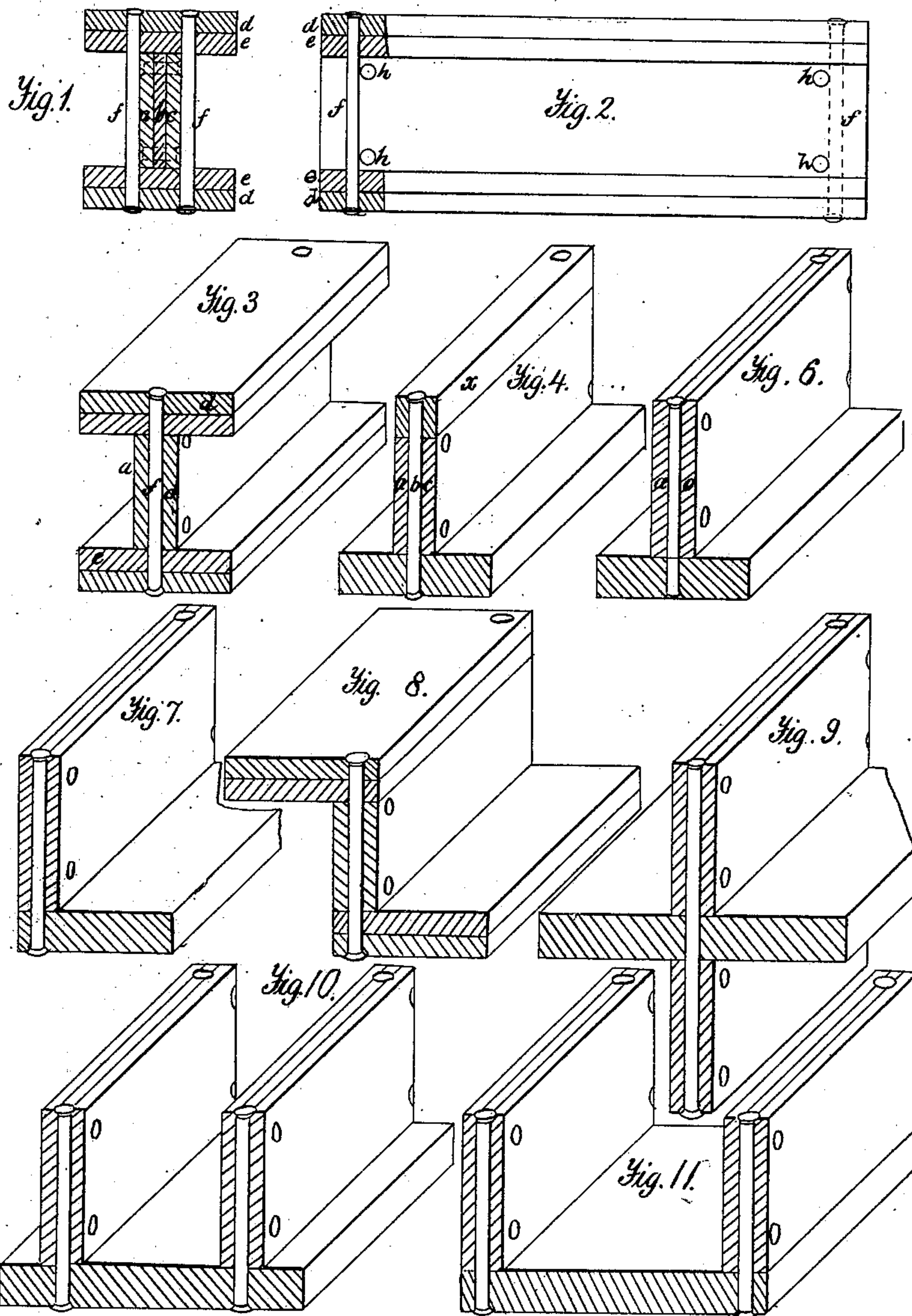


Walters & Shaffer, File for Beams,

N^o 69,872.

Patented Oct. 15, 1867.



Witnesses.

Wm. Albert Steel
S. H. Hoxie Godwin

Inventors.

G. Walters & J. Shaffer
By their Atty
H. H. Brown

United States Patent Office.

GEORGE WALTERS AND THOMAS SHAFFER, OF PHOENIXVILLE, PENNSYLVANIA.

Letters Patent No. 69,872, dated October 15, 1867.

IMPROVEMENT IN THE CONSTRUCTION OF FAGOT FOR BEAM.

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 Pile or Fagot for Wrought-Iron Beams or Girders; and we do hereby declare the following to be a full, clear, and exact description of the same.

Our invention consists of a pile or fagot (for wrought-iron beams or girders) composed of one or more bars for the web, and one or more bars for the flange or flanges, the said bars being arranged and permanently secured together by bolts or rivets, in the manner and for the purpose of effecting the advantageous results described hereafter.

In order to enable others skilled in the art to apply to practice 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—

Figure 1 represents a transverse section of an improved pile or fagot for wrought-iron beams or girders.

Figure 2, a side view of the same.

Figures 3 and 4, modifications; and

Figures 6, 7, 8, 9, 10, and 11 illustrate our improvement as applied to the construction of fagots for beams of different transverse shape.

Similar letters refer to similar parts throughout the several views.

On reference to figs. 1 and 2, *a*, *b*, and *c* represent three bars placed side by side, and cut to the desired length of the pile or fagot, these bars forming the vertical web, against the upper and lower edges of which are placed two bars, *d* and *e*, the latter being punched to receive bolts or rivets *f f*, arranged on each side of and close to the web, and serving to secure the said bars *d* and *e* to the web, the bars of the latter being secured together by the transverse bolts *h h*. The pile, which approximates in shape to an H beam, is now placed in the furnace, there reduced to a welding heat, and then converted into a beam of the desired form and size by the action of rolls.

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. When three bars, *a*, *b*, and *c*, are used for the web, the middle bar, *b*, may be made in sections, arranged so far apart as to permit a vertical bolt, *f*, fig. 3, to pass between them, the bolt or rivet in this case taking the place of the two bolts or rivets *f g* in fig. 1. The bolts or rivets on the outside of the web are indispensable when the latter is composed of one or two bars only, bolts between the bars being available only when the web is composed of three or more bars, but the result as regards the binding of the transverse to the vertical bars is the same in both cases. Vertical bolts or rivets, *f*, may be arranged to pass, some through and some on each side of the web. In some instances we make the web in the manner shown in fig. 6, that is, of three vertical bars, *a*, *b*, and *c*, and a longitudinal solid bar, *x*, placed on the top of the vertical bars, bolts *f* passing through this bar *x* and between the sections of the middle bar *b*. The remaining figures, 6, 7, 8, 9, 10, and 11, explaining the application of our improvements to girders of different transverse forms, will be readily understood without explanation.

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

A pile or fagot, (for wrought-iron beams, girders, &c.,) composed of one or more bars for the web, and any desired number of bars for the flange or flanges, when the said bars are arranged and permanently secured together by bolts or rivets, as and for the purpose herein set forth.

GEORGE WALTERS,
THOMAS SHAFFER.

Witnesses:

P. G. CAREY,
V. N. SHAFFER.