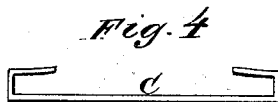
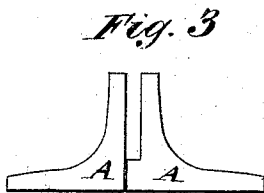
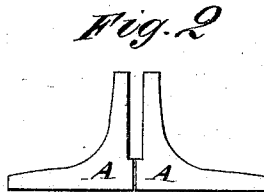
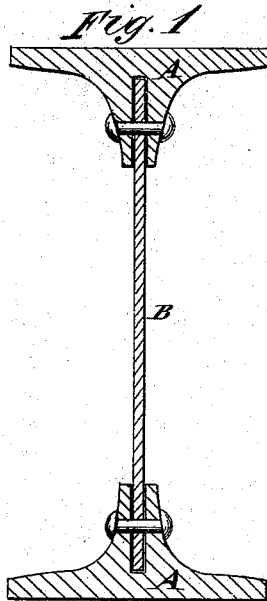


J. L. NOSTRAND.
METALLIC GIRDERS.

No. 178,076.

Patented May 30, 1876.



WITNESSES:

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INVENTOR:

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UNITED STATES PATENT OFFICE.

JOHN L. NOSTRAND, OF BROOKLYN, E. D., NEW YORK.

IMPROVEMENT IN METALLIC GIRDERS.

Specification forming part of Letters Patent No. **178,076**, dated May 30, 1876; application filed April 25, 1876.

To all whom it may concern:

Be it known that I, JOHN L. NOSTRAND, of Brooklyn, E. D., Kings county, State of New York, have invented a new and useful Improvement in Metallic Beams, Girders, &c., of which the following is a specification:

In the accompanying drawing, Figure 1 is a cross-section of a beam or column illustrating my invention. Fig. 2 is an end view of a modified form of one of my improved heads or flanges. Fig. 3 is an end view of another modified form of head, and Fig. 4 is a detail view of a clamp for the two-part head.

The object of my invention is to furnish an improved head or flange for the construction of beams, girders, columns, shafts, posts, struts, braces, compression and tension chords, &c., to be used in constructing buildings, bridges, railroads, and other structures.

The invention will first be described in connection with drawing, and then pointed out in the claim.

In the drawing, A represents the head or flange, in the neck of which is formed a longitudinal groove or channel, to receive the edge of the web B, where it is secured in place by bolts or rivets.

The head or flange A may be made in one piece, as shown in Fig. 1, or in two pieces, as shown in Figs. 2 and 3. In the latter case the plane of division may be in the center of the groove or channel, as shown in Fig. 2, or at one side of said groove or channel, as shown in Fig. 3. With this construction it is advis-

able, in some cases, to clamp the two parts of the head together, to keep them from spreading apart under pressure. For this purpose a bar, C, is bent twice at right angles, at such points as will leave its middle part of a length equal to the width of the heads A. The bar C is heated, and its ends are bent down over the edges of the said head, where it will be held securely by the shrinkage of the iron as it cools. Two of the heads A and their connecting-web B thus form a beam which may be used as a girder, or as a post or column in building bridges, railroads, and other structures where great strength is required.

By this construction, beams of a greater strength can be made by using the same quantity of iron, or of an equal strength by using a less quantity of iron than when the ordinary construction is used. By this construction, also, the strain is transferred from the rivets to the shoulders of the heads, against which the edges of the web rest, so as to greatly increase the power of resistance.

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

A girder or analogous article formed of heads A A and web B, the latter held in grooves of the former by bolt or rivet, substantially as and for the purpose specified.

JOHN L. NOSTRAND.

Witnesses:

JAMES T. GRAHAM,
JAMES H. HUNTER.