

# UNITED STATES PATENT OFFICE.

CHARLES KIDNER MILNE, OF HAMILTON, ONTARIO, CANADA.

PROCESS OF TREATING AND PRESERVING METAL PATTERNS FROM CORROSION.

No. 899,062.

Specification of Letters Patent.

Patented Sept. 22, 1908.

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*To all whom it may concern:*

Be it known that I, CHARLES KIDNER MILNE, a citizen of the Dominion of Canada, residing at the city of Hamilton, in the county of Wentworth, in the Province of Ontario, Canada, have invented a certain new and useful Improved Art or Process of Treating and Preserving Metal Patterns from Corrosion; and I do hereby declare the following to be a full description of the same.

My invention relates to an improved art or process of treating metal patterns more particularly iron patterns used by iron founders, in such a manner as to prevent rust from forming upon them.

Heretofore there has been much difficulty of keeping such patterns from rusting as rust renders patterns unfit to make smooth molds for casting besides causing much trouble and loss of time in trying to remedy the said evil and the object of my improved art or process is to treat the said patterns in such a manner as to entirely and effectually prevent rust from forming upon them and prevent all loss of time and annoyance caused by rusty patterns.

In treating old iron patterns to prevent rust I first subject them to an air blast on a wind wheel then dip the pattern in a solution of three pints of sulfuric acid and twenty gallons of boiling water, allowing the pattern to be submerged about five minutes to start the rust. The pattern is then dipped in a solution of boiling potash and water and allowed to stand a few minutes; it is then scoured on a No. 30 emery wheel until clear of dirt and rust. The pattern is then dipped in a solution of one quart of sulfuric acid and twenty gallons of cold water to neutralize the potash on the pattern; it is next dipped in a solution of cyanid of potassium, two ounces to one gallon of cold water, to neu-

tralize the sulfuric acid, next it is dipped in pure cold water, and it is now rendered in a condition to be submerged in a final bath as follows,—4 lb. sal soda.  $\frac{1}{4}$  lb. white stick potash. 6 lbs. sulfate of copper. 6 lbs. cyanid of potassium, chemically pure. 9 gallons hot water. The above ingredients to be mixed separately and poured back into the solution which should test 16 hydrometer anodes, worked hot and connected to an electric dynamo.

After the pattern is coated with the above solution it is heated and given a coating of hot paraffin wax and polished with a hard brush to give it a smooth surface which will make smooth molds and prevent rust.

Having thus described my improved art or process and its advantages, what I claim and desire to secure by Letters Patent, is,

The improved art or process of treating metal patterns for the prevention of rust, consisting of the treatment of the pattern, (1), to a wind blast, (2), to the action of sulfuric acid and boiling water, (3), then in a solution of boiling potash and water, (4), then subjected to the action of powdered emery, (5) then subjected to the action of sulfuric acid and cold water, (6) then dipped in a solution of cyanid of potassium and cold water, (7), then immersed and treated electrically in a solution of sal soda, white stick potash, sulfate of copper, cyanid of potassium and hot water, and afterwards given a coating of hot paraffin wax, all the ingredients mixed and the pattern treated in or about the proportions substantially as and for the purpose specified.

Hamilton, Ontario, May, 28, 1908.

CHARLES KIDNER MILNE.

Signed in the presence of—

EDWARD GOFF,  
WM. BRUCE.