(No Model.)

H. W. RAMSAY.

TRUSS BRIDGE.

No. 381,168. Patented Apr. 17, 1888.

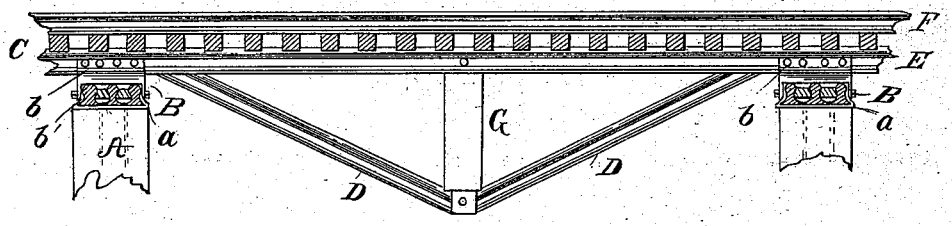


Fig. 1.

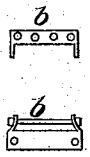


Fig. 2.

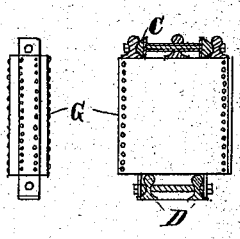


Fig. 3.

Fig. 4.

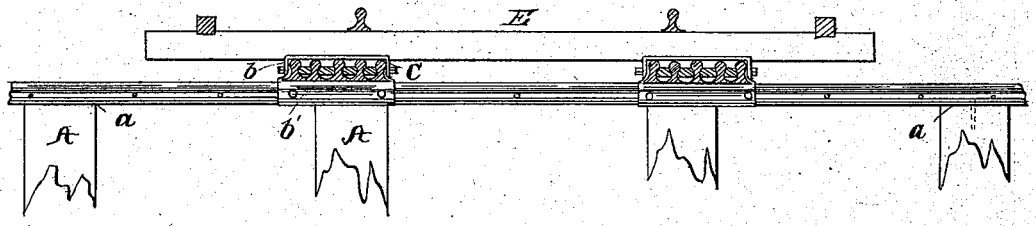
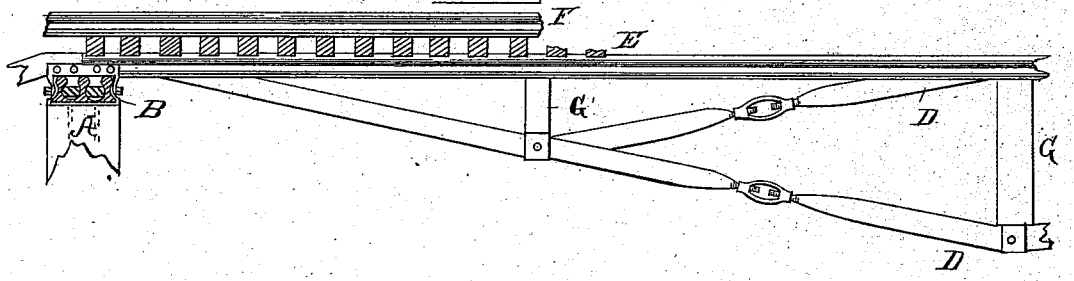


Fig. 5.



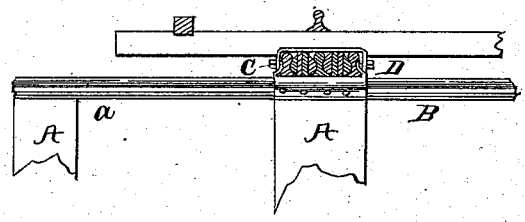


Fig. 6.

Witnesses.

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UNITED STATES PATENT OFFICE.

HENRY W. RAMSAY, OF LINCOLN, NEBRASKA.

TRUSS-BRIDGE.

SPECIFICATION forming part of Letters Patent No. 381,163, dated April 17, 1888.

Application filed September 21, 1887. Serial No. 250,367. (No model.)

To all whom it may concern:

Be it known that I, HENRY W. RAMSAY, a citizen of the United States, residing at Lincoln, in the county of Lancaster and State of Nebraska, have invented certain new and useful Improvements in Truss-Bridges; 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 truss-bridges; and the objects of my invention are to provide a more economical and durable truss-bridge than heretofore known and used, and to provide means for utilizing old rails and iron.

