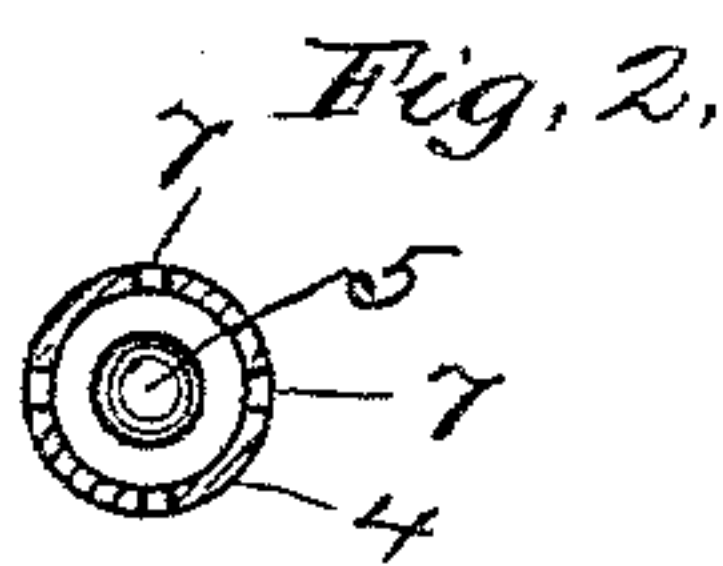
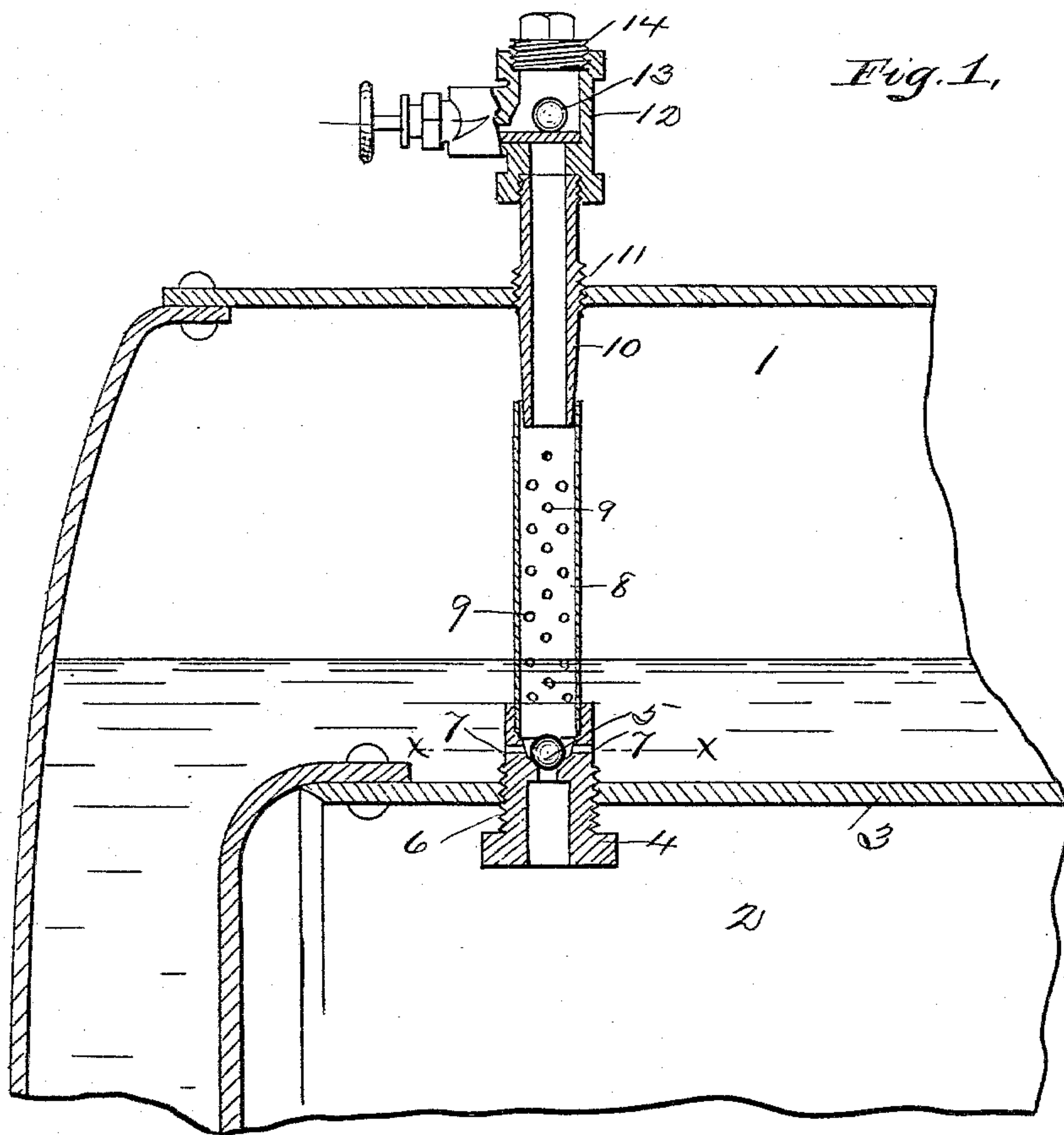


