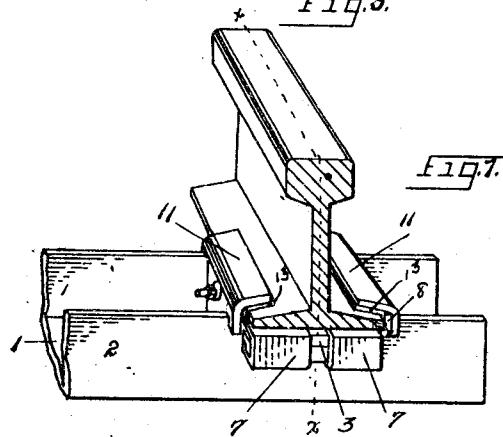
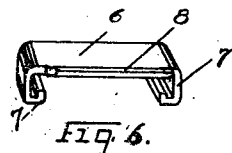
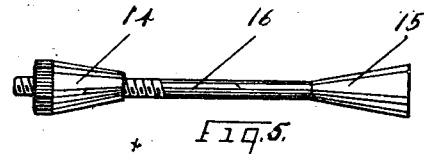
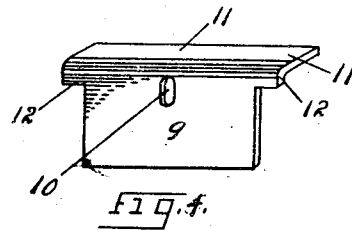
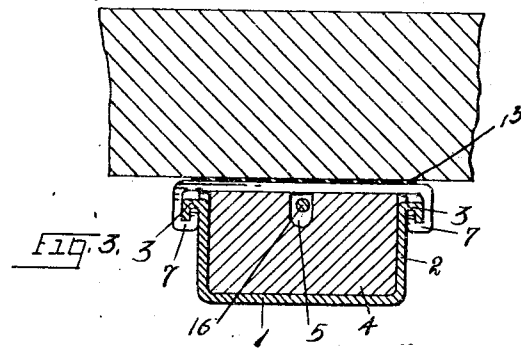
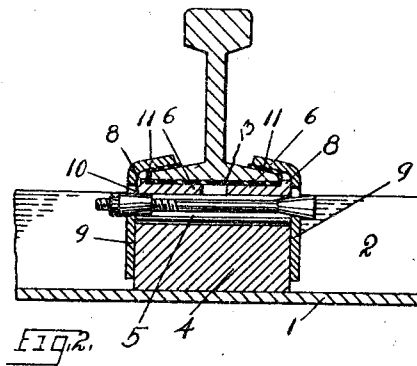
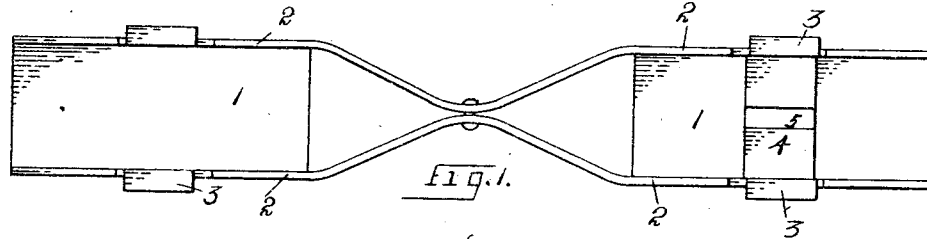


A. C. CANDLAND.
RAIL FASTENING DEVICE.
APPLICATION FILED JULY 2, 1912.

1,048,652.

Patented Dec. 31, 1912.



Witnesses:

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UNITED STATES PATENT OFFICE.

ARTHUR C. CANDLAND, OF PROVO, UTAH.

RAIL-FASTENING DEVICE.

1,048,652.

Specification of Letters Patent. Patented Dec. 31, 1912.

Application filed July 2, 1912. Serial No. 707,354.

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 Rail-Fastening Devices, of which the following is a specification.

My invention relates to metallic railway ties and means for fastening a rail thereon, and has for its object to provide a rail fastening device of few parts, one that is adjustable vertically and laterally and that will supply under the rail the resiliency so much desired. These objects 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 herewith, forming a part of this application, and as pointed out in the appended claims.

Figure 1 is a plan view of a metallic tie of channel shape having portions of the sides cut and bent to form outwardly extending lugs, and a cushion block shown in one end of the tie. Fig. 2 is a vertical section through one end of the tie and my device, with a portion of a rail thereon. Fig. 3 is a transverse vertical elevation on line $x-x$ of Fig. 7. Fig. 4 is a view in perspective of one of the rail clamps. Fig. 5 is a plan view of the holding bolt and cone shaped nut. Fig. 6 is a view in perspective of one of the rail plates. Fig. 7 is a view in perspective of a rail secured on one end of a tie with my device.

