

No. 885,413.

PATENTED APR. 21, 1908.

J. M. WILLIAMS.  
ALARM FOR BOILERS.

APPLICATION FILED MAY 17, 1907.

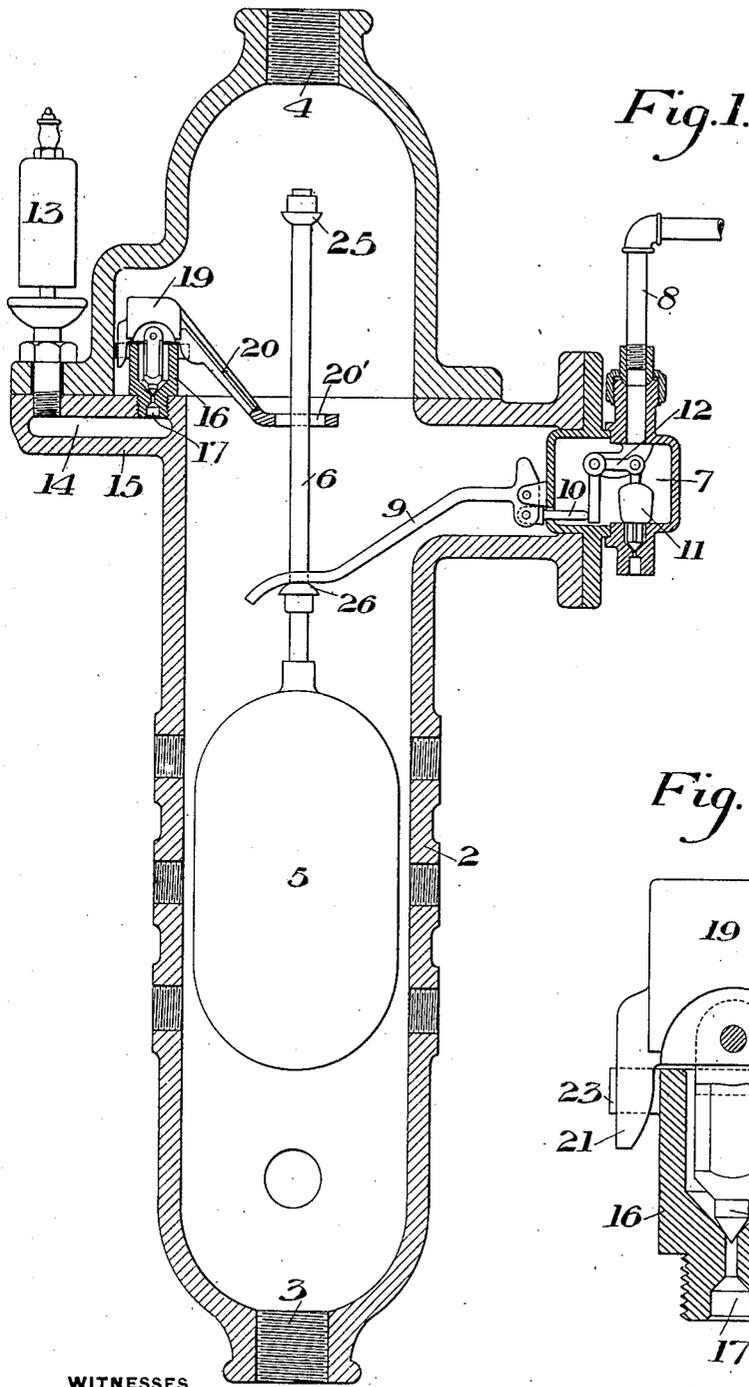


Fig. 1.

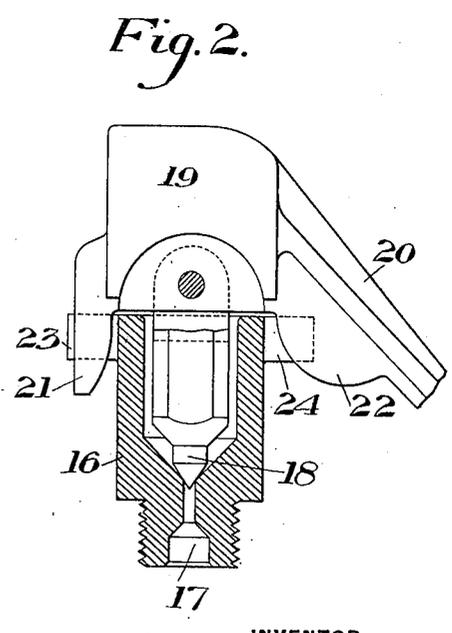


Fig. 2.

WITNESSES

*W. W. Swartz*  
*R. A. Balderson*

INVENTOR

*John M. Williams*  
by *Paul H. Jones*  
his Attorneys

# UNITED STATES PATENT OFFICE.

JOHN M. WILLIAMS, OF PITTSBURG, PENNSYLVANIA.

