

A. C. DINKEY.

METAL RAIL TIE.

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1,024,065.

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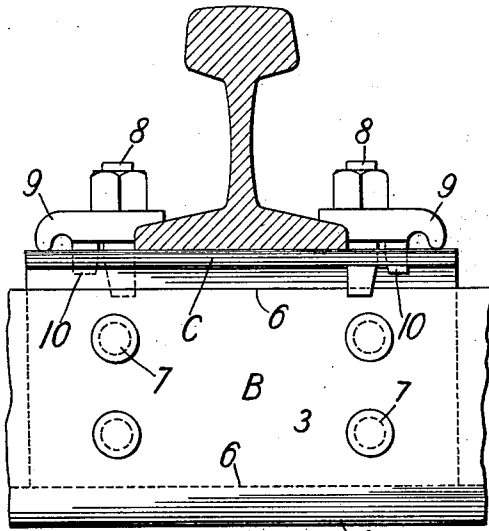


FIG. 2

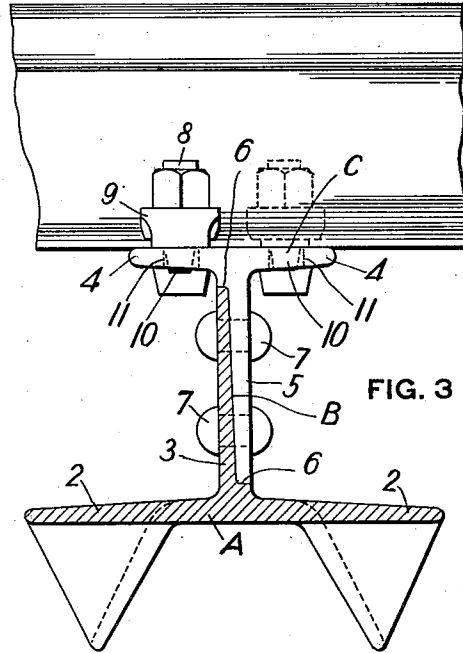


FIG. 3

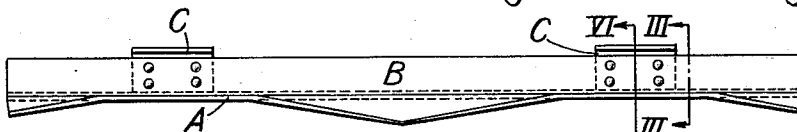


FIG. 1



FIG. 4

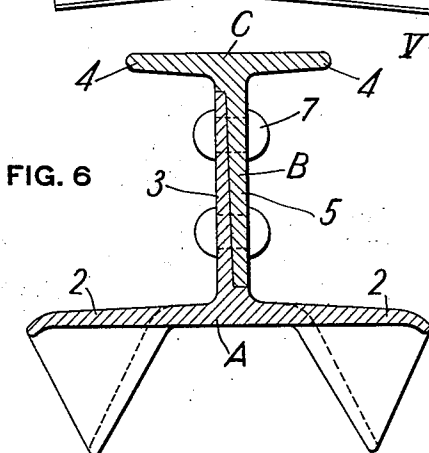


FIG. 6

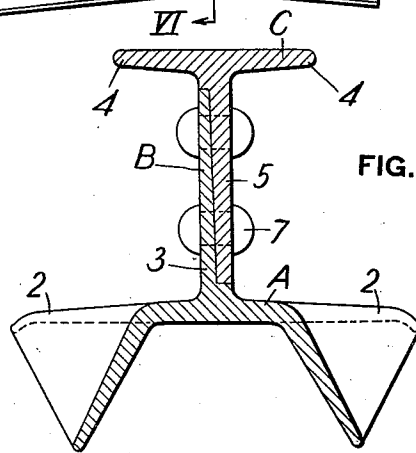


FIG. 5

WITNESSES

A. Little
M. C. Alexander

INVENTOR

Alva C. Dinkey
by Luthicum, Bell, & Allen
his Attorneys

UNITED STATES PATENT OFFICE.

ALVA C. DINKEY, OF PITTSBURGH, PENNSYLVANIA.

METAL RAIL-TIE.

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To all whom it may concern:

Be it known that I, ALVA C. DINKEY, of Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Metal Rail-Ties, of which the following is a specification.

My invention relates to the construction of railway cross ties formed of steel or similar material, and more particularly relates to the construction of wrought metal railway ties having top and bottom members joined together by and extending outwardly from the marginal edges of a substantially perpendicular web member.

One object of my invention is to provide a railway tie formed of rolled metal members T-shaped in cross section and having the metal forming the tie distributed or disposed in a novel manner whereby all of the metal in the tie is made effective and the lateral and transverse strength of the tie is largely increased.

Another object of this invention is to provide a metal tie formed of rolled metal members substantially T-shaped in cross section, and having improved means for transmitting the loads on the track rails secured to the ties to the roadbed of the track in which the tie is placed, by the use of which such loads are positioned and concentrated in the proper location on the tie and a material increase in the effective strength of the ties is made possible without substantial increase in the weight or amount of material used in forming the tie.

A further object of the invention is to provide a metal tie having an improved construction and arrangement of the parts forming the tie, as will more fully appear hereinafter.

Referring to the drawing forming part of this specification, Figure 1 is a longitudinal side elevation of a metal railway tie constructed and arranged in accordance with my invention. Fig. 2 is a side elevation on an enlarged scale, of a portion of the same, showing the preferred manner of securing the track rails on the rail seats of the tie. Fig. 3 is a sectional end elevation of the tie construction shown in Figs. 1 and 2, the section being taken on the line III—III of Fig. 1. Fig. 4 is a longitudinal side elevation similar to that shown in Fig. 1 showing a modified form of construction. Fig. 5 is a sectional end elevation on an en-

larged scale taken on the line V—V of Fig. 4. Fig. 6 is a similar sectional end elevation on the line VI—VI of either Figs. 1 or 4.

