

T.G. Eiswald Boiler Plug

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PATENTED
JAN 14 1868

Fig. 1

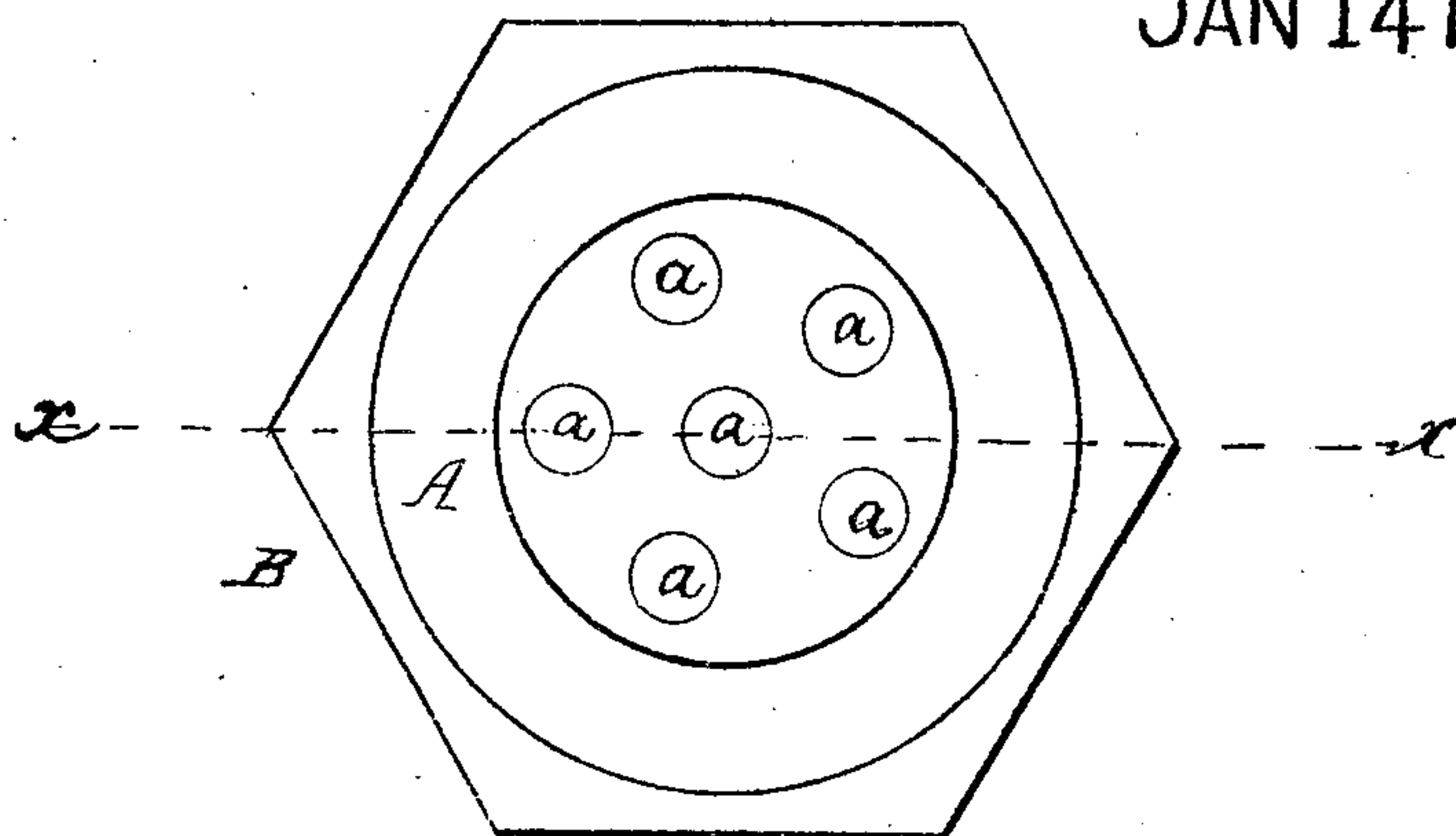
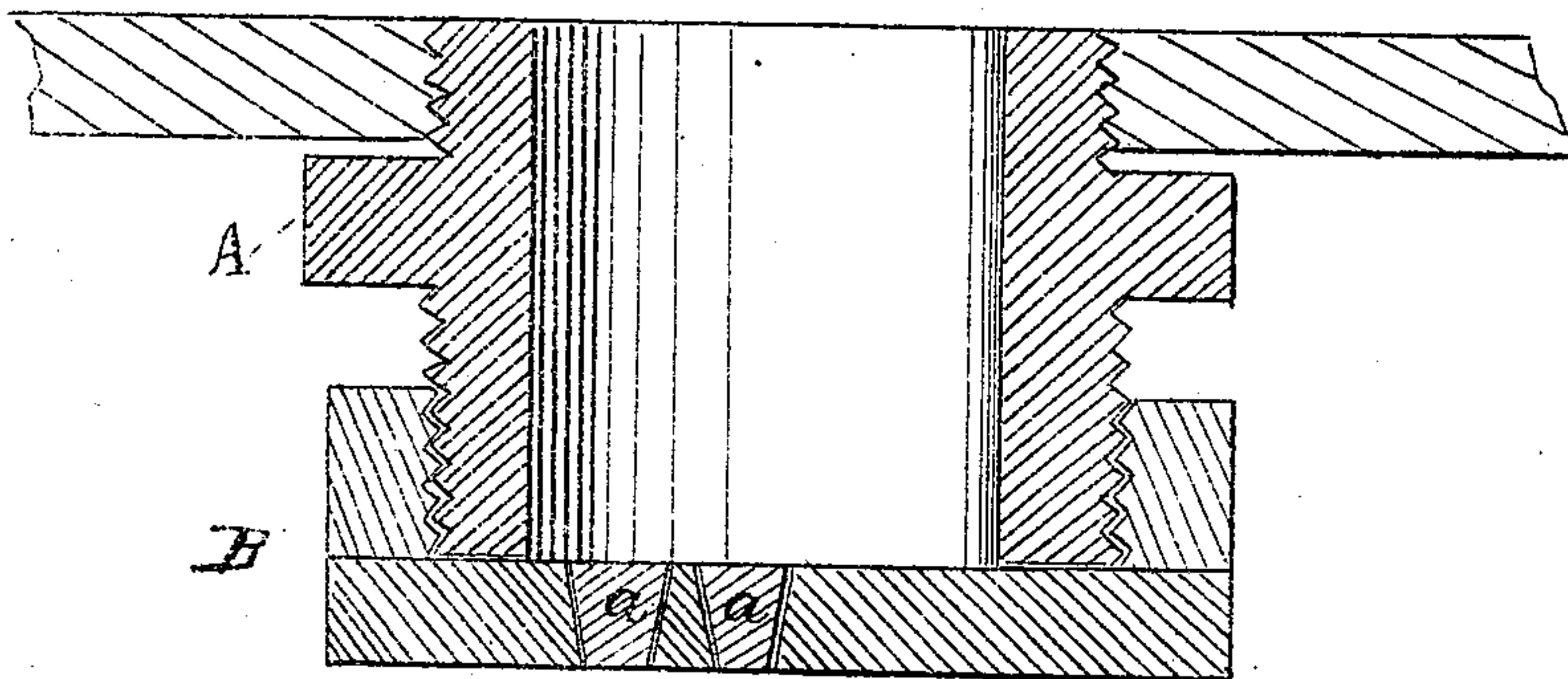


