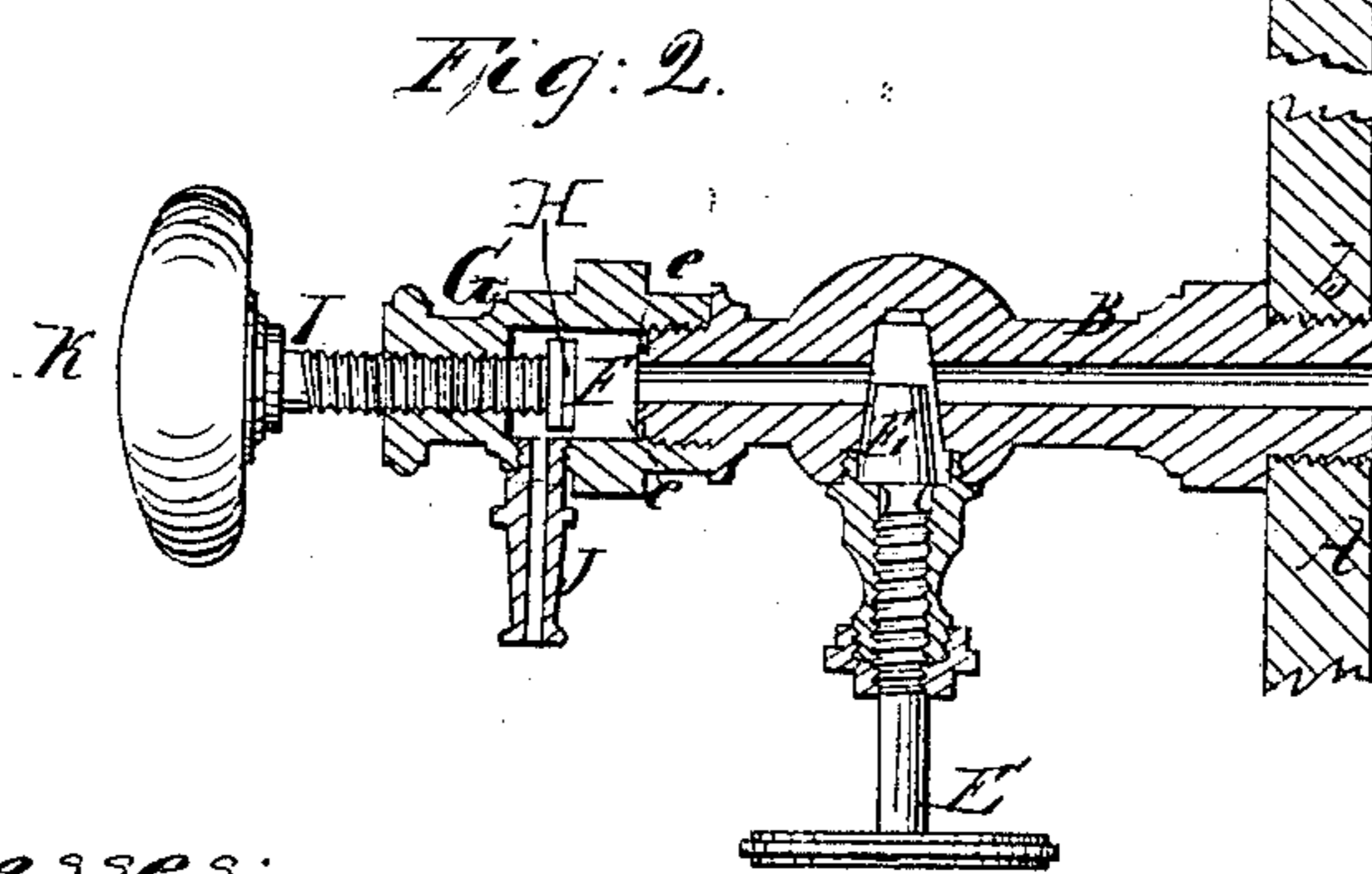
