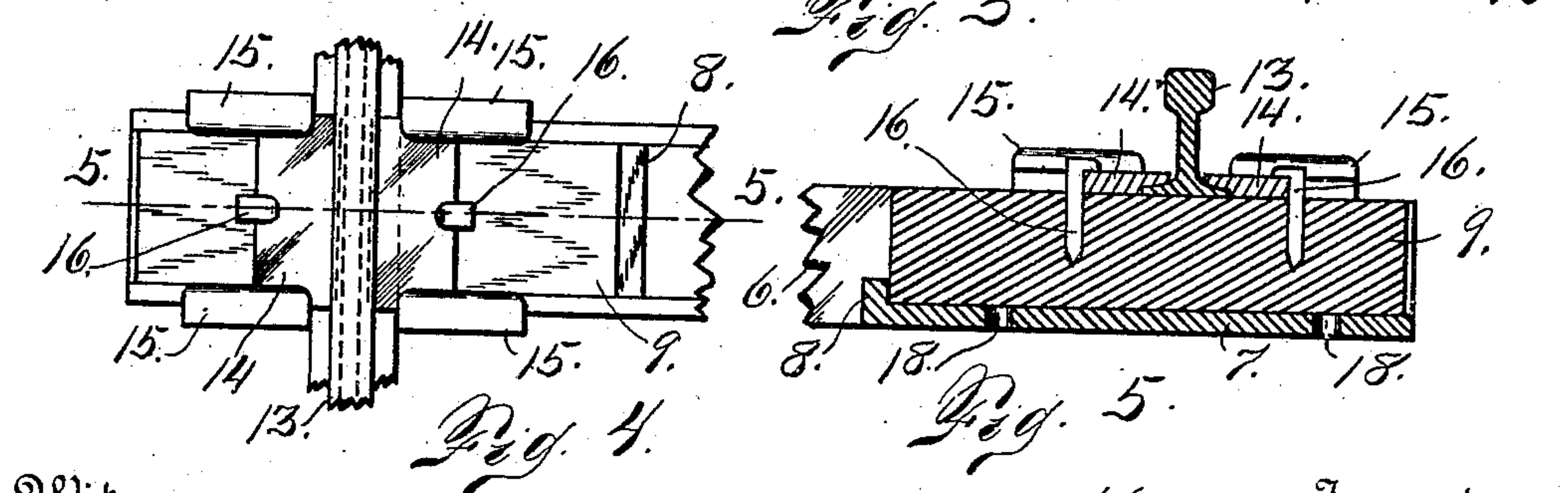
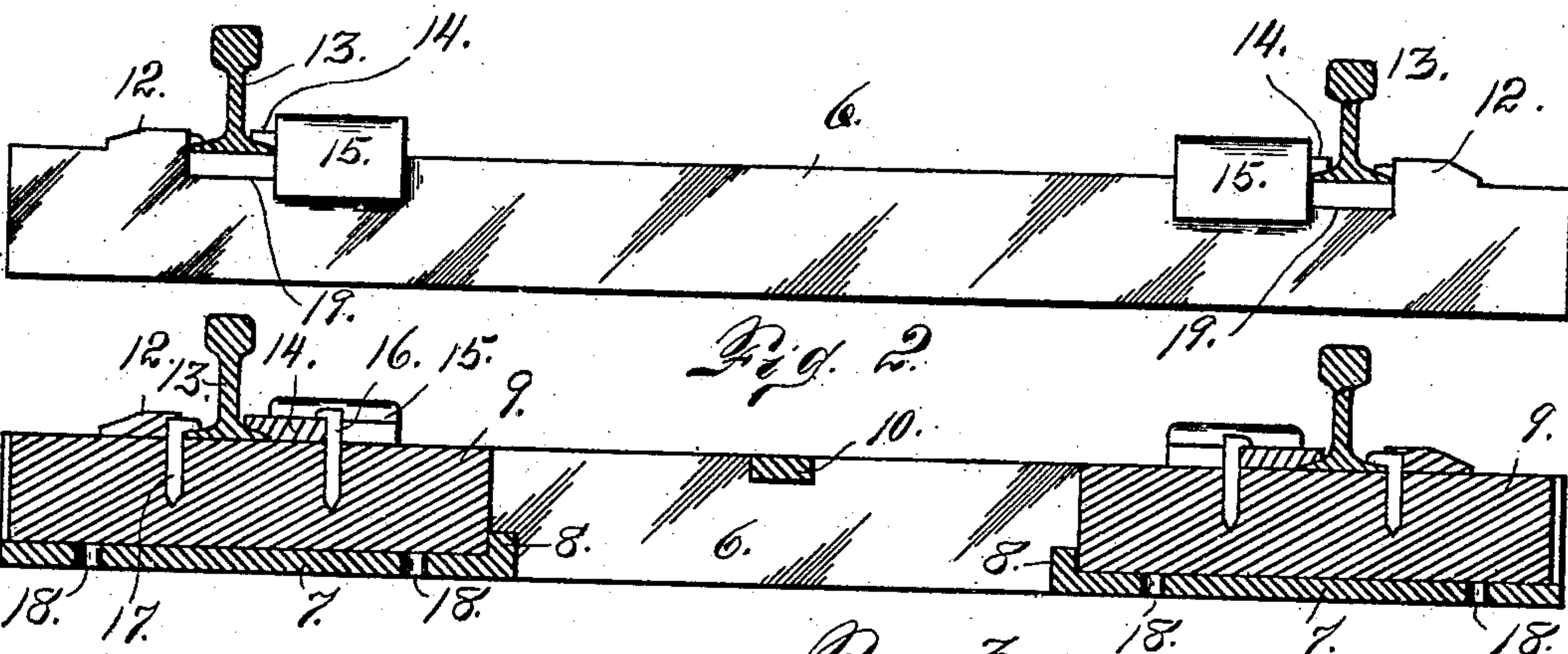
