No. 827,343.

PATENTED JULY 31, 1906.

J. P. ASHBY.

SECTIONAL METALLIC CROSS TIE.

APPLICATION FILED MAR. 21, 1906.

Fig. 1.

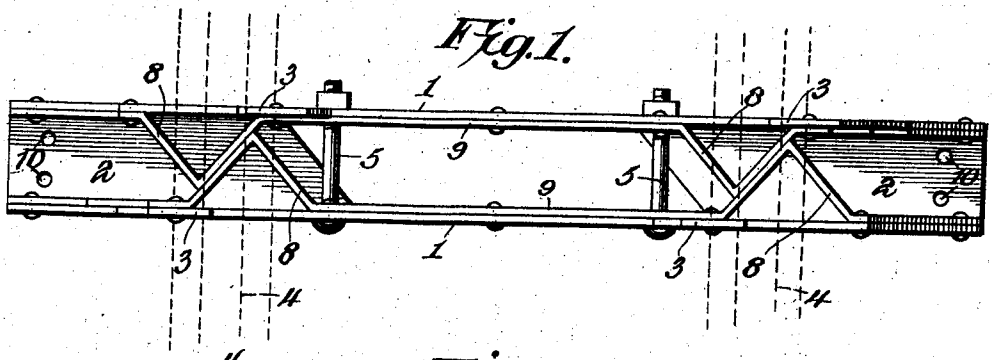


Fig. 2.

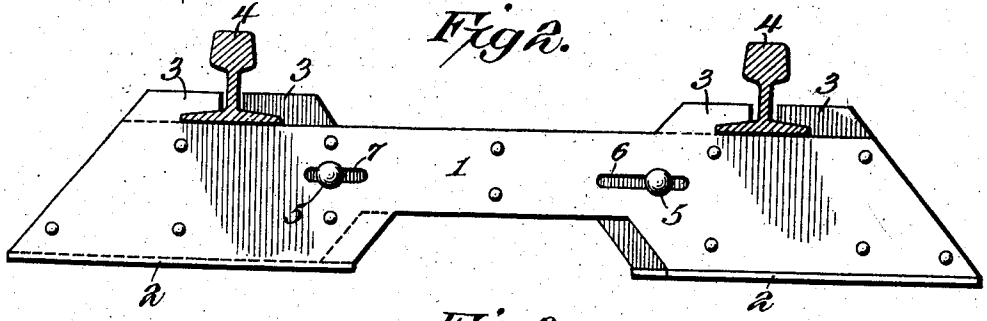


Fig. 3.

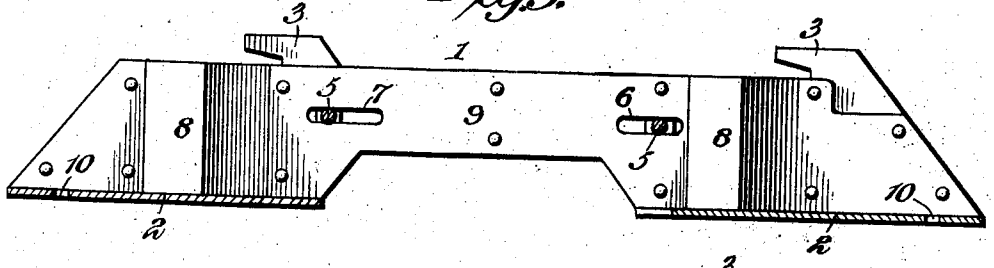
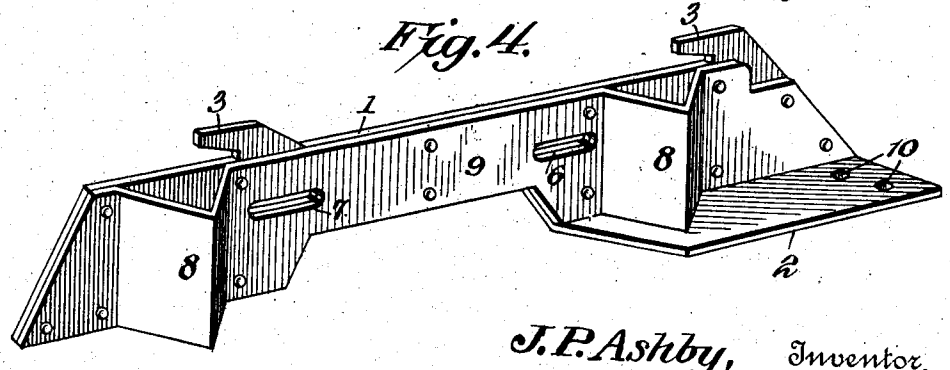


