

UNITED STATES PATENT OFFICE.

HENRY HEIL, OF ST. LOUIS, MISSOURI.

TREATING METAL CASTINGS.

SPECIFICATION forming part of Letters Patent No. 515,222, dated February 20, 1894.

Application filed March 13, 1893. Serial No. 465,747. (No specimens.)

To all whom it may concern:

Be it known that I, HENRY HEIL, of the city of St. Louis, in the State of Missouri, have invented a certain new and useful Improvement in Treating Metal Castings, of which the following is a full, clear, and exact description.

My invention relates to a method of treating metal castings to render them impervious to air and water; and my invention consists in features of novelty hereinafter fully described and pointed out in the claims.

It is the experience of every manufacturer of the class of machinery wherein air or liquid are employed that a very large loss is sustained annually by castings otherwise good but for having minute holes or openings, which permit of the passage of the air or water, and thus render the castings worthless. This probably is particularly so in the manufacture of air brakes, and it is known that hundreds of thousands of dollars' worth of castings are discarded annually for this cause. I have discovered a method, comparatively inexpensive, whereby this difficulty is avoided.

My invention consists in immersing the castings in a solution of a silicate. A solution of any silicate may be used, though I prefer a solution of silicate of soda. I have found, by practical experience, that when a casting has been immersed in a solution of a silicate and the solution heated to boiling point and allowed to gradually cool before the casting is removed, these minute holes or openings are effectually and permanently closed, and thus a casting which would otherwise have to

be discarded is made available for use, and is placed in practically as good condition as if the holes or perforations did not exist.

In carrying out my invention, I boil the solution while the casting is immersed therein, which causes the solution to thoroughly permeate the pores of the casting, then allow the solution to cool before withdrawing the castings, which causes the solution in the pores to be less liable to escape than would be the case if the casting was removed while the solution was hot, and then wiping the casting after being taken from the solution, to remove the solution from its surface before the solution hardens.

I claim as my invention—

1. The method of treating metal castings herein described, which consists in immersing the same in a solution of a silicate, then boiling the solution while the casting remains immersed therein, and finally allowing the solution to cool before the casting is removed, as specified.

2. The method of treating metal castings herein described, which consists in immersing the same in a solution of a silicate, then boiling the solution while the casting remains immersed therein, then allowing the solution to cool, then removing the casting, and finally wiping the casting to remove the solution from its surface, as specified.

HENRY HEIL.

In presence of—

ALBERT M. EBERSOLE,
E. S. KNIGHT.