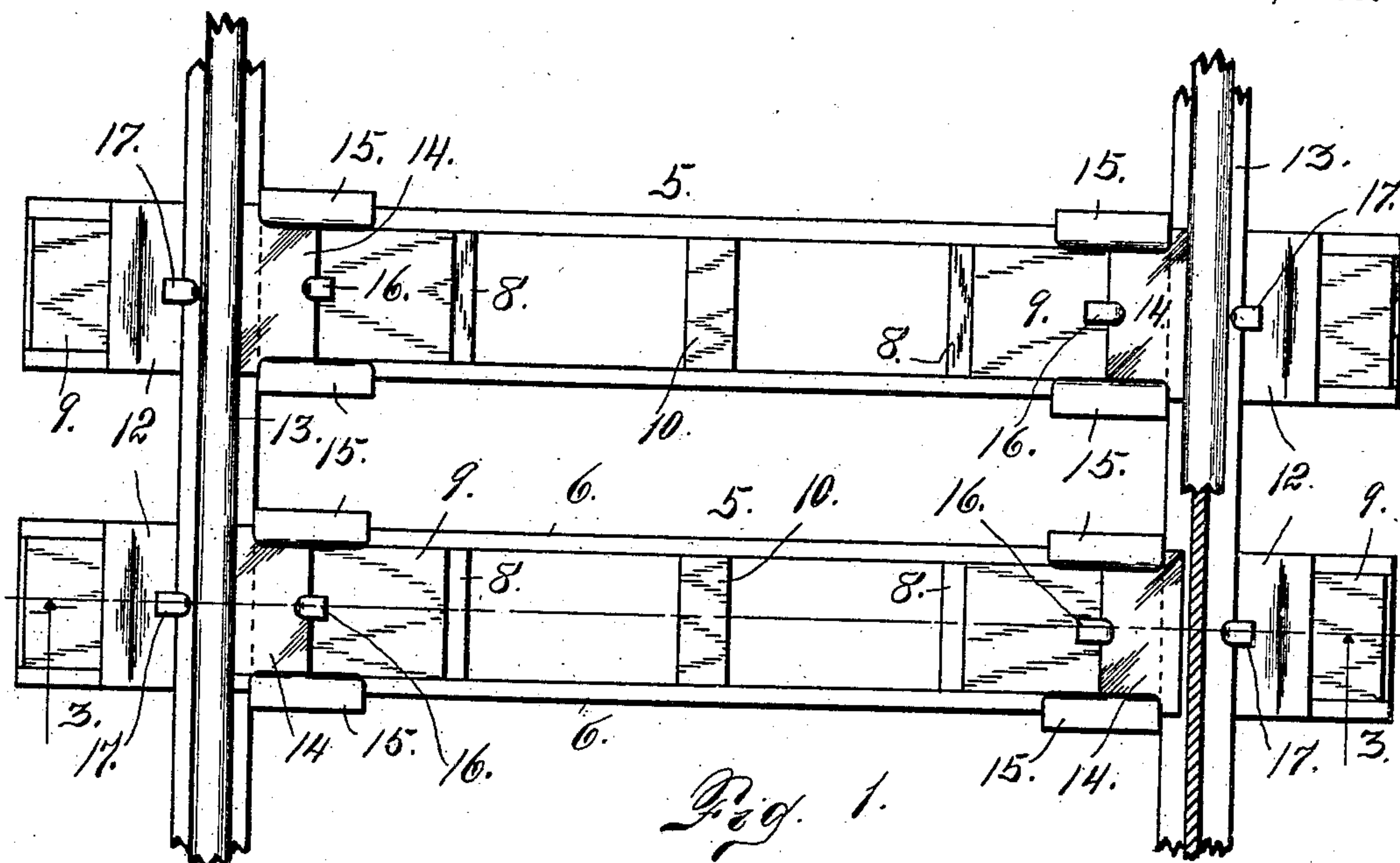


