

A. S. TOPPING.
RAILWAY TIE.
APPLICATION FILED NOV. 22, 1909.

Patented Mar. 1, 1910.

950,970.

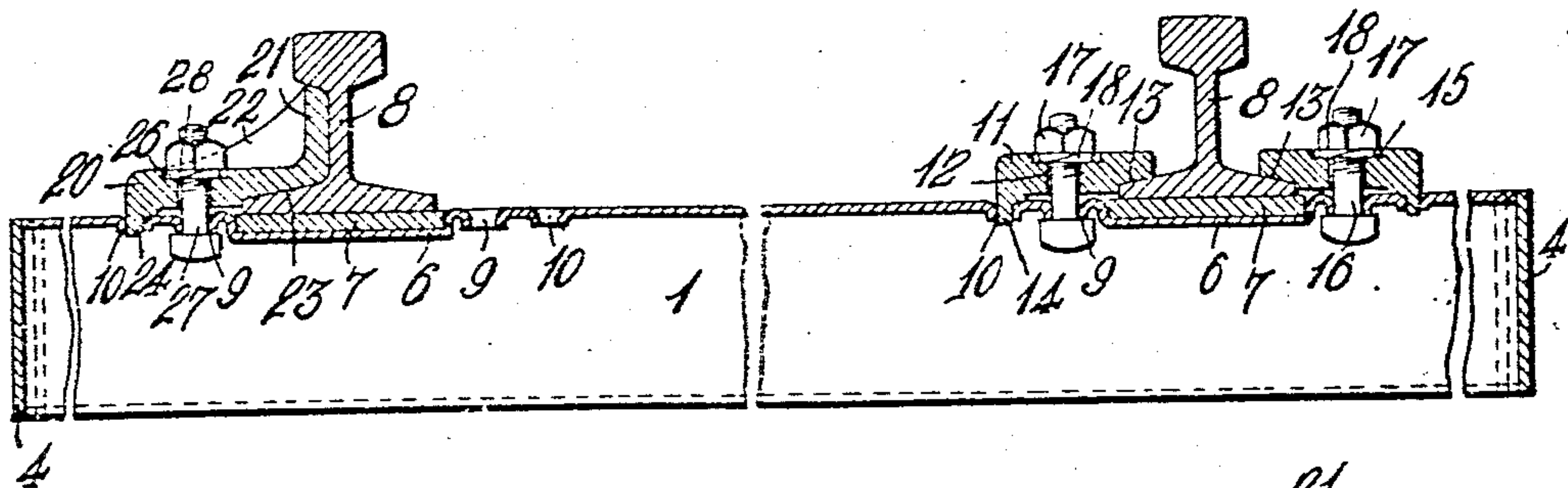
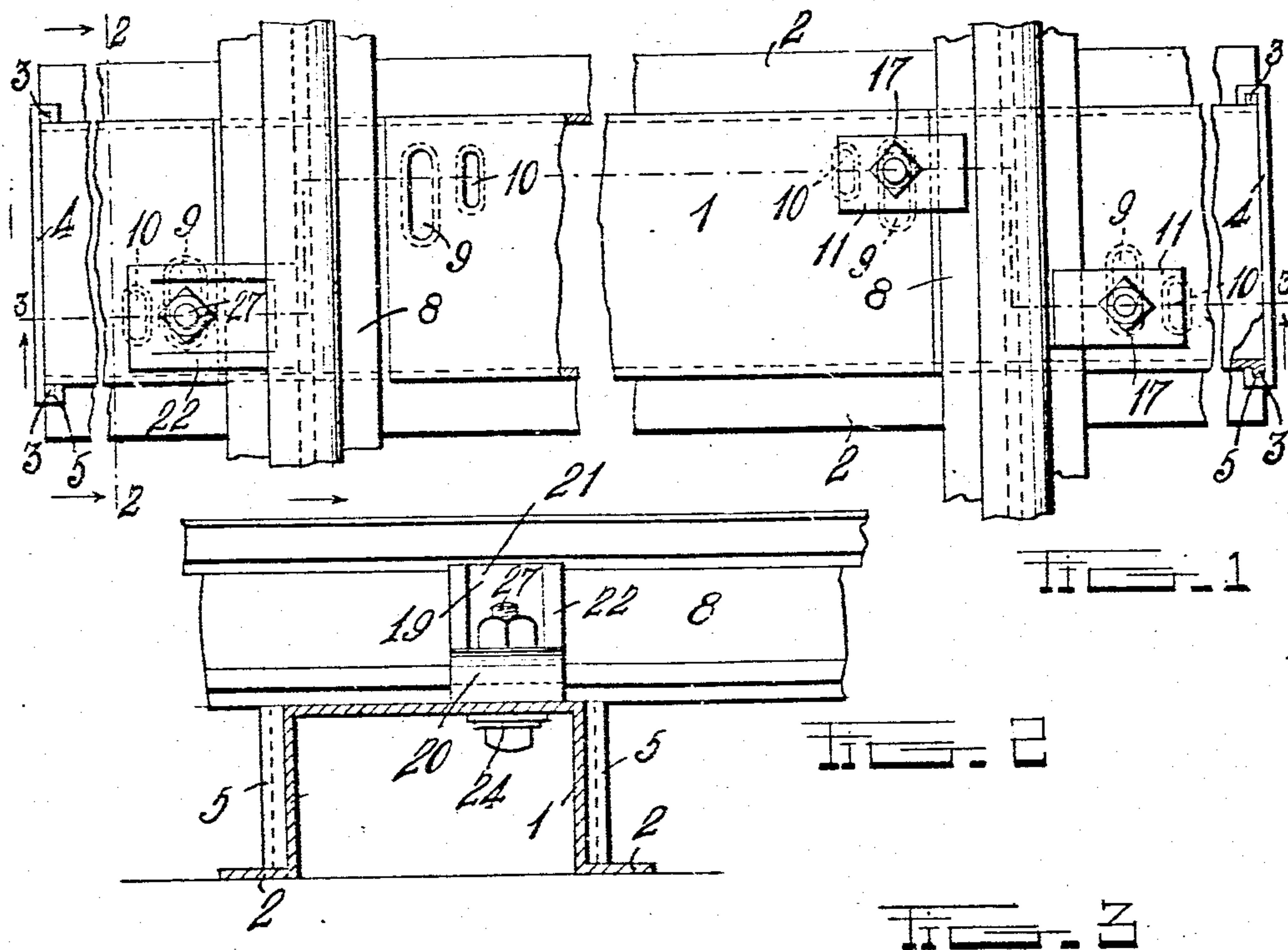
