

United States Patent Office.

BERNARD LAUTH, OF READING, PENNSYLVANIA. ASSIGNOR TO HIMSELF
AND JAMES McCARTY, OF SAME PLACE.

Letters Patent No. 62,758, dated March 12, 1867; antedated September 2, 1866.

IMPROVEMENT IN THE MANUFACTURE OF BARS OR RODS OF IRON OR STEEL.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, BERNARD LAUTH, of Reading, Berks county, Pennsylvania, have invented an Improvement in the Manufacture of Bar Iron and Steel; and I do hereby declare the following to be a full, clear, and exact description of the same.

My invention consists of bars of malleable iron and steel, treated substantially in the manner described hereafter, so that they may have a perfectly smooth and polished surface which will not be oxidized by exposure.

In order to enable others skilled in the art to make and use my invention, I will now proceed to describe its construction and operation.

I take an ordinary bar of malleable iron in its usual merchantable state and remove the oxide from its surface by the application of diluted acid, which is subsequently washed from the bar by alkaline solutions, a well-known process, and one commonly adopted when it is desirable to remove rust and other matter from the surface of malleable iron preparatory to imparting a tin surface to the same. After the bar has been thus prepared I proceed to cover its entire surface with oil. I have found that ordinary petroleum will serve the desired purpose, and that its efficiency is enhanced by mixing with it a small quantity of wood ashes. I either apply the oil to the surface of the bar or immerse the latter into a bath of the oil, after which the most important branch of the process has to be prosecuted. A muffled furnace is so prepared that a uniform, or nearly uniform, heat may be maintained within it, and into this furnace the bar is placed, and care taken that too great a heat is not imparted to it, for on this depends the success of the operation. When the bar approaches a red heat, or when the redness is just perceptible, it is a certain indication that the proper degree of heat has been attained, and a certain guidance for the operator to remove the bar from the furnace, for a greater heat would induce the formation on the surface of the bar of scales of oxide of iron, which would effectually frustrate the attainment of the desired result. The bar on its removal from the furnace is at once subjected to the action of finishing rolls, the grooves of which have been carefully prepared. After the bar has been passed between the rolls from four to six times the desired effect will have been attained, the bar having a uniform surface, as though it had been turned in a lathe, and that surface being of the smooth, polished, and dark character similar to that of Russian sheet iron. Bars thus treated possess two most important advantages over bars hitherto manufactured: first, they are so perfectly round and smooth that, after being subjected to the action of a proper straightening machine, they can be used for shafting, piston-rods, and other like purposes, without resorting to the costly preparatory process of turning and polishing; second, the bars will not rust when exposed to the atmosphere, hence the uniform smoothness of their surfaces is preserved under circumstances which would affect the appearance and quality of ordinary bar iron. Steel bars can be treated with the best results in the manner above described.

I claim as my invention, and desire to secure by Letters Patent, as a new manufacture—

Bars of malleable iron or steel treated substantially in the manner and for the purpose described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

BERNARD LAUTH.

Witnesses:

WM. B. SCHOENER.

JAC. M. SALLAD.