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METAL RAILWAY TIE.

APPLICATION FILED MAR. 25, 1907. RENEWED FEB. 20, 1909.

936,519.

Patented Oct. 12, 1909.



Witnesses  
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# UNITED STATES PATENT OFFICE.

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## METAL RAILWAY-TIE.

936,519.

Specification of Letters Patent.

Patented Oct. 12, 1909.

Application filed March 25, 1907, Serial No. 364,443. Renewed February 20, 1909. Serial No. 479,270.

*To all whom it may concern:*

Be it known that I, HARRY J. BUELL, a citizen of the United States, residing in the city and county of Denver and State of Colorado, have invented certain new and useful Improvements in Metal Railway-Ties; and I do 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 appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in metal ties for railways.

The metal portion of my improved tie is composed of two separated parallel side members suitably connected at the top and bottom, the extremities where the latter are crossed by the rails being provided with cushions preferably composed of wood or other suitable or similar material designed to give the resilience or elasticity incident to the use of wood ties. To this end the extremities of the metal portion of the tie are provided with bottom portions adapted to form a support for the wood cushion members resting thereon and inserted between the metal side members.

An important advantage of my improved tie is that these end cushions or wooden blocks may be readily removed and replaced by new cushions, at a very slight expense whenever it may be necessary so to do. This construction greatly facilitates the work of repairing the track.

Another important feature of my improved tie is that by covering the wood blocks or end cushions of the tie with some suitable non-combustible material as tin or zinc, the ties may be used in connection with iron bridges, making the entire structure fire-proof, yet at the same time the elastic or resilient feature incident to the use of the wood cushions is preserved.

Another feature is that my improvement absolutely prevents the rails from spreading thus avoiding the possibility of expense due to this defect in ordinary railway construction.

Having briefly outlined my improved construction as well as the function it is intended to perform, I will proceed to de-

scribe the same in detail reference being made to the accompanying drawing in which is illustrated an embodiment thereof.

