A. C. CANDLAND.

RAILWAY TIE AND FASTENER.

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1,028,432.

Patented June 4, 1912.

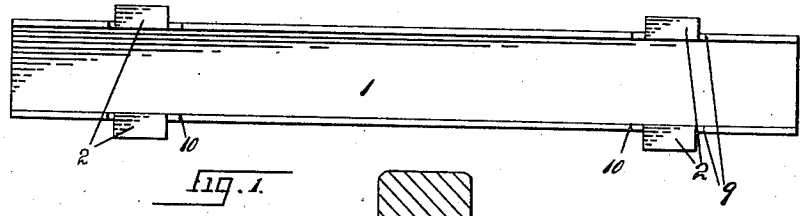

Fig. 1.

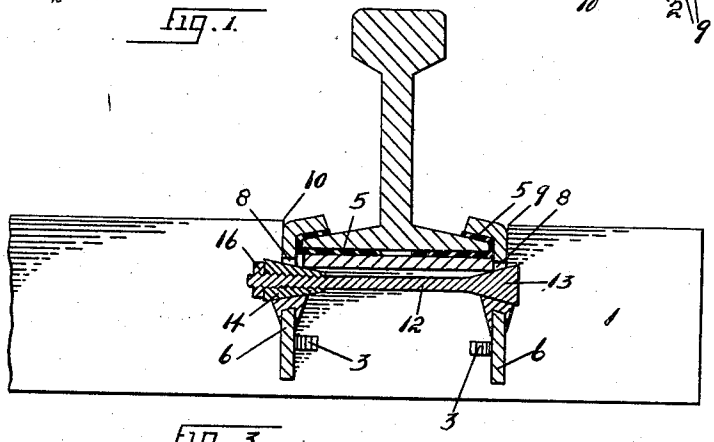

Fig. 3.

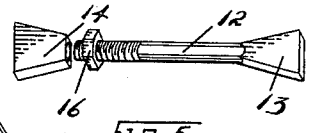

Fig. 5.

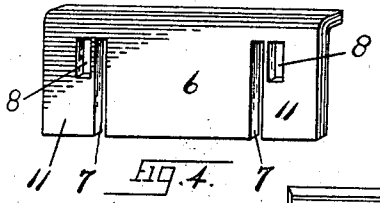

Fig. 4.

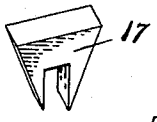

Fig. 6.

Fig. 2.

Witnesses

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RAILWAY-TIE AND FASTENER.

1,028,432. Specification of Letters Patent. Patented June 4, 1912.

Application filed February 2, 1912. Serial No. 674,864.

To all whom it may concern:

Be it known that I, ARTHUR C. CANDLAND, a citizen of the United States, residing at Provo, in the county of Utah and State of Utah, have invented certain new and useful Improvements in Railway-Ties and Fasteners, 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 simple form of channel tie and fastening means to securely hold the rails in place on the tie. 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 a plan view of the tie. Fig. 2 is an isometric view of one end of the tie with my fastening means and a part of a rail thereon. Fig. 3 is a longitudinal vertical section on line *x x* of Fig. 2. Fig. 4 is a perspective view of one of the clamps. Fig. 5 is a perspective view of one of the bolts and trapezoidal washers. Fig. 6 is a perspective view of a metal bushing.

