No. 792,269. PATENTED JUNE 13, 1905.

A. H. JACKSON.

COMPOSITE RAILWAY TIE.

APPLICATION FILED JAN. 16, 1905.

Fig. 1.

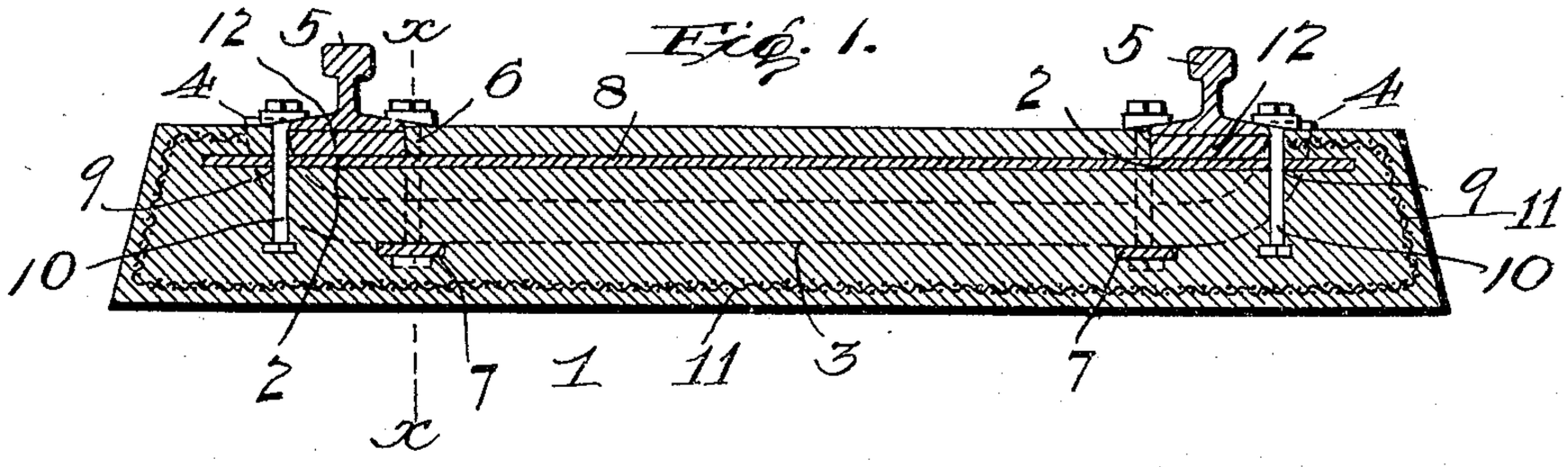


Fig. 2.

