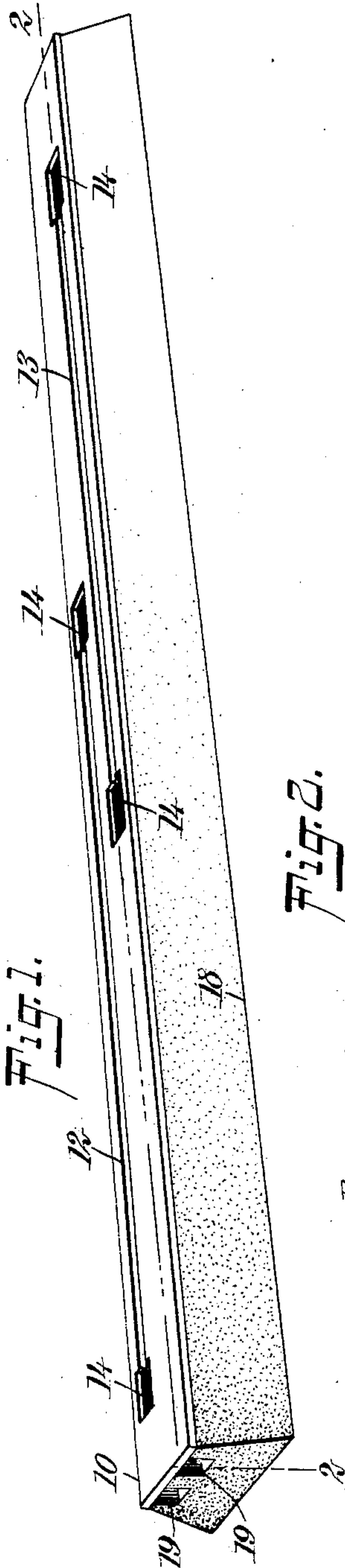


No. 826,718.

PATENTED JULY 24, 1906.

J. S. FRAZER.
RAILWAY TIE.

APPLICATION FILED OCT. 17, 1905.



WITNESSES:

William P. Gager
Frederick

Fig. 2.

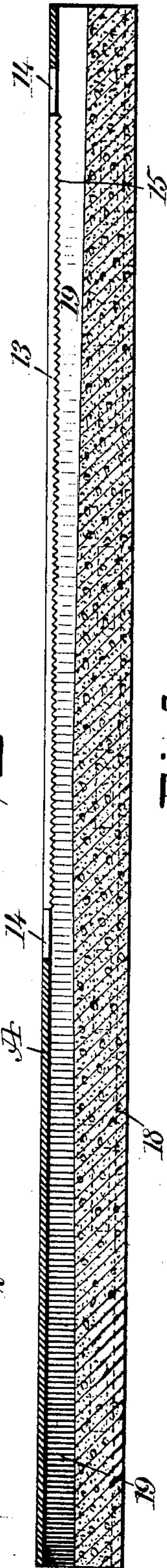


Fig. 3.

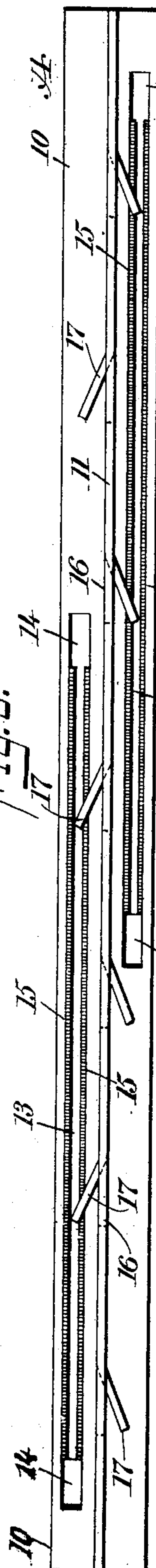


Fig. 4.

