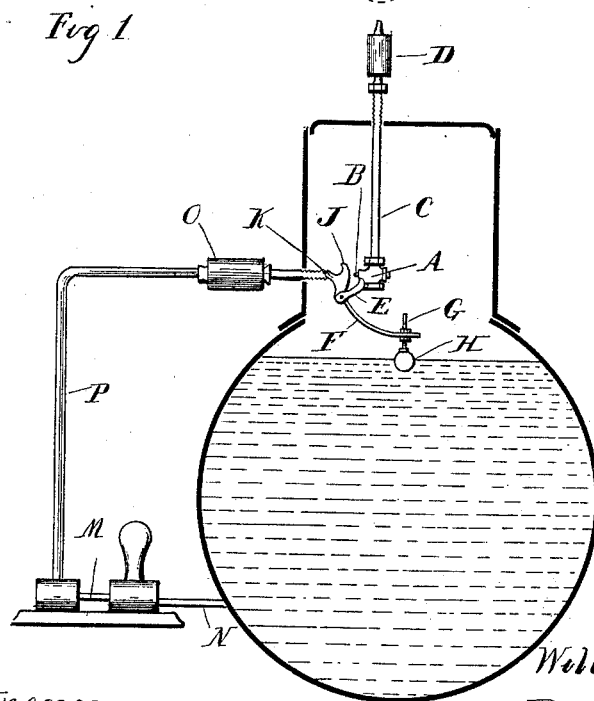
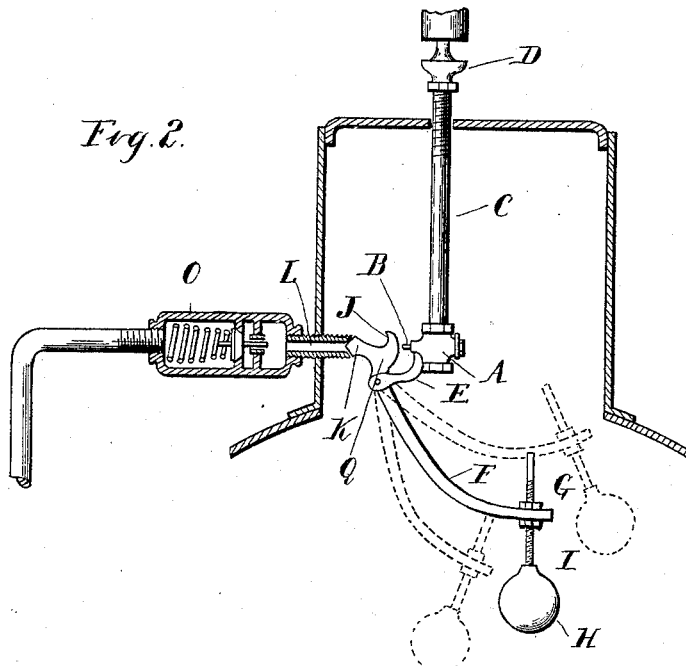


(No Model.)

W. D. McLAUCHLIN.  
LOW WATER ALARM AND BOILER FEEDER.

No. 458,794.

Patented Sept. 1, 1891.



Witnesses  
A. L. Kabbie  
P. M. Hullbert

Inventor  
William D. McLauchlin  
By *Thos. H. Sprague* Atty.

# UNITED STATES PATENT OFFICE.

WILLIAM D. McLAUCHLIN, OF CORUNNA, MICHIGAN, ASSIGNOR OF ONE-HALF  
TO AUSTIN PHILLIPS, OF SAME PLACE.

## LOW-WATER ALARM AND BOILER-FEEDER.

SPECIFICATION forming part of Letters Patent No. 458,794, dated September 1, 1891.

Application filed April 1, 1891. Serial No. 387,310. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM D. McLAUCHLIN, a citizen of the United States, residing at Corunna, in the county of Shiawassee and State of Michigan, have invented certain new and useful Improvements in Low-Water Alarms and Boiler-Feed Devices, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to new and useful improvements in boiler-feed and low-water alarm for steam-generators; and the invention consists in the peculiar construction of a float designed to open the whistle-valve on the lowering of the water beyond a predetermined point and to close the steam-supply pipe to the pump when the water has risen to the level desired to be maintained.

The invention further consists in the application to the steam-supply pipe of a spring-actuated valve set at such a tension that no steam will pass through unless it is of a sufficient pressure to operate the feed-pump.

The invention further consists in the arrangement, combination, and construction of the various parts, all as more fully hereinafter described.

In the drawings, Figure 1 is a vertical section through a boiler, showing my invention applied thereto. Fig. 2 is a similar elevation, partly in section, showing the parts in their various positions.

A is a spring-actuated valve located in the steam-dome or in any other part of the steam-space of the boiler and adapted to be opened by pressure upon the pin B. This valve is supported by the pipe C, passing through the shell of the boiler, at the upper end of which is secured the whistle D. Upon this valve is secured a bracket or arm E, to which is pivoted the float-valve lever F. This lever at its lower end is apertured to receive the stem G, secured to the upper end of the float H. This stem is screw-threaded, and the float can be transferred to any desired height by means of the lock-nuts I on opposite sides of the lever. This lever is provided with a valve-actuated arm J, so arranged that as the float lowers it will strike the pin B upon the valve and the whistle will be blown,

sounding an alarm to indicate that the water has lowered to a dangerous point. The alarm will continue sounding until the float again rises.

Upon the opposite side of the arm J is formed a valve K, adapted to open and close the steam-supply pipe L to the boiler-feed M, which is connected to the boiler by means of the pipe N. In this steam-supply pipe I arrange a spring-actuated valve O of any suitable construction, setting the spring of the valve so that it will not open until sufficient pressure has accumulated in the boiler to operate the pump M. The object of this valve is that as the pump is ordinarily set below the point at which the steam finds exit from the boiler the vertical portion P thereof would fill with water if steam were allowed to enter therein at a pressure less than sufficient to operate the pump.

It will be seen that the head Q of the lever having the arm J at one side and the valve K at the other is interposed between the pin B and the steam-supply pipe L.

In the ordinary operation of the device the steam will be admitted to the feed-pump more or less in proportion as the float-valve H rises or lowers, and when the water reaches the proper height that pipe will be entirely closed. In case the water becomes too low at any time the pipe L will be opened wide, and at the same time the weight of the float-valve and lever will operate the valve A and blow the whistle. By connecting the float directly to the valve A, I obviate the necessity of putting a bracket inside of the boiler.

What I claim as my invention is—

1. In a steam-boiler, the combination, with the boiler, of a steam-pipe leading out from the same, a feed-pump into which the pipe leads, a float-actuated lever for closing the steam-pipe, and a spring-actuated valve in the steam-pipe actuated by steam-pressure independent of the lever, substantially as described.

2. In a steam-boiler, the combination, with the boiler, of an alarm, a valve for the alarm, a steam-supply pipe leading from the boiler at a point opposite the valve, a float-actuated lever between the valve and pipe-opening for

opening and closing the same, a feed-pump into which the steam-pipe enters, and a spring-actuated valve in the steam-supply pipe actuated by steam-pressure independent of the lever, substantially as described.

5 3. In a steam-boiler, the combination of an alarm, a steam-pipe leading out from the boiler, a valve for the alarm, and a float-actuated lever interposed between the valve and  
10 steam-pipe, one side arranged to open the

steam-valve and its opposite side formed into a valve for closing the steam-supply pipe, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM D. McLAUCHLIN.

Witnesses:

S. M. HULBERT,  
A. L. HOBBIE.