

No. 672,892.

Patented Apr. 30, 1901.

S. E. DUFF.
RAILWAY CONSTRUCTION.

(Application filed Jan. 5, 1901.)

(No Model.)

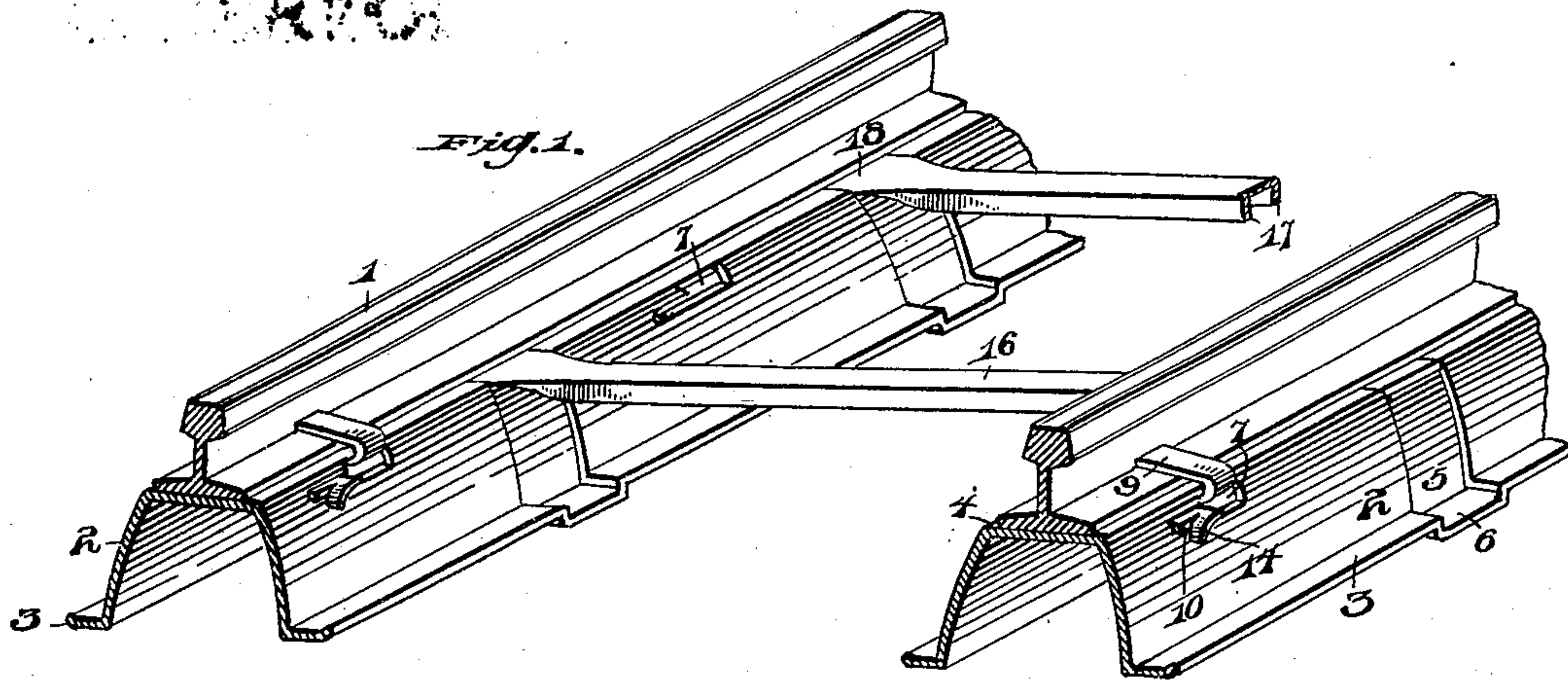


Fig. 2.

