

United States Patent Office.

WILLIAM H. BURRIDGE, OF CLEVELAND, OHIO, ASSIGNOR TO A. L. KINGMAN, C. G. DODGE, AND H. C. HARTWELL.

Letters Patent No. 103,974, dated June 7, 1870.

IMPROVED COMPOUND FOR PREVENTING AND REMOVING 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, WILLIAM H. BURRIDGE, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented a certain new and improved Compound for Preventing and Removing the Sediment and Incrustations in Steam-Boilers, and that the following is a full, clear, and exact description of the same.

The nature of this invention relates to a compound of certain ingredients and the manner of preparing it for the purpose of preventing and removing the sediment and incrustation arising from the use of impure water in steam-boilers.

As one example of the compound and the mode of preparing or compounding the same, I refer to the following description:

One hundred pounds carbonate of soda; ten pounds sulphate of iron; five pounds sulphate of potash; five pounds sulphate of copper; twenty-five pounds fine-ground tan-bark.

These ingredients are all mixed and stirred up together until they are intimately combined.

The soda, iron, potash, and copper, before named, should be all pulverized finely first; then add the tan-bark and about one pound of pulverized borax.

The compound may be introduced into the boiler in quantity from one-quarter to a half pound for each nominal horse-power or capacity of the boiler. However, a discrimination must be made, with due reference to the grate or fire-surface of the boiler; for instance, the common flue-boiler presents more surface for horse-power than the tubular kind.

Due regard must be observed with reference to the pressure of steam and the heat consequent thereon.

These conditions must, of course, involve some degree of experience, in order to arrive at the due or best proportions for the different construction, varying pressure of steam, and character of the water.

I have given an approximating proportion, which will be found of practical use and advantage, and which should be placed in the boiler once every week to once every four weeks, depending upon the conditions before mentioned.

By the use of this compound the sedimentary deposits in the boiler are reduced from the ordinary hard and strong character to a friable, clayey, and granular condition, which may be readily removed in the ordinary way.

This compound may be used with material advantage in the water with which the boiler is supplied, in the same proportions and under like circumstances as though placed in the boiler.

This invention is not confined to the exact formula or proportions herein set forth, as it is evident that the substantial equivalents thereof may be used without departing from the nature of this invention.

The borax may be omitted, and in case tan-bark is not at hand, other organic tannin or tanning extract, or terra japonica, may be substituted, and other forms of alkali and sulphates than herein named may be substituted, having the same material equivalents.

Claims.

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

1. Combining the salts of iron and copper with alkaline salts and tannin, or its equivalents, as and for the purpose set forth.

2. The described compound, separately and combined with borax, substantially as and for the purpose described.

WM. H. BURRIDGE.

Witnesses:

J. H. BURRIDGE,
N. E. FILLMORE.