

UNITED STATES PATENT OFFICE.

GEORGE M. WOLFE, OF SHERIDAN, WYOMING.

PROCESS FOR PREVENTING HONEYCOMBING IN STEAM-BOILER FURNACES.

993,135.

Specification of Letters Patent.

Patented May 23, 1911.

No Drawing. Application filed June 25, 1908, Serial No. 440,387. Renewed December 2, 1910. Serial No. 595,325.

To all whom it may concern:

Be it known that I, GEORGE M. WOLFE, citizen of the United States, residing at Sheridan, in the county of Sheridan and State of Wyoming, have invented certain new and useful Improvements in Processes for Preventing Honeycombing in Steam-Boiler Furnaces, of which the following is a specification.

My invention has to do with the prevention of honeycombing—i. e., the deposit of products of combustion in the fire boxes or combustion chambers of steam boiler furnaces, particularly the fire boxes of steam locomotives; and it consists in the process hereinafter described and definitely set forth in the claim appended.

As is well known to those having care of the fires of steam boiler furnaces, the maintenance of fires in the fire boxes gives rise to honeycombs on the crown stays, crown bolts and rivet heads and in the mouths of flues; the honeycombs hanging from the heads after the manner of icicles and collecting in the flues until the latter are almost closed, with the result that the water containers are shielded from the heat, frequently to such an extent that steam locomotives often fail while *en route* with their trains from one point to another.

The object of my process is to assure all parts of a fire-box remaining practically clean and bare for an indefinite period so that said parts will be exposed to the best advantage to the flames and heated products of combustion, and broadly stated, the process consists first in coating the inside of a fire-box, in whole or part, with a composition calculated, when burned, to leave a smooth and greasy substance on said inside which substance will preclude the deposit of the elements that form honeycombs, and second in subjecting the said composition to the action of fire. This second step in the process may be performed prior to putting the furnace into commission or else the initial firing of the furnace, after it is put into commission, may be depended on to burn the composition and leave the smooth and greasy substance in the inside of the fire-box, without involving departure from the scope of my invention as defined in the claim appended.

Experience has demonstrated that the result desired is attained by painting, spraying or otherwise coating the flues, the crown stays and bolts and the rivet heads in a fire-box, and experience has also demonstrated that the best composition for the purpose stated is composed of the following ingredients, combined in about the proportions stated, viz:

Crude oil	10 gallons.	
Lamp black	one half pound.	
Graphite	one pound.	65

The said ingredients are thoroughly commingled, and the mixture is then ready for use.

It will be gathered from the foregoing that my process is simple and inexpensive, and that it may be carried out without entailing the employment of skilled labor, which also contributes to its cheapness; and I desire to state at this point that I have found from experience that when the composition specified is used to coat the flues, crown stays and bolts and rivet heads of a fire box, and the composition is then burned, a smooth and greasy substance will be left on the said parts, which substance will preclude the adherence of products of combustion and the resulting honeycombing for a lengthy and indefinite period and in that way contribute materially to the steaming capacity of a locomotive and economy in the operation thereof.

Having described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

The herein described process of preventing honeycombing in fire-boxes, which consists, first—in coating such parts in the fire-box as necessary to attain the end desired with a composition of matter consisting of crude oil 10 gallons, lamp black one half pound, and graphite one pound; the coating being effected while said parts are cool, and, second—in burning the composition of matter with which the parts are coated.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE M. WOLFE.

Witnesses:

R. H. REED,
R. C. REED.