(No Model.)

W. A. McFARLANE & S. A. BARRETT.

WATER GAGE.

No. 452,678. Patented May 19, 1891.

Fig. 1.

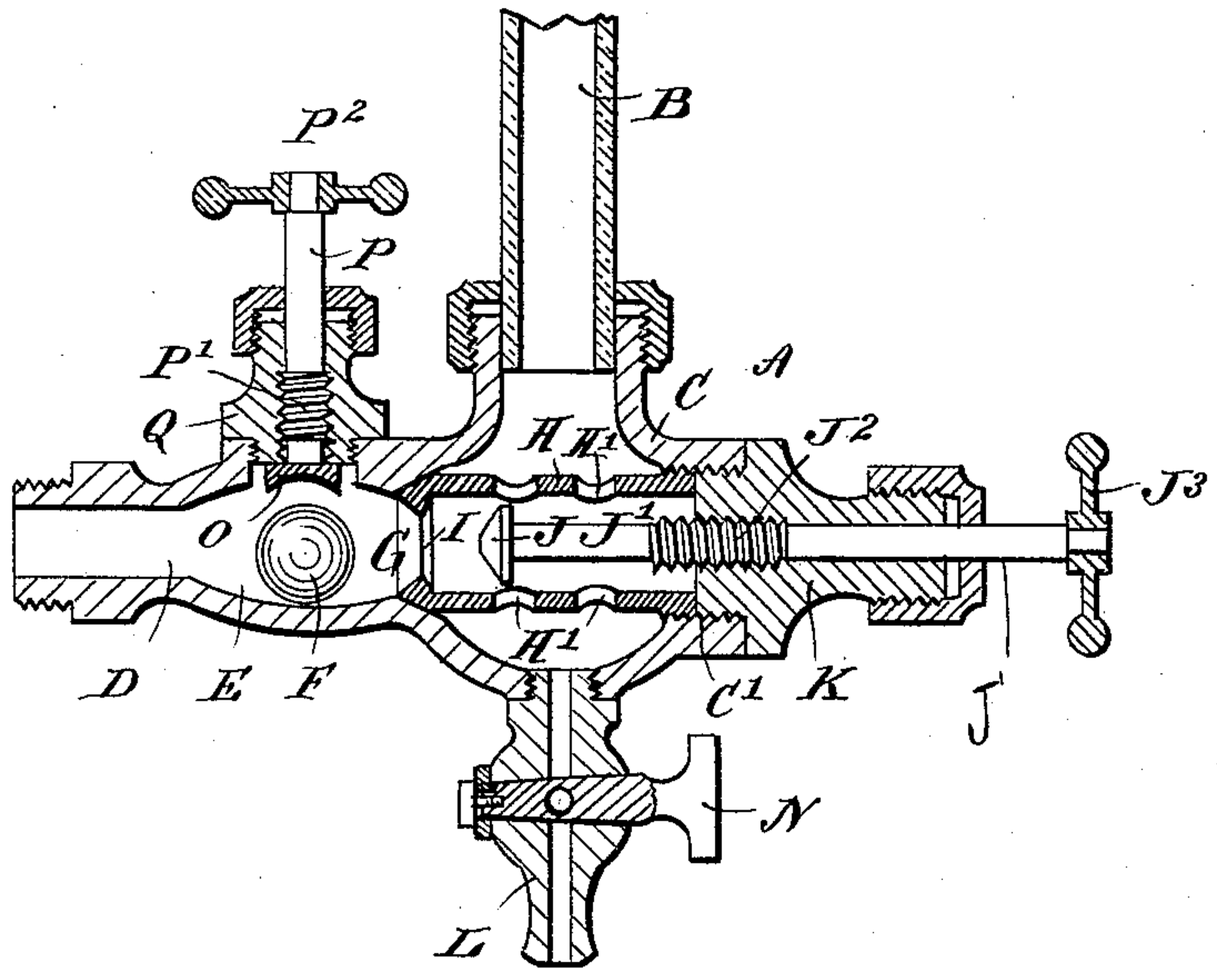
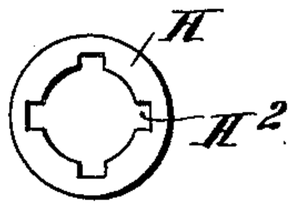


Fig. 2.



WITNESSES:

Donn Twitchell

C. Sedgwick

INVENTOR:

W. A. McFarlane

BY S. A. Barrett

Munn & Co

ATTORNEYS

UNITED STATES PATENT OFFICE.

WILLIAM A. McFARLANE AND SIMEON A. BARRETT, OF SAN BERNARDINO, CALIFORNIA.

WATER-GAGE.

SPECIFICATION forming part of Letters Patent No. 452,678, dated May 19, 1891.

Application filed December 29, 1890. Serial No. 376,106. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM A. McFARLANE and SIMEON A. BARRETT, both of San Bernardino, in the county of San Bernardino and State of California, have invented a new and Improved Water-Gage, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved water-gage which is simple and durable in construction and designed to prevent the overflow of steam and water in case the glass breaks, and to permit of readily blowing off the gage whenever desired.

The invention consists of a ball placed loosely in each of the cocks and adapted to be secured in place whenever it is desired to blow off the gage.

The invention also consists of certain parts and details and combinations of the same, as will be hereinafter fully described, and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in both the figures.

Figure 1 is a sectional side elevation of the improvement, and Fig. 2 is an end view of the valve-plug.

