No. 827,881. PATENTED AUG. 7, 1906.

J. W. PEPPLE.

RAILWAY TIE.

APPLICATION FILED APR. 10, 1905.

2 SHEETS—SHEET 1.

Fig. 1.

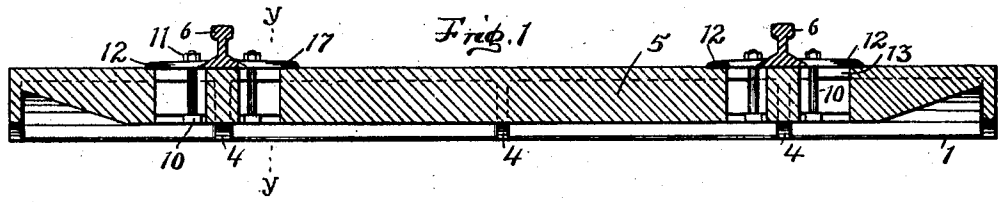


Fig. 2.

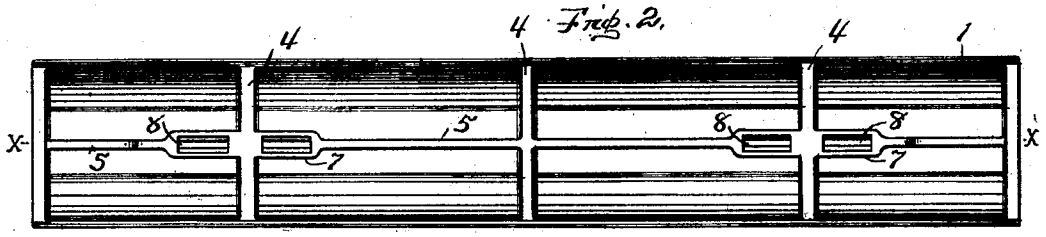


Fig. 3.

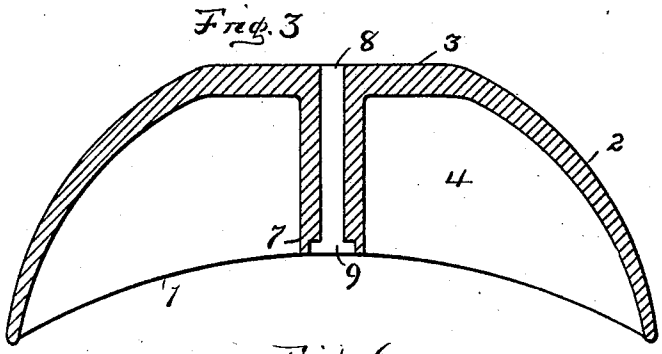


Fig. 6.

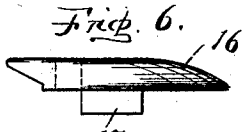


Fig. 4.

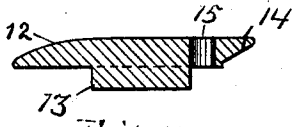


Fig. 5.

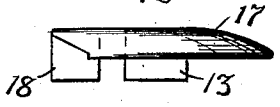


Fig. 7.

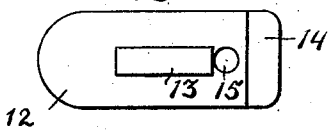
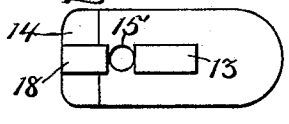


Fig. 8.



WITNESSES:

J. M. Dickens,

Augusta Viberg.

John W. Pepple INVENTOR

BY Chapin & Denny

HIS ATTORNEYS.

No. 827,881. PATENTED AUG. 7, 1906.

J. W. PEPPLE.

RAILWAY TIE.

APPLICATION FILED APR. 10, 1905.