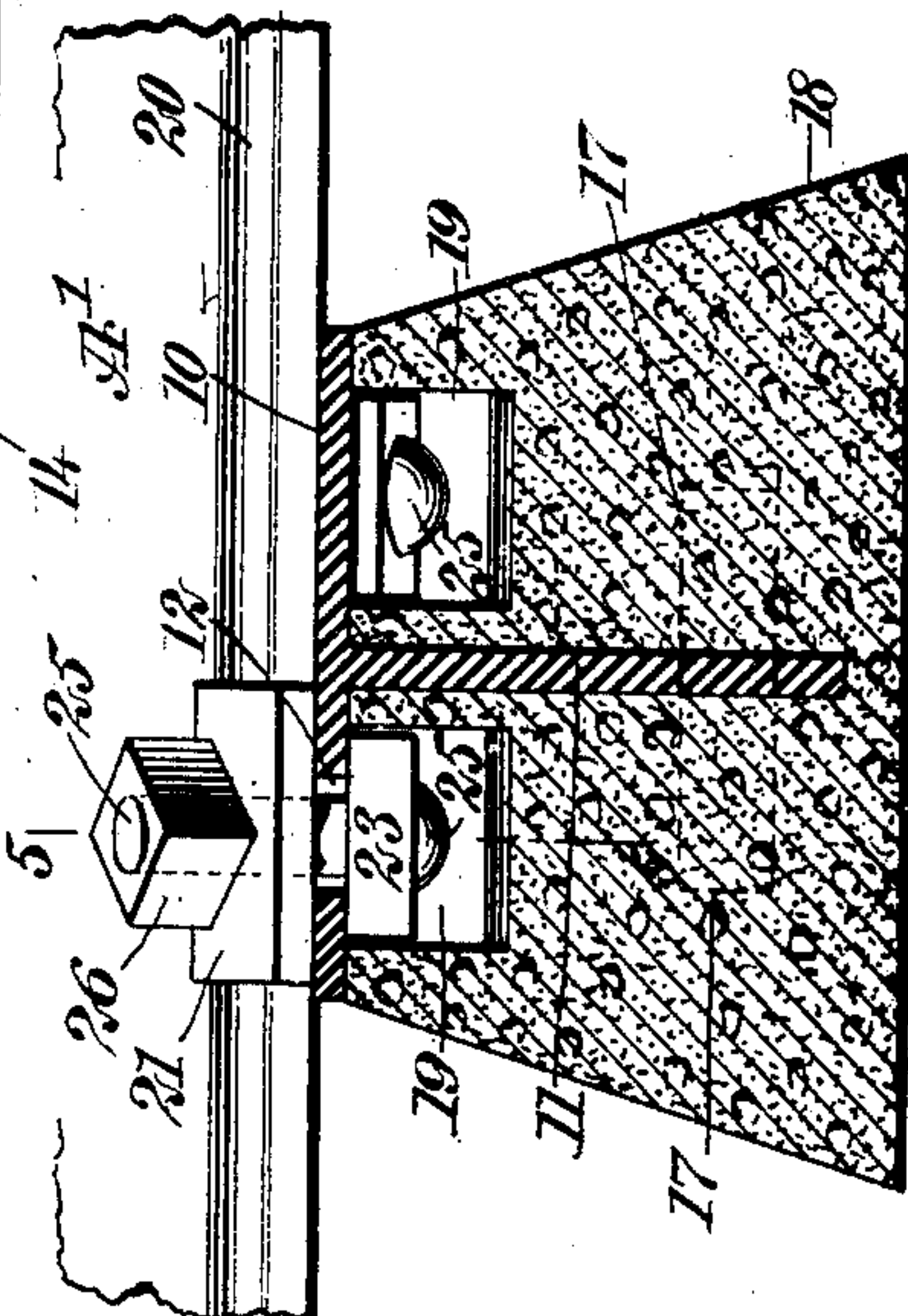
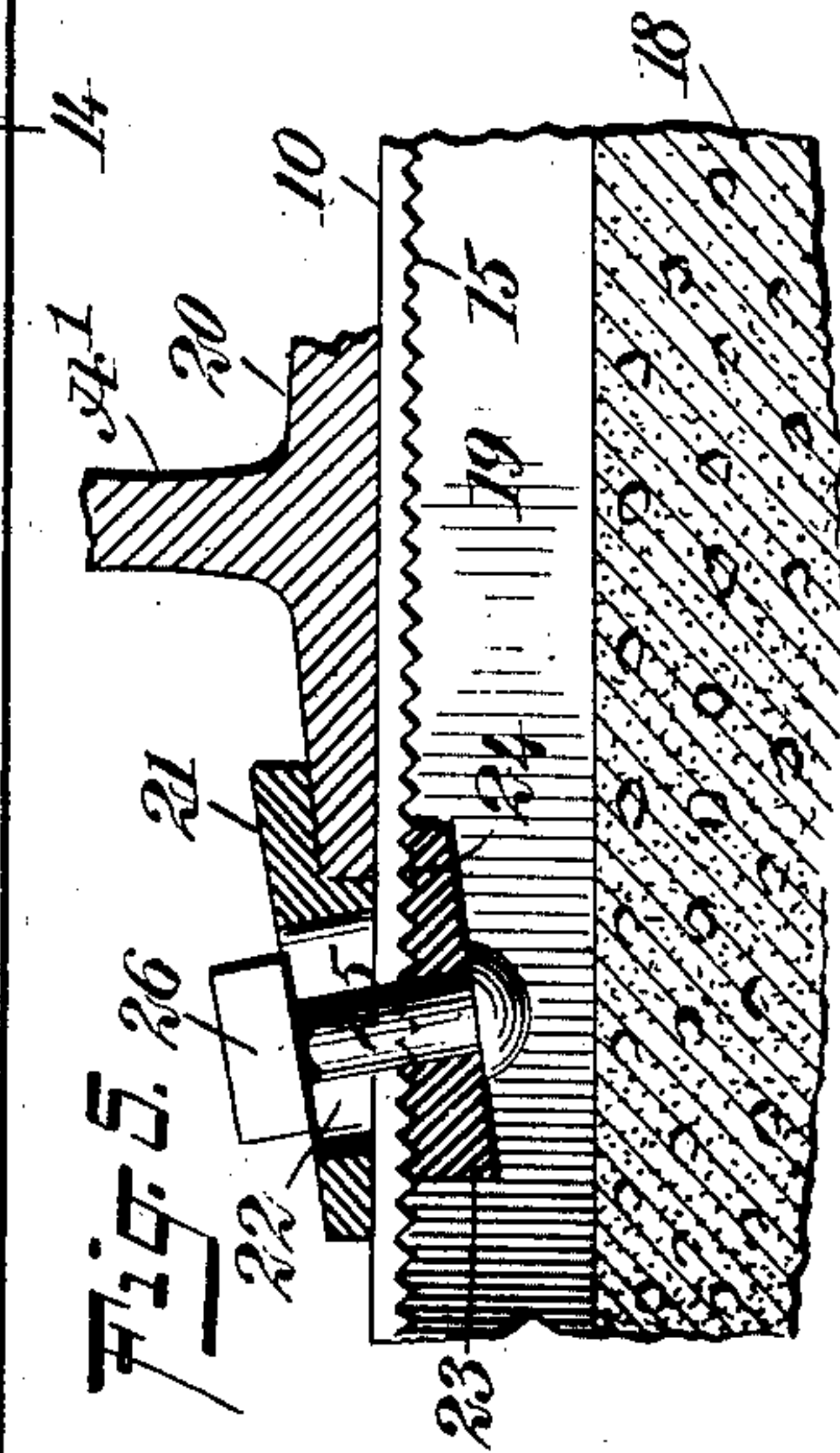


