A. W. VANDORSTON.

High and Low Water Indicators for Steam-Boilers.

No. 199,598. Patented Jan. 22, 1878.

Fig. 1.

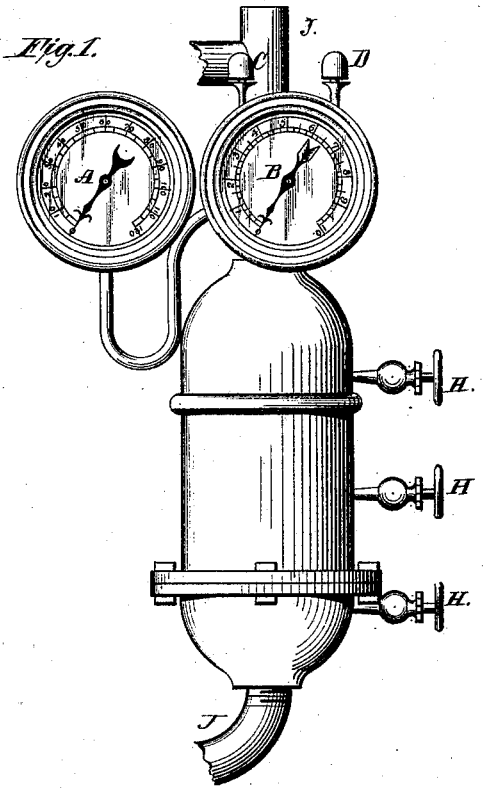


Fig. 2.

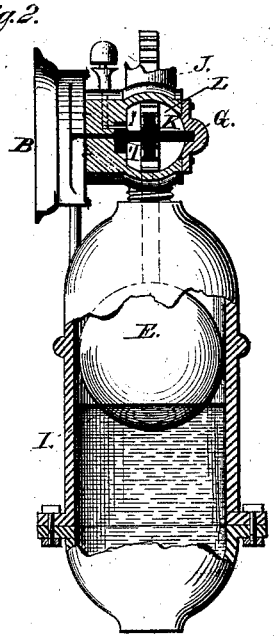
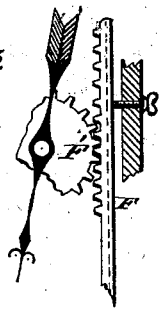


Fig. 3.



Witnesses:

Luther Myers

D. S. Roland

Inventor:

Alvin W. Vandorston

UNITED STATES PATENT OFFICE.

ALVIN W. VANDORSTON, OF SALEM, OREGON.

IMPROVEMENT IN HIGH AND LOW WATER INDICATORS FOR STEAM-BOILERS.

Specification forming part of Letters Patent No. **199,598**, dated January 22, 1878; application filed February 17, 1877.

To all whom it may concern:

Be it known that I, ALVIN W. VANDORSTON, of Salem, in the county of Marion and State of Oregon, have invented certain new and useful Improvements in High and Low Water Indicators for Steam-Boilers; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification, and in which—

Figure 1 represents a front elevation of a water-gage and alarm embodying my improvements. Fig. 2 represents a side view of the same in partial section, and Fig. 3 represents a detail view.

Similar letters of reference occurring on the several figures indicate like parts.

My invention relates to improvements in water-gage and alarm for steam-boilers; and it consists in the details of construction, and general arrangement and combination of parts, all as will be hereinafter more fully described, and pointed out in the claims.

Referring to the drawings, I represents a cylindrical chamber, having pipes J for connection with the steam-boiler, and provided with a steam-gage, A, and try-cocks H, as shown. At the upper end of this chamber I, and to one side of the pipe J, is formed a chamber, L, having a closely-fitting cap, G, at one side, provided with a journal-bearing in the center, for the reception of one end of the rod K, which passes through the chamber L to the water-gage B, where it is provided with an indicator-hand for registering the depth of water in the boiler, a cog-wheel, F′, and valve I′ being attached to said rod in the interior of the chamber, as shown.

E represents a hollow spherical float adapted to loosely fit in the chamber I, and to the upper part of which is attached a cog-stem, F, which works up and through the chamber L, and connects with and operates the cog-wheel F′, as also the rotary valve I′. D represents the low-water whistle, having a sharp sound, and C the high-water whistle, having a coarse sound, to distinguish the two apart when my invention is in operation.

A suitable set-screw is arranged in the wall of the chamber L, for the purpose of holding the cog-stem F in place upon the cog-wheel F′, as shown in Fig. 3. A suitable opening leads from the whistles C and D down to the valve I′, as shown in Fig. 2.

In the operation of my invention it will be observed that the float E, rising and falling in the chamber I, operates the cog-wheel F′ through the medium of the cog-stem F, and that, in turn, operates the rod K, carrying the valve I′ and indicator-hand of the dial, thereby enabling the height of the water in the boiler to be seen at all times.

It will also be observed that when the water in the boiler is too low or high the float E, operating the cog-wheel F′, as already described, turns the rod K to a certain point, and with it the valve I′, bringing the opening of the same in juxtaposition with the opening leading to the whistles C D, allowing of the escape of the steam and the sounding of an alarm.

Having thus described my invention, I claim as new and useful—

1. The rod K, having attached thereto the wheel F′, valve I′, and indicator-hand, in combination with the cap G, provided with a journal-bearing for said rod K, substantially as described.

2. The rod K, having attached thereto the wheel F′ and valve I′, in combination with the float E, cog-stem F, whistles C D, and water-gage B, whereby a high and low water alarm is sounded, and the height of water in the boiler indicated, substantially as described.

ALVIN W. VANDORSTON.

Witnesses:
D. S. ROLAND,
LUTHER MYERS.