My tie is cut from a sheet of metal 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 portions 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. Within the said channel and between the lugs 2 are placed rail supporting blocks on which are 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. Adjacent each end of each of said rail supporting blocks and within the said channel 1 is transversely fitted a clamp 6, each having open slots 7 therein and rectangular openings 8 in the end portions thereof and with the upper portion bent to engage the base flange of the rail. The uncut portion of the sides of channel 1 form shoulders 9 and 10 against which the said clamps 6 engage. The distance between the said shoulders 9 and the lugs 2 is equal to the thickness of the said clamps 6. This arrangement insures a laterally fixed position of the two outer clamps 6 in the channel 1. The distance between the said shoulders 10 and the said lugs 2 is purposely made greater than the thickness of the opposed clamp 6 to permit the moving of said opposed clamp 6, longitudinally in said channel 1, in order that said clamps may be made to firmly grip the base flange of a rail. 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 channel 1, and hold them 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 2. Within said openings 8 are fitted threaded bolts 12 each having a trapezoidal head 13. Within the opening 8 in the opposed clamp 6 is fitted a trapezoidal washer 14. The upper sides of the trapezoidal heads 13 on said bolts and said trapezoidal washers 14 are slidably in contact with the under side of said lugs 2 of said channel 1. The under side of the said respective heads and washers engage the bottom of the rectangular openings in said clamps; and when the threaded nut 16 is turned up on each of said bolts the said clamps 6 will be drawn downward and those on the inside of the track will be drawn outward in gripping contact with the base flange of the rail and firmly bind the tie and rails together. In the sides of said channel 1 are cut horizontal U-shaped slits and the free portion of the tongue within each slit is bent outwardly in curved form or at an angle to form braces 3. The lower portion of each of said clamps 6 engages the free end of one of said braces which will prevent the bending or springing of the portions 11 of the clamps when the nut 16 is turned in on the bolt 12.

At times it becomes necessary on account of the sinking of the tie into the soft roadbed and at a time when it is not practical to ballast the tie up that a shim of wood or other material be placed between the tie and the base flange of the rail, and in order to accommodate my fastening means to such conditions I provide a metal bushing 17.

One of these may be placed within each of the rectangular openings 8 when the tie at that particular place is being set in position. The trapezoidal head and washer on the bolt 13 will then be in slidable contact with said bushing and should it become necessary to put a wooden shim under the base flange of the rail rather than to ballast up the tie, the metal bushings 17 are removed which allows the clamps 6 to be raised to the extent of the thickness of the bushing 17 and a wooden shim to be placed between the tie and the rail.

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

1. A railway tie and fastener therefor consisting of an upturned U-shaped channel, portions of the sides of said channel bent outwardly to form lugs and other portions to form braces, a rail supporting block in each end portion of said channel adjacent said outwardly extending lugs, insulating strips on said rail supporting blocks and said lugs and means to grip the base flange of a railway rail and said extended lugs firmly together.

2. In a railway tie and fastener the combination of outwardly extended lugs on said tie, rail supporting blocks in said tie and adjacent said lugs, braces integral with the sides of said channel, clamps transversely fitted in said channel a portion thereof adapted to grip the sides of said channel and having rectangular openings therein, and another portion bent to grip the base flange of a rail, bolts having trapezoidal heads on each placed in said rectangular openings, trapezoidal washers on said bolts, said washers and said heads of said bolts in slidable contact with the under side of said lugs.

3. A railway tie and fastener therefor consisting of an upturned U-shaped channel, lugs therein formed from outwardly bent portions of the sides of said channel, braces integral with the sides of said channel, a rail supporting block in each end portion of said channel adjacent said lugs, insulating strips between said rail supporting blocks and said lugs, a railway rail placed thereon, a means to grip the base flange of a railway rail and said lugs firmly together.

4. In a railway tie and fastener the combination of outwardly extended lugs on said tie, rail supporting blocks in said tie adjacent said lugs, braces integral with the sides of said tie, clamps transversely fitted in said channel having open slots therein, a portion on each end of said clamps adapted to grip the sides of said channel and provided with rectangular openings therein, threaded bolts having trapezoidal heads on each, a trapezoidal washer carried on each of said bolts and a threaded nut adapted to be turned on each of said bolts.

5. In a railway tie and fastener the combination of outwardly extending portions on said tie forming lugs, outwardly extended braces integral with the sides of said tie, clamps transversely fitted in said channel, portions of the ends thereof partially severed from said clamps by open slots and having rectangular openings therein, a metal bushing in each of said openings, threaded bolts having trapezoidal heads and carrying a trapezoidal washer on each placed in said rectangular openings with one side of said trapezoidal washer and the side of the trapezoidal bolt slidably in contact with the said extended lugs and the opposite side of said trapezoidal washer and trapezoidal head in slidable contact with said bushings, and a threaded nut adapted to be turned on each of said bolts to bind said clamps together and to draw said clamps inward and downward on a railway rail.

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

ARTHUR C. CANDLAND.

Witnesses:
SAM RANEY,
RUTH MCINTOSH.