UNITED STATES PATENT OFFICE.

GEORGE W. CASE, OF LESTERSHIRE, NEW YORK.

COMPOUND FOR THE REMOVAL OF BOILER-SCALES.

No. 851,159. Specification of Letters Patent. Patented April 23, 1907.

Application filed January 24, 1907. Serial No. 353,898.

To all whom it may concern:

Be it known that I, GEORGE W. CASE, a citizen of the United States, residing at Lestershire, in the county of Broome and State of New York, have invented certain new and useful Improvements in Metal Compounds for the Removal of Boiler-Scales, of which the following is a specification.

My invention relates to a metal compound, having for its object the removal and prevention of scales in steam boilers, and other receptacles in which steam is used; also to prevent pitting, priming or foaming of steam boilers.

My metal compound is so compounded as to be readily used for any different steam pressure—from 10 lbs to 400 lbs or for any desired period of the continuous use of the boilers—from one to three months or longer.

My metal compound consists of the following ingredients—: antimony, aluminum, bismuth, copper, lead, tin, mercury and zinc, to be used together or in groups of two or more metals; the objects of these different combinations are for the purpose of meeting the different steam pressures in boilers, as before mentioned herein. Different steam pressures require a different combination of the ingredients. These metals are combined, for general use, in the following proportions; 8 parts antimony, 4 parts aluminum, 2 parts bismuth, 1 part copper, 10 parts lead, 3 parts mercury, 25 parts tin, 45 parts zinc.

The proportion of the different metals entering into this compound, may be varied in amount, in accordance with the different amount or degrees of steam pressure. The actual quantity placed in a boiler at any given time will depend on the horse power, steam pressure, and desired running period between changes. These ingredients above named are first melted separately and then mixed together in the molten state; when in this state and thus mixed together, the compound is placed in molds and cast into balls, or other forms and shapes. When in the form of balls, they are about 2 inches in diameter and about one lb in weight. The balls are placed within a metal container, which is then suspended within the steam boiler for use.

The action of the boiling water and the steam pressure soon disintegrates the metal compound: it dissolves, and the water becomes impregnated with it. The quantity of the metal compound and the proportion of the ingredients entering into the compound, depend upon the horse-powers of the boilers, the composition of the water and the steam power of the boiler; the water being purified by the action of the dissolving compound, it prevents pitting, priming or foaming of the boiler.

Having thus described my invention or discovery, what I claim as new and desire to secure by Letters Patent, is:

1st: The herein described composition of matter, consisting of antimony, aluminum, bismuth, copper, lead, mercury, tin, zinc substantially as described and for the purpose specified.

2. The herein described composition of matter consisting of 8 parts antimony, 4 parts aluminum, 2 parts bismuth, 1 part copper, 10 parts lead, 3 parts mercury, 25 parts tin, 45 parts zinc; and for the purpose of removal and prevention of scales in steam boilers, and other receptacles in which steam is used.

In testimony whereof I have affixed my signature, in presence of two witnesses.

GEORGE W. CASE.

Witnesses:

W. F. WARD,

M. E. MANNING.