2 SHEETS—SHEET 2.

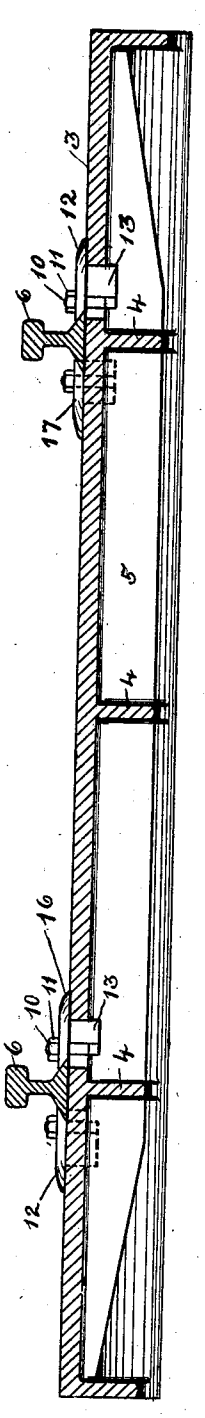
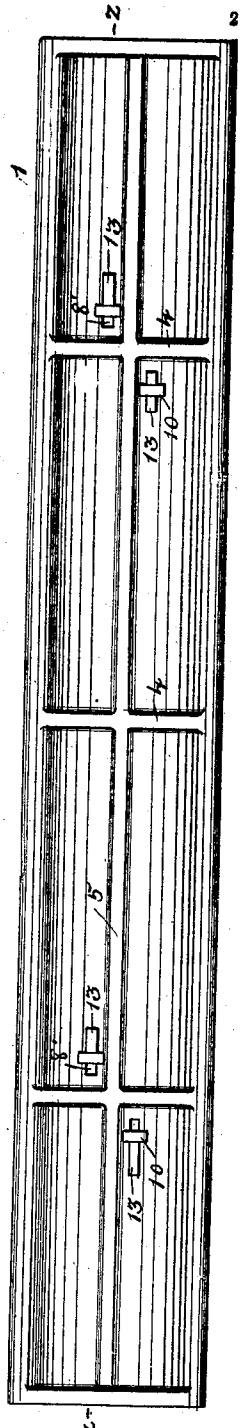


Fig. 10.



WITNESSES:

J. M. Dickens.

Augusta Viberg.

John W. Pepple INVENTOR.

BY Chapin & Denny

His ATTORNEYS.

UNITED STATES PATENT OFFICE.

JOHN W. PEPPLE, OF HILLSBORO, TEXAS.

RAILWAY-TIE.

No. 827,881. Specification of Letters Patent. Patented Aug. 7, 1906.

Application filed April 10, 1905. Serial No. 254,761.

To all whom it may concern:

Be it known that I, JOHN W. PEPPLE, a citizen of the United States, residing at Hillsboro, in the county of Hill, in the State of Texas, have invented certain new and useful Improvements in Railway-Ties; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to improvements in railway-ties.

The object of my present invention is to provide a comparatively cheap, simple, efficient, and durable metallic railway-tie of novel construction and having a novel means for securing the railway-rails thereto and for preventing longitudinal slipping of the rails in use and also for permitting a slight spreading or widening of the track on curves for a well-understood purpose.

My invention consists of a hollow metallic railway-tie approximately semicylindrical in contour with a flattened and vertically-slotted upper face to receive the railway-rails and a novel arrangement of tie-plates adapted to firmly secure the rails to the ties in such a manner as to prevent the usual longitudinal slipping of the rails under their expansion by the heat of summer and also adapted to conveniently permit a limited widening of the track at curves.

The principal novel features of my invention are the construction of the laterally and longitudinally braced skeleton metallic tie and the construction and relative arrangement of the coöperating tie-plates.

In the accompanying drawings, similar reference-numerals indicate like parts throughout the several views, in which—

Figure 1 is a longitudinal central section of my improved tie, taken on the line *x x* of Fig. 2, showing the relative arrangement of the surmounted railway-rails, the interlocking tie-plates, and the means for securing them in position. Fig. 2 is a bottom plan of the same, showing the strengthening longitudinal and transverse ribs. Fig. 3 is a cross-section of Fig. 1, taken on the line *y y*. Fig. 4 is a vertical longitudinal central section of one form of the tie-plates I employ. Figs. 5 and 6 are side views, respectively, of other forms of tie-plates employed with my invention. Fig. 7 is a bottom plan of Fig. 4, and Fig. 8 is a bottom plan of Fig. 5. Fig. 9 is a longitudinal vertical section of a slightly-modified form of my invention, taken on the line *z z* of Fig. 10. Fig. 10 is a bottom plan of the same, showing the tie-plates arranged upon opposite sides of the central web.

My improved railway-tie of any proper dimensions and proportions and of any suitable material, preferably of suitable metal, which may be either rolled, pressed, stamped, or cast, consists of a hollow shell 1 of proper strength and preferably approximately semicylindrical in cross-section, as shown in Fig. 3, has its opposite concavo-convex sides 2 and top 3 strengthened by a plurality of integral vertical transverse webs 4 and a central longitudinal vertical and integral web 5, which is provided with double strength at the points upon which the railway-rails 6 rest or are supported in the manner about to be described.

