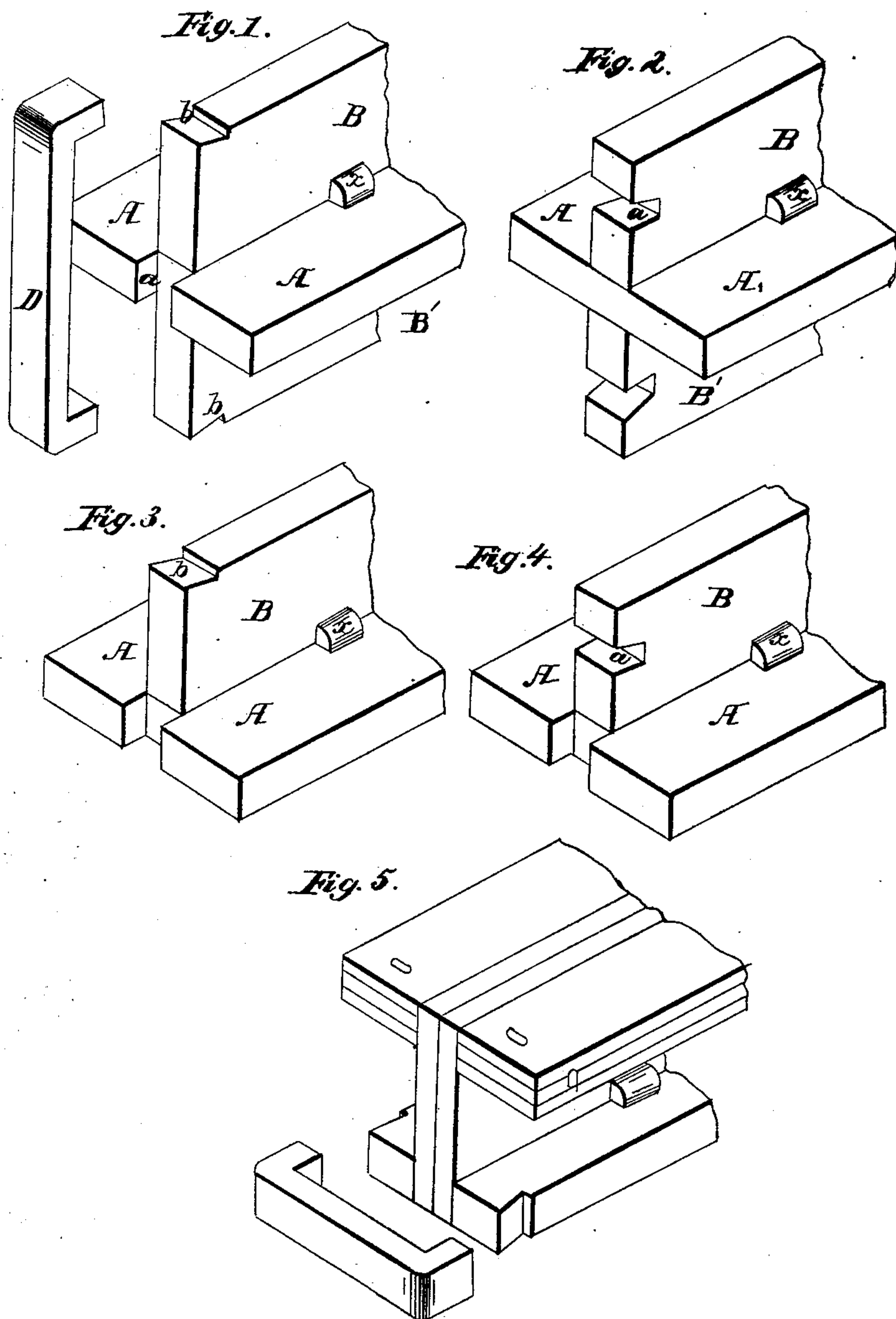


WALTERS & SHAFFER.

Securing Piles and Fagots.

No. 69,597.

Patented Oct. 8, 1867.



Witnesses.
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United States Patent Office.

GEORGE WALTERS AND THOMAS SHAFFER, OF PHOENIXVILLE, PENNSYLVANIA.

Letters Patent No. 69,597, dated October 8, 1867.

IMPROVED MODE OF SECURING THE BARS OF PILES OR FAGOTS.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that we, GEORGE WALTERS and THOMAS SHAFFER, of Phoenixville, Chester county, Pennsylvania, have invented an improved Mode of Securing the Bars of Piles or Fagots; and we do hereby declare the following to be a full, clear, and exact description of the same.

Our invention consists in permanently securing together by clamps, in the manner described hereafter, the bars of piles or fagots to be rolled into cruciform and other shaped iron.

In order to enable others skilled in the art to practise our invention, we will now proceed to describe the mode of carrying the same into effect, reference being had to the accompanying drawing, which forms a part of this specification, and in which—

Figures 1 and 2 represent, in perspective, our improvement, as applied to piles and fagots for cruciform iron

Figures 3 and 4 our improvement applied to T-shaped piles or fagots, and

Figure 5 another application of our improvement.

On reference to fig. 1, A represents a plain bar of iron, cut to the desired length of the pile or fagot, and on the top of this bar is placed the vertical bar B, a similar bar, B', being placed beneath the said bar A, as shown in the drawing. The bar A has at each end a notch or recess, *a*, of the same width as and coinciding with the ends of the bars B and B', each of which has an inclined notch, *b*. D is a clamp, consisting of a short bar of the same width as the notch *a*, the bar being bent at both ends. In arranging and securing the bars for the pile or fagot, the clamp is heated, and then fitted into the notch *a*, each bent end projecting over the inclined notches *b* in the bars B and B', into which notches the ends are hammered, so that when the clamp becomes cool it will by its contraction effectually confine the bars B and B' to the horizontal bar A. In order that there may be no lateral displacement of the bars B and B' while the pile or fagot is in the furnace, we secure to the bar A, by riveting or otherwise, any desired number of studs *x*, between which the said bars B B' are confined. The pile is now placed in a furnace, reduced to a welding heat, and then subjected to the action of rolls which convert it into the desired cruciform bar or girder.

A pile or fagot constructed as above described will retain its shape while it is in the furnace, and the bars being firmly bound together, no cinder or other impurity can be lodged between them, and, being all plain, whatever impurities there may be in the iron are easily worked out. The beam rolled from a pile or fagot composed of bars arranged and secured together as described, is more uniform, solid, and of better finish than beams rolled from ordinary fagots. In the modification shown in fig. 2, inclined notches *a a* are cut in the end of the bars B and B', for the reception of the bent ends of a clamp, D, which fits against the end of the bar A, instead of into a notch in the same, as shown in fig. 1. Figs. 3 and 4 illustrate our improvements applied to piles or fagots for T beams or girders, and fig. 5 our improvement applied to a fagot for an H beam or girder, two flanges being secured to the web by a clamp, and two being composed each of bars secured together and confined to the web by bolts or rivets, in a manner described in a separate application for a patent.

It will be evident that instead of one bar A, two or more may be used, and that the webs B and B' may be composed of more than one bar.

We claim as our invention, and desire to secure by Letters Patent—

Securing the bars comprising the piles or fagots for cruciform and other shaped wrought-iron beams or girders, by clamps, in the manner and for the purpose described.

GEORGE WALTERS,
THOMAS SHAFFER.

Witnesses:

P. G. CAREY,
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