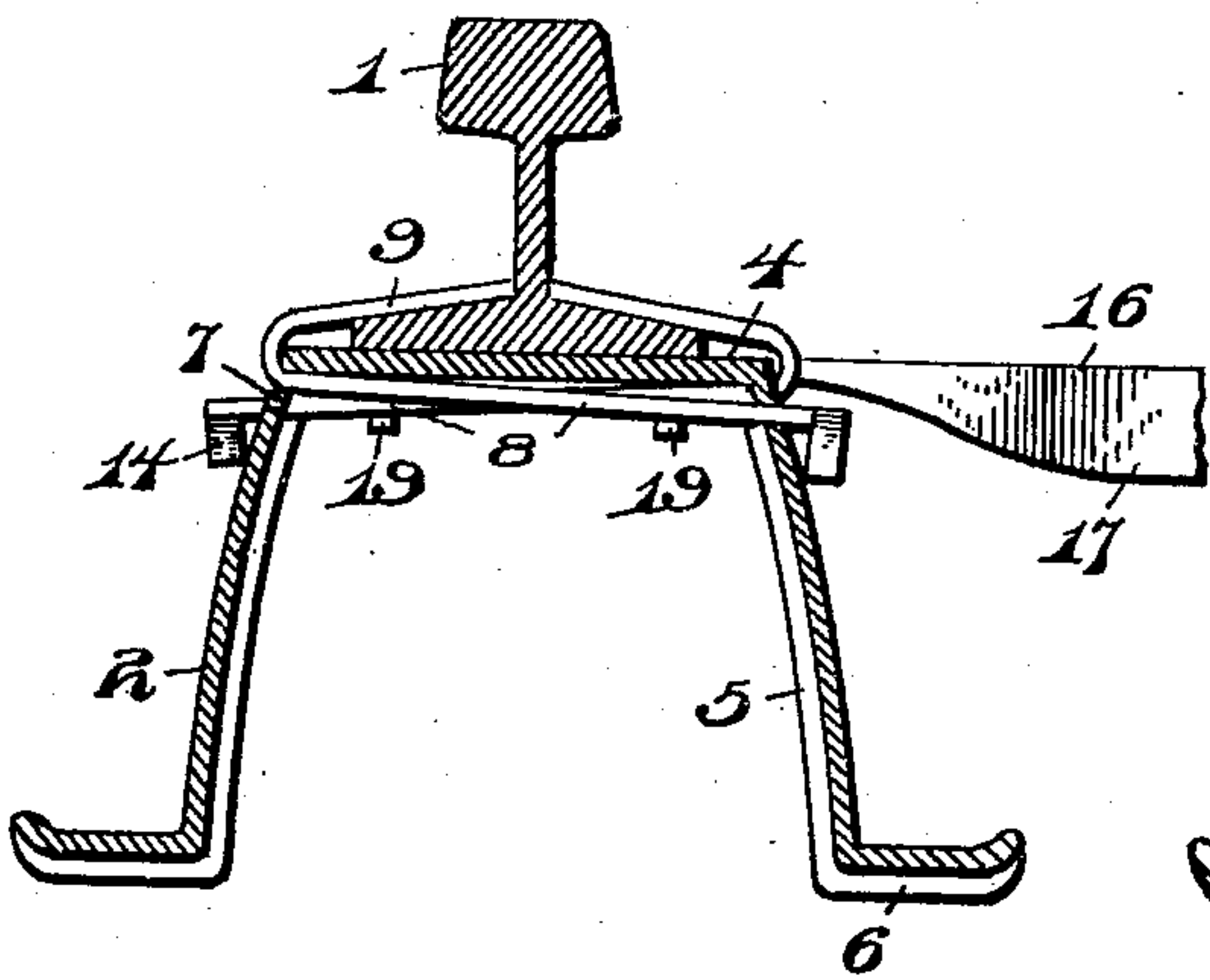


Fig. 3.