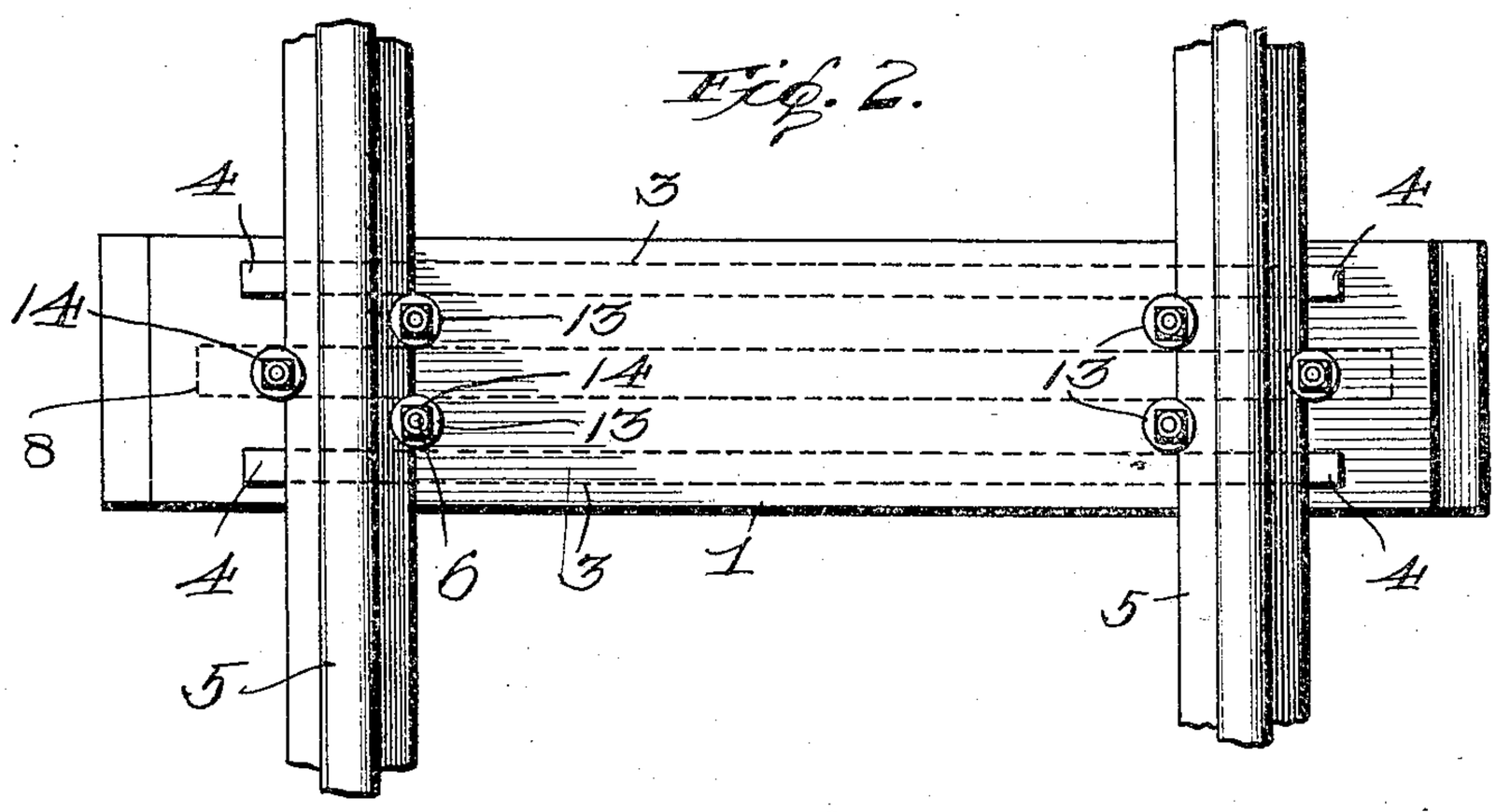


Fig. 4.

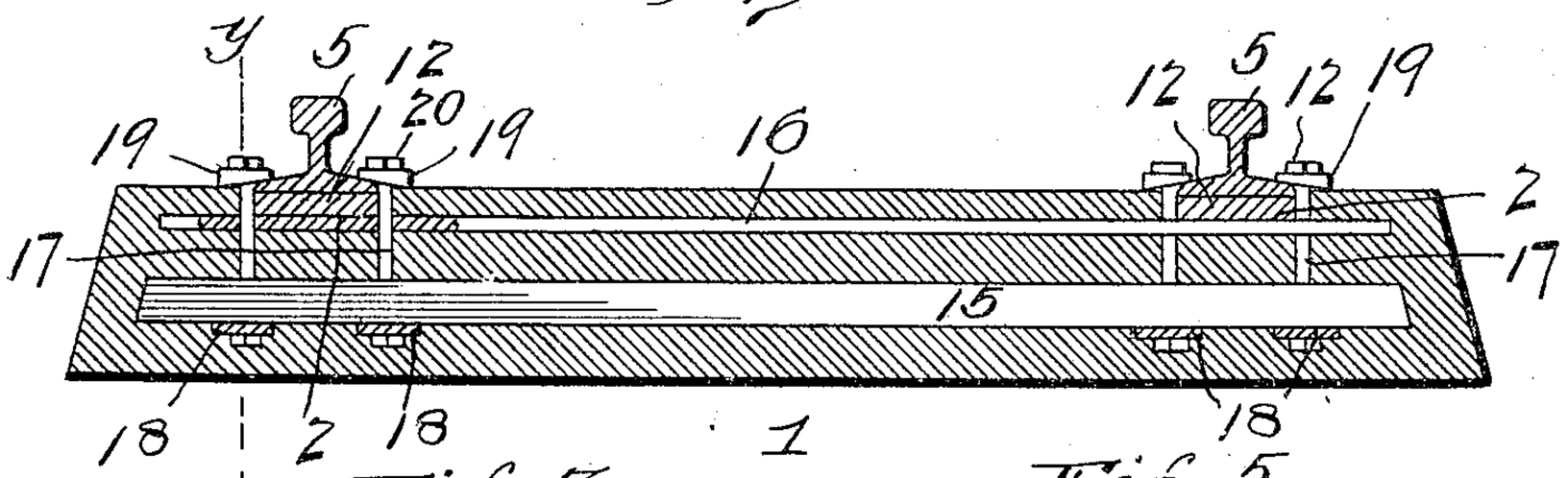


Fig. 3.

