

UNITED STATES PATENT OFFICE.

WILLIAM THOMAS GRANT, OF NEELYVILLE, ILLINOIS.

IMPROVEMENT IN COMPOUNDS FOR REMOVAL OF SCALE FROM STEAM-BOILERS.

Specification forming part of Letters Patent No. **111,198**, dated January 24, 1871.

To all whom it may concern:

Be it known that I, WILLIAM THOMAS GRANT, of Neelyville, in the county of Morgan, and in the State of Illinois, have invented certain new and useful Improvements in Compound for Removing Lime-Scales in Steam-Boilers; and do hereby declare that the following is a full, clear, and exact description thereof.

The nature of my invention consists in a compound for removing lime-scales in boilers, or preventing the formation thereof, and which compound also stimulates the generation of steam in steam-boilers.

It is composed of the following ingredients, namely: ground shells, ground bones, and coal-tar, or fluid taken from the tar by distillation. These ingredients are mixed in about the following proportions: Equal parts of ground shells and ground bone; then take twelve pounds of this mixture to each gallon of tar, or any part of the same that may be taken or separated from it by distillation. This compound is not corrosive, and will not injure the boiler. It will remove lime-scales in steam-boilers by dissolving and loosening the scale, and prevent the formation of lime-

scale by its use. At the same time it will stimulate the generation of steam.

The charge for a boiler of ordinary capacity is from five to fifteen pounds. From the time the first charge is put in, a perceptible difference in making steam is manifest. Any boiler by its use, from the first time it is introduced, will make more steam with less fuel than without it.

I do not confine myself to the precise proportions of the ingredients above mentioned, as they may in some cases be varied with great advantage.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

The within-described compound, consisting of ground shells, ground bone, and coal-tar, or any of its distillates, substantially for the purposes herein set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 23d day of July, A. D. 1870.

WILLIAM THOMAS GRANT.

Witnesses:

JOHN C. EDMONDSON,
THOS. H. JENESON.