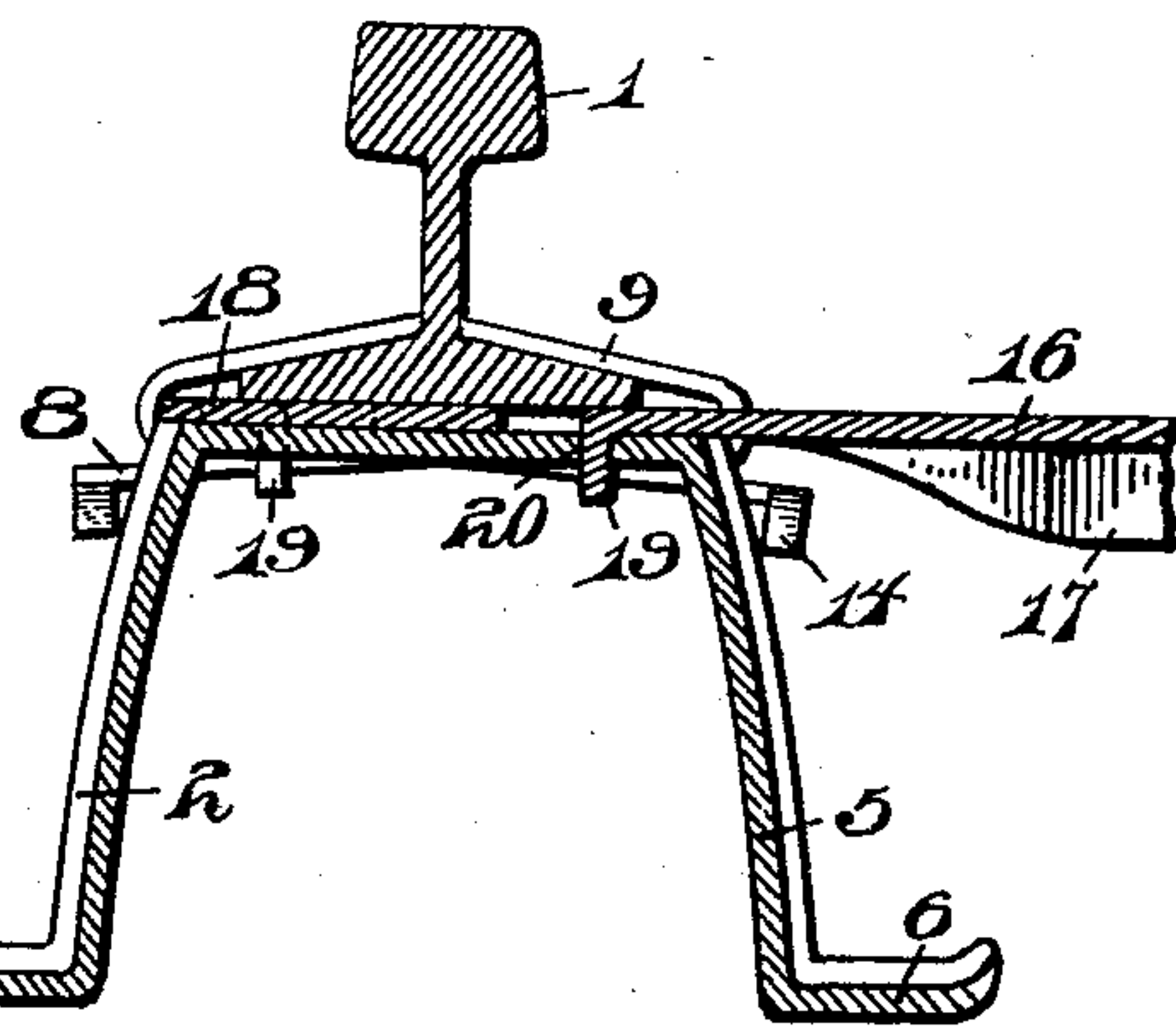


Fig. 4.

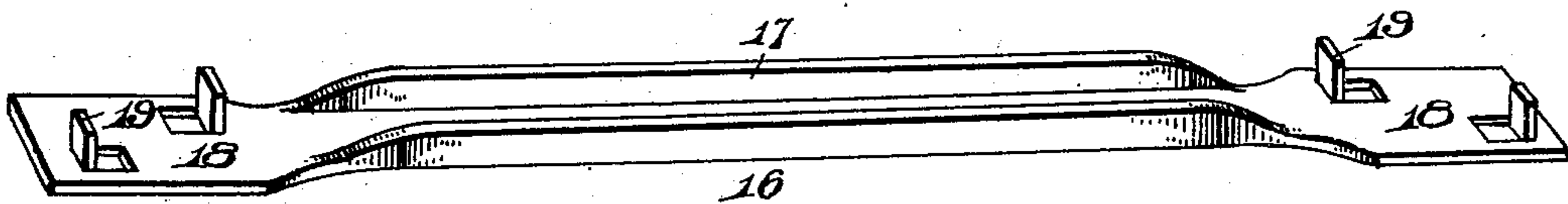


Fig. 5.

