G. WILKINSON.

VALVE.

APPLICATION FILED JAN. 3, 1910.

982,108. Patented Jan. 17, 1911.

Fig. 1

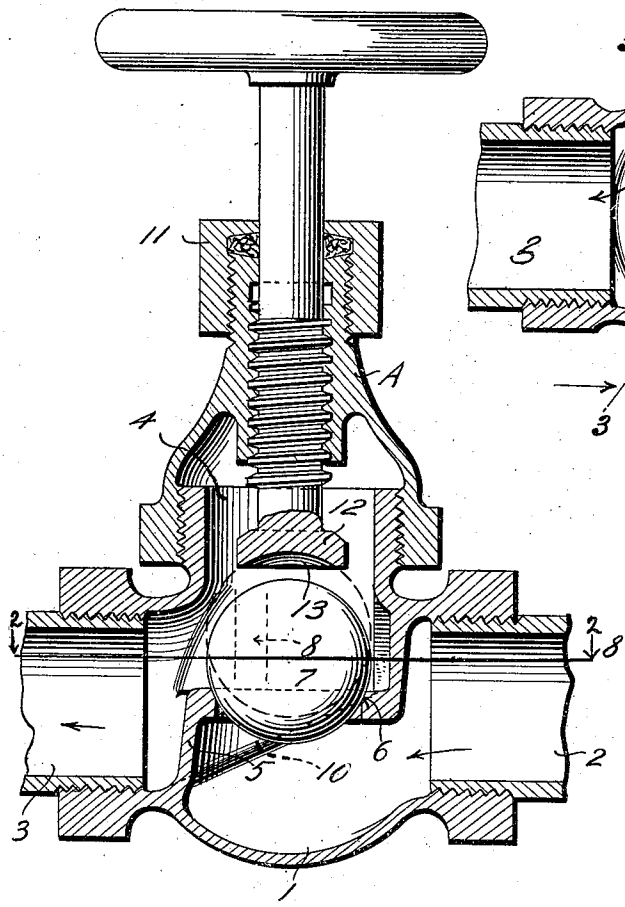
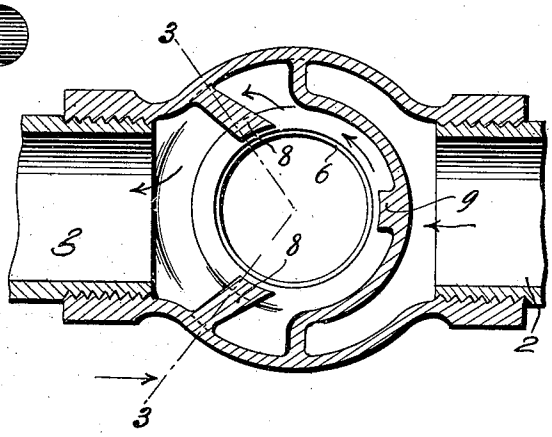


Fig. 2



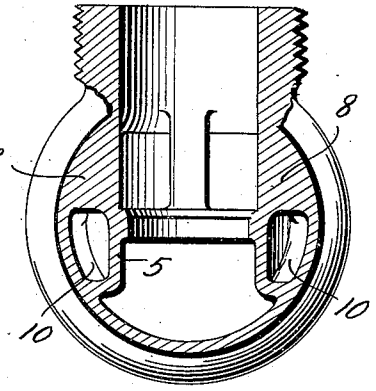


Fig. 3

Witnesses

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VALVE.

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To all whom it may concern:

Be it known that I, GEORGE WILKINSON, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Valves, of which the following is a specification.

This invention relates to valves and more particularly to combined globe and check valves.

This invention resides in the construction of a cage in the body of the valve, said cage being formed of three ribs, two of said ribs being located on either side of the outlet port, and so arranged as to allow the water to pass under the base of each rib. This is done in order to impart a circular motion to the ball, forming the essential feature of the valve and as a result cause the ball to grind itself to a seat and prevent any pounding or noise as has heretofore been experienced in other ball check valves.