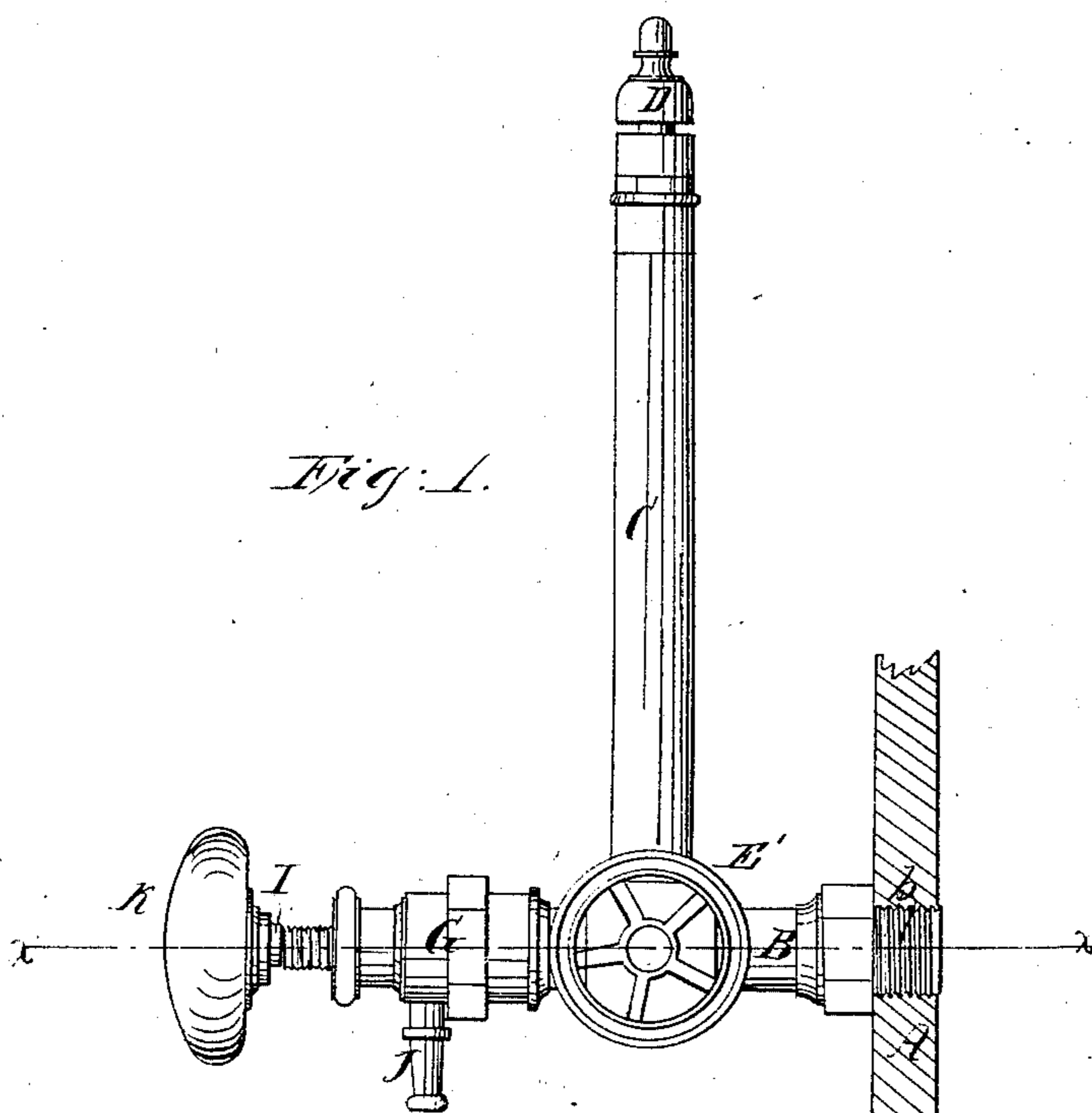