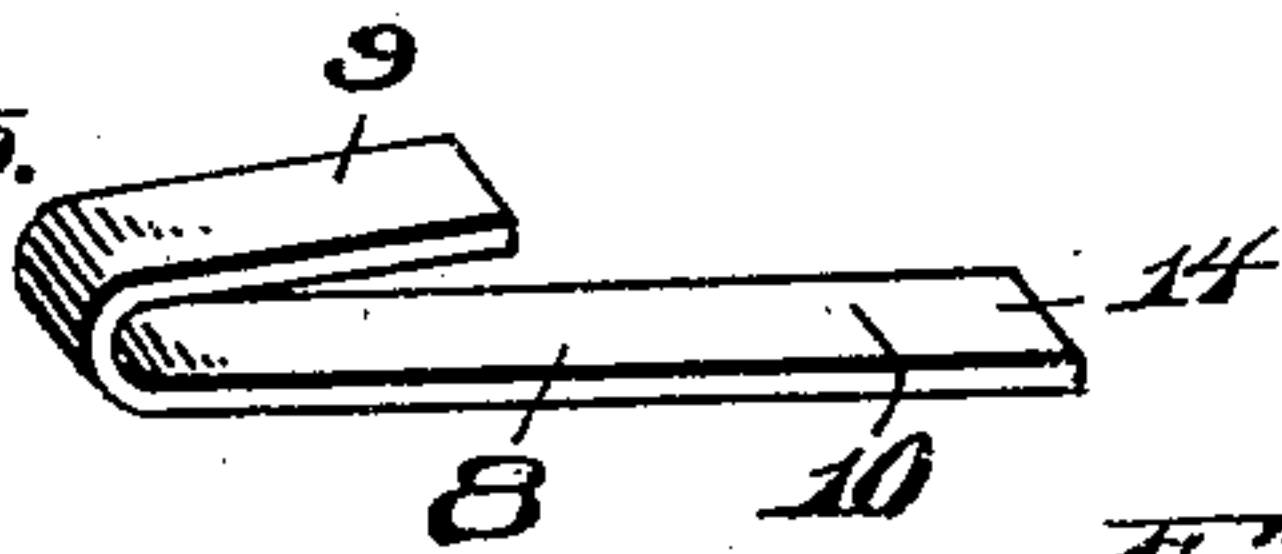


Fig. 6.

