

No. 846,785.

PATENTED MAR. 12, 1907.

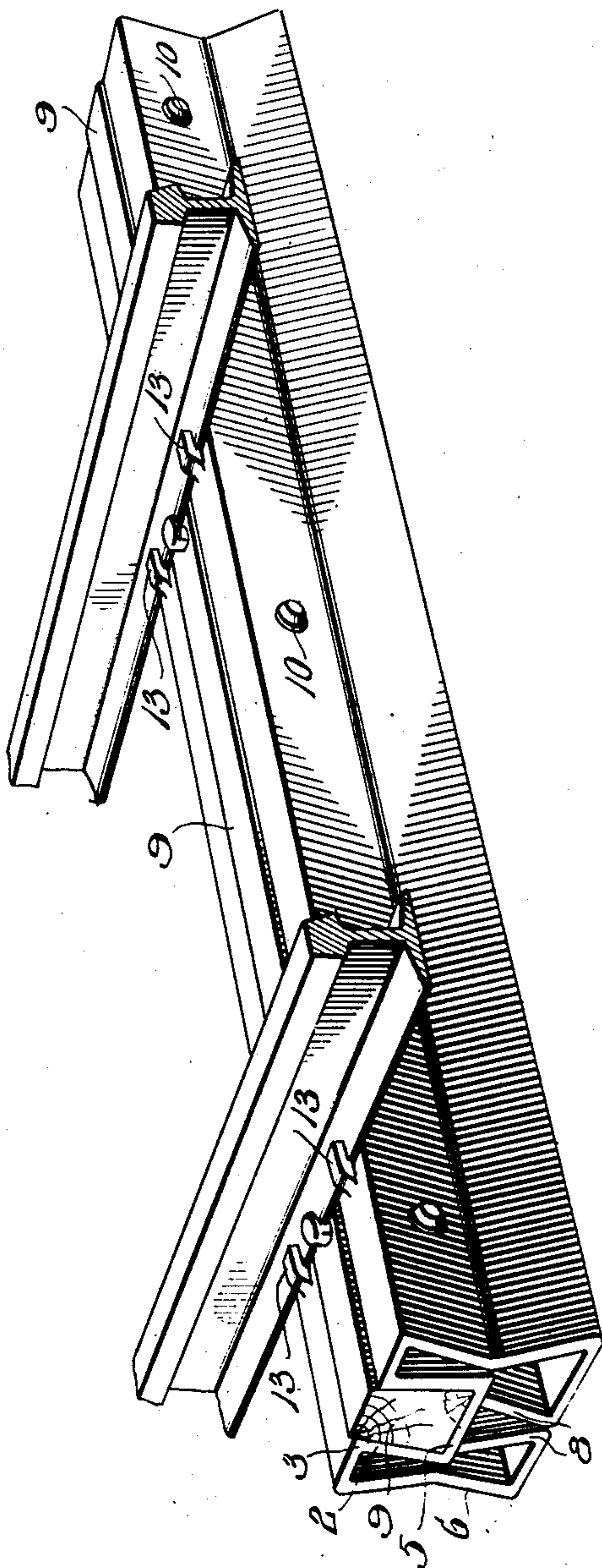
J. W. DUNNIGAN.

RAILROAD TIE.

APPLICATION FILED NOV. 7, 1906.

2 SHEETS—SHEET 1.

Fig. 1.



Inventor

James W. Dunnigan,

Witnesses

Frank Lough
Amos Brown.

By

Victor J. Evans

Attorney

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2 SHEETS—SHEET 2.

Fig. 2.