In the accompanying drawings, referring to Figs. 1, 2 and 3, the letter A designates the base, B the vertically extending web, and C the horizontally extending rail seat or top member of the tie to which the track rails are secured when the ties and rails are in position in the roadbed of a railway track.

The base A is formed of a rolled metal shape substantially T-shaped in cross section and having oppositely extending legs 2, 2, joined to the lower marginal edge of a third leg 3, which projects upwardly perpendicular to the legs 2, 2, and forms a portion of the web member B in the completed tie. The rail seats C are formed of relatively shorter pieces of a similar rolled metal substantially T-shaped section and having oppositely extending legs 4, 4, joined integrally to the upper marginal edge of a third leg 5. The leg 5 extends vertically downward and with the leg member 3 of the base A forms the vertically extending web member B of the tie. In the construction shown in the drawing, the legs 3 and 5 have a jog or projection in one face or side surface, forming an offset 6 in each leg 3 and 5, which is engaged by the toe or marginal edge of the opposite leg 3 or 5 when the T-shaped members are assembled in forming the tie. Rivets 7 or equivalent bolts are employed to rigidly secure the contacting legs 3 and 5 together in forming the tie.

The oppositely extending legs 2, 2, of the base member A are bent downwardly and inwardly in a peculiar manner so as to increase the lateral and transverse strength of the tie by increasing the effective depth of the girder or beam formed by the tie in the middle of the length of the tie and by decreasing the transverse width of the base of the tie at points between the centers of the track rails so as to lessen the bearing surface of the tie on the roadbed at points between the centers of the track rails.

As will be seen by reference to Figs. 1, 3 and 6, the flanges 2, 2, of the base are bent downwardly and inwardly, the amount of bending gradually increasing from the vertical center of the track rails toward the center of the length of the tie so that the greatest amount of bending is at a point approximately in the middle of the length

of the tie. The flange members 2 are also bent downwardly and inwardly from the vertical center of the track rails toward the ends of the tie, so that the greatest amount of bending of the end portions of the tie is at the extreme ends of the tie.

The legs 4, 4, forming the rail seats are provided with openings through which T-head bolts 8 extend in holding the rail clips 9 in engagement with the tie and rails in securing the rails in position. The clips 9 as shown, are provided with downwardly extending lugs 10 which are arranged to project into openings 11 provided for that purpose into the horizontal legs 4 of the upper T-section forming the rail seats of the tie.

In the construction shown in Figs. 4, 5 and 6, the tie is likewise provided with a base A, web B, and rail seating or top portion C. In this construction rolled metal shapes substantially T-shaped in cross section are again employed and the legs 3 and 5 of these shapes are joined together by rivets 7, in a similar manner to that shown in the preceding figures. In this construction, however, the oppositely extending legs 4, 4, of the top member C are continuous and of the same length as the legs 2, 2, and 3, forming the base A of the tie. In this construction the legs 2, 2, are bent downwardly and inwardly in a very similar manner to that shown in Figs. 1, 2 and 3, the difference being that in Figs. 4 and 5 the bending of the legs 2, 2, begins immediately beneath the vertical center of the track rails instead of at points some little distance on either side of the rail centers, as shown in Figs. 1, 2 and 3.

The top members C of this tie are provided with openings through which the bolts 8 and the lugs 10 on the rail clips 9 extend when the clips are in position to hold the track rails in position on the tie in the same manner as in Figs. 1, 2 and 3.

The advantages of my invention result from the peculiar manner of forming the ties from two T-shaped rolled metal shapes and from the manner in which the legs forming the base flanges are bent downwardly and inwardly.

By constructing the tie of two T-shaped rolled metal shapes having one leg of each section secured together to form the web member of the tie, the web member, which

transmits the loads applied to the rails to the roadbed of the tie, is greatly strengthened.

Modifications in the construction and arrangement of the parts may be made without departing from my invention. When desired the lower ends of the opposite bent down legs may be secured together by means of tie bolts, and other changes may be made.

I claim:—

1. A railroad tie comprising in combination a T-shaped member having leg portions bent gradually and increasingly downward from points below the rail seats toward the longitudinal center of the tie, a second T-shaped member superposed on said first T-shaped member, the legs of the two members forming the web of the tie overlapping, inter-fitting and being rigidly secured together.

2. A railroad tie composed of two T-shaped members the legs whereof are overlapped and rigidly secured together, the overlapping legs being provided with offsets forming shoulders in the sides thereof, the marginal edge of each leg engaging in the shoulder of the other and the two rigidly united.

3. A railroad tie composed of two rolled members T-shaped in cross section, the legs of each member being provided with a seat or shoulder near its head for the end of the leg of the other member and the two legs being rigidly secured together in overlapping position.

4. A railroad tie composed of two rolled members T-shaped in cross section, the legs of each member being provided with a seat or shoulder near its head for the end of the leg of the other member and the two legs being rigidly secured together in overlapping position, the members forming rail seats having rail clip openings and the other member forming the tie base having portions of its flanges bent gradually downwardly and inwardly from points below the rail seats toward the middle of the length of the tie.

In testimony whereof, I have hereunto set my hand.

ALVA C. DINKEY.

Witnesses:

WM. W. BAILEY,
J. R. SHOLLAR.