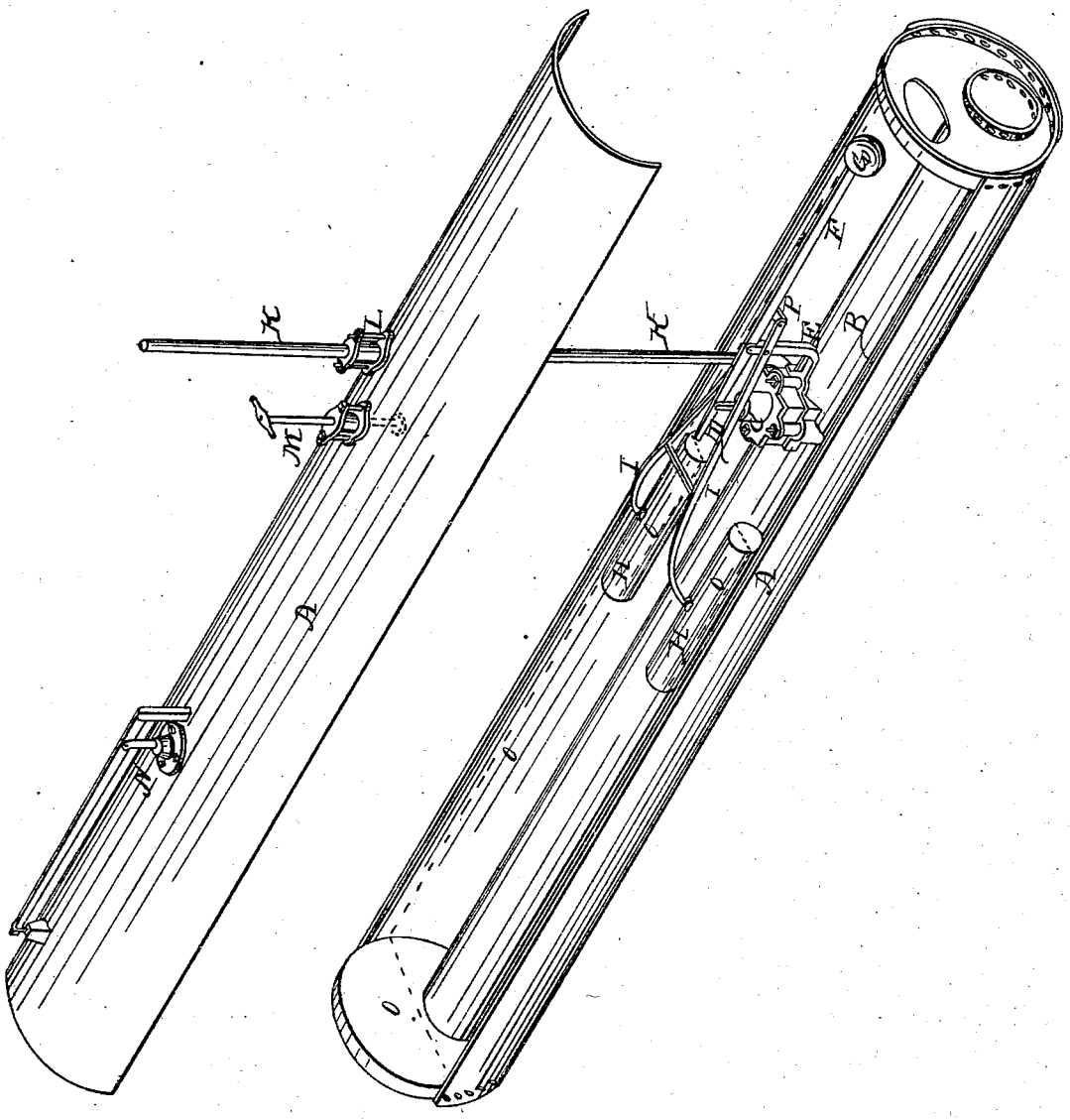
T. S. EASTON.

STEAM APPARATUS FOR PREVENTING EXPLOSION.

No. 2,846. Patented Nov. 9, 1842.



UNITED STATES PATENT OFFICE.

THOS. S. EASTON, OF MOBILE, ALABAMA.

APPARATUS FOR PREVENTING STEAM-BOILERS FROM BURSTING.

Specification of Letters Patent No. 2,846, dated November 9, 1842.

To all whom it may concern:

Be it known that I, THOMAS S. EASTON, of the city of Mobile and State of Alabama, have invented a new and Improved Mode of Preventing Steam-Boilers from Bursting; and I do hereby declare that the following is a full and exact description.

The nature of my invention consists in a steam chest placed within the boiler (a drawing of which accompanies this application) and on top of the flues or flue if a flue boiler. If the boiler is without flues the steam chest is secured to the shell of the boiler on a stand that will lift it above the water line. In the top of the steam chest (which is marked C in the drawing) is a valve which opens downward into the chest. The valve stem D is united to a lever F by a pin joint which lever has its fulcrum at E, the weight G on the end of the lever will operate on the valve to keep it closed against any required pressure. To the steam chest I affix an escape pipe K leading through the shell of the boiler at any required point and made steam tight by the stuffing box L. This forms my arrangement for steam pressure, for it is evident that as soon as the steam in the boiler exceeds the pressure allowed by the lever, that the valve will open and the excess of steam escape into the steam chest and from thence through the escape pipe K out of the boiler.

For low water, or rather for the purpose of indicating the instant the water is reduced in the boiler to the low-water line O, I use a float or floats placed in the exact central region of the boiler. To the floats are attached the arms I by a pin joint, which float arms are joined to the fulcrum stake E (also by a pin joint) below the lever one on each side, and these points extending back to P at which place they are joined, and forming a lever of the first order, when brought in contact with the lever F. The floats and float arms are so arranged that as long as there is sufficient water in the boiler, they float free of the lever F, but the moment the low water line is passed the point P comes in contact with the lever F and counteracts the weight G thereby allowing the valve to open and the steam escape into the chest and out of the boiler by the pipe K, the valve remaining open till the boiler is supplied with water. I have also invented a feeler M which is a rod inserted in the shell of the boiler, immediately over the valve stem and made steam tight by a stuffing box, on the lower end of the rod is a button which when the rod is pressed down comes in contact with the lever at or near its union with the valve stem which will enable the engineer to open the valve at pleasure but affords no means to keep it closed.

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

1. The employment of a steam chest within the boiler, provided with a pipe to carry off the steam, and a valve in its upper part opening downward, for the purpose and in the manner described.

2. I also claim the feeler in combination with a valve within a boiler for the purpose of opening the valve from without the boiler as described.

THOS. S. EASTON.

Witnesses:

JAMES DAVIS,

RUTH LONGE.