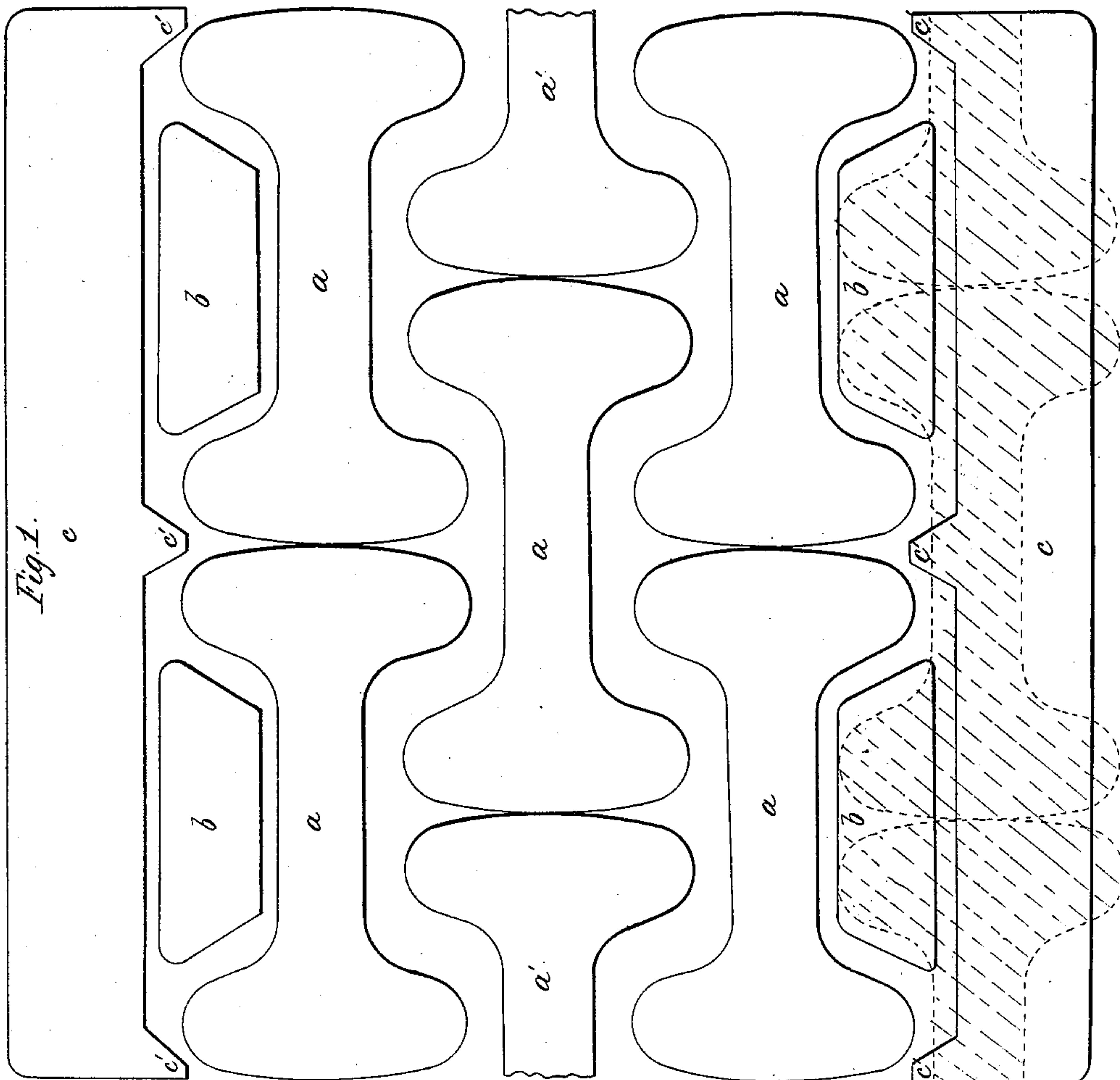
