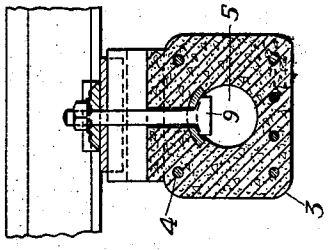
June 3, 1930. C. F. BUENTE 1,761,705

CEMENTITIOUS BEAM MEMBER

Filed June 22, 1928

Fig. 3



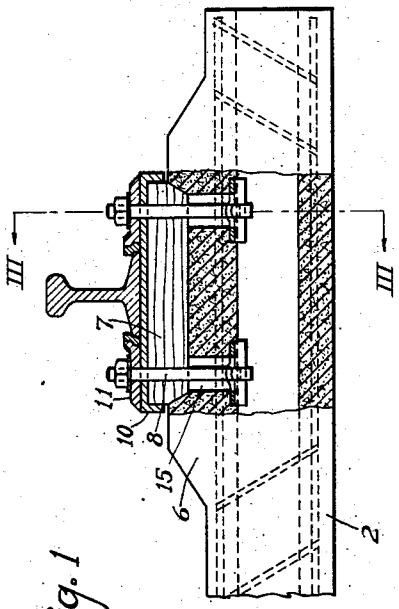


Fig. 1

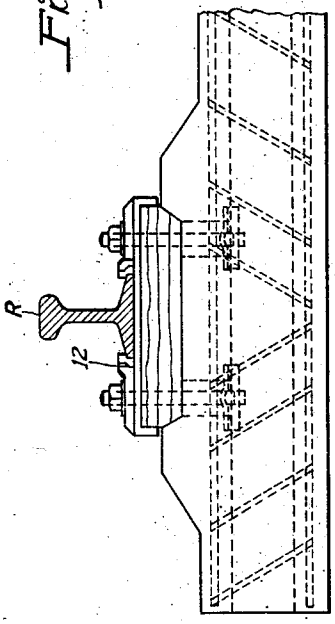


Fig. 2

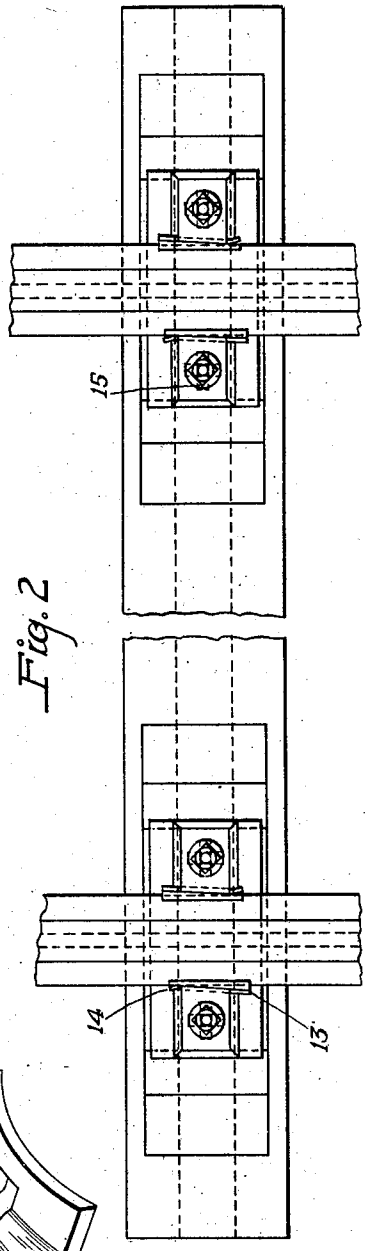
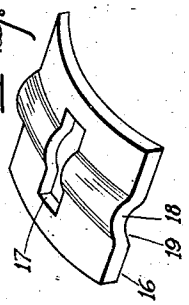


Fig. 4



INVENTOR

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by his Atty.

By [illegible] Stebbins & Pennie

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1,761,705

UNITED STATES PATENT OFFICE

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CEMENTITIOUS BEAM MEMBER

Application filed June 22, 1928. Serial No. 287,572.

This invention relates to cementitious beam members and is herein described as applied to railroad ties, to which certain features of the invention are particularly applicable, although other features thereof have numerous applications.