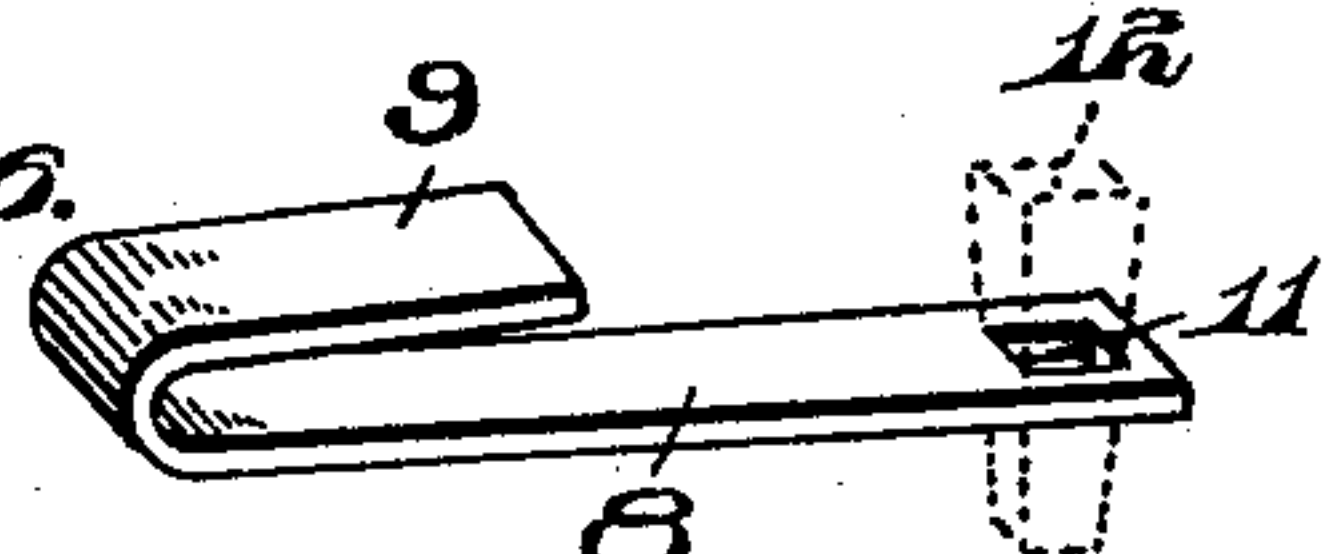
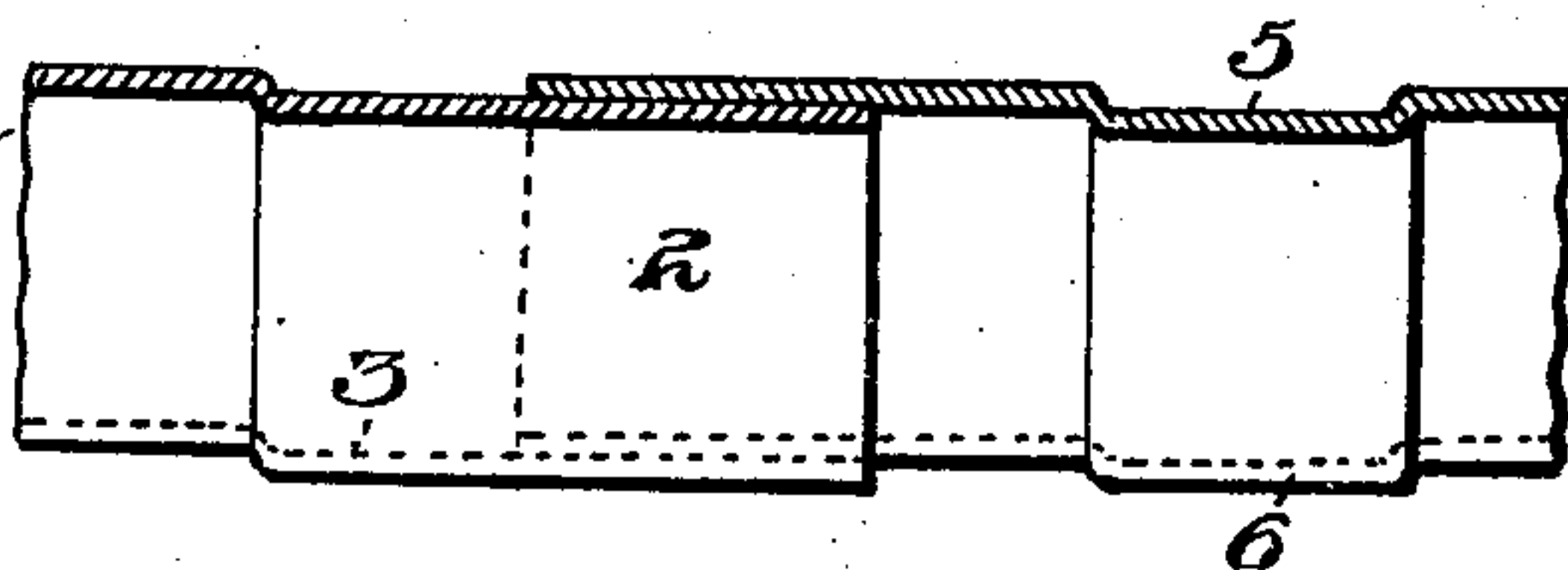


Fig. 7.



Witnesses:

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UNITED STATES PATENT OFFICE.

REISSUED

SAMUEL E. DUFF, OF BELLEVUE, PENNSYLVANIA.

RAILWAY CONSTRUCTION.

SPECIFICATION forming part of Letters Patent No. 672,892, dated April 30, 1901.

Application filed January 5, 1901. Serial No. 42,149. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL E. DUFF, a citizen of the United States of America, residing at Bellevue, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Railway Construction; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form a part of this specification.

This invention relates to certain new and useful improvements in railway constructions, and more particularly to the subconstruction for railways consisting of girders, of steel or other suitable material, of such form and arrangement as to afford a continuous support for the railway-rails, as well as permit such an arrangement of the ballast as will obtain the proper distribution upon the railway-bed of the loads coming upon the rails, combined with tie-pieces, of steel or other suitable material, connected with the girders in such a manner as to fix and maintain the required gage or spacing of the rails and to prevent the altering of this gage without the removal of the rails from the girders.

