

# UNITED STATES PATENT OFFICE.

R. N. ALLEN AND C. C. HINSDALE, OF CLEVELAND, OHIO.

## IMPROVEMENT IN THE MANUFACTURE OF SHEET-IRON.

Specification forming part of Letters Patent No. 53,253, dated March 20, 1866.

*To all whom it may concern:*

Be it known that we, R. N. ALLEN and C. C. HINSDALE, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented new and useful Improvements in the Mode of Making Sheet-Iron; and we do hereby declare that the following is a full and complete description of the same.

The nature of this invention relates to the manufacture of sheet-iron in such a manner that the surface is covered during the process of manufacture with a hard and compact enamel of steel, thereby rendering the sheets stronger and capable of resisting the processes of oxidation much longer than that manufactured in the ordinary way, besides adding greatly to the beauty and durability of articles manufactured therefrom.

In the accomplishment of this object we first make up a pile in the usual manner. To both top and bottom of the same we add a bar or plate of steel of the length and width of the pile. The pile is then heated to the proper degree for welding and passed between rollers, and thus reduced to a bar of the desirable width and thickness. The bars thus formed are next cut into lengths proportionate to the width of the sheets that are to be made therefrom. These bars are again heated and passed between rollers longitudinally, and this operation repeated until plates are formed of the

desired thickness for subsequent rolling into sheets. These plates are then subjected to the action of a chemical bath for the purpose of removing the scale formed by the previous heating and rolling. This bath is composed of dilute mineral acids. After the plates come from the bath they are washed clean in water.

A series of the plates thus scaled—say ten, more or less, in number—are then piled together and brought to a dull-red heat in a suitable furnace, and in this piled condition again passed between rollers and thus reduced to the desired thickness, the sheets coming out finished and presenting a smooth and polished surface on both sides. In making up the pile, if the plate or bar of steel is placed only upon one side, the finished sheet will have the enamel only upon one side, but the manipulation will be the same in both cases.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. Making sheet-iron plate by piling and rolling, in the manner substantially as set forth.
2. The piling of iron with plates of steel upon one or both sides, for the purpose described.

R. N. ALLEN.

C. C. HINSDALE.

Witnesses:

W. H. BURRIDGE,  
FRANK ALDEN.