Cementitious beam members have heretofore been made by pouring or tamping a cementitious mix into a form. I provide for centrifugally casting such beam members. Centrifugal casting processes have been employed for the making of pipe, but in these cases the process has been resorted to principally because it inherently is such as to make simple the production of a shell-like article. I have found that centrifugal casting processes are of great value in the making of beam members because the material is more densely compacted, particularly in the outer portions of the beam where the maximum stresses are developed in use, thus giving a stronger beam than is produced by ordinary methods.

Centrifugal casting is of particular value in beams which are to be employed as railroad ties or the like because the dense outer structure is resistant to abrasion to a high degree.

I provide attaching means for the rail, which attaching means employ to advantage the opening formed in the central portion of the beam member in centrifugal casting.

My attaching means preferably comprises a sleeper lying in a recess formed in the beam member with bolts extending through the sleeper and into the opening through the center of the beam. Clips are provided on the sleeper, these clips being held in place by the bolts and having keys which engage the railroad rails.

In the accompanying drawings illustrating the present preferred embodiment of my invention as applied to railroad ties,

Figure 1 is a side elevation partly broken away of a railroad tie, supporting a pair of rails,

Figure 2 is a top plan view thereof,

Figure 3 is a transverse section taken on the line III—III of Figure 1, and

Figure 4 is a perspective view of a bolt retaining plate.

The tie structure comprises a cementitious beam 2 of generally rectangular cross section and having rounded corners 3. The beam is reinforced by metal rods 4. The beam is centrifugally cast so that a dense structure is secured and the beam is hollow, having an opening 5 extending throughout its length.

Adjacent either end of the tie there is provided a protuberance 6 which is recessed to receive a wooden sleeper 7. The sleeper is held in place by bolts 8. The bolts have T shaped heads 9 which lie in the central opening 5. A plate 10 lies over the top of the sleeper 7 and is in turn surmounted by clips 11. The clips and the plate are held in position with the sleeper by the bolts 8.

The clips 11 are spaced apart and are provided with undercut faces 12. The railroad rails R extend between these faces and are held in place by keys 13. As shown in Figure 2, the faces 12 are inclined to the rails so that the keys 13 may be tapered. Lateral adjustment of the rail may be secured by varying the amount to which the keys on opposite sides of the rail are driven. After the keys have been driven to the desired position so as to properly locate the rail and hold it tightly in place, the ends thereof are turned outwardly as indicated at 14, so as to lock them in place.

Provision is made for rapidly inserting or removing the bolts 8. It is not desirable to embed the bolts in the tie because if they should be accidentally cut or broken off, or otherwise injured, it would be necessary to replace the entire tie. I provide elongated slots 15 extending from the bottom of the recess for the sleeper 7 to the central opening 5. Bolt retaining plates 16 are cast into the beam member 2 with their inner faces lying substantially flush with the wall of the opening 5. Each plate 16 is provided with an elongated slot 17 registering with the slot 15, and is also provided with a rib 18 which is struck up at right angles to the slot 17 so as to provide a recess 19 in the inner face of the plate. The bolts 8 are inserted by lowering them through the openings 15 until

their T heads 9 pass through the slots 17. They are then rotated 90° and lifted up so that the top faces of the T heads engage the recesses 19 on opposite sides of the slots 17. The bolts are thus firmly held in place but may be easily removed without disturbing the tie.

I have illustrated and described the preferred form of my invention, but it will be understood that it is not thus limited, as it may be otherwise embodied within the scope of the following claims.

I claim:—

1. A railroad tie comprising a centrifugally cast cementitious body which is generally rectangular in cross section and has an opening through the central portion thereof, the body having longitudinal reinforcements therein, and also having diagonally extending reinforcements in the side walls thereof.

2. A railroad tie comprising a cementitious body having a central opening, a metal reinforcing member in the central opening, the body and the reinforcing member having a lateral opening adapted to receive a bolt and a bolt extending through said lateral opening, said lateral opening being elongated, the bolt having a T-head adapted to fit through the opening and the metal reinforcing member having a recess extending at an angle to the greatest cross-sectional dimension of said lateral opening and adapted to receive the bolt head and prevent rotation thereof, whereby the head may be inserted through the lateral opening and the bolt turned so as to bring the head into engagement with the recess.

3. A railroad tie comprising a centrifugally cast cementitious body which is generally rectangular in cross section and has a generally cylindrical opening extending through the central portion thereof, the tie having bolt openings extending from the top face to the central opening, and perforated metal reinforcing plates having openings in alinement with the bolt holes and embedded in the sides of the central opening.

In testimony whereof I have hereunto set my hand.

CHARLES F. BUENTE.