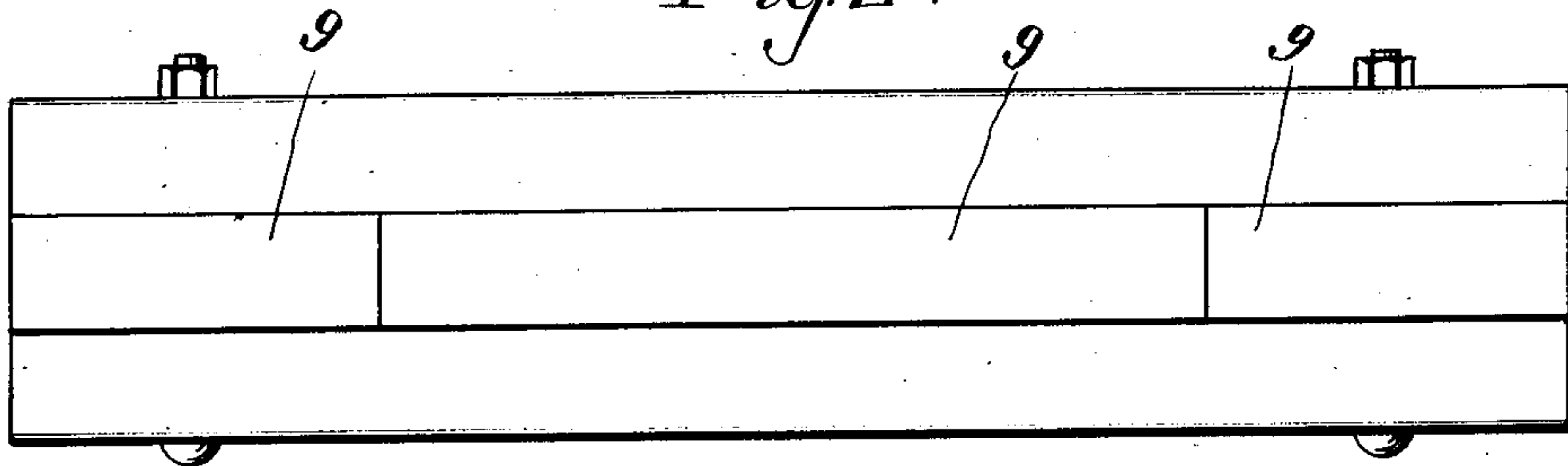


Fig. 3.

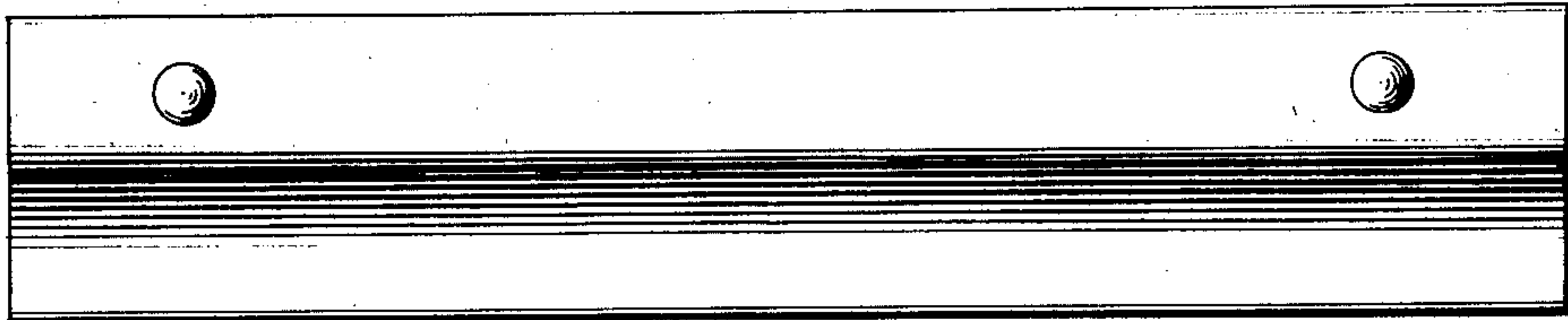


Fig. 4.

