(No Model.)

J. B. WILLIAMS.

RAILWAY TIE.

No. 370,837. Patented Oct. 4, 1887.

FIG. 1

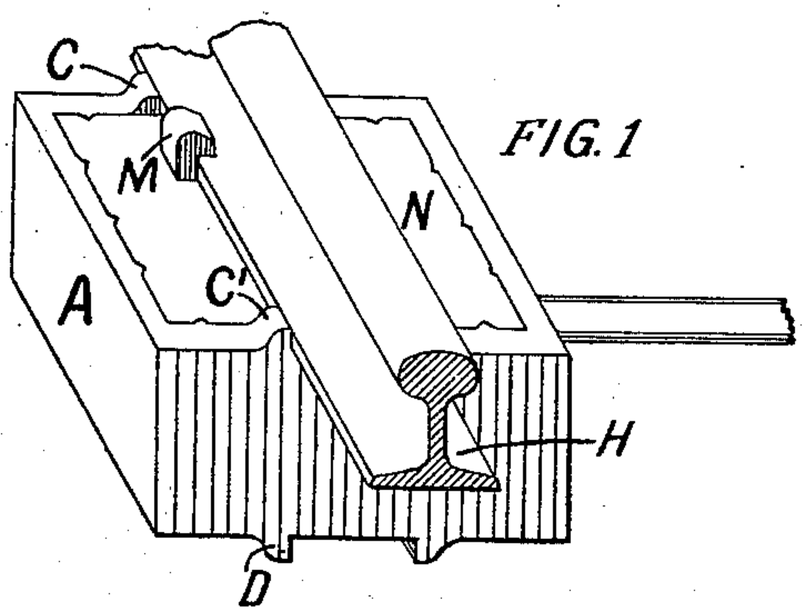


FIG. 2

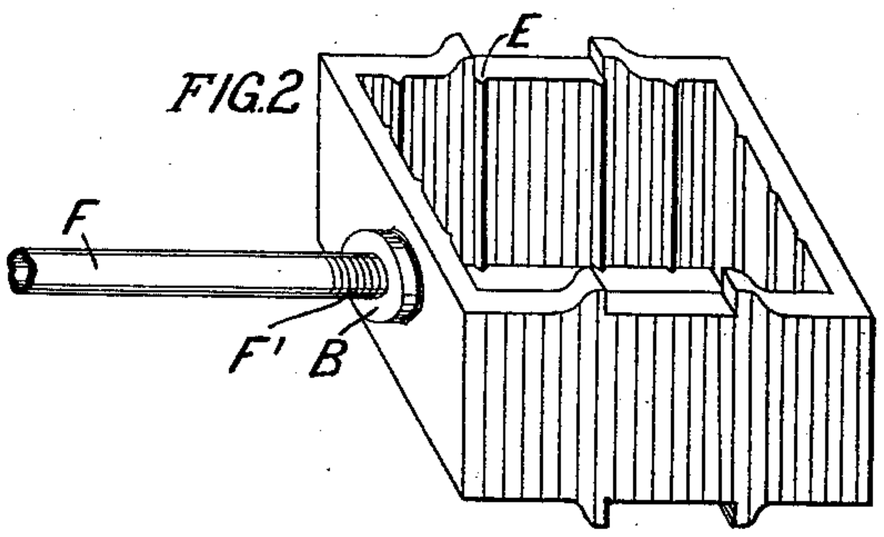


FIG. 3

FIG. 4

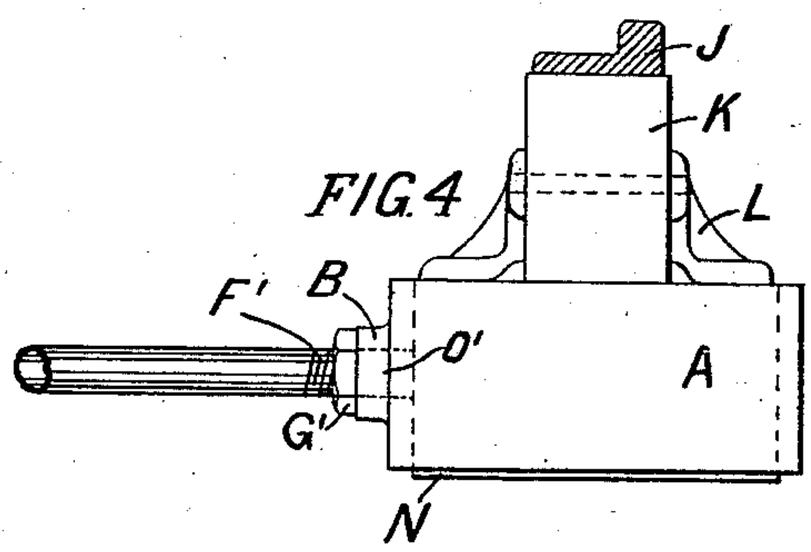
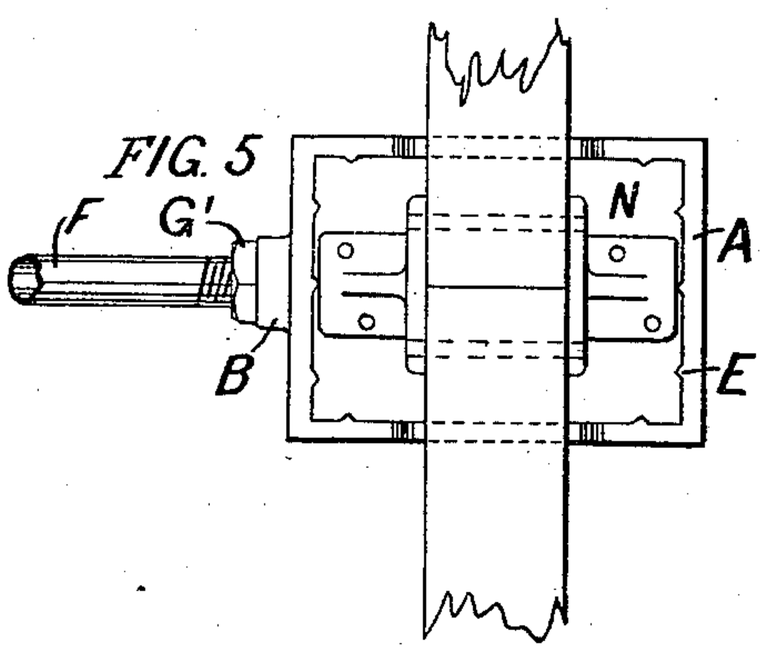


FIG. 5



WITNESSES

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RAILWAY-TIE.

SPECIFICATION forming part of Letters Patent No. 370,837, dated October 4, 1887.

Application filed May 14, 1887. Serial No. 238,170. (No model.)

To all whom it may concern:

Be it known that I, JOHN B. WILLIAMS, a citizen of the United States, residing at the city of Reading, county of Berks, State of Pennsylvania, have invented a new and useful Improvement in Railway-Ties, of which the following is a specification.

My invention relates to railway-ties constructed by the combination of wood and metal in such a manner as to secure the requisite strength, elasticity, and stability. The object is to accomplish this in a cheap, simple, and reliable tie, which will also allow of the ready adjustment of the rails, and also preserve the alignment when established. These objects are attained in the use of the tie shown in the accompanying drawings, upon which similar letters indicate similar parts.

Figure 1 represents in perspective one of the two tie-heads, which, when connected by the metal tie-rod, as shown, form my tie. The figure represents the tie-head with a block of wood driven into it, and shows an ordinary rail spiked to the block. Fig. 2 is a perspective view of a tie-head, showing its interior and its connection with the tie-rod. Fig. 3 shows a transverse section through the center of the tie-head and the application of the same to the rolled beams of an elevated road. Fig. 4 is an outside elevation of the tie-head, showing its use in connection with an ordinary street-railway. Figs. 1 and 2, as also 3 and 4, by their connection, show the complete tie. Fig. 5 is a top view corresponding with the outside elevation shown in Fig. 4.

