

# UNITED STATES PATENT OFFICE.

CHARLES H. PERKINS, OF PROVIDENCE, RHODE ISLAND, ASSIGNOR TO  
THE PERKINS SHEET IRON COMPANY, OF SAME PLACE.

## IMPROVED METHOD OF TREATING SHEET-IRON PLATES.

Specification forming part of Letters Patent No. 52,647, dated February 13, 1866.

*To all whom it may concern:*

Be it known that I, CHARLES H. PERKINS, of the city and county of Providence, in the State of Rhode Island, have invented a new and useful Improvement in the Method of Treating Sheet-Iron Plates for the purpose of imparting to the same the qualities and finish which have hitherto belonged only to that description of sheet-iron known to the trade as "Russia sheet," of which the following is a specification.

The process by which Russia sheet-iron is manufactured has been preserved a profound secret in the country which has derived so large a revenue from its exportation. Many attempts have been made among sheet-iron makers in this country to discover the secret by experiment, but hitherto without success.

I do not claim to have ascertained the particular process which is employed in Russia, but I claim to have discovered a process for treating the common American sheet-iron which will give to it a luster and beauty of surface equal, if not superior, to the best sheet-iron of Russian manufacture; and it consists in, first, removing by mechanical means the superficial scale of oxide of iron which coats the outside of the sheet, and at the same time brightening the surface of the sheet by friction; secondly, subjecting the sheet so cleaned and brightened to the action of a degree of heat in a close oven sufficiently powerful to produce by partial oxidation the dark-blue color without developing fresh scale.

For removing the scale and brightening the surface various means may be employed, the

most convenient and efficient of which will be found to be the revolving rubbing-bed commonly employed in shops for working marble and freestone; or the sheets may be placed upon a stationary table and their surfaces cleaned and brightened by the action of reciprocating rubbers, between which and the surface of the plate is sprinkled sand moistened with water. The sheets being now free of all scale and rendered bright in the manner described, or by any other preferred means, are inclosed in a box and placed in an oven the temperature of which is about 500° Fahrenheit, at which point the deep-blue color which distinguishes Russia iron will be obtained.

Common sheet-iron treated as above described will exhibit all the appearances and possess the qualities of Russia sheet—that is to say, it will have a smooth lustrous surface of a deep-blue color, and when bent at a sharp angle will throw up no superficial scale. So far as tenacity and ductility are concerned these qualities will depend upon the structure of the iron, for it will not be understood that the process above described affects anything beyond the surface of the sheet.

What I claim as my invention, and desire to secure by Letters Patent, is—

Giving to common sheet-iron the luster, finish, and color of Russia sheet-iron by the process substantially as described.

CHARLES H. PERKINS.

Witnesses:

B. F. THURSTON,  
JOHN D. THURSTON.