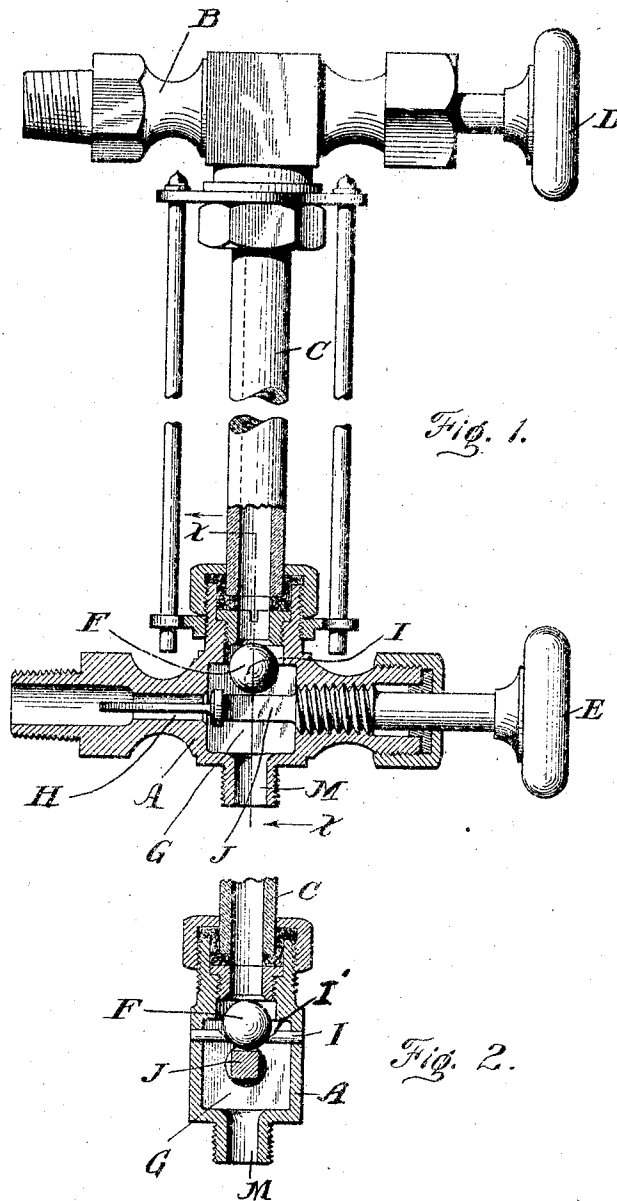


F. J. O'LEARY.
WATER GAGE.
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1,002,432.

Patented Sept. 5, 1911.



Witnesses
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By *[Signature]*
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UNITED STATES PATENT OFFICE.

FRANK J. O'LEARY, OF DETROIT, MICHIGAN, ASSIGNOR TO PENBERTHY INJECTOR COMPANY, OF DETROIT, MICHIGAN, A CORPORATION OF MICHIGAN.

WATER-GAGE.

1,002,432.

Specification of Letters Patent.

Patented Sept. 5, 1911.

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To all whom it may concern:

Be it known that I, FRANK J. O'LEARY, a citizen of the United States of America, residing at Detroit in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Water-Gages, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention relates to water gages for steam boilers and consists in certain provisions made in the construction of the water arm of the gage with the object in view to prevent the ball valve in said arm, which is
15 designed to operate automatically on the breaking of the glass of the gage, from becoming inoperative by sticking to its seat due to its liming up or from corroding, all as more fully hereinafter described and
20 shown in the accompanying drawings, in which—

Figure 1 is an elevation of a water gage provided with the improved water arm, the same being shown in central vertical section
25 and Fig. 2 is a vertical cross section of the water arm on line $x-x$ Fig. 1.

Referring to the drawings A is the water arm, B the steam arm, C the gage glass, D and E the valves controlling the admission
30 of steam and water respectively to the gage glass and M the blow-off having the usual blow-off cock (not shown) the parts being of the usual description and operation.

F is the ball valve inclosed in the chamber
35 G formed in the end of the water arm below the gage glass and communicating with the boiler through the passage H controlled by the valve E. The ball F is provided with two alternative seats for its normal support,
40 one of these seats is formed by means of two pins or supports I projecting from opposite sides of the chamber and adapted to support the ball on opposite sides below its center of gravity and the other seat is formed by
45 the stem of the valve which passes directly beneath the ball and is provided with a squared portion J.

In practice, the parts being arranged as shown, it will be seen that every time the handle of the valve E is turned to blow off
50 the gage, the ball is lifted by the squared portion of the stem against the downward pressure of the steam and is also given a rolling motion at the same time within the space in which it is confined. This great
55 agitation from three to six times a day as in the usual practice of blowing off that number of times prevents the ball from ever becoming limed up or stuck fast under the most unfavorable conditions.

Should the stem of the valve be removed the pins I will support the ball in position within the upper portion of the chamber. The inner ends of the pins are beveled at I' to guide the ball in its movement and keep
60 it centered upon the valve stem.

It is obvious that the portion J of the valve stem may be given any other cross section adapted to impart a lifting motion to the ball by turning the stem and the term
70 square is intended to include all such equivalents.

What I claim as my invention is:—

In a water gage, the combination with the water arm and its controlling valve, the
75 stem of which passes through the water chamber in the end of the arm, of an automatic ball valve in said chamber normally supported by the valve stem in the chamber above the valve stem, and two pins project-
80 ing from opposite sides of the chamber and adapted to support said ball upon opposite sides below its center of gravity independently of the valve stem, the ends of the pins being beveled and the portion of the stem
85 supporting the valve being squared.

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

FRANK J. O'LEARY.

Witnesses:

C. R. STICKNEY,
A. M. SHANNON.