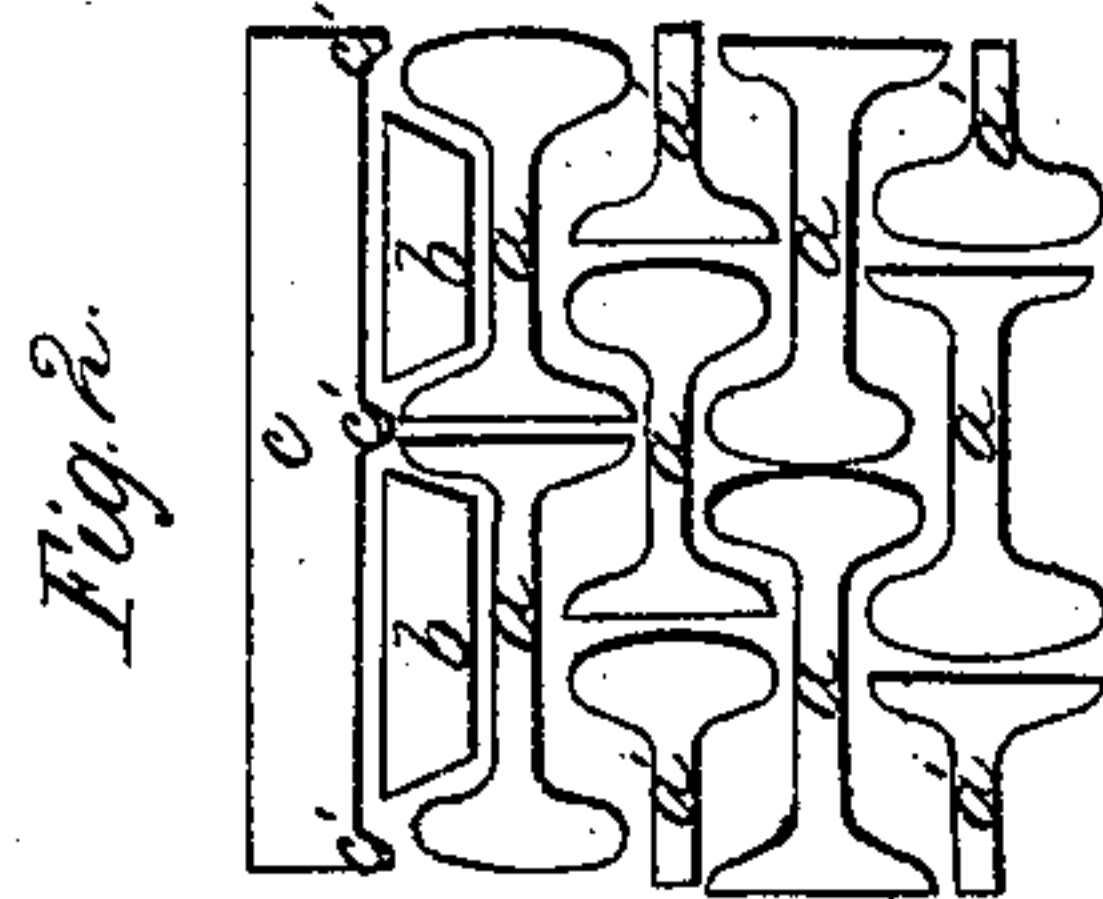


