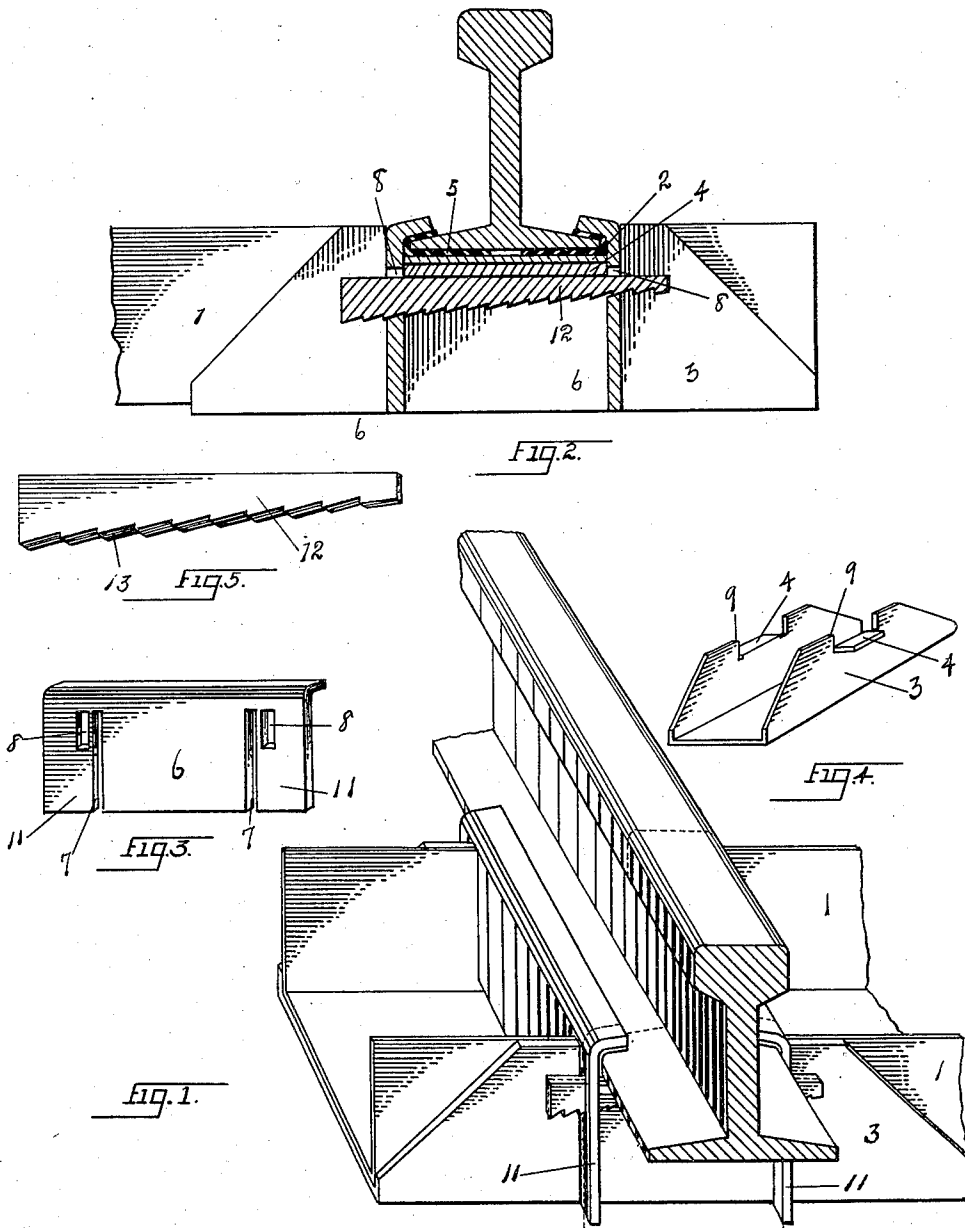


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RAILWAY TIE AND FASTENER THEREFOR.
APPLICATION FILED JAN. 29, 1912.

1,028,431.

Patented June 4, 1912.



Witnesses

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ARTHUR C. CANDLAND, OF PROVO, UTAH.

RAILWAY-TIE AND FASTENER THEREFOR.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ARTHUR C. CANDLAND, a citizen of the United States, residing at Provo city, in the county of Utah and State of Utah, have invented certain new and useful Improvements in Railway-Ties and Fasteners Therefor, of which the following is a specification.

My invention relates to railway ties and means to fasten the rails on the ties, and has for its object to provide a fastening means which may be used on a light weight metallic tie to not only securely hold the rails in place on the ties but is so constructed that the ties will be strengthened and reinforced at the points where the great weight of the load carrying wheels of a passing train must bear.

A further object is to provide a tie and fastening means which may be shipped in a knocked-down or unassembled form, and in shipping or handling may be nested and crated, thus saving much space in transportation vehicles and time in handling.

These and other objects which will be readily apparent I accomplish with the device illustrated in the accompanying drawings in which similar letters of reference indicate like parts throughout the several figures and as described in the specifications forming a part of this application.

Figure 1 is an isometric view of one end of the tie with my reinforcing fastening means and a part of a rail. Fig. 2 is a longitudinal vertical section on line *x x* of Fig. 1. Fig. 3 is a perspective view of one of the clamps. Fig. 4 is a perspective view of one of the reinforcing members. Fig. 5 is a perspective view of one of the keys.

