(No Model.) 2 Sheets—Sheet 1.

C. H. EWING & C. G. BOCKUS.

RAILROAD SLEEPER.

No. 440,997. Patented Nov. 18, 1890.

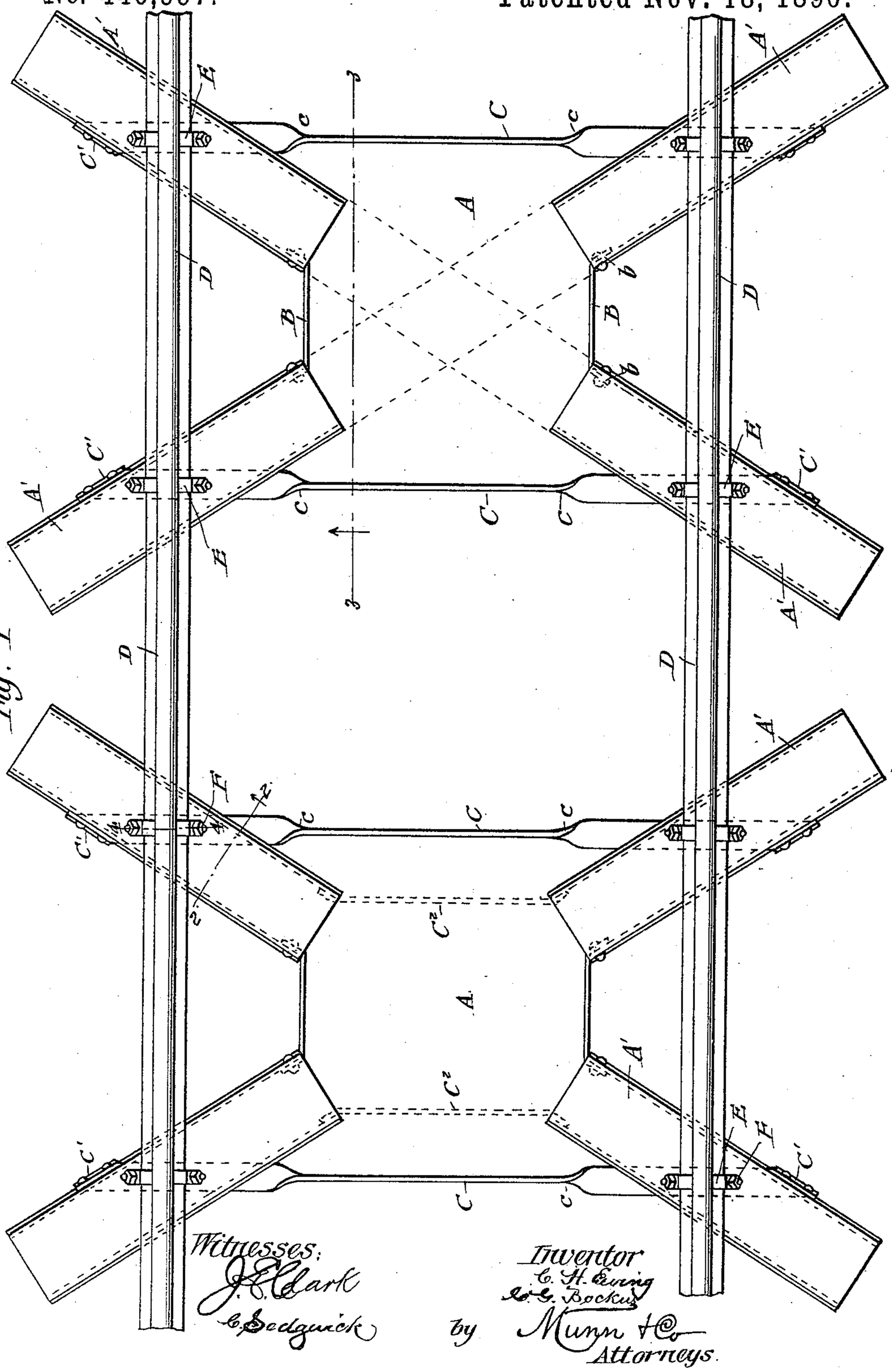

Fig. 1

(No Model.) 2 Sheets—Sheet 2.

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Fig. 2.

