A. E. BROWN.

Compression-Members of Bridges.

No. 164,136. Patented June 8, 1875.

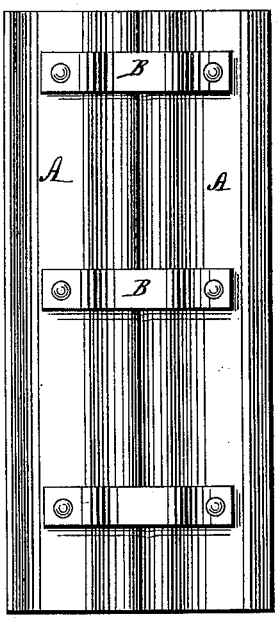


Fig 1

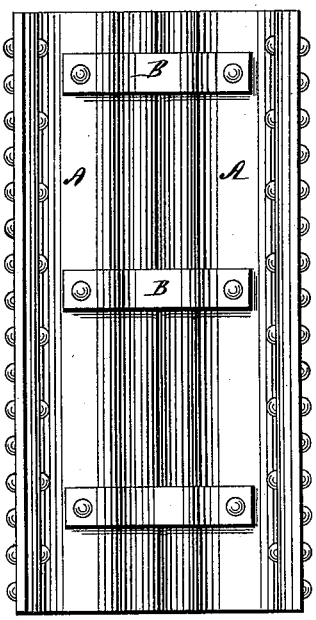
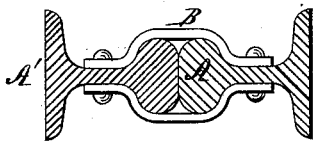
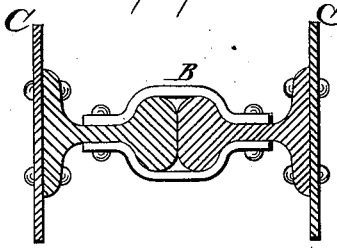
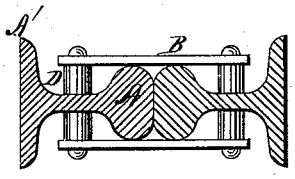


Fig 2







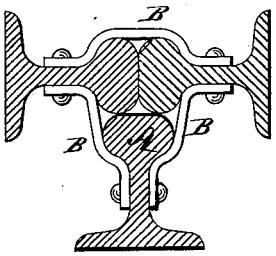


Fig 3

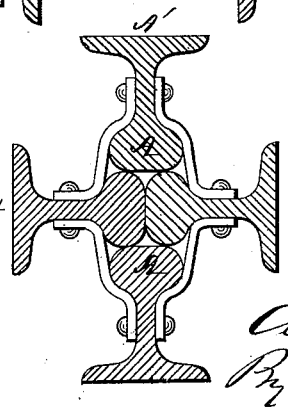


Fig 4

Witnesses
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Attorneys

UNITED STATES PATENT OFFICE.

ALEXANDER E. BROWN, OF CLEVELAND, OHIO.

IMPROVEMENT IN COMPRESSION-MEMBERS OF BRIDGES.

Specification forming part of Letters Patent No. **164,136**, dated June 8, 1875; application filed May 18, 1875.

CASE B.

To all whom it may concern:

Be it known that I, ALEXANDER E. BROWN, of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Compression-Members of Bridges, &c.; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to improvements in the compression-members of a truss, such as is employed in making railway-bridges, roof-trusses, &c., but more especially designed for bridge constructions.

My invention consists in combining with each other, and with other forms of iron, the ordinary railway T-rails, in the manner substantially as set forth and claimed.

In the drawings, Figure 1 shows one form of combination illustrating my invention. Fig. 2 shows another form wherein plates are secured to the bottoms of the flanges.

One of the greatest sources of expense in compression-members of various structures, such as bridges, truss-work, and the like, is due to the fact that the members have each to be made by special machinery designed for the purpose, and necessitating a change of machinery for every change in the size and strength required for a member, as also requiring changes for the different compression-members that form different parts of a structure.

My invention contemplates the employment of railway T-rails, being the ordinary form of rails used upon railroads. Owing to the common and universal form of this material it can be readily purchased at about the cost of the raw material, and those rails that have become worn out by long use, so as no longer to be fit for service in the track, will generally be as well adapted for the purpose of my invention as new rails, and can be purchased very cheaply.

This application forms one of a number of applications filed by me covering various combinations, whereby is formed from railway T-rails all of the compression-members required to withstand the strains in a bridge, truss, or other structure. That which forms the subject of this invention is the combination of railway T-rails, wherein two or more rails are placed head to head, and in that position are bound snugly together. Thus there may be two rails, A, as shown in Fig. 1, placed head to head and firmly strapped together by metallic straps B. In this way the flange A′, presenting broad flat outer surfaces, forms a ready means whereby other parts of the structure may be secured to the compression-member.

When it is desired that the structure shall possess a greater lateral stiffness than is provided for by the flange A′, plates C may be attached to the bottoms of the flanges, as shown in Fig. 2. So, also, when additional strength is required, three rails may be placed head to head, as shown in Fig. 3; or four rails may be placed close together head to head, as shown in Fig. 4, the object being to form a solid column, as nearly as possible, from combinations of railway T-rails by placing the heads of the said rails together, and strap them or otherwise secure them snugly in that position, so that the bottoms of the flanges shall present their broad flat surfaces outward.

I am aware that railway-rails have been united flange to flange by bolts, and am also aware that they have been so united flange to flange upon both sides of an intermediate plate of metal; but in neither case is there a broad flat surface presented outward from the structure, whereby the device is rendered suitable for compression-members in various forms of trusses and other structures.

The straps B may be made to conform to the contour of the rails, as shown in one of the sectional views of Fig. 1; or the straps B may be straight, as shown in the other sectional view, and thimbles or washers D are interposed between the webs and the straps. These washers may or may not be made to conform to the surface of the rail along the web, and may or may not fill up all the space between the straps B and the web of the rail.

What I therefore claim as new, and desire to secure by Letters Patent, is—

1. A compression-member of a bridge or other truss, consisting of two or more railway T-rails placed head to head and firmly bound together, substantially as and for the purpose described.

2. A compression-member of a bridge or other truss, consistsing of railway T-rails placed head to head and firmly bound together, in combination with plates C, secured to the bottoms of the flanges, substantially as and for the purpose described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ALEXANDER E. BROWN.

Witnesses:

FRANCIS J. WING,

JOHN R. RANNEY.