The tie-heads A A′ consist of open rectangular boxes, of cast-iron or other suitable metal, and may be made about nine by thirteen inches inside and about six inches deep, though the dimensions should vary in different cases. The box is made with projections C to suit the base of the rail, or, if used as shown in Fig. 4, to suit the timber which rests on the tie and serve to remove the lateral strains from the spikes or wood-screws and to keep the tie-head square with the rail. The V-shaped projections E on the inside faces, running vertically, and preferably stopping about one inch from the bottom of the box, assist in securing the elastic block N. The boss B has a hole through its center tapped to suit the tie-rod F.

The lips D may be cast on the bottom when used as shown in Fig. 3, to suit the beam I. The elastic block N, of wood or other suitable material, is to be fitted into the box flush on top and flush or projecting on the bottom. To this block the rail may be spiked direct, or the timber K fastened by suitable brackets, L, in the same manner as is now common.

The tie-rod F is preferably a piece of what is known as "gas-pipe," of about the one-and-a-quarter-inch size, with a right-hand thread cut on one end and a left-hand thread on the other, to suit the tapped holes O O′, and is provided with nuts G G′, tapped to suit, said nuts to be used as "jam-nuts" to maintain the spread of the tie after it has been properly adjusted by means of a pipe-wrench, the tie-heads being spread or drawn together by the right and left hand threads on the opposite ends of the tie-rod. The rails H and J, spike M, beam I, timber K, and brackets L are all such as are now in common use.

It will be seen that my tie is made up of three main pieces. The two tie-heads differ from each other only in having the one a right-hand and the other a left-hand thread through the boss B. The castings A A′ are made to the exact shape needed, no work being required on them, except the tapping of said threads. The blocks of wood are sawed to the size wanted, protected from decay, if so desired, and forced into the boxes A A′, the projecting ribs E assisting in making a tight fit. The third piece may be a proper length of commercial pipe with the right and left threads cut on either end, as previously described.

I believe that my tie combines advantages which no other that I know of can claim. Though in the main a metallic tie, I utilize small blocks of wood, so as to give me all the advantage a wooden tie offers for conveniently and securely connecting the rail to the tie. My arrangement offers the advantage that the spike cannot split the block, as it is braced all around by the metallic box. I also profit by the elasticity of the wood, so that with a small percentage of the timber required for an ordinary wooden tie I gain all its advantages. Moreover, by previous treatment, and by the protection afforded by the metallic box, the life of these blocks is indefinitely prolonged.

The advantages of my tie are perhaps most evident in its application to the street-railways of cities. The reduction in the amount of digging required is very important, it being necessary to provide room only for the tie-rod between the rails, the two tie-heads being put in independently and afterward connected and adjusted by the tie-rod. The ready means provided for adjusting the rails to the required gage after they are fastened to the tie will be easily appreciated.

In its application to an elevated road the advantage my tie offers of a practically open space between rails will be evident.

Having shown the construction, use, and advantages of my improved combination railway-tie, I desire to secure by Letters Patent the following claims thereon:

1. A railway-tie consisting of two distinct tie-heads made up of a metallic case or box, A A, open top and bottom and inclosing a semi-elastic material, N, said case or box having threaded holes O O′, in combination with a tie-rod, F, having its ends threaded, respectively, right and left and adapted to fit said holes O O′, substantially as shown and described, and for the purpose set forth.

2. A railway tie-head consisting of an open metallic box adapted to receive and hold a semi-elastic material, N, and provided on its inside surface with vertical projecting ribs E, to assist in securing the same, substantially as shown, and for the purpose specified.

3. A railway tie-head consisting of an open metallic box adapted to receive and hold a semi-elastic material, N, and provided with projections C D, substantially as shown, and for the purpose set forth.

4. A railway-tie consisting of two distinct tie-heads made up of metallic boxes A A, inclosing semi-elastic blocks N, secured by projections or ribs E, said boxes having lips C D and tapped holes O O′, in combination with an adjustable tie-rod, F, having ends F′ F², threaded right and left handed, respectively, and nuts G G′, adapted to maintain the spread of the tie-heads, substantially as shown and described, and for the purpose set forth.

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Witnesses:
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