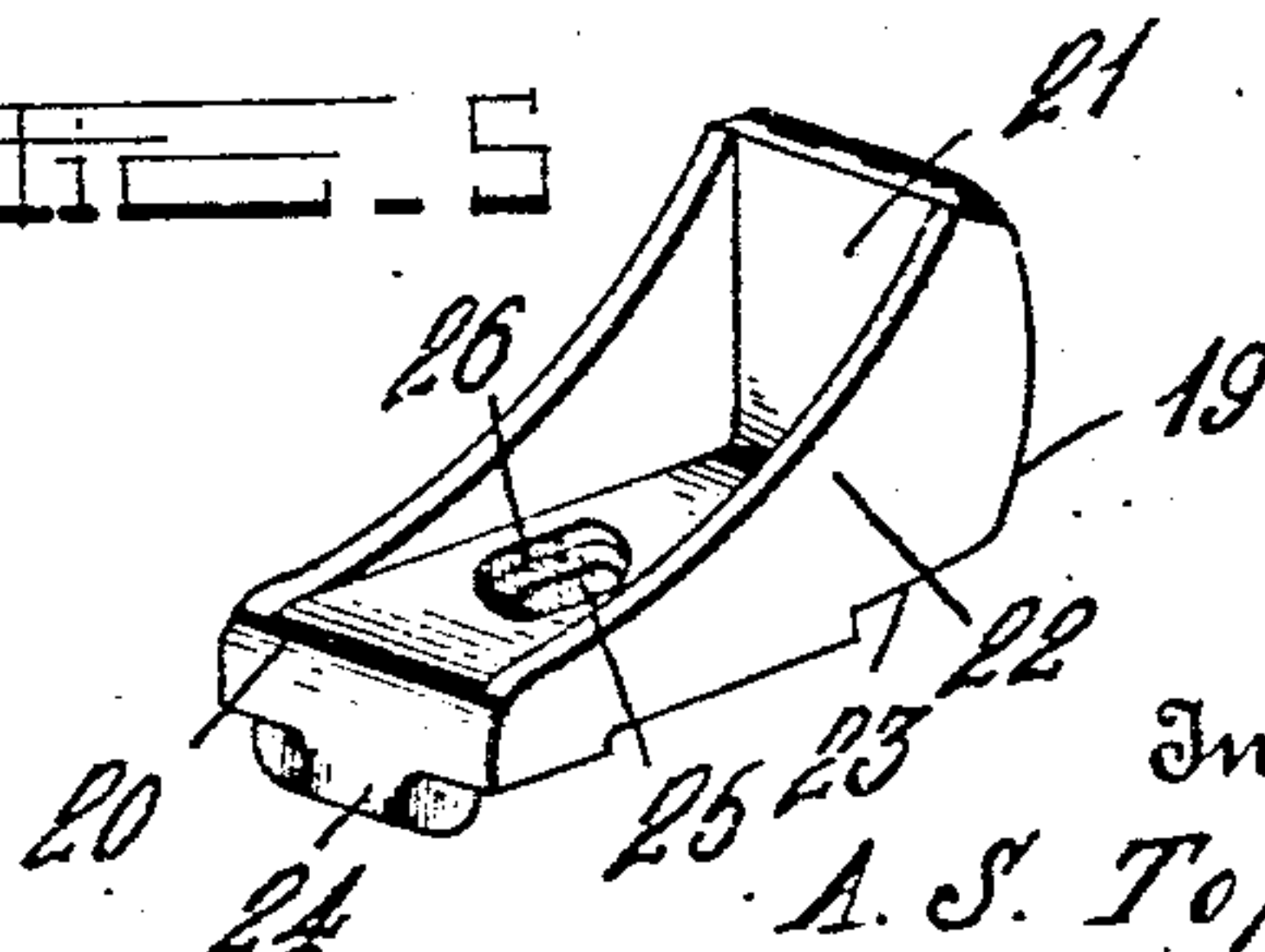
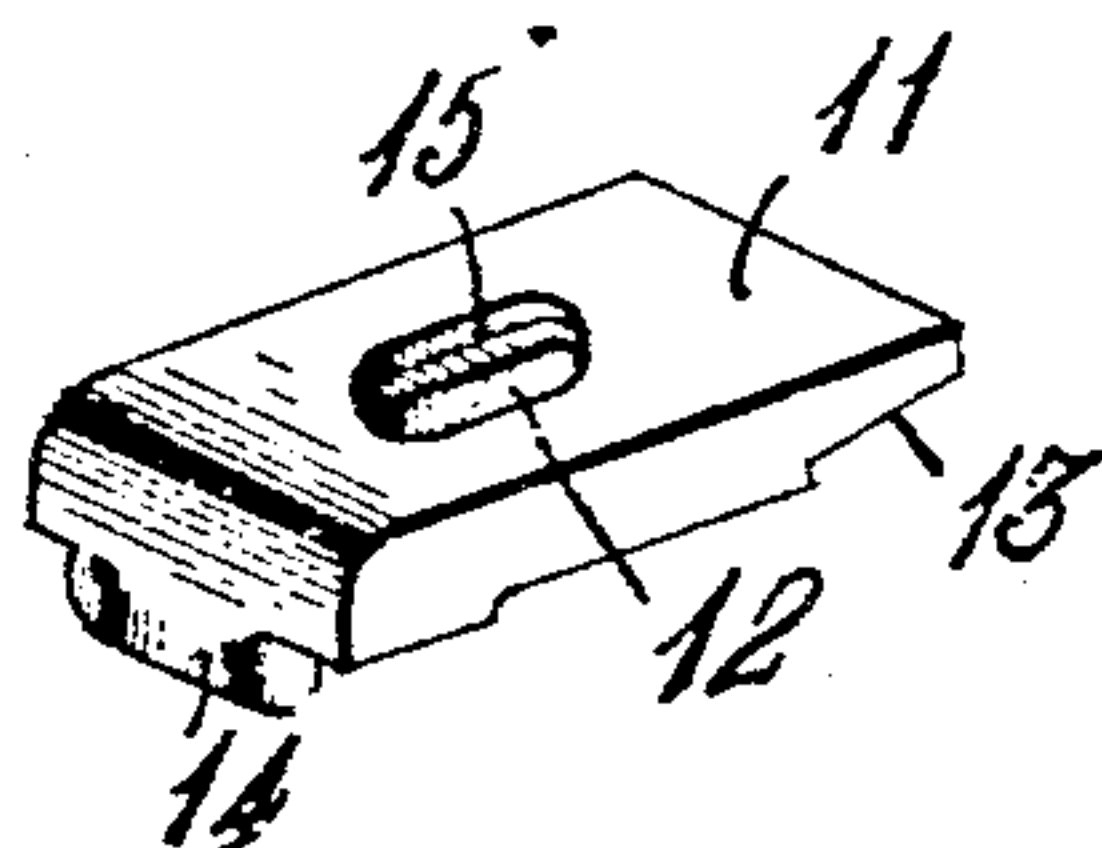


