

United States Patent Office.

CORNELIUS GODFREY AND REUBEN LIGHTHALL OF NEW YORK, N. Y.

Letters Patent No. 109,508, dated November 22, 1870.

IMPROVEMENT IN PROTECTING IRON AGAINST CORROSION.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that we, CORNELIUS GODFREY and REUBEN LIGHTHALL, of the city, county, and State of New York, have invented a new and improved Mode of Preventing Corrosion of Iron exposed to water or dampness; and we do hereby declare that the following is a full, clear, and exact description of the same.

The oxidation and corrosion to which iron is subject when in contact with water, more especially salt water, is the cause of serious deterioration of the structures of which it forms the whole or part, and this is more especially the case when such oxidation or corrosion is promoted or augmented by a certain galvanic action arising from the presence of another metal or other metals, with which the iron forms an electric battery, in which the iron forms the electro-positive element and the other metal or metals form the electro-negative element, for in such case the oxygen of the water is set free in immediate contact with the iron, with which it enters into combination to form the oxide of iron, thereby causing the corrosion and loss of the iron.

This oxidation from the above, or any other cause dependent upon the presence of water in contact with the iron, it is the object of this invention to prevent; and

Our invention consists in effecting this object by connecting with the iron a metal or combination of metals or alloy which shall be electro-positive with reference to iron, such, for instance, as zinc, or alloys of zinc, with tin or other metals, or mechanical com-

binations of zinc and tin. We do not, however, propose to attach such metals or alloys continuously over the whole surface of the iron exposed to the action of the water, but at any convenient and distant points of such surface.

The applications which may be made of this invention are numerous and varied. Among the many structures and articles to which it may be applied may be mentioned steam-boilers, anchors and their chains, buoys, the propelling-screws of steam-vessels and their shafts, and the appurtenances of the same, rudders, iron pumps, water-meters, and iron pipes laid in the ground or elsewhere.

Many modifications will be necessary in the application of the invention, according to the nature, form, and exposure of the structures, bodies, or articles to which it is applied.

The electro-positive metal may be fashioned and applied in the form of bolts, spikes, nails, rivets, plugs, collars, rings, bands, nuts, straps, plates, or couplings.

What is here claimed, and desired to be secured by Letters Patent, is—

The protection of iron surfaces or bodies from oxidation or corrosion, when exposed to the action of fresh or salt water or dampness, by applying to the iron an electro-positive metal, alloy, or combination composed of zinc and tin, substantially as hereinabove described.

CORNELIUS GODFREY,
REUBEN LIGHTHALL.

Witnesses:

JOHN BISELL,
A. G. BUELL.