F. J. HEARNE.

Pile for Manufacturing Nail-Plates.

No. 208,237. Patented Sept. 24, 1878.

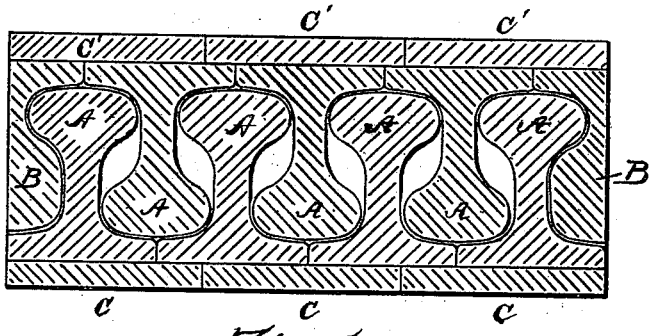

Fig. 1.

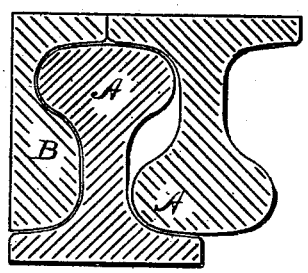

Fig. 2.

WITNESSES:

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UNITED STATES PATENT OFFICE.

FRANK J. HEARNE, OF WHEELING, WEST VIRGINIA.

IMPROVEMENT IN PILES FOR MANUFACTURING NAIL-PLATES.

Specification forming part of Letters Patent No. **208,237**, dated September 24, 1878; application filed June 26, 1878.

To all whom it may concern.

Be it known that I, FRANK J. HEARNE, of the city of Wheeling, in the county of Ohio and State of West Virginia, have invented certain new and useful Improvements in the Construction of a Pile for Rolling Nail-Plates; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

In the drawings, Figure 1 represents an end view of the pile or fagot for rolling into nail-plate; and Fig. 2, an enlarged section of a side thereof, with the top and bottom plates removed.

In order that others may fully understand my invention and make and use the same, I will first give a brief description of the manufacture of nail-plate from old rails.

In methods for the conversion of old rails into nail-plate heretofore practiced, the old rails have been piled either with or without scrap or puddled iron, and rolled into flats or other suitable shapes. These have been cut into suitable lengths, repiled, reheated, and finally rolled into the finished plate, thereby incurring the cost of twice reheating and rolling, together with the loss and waste of iron necessarily involved.

In the method of piling employed by me I accomplish the conversion of the rails at one heat into the finished plate, and at the same time produce a superior quality of product, for it is well known that the generality of iron rails are made from material from which by too frequent working the cinder has been expelled to such an extent as to impair the welding properties, so that for conversion into a product such as nail-plate iron it is very desirable to avoid as many rerollings and accompanying expulsion of cinder as possible.

To this end my invention consists in the pile shown in Fig. 1, which is formed from pieces of old rails, A, cut to any desired equal lengths, and placed, four (more or less) pieces resting on their bases or flanges, with three (more or less) inverted and dovetailed with the first four. This arrangement places all the cold-short head-iron in the center of the pile, while the top and bottom surfaces are formed entirely from the fibrous red-short flange-iron, thus giving the top and bottom of the pile smooth surfaces, with no projections or inequalities to become oxidized and wasted in the furnace, or produce a variable quality of product.

In order to protect the edges of the pile I form a grooved bar, B, having an irregular curved side made to conform and fit into the side of the rail and cover one-half of the head thereof, the bar filling up the space on a line with the flange, making the side of the pile square and regular. This bar can be made of old rail, but preferably from the squeezer-ball rolled without reheating, thus securing any desired quality of iron, and thereby insuring sound and perfect edges on the finished plate.

If the particular lot of old rails operated upon prove of inferior quality, and they are exceedingly variable, the quality of plate may be improved by the addition of one or more layers of muck-iron, C C′, placed on top and bottom, which is rendered practicable by reason of the smooth surfaces previously formed, as described above.

The above-described pile, with or without layers of muck-bar, is placed in a reheating-furnace and brought to a proper welding heat. It is then carried to the plate-rolls, which are made adjustable by suitable mechanism to receive said pile, and with one pass, while retaining width unchanged, is reduced in thickness equal to piles commonly employed. The rolling then proceeds as in usual practice in manufacture of nail-plate.

It will be understood that I claim no novelty in making nail-plate from old rails *per se;* but the novelty consists in the form of pile and side pieces herein shown.

I am aware of the patents granted to T. M. Hart, January 1, 1867, D. B. Oliver, January 15, 1878, and Lewis Jones, April 9, 1878, for improvements in piles; but my invention differs materially from that of T. M. Hart, in that the top and bottom pieces, C C′, are not essential, and the side pieces, B B, must cover the head of the rail. It also differs from the invention of D. B. Oliver, in that while the side piece, B, covers the head of the rail, it

also rests on the flanges of the rail, and fills the space up flush with the outer edges of the flanges, and gives square corners to the pile. It also differs from the invention of L. Jones, in that the side piece, B, covers the head of the rail and forms a square pile, and does not involve proximity of granular and fibrous iron.

I am aware of the patent granted to John Griffin and M. P. Weeks, May 10, 1864, No. 42,656, for pile for railroad-rails, in which a pile is formed by interlocking two or more series of rails; but in this case, in order to secure a perfect contact of the rails in the center of the pile, and thereby render the entire pile solid, the flanges of the rails are sheared off.

In my pile I desire to secure a solid periphery or outer surface to the pile without shearing at all, and at the same time secure interstices or spaces through the center of the pile, thus exposing a larger surface to the action of the heat, so that the outer surface and center of the pile are more equally heated and simultaneously brought to a welding heat.

The Griffin and Weeks pile necessarily involves a loss or waste of iron on the outer surface while bringing the interior of the pile to proper welding heat.

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The improved pile for manufacturing nail-plates, constructed of a series of interlocking rails or rail-pieces, the flanges of the upper and lower series being in contact, respectively, and resting upon the heads of the rails of the opposite series, leaving spaces in the interior of the pile for the free circulation of the heat, and with side pieces made to fit the end rails of the pile, to square it up and diminish the waste by burning, substantially as and for the purpose set forth.

2. The improved pile for the manufacture of nail-plates, composed of top and bottom plates, C C′, a series of interlocking rails, A, the flanges of the upper rails being in contact and resting upon the tops of the lower series, and vice versa, and end pieces, B B, fitted to the sides of the rails, in the manner and for the purpose set forth.

In testimony that I claim the foregoing as my own I hereby affix my signature in presence of two witnesses.

FRANK J. HEARNE.

Witnesses:
J. R. GREER,
W. D. JOHNSON.