

UNITED STATES PATENT OFFICE.

ROBERT A. FISHER, OF SAN FRANCISCO, CALIFORNIA.

IMPROVEMENT IN MEANS FOR PREVENTING INCRUSTATION IN STEAM-BOILERS.

Specification forming part of Letters Patent No. **140,263**, dated June 24, 1873; application filed February 12, 1873.

To all whom it may concern:

Be it known that I, ROBERT A. FISHER, of San Francisco, State of California, have invented Improvements in Preventing Incrustation in Steam-Boilers; and I do hereby declare the following description and accompanying drawings are sufficient to enable any person skilled in the art or science to which it most nearly appertains to make and use my said invention or improvements without further invention or experiment.

The object of my invention is to provide a simple and effective remedy or preventive of incrustation in steam-boilers, tuyeres, and in other places where incrustation is likely to occur on account of the impurities in the water. My invention consists in flowing or covering the bottom or lowest portion of the boiler or other vessel to be protected with quicksilver or any easily-fused metal or alloy, the melting point of which is below the ordinary or average temperature to which the water employed in said boiler or vessel is intended to be heated. Usually I shall cover the bottom or lowest part of the boiler or vessel to the depth of an inch or more with the said quicksilver or alloy, so that it will form an interposing medium between the metal of the boiler or vessel and the water contained in it; but the exact quantity

or thickness of the liquid metal required will vary according to the form or construction of the vessel.

By thus interposing a liquid metallic medium between the water and heated surface incrustation is not only prevented at the point covered by the liquid, but the entire interior of the vessel will be kept clean and free from incrustation.

I am aware that Hugh McQuade, in Letters Patent No. 82,859, dated October 6, 1868, has claimed lining the interior of a boiler with copper plate and then amalgamating said plate with quicksilver for the purpose of preventing incrustation. This I do not claim; but

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

The application of a body of quicksilver, or an easily-fused metal or alloy, in the bottom of steam-generating vessels, which, becoming mobile at a temperature of about 212° Fahrenheit, will, by its agitation, prevent incrustation, substantially as set forth.

In witness whereof I hereunto set my hand and seal.

ROBERT A. FISHER. [L. S.]

Witnesses:

J. L. BOONE,

C. M. RICHARDSON.