(No Model.)

J. FISHBURN.

SAFETY VALVE FOR WATER GAGES.

No. 490,955. Patented Jan. 31, 1893.

Fig. 1

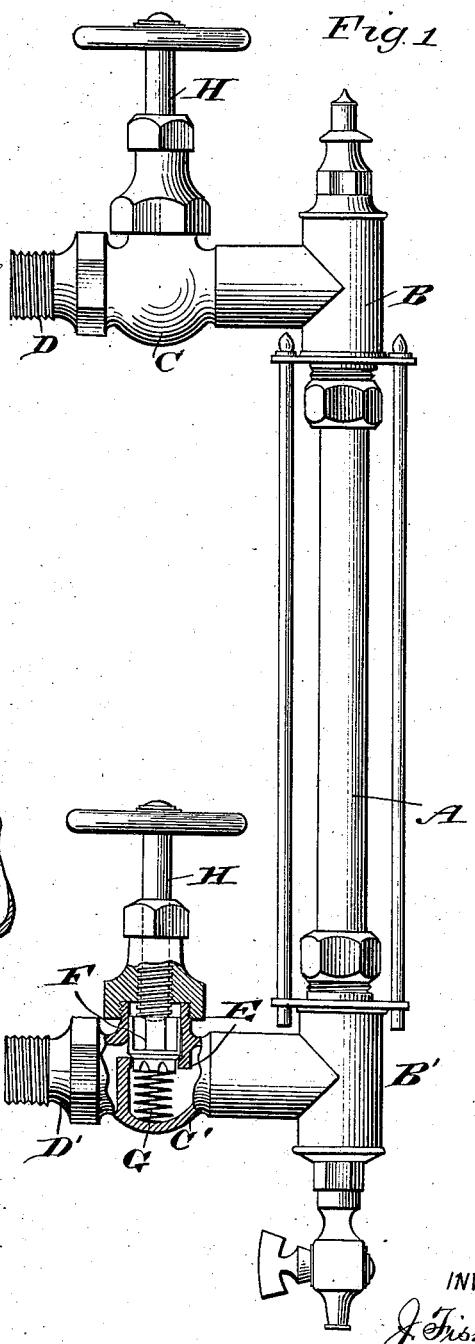
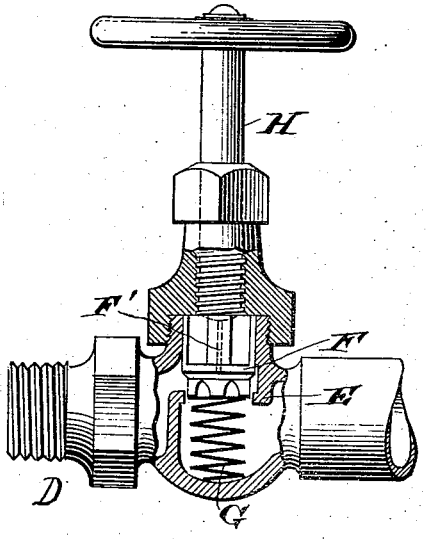


Fig. 2.



WITNESSES:

Paul Johnston

C. Bedgwick

INVENTOR

J. Fishburn

BY Munn & Co

ATTORNEYS.

UNITED STATES PATENT OFFICE.

JOHN FISHBURN, OF WALLA WALLA, WASHINGTON, ASSIGNOR TO HIMSELF, JOHN A. CAMERON, AND JOHN HENRY WATSON, OF SAME PLACE.

SAFETY-VALVE FOR WATER-GAGES.

SPECIFICATION forming part of Letters Patent No. 490,955, dated January 31, 1893.

Application filed October 4, 1892. Serial No. 447,777. (No model.)

To all whom it may concern:

Be it known that I, JOHN FISHBURN, of Walla Walla, in the county of Walla Walla and State of Washington, have invented a new and Improved Safety-Valve, of which the following is a full, clear, and exact description.

The invention relates to safety valves for steam and water gages, and its object is to provide a new and improved safety valve, which is simple and durable in construction, very effective in operation, and arranged to automatically seat itself in case of accident to the glass, to prevent the escape of steam, water, lubricant, or other substance.

The invention is an improvement in the construction of the valves, whereby a small quantity of steam is allowed to pass through them when seated, for the purpose of equalizing pressure.

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 side elevation of the improvement with parts in section; and Fig. 2 is an enlarged sectional side elevation of one of the valves.

The gage is provided with the usual stand glass A, attached at its ends in the T's B and B′, provided on their horizontal parts with globe valves C and C′, respectively, from which extend the nipples D and D′, respectively, adapted to be secured to the boiler in the proper place and in the usual manner, so that steam passes through the nipple D and water through the nipple D′. As shown in the drawings, the T B, globe valve C and nipples D, are all cast in one piece, and in a similar manner, the T B′, globe valve C′ and nipple D′ are also cast in one piece.

Each of the globe valves C and C′ is provided with a valve seat E, on which is adapted to be seated a check valve F, held normally off its seat by a spring G, placed in the bottom of the globe valve, and pressing on the under side of the check valve. A valve stem H, is adapted to engage the upper end of the check valve F, so as to force the latter to its seat and hold the same thereon against the tension of the spring, while inserting a new glass A.

In the check valve F for the upper globe valve C is arranged a small opening or aperture F′, so that when the said valve is seated, steam can pass from the nipple D through the said aperture F′, into the T B and the top of the glass A to cause an equalizing pressure beneath the check valve. The upper end of this aperture F′ is adapted to be closed by the lower end of the valve stem H of the globe valve C.

The operation is as follows: When the several parts are in position, then the valves F in both globe valves C and C′ are held off their seats by the springs G so that steam and water from the boiler can readily enter the gage in the usual manner. Now, in case the glass A breaks, the check valves F immediately seat themselves on their seats E owing to the pressure from within the boiler, it being understood that the equalizing pressure is removed by the breaking of the glass, consequently the two valves are seated by the force of the steam and water from within the boiler. An escape of steam or water from the boiler is thus prevented.

In order to insert a new glass A, the operator screws down the valve stems H, so as to securely hold and lock the valves F to their seats. The top cap is then removed, a new glass inserted in the usual manner, and then the valve stems H are screwed outward to unlock the valves F and permit the same to rise by the action of the springs G, it being understood that an equalization will take place by the water and steam passing to the glass A. The small aperture F′ and the check valve F of the globe valve C allows a sufficient quantity of steam to pass to the under side or the said valve, so that the pressure on the latter is equalized, and its spring G can readily hold the valve off its seat.

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

A gage provided in its horizontal arms with globe valves each containing a spring-pressed check valve, the check valve in the steam globe valve being provided with an aperture to permit the steam to pass to the under side of the said check valve when seated, substantially as shown and described.

JOHN FISHBURN.

Witnesses:
EUGENE THOMAS,
J. G. THOMAS.