T. G. Eiswald,
Steam-Boiler Indicator.
No 80,399. Patented July 28, 1868.



Witnesses:

S. C. Keum
C. A. Pettit

Inventor:

T. G. Eiswald
By [Signature] & Co.
Attorneys

United States Patent Office.

THEODOR G. EISWALD, OF PROVIDENCE, RHODE ISLAND.

Letters Patent No. 80,399, dated July 28, 1868.

IMPROVEMENT IN LOW-WATER INDICATOR.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, THEODOR G. EISWALD, of the city and county of Providence, and State of Rhode Island, have invented a new and improved Low-Water Indicator; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a side elevation.

Figure 2 is a longitudinal vertical section.

The object of this invention is to furnish a neat and convenient instrument, which, being attached to the head of a steam-boiler, will enable the engineer at any time to try the condition of the water in the boiler, and will of itself sound an alarm-whistle when the water gets too low for safety.

In the drawings, A represents the head of the boiler, and B is a horizontal tube, tapping it, the connection being formed by the screw *b*. A vertical pipe, C, terminating in a steam-whistle, D, screws into the upper side of the tube B.

E is a plug-valve, opening and closing the central passage of the horizontal tube, and when it is seated, preventing the hot water or steam of the boiler from rising into the vertical pipe C, or from passing out beyond the valve towards the outer end of the horizontal tube. At the outer end of such tube is a chamber, F, formed by a cap, G, which screws upon the end of the tube B.

The extremity of the tube B projects slightly beyond the inner wall of the chamber F, as seen at *e*, in order that it may form a valve-seat, upon which a valve, H, shall firmly seat itself.

The valve H is attached to a stem, I, which screws through the outer end wall of the chamber, and as it is rotated, in one direction or the other, seats or unseats the valve, and allows the water or steam to pass around the valve and fill the chamber, whence it escapes through a short branch-pipe, J, to the open air. The diameter of the valve H being less than that of the chamber F, the steam or water will pass freely around it to the escape-pipe, whenever the valve is in the slightest degree removed from its seat.

The pipe C is at some convenient point provided with a fusible plug, which will be fused by the contact of steam, superheated to any given degree, and when fused, will be blown out of the pipe, leaving the steam free to sound the whistle D.

I usually place the plug at the top of the vertical pipe, in order to diminish the amount of heat conducted to it from the heated boiler-head, and render it less liable to be accidentally fused, thereby, as well as for convenience in replacing it after it has been fused and blown out.

The valve H may be faced or packed with any suitable material, such as leather, rubber, wood, &c., which, being held firmly against the end of the pipe at *e e*, will effectually close the passage, rendering it water and steam-tight.

This construction of the pipes and valves has several important advantages over all others in use heretofore, among which may be mentioned that by closing the valve E at any time, even when the steam is up, and the boiler heated, the fusible plug may be renewed in the pipe C, or the cap G may be unscrewed and removed, and a new facing added to the valve H, or any other repairs made upon it, without in the slightest degree interfering with the operation of the boiler or engine, and not only without loss of time, but with the greatest convenience.

The valve H forms a try-cock, and the upright pipe C, with its fusible plug, and its whistle, forms a low-water indicator, both being combined in a single instrument in my invention, and working in the most convenient manner in connection with each other.

I am aware that a gauge-cock and whistle have been heretofore constructed together in one instrument, but this I do not claim.

What I do claim as new, and desire to secure by Letters Patent, is—

The arrangement of the horizontal-pipe B, vertical whistle and fusible plug-tube C, plug-valve E, chambered screw-cap G, and the valve H, with its stem I and handle K, as herein shown and described.

To the above specification of my improvement I have signed my hand, this 15th day of April, 1868.

THEODOR G. EISWALD.

Witnesses:

CHAS. A. PETTIT,
SOLON C. KEMON.