Eisrald & Barbour,

Steam-Boiler Indicator.

No. 81,483. Patented Aug. 25, 1868.

Fig: 1.

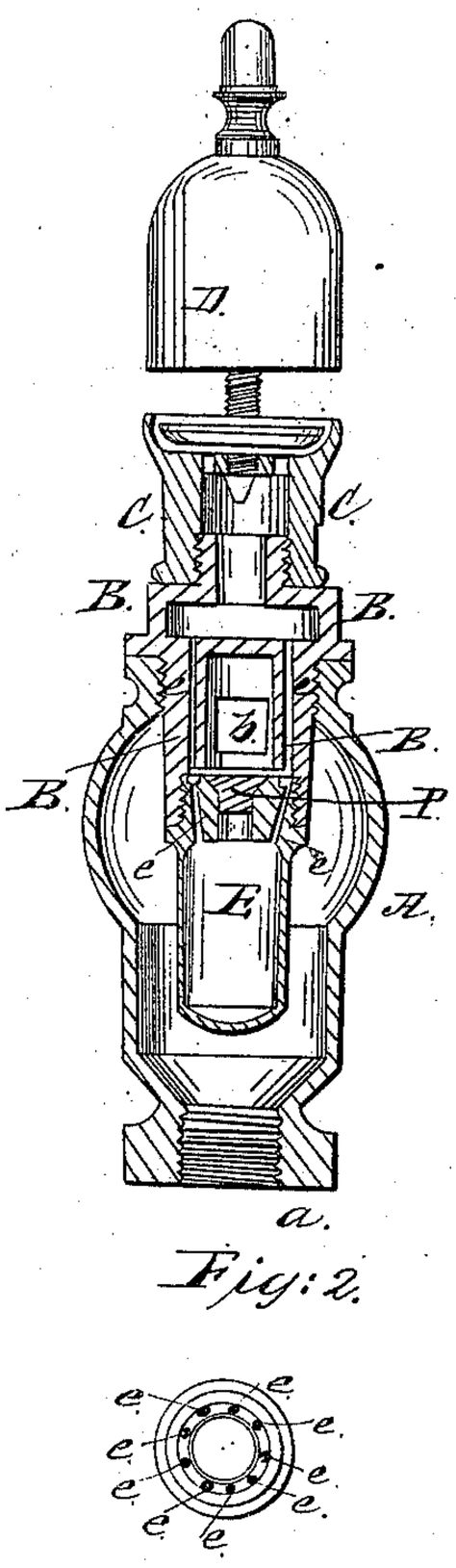

Fig: 2.

Witnesses:

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THEODOR G. EISWALD AND JAMES BARBOUR, OF PROVIDENCE, RHODE ISLAND, ASSIGNORS TO T. G. EISWALD.

Letters Patent No. 81,483, *dated August* 25, 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 we, THEODOR G. EISWALD and JAMES BARBOUR, of the city and county of Providence, and State of Rhode Island, have invented a new and improved Low-Water Indicator; and we 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 accompanying drawings, making a part of this specification, in which—

Figure 1 is a longitudinal vertical section.

Figure 2, a horizontal section through line *x x* of fig. 1.

The object of this invention is so to construct a low-water indicator that the fusible plug, when melted, shall not be blown into the whistle, but shall be forced in another direction, so as to prevent the possibility of its obstructing or interfering with the operation of the alarm-apparatus.

In the drawings, A represents an expanded and chambered tube, which is attached to the boiler, or to any suitable steam-pipe, by the connection *a*.

B is a tube screwing into the upper end of the chamber A, and C another, screwing into the upper end of tube B, and supporting the whistle D, the whole forming an instrument whose general outlines are represented in fig. 1.

The lower end of tube B projects down into the chambered or expanded portion of tube A, and there supports a hollow cup, E, which is suspended from it by a screw-thread connection. A fusible-plug valve, P, separates the interior of cup E from the interior of tube B, seating downward, as seen in fig. 1. The steam from the boiler enters chamber A, and thence passes into the interior of tube B through an aperture, *b*, in the side of the tube. It cannot thence pass upward to the whistle, since the upper end of tube B is made solid, and there is no communication in that direction between its cavity and the tube C above it. When the steam is superheated, however, from any cause, it melts and blows out the plug P, forcing the latter down into the cup E. The steam then passes into the cup, and from that escapes through pipes *e e*, in the solid walls of the tube B, and through the upper part of cup E to the cavity of tube C, and thence to the whistle, where it sounds the alarm.

The whole instrument is exceedingly simple in construction and efficient in practical operation, blowing all the material of the plug to the bottom of cup E, and preserving the whistle in good working condition at all times, so that when the plug is blown out, the whistle never fails to sound instantly.

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

1. The arrangement of the cup E, fusible plug P, tube or stem B, and openings or side pieces *e e*, or their equivalents, when constructed to operate in the manner described.

2. The arrangement of the above-described apparatus within the hollow globe, cylinder, or expanded pipe A, substantially as shown and described.

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