

(No Model.)

J. K. McDONOUGH.

PILE FOR THE MANUFACTURE OF BEAMS.

No. 303,028.

Patented Aug. 5, 1884.

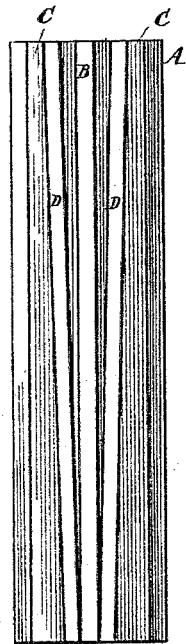


FIG. 1

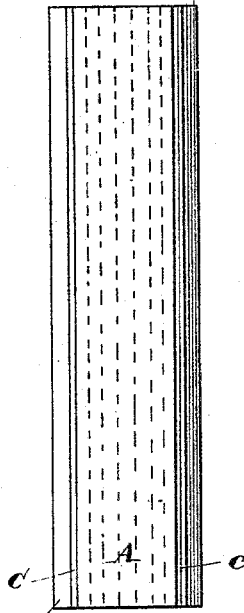


FIG. 3

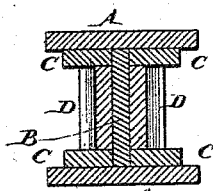


FIG. 2

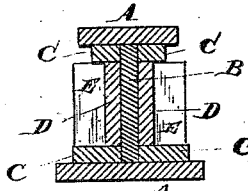


FIG. 4

WITNESSES:

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# UNITED STATES PATENT OFFICE.

JAMES K. McDONOUGH, OF PHILADELPHIA, PENNSYLVANIA.

## PILE FOR THE MANUFACTURE OF BEAMS.

SPECIFICATION forming part of Letters Patent No. 303,028, dated August 5, 1884.

Application filed June 28, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES K. McDONOUGH, of the city of Philadelphia, county of Philadelphia, and State of Pennsylvania, have invented an Improvement in Piles for the Manufacture of Beams, of which the following is a specification.

My invention has reference to the manufacture of I or deck beams, but more particularly to the piles from which they are made; and it consists in forming the pile from the standard sizes of flat irons, the said irons, when placed together, forming lap-welds, and thereby increasing the strength of the beams, and in details of construction, all of which are fully set forth in the following specification, and shown in the accompanying drawings, which form part thereof.

The object of my invention is to enable a pile to be formed for any sized beam from the ordinary standard sizes of flat or bar irons, thereby reducing the cost of producing the beams, as well as the time required for the production of the pile. Further, the arrangement of the flat bars upon each other in most cases are self-supporting, and all form lap-welds, thereby producing a stronger beam. The pile also is self-supporting, and hence may be placed in the welding-furnace without being bound together.

In the drawings, Figure 1 is a plan view of a pile from which to make an I-beam, with the top plates removed. Fig. 2 is a cross-section of the completed pile. Fig. 3 is a plan view of a pile from which to make a deck-beam. Fig. 4 is a cross-section of same.

A A are the top and bottom plates. B is the vertical plate between them. C C C are plates which lie next to the plates A A and on each side of the vertical plate B and in close contact therewith. D D are two vertical plates placed one on each side of the vertical plate B and between the plates C C C, as shown in Figs. 2 and 4, the former being a pile for an I-beam, the latter for a deck-beam, the only difference being that the upper plate A and plates C C are smaller in the case of the deck-beam. In the beam-pile it is advisable to support the upper plates C C, and to do this the vertical plates D D may be set at a slight angle with plate B, as shown in Fig. 1, thereby giving a sure support to the

pile during the heating up. In lieu of thus placing the plates D D, their ends alone may be bent out or blocks of wood or fire-brick E may be placed as shown in Fig. 4; but this precaution is only taken to prevent the pile from accidentally becoming deranged while placing it in the heating-furnace.

From the foregoing it is seen that a pile may be made from the flat irons or bars now in general use, reducing the cost of production, facilitating the welding operation, and producing a stronger beam when rolled. It is also possible to make a given length of beam from a shorter pile than has heretofore been possible. By "lap-weld" I have reference to the arrangement of the bars or plates by which they lie against each other flatly or at right angles, (see cross-sections,) in contradistinction to bars which abut only on their ends or edges.

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

1. A pile for making beams, consisting of the flat commercial bars A A B C C C C D D, the upper bars A C C being of less width than the lower corresponding bars, substantially as and for the purpose specified.

2. A pile from which to make I and deck beams, formed of flat bars arranged with their edges against the flat sides of adjacent bars, and a vertical bar on each side of the central vertical bar, said vertical bars being arranged at an angle to said central vertical bar, so as to support the upper plates or bars from becoming deranged, substantially as and for the purpose specified.

3. In a pile from which to make a beam, the combination of the following flat plates of iron or steel: two horizontal plates, A A, one vertical plate, B, four horizontal plates, C C C C, and two vertical plates, D D, the said plates D being narrower than plate B, and plates C being narrower than plates A, substantially as shown.

In testimony of which invention I hereunto set my hand.

JAMES K. McDONOUGH.

Witnesses:

W. H. LOCKINGTON,  
FRANK A. HARTRANFT.