The improved water-gage is provided with two cocks A and the usual connecting-glass B. Each cock A is provided with a casing C, having a hollow extension D screwing in the boiler, so as to establish a communication between the interior of the boiler, the casing C, and the glass B. In the hollow extension D is formed an enlargement E, in which is held a ball F, adapted to be seated on a valve-seat G, formed on the outer end of a valve-plug H, screwing with its other end in a screw-thread C′, formed in the casing C opposite the hollow extension D. The valve-plug H thus extends across the casing C, and is provided in its wall with a series of openings H′ and with a second seat I, arranged at the outer end of the plug at the back of the valve-seat G. This valve-seat I is adapted to be engaged by a valve J, held on a valve-stem J′, passing centrally through the plug H and provided with a screw-thread J^2, screwing in a cap K, screwing on the thread C′, previously mentioned. The valve-stem J′ is packed in a suitable manner on the outer end of the cap K, and the extreme outer end of the said valve-stem is provided with a handle J^3 for conveniently turning the valve-stem to move the valve J to or from the valve-seat I. In the bottom of the casing C is secured the petcock L, provided with the usual valve N, which when opened serves to blow off the gage.

In order to lock the ball F in place in the enlargement E whenever it is desired to blow off the gage, a clamping-plate O is provided, curved on the under side to fit onto part of the spherical surface of the ball. The clamping-plate O is held on the lower end of a valve-stem P, provided with a screw-thread P′, screwing in a cap Q, secured to the extension D, as is plainly indicated in Fig. 1. The valve-stem P is packed by a suitable stuffing-box on the outer end of the cap Q, the extreme outer end of the valve-stem P being provided with a suitable handle P^2.

When the several parts are in the position shown in Fig. 1, the water from the boiler can pass through the extension D into the plug H, and from the latter through the openings H′ into the interior of the casing C and to the glass B. Now when the glass B breaks the pressure of the water from the boiler acts on the ball B and forces the same against the valve-seat G, so that the water cannot escape into the casing C and out through the broken end of the glass B. When such an accident has happened, the ball F thus effectively shuts off the water. The operator, by turning the handle J^3, can then move the valve J onto its seat I, so as to prevent any escape of water into the casing C. The operator can then place a new glass B in position on the two cocks.

When it is desired to blow off the gage, the operator turns the handle P^2 of the stem P, so that the clamping-plate O engages the ball F and locks the same in place in the enlargement E. The operator then opens the valve N of the petcock L, so that the water can freely pass through the casing C into the said petcock L and out of the same. When it is desired to take out the ball F and the valve-plug H, in order to clean the gage without

disturbing the position of the two cocks and the glass B, the operator unscrews the cap K, and then unscrews the valve-plug H by inserting a suitable wrench into the recesses H^2, formed in the end of the valve-plug H, as is plainly illustrated in Fig. 2. The valve-plug H can thus be unscrewed from the thread C′, and the ball F can then be taken out of the enlargement E into the casing C, and from the latter past the thread C′ to the outside. The interior of the casing C can then be conveniently cleaned, after which the ball F is again introduced into the enlargement E, the valve-plug H is screwed in again, and then the cap K, with the valve J, is screwed in its former place, as indicated in Fig. 1. It is understood that it is quite necessary to lock the ball F in place when it is desired to blow off the gage, as otherwise the ball F would seat itself on the seat G of the plug H, thereby preventing blowing off of the gage.

Having thus fully described our invention, we claim as new and desire to secure by Letters Patent—

1. In a water-gage, the combination, with the casing having a passage enlarged to form a valve-chamber provided with a valve-seat, and a ball in said chamber to be automatically forced to its seat by fluid-pressure, of a clamping device entering one side of the chamber and adapted to clamp the ball against the opposite side and away from its seat, substantially as set forth.

2. The combination, with the casing A, having its passage from the boiler to the glass provided with a double valve-seat, and a ball-valve to seat against one side of the seat by fluid-pressure, of a valve-stem entering the casing in alignment with the part of the passage containing the ball and provided on its inner end with a valve to seat against the opposite side of the valve-seat and close the entire passage, substantially as set forth.

3. In a water-gage, a cock comprising a casing, an apertured valve-plug held in the said casing, a valve adapted to be seated in the said valve-plug, and a ball held in an extension of the said casing and adapted to be seated on the outer end of the said valve-plug, substantially as described.

4. In a water-gage, a cock comprising a casing, an apertured valve-plug held in the said casing, a valve adapted to be seated in the said valve-plug, a ball held in an extension of the said casing and adapted to be seated on the outer end of the said valve-plug, and a clamping-plate adapted to secure the said ball in place in the said extension, substantially as shown and described.

5. In a water-gage, the combination, with a casing provided with an extension adapted to connect with the boiler, of an apertured valve-plug held in the said casing and provided in one end with a valve-seat, and a ball held in the said extension and adapted to be seated on the seat of the said valve-plug, substantially as shown and described.

6. In a water-gage, the combination, with a casing provided with an extension adapted to connect with the boiler, of an apertured valve-plug held in the said casing and provided in one end with a valve-seat, a ball held in the said extension and adapted to be seated on the seat of the said valve-plug, a petcock held on the said casing, and a clamping-plate for locking the said ball in place, substantially as shown and described.

7. In a water-gage, the combination, with a casing provided with an extension adapted to connect with the boiler and provided with a valve-chamber having a lateral cap Q and a valve-seat at the junction of said extension with the casing, of a ball held in said extension and adapted to be seated on said valve-seat, and a screw-stem working in said cap and provided on its inner end with a clamp for locking said ball in place against the opposite wall of the chamber, substantially as shown and described.

WILLIAM A. McFARLANE.
SIMEON A. BARRETT.

Witnesses:
C. A. LAWSON,
WM. G. MOORE.