Fig. 4.



Witnesses

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SECTIONAL METALLIC CROSS-TIE.

No. 827,343. Specification of Letters Patent. Patented July 31, 1906.

Application filed March 21, 1906. Serial No. 307,232.

To all whom it may concern:

Be it known that I, JOHN P. ASHBY, a citizen of the United States, residing at Oklahoma city, in the county of Oklahoma and Territory of Oklahoma, have invented a new and useful Sectional Metallic Cross-Tie, of which the following is a specification.

The invention relates to improvements in metallic cross-ties.

The object of the present invention is to improve the construction of metallic cross-ties and to provide a simple and comparatively inexpensive one which will possess sufficient elasticity and in which a maximum strength will be secured with a minimum amount of material.

A further object of the invention is to provide a metallic cross-tie which will be provided with means for firmly gripping the rails and in which the rail-clamping mechanism will not be affected and the rails loosened by the expansion and contraction of the tie.

The invention also has for its object to provide a cross-tie which will not bind at the center and rock at the ends in frozen ground and in which the central portion will thaw out as rapidly as the end portions.

A further object of the invention is to provide a sectional cross-tie in which the means for securing the sections together will operate to cause the sections to clamp the rails so that there will be no liability of the rails becoming disengaged from the cross-tie while the sections are secured together.

With these and other objects in view the invention consists in the construction and novel combination and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended, it being understood that various changes in the form, proportion, size, and minor details of construction within the scope of the claims may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings, Figure 1 is a plan view of a sectional metallic cross-tie constructed in accordance with this invention. Fig. 2 is a side elevation of the same, the rails being in section. Fig. 3 is a longitudinal sectional view of the cross-tie. Fig. 4 is a perspective view of one of the sections of the cross-tie.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

1 1 designate sections of a cross-tie, which is designed to be constructed of any suitable metal and which consists of a skeleton structure that is adapted to secure a maximum strength at the expenditure of a minimum amount of material. The sections, which are arranged in spaced relation, have vertical longitudinal portions, which form the sides of the cross-tie, and each section is also provided with a bottom flange or portion 2, the flanges 2 being located at the opposite ends of the cross-tie, as clearly shown in Fig. 1 of the drawings.

The sections are provided with rail-engaging clamps or jaws 3, preferably formed integral with and extending upward from the vertical longitudinal portions of the said sections, and these jaws conform to the configuration of and extend over the bottom flanges of the rails 4, as clearly shown in Fig. 2 of the drawings. The sections are reversely arranged, the clamping-jaws 3 for engaging each rail being carried by the opposite sections. The sections are secured together by bolts 5, arranged transversely of the cross-tie and passing through horizontal slots 6 and 7 of the same. These transverse fastening devices, which are adapted to draw the sections together, also operate to carry the jaws or clamps 3 into engagement with the rails, and in order to effect this result the sections are provided at their end portions with transversely-disposed substantially V-shaped projections or wedges 8, which present angularly-disposed engaging faces adapted when the sections are drawn together to cause the sections to move longitudinally. This longitudinal movement of the sections is in opposite directions and operates to move the clamps or jaws 3 of one section in one direction and those of the other section in the opposite direction. The transversely-disposed V-shaped projections or portions are reversely arranged, those of one section engaging the inner side of one of the projections or portions and the outer side of the other projection or portion of the other section. These tapering engaging portions 8 are hollow and are shown in the drawings as consisting of a plate 9, riveted or otherwise secured to the inner face of the longitudinal body portion of the section and bent at its end portions to form intermediate V-shaped

