No. 800,340. PATENTED SEPT. 26, 1905.

W. F. THORN.

SAFETY VALVE FOR STEAM BOILERS.

APPLICATION FILED MAY 6, 1905.

Fig. 1.

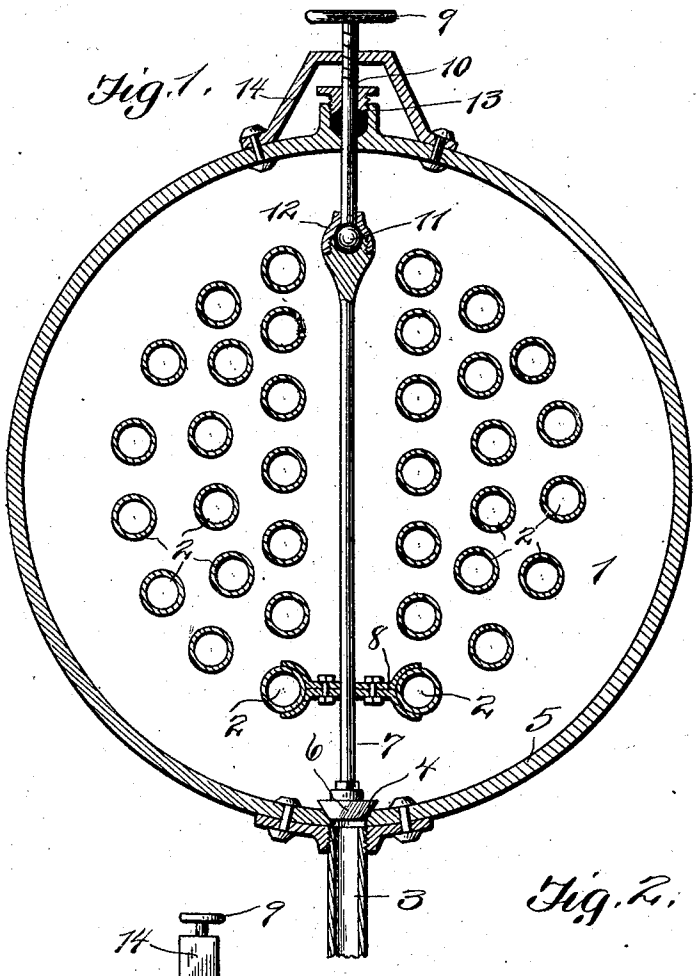
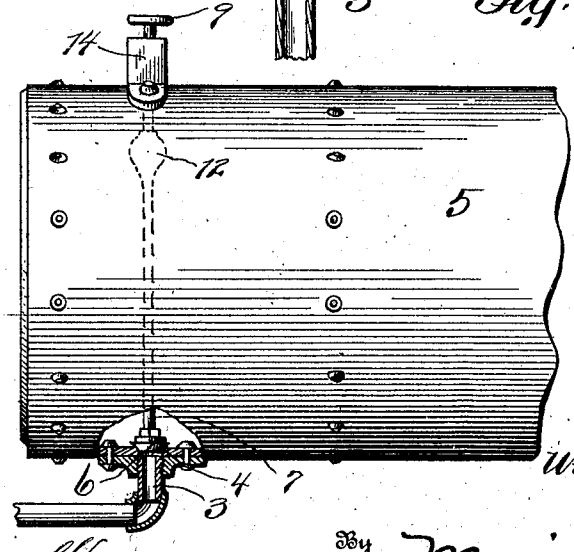


Fig. 2.



Witnesses

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SAFETY-VALVE FOR STEAM-BOILERS.

No. 800,340. Specification of Letters Patent. Patented Sept. 26, 1905.

Application filed May 6, 1905. Serial No. 259,091.

To all whom it may concern:

Be it known that I, WILLIAM F. THORN, a citizen of the United States, residing at Lothrop, in the county of Missoula and State of Montana, have invented certain new and useful Improvements in Safety-Valves for Steam-Boilers, of which the following is a specification.

This invention relates to certain new and useful improvements in safety-valves for blow-off pipes or mud-drum connections of steam-boilers; and it has for its objects, among others, to provide a simple and efficient attachment applicable to nearly every kind of boilers, especially of the horizontal type, by use of which in the case of the blow-off pipe or the valve in the blow-off pipe breaks this improvement can be operated to move the valve thereof to cause it to close, and thus keep the water in the boiler, and thus prevent the boiler from injury by being burned or blistered.

Other objects and advantages of the invention will hereinafter appear, and the novel features thereof will be specifically defined by the appended claims.

The invention is clearly illustrated in the accompanying drawings, which, with the numerals of reference marked thereon, form a part of this specification, and in which—

Figure 1 is a vertical cross-section through a horizontal boiler with my improvements applied. Fig. 2 is a side elevation with a portion broken away and parts in section.

Like numerals of reference indicate like parts throughout both views.

Referring now to the details of the drawings, 1 designates a tubular boiler of the horizontal type, and 2 the flues thereof.

3 is the blow-off pipe, and 4 a valve-seat which may be milled into the boiler-plate 5. 6 is a valve fitted to said seat, and this valve is carried by the valve-stem 7, which is guided in its movements by a suitable guide 8, the ends of which are oppositely curved, as shown, and engage or embrace the adjacent flues, as seen clearly in Fig. 1.

9 is a valve-wheel carried by the stem 10, which latter has a ball-and-socket connection 11 with the upper end of the valve-stem 7, as seen clearly in Fig. 1, although this form of connection may not always be employed. When employed, this ball-and-socket connection is detachably united by means of the removable coupling portion 12, as shown.

The valve-stem 10 extends through a stuffing box and gland 13 at the top of the boiler, as shown, and a suitable brace 14 is employed, secured to the boiler-plate and having an opening through which the stem 10 passes, as shown.

The operation will be apparent. Should the blow-off pipe or the valve in the blow-off pipe break or become inoperative, the closing of the valve 6 will retain the water in the boiler and prevent injury to the latter, as will be readily understood.

Modifications in the details, proportions of parts, &c., may be resorted to without departing from the spirit of the invention or sacrificing any of its advantages.

What is claimed as new is—

1. A safety attachment for steam-boilers, comprising a valve controlling the blow-off and operable in case the blow-off pipe or its valve becomes inoperative and a guide for the stem of said valve disposed between the flues of the boiler.

2. A safety-valve attachment for steam-boilers, comprising a valve mounted to control the blow-off pipe and a stem for actuating said valve, and a guide for said stem, supported on the flues of the boiler.

3. A safety-valve attachment for steam-boilers, comprising a valve mounted to control the blow-off pipe, a stem for actuating said valve, a guide for said stem, and an operating-wheel having a ball-and-socket connection with the valve-stem said guide being disposed between the valve and said ball-and-socket joint.

4. In a safety-valve attachment for steam-boilers, a valve fitted to a seat over the blow-off pipe, a stem for said valve, a guide for said stem supported on the flues of the boiler, a brace on the top of the boiler, a valve-wheel, its stem mounted in said brace, a stuffing-box through which the latter stem passes, and a detachable connection between the said stems.

In witness whereof I have hereunto set my hand in the presence of two witnesses.

WILLIAM F. THORN.

Witnesses:
R. J. BROWN,
W. I. WRIGHT.