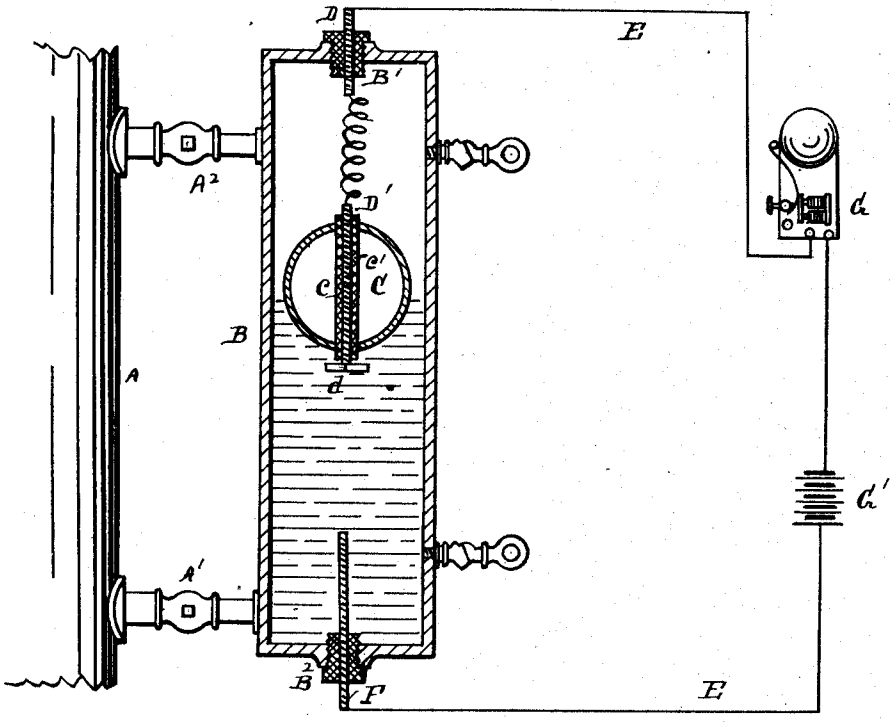
(No Model.)

J. MOREHEAD.

ELECTRIC LOW WATER ALARM.

No. 428,688. Patented May 27, 1890.



Witnesses
John Schuman
Charles F. Salow.

Inventor
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By his Attorney
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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JOHN MOREHEAD, OF DETROIT, MICHIGAN.

ELECTRIC LOW-WATER ALARM.

SPECIFICATION forming part of Letters Patent No. 428,688, dated May 27, 1890.

Application filed June 11, 1889. Serial No. 313,865. (No model.)

To all whom it may concern:

Be it known that I, JOHN MOREHEAD, a citizen of the United States, residing at Detroit, county of Wayne, State of Michigan, have invented a certain new and useful Improvement in an Electrical Low-Water Alarm; and I declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawing, which form a part of this specification.

My invention has for its object to provide an electrical low-water alarm for steam-boilers; and it consists of the devices and appliances hereinafter specified, and pointed out in the claims, and more definitely shown in the accompanying drawing, in which I have represented in side elevation a device embodying my invention with a diagram of an electric circuit with battery and alarm apparatus, the case of the water column being in section, also the interior float.

The object of my invention is to provide an electrical alarm which will be operative at all times when there is low water, whether there is any steam or not. This object I accomplish by an electrical apparatus provided with an alarm-bell or other suitable signaling device which may be located at any desired point, said device being thrown into and out of operation by the rising and falling of a suitable float in a water-chamber.

I carry out my invention as follows:

A represents a boiler, and B a chamber, for containing a water column, said chamber connected with the water-space and the steam-space of the boiler, as shown at A′ A^2, the pressure being thereby equalized in the chamber. C represents a float located in said chamber.

D is a conductor in an electric circuit E, said conductor extending into the interior of the chamber and provided with a terminal D′ engaged with the float. B′ is an insulator insulating the said conductor from said chamber to engage the terminal with the float. I prefer to braze into the float a tube *c* extending through the float, within which tube is arranged a suitable insulation, as shown at *c*′. The terminal of said conductor is passed through this tube, as shown, and may be provided with a circuit-closer *d*, also insulated from the float. Above the float said terminal is made slack to allow the float to freely descend and carry the terminal with it.

F represents the opposite terminal of the electric circuit extended, preferably, into the chamber B and insulated therefrom, as shown at B^2. The circuit E, of which the terminals D′ and F form the two poles, may lead to any desired point, and is provided with a signaling device—as, for instance, an alarm-bell G. G′ is a battery in said circuit. The poles D′ and F may be connected to a circuit provided with an alarm-bell—for instance, in the office, where a tell-tale alarm will be sounded in case the engineer allows the water to get low in his boiler. It will be readily seen that when the float descends to the low-water limit it will form a contact of the poles D′ and F, completing the electric circuit and sounding the alarm.

The terminal F may be adjustable, so as to fix the low-water limit wherever preferred.

I do not limit myself to any particular manner of connecting the two poles to the circuit, as this may be done in any suitable manner. Neither do I limit myself to any definite manner of engaging the terminal D′ to the float.

What I claim as my invention is—

1. In combination, a water-chamber attachable to a boiler, a float in the chamber, a tube extending through the float and secured thereto, an electrical conductor led through the case of the chamber and through said tube and insulated from both the case and the tube, a second electrical conductor led through the case and insulated therefrom, the arrangement being such that the descent of the float will close the circuit between said conductors, substantially as described.

2. In combination, a water-chamber attachable to a steam-boiler, a float in the chamber, a tube extending through the float and

secured thereto, an electrical conductor led through the case of the chamber and through said tube and insulated from both the case and the tube, and a second electrical conductor, the arrangement being such that the descent of the float will close the circuit between said conductors, substantially as set forth.

In testimony whereof I sign this specification in the presence of two witnesses.

JOHN MOREHEAD.

Witnesses:
N. S. WRIGHT,
CHAS. F. SALOW.