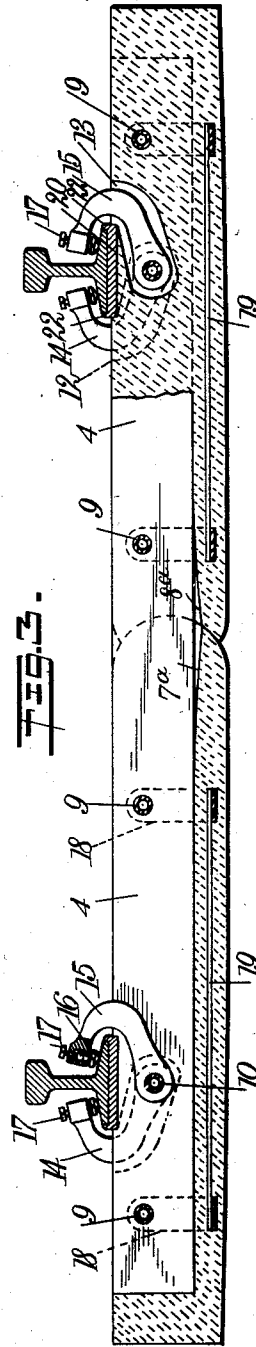
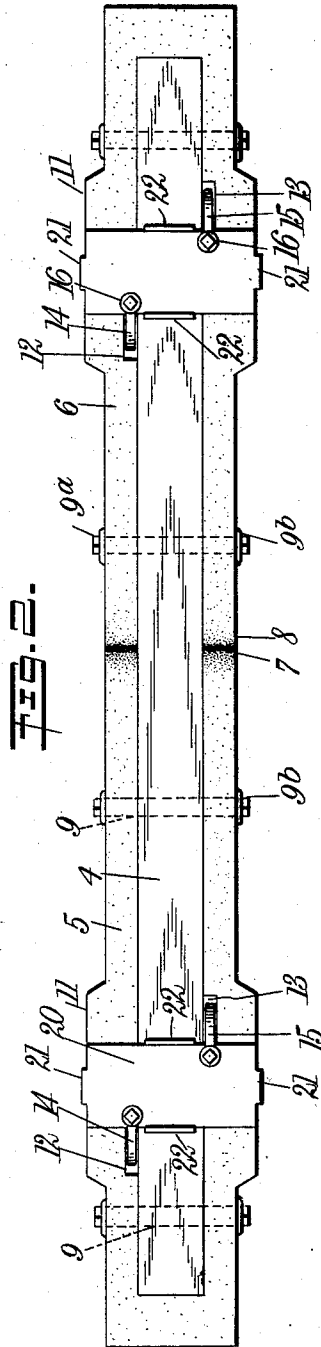
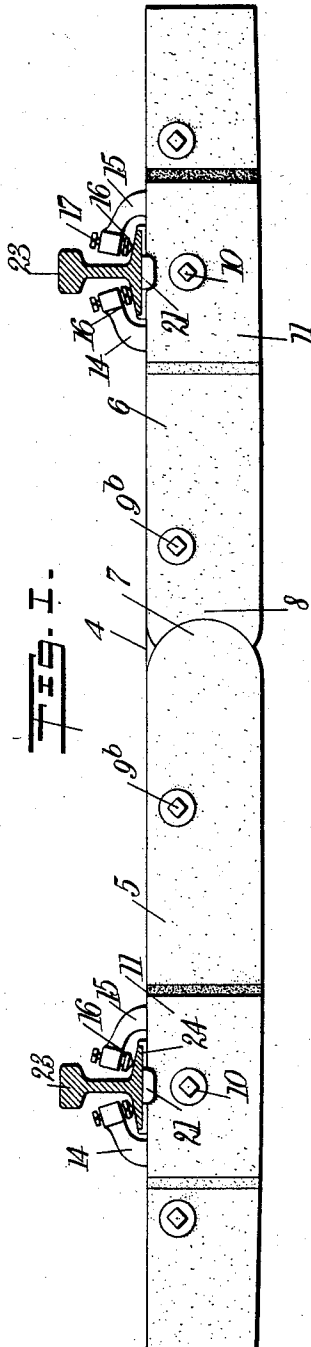


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SLEEPER.

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SLEEPER.

1,021,666.

Specification of Letters Patent.

Patented Mar. 26, 1912.

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To all whom it may concern:

Be it known that I, GEORGE DORFFEL, a citizen of the United States, and a resident of Oakland, in the county of Alameda and State of California, have invented a new and Improved Sleeper, of which the following is a full, clear, and exact description.

My invention relates to sleepers adapted for use as cross ties and the like, my more particular purpose being to make the sleeper principally of concrete and give it such form that it may practically be bent.

More particularly stated, my invention comprehends two trough-like concrete members connected together by a joint and also by a wooden member extending almost the entire length of the concrete members.

My invention further comprehends various details of construction whereby the rails are secured to the sleeper and the sleeper is strengthened in various ways.

My invention also comprises means whereby a limited play or slight relative movement is afforded between the rails and the sleeper, and also whereby the sleeper is especially adapted for use upon curves of a railway.

Reference is to be had to the accompanying drawing forming a part of this specification in which like characters of reference indicate corresponding parts in all the views, and in which—

Figure 1 is an elevation showing my improved sleeper used as a cross tie and supporting a pair of rails which are shown in cross section; Fig. 2 is a plan view of the sleeper, the rails being removed; and Fig. 3 is a fragmentary section showing the internal construction of the sleeper.