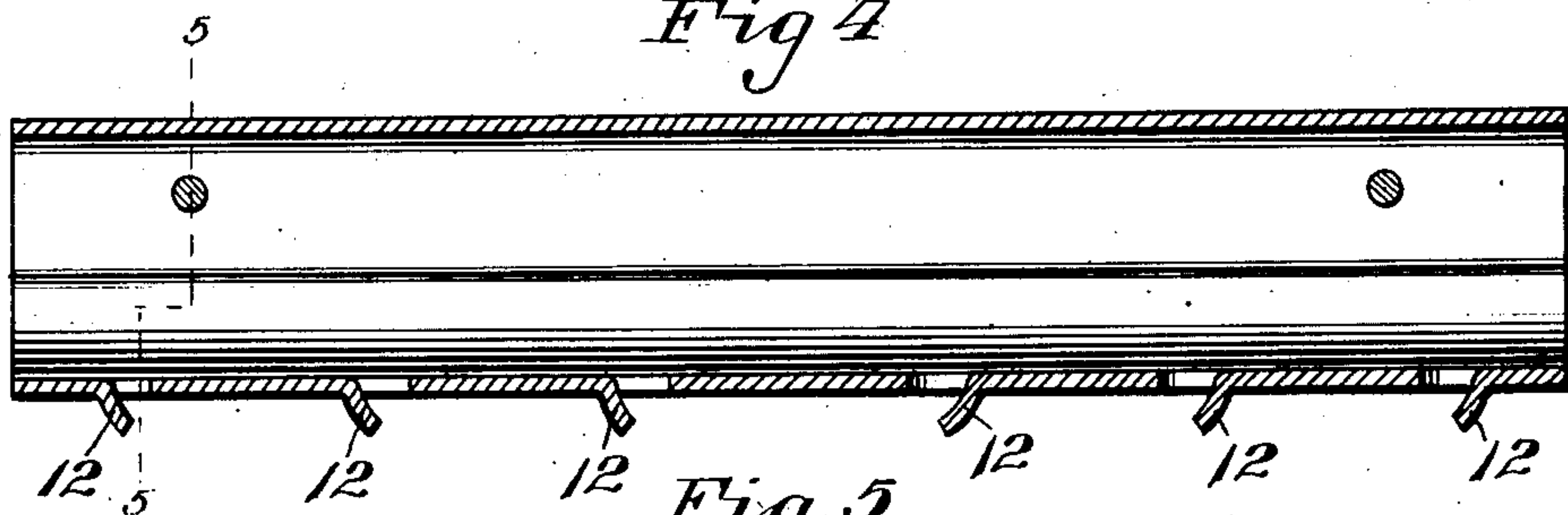


Fig. 5.