My tie is cut from a sheet of metal of lighter weight than is usually considered necessary for metallic ties and bent to form a channel 1. At the points where it is intended to have the rails cross the tie the sides of said channel are slit and a portion of the sides are bent outwardly forming lugs 2, which are to be clamped between the bottom of a rail and the fastening means to hold the rail and tie in fixed relation to each other.

Reinforcing members 3, one each of which is closely fitted contiguous the bottom and sides of each end portion of said channel 1. Practically one third of the bottom of the tie is covered by each reinforcing member 3 thus equalizing or balancing the load on the

tie. Each side of said reinforcing member 3 has slits cut therein and the portions between the slits are bent outwardly forming lugs 4 which are similar to and are to be placed contiguous the said lugs 2 of the said channel 1. Within the said channel and between the lugs 2 is placed cushion blocks or other supporting blocks on which is placed strips of insulating material 5. The rails rest on the insulating strips 5 and one edge of each strip 5 is bent over the edge and partially over the top of the base flange of the rail. Clamps 6, each having open slots 7 therein and elongated rectangular openings 8 in the end portions thereof, are placed transversely in said channel contiguous the cushion blocks with the upper portion bent to engage the base flange of the rail. The uncut portion of the sides of the reinforcing members form shoulders 9 against which the said clamps 6 engage. The distance between the said shoulders 9 and the lugs 4 is equal to the thickness of the said clamps 6 this arrangement insures a laterally fixed position of the clamps 6 in the reinforcing members 3. When said clamps 6 are placed in position within the channel 1, the said open slots 7 permit the end portions 11 of the said clamps to engage the sides, of the said reinforcing members 3 and channel 1, and hold them contiguously together and against outward bending or displacement. Ballast may be packed against the said portions 11 of said clamps as well as within the channel 1 to prevent longitudinal movement of the tie when it is in place on the roadbed. When the said clamps 6 are in position and engaging the base flange of the rail, the said slots 8 extend above the bottom of the said lugs 4. A key 12, having teeth 13 on one edge, is driven within the said openings 8, with the serrated side sliding on the bottom of the said openings and the top side slidably contacting with the under side of the said lugs 4. When two of said keys are so driven within said openings 8, one on each side of the said channel and preferably in opposite directions the said clamps will be drawn downwardly and firmly bind the tie, reinforcing members and rail together.

I am aware that others have patented sheet metal channel ties but so far as known to me none have used a fastening means surrounding and reinforcing the channel as well as binding the channel and rail to-

gether, and at the same time supplying an individual truss support under each rail.

Having thus described my invention I desire to secure by Letters Patent and claim;—

5 1. In combination with an open topped metallic shell; reinforcing members having closed sides and bottom for each end portion of said shell; rail supporting blocks in said shell; clamps adapted to engage the base
10 flange of a rail and to hold said rail supporting blocks in place; and means to draw said reinforcing members and said clamps together.

2. In combination with an open topped
15 metallic shell; reinforcing members having closed sides and bottom contiguous each end portion of said shell; rail supports in said shell; clamps adapted to engage the base flange of a rail placed on said supports, each
20 having open slots therein; and means in said slots to draw said reinforcing members and said clamps toward each other.

3. In combination with a U-shaped metallic shell, outwardly extended lugs thereon;
25 rail supporting blocks in said shell, reinforcing members adjoining the bottom and sides of each end portion of said shell; outwardly extended lugs on said reinforcing members; and means to bind said reinforcing
30 ing members and transversely placed rails on opposed sides of said shell.

4. In combination with a railway tie portions of which are bent outwardly, rail supporting blocks within said tie; clamps transversely placed in said tie adjoining said
35 blocks, each having open slots therein, rectangular opening therethrough and a portion bent to engage the base flange of a rail; a reinforcing member having closed sides
40 and bottom surrounding each end portion of said tie and adapted to strengthen the sides and bottom thereof and to co-act with said clamps in holding the rail in a fixed

position on the tie; and keys driven within the rectangular openings in said clamps. 45

5. In combination with outwardly extended portions of a railway tie, clamps transversely placed in said tie contiguous the said outwardly extended portions thereof and each having open slots therein, rectangular openings therethrough and a portion bent to engage the base flange of a rail; reinforcing members one each of which is placed adjoining the sides and bottom of each end portion of said tie and having a
55 portion of each side of each extended outwardly subjacent said outwardly extended portions of said tie; and keys driven within the said rectangular openings in said clamps in slidable contact with the underside of
60 said outwardly bent portions of said reinforcing members.

6. In combination with outwardly extended lugs on a railway tie, clamps transversely placed in said tie contiguous the said outwardly extended lugs, each having open slots therein, rectangular openings therethrough and a portion bent to engage the base flange of a rail; reinforcing members one each of which is placed adjoining the sides and bottom of each end portion of said tie, and having outwardly extended lugs on each side thereof subjacent said outwardly extended lugs on said tie; and keys driven within the said rectangular openings in said clamps in
75 slidable contact with the said last mentioned lugs adapted to bind said reinforcing members and said tie and transversely placed rails securely together.

In testimony whereof I have affixed my
signature in presence of two witnesses. 80

ARTHUR C. CANDLAND.

Witnesses:

SAM RANNEY,

GOULD B. BLAKELY.