W. E. PUGSLEY.

METALLIC RAILWAY TIE AND RAIL FASTENER.

APPLICATION FILED DEC. 9, 1912.

1,054,869.

Patented Mar. 4, 1913.

2 SHEETS—SHEET 1.

Fig. 1.

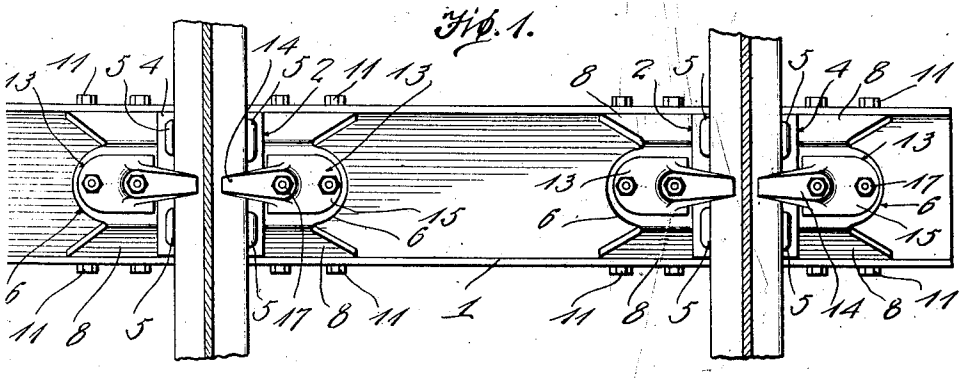


Fig. 2.

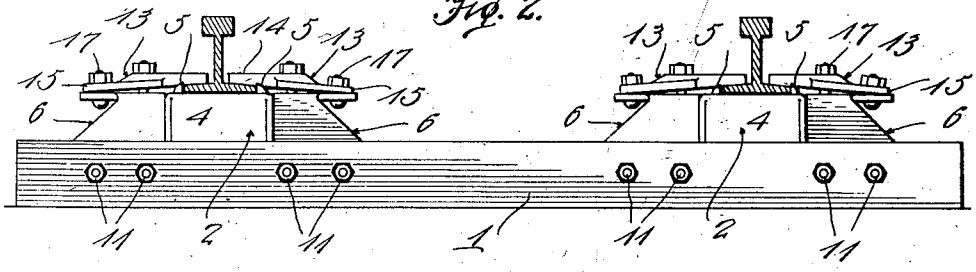


Fig. 3.

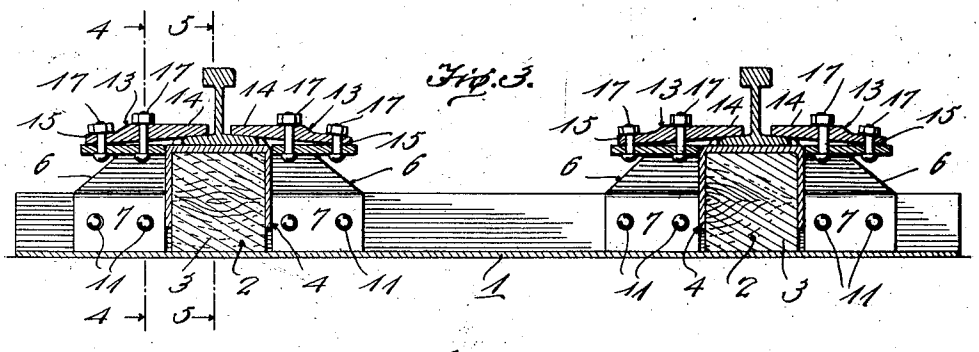
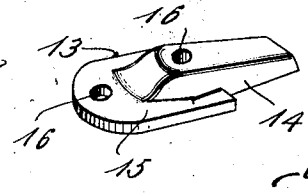


Fig. 6.



Witnesses

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2 SHEETS—SHEET 2.

Fig. 4.

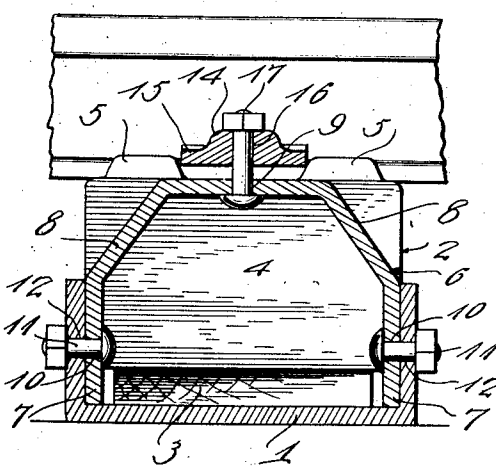


Fig. 5.

