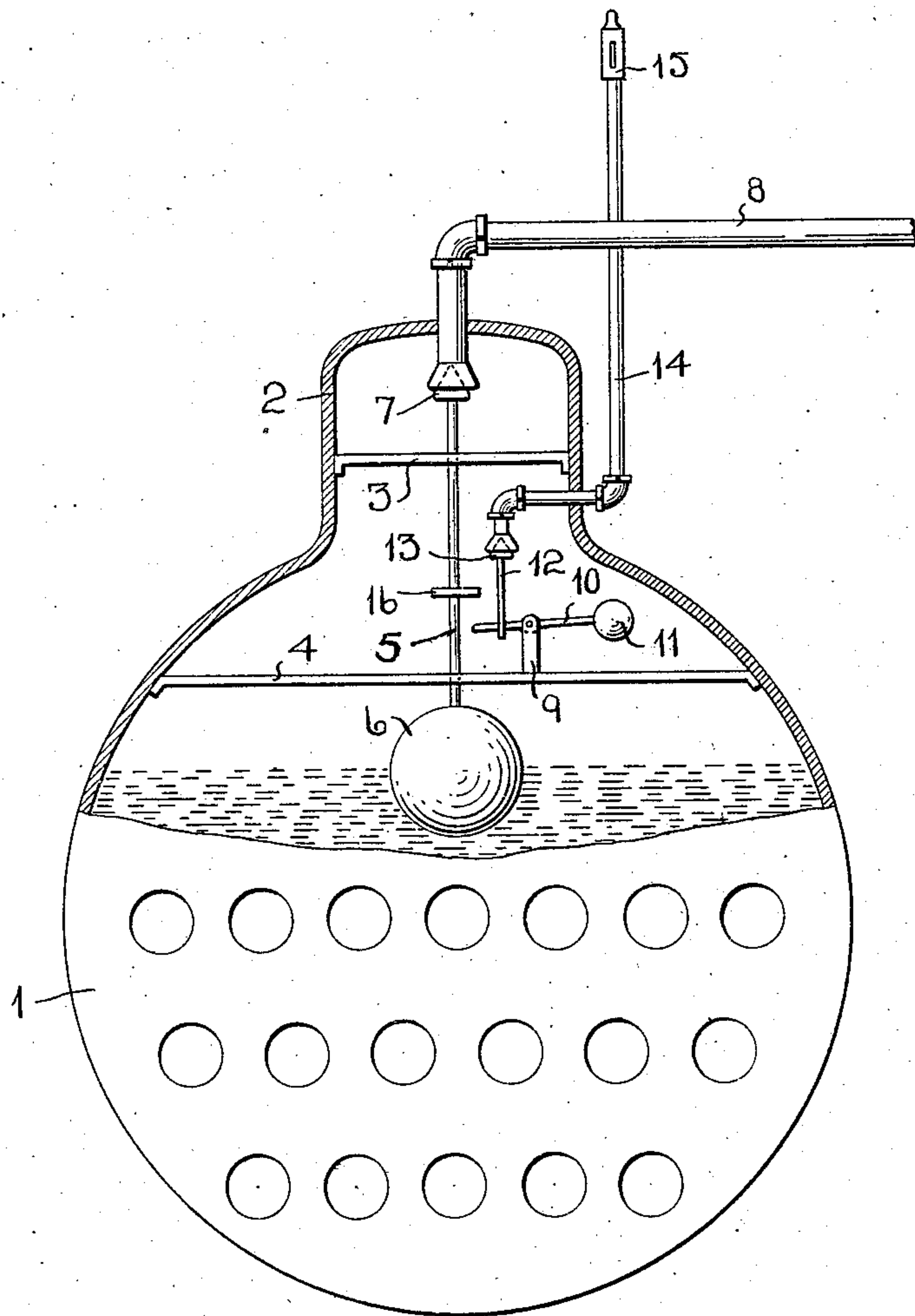


No. 860,165.

PATENTED JULY 16, 1907.

