

No. 749,163.

PATENTED JAN. 12, 1904.

H. BRUNSON.
RAILROAD TIE.

APPLICATION FILED MAR. 2, 1903.

NO MODEL.

Fig. 2.

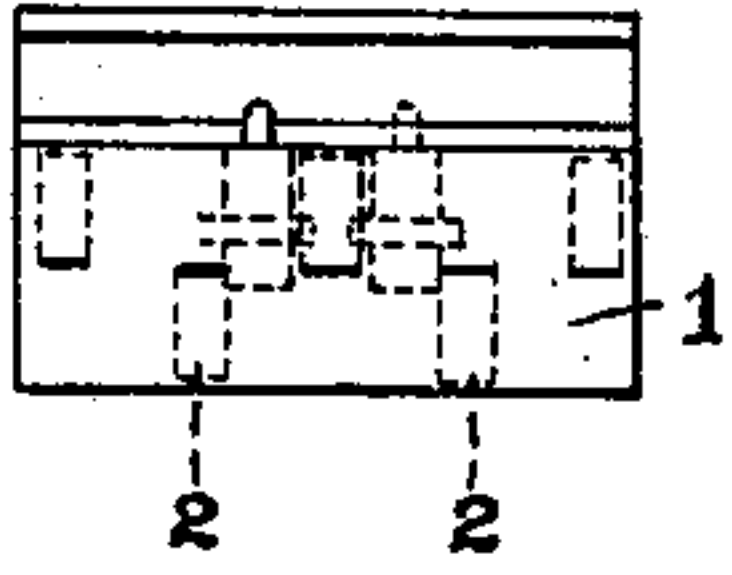


Fig. 1.

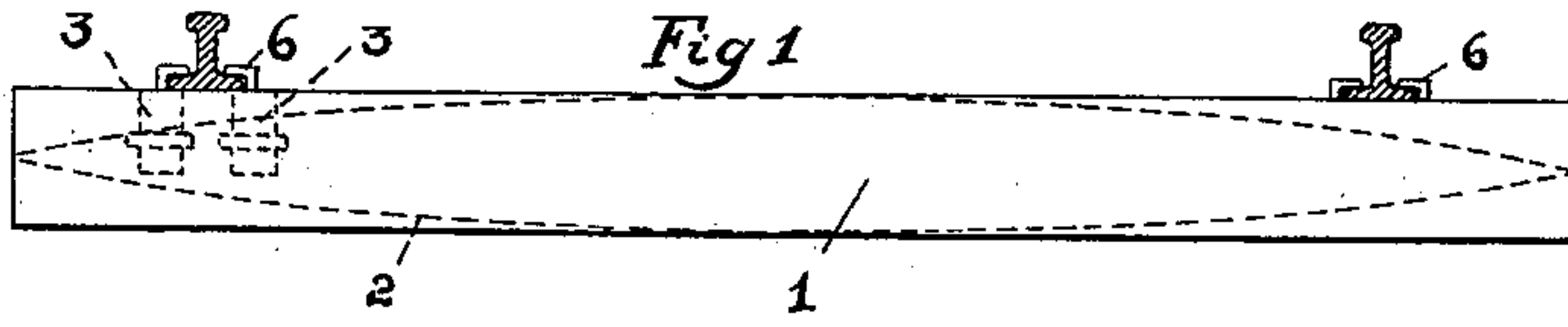


Fig. 3.

