

# UNITED STATES PATENT OFFICE.

ALONZO TEMPLE, OF BRIDGEPORT, CONNECTICUT.

## ART OF LUBRICATING AND PRESERVING STEAM-ENGINES.

SPECIFICATION forming part of Letters Patent No. 261,180, dated July 18, 1882.

Application filed December 12, 1881. (No specimens.)

*To all whom it may concern:*

Be it known that I, ALONZO TEMPLE, of Bridgeport, in the county of Fairfield, and in the State of Connecticut, have invented certain new and useful Improvements in the Art of Lubricating and Preserving Steam-Engines; and I do hereby declare that the following is a full, clear, and exact description thereof.

In marine boilers particularly, and in others also, one of the principal impediments to keeping the boiler clean is the oil which enters it from the valves, cylinder, and adjacent parts. When necessary to use salt-water for steam, in addition to the ordinary incrustations, corrosion, and sediment, there is a deposit of salt in the boiler which greatly obstructs its use.

All preparations now in use for the purpose of lubricating the valves and cylinders pass through the pump, lubricating the water-cylinder to the boiler, and, attaching themselves to the inside of the pipes and boiler, hold other foreign substances, and incrustations, corrosion, and sediment are largely formed and retained.

All preparations now in use for the purpose of preventing or removing these impediments to the efficiency of the engine are applied periodically and directly to the inside of the boiler, and not in the same manner as the oil reaches it, and hence the boiler cannot be kept uniformly clean and by the same process that the cylinder is lubricated by.

The object of my invention is to dispense with the use of oils, (which will not mix with the water,) and to lubricate those parts of the engine from which the lubricant can escape and enter the boiler with a substance or compound that will remain in solution in the water, and not only remove but also continuously prevent all of the above-mentioned impediments to the utility of the boiler, thus accomplishing the double office of a lubricant of these parts of the engine and anti-incrustator and anti-corrosive by applying it in the manner herein described.

My invention consists in the improved method of applying this compound so as to prevent any incrustations or corrosions, as well as and instead of removing them after formed and the boiler is injured, also in the use of this compound as a lubricant, which I have

now discovered can be done for the first time, and is made of gambia or terra-japonica or catechu and water, and, if to be used with salt-water, cocoanut-oil, and is prepared as follows: First, mix about three pounds of gum to one quart of water, heat to a boiling-degree, and only enough to dissolve the gum; then strain the mixture and again heat it to a boiling-point, and re-strain or filter it, so as to fully remove all foreign substances, adding water as may be necessary to reduce the preparation to the same consistency as the heavy bodied oils that are used for similar purposes. If to be used with salt-water, about one-sixteenth of the preparation may be cocoanut-oil. This may be used as a lubricant wherever there is sufficient heat to reduce it to the proper consistency, or it may be warmed or diluted; but I do not claim that it is as convenient as oils as a universal substitute, but do claim it is a superior lubricant.

When this preparation is used the packing wears as long again at least as when oil is used, and it requires less care, and there is less leakage. It also preserves the parts on which it is used from pitting, while most oils and anti-incrustators injure them in that manner and cause corrosion. In an engine with a condenser the amount that is ordinarily used as a lubricant will be sufficient to prevent incrustations, and thus preserve the valves, cylinder, pipes, and boiler also. In an engine without a condenser it may be used as a lubricant to the parts to which it is adapted, but does not affect the boiler except as directly applied to the water in it.

I am aware that before the adoption of the condensers now in common use the same substances, differently compounded and prepared, and applied as an anti-incrustator directly, and not as a lubricant first and thence through the valves and pipes to the boiler, were used, and my patent dated November 29, 1864, was for a compound containing two of these substances; but condensers were not then in common use to use the water over and over, and I have now discovered that prepared as hereinbefore described to be applied as a lubricant I can at once dispense with the use of oils for the parts mentioned, make a far superior lubricant, and preserve the boiler by the

process described, as well as the intermediate and surrounding parts.

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

The improved method of lubricating the pistons, valves, pipes, and adjacent parts of steam-engines to prevent and remove incrustations of the engine and boiler, which consists in the  
10 application thereto of the herein-described

compound of gambia, terra-japonica, or catechu and water, substantially as herein described.

In testimony that I claim the foregoing I have hereunto set my hand this 1st day of December, 1881.

ALONZO TEMPLE.

Witnesses:

JOHN J. PHELAN,  
I. B. KLEIN.