The invention further contemplates to provide clips or fasteners, of steel or other material, of such form and arrangement as to securely fasten the rails to the girders in such a manner as to produce and maintain the proper spacing and gaging; furthermore, to provide effectual means whereby the various parts are securely locked together.

With the above and other objects in view the invention consists in the novel combination and arrangement of parts to be hereinafter more fully described, and specifically pointed out in the claim.

In describing the invention in detail reference is had to the accompanying drawings, forming a part of this specification, and wherein like numerals of reference indicate corresponding parts throughout the several views, in which—

Figure 1 is a perspective view of a set of rails having secured thereto my improved girders and cross-ties. Fig. 2 is a vertical sectional view thereof. Fig. 3 is a similar view taken through the girders and cross-ties.

Fig. 4 is a perspective view of one of the cross-ties detached. Fig. 5 is a perspective view of one of the clips. Fig. 6 is a like view of a modified form of clip. Fig. 7 is a longitudinal sectional view of the girders, showing the manner of connection.

In the drawings the reference-numeral 1 indicates the rails, which are mounted upon the girders, the latter being formed of converging side walls 2, having formed outwardly-extending supports 3 at their base.

The reference-numeral 4 indicates the connecting-piece of the side walls, forming the support for the under face of the rail 1. Said side walls 2 and connecting-piece 4 are provided on their outer face with a recessed portion 5, said recessed portion being also formed, as shown at 6, in the outwardly-extending supports 3.

The reference-numeral 7 indicates openings arranged in the side walls 2 of the girders for the reception of the clips 8, having the end 9, which is bent over upon itself, and this bent-over portion extends slightly at an angle and has its other end provided with a slit 10 or opening 11, having secured therein as fastening means the wedge 12.

The reference-numeral 14 indicates the downwardly-extending portion of the ends of the clip forming the locking means, which will rigidly retain the base of the rail to its proper position upon the girders.

The reference-numeral 16 indicates the tie-pieces, which are of the channel construction, having formed downwardly-extending flanges 17 and end pieces 18, in which are stamped out lugs 19, said lugs engaging apertures 20, formed in the connecting-piece 4.

The operation of my improved girder and tie-piece is as follows: The girders are placed in proper position and the tie-pieces engaged thereto, the lugs 19, engaging in the openings 20 of the girders, forming fastening means and preventing any lateral displacement of the girders. The rails are then placed in proper position upon the girders and the clips applied thereto, the end of the clips 9 engaging in the opening 7, encircling the base of the rail and the connecting-piece 4 of the girder, the other end extending through the openings, where the end 14 is bent downwardly,

as shown in the drawings, or provided with a wedge 12, extending through the opening 11, as shown in the modified form in Fig. 6.

Particular attention is directed to the fact
 5 that by this construction all the vibrations that are caused by the heavy trains will be taken up and cushioned by the girders and tie-pieces and that effectual means have been provided to retain the rails in proper position and either lateral or lineal displacement
 10 of the same will be impossible.

In order to place the girders together, the arrangement as shown in Fig. 7 is employed, thereby making a continuous rigid support
 15 for the rails through the entire construction.

Particular attention is also called to the fact that the form and arrangement of the girders, tie-pieces, and fastenings are such as to allow the ballast of broken stone, gravel,
 20 or other suitable material which may be used by the railway to which my system of construction is applied to be so placed as to uniformly and continuously transmit to the railway-bed the loads coming upon the rails by
 25 means of the girders, tie-pieces, and fastenings, combined as set forth.

It will be noted that various changes may

be made in the details of construction without departing from the general spirit of my invention.

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

In a support for railway-rails, the combination of girders having converging side walls, an outwardly-extending portion, connecting-piece, said girders having formed therein recesses and openings, tie-pieces of channel construction carrying flat ends and lugs, said lugs adapted to engage said openings in the girders, clips encircling the base portion of the rail and the upper portion of said girders, said clips having their ends bent downwardly when placed in proper position forming a lock, all parts being constructed and operating substantially as herein shown and described.

In testimony whereof I have hereunto affixed my signature in the presence of two subscribing witnesses.

SAMUEL E. DUFF.

Witnesses:

JOHN GROETZINGER,
 M. E. HARRISON.