

United States Patent Office.

HUGH McQUAID, OF CANYON CITY, OREGON.

Letters Patent No. 82,859, dated October 6, 1868.

IMPROVEMENT IN PREVENTING INCRUSTATION IN STEAM-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, HUGH McQUAID, a citizen of the United States, and resident of Grant county, State of Oregon, have discovered and invented a new and improved Mode of Preventing Steam-Boilers from Incrustation; and I do declare the following to be a full, clear, and exact description thereof.

The nature of my invention consists in galvanizing or plating the iron of the steam-boiler with copper, and polishing the same to brightness, and coating with quicksilver the parts liable to incrustation. The quicksilver will expand as the water increases in heat, till it has attained 212° of Fahrenheit, then steam forms. The iron of the bottom of the boiler is cold, in contact with the fire of the furnace. The mercury then contracts, and is not again subject to heat till the steam has passed off or the water become exhausted in the boilers. Quicksilver being a liquid on the parts of the boiler and heaters liable to incrustation, and being larger in volume by increase of heat, it contracts after steam has formed, and *vice versa*, the sediment remains free.

To enable others skilled in the art to make and use my invention, I will proceed to fully state its construction and operation.

I construct my steam-boiler in any of the known forms, and apply thereto gauge-cocks, a safety-valve, and the other appendages of such boilers. But, in order to obviate the danger arising from incrustation, I cause the iron of the bottom and inside parts, liable to incrustation, to be plated with copper, and cleanse the same with nitric acid, and polish the copper to brightness, and on the polished surface I spread an equal coat of quicksilver. This being done, my boiler is ready for use.

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

The application in steam-boilers of an amalgamated surface to the parts liable to incrustation, the iron plated with copper being coated with quicksilver, and being a liquid, on the surface of the copper, expands, as herein set forth, using for that purpose the aforesaid metals, or any other substantially the same, which will produce the intended effect.

HUGH McQUAID.

Witnesses:

F. J. KING,
JOHN L. MILLER.