(No Model.)

J. GRIPP & J. F. MORRISON.
SAFETY PLUG FOR STEAM BOILERS.

No. 559,847.

Patented May 12, 1896.

[illegible]

H. O. Harrison,
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UNITED STATES PATENT OFFICE.

JACOB GRIPP AND JAMES F. MORRISON, OF PITTSBURG, PENNSYLVANIA.

SAFETY-PLUG FOR STEAM-BOILERS.

SPECIFICATION forming part of Letters Patent No. 559,847, dated May 12, 1896.

Application filed January 13, 1894. Serial No. 496,830. (No model.)

To all whom it may concern:

Be it known that we, JACOB GRIPP and JAMES F. MORRISON, citizens of the United States, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Safety-Plugs for Steam-Boilers; and we do hereby 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 pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification.

Our invention relates to an improved safety-plug for boilers; and it consists in certain details of construction and combination of parts, as will be fully described hereinafter.

In the accompanying drawings, Figure 1 is a sectional side elevation of our improved safety-plug attached in position to a boiler and constructed in accordance with our invention. Fig. 2 is a sectional plan view taken of the line X X.

To construct an apparatus in accordance with our invention and adapt the same to an ordinary boiler having a fire-chamber 2, covered by a crown-sheet 3, we form a threaded opening in the same and attach therein a threaded plug 4. This plug 4 is finished with an interior seat, adapted to be closed by a soft metal or fusible sphere 5, which is held rigidly to the said seat by the pressure of water on the top of the same. Fitted in the shell of the boiler above the plug 4 is a short section of a tube 10, having a threaded portion 11 to attach the same to the said shell, and is connected at its lower end with the upper part of the plug 4 by a perforated tube 8. Attached to the top of the tube 10, projecting from the boiler, is a valve 12 of peculiar construction. This valve 12 is formed with a sliding gate to close the opening leading to

the tube 10, and means for operating said gate, and a removable plug 14 at the top, whereby a similar fusible sphere 13 to that above described is placed. Small perforations 7 are formed in the plug 4 immediately above the seat of the sphere 5, which will permit the water to escape from about the same should the said water be lowered to that level.

In operation, should the water in the boiler become dangerously low, the fusible ball 5 melts and the water and steam escape into the fire-chamber, drown the same, and as the plug 5 is some distance above the crown-sheet 3 sufficient water will remain to protect the same and prevent warping. Another plug or fusible ball may be dropped from the valve, (by opening the same,) to again close the opening to the fire-chamber, and another ball placed in the valve ready for immediate use.

Having thus described our invention, what we claim, and desire to secure by Letters Patent, is—

The combination, with a boiler and furnace, of the plug arranged in the crown-sheet of the furnace and having therein a seat and water-outlets arranged in horizontal alinement with said seat, a fusible spherical valve resting in said seat, a second plug arranged in the upper part of the boiler and also having a seat, a slide or plate resting in said latter seat, a fusible spherical valve resting upon said slide or plate, a perforated or foraminous pipe connecting the two plugs within the boiler, substantially as set forth.

In testimony that we claim the foregoing we hereunto affix our signatures this 31st day of January, A. D. 1893.

JACOB GRIPP. [L. S.]
JAS. F. MORRISON. [L. S.]

In presence of—

M. E. HARRISON,
JAS. J. MCAFEE.