A. S. VINCENT.
WATER GOVERNOR FOR BOILERS.
APPLICATION FILED OCT. 15, 1906.



Witnesses

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UNITED STATES PATENT OFFICE.

ARTHUR S. VINCENT, OF TOPPENISH, WASHINGTON.

WATER-GOVERNOR FOR BOILERS.

No. 860,165.

Specification of Letters Patent.

Patented July 16, 1907.

Application filed October 15, 1906. Serial No. 339,047.

To all whom it may concern:

Be it known that I, ARTHUR S. VINCENT, a citizen of the United States, residing at Toppenish, in the county of Yakima and State of Washington, have invented certain new and useful Improvements in Water-Governors and Danger-Alarms for Steam-Boilers; and I do 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.

This invention relates to a combined water governor and danger alarm for steam boilers, whether stationary or movable.

The object of the invention is in a ready and practical manner to give an audible alarm in case the water in a boiler sinks below a predetermined level and also to insure the automatic operation of the pump in the event of such an emergency.

With the above and other objects in view, as will appear as the nature of the invention is better understood, the same consists in the novel construction and combination of parts of a combined water governor and danger alarm for steam boilers, as will be hereinafter fully described and claimed.

In the accompanying drawings forming a part of this specification, and in which like characters of reference indicate corresponding parts,—the figure is a view in elevation of a boiler equipped with the improvements of the present invention.

Referring to the drawings, 1 designates a boiler of any preferred type, and 2 the steam dome thereof.

Arranged within the boiler at a point below the steam dome and within the dome are two horizontally-disposed guides 3 and 4 in which works a rod or bar 5 that carries at its lower end a float 6, and at its upper end a conical valve 7 that is designed normally to close one end of a pipe 8 that leads to the feed pump. The valve 7 is disposed near the upper portion of the dome, thus to insure the passage of dry steam to the pump when emergency arises for the operation of the latter.

Mounted upon the bar 4 is an upright 9 carrying a pivoted lever 10, one end of which is furnished with a weight or counter-poise 11 and the other end with a vertically-disposed arm 12 that carries a valve 13, preferably of a cone type, adapted normally to close the lower end of a pipe 14 that projects into the steam

dome, and carries at its upper end a whistle or other suitable alarm 15. The weight 11 normally holds the valve 13 in the position shown, thus to cut off any escape of steam to the pipe 14 and thence to the whistle, but in the event that the water in the boiler sinks below a predetermined level, the lever 10 is struck by a striker or arm 16 that is carried by the rod 5, thereby unseating the valve 13 and causing the alarm to be sounded. At the same time that the valve 13 is unseated, the valve 7 is also unseated, thereby to allow steam to pass to the steam pump and start it to working, thus to supply water to the boiler until the proper level is reached. When such level is restored, the valve 7, by reason of the lifting of the float 6, will cut off the supply of steam to the pump, and thus stop its operation. As the float 6 lifts, the striker 16 will move out of engagement with the arm 10 and thus allow the valve 13 again to resume its seat.

By the arrangement of the mechanism shown, an engineer will always be notified by the whistle 15 when the water is low in the boiler, so that in the event that the pump does not start to work from any cause he will be properly informed, and will be enabled to prevent any catastrophe which might otherwise result if he depended wholly upon the automatic starting of the pump, by the lowering of the level of the water in the boiler. Generally, however, dependence may be placed upon the starting of the pump, and its proper operation by the dropping of the float 6.

I claim:—

The combination with a boiler, of transversely-arranged guides disposed within the steam dome and at a distance below the same, a rod working in the guides and carrying at one terminal a float and at its other terminal a valve, a steam pump connection communicating with the dome and with which the valve coacts normally to close the passage therethrough, a pipe entering the boiler and carrying a whistle, a whistle-controlling valve, a counterpoised lever supported by the lower guide and with which the whistle-controlling valve is connected, and a striker carried by the float rod and operating to unseat the last-named valve when the float drops by the lowering of the water in the boiler.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

ARTHUR S. VINCENT.

Witnesses:

L. J. GOODRICH,
G. G. LEE.