No. 800,795. PATENTED OCT. 3, 1905.

H. J. CORELL.

RAILROAD TIE.

APPLICATION FILED JUNE 3, 1905.

2 SHEETS—SHEET 1.

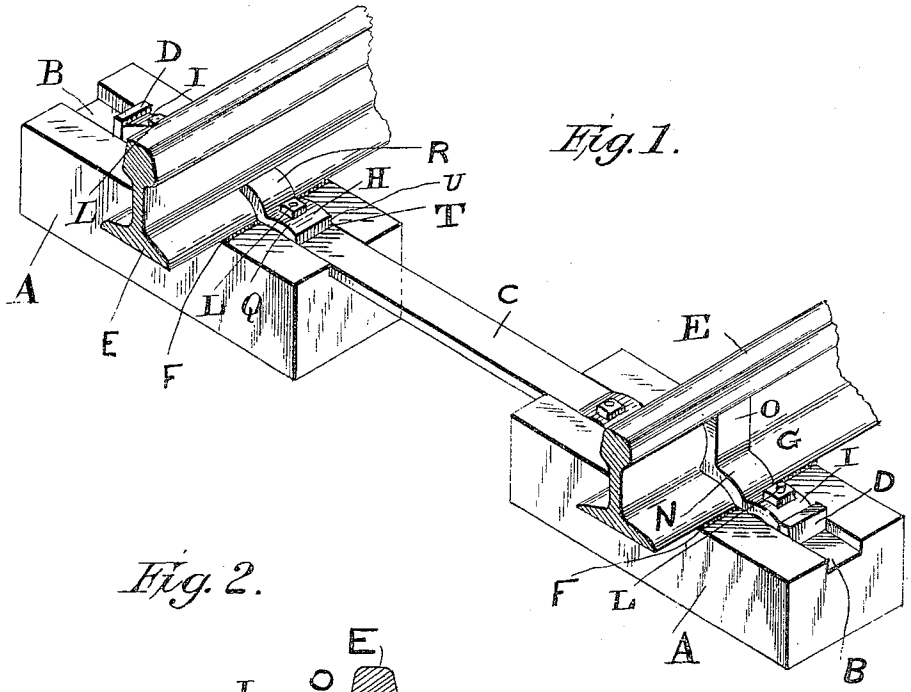


Fig. 1.

Fig. 2.

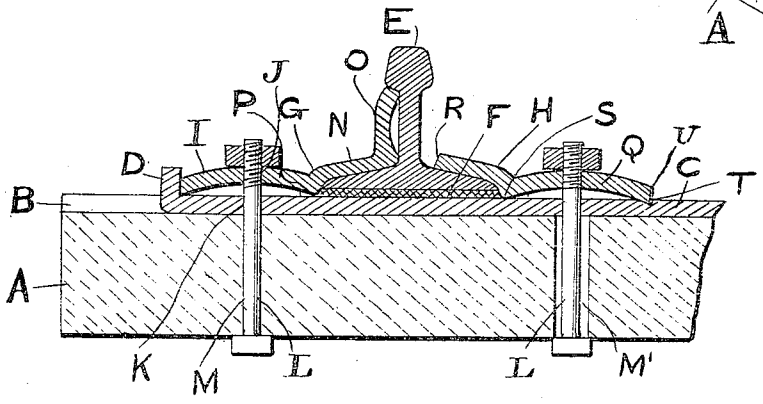
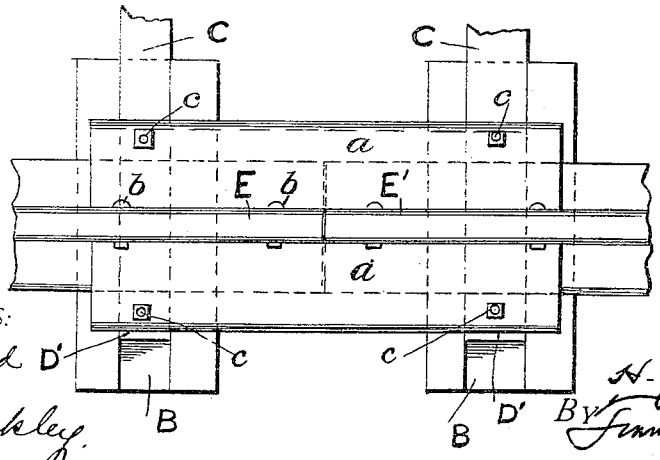


Fig. 3.



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2 SHEETS—SHEET 2.

