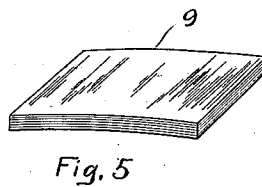
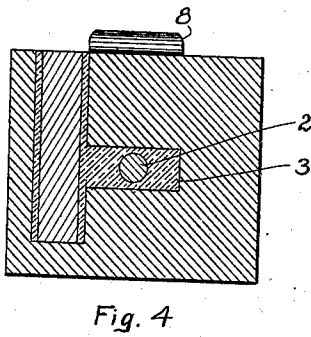
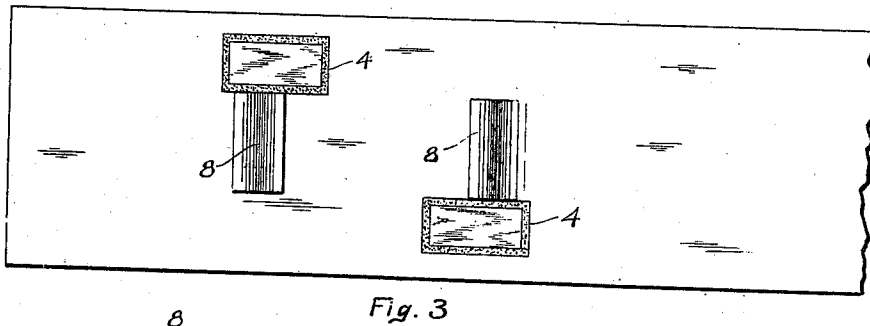
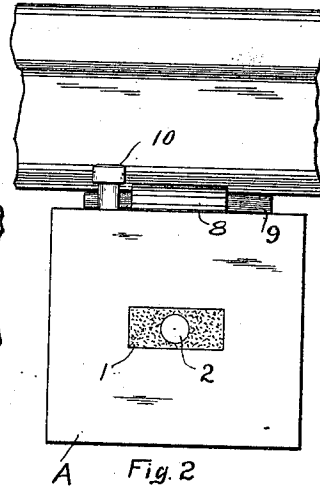
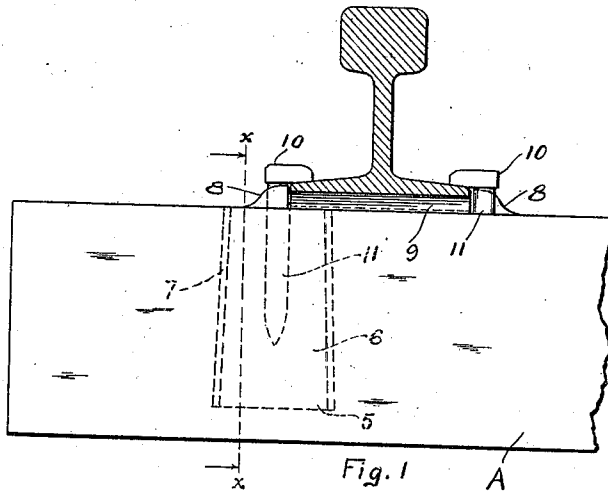


J. MURPHY.
RAILWAY TIE.
APPLICATION FILED JAN. 6, 1911.

996,115.

Patented June 27, 1911.



Witnesses

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RAILWAY-TIE.

996,115.

Specification of Letters Patent. Patented June 27, 1911.

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To all whom it may concern:

Be it known that I, JOHN MURPHY, a citizen of the United States, residing at Columbus, in the county of Franklin and State of Ohio, have invented certain new and useful Improvements in Railway-Ties, of which the following is a specification.

The present invention relates to certain novel and useful improvements in railway ties.

In carrying out my invention, it is my purpose to form a railway tie of clay, shale or other suitable earthy material which is uniformly burned and vitrified in the course of manufacture.

Still a further object of my invention is to provide a railway tie of the type referred to, formed with an opening through the center, to admit the fire to the interior of the tie body and thereby to provide for the uniform burning, vitrifying and annealing of the tie, the opening being subsequently filled with grout or other cement material in such manner to embed a strong metal rod or bar which will reinforce the tie and thereby strengthen the latter to resist accidental breaking.

