

No. 797,700.

PATENTED AUG. 22, 1905.

A. MARX.
RAILROAD CONSTRUCTION.
APPLICATION FILED MAR. 31, 1905.

2 SHEETS—SHEET 1.

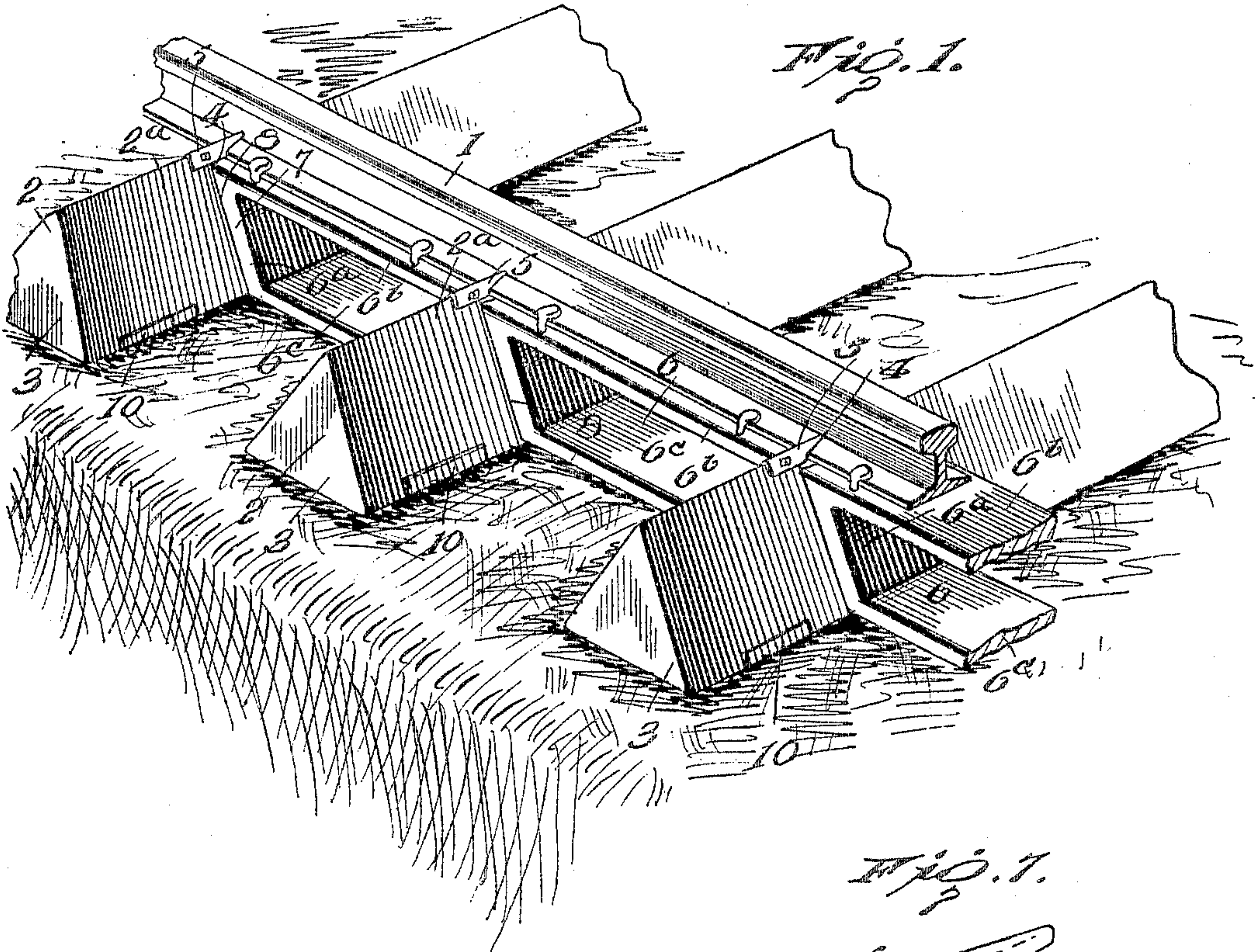
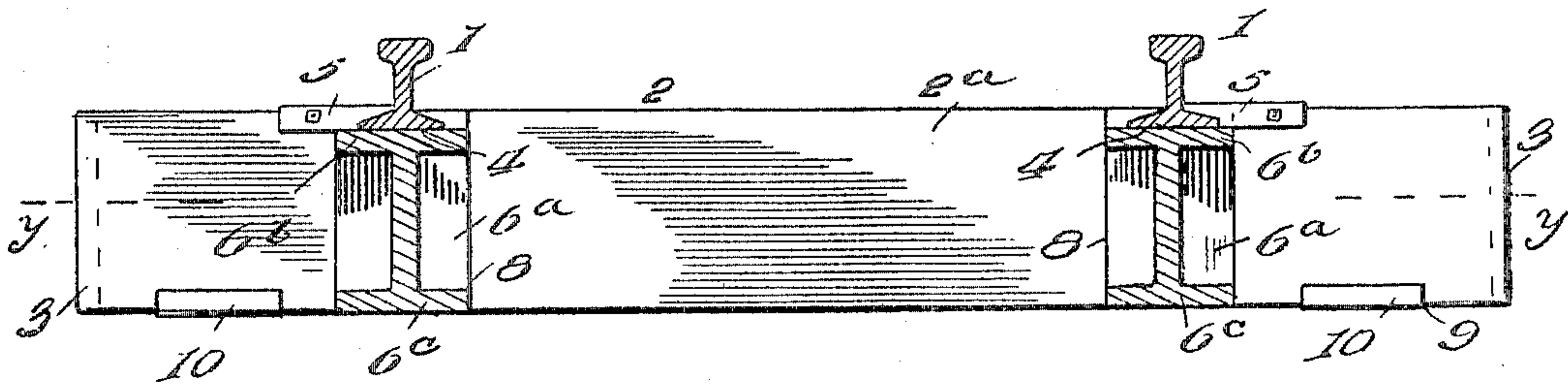
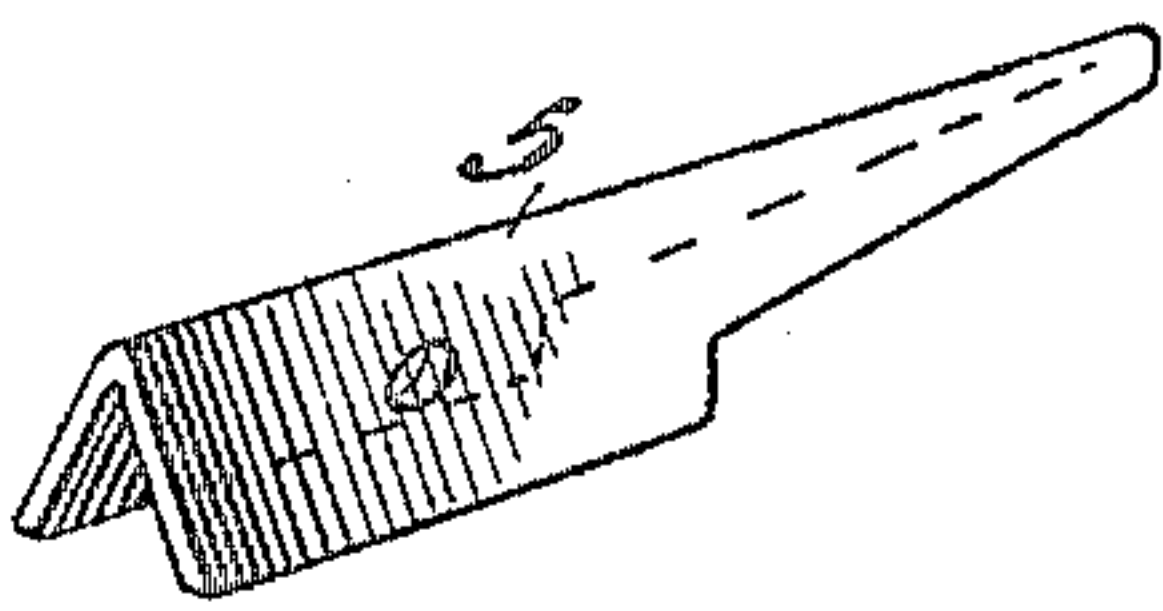