The shell-body 1 of the tie is preferably about fourteen inches wide at its base, about six inches in depth, and its top 3 has a width of about eight inches. The transverse webs 4 may be arranged one at each end of the body 1 and a plurality between its ends, preferably three, one directly below each rail 6, as shown in Fig. 1, which are preferably somewhat stronger than the other webs 4, and one midway of the rails.

The longitudinal web or pendent flange 5 may be tapered upon its lower face at each end and has a lateral enlargement 7 upon each side of the webs 4, which are directly beneath the rails, Fig. 2. These last-mentioned webs each have a vertical central longitudinal slot 8 for the rail-securing means about to be described. A longitudinal recess 9 is provided upon the lower end and upon each side of the slot 8, forming a countersunk or depressed seat for the head of the bolts 10 to prevent them from turning when the nuts 11 are being placed thereon.

Three slightly-modified forms of tie-plates are shown in Figs. 4, 5, and 6. The former or plate 12, a bottom plan of which is shown in Fig. 7, is of any proper dimensions, has a central pendent lug 13, adapted to snugly fit the vertical slot 8. This plate 12 has its inner end 14 beveled to fit the beveled upper face of the rail-base and has a perforation 15 to receive the upper protruding screw-threaded end of the bolts 10, which are then rigidly secured in position by the nuts 11. These tie-plates 12 are specially designed for use

upon the inside of the railway-rail on curves, but are adapted for use upon both sides of the rail in a straight track. The tie-plate 16 (shown in Fig. 6) is identical in form with the plate 12, except that the pendent lug 13 is shortened, preferably, about one-fourth of an inch and are designed for use upon a curve and upon the outside of the railway-rail, thereby enabling the operator to slightly widen or spread the rails upon a curve. The tie-plate 17 (shown in Fig. 5) is identical in construction with the plate 16, except that an additional pendent lug 18 is provided upon the beveled portion 14 in longitudinal alinement with the lug 13. The lug 18 is adapted to snugly fit a vertical notch in the adjacent edge of the foot of the rail, and thereby prevents any longitudinal slipping or "running" of the rail in use. One or more of these plates 17 can be used with each rail.

In the modified forms shown in Figs. 9 and 10 the slotted lateral enlargement of the web 5 is omitted, and instead thereof the tie-plates are arranged upon opposite sides of this web in vertical slots in coöperative relation with the rails, as shown, and in the same manner above described, the only difference being that in this construction the bolts 10 are much shorter, and the expense of slotting the web 5 is avoided.

My improved tie thus constructed may be properly coated with pitch, asphaltum, or other non-corrosive covering adapted to protect and preserve the tie, and its manner of use is too obvious to require further description.

Having thus described my invention, what I desire to secure by Letters Patent is—

1. A metallic railroad-tie consisting of a one-piece skeleton frame braced by a pendent central longitudinal web and a plurality of transverse webs, the longitudinal web having a series of vertical slots for the rail-securing means; a plurality of tie-plates having pendent lugs adapted to be received by the said slots; and means for securing the said plates in position, all substantially as described.

2. In a railway-tie a one-piece metallic skeleton or shell frame, provided upon its lower concave face with a central longitudinal strengthening-web, and a plurality of transverse webs, the longitudinal web being vertically slotted as shown; tie-plates having pendent lugs to fit the said slots for the purpose specified; means for preventing longitudinal movement of the rail; and means for securing the said plates in position.

3. In a railway-tie a one-piece metallic skeleton or shell frame, provided upon its lower concave face with strengthening-webs, and having two pairs of vertical slots to receive the tie-plates; tie-plates having pendent lugs to fit the said slots for the purpose specified; means for preventing longitudinal movement of the rail; and means for securing the said plates in position.

4. In a metallic railway-tie a tie-plate having a pendent flange adapted to form an interlocking union with the tie-body, provided with a beveled inner end having a transverse pendent lug adapted to holdingly engage the railway-rail, and having a vertical perforation intermediate of the said lugs, all substantially as described.

Signed by me at Hillsboro, in the county of Hill and State of Texas, this 4th day of April, A. D. 1905.

JOHN W. PEPPLE.

Witnesses:
B. D. SMITH,
G. D. TARLTON.