116,046

UNITED STATES PATENT OFFICE.

JAMES FROWEN, EDWARD HEMMINGS, AND JAMES SHELDON, OF NILES, OHIO.

IMPROVEMENT IN PROCESSES OF MANUFACTURING NAIL-PLATES AND SHEET-STRIPS.

Specification forming part of Letters Patent No. 116,046, dated June 20, 1871.

To all whom it may concern:

Be it known that we JAMES FROWEN, EDWARD HEMMINGS, and JAMES SHELDON, of Niles, in the county of Trumbull and State of Ohio, have invented a certain new and Improved Mode of Repairing Nail-Plate and Sheet-Strips, of which the following is a description:

The nature of this invention relates to a process of preparing blooms for nail-plates and sheet-strips; and the object sought for and obtained is the production of a firmly-welded solid sheet, from which the nails are cut, so that said nails shall be free from splits or unwelded seams; hence is produced a more solid and stronger nail than those cut from plates made in the ordinary manner.

A more full and complete description of the same is hereinafter set forth.

The present mode of manufacturing nail-plates is as follows: A ball or mass of iron is taken from the furnace and submitted to the action of the squeezers. The blooms thus formed are then passed through the muck-rolls, whereby they are made into bars of various widths, from three and a half to four and a half inches. Said bars are then cut into proper length for piling, which, on being done, the pile is reheated and passed through the finishing rolls, from which it comes in sheets of various thickness, as the size of the nails to be made therefrom may demand. Sheets made from piles in this way are very liable to be seamed, and the nails cut therefrom are full of loose seams, which, on being driven, split and break.

The expense of preparing sheets in this manner is about three dollars and a half per ton, not including the rolling. There is also a waste of about two hundred and eighty pounds per ton.

In the present way of heating one furnace will heat eight tons per day at an expense of about seven hundred weight of coal to the ton.

Per contra to the above-described process we take the mass or balls of iron from the furnace and submit them at once to the action of a hammer, and thereby hammer them into blooms of such size as is required for the nail-plates or sheet-strips. Said blooms are taken while yet hot and reheated in the mill-furnace, which requires but a few minutes to reheat them sufficiently for rolling into plates or sheet-strips, and which is done by passing them through the ordinary plate-rolls.

In this our process the use of the muck-rolls and piling is avoided, as the mass or balls are hammered into bars ready for the finishing or plate-rolls at once, and more firm and solid plates are obtained, as they are free from seams, and the nails cut therefrom will be stronger, in consequence of their being solid and not liable to split, as the bars of which the plates are made are hammered into form instead of being squeezed and piled.

In this our process it takes in labor from the furnace to the rolls about two dollars per ton, not including the rolling, against some three dollars and a half in the old way, and a waste of only some one hundred pounds, against two hundred and eighty, as above stated, lost in the ordinary process.

In consequence of the short time required to reheat the bars made by our process, one furnace will reheat from twenty to twenty-four tons per day, against eight tons in the ordinary process, making a saving of something like two-thirds of the coal consumed in conducting the manufacture in the old way.

From careful observation made under various trials it is estimated that a saving of about six dollars per ton is obtained by our process above described.

Claim.

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

The herein-described process of preparing nail-plates and sheet-strips by hammering the mass or balls of metal directly from the furnace into blooms, ready, by reheating, for finishing-rolls, substantially as set forth.

JAMES FROWEN.

his
EDWARD × HEMMINGS.
mark.

JAMES SHELDON.

Witnesses:
G. W. MAWBY,
JAMES WADELEY.