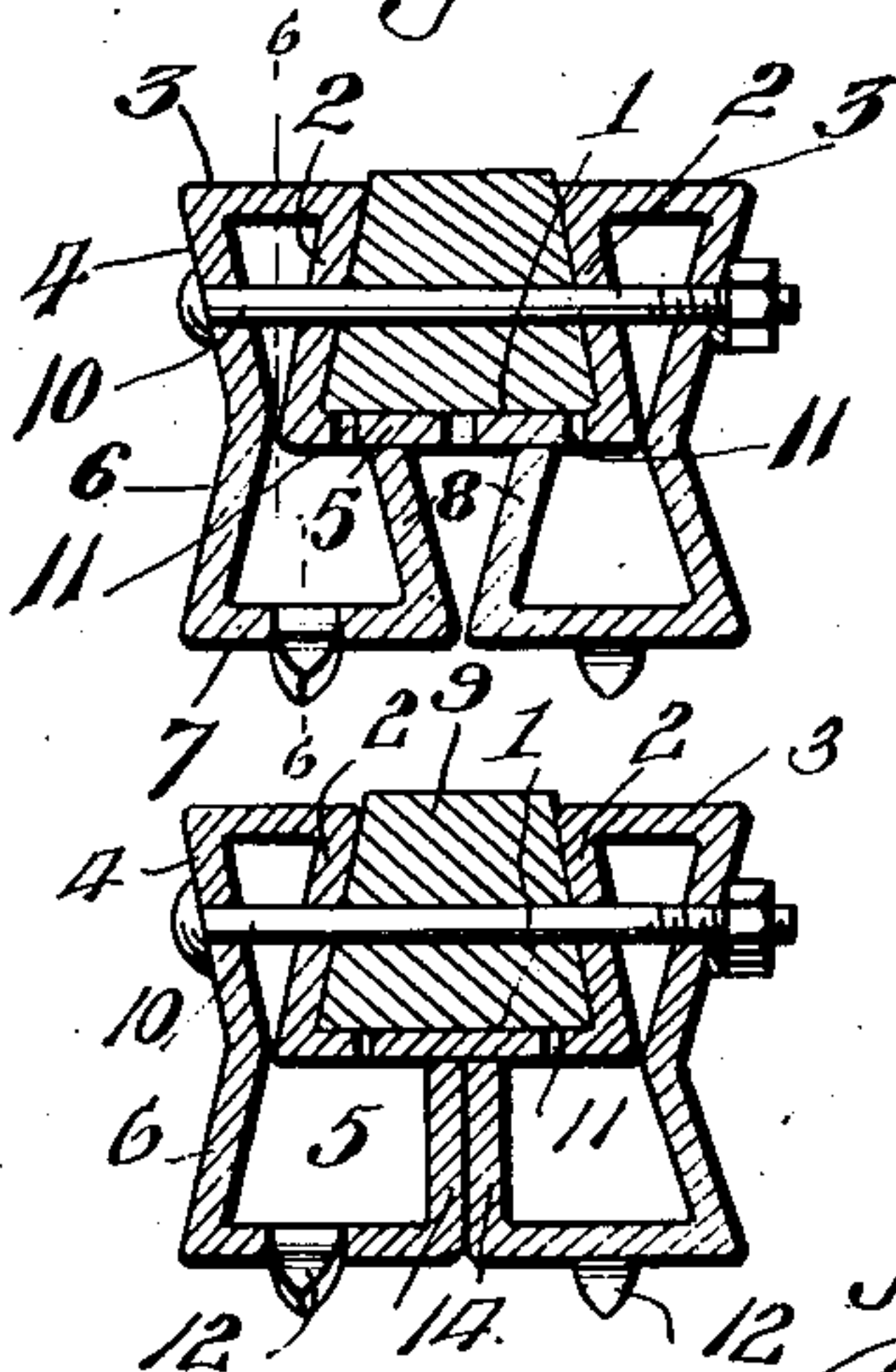


Fig. 6.

Inventor

Witnesses

Frank Hough
Amos Brown

James W. Dunnigan,
By Victor J. Evans
Attorney

UNITED STATES PATENT OFFICE.

JAMES W. DUNNIGAN, OF ALTOONA, PENNSYLVANIA.

RAILROAD-TIE.

No. 846,785.

Specification of Letters Patent.

Patented March 12, 1907.

Application filed November 7, 1906. Serial No. 342,399.

To all whom it may concern:

Be it known that I, JAMES W. DUNNIGAN, a citizen of the United States of America, residing at Altoona, in the county of Blair and State of Pennsylvania, have invented new and useful Improvements in Railroad-Ties, of which the following is a specification.

The invention relates to an improvement in railroad-ties constructed and arranged to provide an indestructible tie having a sufficient degree of elasticity to compensate for the jar incident to the travel of trains upon the rails.

The main object of the present invention is the provision of a railway-tie constructed of sheet metal of a tensiled strength to provide the necessary resistance, the formation of the tie providing for the essential elasticity and also providing for securely holding the tie in the road-bed or ballast.

The invention will be described in the following specification, reference being had particularly to the accompanying drawings, in which—

Figure 1 is a perspective view illustrating the construction of my improved tie. Fig. 2 is a plan view of the same, the rails being omitted. Fig. 3 is a side elevation of the same. Fig. 4 is a vertical section of the tie on line 3 3 of Fig. 4. Fig. 5 is a cross-section on line 4 4 of Fig. 3. Fig. 6 is a transverse section of the tie, illustrating a slightly-modified construction.

Referring particularly to the drawings, wherein like parts are indicated by similar reference-numerals throughout the several views, my improved tie is constructed of a single strip of sheet metal of appropriate width and of a length equal to the length of the desired tie.

In forming the tie the strip is bent at a point intermediate its side edges to form a channel 1, said channel extending the full length of the tie and having its side walls 2 arranged at an upward and inward inclination, whereby the channel is, in effect, dove-tailed. From the upper ends of the channel-walls the strip extends laterally in opposite directions to provide rail-seats 3, the rail-seats and mouth of the channel completing the full width of the tie. From the rail-seats 3 the strip is bent downwardly at an inward inclination, as at 4, the lower ends of the sections 4 of the tie terminating on alinement with the lower or base wall 5 of the channel and contacting with the lower end of the wall

2 of the channel. From the section 4 the strip is projected below the lower wall of the channel at a relatively outward inclination, as at 6, the section 6 being approximately equal in length to the section 4. At the lower end of the section 6 the strip is bent inwardly toward the center of the tie to provide a base-section 7, extending in parallel relation to the rail-seat and terminating at the longitudinal center of the tie. From the base-section 7 the ends of the strip project upwardly, as at 8, the sections 8 projecting at a slight outward incline and resting in contact with and forming a support for the bottom wall 5 of the channel. As thus constructed the tie is formed with a centrally-disposed longitudinally-arranged channel and with metallic rail-seats on opposite sides of the channel. The side walls of the tie, including the sections 4 and 6, project at reverse inclinations from the respective upper and lower surfaces of the tie, while the base-section of the tie is provided with vertical struts to bear beneath and aid in supporting the bottom wall of the channel.