A further object of this invention is to construct a bonnet for the valve having a valve stem rotatably mounted thereon in such a manner that the ball is held in position against the base of the valve stem and rotated there against. This construction makes it possible to grind all mud and dirt which passes through the valves of this nature and is driven along with the water, consequently preventing all clogging or corroding in the cylinder of the valve or the bonnet. A feature of this character eliminates the necessity of cleaning the valve and increases the utility and effectiveness thereof. In all boiler plants it is necessary to provide in the feed water line a globe and a check valve to conform with the Underwriters' rules. The advantage of the valve herein described and claimed is obvious in as much as it combines a check and a globe valve and reduces greatly the expense and labor of operating boiler plants.

With the above and other objects in view, this invention consists of the construction, combination, and arrangement of parts all as hereinafter more fully described, claimed and illustrated in the accompanying drawings, wherein:

Figure 1 is a central longitudinal section of a valve constructed in accordance with the present invention; Fig. 2 is a horizontal section thereof taken along the line 2—2 of Fig. 1; Fig. 3 is a view taken along line 3—3 of Fig. 2.

The valve forming the subject-matter of the present invention comprises a body portion 1 having an inlet port 2 and an outlet port 3, and a stem opening 4, said stem opening being provided with a bonnet A hereinafter more fully referred to. On the interior of the body portion 1 is formed a curved vertical partition 5 which on one side thereof faces the lower side of the outlet port and on the opposite side faces the upper side of the inlet port, said partition being provided with a centrally located horizontal opening 6 in which rests the ball 7.

A series of ribs form the cage for the ball and are so constructed that the outlet opening 3 is flanked by the ribs 8 and the inlet opening has adjacent thereto the rib 9. The ball 7 operates loosely between these ribs and is retained therein with the elimination of all claws and catches that have heretofore been used.

Behind and under each of the ribs 8 is formed a passage 10 through which a portion of the water passes when flowing through the valve, imparting a circular motion to the ball incased by said ribs.

The bonnet indicated in general as A is constructed in a manner very similar to those of heretofore and is threaded to the stem opening 4 of the valve. This bonnet has rotatably mounted therein the stem 11, at the base of which is formed the transverse flange 12, said flange having the concaved portion 13 on the lower side thereof.

From the foregoing it will readily be seen that the water entering the inlet port 2 exerts a pressure against the ball 7 and if the stem is raised causes the ball to rise and the water to flow through the opening 6. After the water has passed through the opening 6, a portion of it goes directly through the outlet opening, while the remainder passes through the passages 10 under the ribs 8, imparting a circular motion to the ball, and as a result causes the same to grind itself to a seat and to mutilate all mud or dirt passing through the valve. It will also be seen that through the provision of the stem 11, the valve has the same action as a globe valve and when the stem 11 is raised, the valve performs all of the functions of a check valve and operates in a very effective

manner, thus combining a globe and check valve.

Having thus described my invention, what I claim as new is:

1. In a valve of the class described, the combination with a body portion, of an inlet and an outlet port, a partition in the body portion having a part arranged above said inlet port and a part below said outlet port, a plurality of ribs formed in said body portion, a ball check valve adapted to reciprocate between said ribs, and means whereby said ball is rotated within said ribs.

2. A combined globe and check valve comprising, a body portion having an inlet and an outlet port, a partition arranged in said body portion having a central orifice therein, a series of ribs surrounding said orifice, a ball loosely reciprocating between said ribs and adapted to rest normally in said central opening, a bonnet carried by said body portion, a stem rotatably mounted in said bonnet provided with a transverse flange concaved on its lower surface to conform with the contour of the ball, and means whereby rotary motion may be imparted to the ball comprising a pair of sloping outlet openings under the ribs located on each side of the outlet port and adjacent said partition.

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

GEORGE WILKINSON.

Witnesses:
MAHLON VAN BOOSKIRK,
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