Fig. 4

Fig. 5



Witnesses
C. R. Hardy.
C. H. Grubauer.

Inventor
A. S. Topping
By *E. H. Wilson & Co.*
Attorneys

UNITED STATES PATENT OFFICE.

ALFRED S. TOPPING, OF MUSKEGON, MICHIGAN.

RAILWAY-TIE.

950,970.

Specification of Letters Patent.

Patented Mar. 1, 1910.

Application filed November 22, 1909. Serial No. 529,284.

To all whom it may concern:

Be it known that I, ALFRED S. TOPPING, a citizen of the United States, residing at Muskegon, in the county of Muskegon and State of Michigan, have invented certain new and useful Improvements in 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.

This invention relates to improvements in metal railway ties.

The object of the invention is to improve the construction of the railway tie and rail fastening means shown in United States Patent No. 909,713, granted Jan. 12, 1909, whereby a stronger tie and a more secure fastening is provided.

With the foregoing and other objects in view, the invention consists of certain novel features of construction, combination and arrangement of parts, as will be more fully described and particularly pointed out in the appended claim.

In the accompanying drawings, Figure 1 is a plan view of a tie and parts of two rails showing the application of the rail fastening devices for both curved and straight track rails; Fig. 2 is a cross sectional view of the tie and one of the improved fastenings, showing a portion of the rail in side elevation; Fig. 3 is a side view of the same, partly in section; Fig. 4 is a detailed perspective view of one of the fastening devices for straight rails; Fig. 5 is a similar view of one of the fastening devices for curved rails.

Referring more particularly to the drawings, 1 denotes the improved tie which is in the form of a hollow channel shaped bar having on its lower edges laterally projecting ground engaging flanges 2. On the side portions of the ends of the tie are formed vertically disposed ribs or flanges 3 with which are engaged end plates 4. The plates 4 are provided on their opposite edges with grooves or channels 5, which are preferably formed by bending the ends of the plates at right angles and then inwardly as shown. The end plates 4 serve to close the ends of the tie and also to hold the sides of the same against separating or lateral movement.