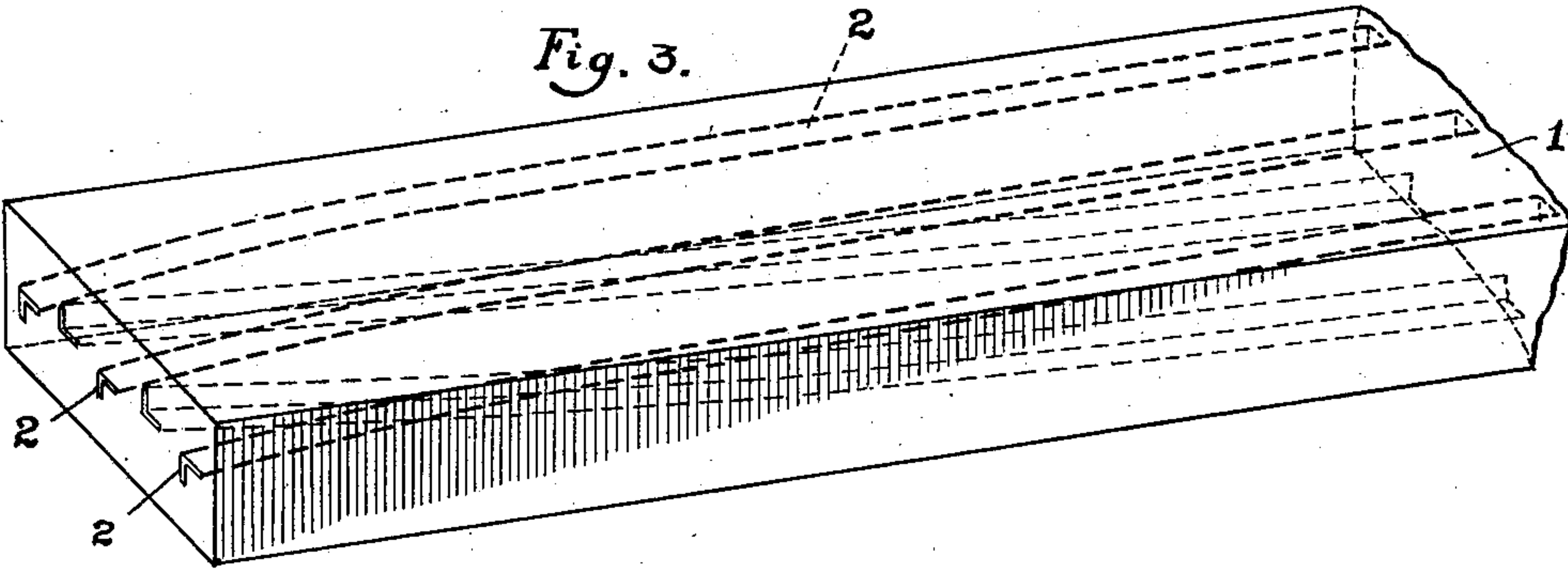


Fig. 4.