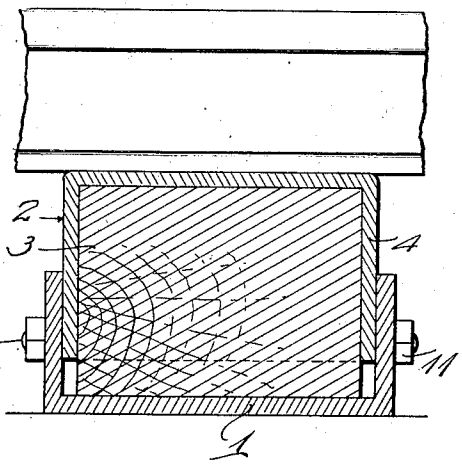


Fig. 6.

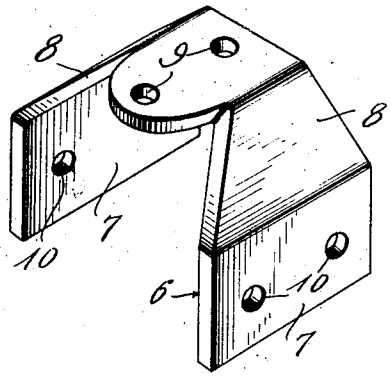
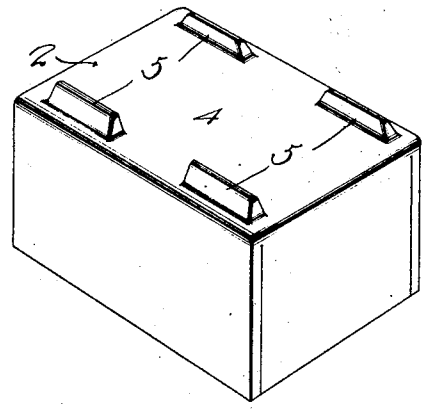


Fig. 7.



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METALLIC RAILWAY-TIE AND RAIL-FASTENER.

1,054,869. Specification of Letters Patent. Patented Mar. 4, 1913.

Application filed December 9, 1912. Serial No. 735,775.

To all whom it may concern:

Be it known that I, WILLIAM EDWARD PUGSLEY, a citizen of the United States, residing at Grand Rapids, in the county of Kent and State of Michigan, have invented certain new and useful Improvements in Metallic Railway-Ties and Rail-Fasteners; 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 metallic railway ties and rail fasteners.

One object of the invention is to provide a metallic railway tie having an improved construction and arrangement of rail supporting mechanism or chairs whereby a sufficient amount of resiliency or elasticity is provided between the rail and the metallic tie to relieve the jar and deaden the noise occasioned by the passage of trains over the rails.

Another object of the invention is to provide a metallic railway tie having an improved construction and arrangement of rail and fastening devices whereby the rails are securely fastened to the ties without the use of spikes and whereby the rails are positively prevented from spreading or upsetting.

With these and other objects in view, the invention consists of certain novel features of construction, and the combination and arrangement of parts as will be more fully described and claimed.

In the accompanying drawings; Figure 1 is a plan view of my improved metallic railway tie and rail fasteners showing portions of railway rails secured thereto, the rails being shown in horizontal section; Fig. 2 is a side view of the parts shown in Fig. 1 with the rails in vertical section; Fig. 3 is a central vertical sectional view of the parts shown in Fig. 1; Fig. 4 is an enlarged vertical cross sectional view of the tie and rail fastener taken on the line 4—4 of Fig. 3; Fig. 5 is a similar view taken on the line 5—5 of Fig. 3; Fig. 6 is a detail perspective view of one of the supporting devices for the rail fasteners; Fig. 7 is a similar view of the cap or rail receiving member of one of the rail supporting chairs; Fig. 8 is a perspective view of one of the rail fastening devices.

Referring more particularly to the drawings 1 denotes my improved tie which is in the form of a channel iron bar of suitable width and length and in which near the ends thereof are arranged rail supporting chairs 2. The chairs 2 comprise blocks 3 which are preferably formed of wood but which may be constructed of any suitable material having sufficient resiliency or elasticity. Engaged with the blocks 3 are metallic caps 4 in the form of rectangular boxes corresponding in size and shape to the length and width of the blocks 3 with which they are engaged. The caps 4 are of less depth than the height of the blocks so that when the caps are engaged with the upper portions of the blocks the lower edges of the caps terminate some distance above the bottom of the tie as clearly shown in Figs. 4 and 5 of the drawings. By thus constructing the chairs 2 it will be seen that when the rails are engaged with the chairs the weight of the rails and of the trains passing thereover is supported by the blocks 3 or by the ties through said blocks which having a certain amount of resiliency or elasticity will take up jars and deaden the noise which would occur should the metal part of the chair engage or rest on the ties. By this construction it will be seen that the ties while being formed of metal, possess all of the well known advantages of ties formed of wood.

