A. STILLMAN.

ARRANGEMENT FOR USING FUSIBLE METAL IN STEAM BOILERS.

No. 5,022. Patented Mar. 20, 1847.

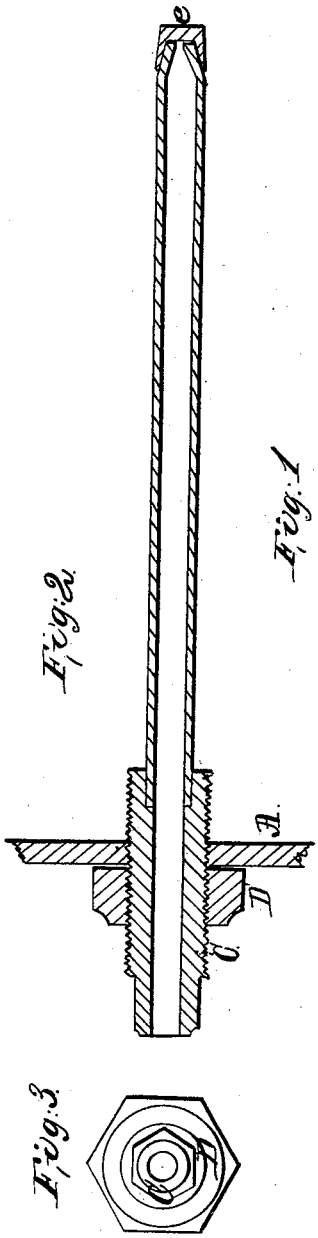


Fig. 2.



Fig. 3.

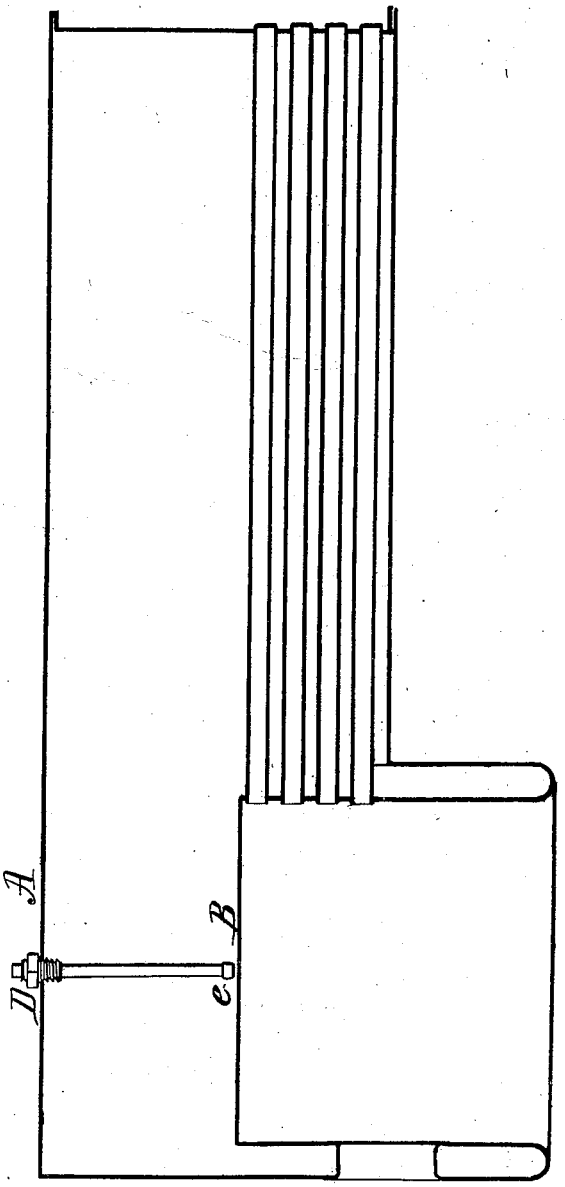


Fig. 1.

# UNITED STATES PATENT OFFICE.

ALFRED STILLMAN, OF NEW YORK, N. Y.

## APPARATUS FOR INDICATING THE HEIGHT OF WATER IN BOILERS BY THE USE OF FUSIBLE ALLOY.

Specification of Letters Patent No. 5,022, dated March 20, 1847.

*To all whom it may concern:*

Be it known that I, ALFRED STILLMAN, of the city and county of New York and State of New York, have invented a new and useful Improvement in the Method of Using Fusible Metal in Steam-Boilers to Avoid Accidents from Overheated Flues; and I do hereby declare that the following is a full and exact description.

The nature of my improvement consists in the use of a tube, one end of which is stopped with fusible metal and rests upon some part of the boiler liable to be overheated from a deficiency of water, while the other end opens through the external part or shell of the boiler to allow the escape of steam to give alarm to the person in attendance whenever the fusible metal should become melted by the overheated boiler, and so arranged that the issue of steam may be stopped at pleasure and the fusible metal subsequently restored to its place with very trifling labor, or detention.

To enable others skilled in the art to make and use my invention I will proceed to describe its construction and operation, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1, is a boiler with the instrument attached. Fig. 2 is a longitudinal section of the instrument and Fig. 3 a transverse section of it.

The letters have reference to the same parts in the several figures.

A is the external part or shell of the boiler.

B is the top of the fire box or flue.

C is a tube of iron or other metal with its screw and nut D, and a cap of fusible metal E.

The boiler A, B, possesses nothing peculiar in its construction and should have the usual safety valve, water gages, &c.

C is a tube of iron, or other metal about one inch in internal diameter the lower end of which should be contracted as shown at E, Fig. 2, and furnished with a cap of some metal, or alloy, possessing the property of fusion at a comparatively low temperature, as lead or tin, or a combination of them— that combination known as soft solder, being well adapted to it, may be successfully used. The upper end of the tube is fitted with a screw and nut D, to attach it to the boiler and also with flat sides for a wrench, as shown at Fig. 3. The screw should be of such size as to fill a hole sufficiently large for the tube, with its cap E, to pass through freely; and the whole should be of such length as to extend from the flue B, through the shell A. When thus constructed and supplied with its fusible cap E, I screw it down, compressing the cap E, between the flue B, and the tube C, so as to form a tight joint on the end of the tube. In case the flue B, becomes heated from the absence of water the cap E, will fuse and allow the escape of sufficient steam to give the desired alarm to the person in attendance. The escape of steam may then be stopped by means of a plug driven into the tube or by a cock previously provided. The boiler may then, after being replenished with water, be continued in operation until a convenient time to replace the fusible metal, which may be done by taking the tube from the boiler and screwing another cap in the place of the one fused and returning it as before directed.

What I claim and desire to secure by Letters Patent is—

The application to steam boilers of a tube constructed for the purpose or in the manner herein described and stopped with a cap, or any other shaped piece, of fusible metal resting upon a part of the boiler liable to become over heated in the absence of a proper supply of water, and designed for the purpose and objects herein substantially set forth.

ALFRED STILLMAN.

Witnesses:

ENEAS SMITH,

WILLIAM FORT.