(No Model.)

H. W. BORNTRAEGER.

PILE FOR CHANNEL AND I-BEAMS.

No. 267,304. Patented Nov. 7, 1882.

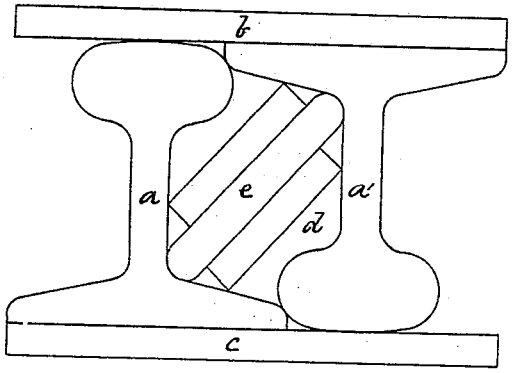

Fig. 1.

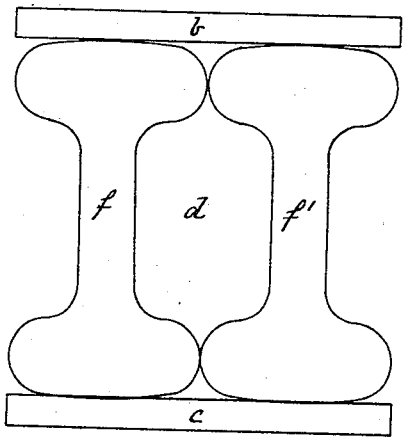

Fig. 2.

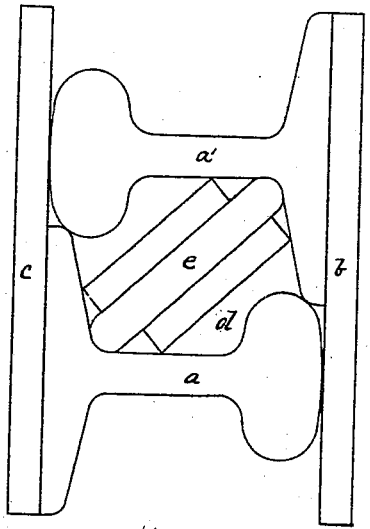

Fig. 3.

Witnesses
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UNITED STATES PATENT OFFICE.

HENRY W. BORNTRAEGER, OF PITTSBURG, PENNSYLVANIA, ASSIGNOR TO CARNEGIE BROS. & CO., (LIMITED,) OF SAME PLACE.

PILE FOR CHANNEL AND I BEAMS.

SPECIFICATION forming part of Letters Patent No. 267,304, dated November 7, 1882.

Application filed June 5, 1882. (No model.)

To all whom it may concern:

Be it known that I, HENRY W. BORNTRAEGER, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Piles for Channel and I Beams; and I do hereby declare the following to be a full, clear, and exact description thereof.

My invention consists of a pile for rolling channel and I beams constructed of railroad-rails without the necessity of binders or of a preliminary heating and rolling to bring them into shape for piling.

To enable others skilled in the art to make and use my invention, I will now describe it by reference to the accompanying drawings, in which—

Figure 1 is an end view of my improved pile. Fig. 2 is a like view of a pile composed of double-headed rails. Fig. 3 shows the position of the pile as it is inserted into the rolls.

Like letters of reference indicate like parts in each.

This pile is formed of two rails placed side by side upon a bottom piece of corresponding length and a width equal to the greatest width of the two rails, and covered by a top piece of similar shape, the rails resting directly upon the bottom piece and the top piece resting directly upon the rails. If desired, the cavity between the webs of the rails may be wholly or partially filled with muck-bar or scrap.

In Fig. 1 I show T-rails *a a'* and top and bottom pieces, *b c*, the rail *a* standing in an upright position, with its flange resting on the bottom piece, *c*, and the rail *a'* standing in an inverted position, with its head resting upon the bottom piece, *c*. The top piece, *b*, rests upon the head of rail *a* and upon the flange of rail *a'*. The top and bottom pieces are of the same length as the rails, and of a width equal to the greatest width of the two rails, when placed together in the manner described. In the recess *d*, formed between the webs of the rails, I place muck-bar or scrap in greater or less quantity, as it is desired to make the web of the bar or I-beam of greater or less thickness. If it is desired, the filling *e* may be omitted entirely.

In Fig. 2 I show the same pile constructed of double-headed rails *f f'*. The pile thus formed requires no binders, and is inserted into the heating-furnace in the position shown in Figs. 1 and 2, the bottom piece, *c*, resting upon the bottom of the furnace. The effect of the heating is to cause the top and bottom pieces to weld and adhere to the rails sufficiently to bind the pile together and permit it to be removed from the furnace and turned on its side, as in the position shown in Fig. 3, in order to be inserted into the rolls. The rolls are provided with the suitable number of passes, and the pile is gradually worked down therein to the form of channel or I beam required. The first pass compacts and reduces the pile, welding its parts together, so that it can be handled without any danger of the parts separating in being fed to the second pass.

The advantage of my improvement is that the pile is extremely simple in its construction, the fiber of the iron is preserved in the finished beam, and the expense of binders and the labor and trouble of applying them is avoided. By placing the top and bottom pieces directly upon both rails I avoid the danger of not obtaining a perfect weld between the said pieces and both rails, and secure a structure of uniform strength throughout in the finished beam.

If desired, additional rails may be placed between the top and bottom pieces, the same being arranged as described with reference to the rails *a a'* or *f f'*.

I am aware that solid piles have heretofore been formed by interlocking rails and specially-shaped top and bottom plates, and do not herein claim such a pile, because such an arrangement of the rails requires a special form of top and bottom plate, as well as in many cases shearing of the flanges, all of which adds to the cost of manufacture.

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

1. A pile composed of two or more rails ar-

ranged side by side, resting directly upon a plain or rectangular bottom piece, and having a similar top piece placed directly on the rails, substantially as and for the purposes described.

2. A pile composed of two or more rails, arranged side by side, resting directly upon a plain or rectangular bottom piece, a similar top piece resting directly upon the rails, and a filling of muck-bar or scrap between the rails, substantially as and for the purposes set forth.

In testimony whereof I have hereunto set my hand this 27th day of May, A. D. 1882.

HENRY W. BORNTRAEGER.

Witnesses:

W. W. YOUNG,

ROBT. B. TOWNSEND.