In this drawing, Figure 1 is a top plan view of a section of track showing two of my improved ties in place. Fig. 2 is a side elevation of one of the ties showing the track rails in cross section. Fig. 3 is a longitudinal section taken on the line 3—3 Fig. 1 viewed in the direction of the arrow. Fig. 4 is a fragmentary top plan view showing a modified form of construction. Fig. 5 is a section taken on the line 5—5 Fig. 4.

The same reference characters indicate the same parts in all the views.

Let the numeral 5 designate my improved metal tie considered in its entirety, the same being composed of upwardly projecting parallel sides 6, the seats between the sides being closed at the bottom by end portions 7 having upwardly projecting flanges 8 at their inner extremities which form stops for the cushion blocks 9 which are inserted on the outer extremities of the tie and fit closely between the side members 6. The two side members are connected at the top by a centrally located web 10 and their extremities by cross pieces 12 which occupy positions immediately above the cushion blocks 9. The parts 12 are arranged to engage the base of the rails 13 on the outside, while a plate 14 engages the base of each rail on the inside. These plates 14 are readily removable and are held in place at their extremities by overlapping members 15 formed integral with the sides 6 of the tie and which in connection with the upper edges of the plates 6 form grooves in which the locking plates 14 are free to slide. These plates 14 are secured in place by spikes 16 which are driven into the cushion members 9 and overlap the inner edge of the plate 14 forcing the latter tightly against the base of the rail. The rails are also further held in place from the outside, by spikes 17 which are inserted in recesses formed in the stationary parts 12, the spikes being driven into the cushion members 9 which are preferably formed of wood as heretofore explained. It will thus be understood that where each rail crosses each tie, the rail is engaged by the locking devices 12 on the outside and the removable plates 14 on the inside. The bottom portions 7 of each tie are provided with



openings 18 through which water may escape, thus preventing the wood from undue moisture which might result in the premature decay of the latter.

5 In the form of construction shown in Figs. 4 and 5, the rail is locked in place by removable plates 14 on the outside as well as on the inside of the rail. In this case each tie is also provided on the outside of the rail  
10 with upwardly projecting overlapping members 15 forming grooves in which the outer and inner plates 14 are free to slide. These plates are also locked in place by spikes 16 which are driven into the cushion members  
15 9 and overlap the outer edge of the plates, being therefore fastened in the same manner as the inside plates 14. Directly below where each rail crosses the tie, the upper edges of both members 6 are cut away as  
20 shown at 19, to prevent the metal portions of the rail from coming in direct contact with the rail. By virtue of this construction, the rails rest directly upon the wood blocks or cushion members 9 of the ties  
25 which therefore form a comparatively resilient or elastic support for the rails whereby I gain the same advantage in this regard as is possessed by wooden ties, while at the same time the greater portion of my improved tie is composed of metal. It must  
30 be understood, however, that I do not limit the end cushion members with my improved tie to wood or any special material providing, however, that these members are composed of some material which is different

from the body of the tie and possesses the necessary resilience to form a cushion or yielding support for the rails.

From the foregoing description the use of my improved metal tie will be readily understood. These ties are properly spaced  
40 along the road bed and the rails are secured thereto in the manner heretofore explained. This tie will prove very serviceable for traction or suburban lines since the extremities  
45 of the ties may be placed upon a concrete foundation, after which the central portion of the tie which is open at the bottom may be filled with concrete between the two parallel side members.  
50

Having thus described my invention, what I claim is:

A tie whose body portion is composed of metal, the same being formed of two parallel upwardly projecting side members suitably  
55 connected, the said tie being provided at its extremities with cushion blocks, the edge of the tie on opposite sides being cut away under the rail, to cause the rails to rest upon the cushion blocks, integral flanges project-  
60 ing above the parallel sides and provided with longitudinal grooves, and plates fitted in said grooves, and extending over the base of the rail, substantially as described.

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

HARRY J. BUELL.

Witnesses:

DENA NELSON,  
MAY GAWLEY.