The channel 1 is designed to receive a plurality of sections or strips of wood or the like, as 9, which are shaped in cross-section to accurately correspond with the sectional contour of the channel. By preference the wooden strip is in three sections, a central section and two end sections, and said strip is held against independent longitudinal movement through the medium of tie-bolts 10, which pass through the sections 4 of the tie, the side walls 2 of the channel, and the wooden strip within the channel. The bottom wall of the channel is formed with a series of perforations 11, whereby to provide for the escape of any moisture finding its way into the channel.

The base-sections 7 of the tie are each formed with a series of integral downwardly-projecting tongues 12, forming projections to prevent longitudinal movement of the tie when the latter is seated in the road-bed. By preference the tongues on the opposite sides of the transverse center of the tie project in opposite directions, thereby assisting in holding the tie against movement in either direction.

In use the tie is adapted to be placed in the road-bed construction in the usual manner, the reverse inclination of the sections 4 and 6 of the sides of the tie providing, in effect, a pocket for the reception of the road-bed ma-

terial to aid in holding the tie in place. The rails are spiked to the tie in the usual manner, the spikes seating, of course, in the wooden strip 9 in the channel. The desirability of having the wooden strip in sections is at once apparent, and provision is thereby made for removing either or both end sections in the event they become worn or split without the necessity of disturbing the other sections.

The tie constructed as described is, in effect, a hollow tie, which by means of the peculiar formation provides a series of independent chambers extending throughout the length of the tie. These chambers, which are in the preferred construction described so arranged as to provide three independent chambers immediately above the base of the tie and one on each side of the main channel, are capable and designed for permitting the passage of line-wires for electric current or signal-operating wires or the like. In the event it is desired to render the tie of more solid construction the chambers referred to may be charged with any suitable filler, as cement or the like, and I contemplate in such use of the tie that end caps of obvious construction may be arranged to close the ends of the chambers in the use of such filler. In using a filler for the tie the independence of the chambers is important, as the two side chambers in the lower portion of the tie may thus be filled, leaving the intermediate chamber and the side chambers beyond the channel to impart the desired resiliency to the tie. In fact, one or more of the chambers may be filled, as the necessities of the particular use of the tie may demand.

The tie is preferably constructed of a single sheet of metal and in the form shown and described provides practically an indestructible tie having all necessary inherent elasticity to absorb jar. If desired, the rail-seats 3 of the tie may be formed with integral tongues 13, designed in use to be bent about the base-flanges of the rail and aid in securing the rails in place.

In Fig. 6 I have shown a slightly-modified form of the rail-tie of this invention, wherein

it will be noted that the end sections of the strip forming the tie are projected from the base-section of the tie to the bottom wall of the channel 5 in parallel contacting relation, as at 14, instead of the inclined spacing arrangement illustrated in Fig. 5.

Having thus described the invention, what I claim as new is—

1. A metallic tie formed with a series of independent compartments arranged both above and below the central line of the tie, the tie being also formed to provide a channel intermediate the upper compartments.

2. A metallic tie formed with a series of independent compartments arranged both above and below the central line of the tie, the tie being also formed to provide a channel intermediate the upper compartments, and a section of spike-penetrable material secured in the channel.

3. A metallic tie formed with a series of independent compartments arranged both above and below the central line of the tie, the tie being also formed to provide a channel intermediate the upper compartments, and a plurality of longitudinally-alined sections of wood secured in the channel.

4. A metallic tie constructed of a single strip of sheet metal bent to form a centrally-arranged dovetailed channel, and to form a series of independent compartments below the channel.

5. A metallic tie constructed of a single strip of sheet metal bent to form a centrally-arranged dovetailed channel, and to form a series of independent compartments below the channel, the free ends of the strip bearing beneath the base-wall of the channel.

6. A metallic tie having a centrally-arranged channel, and a series of compartments disposed below the channel, each side wall of the tie being inclined in reverse directions from the longitudinal center.

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

JAMES W. DUNNIGAN.

Witnesses:

JOHN L. FLETCHER,
ANNIE BROWN.