In the upper side of the tie adjacent to each end and at the point where the tie is crossed by the rails are formed transversely disposed depressions 6 which are adapted to

receive cushioning blocks 7 formed of wood or other suitable material and adapted to receive the rails 8 when the latter are arranged on the tie. The depressions 6 are preferably of such depth that the upper surface of the cushioning blocks 7 will be flush or on a level with the upper side of the tie. In the upper side of the tie adjacent to the opposite edges of the depressions 6 are formed slots or elongated apertures 9 and 10. The apertures on one side of the depressions 6 are arranged near one side of the tie while the apertures on the opposite side of the depressions are arranged near the opposite side of the tie.

In order to secure the rails to the tie, two forms of improved fastening devices are provided, one form being adapted for securing straight tracks and the other form for securing and bracing curved tracks or rails to the tie.

The improved straight track fastening device comprises a clip 11 which is substantially in the form of a flat metal block having formed therethrough an elongated bolt hole 12 and having formed in its under side adjacent to one end a beveled notch or recess 13 which is adapted to fit over the upper side and edge of the rail flange or base as shown. On the opposite end of the clip is formed a downwardly projecting stop lug 14, said lug being adapted to be engaged with the slot 10 in the upper side of the tie. Around the elongated bolt hole 12 in the clip is formed a circumferential recess 15, the purpose of which will hereinafter appear. When the clips 11 are arranged in position on the tie with the recess therein engaging the rail flange and the lug 14 engaging the slot 10, a clamping bolt 16 is inserted upwardly through the slot 9 in the tie and the elongated bolt hole 12 in the clip. On the upper end of the bolt 16 is screwed a clamping nut 17 below which and engaging the recess 15 is arranged a split steel spring washer 18. When the nut 17 has been screwed up on the bolt 16, the clip 11 will be clamped into tight engagement with the rail flange, thus securely fastening the rail to the tie.

The fastening device for curved track rails comprises a combined clip and brace 19 which is preferably in the form of a substantially right angular plate and comprises a base or clip portion 20 and a bracing portion 21. The bracing portion and clip por-

tion of the fastening are braced and connected together at their opposite edges by integrally formed webs or flanges 22. In the lower side of the inner end of the clip portion 20 is formed a flange engaging recess 23 which is adapted to be engaged with the upper side and edge of the rail flange, as shown. On the outer end of the clip portion 20 is formed a downwardly extending stop lug 24 which corresponds with the stop lug 14 of the clips 11 and is adapted to be engaged with one of the slots 10 in the top of the tie. In the base or clip portion of the fastening 19 is formed a bolt hole 25 having a washer recess 26 which is adapted to receive a clamping bolt 27 and washer 28 corresponding to the washer and bolt of the clips 11. The bracing portion of the fastening 19 is adapted to fit into close engagement with the web portion and under side of the tread portion of the rails thus securely bracing the latter and preventing the same from separating or being upset. It will be noted that in forming the slots 2, 9 and 10 in the upper side of the tie that the metal surrounding the slots is turned downwardly in the formation of the slots and that said downwardly turned edges of the slots form flanges which greatly increase the strength of the material at these points. By means of the tie and fastening devices constructed as herein shown and described, the rails of the railway may be firmly supported and securely fastened in place. From the foregoing description, taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of the invention, as defined in the appended claim.

Having thus described my invention, what I claim is:—

A metal railway tie comprising a hollow channel shaped bar having formed therein rail receiving depressions and flanged slots, straight track fastening devices comprising metal clips having formed in one end rail engaging recesses, stop lugs formed on the opposite ends thereof and adapted to be engaged with certain of the flanged openings in said tie, curved rail fastening devices comprising combined clips and bracing portions, said clip portions having formed therein recesses to engage the flanges of the rail, stop lugs formed on the outer end of said clip portions to engage the flanged openings in the tie, bracing webs arranged between said bracing and clip portions of the fastening devices whereby said bracing portions are held in position to engage the web and under side of the tread portions of the rails, and clamping bolts arranged through the other flanged slots in the tie and through said fastening devices whereby the latter are secured to the tie and clamped into engagement with the rails.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

ALFRED S. TOPPING.

Witnesses:

MILLO A. WHITE,
HENRY MCCARRY.