Fig. 2



Inventor

Witnesses

W. N. Woodson

A. Marx.

By

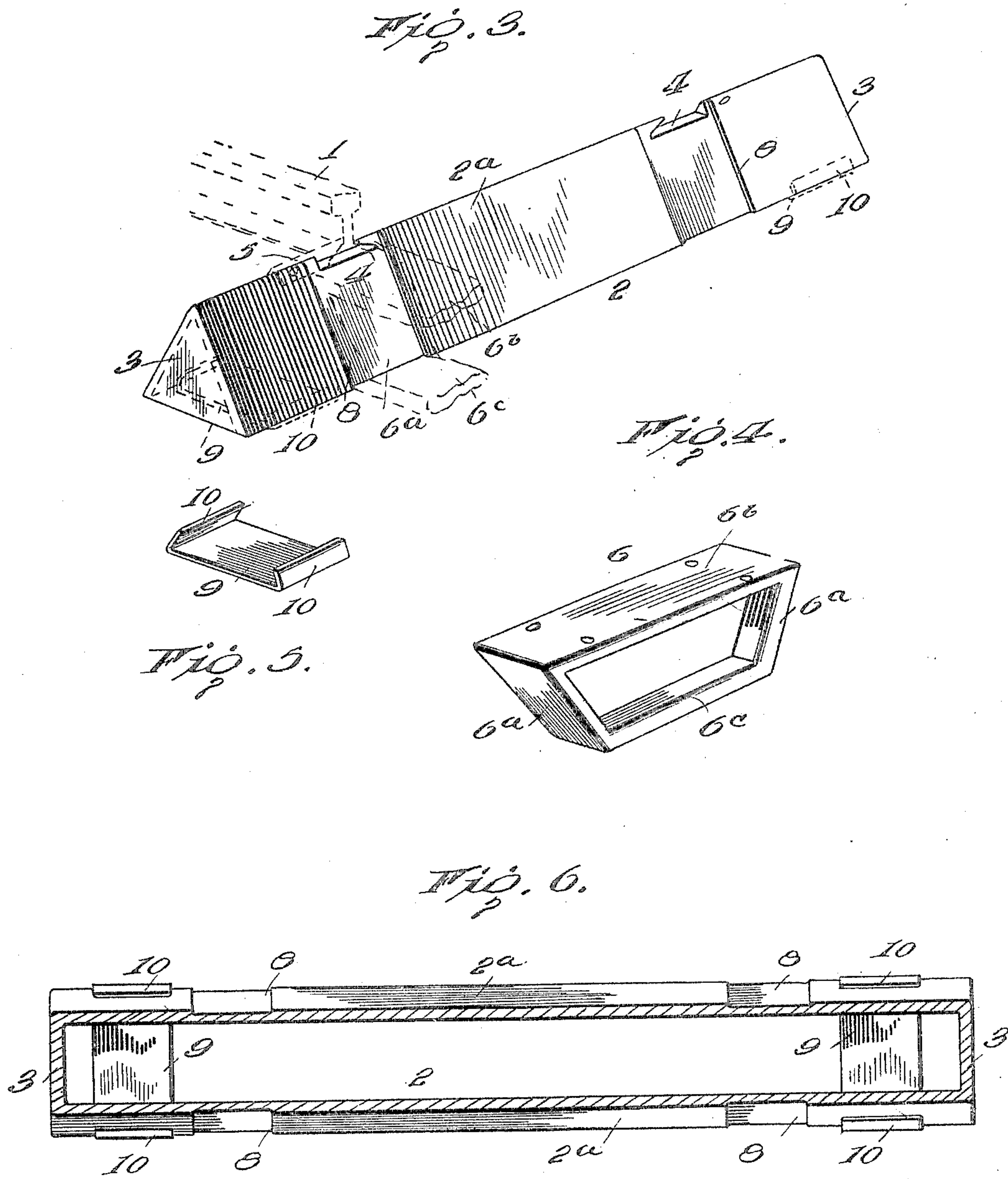
R. A. Racy, Attorney

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 W. P. Woodson

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R. A. Racy, Attorneys

UNITED STATES PATENT OFFICE.