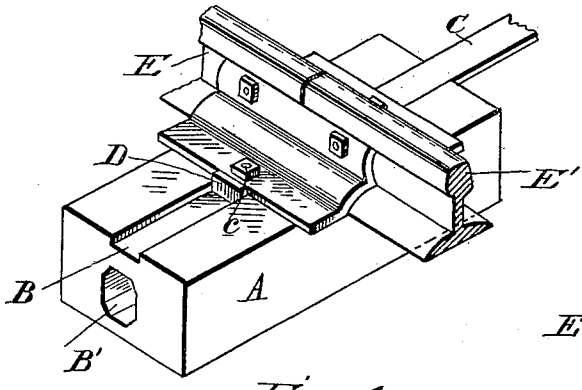


Fig. 4.

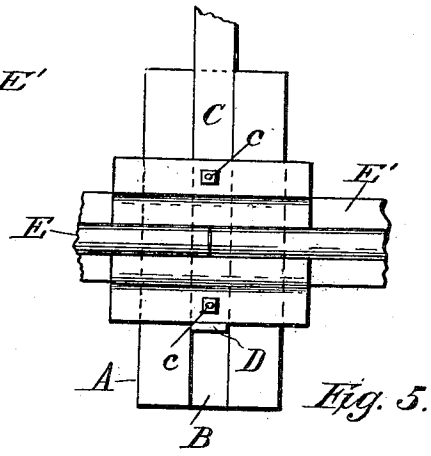


Fig. 5.

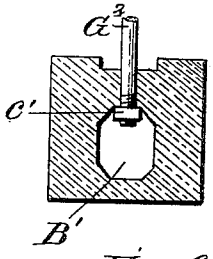


Fig. 6.

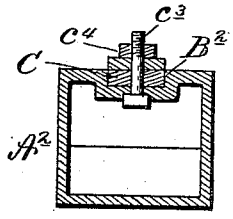


Fig. 7.

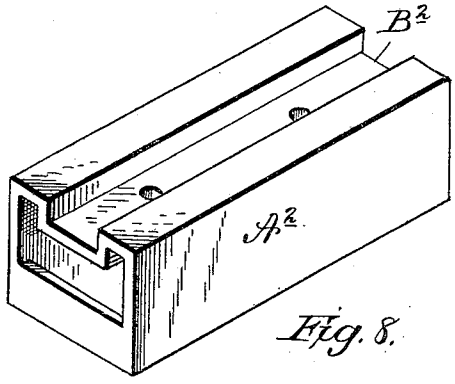


Fig. 8.

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UNITED STATES PATENT OFFICE.

HARRY J. CORELL, OF MOUNT JEWETT, PENNSYLVANIA.

RAILROAD-TIE.

No. 800,795. Specification of Letters Patent. Patented Oct. 3, 1905.

Application filed June 3, 1905. Serial No. 263,561.

To all whom it may concern:

Be it known that I, HARRY J. CORELL, a citizen of the United States of America, residing at Mount Jewett, in the county of McKean and State of Pennsylvania, have invented certain new and useful Improvements in Railroad-Ties, of which the following is a specification.

My invention relates to railways, and particularly to a device for supporting and securing track-rails.

An object of this invention is to provide a sleeper on each side of the track, the said sleepers being formed of any desirable material—such as metal, wood, clay, or composition—the said sleeper when formed of clay being suitably vitrified to give the maximum tensile strength, toughness, and resistance.

The invention further consists in the provision of novel means for attaching a rail to the sleeper and in the interposition of a cushion between the base of the rail and the sleeper for the purpose of absorbing the vibration and jar incident to the use of the rail, thus obviating any material injury by reason of the said jar or vibration.

Furthermore, an object of the invention is to provide a suitable tie-bar for connecting the sleepers transversely of the track and in utilizing the said connecting means in combination with the clutches or clamps for binding the rails in operative position with relation to the sleepers.

A still further object of this invention is to utilize a novel form of fish-plate, causing it to coact with the tie-bar and sleeper for the purpose of supporting and connecting the meeting ends of the rails to afford rigidity at the junction of the rails.

Finally, an object of this invention is to provide a sleeper, tie-bar, and clamping means which will comprise comparatively few inexpensive parts, proving simple in construction as well as efficient and satisfactory in use.

With the foregoing and other objects in view the invention consists in the details of construction and in the arrangement and combination of parts to be hereinafter more fully set forth and claimed.