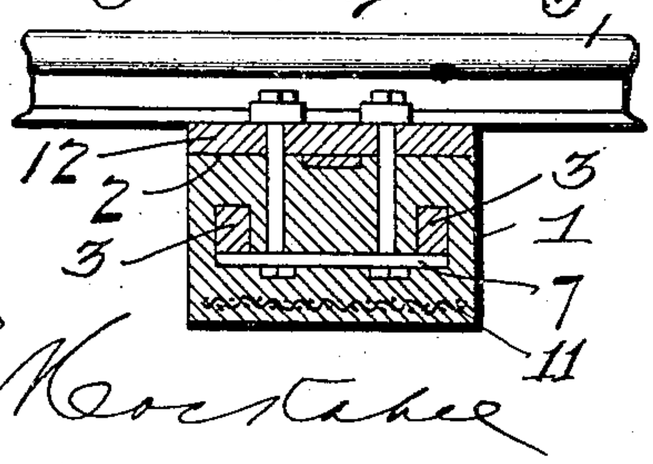
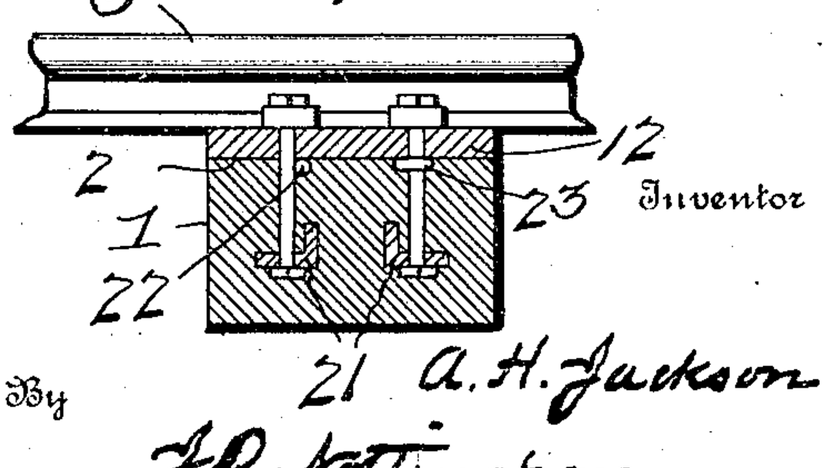


Fig. 5.



Witnesses

J. L. Mowtabee

Ralph Wormelle

Inventor

A. H. Jackson

By

J. R. Nottingham

Attorney

No. 792,269. Patented June 13, 1905.

UNITED STATES PATENT OFFICE.

AMOS H. JACKSON, OF FREMONT, OHIO.

COMPOSITE RAILWAY-TIE.

SPECIFICATION forming part of Letters Patent No. 792,269, dated June 13, 1905.

Application filed January 16, 1905. Serial No. 241,287.

To all whom it may concern:

Be it known that I, AMOS H. JACKSON, a citizen of the United States, residing at Fremont, in the county of Sandusky and State of Ohio, have invented certain new and useful Improvements in Composite Railway-Ties; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to that class of railway cross-ties commonly known as "composite" ties; and it consists of the novel arrangement and combination of the several parts, as will be hereinafter fully described in this specification and briefly stated in the claims.

One of the principal objects of the invention is to produce a railway-tie sufficiently strong and durable to withstand the wear and tear to which it may be subjected by passing trains and that will not be affected by climatic changes.

Other objects of the invention will become apparent upon a detailed description thereof.

In the drawings, Figure 1 is a longitudinal vertical section of my improved tie; Fig. 2, a top plan view thereof; Fig. 3, a transverse section on line *x x* of Fig. 1; Fig. 4, a longitudinal vertical section of a modified form of my improved tie; and Fig. 5, a transverse section on line *y y* of Fig. 4, showing modified form of strengthening member and tie member.