ANDREW MARX, OF EAST MAUCHCHUNK, PENNSYLVANIA.

RAILROAD CONSTRUCTION.

No. 797,700.

Specification of Letters Patent.

Patented Aug. 22, 1905.

Application filed March 31, 1905. Serial No. 253,117.

To all whom it may concern:

Be it known that I, ANDREW MARX, a citizen of the United States, residing at East Mauchchunk, in the county of Carbon and State of Pennsylvania, have invented certain new and useful Improvements in Railroad Constructions, of which the following is a specification.

This invention relates to railroad construction, and embodies, primarily, a novel form of tie for the rails in connection with special means for securing the rails thereto and means for securing a continuous bearing for the rails throughout the length of the track.

It is designed to employ metallic tie structure in carrying out the invention, the tie structure being such as to cheapen cost of the ties to a minimum, peculiar devices being employed for producing the greatest degree of elastic or cushioning effect in the structure of the ties with regard to the rails which are carried thereby.

An essential feature of the invention is comprised in the provision of ties arranged in spaced relation, as usual in road-bed construction, with blocks or supporting members between the ties to form a bearing for the rails and to assist in promoting the general elasticity of the supporting structure.

In addition to the cheapness and simplicity the durability of the road construction embodying the invention is promoted to the highest degree, and the details of construction enable repair-work to be done at very small expense, as will be seen more clearly as the description proceeds.

For a full description of the invention and the merits thereof and also to acquire a knowledge of the details of construction of the means for effecting the result reference is to be had to the following description and accompanying drawings, in which—

Figure 1 is a perspective view showing the adaptation of the invention when in use. Fig. 2 is a longitudinal vertical sectional view through a tie, the rails in position. Fig. 3 is a perspective view of a tie alone, rails shown in dotted lines. Fig. 4 is a detail perspective view of one of the blocks. Fig. 5 is a detail view of one of the plates connecting sides of the tie. Fig. 6 is a horizontal sectional view through the tie. Fig. 7 is a detail perspective view of one of the rail-engaging members.

Corresponding and like parts are referred

to in the following description and indicated in all the views of the drawings by the same reference characters.

Referring to the drawings, the rails comprised in the track are indicated at 1, and said rails are mounted upon cross-ties 2, arranged at intervals in spaced relation. The ties 2 are preferably of metallic construction and comprise hollow bodies of approximately triangular form in cross-section, having the sides 2^a diverging toward the lower portions thereof. The ties are provided with ends 3, forming closures at the extremities of the ties, as will be obvious. Each of the ties 2 is formed with rail-seats 4 in the upper portion thereof near the ends, and the base portions of the rails 1 are received in the seats 4 of the ties. The inner sides of the seats 4 are preferably undercut, so as to enable the rails to be positively interlocked with the tie, so as to render connection between the rails and the ties of the road-bed more substantial. Certain of the ties 2 are provided with rail-engaging members 5, which preferably consist of angle-plates bolted or otherwise secured to the tie 2 and having one end adapted to engage over the outer portion of the base of the rails to firmly hold the latter from displacement from the seats 4, in which they are mounted. The members 5 being of angular formation are adapted to receive the upper portion of the ties, between the sides thereof, when said members are in position, so that the said members 5 do not form projecting parts liable to be broken or otherwise injured, but constitute elements almost flush with the body of the tie to which they are attached, the general construction of the tie and members 5 subserving the compactness of the supporting structure to which the rails are secured.