In describing the invention in detail reference will be had to the accompanying drawings, forming part of this specification, wherein like characters denote corresponding parts in the several views, in which—

Figure 1 is a view in perspective showing a fragment of two rails clamped in position on the sleepers, which sleepers are suitably connected by the tie-bar. Fig. 2 is a sectional view taken centrally of one of the sleepers. Fig. 3 is a detail view showing the use of fish-plates in conjunction with the sleepers and tie-bars. Fig. 4 is a perspective view thereof. Fig. 5 is a detail view showing a slightly-different arrangement of the elements shown in Fig. 3. Fig. 6 is a detail view showing a composition sleeper provided with an opening for the application of nuts for engaging the bolts, the said bolts extending only partially through the sleeper in this construction. Fig. 7 is a view in perspective of a metallic sleeper, showing the application of this invention to a sleeper of this character.

In the drawings, A indicates the sleepers, which, as stated, may be of any desired material, but in the form shown in Figs. 1 and 2 the sleepers are made of plastic material suitably vitrified, though I do not wish to limit myself with respect to the material, for it may be of wood or metal in addition to a composition. Each sleeper has a longitudinal recess B—that is, a recess which extends transversely of the track—the said recess being designed for the purpose of forming a seat for the tie-bar C, which tie-bar has angular ends forming the shoulders D. The rails E of the track are supported by the sleepers, though I prefer to interpose the cushion F, which cushion may be of fibrous substance, such as cork or a suitably-treated cloth, though a soft metal, such as Babbitt metal or lead, will accomplish the result sought in absorbing the vibration.

In the forms shown in Figs. 1 and 2 I utilize in combination with the tie-bar two clamps G H at each end, and while I have termed these members "clamps" they may be termed "clutches," or they may be otherwise designated.

Each clamp G has a convex portion I, with its edges bearing against the shoulder D, and this portion I and the tie-bar C have coinciding apertures J and K, through which the bolt L passes. The sleeper has an aperture M for the reception of the bolt L, and the clamp, tie-bar, and sleepers are bound together thereby. Owing to the convexity a suitable yielding action is afforded, which serves to compensate for wear and exerts sufficient pressure against the nut to prevent its rotation except when properly manipulated. The clamp has a portion N, which fits over the upper surface of the base of the rail, and this

portion N terminates in an extension O, which lies approximately parallel with the web of the rail, and has its edge abutting the under surfaces of the head of the rail, forming a brace which will effectually hold the rail in proper position. At the junction of the portions I and N of the clamp a shoulder P is formed, which is engaged by the edges of the base-flange. The shoulder may be utilized also to clamp the cushion. From the foregoing description of this clamp G it will be observed that provision is made for holding it in contact with the shoulder D and for causing a support of the rail, whereby an efficient clamping member is produced.

The clamping member H has a convex base Q and an extension R, lying over the surface of the inner base-flange of the rail, and a shoulder S is formed at the junction of the base Q and extension R, which is abutted by the edges of the inner base-flange. I may provide a notch T in the tie-bar at each end for the purpose of forming a shoulder to engage the end U of the clamp H, and while this may be desirable in some instances I do not wish to be limited to this feature, as it would only be employed where there would be any great inward strain at switches or the like. The bolt L for holding the clamp in place is the same as that utilized in connection with the securing of the clamp G, and it is to be understood that the clamp H, the tie-bar, and the sleeper have alining apertures for the reception of the said bolt. In order to provide for any shrinkage or other variation in the size of the sleeper, I find it desirable to make the aperture M′ elongated, so that it will be in the form of a slot. This arrangement permits the bolt of the clamp H to be adjusted with relation to the bolt of the clamp I and insures a proper adjustment of the clamp regardless of the distance between the apertures M and M′.

I have found it a great advantage to utilize in connection with the sleepers and tie-bars of this character a means for connecting the two meeting ends of a rail, the said means comprising fish-plates *a*. The outer fish-plate has its edge contacting with the shoulder D′, it being understood that the fish-plate will extend over one sleeper to another, as fully shown. The two meeting ends of the rail E E′ are supported by the fish-plates, which have angular portions lying approximately parallel with the web of the rail, and these portions are held in place by means of the bolts *b*, which run through the fish-plates and the web of the rail. The bolts *c* are run through registering apertures in the fish-plates, tie-bars, and sleepers, and in cross-section they would resemble the construction shown in Fig. 2, where the clamp G is illustrated.

As shown in Fig. 5, I may cause the ends of the rails to meet immediately over a sleeper, utilizing the fish-plates *a*, just described in the foregoing paragraph, except that I may omit the bolts *b*, which run through the fish-plates and the webs of the rails. In the arrangement shown in Fig. 5 the fish-plates would form a chair of sufficient rigidity to hold the rails in place without the bolts referred to, and the same might be found more desirable than the arrangement shown in Fig. 3.