Two trough-like members 5, 6 of concrete are fitted together end to end, and for this purpose the end 7 of the concrete member 5 is made convex, while the end 8 of the concrete member 6 is rendered concave, the ends 7, 8 fitting neatly together as a joint. A beam 4 of wood is fitted into the concrete members 5, 6 and fills the same flush with their top levels. Extending through each concrete member 5, 6, and also through the wooden beam 4, are tubular bolts 9 provided with heads 9^a and fitted with nuts 9^b for the purpose of holding the trough-like members 5, 6 and the beam 4 together. Extending crosswise through the concrete members and the beam are two other tubular bolts 10 located a little lower than the row of bolts 9.

The concrete members 5, 6 are provided with widened portions 11 and with hook passages 12, 13, the latter being staggered as indicated in Fig. 2. Hooks 14, 15 are mounted within the hook passages 12, 13 and are pivotally connected with the tubular bolts 10. These hooks 14, 15 carry bolts 16, 17, the bolts 17 serving as locks for the bolts 16.

I provide a number of metallic members 18 which are embedded within the concrete members and are each of substantially U shape. Each bolt 9 extends through the U-shaped member 18 and strips of metal 19 extend from one U-shaped member to the other, there being two of these strips 19, one being located in each concrete member 5, 6. Mounted upon each of these members 5, 6 is an iron plate 20 extending directly across and provided at its ends with lugs 21, these lugs being integral with the plate and extending downwardly so as to anchor the plate 20 against endwise movement of the plate relatively to the concrete member upon which it rests. Each plate 20 is further provided with upwardly extending lugs 22 integral with it and disposed oppositely to each other.

Rails are shown at 23 and are provided with bases 24, each base 24 resting directly upon a plate 20 and extending lengthwise thereof. The upwardly extending lugs 22 fit upon opposite sides of the rail base, and the hooks 14, 15, by aid of the bolts 16, hold the rail base in position.

The trough-like members 5, 6, at their bottoms, are rounded off as indicated at 7^a, 8^a in Fig. 3, so as to leave a little space between the wooden beam 4 and the adjacent bottom of the trough-like member in the immediate vicinity of the joint. The purpose of this arrangement is to prevent undue strain and excessive wear upon the edges of the concrete members 5, 6 in the immediate vicinity of the joint and also to prevent too abrupt a strain from being thrown upon the beam 4; that is to say, the beam 4, by this arrangement, is allowed to make a more gradual bend than would be the case if the rounded surfaces 7^a, 8^a were not provided.

The sleeper constructed as above described admits of quite a number of uses and is especially adapted for use as a railway tie. Owing to the joint between the concrete members 5, 6, these members, as a unit, can

bend. The wooden beam 4 has sufficient elasticity to permit of a bending movement. The plates 20 each have, when no rails are upon them, a slight play relatively to the sleeper, this play being permitted by the lugs 21 which are of a width approximating one-third of that of the plates 20. A very slight displacement of the plate 20 relatively to the sleeper will allow of some adjustment between these parts. Moreover, in laying rails along a curve, it is sometimes desirable to give the rails a slight bend and this is facilitated by the construction of the plates 20. The lugs 21 upon their opposite sides are quite narrow as compared with the plates 20 across the sleeper, and no tightening or pinching of the rails can take place, the rails being secured firmly in position by aid of the hooks 14, 15 and without the use of spikes.

In building new railroads through sections of country in which timber is scarce, the sleeper above described may be employed to advantage. The beam 4, because of its small size, does not require a great deal of timber in its construction, and waste pieces may be employed to a great extent in this relation.

I do not limit myself to the precise construction shown in the drawings and above described, as variations may be made therein without departing from the spirit of my invention.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:—

1. A sleeper comprising a plurality of trough-like members of concrete, a wooden beam resting within said trough-like members and connecting the same together, the outer face of said beam being substantially flush with the outer face of said trough-like members, and means for securing said wooden beam within said trough-like members.

2. A sleeper comprising a pair of trough-like members, one provided with a concave end and the other with a convex end mating said concave end, and forming a joint therewith, a wooden beam disposed within said trough-like members and extending from one of said trough-like members to the other, and a plurality of bolts extending through said trough-like members and said beam.

3. A sleeper comprising a pair of trough-like members of concrete fitted together by

a joint, a wooden beam mounted within said trough-like members and extending from one to another, means for securing said wooden beam in position relatively to said trough-like members, a plate supported by said trough-like members, and means for holding said plate in position upon said trough-like member on which it rests.

4. A sleeper comprising a pair of trough-like members, a beam mounted within said trough like members, each trough like member being provided with recesses forming with the sides of the beam hook passages, the said hook passages being in staggered relation to each other, metallic hooks extending within said hook passages, bolts extending through the trough like members and said beam, and on which the said hooks are mounted to swing, and bolts mounted upon said metallic hooks for engaging the base of a rail.

5. A sleeper comprising a pair of trough like concrete members movable relative to each other and each having a wide portion, a wooden beam resting within said concrete members and connecting the same together, the top face of said beam being flush with the top faces of said trough like members, plates extending across the top face of said beam and the said trough like members at the wide portion of the latter, the said plates being each provided at its ends with downwardly extending lugs for engaging opposite edges of said wide portion, the said lugs being narrower than said plates, each plate having upturned lugs at the sides for engaging opposite side edges of a rail base, and means for engaging the upper face of the rail base to hold the rail upon said plate.

6. A sleeper comprising a pair of concrete members each having generally a trough-like form and having a rounded bottom, said trough-like members engaging each other and forming a joint at the point of their engagement, said trough-like members being provided with rounded bottoms adjacent to said joint, and a beam disposed partially within each of said trough-like members and free to bend at points adjacent to said rounded bottoms.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

GEORGE DORFFEL.

Witnesses:

HENRY H. SHED,
CARL E. STROM.