

J. C. LEISTNER & A. KAYSER.

Improvement in Low-Water Alarms for Steam-Boilers.

No. 128,318.

Patented June 25, 1872.

Fig. 1.

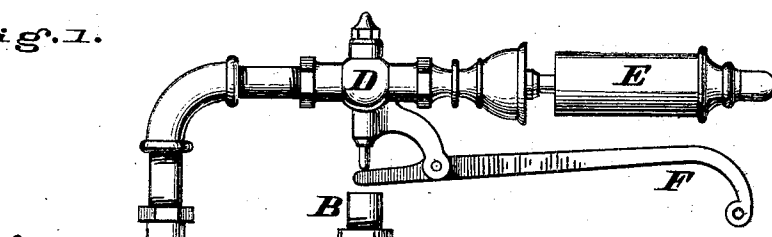


Fig. 3.

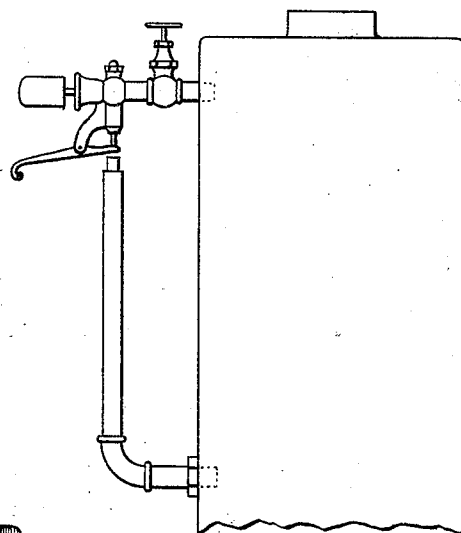
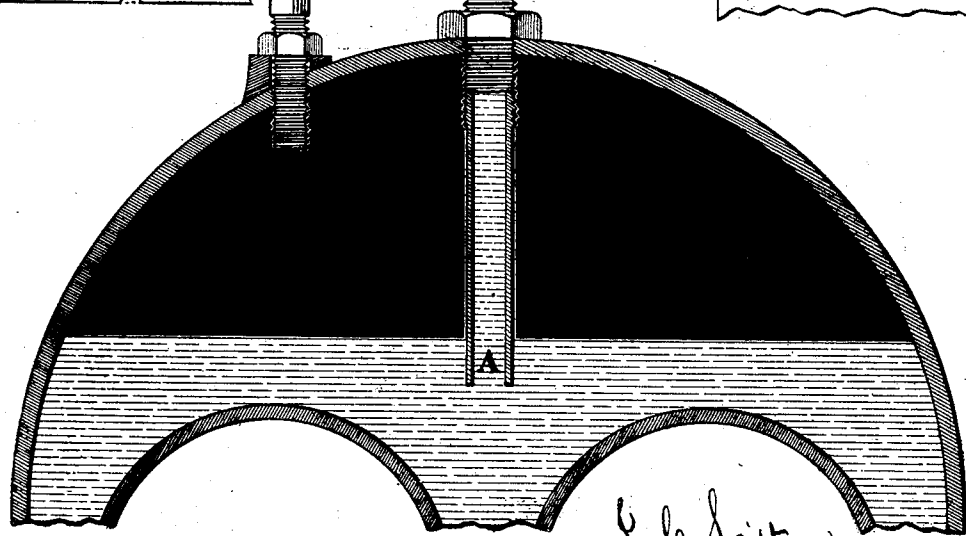
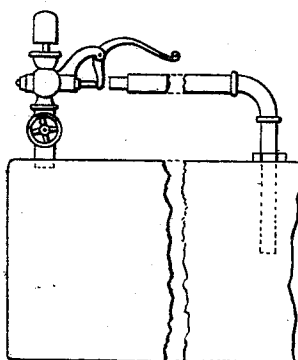


Fig. 2.



Attest.
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Atty.

UNITED STATES PATENT OFFICE.

JOHN C. LEISTNER AND AUGUSTUS KAYSER, OF CINCINNATI, OHIO.

IMPROVEMENT IN LOW-WATER ALARMS FOR STEAM-BOILERS.

Specification forming part of Letters Patent No. 128,318, dated June 25, 1872.

Specification of Low-Water Alarm invented by us, JOHN C. LEISTNER and AUGUSTUS KAYSER, both of Cincinnati, Hamilton county, Ohio.

Nature and Objects of the Invention.

This is an improved form of those low-water alarms which act by the expansion of a tube consequent on the entrance of steam. This tube, in our invention, is entirely closed at its outer end, and therefore incapable of interfering with the alarm-valve or with the whistle; and our steam-pipe proper, which sounds the whistle, also performs service as a frame to hold the valve for the action of the expansible tube, thus rendering a special frame for this purpose unnecessary.

Description with Reference to the Drawing.

Figure 1 is a partly-sectionized elevation of a high-pressure alarm embodying our invention. Figs. 2 and 3 represent slightly modified forms of the same, to a smaller scale.

A is a tube which is carried into the boiler, so that its lower end shall be below the proper water-level. The lower end of this tube is open so as to communicate freely with the interior of the boiler. The upper end of said tube is permanently closed by means of a plug, B. That portion of the said tube outside of the boiler must be of sufficient length to secure the requisite expansion, when filled with steam, to open the alarm-valve, as hereinafter explained. C is a tube, one end of which en-

ters and freely communicates with the upper part of the boiler, and the other end of which terminates in a customary alarm-valve, D, and whistle E. F is a lever, by means of which the alarm-valve may be operated by hand.

Operation.

The operation is essentially the same as other alarms of this class. Water, having sunk below the level of the pipe A, gives place to steam, whose greater heat expanding the pipe longitudinally impinges on the lower end of the valve or on the lever operating it, and, opening the valve, causes the whistle to sound.

Where the room above the boiler is limited the parts may be given the form represented in Fig. 2, for a horizontal boiler, or the form represented in Fig. 3, for a vertical boiler.

Claim.

We claim as new, and of our invention—

The water-tube A closed at its upper end, and acting directly on the alarm-valve, in combination with the steam-tube C, alarm-valve D, and whistle E, all constructed, arranged, and operated as set forth.

In testimony of which invention, we hereunto set our hands.

JOHN C. LEISTNER.
AUGUSTUS KAYSER.

Attest:

GEO. H. KNIGHT,
JAMES H. LAYMAN.