As before premised, supporting members are provided for the rails between the ties 2 to afford a continuous bearing therefor, and these supporting members consist of blocks 6 arranged between the ties transversely thereof, the upper sides of the blocks 6 being in contact with the under sides of the base portions of the rails 1. The term "blocks" as used in this description contemplates, broadly, supporting members. Further, the latter are hollow or solid. Under certain conditions it is desirable to form the blocks 6 solid, and in this instance the same are preferably made of wood to secure the necessary

elasticity. In other instances the blocks 6 are of hollow formation and made of metal, in which instance said blocks are composed of the spaced ends 6^a, the top 6^b, and the bottom 6^c. As the sides of the ties 2 slope outwardly, the end portions of the blocks 6 are inclined, as shown at 7, so as to fit snugly against the sides of the ties. The inclination of the end portion of the blocks 6 possesses an important advantage in that as the weight of the rolling-stock is received upon the track over the blocks the said blocks are adapted for a certain amount of vertical elastic movement, the extremities riding down and up the sides of the ties 2, and said sides 2^a of the ties may be forced toward each other with spring movement by the weight upon the blocks 6, thus producing a general spring structure beneath the rails throughout the length of the latter. To prevent the blocks 6 from being displaced from beneath the rails, in addition to fastenings, such as spikes or the like, which secure the rails to the blocks, the end portions of the blocks move in recesses 8, which are formed upon the outer sides of the tie 2, near the ends thereof. The recesses 8 form seats or depressions for the extremities of the blocks 6 and constitute guides directing the vertical movement of the blocks as the same give to the weight of the rolling-stock passing over the track above them. The recesses 8 accomplish a further function in interlocking the blocks with regard to lateral movement thereof relative to the ties, and this is very desirable in promoting the general rigidity of the supporting structure and preventing the various parts of such structure from being thrown out of proper position.

To increase the yielding or cushion effect of the ties 2, it is preferred to utilize tie-plates 9 beneath the ties, said plates 9 having end flanges 10 projecting upwardly therefrom and adapted to engage the lower edges of the sides 2^a of the tie. Thus when the sides 2^a of the tie tend to move outwardly under the weight of the rolling-stock the flanges 10, which form spring members, take up the spring movement of the tie sides 2^a and reinforce the tie, as well as accomplish the above-mentioned result. It will be understood that any suitable number of the plates 9 may be used, and these may be located intermediate the extremities of the tie, or two or more of them may be distributed in the

length of the tie, as found most desirable in actual use.

In addition to the cushion or elastic effect secured by the metallic construction of the ties 2 it will be noted that the hollow portions thereof will receive the earth of the road-bed and will increase the elasticity of the ties to no small extent.

Having thus described the invention, what is claimed as new is—

1. In railroad construction, the combination of a plurality of hollow ties embodying sloping sides, and rail-bearing blocks arranged between the ties and having inclined end portions in contact with the sides of the ties.

2. In railroad construction, the combination of a plurality of hollow ties embodying sloping sides, and rail-bearing blocks arranged between the ties and having inclined end portions in contact and interlocking with the sides of the ties.

3. In railroad construction, the combination of a plurality of ties, rail-bearing blocks arranged between the ties, and guide means at opposite sides of the ties for directing the bearing-blocks in their movement.

4. In railroad construction, the combination of a plurality of hollow ties embodying sloping sides provided with exterior recessed portions forming guides or ways, and rail-bearing blocks arranged between the ties and having inclined end portions seated in the ways or guides aforesaid.

5. In railroad construction, the combination of a tie provided in its upper portion with rail-seats, and angle-plates embracing side portions of the tie and arranged to engage rails in the seats thereof.

6. In railroad construction, the combination of a metallic tie of approximately triangular form in cross-section and provided in its upper portion with rail-seats, rails mounted in the seats of the tie, and rail-engaging members comprising angle-plates receiving or embracing the body of the tie and in engagement with the rails in the seats thereof.

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

ANDREW MARX. [L. S.]

Witnesses:

CHARLES STAEDLE,
JAMES J. BOYLE.