My invention consists in the combination of railway T-rails used as stringers and trusses, in the manner substantially as hereinafter set forth and claimed.

In the drawings, Figure 1 represents a side view of a truss-bridge embodying my invention; Fig. 2, detailed views of the splice-plates; Fig. 3, detailed views of the truss-strut; Fig. 4, an end view of my improved truss-bridge; Fig. 5, a side view of a part of the truss-bridge, showing adjustable strips or rods used in place of T-rails to form the trusses; and Fig. 6, an end view thereof.

Similar letters refer to similar parts throughout the several views.

The letter A designates the piles of my improved bridge, each pile being topped with a cap, *a*, doweled thereto. The cross-pieces B of my invention are T-rails placed flange to flange and having the interstices over the piles occupied by metal sections. The dowels securing the cap *a* to the pile A also pass through the flanges of the cross-pieces B, each end of the cap *a* being turned up and lapped over the outer flanges of each outer cross-piece, B.

The letter *b* designates a splice-plate, each end of which is provided with two incisions to permit that portion of each end between the incisions to be turned down and each side with the remaining portion of each end to be turned upward, for the purpose hereinafter specified.

In Fig. 2 are shown detailed views of the splice-plate *b*, the upper and lower view representing, respectively, a side and end view of the splice-plate *b*.

The splice-plate *b* and cross-pieces B are firmly secured by the bolts *b'*, passing through the lapped-down ends of the splice-plate *b*, the cross-pieces B, and intervening sections.

The stringers C and trusses D of my invention are formed of T-rails standing flange to flange and having the interstices at different points occupied with metal sections. The sides of the splice-plate *b* are turned up and lapped over the outer flanges of the outer stringers, C.

The splice-plate *b*, stringers C, and trusses D are firmly secured by the bolts *c*, passing through the turned-up sides of the splice-plate *b*, the stringers C, trusses D, and intervening sections. The stringers C extend from pile to pile in the usual manner, and adapted to them are the ties E, upon which rest the track-rails F. The trusses D, which, as indicated by the drawings, are placed intermediate to the stringers C, project from the pile A downward at about an angle of forty-five degrees, until at the center of the span they are bent upward at the same angle to rest upon the next pile A.

The letter G designates a strut formed of four sheets of sheet metal riveted together at the edges, each edge of each side of the strut being turned outward to be riveted to the inner side of each end of the strut. The upper ends of each side of the strut project upward next to the inner flange of each outer stringer, C. A bolt passes through the stringers C, having at that point also the interstices occupied with metal sections, the intervening sections, and upwardly-projecting ends of each side of the strut. The lower ends of each side of the strut G project downward next to the outer side of each of the trusses D, and a bolt passes through the downwardly-projecting ends of each side of the strut G, trusses D, and intervening sections placed at that point between the trusses D.

In Fig. 3 are detailed views of the strut G, the rightward and leftward view presenting, respectively, an end and side view of the strut.

To each span of the bridge one or more of the struts G may be used, as deemed necessary. In a long span it may be found more desirable to form the trusses D out of strips or rods of metal, two of such strips or rods taking

the place of each one of the trusses D. In this case the better construction is to have one of the strips or rods of each set of such truss strips or rods to pass from pile to pile of the bridge and under the main strut G and the other strip or rod to pass under an intermediate strut, G', and over the main strut G. The requisite tension can be secured in this construction by providing the trusses D with coupling-nuts *d*.

Fig. 5 presents a side view, and Fig. 6 an end view, of my truss-bridge constructed as last described.

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

1. The combination, in a truss-bridge, of piles A, cross-pieces B, stringers C, trusses D, the cross-pieces, stringers, and trusses formed of T-rails, strut G, ties E, and track-rails F, substantially as described.

2. The combination, in a truss-bridge, of piles A, caps *a*, splice-plates *b*, cross-pieces B, stringers C, trusses D, the cross-pieces, stringers, and trusses formed of T-rails, strut G, ties E, and track-rails F, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

HENRY W. RAMSAY.

Witnesses:

C. S. TREVITT,

WILLIAM HAMELTON.