Struck up from or otherwise formed on the upper or rail engaging side of the caps 4 are pairs of stop lugs 5 between which the rails are placed and which engage the opposite edges of the base flanges of the rails and thereby firmly hold the latter against lateral movement on the chairs. The caps 4 of the chairs may be constructed in any suitable manner but are preferably

formed from heavy sheet metal which is cut and bent into shape for forming the caps as shown in Fig. 7 of the drawings.

The chairs 2 are held in position in the ends of the tie by arch shaped members 6 which also form supports for the rail fastening devices hereinafter described. The sides of the arch members 6 are perpendicular for a suitable distance above their lower ends as shown at 7 and then inclined inwardly at suitable angles as shown at 8. At the upper ends of the angular portions of the sides of the arches is formed a flat top, the outer end of which is rounded and projects beyond the outer edges of the inclined portions of the sides 8, said edges being preferably formed at an angle or cut off as shown.

In the flat top of the arch members 6 are formed bolt holes 9, similar holes 10 being formed in the lower perpendicular portions 7 of the sides of the members as clearly shown in Fig. 6 of the drawings. In applying the arch members 6 the latter are engaged with the opposite sides of the chairs 2 and the lower vertical portions 7 of the arch members are inserted between and engaged with the inner surfaces of the vertical sides of the tie as shown. When thus arranged the members 6 are rigidly fastened to the tie by rivets or bolts 11 which are engaged with the bolt holes 10 in the sides of the members and with similar holes 12 in the sides of the tie. When the members 6 are thus fastened to the tie the chairs 2 are rigidly held against lateral movement in either direction in the ties.

The rails when engaged with the chairs 2 in the manner described are securely fastened thereto and to the ties by fastening devices 13 comprising clamping blocks 14 having inclined or angular inner surfaces and having on their outer ends attaching plates 15 which are adapted to be engaged with the flat tops of the arched members 6 while the projecting ends of the clamping blocks 14 are engaged with the opposite base flanges of the rails between the stop lugs 5 on the caps 4 of the chairs. In the rail fastening devices 13 are formed bolt holes 16 with which and with the bolt holes 9 in the tops of the arch members 6 are engaged clamping bolts 17 whereby the rail fastening devices are rigidly clamped to the arch members and firmly fasten the rails to the chairs, said fastening devices by their engagement with the base flanges of the rails also firmly holding the chairs down in engagement with the ties, as clearly shown in Figs. 2 and 3 of the drawings.

By constructing and arranging my improved railway tie and rail fastening devices as herein shown and described it will be seen that the rails are yieldingly supported and firmly held against spreading or upsetting and that the advantages possessed by the usual form of wooden ties is preserved while the disadvantages of the usual construction of metal ties is eliminated.

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 claimed.

Having thus described my invention, what I claim is:

1. The combination with a railway tie, of chairs comprising inner resilient members, caps engaged therewith, stop lugs on said caps to engage the opposite edges of the base flanges of the rails, chair holding members adapted to be secured to the sides of the tie and in engagement with the opposite sides of the chairs, whereby the latter are held against longitudinal movement, and rail fastening devices secured to said chair holding members, whereby the rails are fastened to the latter and the chairs held in engagement with the ties.

2. A railway tie and rail fastener comprising a channel shaped bar forming said tie, chairs arranged in said bar and comprising inner members in the form of blocks having a suitable amount of elasticity, and outer members comprising metal caps adapted to be engaged with said blocks or inner members, said caps terminating at their lower ends above the bottom of the tie, stops lugs formed on the upper side of the caps and adapted to engage the opposite edges of the base flanges of the rails, chair holding members adapted to be secured to the sides of the tie and in engagement with the opposite sides of the chairs whereby the latter are held against lateral movement in either direction and rail fastening devices secured to said chair holding members and engaged with the flanges of the rails whereby the latter are securely fastened to the chairs and the chairs held in engagement with the ties.

3. A metallic railway tie and rail fastener comprising a channel shaped metal bar forming said tie, resilient rail supporting chairs arranged in the tie, arch shaped chair holding members secured to the tie on opposite sides of the chairs whereby the latter are held against lateral movement in either direction, stop lugs formed on the upper sides of the chairs to engage the opposite edges of the base flanges of the rail and rail clamping devices comprising blocks adapted to be engaged with the flanges of the rails and having on their outer ends

plates adapted to be engaged with the tops of said arched chair holding members, and clamping bolts engaged with said rail fastening devices and arched members whereby the rail fastening devices are rigidly secured in position to fasten the rails to the chairs and the chairs to the ties.

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

WILLIAM EDWARD PUGSLEY.

Witnesses:

JOHN MULDER,

JOHN JUNGBAECKER, JR.