(No Model.)

E. E. KILDOYLE.

LOW WATER ALARM FOR STEAM BOILERS.

No. 422,803. Patented Mar. 4, 1890.

Fig. 1.

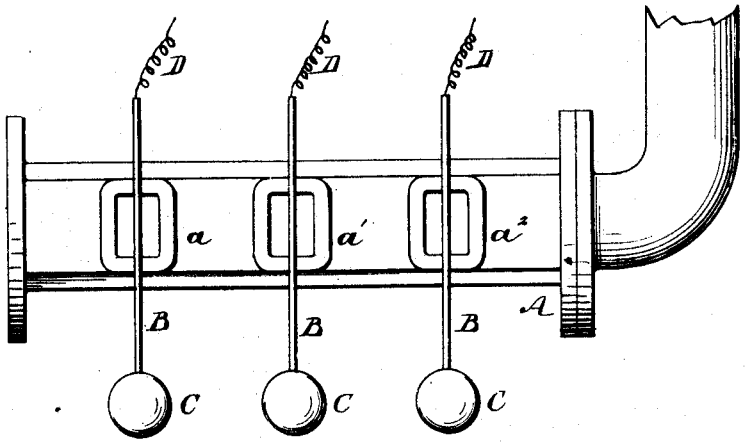


Fig. 2.

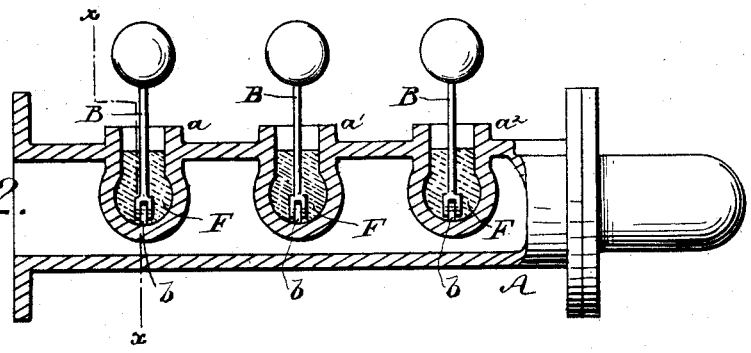
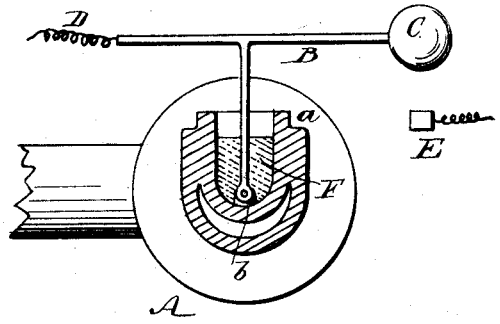


Fig. 3.



WITNESSES:

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UNITED STATES PATENT OFFICE.

EDWARD EDMUND KILDOYLE, OF YOKOHAMA, JAPAN.

LOW-WATER ALARM FOR STEAM-BOILERS.

SPECIFICATION forming part of Letters Patent No. 422,803, dated March 4, 1890.

Application filed September 16, 1889. Serial No. 323,998. (No model.)

To all whom it may concern:

Be it known that I, EDWARD EDMUND KILDOYLE, of Yokohama, Japan, have invented a new and Improved Low-Water Alarm for Steam-Boilers, of which the following is a specification, reference being had to the annexed drawings, forming a part thereof, in which—

Figure 1 is a plan view of my improved steam-boiler alarm. Fig. 2 is a side elevation, partly in section; and Fig. 3 is a transverse section taken on line x x in Fig. 2.

Similar letters of reference indicate corresponding parts in all the views.

The object of my invention is to provide a simple and reliable device for indicating low water in a steam-boiler.

My invention consists in the combination, with a pipe adapted for connection with a steam-boiler at the water-line and provided with one or more pockets, of one or more weighted levers pivoted in the pockets, a filling of fusible metal placed in the pockets and surrounding and sustaining the weighted lever or levers, and electrical connections and an alarm-circuit operated by the falling of the weighted lever, all as will be hereinafter fully described.

The pipe A, which is adapted for connection with the boiler at the water-line, is furnished with pockets a a' a^2, which project downwardly into the pipe and are open at the top thereof. At the bottom of each pocket there is an ear b, to which is pivoted a T-lever B, one arm of the T-lever carrying a weight C, the other arm being connected with a wire D, which, together with the lever, the contact-point E, arranged below the weight C, and a battery and alarm apparatus, (such as an electric bell,) form a complete electric circuit, which remains normally open when the T-lever B is in a vertical position. The said T-lever B is held in this position by fusible metal F, cast in the pocket a. The several pockets contain fusible metal adapted to melt at different temperatures, so as to insure certainty in the action of the apparatus. The pipe A is connected with the boiler at the water-line, and so long as the pipe remains full of water, there being no circulation therein, it remains cool; but when the water in the boiler drops below the mouth of the pipe A the water runs out of the said pipe, and steam takes its place and melts the fusible metal in the pockets, allowing the weighted T-levers to topple over, causing the weights C to strike the contact E, thus completing the electric circuit and giving the alarm. After the alarm is given the weighted T-levers B are held in a vertical position in any convenient way until the water-level is restored and the pipe A is cooled off, when the support of the levers is renewed and the apparatus is ready for another operation.

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

1. In a low-water indicator, the combination of the pipe A, provided with one or more pockets a, the weighted T-levers B, and the fusible metal F, substantially as specified.

2. In a low-water indicator, the combination of the pipe A, provided with one or more pockets a, the weighted T-levers B, the fusible metal F, and the electrical connections, substantially as specified.

EDWARD EDMUND KILDOYLE.

Witnesses:

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