wedges, as clearly shown in Fig. 4. The plate 9 extends from the inner and outer side of each of the wedges and firmly braces the same. The tapering projections or wedges may, however, be formed integral with the body portions of the sections, and the tapering or triangle form is not essential, as the longitudinal movement of the sections on each other results from the engagement of the contiguous angularly-disposed faces of the projections or wedges. The opposite faces may be varied in form without affecting the result.

When the transverse fastening devices are tightened, the sections are drawn together and the rail-engaging jaws or clamps are caused to firmly engage the rails. The rail-engaging clamps or jaws of each section are located, respectively, at the inner side of one rail and at the outer side of the other rail, and this particular arrangement of the rail-engaging means prevents the expansion and contraction of the sections incident to changes in temperature from loosening the rails, as the expansion or contraction of one section is counteracted by the expansion and contraction of the opposite section.

The bottom flanges or portions 2 extend beneath the transversely-disposed engaging members 8, and they may be provided with openings 10 for enabling the cross-tie to be bolted or spiked to trestles, and, if desired, exteriorly-arranged flanges may be employed for this purpose. Also the cross-tie may be made of various lengths to adapt it for switch constructions and the like, and the rail-engaging clamps or jaws may be extended laterally, so as to project on each side of a rail-joint, if desired.

As the cross-tie is open at the center, as shown, it will not bind at the center and rock at the ends in frozen ground, and the open center will enable the cross-tie to thaw more rapidly at the center than at the ends. The sectional cross-tie possesses greater elasticity than a solid or integral tie, and this elasticity is further increased by the employment of hollow or skeleton engaging portions 8. In practice the rail will be seated upon the upper edges of the vertical sides of the cross-tie; but if greater elasticity be desired blocks of wood or other forms of cushions may be employed in the usual well-known manner. The open **V**-shaped wedges or projections 8 form convenient sockets for holding the rail-cushioning means.

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

1. A cross-tie composed of separable sections carrying rail-engaging means, fastening means for drawing the sections together, and means also carried by the sections for automatically moving the rail-engaging means into engagement with a rail when the sections are drawn together.

2. A cross-tie composed of separable sections carrying opposite rail-engaging jaws, fastening means for securing the sections together, and means also carried by the sections for automatically moving the same on each other in a longitudinal direction when they are drawn together, whereby the said jaws will be carried into engagement with a rail.

3. The combination of opposite sections provided with means for engaging the opposite sides of a rail, said sections being also provided with angularly-related faces arranged to carry the rail-engaging means into engagement with a rail when the sections are drawn together, and means for drawing the sections together.

4. The combination of opposite sections carrying rail-engaging means and provided with angularly-disposed engaging faces slidable on each other to carry the rail-engaging means into engagement with a rail, and fastening devices connecting the sections.

5. A cross-tie composed of opposite sections having rail-engaging means and provided with transversely-disposed engaging portions arranged in pairs and having angularly-disposed faces slidable on each other for carrying the rail-engaging means into and out of engagement with the rails, and fastening means for securing the sections together.

6. A cross-tie composed of opposite sections provided with substantially **V**-shaped portions arranged in pairs and slidable on each other, means for connecting the sections, and rail-engaging means carried by the sections.

7. A cross-tie composed of opposite sections provided with transversely-disposed projecting portions having angularly-disposed faces slidable on each other, bottom flanges carried by the opposite sections and extending beneath the transversely-disposed portions, and rail-engaging means carried by the sections.

8. The combination of opposite sections provided with angularly-related faces slidable on each other and arranged to move the sections in opposite directions when they are drawn together, and rail-engaging means operated by the reverse movement of the sections to engage and release a rail.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

JOHN P. ASHBY.

Witnesses:
LUTHER G. WEST,
HAROLD V. HAUGH.