F. W. Webb.

Piles for Railroad Rails.

N^o 47,077.

Patented Mar. 28, 1865.



Witnesses;
Jno. Black
As. Carman

Inventor;
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Sheet 2, 2, Sheets.

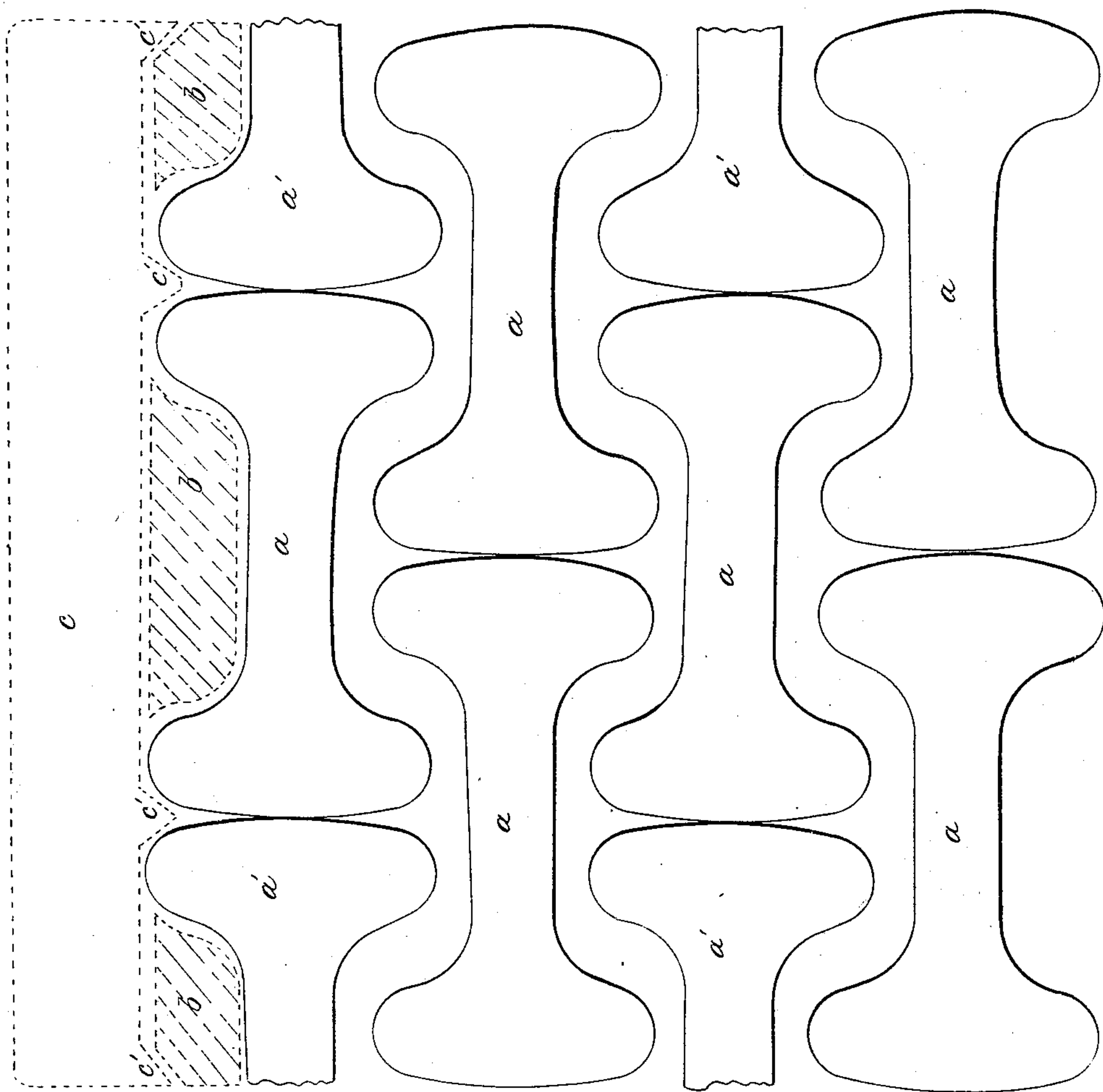
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Fig. 2.



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UNITED STATES PATENT OFFICE.

FRANCIS WILLIAM WEBB, OF MONKS CHIPPENHALL, CREWE, COUNTY OF CHESTER, ENGLAND.

IMPROVEMENT IN THE CONSTRUCTION OF FAGOTS.

Specification forming part of Letters Patent No. 47,077, dated March 28, 1865.