## ALARM FOR BOILERS.

No. 885,413.

Specification of Letters Patent.

Patented April 21, 1908.

Application filed May 17, 1907. Serial No. 374,135.

*To all whom it may concern:*

Be it known that I, JOHN M. WILLIAMS, of Pittsburg, Allegheny county, Pennsylvania, have invented a new and useful Alarm-Valve for Boilers, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a vertical section showing an alarm valve embodying my invention as applied to a feed-water regulator for boilers, and Fig. 2 is a detail view partly in section of the alarm valve proper.

My invention is designed to provide a simple and efficient means for the purpose of giving an alarm when from any cause the water level falls to a dangerous point, or if the regulator becomes inoperative so that the water level becomes too high; and my invention consists in the novel construction, arrangement and combination of parts all substantially as hereinafter described and pointed out in the appended claims.

In the drawings, I have shown my improved valve in connection with a feed-water regulator of the character described and claimed in my Patent No. 723,225, dated March 17th, 1903. 2 is the water column, which is connected at its lower end at 3 with the water space of the boiler, and at its upper end at 4 with the steam space of the boiler, so that the water level in the column may be the same as the water level of the boiler. 5 is the float in the column having the stem 6, which, as the float rises and falls operates the valve mechanism of the regulator. 7 is a chamber from which a pipe 8 leads to the diaphragm valve, (not shown), which controls the supply of feed-water to the boiler. 9 is a lever operated by the float stem 6 and operating the valve 10, which controls the communication between the chamber 7 and the float chamber. 11 is the valve which controls the exhaust from the chamber 7, and which is operated by the bell crank lever 12 through the valve 10. These parts are all substantially the same as in the said patent, to which reference may be had for a more complete description.

When the parts are in the position shown in Fig. 1, the exhaust valve 11 is closed, and the valve 10 being open, steam pressure is admitted to the pipe 8 to hold the diaphragm valve closed and prevent the flow of feed-water to the boiler. When, however, the level of water in the boiler falls below the nor-

mal, the sinking of the float permits the lever arm 9 to fall and close the valve 10. The exhaust valve 11 is at the same time opened. Pressure is thereby cut off from the pipe 8; which causes the diaphragm valve to open and admit water to the boiler.

13 designates an alarm whistle which is connected with a chamber 14 formed in a projection 15 at the upper portion of the column 2.

16 is a chambered plug, which is removably seated in the upper wall of the chamber 14, and which has a port 17 therethrough for the purpose of connecting the float chamber with the chamber 14. The port 17 is controlled by a needle valve 18 seated within the chamber of the plug 16, and pivotally connected at its upper end with a block 19. This block 19 is loosely seated upon the upper end of the plug 18, and is formed with a depending arm 20 which extends into the float chamber and engages the float stem 6 by an oblong slot 20' through which the steam passes. The block 19 is also formed with the lugs 21 and 22, the former loosely engaging a slotted projection 23 at the upper end of the plug 16 at one side, and the lug 22 having a similar engagement with a slotted lug 24 at the opposite side of the plug 16.

When the float 5 falls to such an extent that the projection 25 on the float stem 6 comes in contact with the end of the arm 20, said arm is depressed, thereby rocking the head 19 on its seat and raising the needle valve 18 to open the port 17 and thereby admit steam to the chamber 14 and to the alarm whistle 13. On the other hand, should the water rise too high in the boiler from any cause, a second projection 26 on the valve stem 6 will engage the under side of the end of the arm 20, thereby raising said arm and rocking the head 19 in the opposite direction. This also raises the valve 18 and admits steam to the alarm whistle.

The advantages of my invention result from the simplicity of the alarm valve, whereby it will operate to admit steam to the whistle when the boiler level reaches either an abnormally low, or abnormally high point, the operation of the valve being effected without the use of springs, or complicated connections or parts of any kind.

Various changes may be made in the details of construction and arrangement without departing from the spirit and scope of my invention. Thus, the alarm whistle may

be located at a distance from the feed-water regulator and be connected therewith by any suitable pipe or conduit controlled by the valve.

5 What I claim is:—

1. In an alarm for boilers, a whistle, a steam chamber communicating therewith, a ported plug forming the steam inlet to said chamber; a needle valve in the plug for controlling said port, a block loosely seated on said plug and to which the valve is pivoted, said block having depending guides engaging the plug at opposite side, and a float-actuated arm connected to said block; substantially as described.

15 2. In an alarm for boilers, a whistle, a

steam chamber communicating therewith, a ported plug forming the inlet to said chamber, a recessed block seated loosely on the upper end of the plug, and a valve in the plug and having its stem pivoted in the recess of the block, said block having depending projections engaging lugs on the plug, and also having an actuating arm; substantially as described.

25 In testimony whereof, I have hereunto set my hand.

JOHN M. WILLIAMS.

Witnesses:

JOHN MILLER,  
H. M. CORWIN.