In presence of—

JOHN C. THOMPSON,

ETHAN ALLAN.