To all whom it may concern:

Be it known that I, FRANCIS WILLIAM WEBB, of Monks Chippenhall, Crewe, in the county of Chester, England, engineer, a subject of the Queen of Great Britain, have invented or discovered new and useful Improvements in the Manufacture of Railway-Rails; and I, the said FRANCIS WILLIAM WEBB, do hereby declare the nature of the said invention, and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement thereof, that is to say—

This invention has for its object improvements in the manufacture of railway-rails; and the nature of the same consists in certain combinations and arrangements hereinafter described for effecting such improvements. For this purpose I make a pile of old double-headed rails, laid head to head and in layers, one above the other, generally, but not invariably, arranging the pile with two rails in its width and three layers high, the heads of the rails in one layer coming in the hollows or spaces intermediate of the heads of the rails in the adjacent layer or layers. One of the rails in the central layer is divided or broken in half longitudinally and one-half is placed on each side of the other rail in the layer. At the top and bottom of the pile a tolerably level surface is produced by laying puddle-bars into the hollows or spaces intermediate of the heads of the rails, and the pile is completed with top and bottom slabs of Bessemer and other cast-steel. These cast-steel slabs I roll with ridges or projections at intervals on their inner surfaces to project and overlap the heads of the rails in the layer above or below the slab. I employ these ridges in order to avoid a straight weld between the steel and the body of the pile; also because these projections, being thinner than the slab, are more easily heated to a welding temperature, so that by the use of them a good weld is more easily made.

Figure 1 is an end view of a pile so made. *a a* are old rails, and *a' a'* are parts of similar rails, produced by breaking the rails in half longitudinally, which is readily done under a steam-hammer. *b b* are puddle-bars. These bars serve not only to give a tolerably even surface to receive the steel slab, as before

mentioned, but they insure a more perfect weld, as the semi-crystalline puddle-bar combines more freely with the steel than fibrous iron of the old rail will. *c c* are the steel slabs, (I employ Bessemer steel by preference,) rolled with ridges *c' c'* upon them.

Should it not be desired to produce a double-headed rail from the pile, one of the steel slabs is omitted, and in place thereof another layer of rails is added to the pile. In this case there will be a broken rail in two of the layers, and the layer next the steel slab may be one containing a broken rail. A pile of this description is shown at Fig. 2. A similar method of piling is also applicable in rerolling rails of the form known in England as the "contractor's section," a form much used in America and on the continent of Europe. Fig. 2^x shows such a pile.

Piles formed as above described, after being heated to a welding-heat and hammered, rolled, or squeezed into a slab welded throughout, are afterward further heated and rolled to the form of rail required.

I would remark that whenever, in the manufacture of railway-rails, it is desired to pile a steel facing-slab with bars of iron it is desirable to roll the slab with ridges on its under side. For example, when piling puddle-bars with a facing-slab which is flat and smooth on its under side, it is difficult to get a perfect weld, but this difficulty is much diminished by rolling the under side of the slab with ridges upon it. The puddle-bar of which the pile is made may have grooves formed in it to correspond with and fit the ridges in the steel facing-slab. This is not, however, essential.

Having thus described the nature of the invention, and the manner of performing the same, I would have it understood that I do not claim, broadly, the forming piles for rails by the combination of old rails and puddle-bars with facing-slabs of every kind, nor the employment of steel facing slabs of every kind, for the formation of piles for rails; but

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

1. Forming piles for the manufacture of steel-faced rails by the combination of old rails, puddle-bars, and facing-slabs of cast-steel, the semi-crystalline puddle-bars being

interposed between the fibrous old rails and the crystalline steel slabs so as to combine the materials of these two by a material which partakes of the nature of each, substantially as described.

2. Forming the piles for the manufacture of steel-faced rails by the combination of iron bars with facing-slabs of cast steel provided with intermediate projections on their inner

surfaces for the purpose of facilitating the welding of the steel to the iron, substantially as set forth.

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