Referring to the several views, the numeral 1 indicates the body of my improved tie, which is preferably composed of concrete or a mixture of hydraulic cement, sand, and water. The body may be of any desired shape and is formed with a transverse groove or recess 2 near each end thereof to provide a seat for the rail. Inclosed in the body are two metallic strengthening members 3 3, arranged parallel with each other and longitudinally of the body. The respective ends of these members preferably curve upward and projecting through the upper surface of the body form abutments 4, against which the outer flanges of the rails 5 abut. Also embedded in the body in line with the inner wall of the grooves 2 are headed bolts 6, which pass up through anchor-plates 7, arranged transversely beneath the strengthening members. The screw-threaded ends of the bolts project slightly above the upper surface of the body and being in line or flush with the inner walls of the grooves 2 form, in conjunction with the abutments 4, rigid side supports for the rails. Arranged centrally within the body and in line with the bottom of the grooves 2 is a metallic tie member 8, having a perforation 9 near each end for the passage of bolts 10, which are embedded in said body, as shown in Figs. 1 and 2.

To give additional strength and tenacity to the tie, I prefer to embed therein a binder 11 of closely-woven wire fabric or a network of any suitable material, as shown in Figs. 1 and 3.

In constructing a road with my improved tie a cushion 12, of suitable material, preferably wood, is placed in each groove or recess and the rails laid thereon. Clamping-plates 13 and nuts 14 are employed to firmly secure the rails in their seats.

It will be evident that ties constructed as herein described may be employed to replace old and worn-out wooden ties, and it will also be evident that "spreading" of the rails will be prevented, as the strengthening members and the tie members and their bolts firmly and rigidly hold the rails against lateral movement.

In the modification shown in Fig. 4 the curved ends and abutments of the strengthening members are dispensed with and plain straight members 15 are employed, and instead of the tie member being arranged centrally two tie members 16, only one being shown, are used, one arranged above each strengthening member. Bolts 17 17 are embedded in the body in line with both the inner and outer side walls of the grooves or recess 2, which bolts pass up through holes in anchor-plates 18 and through holes in the tie members, clamping-plates 19 and nuts 20 being used to secure the rails in their seats.

The strengthening members may be of any preferred shape in cross-section, either rectangular, as shown in Fig. 3, or angular, as

shown at 21, Fig. 5. In the latter form the anchor-plates may be dispensed with and the bolts passed through holes in the strengthening members, as shown in said Fig. 5. Tie-rods 22 may be substituted for the tie members, in which case each end would be bent outwardly to form a hook 23 to engage the outer bolts.

Various modifications or changes in the details of construction of my improved tie may be made without limiting the scope of the invention or changing the character thereof.

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

1. A railway-tie, composed of a body of concrete, or similar material, two strengthening members and one or more tie members embedded in said body, said members being arranged longitudinally and parallel with each other, and securing-bolts embedded in the body and passing through the tie member or members.

2. A railway-tie, composed of a body of concrete, or similar material, two strengthening members and one or more tie members embedded in said body, said members being arranged longitudinally and parallel with each other, securing-bolts embedded in the body and passing through the tie member or members, and a binder embedded in said body.

3. A composite railway-tie, consisting of a body of suitable material, having a rail-seat provided at each end, two strengthening members and one or more tie members embedded in said body, said members being arranged longitudinally and parallel with each other, and securing-bolts embedded in the body and arranged in line with the outer and inner walls of the rail-seats.

4. A composite railway-tie, consisting of a body of suitable material, having a rail-seat at each end, two strengthening members and one or more tie members and their bolts embedded in said body, said members being arranged longitudinally and parallel with each other, securing-bolts embedded in the body and arranged in line with the inner and outer walls of the rail-seats, and a binder embedded in said body.

5. A composite railway-tie, consisting of a body of concrete, or similar material, having rail-seats formed therein, two strengthening members having upwardly-curved and abutting ends, said abutting ends being in line with the outer wall of the rail-seats, securing-bolts arranged in line with the inner wall of the rail-seats, a centrally-arranged tie member, and securing-bolts arranged in line with the outer wall of said rail-seats and the abutting ends, all of said members and bolts being embedded in the body, as set forth.

6. A composite railway-tie, consisting of a body of concrete, or similar material, having rail-seats formed therein, two strengthening members having upwardly-curved and abutting ends, said abutting ends being in line with the outer wall of said rail-seats, anchor-plates arranged beneath the strengthening members, securing-bolts arranged in line with the inner wall of the rail-seats, a centrally-arranged tie member, and securing-bolts arranged in line with the outer wall of said rail-seats and abutting ends, all of said parts being embedded in the body, as set forth.

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

AMOS H. JACKSON.

Witnesses:
H. F. MURPHY,
J. R. NOTTINGHAM.