

# UNITED STATES PATENT OFFICE.

JOHN H. PITTS, OF OAKLAND, CALIFORNIA.

IMPROVEMENT IN COMPOUNDS FOR THE PREVENTION OF SCALES IN STEAM-BOILERS.

Specification forming part of Letters Patent No. **160,030**, dated February 23, 1875; application filed April 28, 1874.

*To all whom it may concern:*

Be it known that I, JOHN H. PITTS, of the town of Oakland, Alameda county, State of California, have invented a certain Compound for the Prevention of Scales Forming and Adhering to the Sides of Boilers, of which the following is a specification:

This invention relates to that class of anti-scale compounds which, by their admixture with the water contained in a boiler, attack the alkaline matter more or less present, hold it in solution, and thus prevent its adherence to the sides of a boiler.

To prepare this compound, take of leather scraps or cuttings three pounds, by weight, caustic soda one-fourth of a pound, and add thereto one gallon of water, boil the whole in a suitable vessel, say, of copper, until the leather scraps are thoroughly dissolved; then add to the solution one-quarter of a pound of glue, gelatine, or isinglass that has been previously steeped in cold water for a space of twenty-four hours, and incorporate the several ingredients well together.

The mixture thus prepared, when introduced into the water of a boiler in suitable quantity, will be found to possess the anti-scale properties required.

The compound formed in the manufacture

described consists of tannate of soda held in solution produced by the tannic acid of the leather scraps combining with the caustic soda, and the gelatinous particles contained in this leather being set free at the same time and also held in solution. Their action on the water is caused by the tannate of soda attacking the saline matter therein present, forming the same into a precipitate, which is deposited loosely at the bottom of the boiler, and from thence can be readily blown off; also, the gelatinous material from the leather, together with the gelatine introduced into the compound, prevent adherence of the saline deposit to the iron sides of the boiler, so that scaling by the introduction of this mixture into the water is thus completely prevented.

I claim as my invention.

The compound described, consisting of a solution formed by the boiling together of leather scraps, caustic soda or hydrated oxide of sodium, gelatine, and water, in or about the proportions named, substantially as and for the purposes herein set forth and specified.

JOHN H. PITTS.

Witnesses:

ALFRED C. CRANE,  
LIONEL VARICAS.