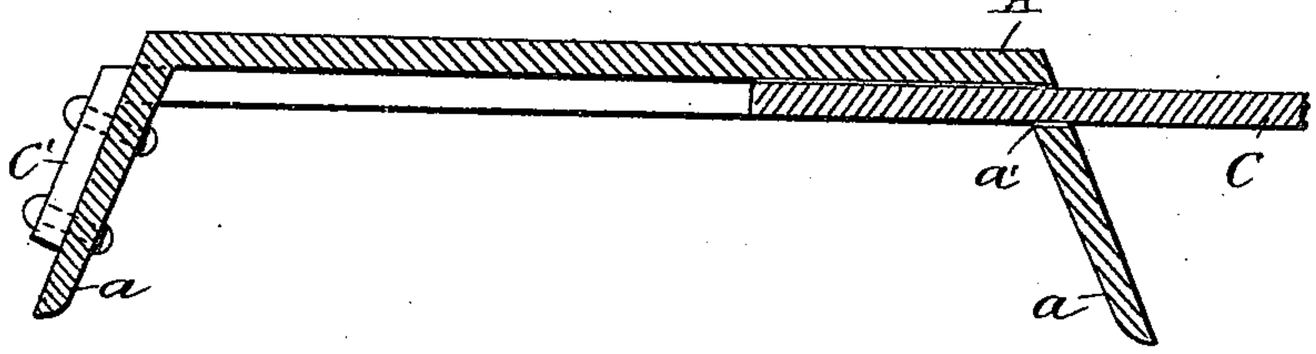


Fig. 3.

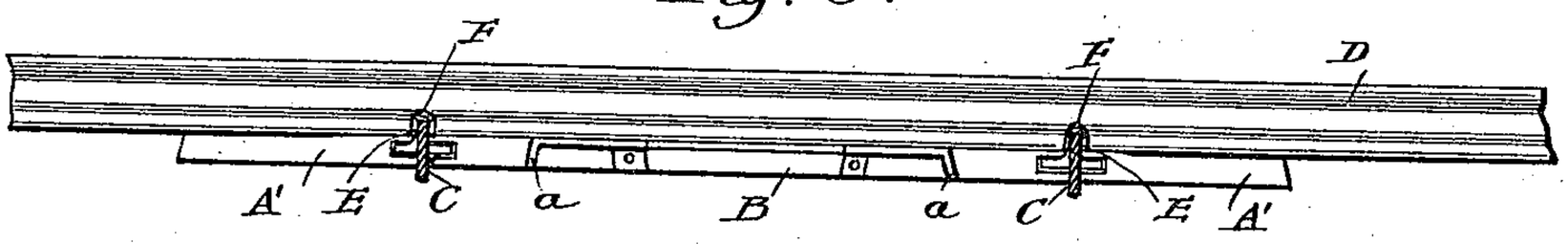
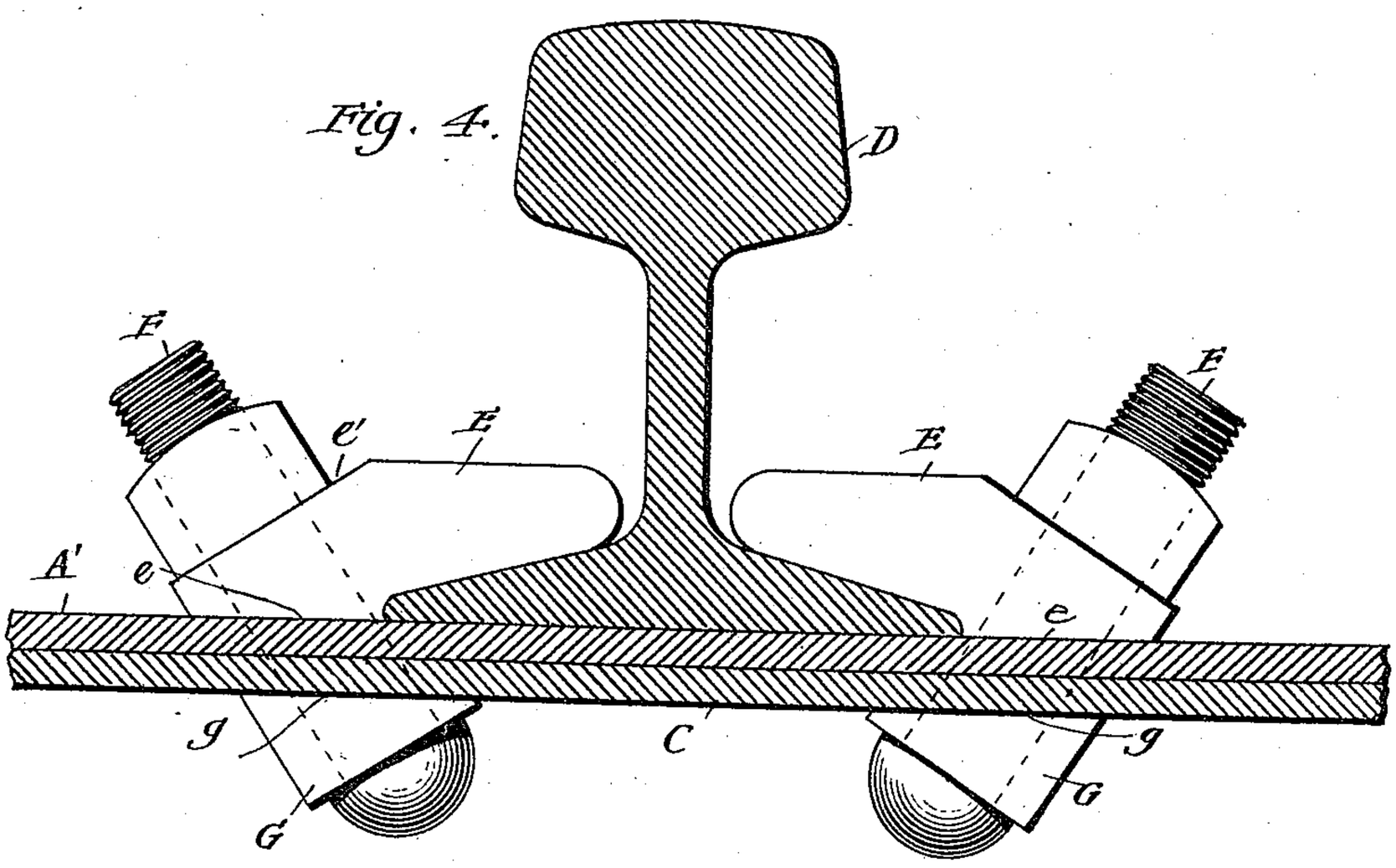