In a metallic tie of channel shape having a bottom 1 and sides 2; I cut and bend portions of the said sides 2, outwardly and then downwardly to form lugs 3. Adjacent said lugs 3 and within the said channel shaped tie, I place the cushion blocks 4, each of which has a channel 5 cut in the upper side thereof and parallel with said sides 2 of the tie. The rail plates 6 have each end bent to form hooks 7, and one side of each upwardly bent to form a flange 8 thereon. Rail clamps 9, each having an elongated circular opening 10 therein, and a portion 11 bent to engage the base flange of a railway rail, are placed transversely in said tie adjacent said blocks 4. The ends of said clamps are extended to form lugs 12, which lugs abut against the shoulder formed in said sides 2 where said lugs 3 are cut out. Strips of in-

sulating material 13 are placed between the said rail plates 6 and the base flange of the rail, and also between the said flange and the portion 11 of the rail clamps.

In using my device the rail plates 6 are placed on the tie by sliding them longitudinally on the top thereof until the said hooks 7 are beneath said lugs 3, with the flange portion 8 upwardly extending. They are placed in pairs with the flange 8 of one rail plate spaced from the flange 8 on the opposed rail plate a sufficient distance to admit the base flange of a rail therebetween. A strip of insulating material 13 is fitted on the top of each of said rail plates and adjoining the said flange 8 and the railway rail placed on said insulating strips, and resting on said rail plates. One of the said blocks 4 is then inserted below each pair of rail plates, which will force said rail plates upwardly and the said hooks 7 into locking contact with said lugs 3. The rail clamps 9 are then placed transversely within said tie with the portion 11 engaging the upper side of the base flange of the rail, and the lugs 12 thereon within the space cut out of the sides 2. A threaded bolt 14 having a cone shaped head 15 thereon is inserted through the elongated circular hole 10 and within the channel 5 in said block 4, and through the hole 10 of the opposed clamp 9. A threaded cone shaped nut 16 is screwed on said bolt with said nut engaging the under side of the said rail plate 6, and the lower end of the elongated hole 10. The head on the said bolt 14 will contact with the under side of the opposed rail plate and with the lower end portion of the elongated hole 10 in the opposed clamp 9. Any tightening of the said nut on said bolt will draw the said clamps 9 inwardly and downwardly in gripping contact with the base flange of the rail; and as said lugs 3 prevent the said rail plates from any upward movement, the rail will be fastened securely on the tie. Should the said blocks 4 shrink or wear until the conical shape of the said head 15 and nut 16 bearing against said rail plates and within said holes 10 will not hold said rail above the sides 2 of the tie, or the said hooks 7 in engagement with said lugs 3; the blocks 4, rail plates 6 and clamps 9 may be shimmed up by driving wooden shims between the blocks and the bottom of the tie, and the nut and bolt readjusted. The conical shape of the head and

nut on the bolt engaging, as they do with separated beveled faces prevents either the bolt or nut from unintentional rotation or turning and locks the nut on the bolt.

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

1. In a rail fastening device the combination of outwardly and downwardly extended lugs on a metallic tie; rail plates having
10 hooks on each end thereof to engage said lugs; rail clamps having an elongated circular hole in each; and a bolt having a cone shaped head and a cone shaped nut screwed thereon through said holes and below said
15 rail plates tending to draw said rail clamps downward and inward in gripping contact with the base flange of a rail placed on said rail plates.

2. In a rail fastening device the combination of outwardly and downwardly extended
20 lugs on a metallic tie; rail plates having hooks on each end thereof to engage said lugs; cushion blocks under said rail plates; rail clamps having an elongated circular
25 hole in each; a bolt having a cone shaped head thereon inserted through said elongated holes in said clamps and below said rail plates; and a cone shaped nut screwed

on said bolt within one of said elongated holes tending to draw said rail clamps down- 30
ward and inward in gripping contact with the base flange of a railway rail placed on said rail plates.

3. A rail fastening device consisting of outwardly and downwardly extended lugs 35
on a metallic tie; cushion blocks adjacent said lugs; rail plates superimposed on said blocks; hooks on each end of said rail plates adapted to engage said lugs; rail clamps
40 having an elongated circular hole in each; lugs on said rail plates to abut against portions of said tie; a bolt having a cone shaped head thereon inserted through said elongated hole in said clamps and below said
45 rail clamps; and a cone shaped nut screwed on said bolt within one of said elongated holes tending to draw said rail clamps together in pairs and downward in gripping
50 contact with the base flange of a rail placed on said rail plates.

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

ARTHUR C. CANDLAND.

Witnesses:

SAM RANEY,
S. A. PARKER.