Another object of my invention is to embed within the tie wooden blocks which have been treated with a suitable material, such as creosote or the like, said blocks being adapted to receive the shanks of the spikes which retain the rail, the rail having its base resting upon a flexible plate of steel or other material which forms a cushion, and overcomes the rigidity of the body of the tie, the proper play or spring being imparted to the rail by the cushioning plates.

With the above recited objects and others of a similar nature in view, my invention consists in the construction, combination and arrangement of parts set forth in and falling within scope of the appended claims.

In the accompanying drawings—Figure 1 is a view of a portion of a railway tie, embodying my improvements, and showing the manner of securing a rail thereto, said rail being shown in vertical cross section, Fig. 2 is a similar view, showing the end of the tie, a portion of the rail being shown in elevation, Fig. 3 is a top plan view of a portion of one of my improved ties, Fig. 4 is a cross sectional view taken on the line $x-x$ of Fig. 1 and looking in the direction of the

arrows, and, Fig. 5 is a perspective view of one of the metallic cushioning plates.

Referring now to the accompanying drawings in detail, the letter A designates the body of the tie, which is composed of clay, shale or other suitable earthy material, said tie being in the process of manufacture, formed with an opening 1 extending longitudinally therethrough, so that when the tie is being burned, the fire may have access to and through the opening and thereby insure a uniform burning, vitrifying or annealing of the whole tie. After the tie has been burned, I insert a strong metallic reinforcing bar or rod 2, through the opening, said tie being embedded in cement or other binding material 3, which completely fills the opening 1, this construction insuring that the tie will be reinforced and strengthened in such manner as to reduce the liability of the tie to suffer damage through accidents and wear and tear.

In order to fasten the rail to the tie, I form in the body of the tie, adjacent to each end thereof, two vertical sockets 4—4, each socket if desired being flared or widened at the bottom, as at 5. Each socket is designed to receive a block 6 of wood or other suitable material, which may be also wider at the bottom than at the top, said block after being inserted in the socket being held in position by the cement lining 7, which is placed in a plastic state between the walls of the socket and the adjacent faces of the blocks. Owing to the wedge shape of the block, the latter will not pull or withdraw from the tie as readily as would be the case were the sides of the block straight. It is of course to be understood that I embed two of the blocks adjacent to each end of the tie.

Formed integral with the top of the tie in the process of manufacture are the lugs or webs 8 which serve as guides and retainers for the base of the rail and the cushioning plate therefor. This cushioning plate is shown in detail in Fig. 5, and is designated by the numeral 9, said plate lying in position between the lugs, and as the plate is slightly curved or arched, and is formed of resilient material, such as metal, it permits the vertical yielding of the rail and imparts the necessary elasticity to the track rail. In securing the rail, I provide suitable spikes 10, the shanks 11 of which are

adapted to be driven into the wooden blocks embedded in the tie until the heads of the spikes contact with the base of the rail in the ordinary manner.

5 It will be seen that I have provided a cheap, strong type of tie, which, owing to its durability possesses manifest advantages over the ordinary wooden tie, inasmuch as it is not subject to wear and tear and disintegration, due to the weather and other causes, as is the ordinary wooden tie. Further-
10 more by providing the cushion the desired elasticity is attained by the trackway.

While I have herein shown and described
15 one particular embodiment of my invention, I wish it to be understood that I do not confine myself to all the precise details of construction herein set forth, as modification and variation may be made without departing from the spirit of the invention or
20 exceeding the scope of the appended claims.

What I claim, is—

1. A railway tie comprising a body of vitreous material, a longitudinal layer of
25 cement embedded therein, a metal reinforce-

ment embedded in said layer, and blocks of wood sunk in said tie.

2. A railway tie comprising a body of vitreous material having a longitudinal aperture, and communicating vertically
30 sunken holes, reinforcing means in said longitudinal aperture, blocks of wood in said sunken holes, and cement surrounding said reinforcing means and said blocks of wood.

3. A railway tie comprising a body of
35 vitreous material having a longitudinal aperture therethrough and counter-sunk holes in laterally disposed relation thereto and being enlarged at their bases, integral retaining lugs, a metal reinforcement in the
40 longitudinal aperture, blocks in said holes, cement embedding said reinforcement and said blocks, and spring metal plates forming supports for the rail.

In testimony whereof I affix my signature
45 in presence of two witnesses.

JOHN MURPHY.

Witnesses:

RICHARD B. CAVANAGH,
INGLE A. MORRIS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."