Fig. 4.



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UNITED STATES PATENT OFFICE.

CHARLES H. EWING AND CHARLES G. BOCKUS, OF PHILADELPHIA, PENNSYLVANIA.

RAILROAD-SLEEPER.

SPECIFICATION forming part of Letters Patent No. 440,997, dated November 18, 1890.

Application filed August 18, 1890. Serial No. 362,291. (No model.)

To all whom it may concern:

Be it known that we, CHARLES H. EWING and CHARLES G. BOCKUS, both of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a new and Improved Railroad-Sleeper, of which the following is a full, clear, and exact description.

Our invention relates to improvements in railroad-sleepers. It is well known that with the sleepers in ordinary use it is difficult to hold the rails in perfectly-parallel alignment and surface, and it is also noticed that the center of the road-bed between the rails is usually much harder than the sides of the road-bed, so that it is necessary to construct the ordinary forms of sleepers of very heavy material; otherwise they will be held firmly in the center and will bend at the ends.

The object of our invention is to provide a sleeper of light material and of simple construction that will hold the rails in such a manner that they cannot spread, and so that they cannot be moved or pressed out of parallel alignment, that will box in ballast and keep track in good surface, and also to produce a sleeper having its central portion cut away, so as to resist the tendency to bend and rock, as by so doing the sleeper may be made of light material, and consequently may be made much cheaper than the ordinary form of sleeper.

To this end our invention consists in certain features of construction and combinations of parts, which will be hereinafter fully described, and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a plan view of a sleeper embodying our invention, showing the application of the same to the rails. Fig. 2 is an enlarged cross-section of one member of the sleeper on the line 2 2 of Fig. 1. Fig. 3 is a cross-section of the sleeper on the line 3 3 of Fig. 1, showing the connecting-strip for uniting the members; and Fig. 4 is an enlarged broken transverse section of the sleeper and rail on the line 4 4 of Fig. 1, showing the means for fastening the rail to the sleeper.

The sleeper A comprises the four members A′, arranged in pairs on opposite sides of the track and united by the strips B, the cross-ties C for uniting the members on opposite sides of the track, and the means for clamping the rails to the sleepers. The four members A′ are arranged in pairs, as shown, there being a pair on each side of the track, and the members are placed at an angle to each other, so that they have the same relation one to the other as if the sleeper were composed of two members extending across the track and centrally crossing each other, as indicated by the dotted lines in Fig. 1. Rails clamped to such sleepers would thus be securely braced in all directions, so that it would be impossible for them to spread or to get out of parallel alignment. By having the members made, arranged, and held as shown they have the same bracing effect as if crossed in the manner described, and they may be made much cheaper and of lighter material, as the tendency to bend will be very slight, owing to the removal of the central portion.