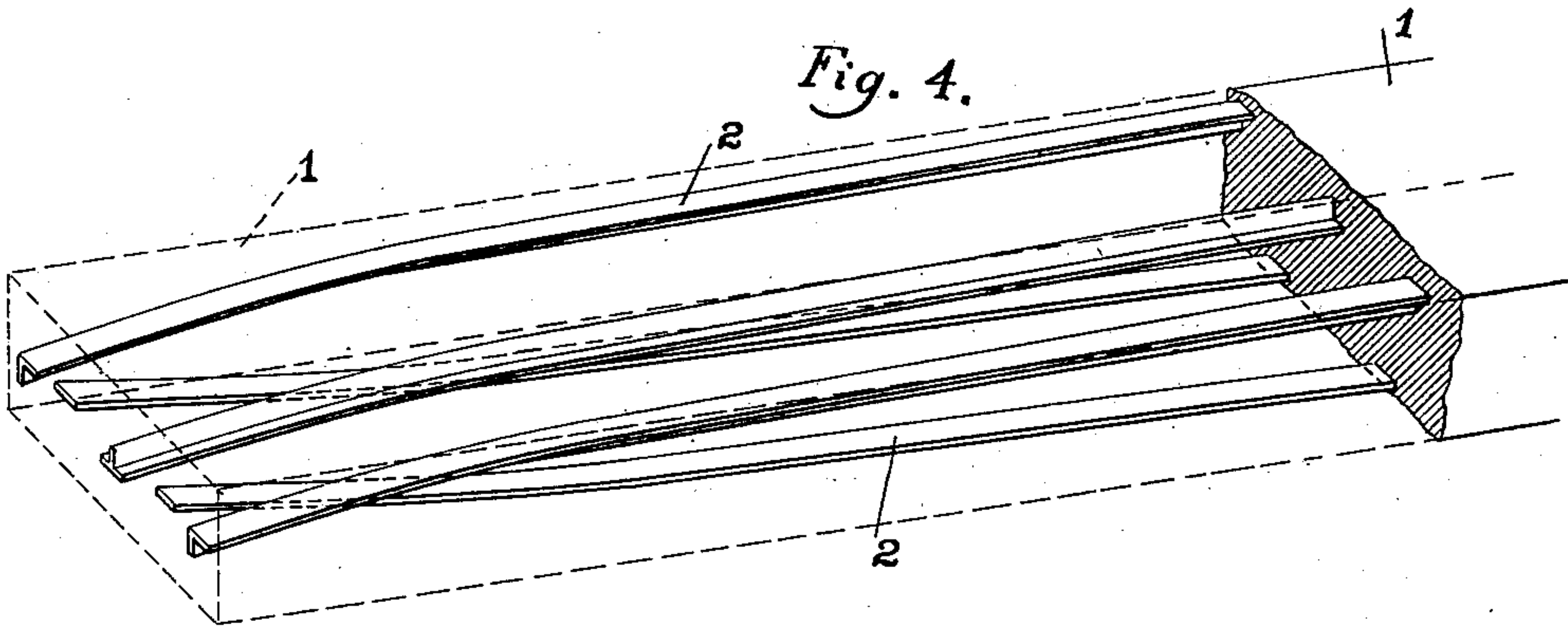
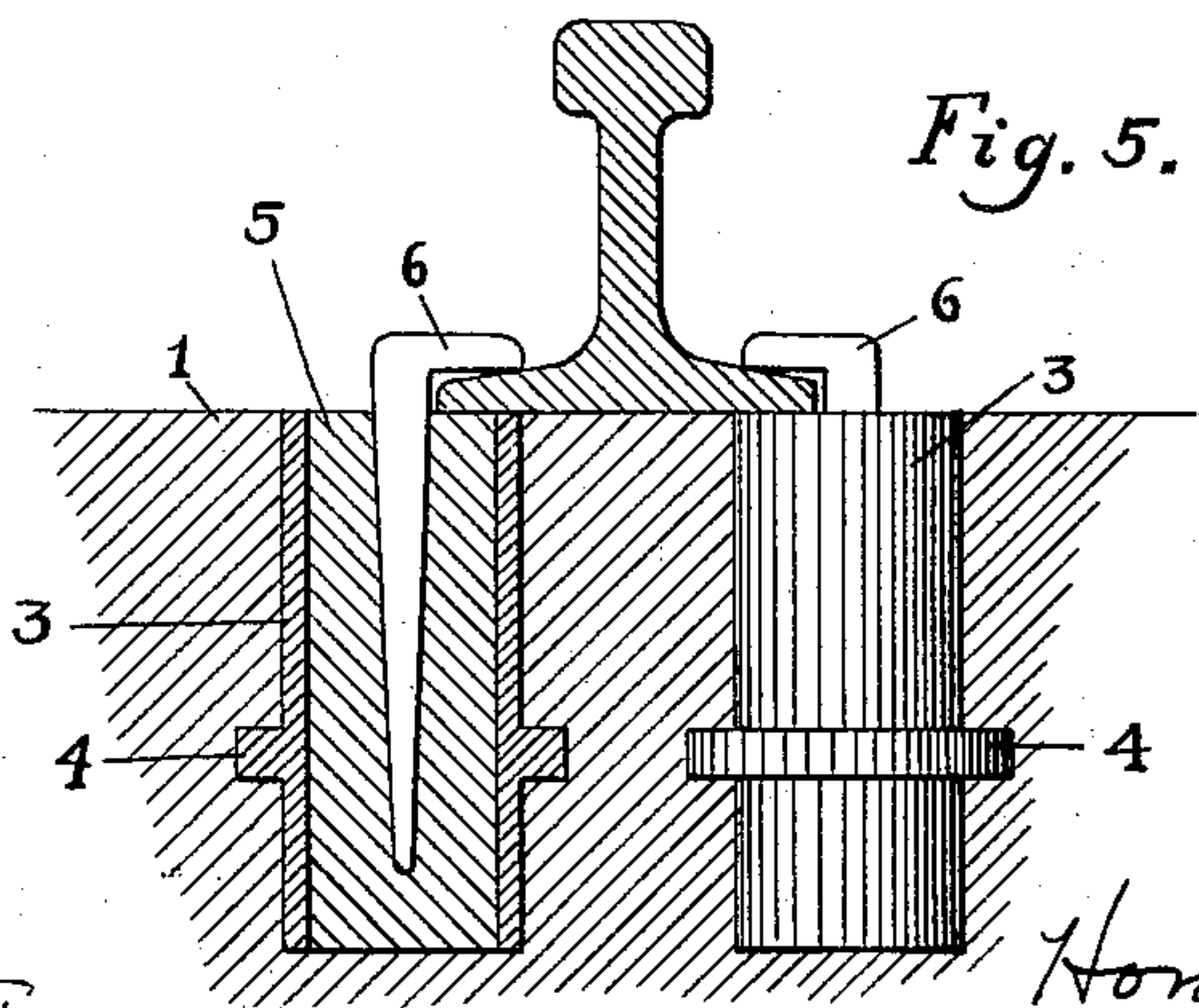