Fig. 2.



Witnesses
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United States Patent Office.

THEODOR G. EISWALD, OF PROVIDENCE, RHODE ISLAND.

Letters Patent No. 73,311, dated January 14, 1868.

IMPROVEMENT IN SAFETY-PLUGS FOR BOILERS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, THEODOR G. EISWALD, of Providence, in the county of Providence, and State of Rhode Island, have invented a new and improved Safety-Plug for Boilers; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a plan view of my invention.

Figure 2 is a section of the same through the line $x x'$, fig. 1.

Similar letters of reference indicate corresponding parts.

This invention refers to an improved fusible plug for boilers, and consists in the construction of the holes for containing the fusible metal plugs, which are conical, so that the said plugs shall not be blown out by the pressure of the steam, together with other devices perfecting the whole, as will be hereinafter more fully set forth.

In the drawings, A is a flanged hollow nut tapped into the boiler at the low-water level. A screw-cap, B, fits on the said nut steam-tight. In this cap are one or more small conical holes, as shown in the drawing. These holes are filled with a fusible alloy, or common solder, of such a melting-point that when the water falls below the nut the fusible alloy will melt out, and the escape of steam will call attention to the low state of the water in time to prevent disaster, by applying the feed-pumps. Duplicate caps can be provided, so that another cap with similar plugs can be applied without waiting to re-plug the cap previously used.

I am aware that fusible plugs have been employed for the purpose of permitting the escape of steam when the same was at too great a pressure for safety, but in all such cases the area of the plug was large, and the escape of steam in sufficient quantity to relieve the boiler was the object intended. The points of application of such fusible plugs were on top of the boiler, or considerably above the highest water level, and their action was not specifically dependent upon the fall of the water *per se*, so as to permit the escape of a small quantity of steam for the purpose of calling attention to the low state of the water in the boiler.

Certain disadvantages attend the use of such fusible plugs as are above cited, as, for example, they are liable to become honey-combed, so called, by the gradual melting out of the softest metal in the alloy, thus rendering them useless for the purpose intended. Their action, also, is unreliable, as they frequently melt out at different degrees of steam-pressure. Furthermore, the sudden escape of steam when the water has fallen below the flues occasions the rising of the water on the hot flues, and thereby causing the explosion of the boilers. These disadvantages are obviated by my invention, which gives a reliable and timely warning, that cannot be mistaken or overlooked, as the alloy composing the plug is nearly any common solder that will melt when unprotected by contact with water.

I claim as new, and desire to secure by Letters Patent—

Fusible plugs, constructed substantially as shown and described.

THEODOR G. EISWALD.

Witnesses:

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