The members A′ on opposite sides of the track align diagonally, and each member is provided on opposite sides with a depending flange *a*, which flares slightly outward, and which, when the sleeper is laid, is embedded in the ballast, so as to prevent any lateral movement of the sleeper. The inner ends of each pair of members A′ are united by the strips B, the said strips being bent to extend parallel with the flanges *a* of the members, being bolted thereto. The strips B are of the same depth as the flanges *a*, and effectually resist any tendency of the sleepers to move longitudinally.

The members A′, opposite each other and on opposite sides of the track, are connected by the tie-rods C, the said rods extending through perforations *a′* in the members A′, the said perforations being just below the upper surface of the members, and the outer ends C′ of the tie-rods are bent downwardly upon the outer flanges *a* of the members A′ and are securely bolted thereto. The central portions of the tie-rods C are twisted, so as to assume a vertical position, as shown at *c*. Instead of using the tie-rods in the man-

ner described, the inner ends of the members A′ may be connected by tie-rods C², as indicated by dotted lines in Fig. 1. It will thus be seen that when the sleeper is planted in the road-bed it is securely braced in all directions and cannot be easily moved.

The rails D rest upon the upper surface of the members A′, and are held in position by the clips E, the clips being arranged on opposite sides of the rails, so as to clamp the flanges thereof, and the outer ends of the clips are beveled on the lower side, as shown at *e*, to fit the surface of the members A′, and the upper portion of the clip is beveled at *e′*, so that the said upper surface of the clips adjacent to the outer ends will be at right angles to the bolts F, by which the clips are held in position. The bolts F extend diagonally through the clips and through the outer surface of the members A′ and the tie-rods C. The beveled washer G is inserted beneath the tie-rod and between the lower surface of the tie-rod and the bolt-heads, the upper surface *g* of the washer being shaped to rest firmly against the tie-rod and the lower face of the washer being at right angles to the bolt F.

It will be observed that the points on the members A′, to which the rails B are fixed, are a suitable distance apart to hold the rails in such a manner that they cannot be twisted out of parallel alignment, and it will be noticed that the sleepers are braced in all directions, so that they cannot move in the road-bed. It will be seen, too, that as the bolts F extend diagonally through the sleepers and tie-rods they will hold the clips and rails much more firmly together than if they extended vertically through the same, and that they will also serve as an additional brace to the tie-rods and members A′.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

1. A railroad-sleeper comprising a series of members arranged at an angle to each other and connected by tie-rods, substantially as described.

2. A railroad-sleeper comprising a series of members arranged at an angle to each other and connected by tie-rods, as shown, the said members having depending flanges, substantially as described.

3. A railroad-sleeper comprising a series of members arranged in pairs on opposite sides of the tracks and at angles to each other, the inner ends of each pair being united by a strip, as shown, and the opposite pairs being connected by tie-rods, substantially as described.

4. A railroad-sleeper comprising four members arranged in pairs on opposite sides of the track, the members of one side diagonally aligning with the opposite members, strips connecting the inner ends of each pair, and tie-rods extending transversely of the road-bed and connecting the opposite members, substantially as described.

5. A railroad-sleeper comprising four members arranged in pairs on opposite sides of the track, the members of one side diagonally aligning with the opposite members, strips connecting the inner ends of each pair, and tie-rods extending transversely of the road-bed and connecting the opposite members, the said tie-rods extending through perforations in the members and having their ends bolted to the flanges thereof, substantially as described.

6. A railroad-sleeper comprising four members having depending flanges arranged in pairs on opposite sides of the track, the members of one side diagonally aligning with the opposite members, strips connecting the inner ends of each pair, and tie-rods extending transversely of the road-bed and connecting the opposite members, the said tie-rods extending through perforations in the members and having their ends bolted to the flanges thereof, substantially as described.

7. In a railroad-sleeper, the combination, with the diagonally-arranged members extending partially across the track, having depending flanges with perforations therein, of the tie-rods extending across the track and through perforations of the flanges, the ends of said tie-rods being bent to fit the flanges, substantially as described.

CHARLES H. EWING.
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Witnesses:
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L. H. DAVIS.