Fig. 5.



WITNESSES:

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UNITED STATES PATENT OFFICE.

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RAILROAD-TIE.

SPECIFICATION forming part of Letters Patent No. 749,163, dated January 12, 1904.

Application filed March 2, 1903. Serial No. 145,769. (No model.)

To all whom it may concern:

Be it known that I, HORACE BRUNSON, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Railroad-Ties, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to improvements in railroad-ties. It has for its object to produce a device of this character which will not be subject to destruction by exposure to the weather or the elements.

A further object of the present invention is to so brace or reinforce the device that it will not be liable to be broken when subjected to heavy strain.

In the accompanying drawings, illustrating the preferred embodiment of my invention, Figure 1 is a side elevation of my improved railroad-tie. Fig. 2 is an end view thereof. Fig. 3 is a perspective view of one end of the tie, showing the position of the reinforcing-strips in dotted lines. Fig. 4 is a perspective view of the end of a tie with the cement in which the reinforcing-strips may be broken away to more clearly disclose the position of said reinforcing-strips. Fig. 5 is a detail view showing more clearly the means of fastening the rail upon the tie.

Referring now to the drawings, which show the preferred manner of constructing my improved railroad-tie, a mass of cement or other suitable material 1, which is not liable to destruction by exposure to the weather, is suitably formed to be used as a railroad-tie. Within said mass of material are embedded strips of metal 2, which are preferably arched and may be of any form, such as a rod or bar, an angular plate, or a T-shaped strip. These strips preferably extend lengthwise of the tie and are preferably curved so that the ends will lie about midway between the top and bottom of the tie, while their central portion lies near the surface of either the top or bottom por-

tion of the tie. Preferably three arched strips are arranged in the upper portion of the tie, while two strips which are disposed between the strips in the upper portion of the tie are embedded in the lower portion thereof. Also within the cement are preferably embedded tubes 3, which have a flange 4 formed upon the outer surface thereof to prevent the withdrawal of the tubes from the cement, and said tubes are preferably so arranged that their flanges will be engaged by one or more of the strips within the mass of cement. Within each tube is placed a filling 5 of some suitable material, such as lead or a plug of wood, into which a spike 6 or other means of fastening may be driven for the purpose of securing the rails of the track to the tie.

A railroad-tie constructed as herein proposed will not be liable to destruction by the weather, as are the wooden ties now extensively used and which are very short lived. Of course a mass of cement or other such material is necessarily brittle, and I therefore strengthen the same by embedding the strips of metal within the mass of material from which the tie is composed. The arching or curving of these strips considerably adds to the strengthening effect of the tie. A railroad-tie is necessarily subjected to the greatest pressure at the ends, and therefore is very liable to break at the center. The arrangement of the strips as herein set forth so strengthens the device which I have produced that it will be able to more than withstand the pressure to which it is subjected in use.

It may be desirable to provide a resilient support for the rails of the track upon the tie, and this might be accomplished in various ways, as by laying a strip of some soft material, such as wood or some other resilient material, upon the surface of the tie underneath the rail, or a special bearing for the rail might be set in the cement.