The sleeper A′ (shown in Fig. 6) is of the same general construction as that heretofore described except that it is provided with an approximately central longitudinal opening B′, which I will term a "hand-hole," and is designed for the purpose of admitting the hand of a manipulator to the interior of the block for the purpose of applying the nut C′ to the bolt C^2. The other structural features of this sleeper are identical with those shown in Fig. 1, the only difference being that the bolt extends only part way through the sleeper instead of entirely through it.

The metallic sleeper shown in Fig. 7 is a shell-like structure A^2, having the grooved top, as shown at B^2, for the purpose of receiving the tie-bar. This metal sleeper coacts with the tie-bar, clamp, and rails in the same way as the sleepers heretofore described, and the bolt C^3 will bind the sleeper, tie-bar, and fish-plate or clamp together.

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

1. In a device of the character described, composition sleepers suitably vitrified, said sleepers having grooves extending transversely of the track, a tie having shoulders at its ends seated therein, clamps having their outer edges abutting the shoulders of the tie, means for holding the outer clamps in engagement with rails, clamps on the inner sides of the rails secured to the tie and adapted to contact with rails.

2. In a device of the character described, suitable sleepers of plastic material, ties connecting the sleepers and having shoulders on their ends, means for fastening the ties to the sleepers, and clamps secured with the ties to the sleepers and adapted to clamp rails in position, certain of said clamps being interposed between the rails and the shoulders of the ties.

3. In a device of the character described, suitable sleepers, having recesses extending transversely of a track, ties seated therein and having shoulders on their ends, clamps having convex portions secured to the ties, one of said clamps having a portion lying approximately parallel with the web of the rail and having its upper edge in contact with the under surface of the head of the rail, and a portion of the clamp lying over the base of a rail, a shoulder formed at the junction of the convex portion and that portion overlying the base of the rail and adapted to engage the

edge of the base-flange of a rail and a bolt run through the clamp, tie, and sleeper and securing the parts in operative position.

4. In a device of the character described, suitable sleepers, ties having shoulders on their ends, combined clamps and fish-plates extending over one sleeper to another, the outer edges of the said fish-plates contacting with the shoulders of the ties, bolts for clamping the fish-plates and ties to the sleeper, and in combination therewith, rails having their meeting faces intermediate the length of the fish-plates and bolts for securing the fish-plates to the rails.

5. In a device of the character described, suitable sleepers, ties having shoulders on their ends, combined clamps and fish-plates extending from one sleeper to another, the outer edges of said fish-plates contacting with the shoulders of the ties, bolts for clamping the fish-plates and ties to the sleeper, and in combination therewith, rails having their meeting ends intermediate the length of the fish-plates, bolts for securing the fish-plates to the rails and a cushion interposed between the rail and the sleeper.

6. In a device of the character described, suitable sleepers, a tie connecting the sleepers, rails resting on the tie and sleepers, clamps for the rails, and bolts passing through the clamps, tie and sleepers, certain of said bolts being adjustable with relation to the remainder of the bolts.

7. In a device of the character described, suitable sleepers, a tie connecting the sleepers, rails resting on the tie and sleepers, clamps for the rails, and bolts passing through the clamps, tie and sleepers, certain of said bolts being adjustable with relation to the remainder of the bolts, longitudinally of the sleepers.

8. In a device of the character described, suitable sleepers having openings therethrough, certain of said openings being elongated, a tie connecting the sleepers and having openings registering with the openings of the sleepers, clamps for the rails, and bolts passing through the clamps and the openings of the tie and sleepers.

9. In a device of the character described, suitable sleepers, a tie connecting the sleepers, the ends of the ties being provided with shoulders, a rail resting on the sleepers, above the tie, a clamp interposed between a side of each rail, and a shoulder of the tie, said tie having a notch on the opposite side of the rail and a clamp interposed between the said notch and side of the rail and engaging said notch.

10. In a device of the character described, suitable sleepers, ties having shoulders on their ends, combined clamps and fish-plates, the outer edges of the said fish-plates contacting with the shoulders of the ties, bolts for clamping the fish-plates and ties to the sleeper, and rails having their meeting ends intermediate the length of the fish-plates.

In testimony whereof I affix my signature, in the presence of two witnesses, this 4th day of May, 1905.

HARRY J. CORELL.

Witnesses:
MAX BEERE,
R. H. HOLMES.