Of course the arrangement of the strips may be varied from that herein described and more or less may be provided, according to the circumstances and the strain to which the

tie will be subjected. Furthermore, these strips may be of any form and may be arched so that their ends will be near one side, while their central portion will be near the opposite side or may have a different curvature from that herein shown. Also the tubes which prevent the cement of the tie from breaking when a spike is driven into the soft material contained within said tubes may be of different form from that herein described, or they may be dispensed with altogether. Moreover, other means for fastening the rails of the track to the tie than that I have herein described may be employed without changing the purpose of my invention.

The invention which I have made is not necessarily limited to railroad-ties, for it may be employed in the construction of beams for bridges and buildings, &c., or in any other places which may from time to time become apparent.

The expression "curved from the bottom toward the top" as employed in the specification contemplates not only arranging a curved strip in the block with its ends disposed toward the top and its central portion toward the bottom of the block, but also placing a curved strip in the block with its central portion arranged toward the top and its ends toward the bottom of the block.

Herein I have described only the preferred manner of carrying out my invention, and I therefore reserve the right to make such changes as fairly fall within the scope thereof.

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

1. An article of the character described, comprising a mass of suitable material formed into an elongated block having a flat top and a flat bottom which are substantially parallel to each other, and a reinforcing-strip embedded therein which is arranged substantially lengthwise of the block and curved from the top toward the bottom thereof, substantially as described.

2. An article of the character described, comprising a mass of suitable material formed into an elongated block having a flat top and a flat bottom which are substantially parallel to each other, and a plurality of reinforcing strips embedded therein which are arranged substantially lengthwise of the block and curved from the bottom toward the top thereof, substantially as described.

3. A device of the character described, comprising a mass of cement or other similar material formed into a suitable block, and a series of arched strips embedded therein, said strips being oppositely curved and arranged parallel to each other, substantially as described.

4. An article of the character described,

comprising a mass of suitable material formed into an elongated block and having a plurality of oppositely-curved reinforcing-strips embedded within the same, which are arranged substantially lengthwise of the block and curved from the bottom toward the top thereof, substantially as described.

5. An article of the character described, comprising a mass of suitable material formed into an elongated block, and a series of reinforcing-strips embedded therein, said strips being curved so that the central portion of some of said strips is arranged near the bottom of the block, and a central portion of others is arranged near the top of the block, the ends of said strips being arranged in substantially the same plane, substantially as described.

6. An article of the character described, comprising a mass of suitable material formed into an elongated block having a flat top and a flat bottom which are substantially parallel to each other, a plurality of reinforcing-strips embedded therein which are arranged substantially lengthwise of the block and curved from the bottom toward the top thereof, and means for securing the rails of the track to said block, substantially as described.

7. An article of the character described, comprising a block of cement or other suitable material, tubes arranged within said block, suitable material placed within said tubes in which a spike or other means of fastening the rails of a track in position may be secured, means for holding said tubes in place, and reinforcing-strips embedded in said block and oppositely curved to one another, substantially as described.

8. An article of the character described, comprising a block of cement or other suitable material, tubes arranged within said block having flanges to prevent their withdrawal therefrom, suitable material placed within said tubes in which a spike or other means for fastening the rails of a track in place may be secured, and reinforcing-strips embedded within said block and oppositely curved to one another, substantially as described.

9. An article of the character described, comprising a block of cement or other suitable material suitable as a railroad-tie, a tube arranged within said block and having a flange to prevent its withdrawal therefrom and suitable material placed within said tube into which a spike or other means for fastening the rails of the track in position on the track may be driven, substantially as described.

10. An article of the character described, comprising a block of cement or other suitable material, a tube arranged within said block and having a flange to prevent its with-

drawal therefrom, suitable material into
which a spike or other fastening may be
driven to secure the rails of the track in posi-
tion, reinforcing-strips for said block embed-
5 ded therein, one or more of said reinforcing-
strips engaging the flange upon said tube,
substantially as described.

In witness whereof I have hereunto sub-
scribed my name in the presence of two wit-
nesses.

HORACE BRUNSON.

Witnesses:

J. W. HODGMAN,

L. J. SCHUENEMANN.