Fig. 5.



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JAMES STANLEY FRAZER, OF MOUNT VERNON, NEW YORK.

RAILWAY-TIE.

No. 826,718.

Specification of Letters Patent.

Patented July 24, 1906.

Application filed October 17, 1905. Serial No. 283,083.

To all whom it may concern:

Be it known that I, JAMES STANLEY FRAZER, a citizen of the United States, and a resident of Mount Vernon, in the county of Westchester and State of New York, have invented a new and useful Improvement in Railway-Ties, of which the following is a full, clear, and exact description.

My invention relates to composite railway-ties.

A purpose of the invention is to produce a railway-tie in the construction of which perishable material does not enter, and which can be made at a cost sufficiently reasonable to justify its adoption and use, and which will be exceedingly durable.

Another purpose of the invention is to provide a simple construction of railway-tie in which the position of the rail on the tie is not confined to any one spot, or to a certain few inches of space, and in which an especial construction of tie does not have to be provided to meet special requirements.

A further purpose of the invention is to provide means of fastening the rails to the ties, so that not only may the rails be securely clamped in any position on the ties, but guard-rails, switch-rails, frogs, &c., may also be clamped thereto with equal facility and security.

Another purpose of the invention is to so construct the tie that there will be no loose or wearing parts to need attention.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a perspective view of the improved tie. Fig. 2 is a longitudinal vertical section through the tie, taken practically on the line 2 2 of Fig. 1, the view being drawn upon a larger scale. Fig. 3 is a bottom plan view of the metal body of the tie. Fig. 4 is a transverse section through the tie, drawn upon an enlarged scale, a side elevation of a portion of a rail, and a side elevation of the fastening devices for the rail; and Fig. 5 is a longitudinal section through a portion of the tie and a section through a part of a rail and fastening devices for the rail, the section being taken practically on the line 5 5 of Fig. 4.

The body portion A of the tie is made of

metal and usually consists, as shown, of a top or face plate 10 and a central web 11, which extends downward from end to end of the top or face plate 10; but I desire it to be understood that two or more webs may be employed, although the T formation of the body-section is preferred. Slots 12 and 13 are produced in the top plate 10 adjacent to its side edges, which slots preferably extend past each other at the central portion of the body, as is shown in Figs. 1 and 3; but they may be made shorter if occasion demands. Each slot 12 and 13 at its terminal portion is provided with an opening 14 of any desired shape, preferably rectangular, which openings are much wider than the said slots 12 and 13.

A series of teeth 15 is formed upon the under surface of the face or top plate 10 at the side marginal portion of each slot 12 and 13, as is best shown in Fig. 3, and the said series of teeth extend from one terminal opening 14 of a slot to the other.

The web 11 is provided with a series of openings or slots 16, produced near its lower edge, as is shown by dotted lines in Fig. 4, and the material pressed from the said slots is carried out to form fins 17, which extend at an angle, usually an acute angle, from the side faces of the said web. The said fins 17 may extend beyond both faces of the web or beyond one face of the web; but when the fins extend beyond both faces of the web they may be carried in the same direction or in opposite directions, as is illustrated in Fig. 3.

A base 18 is provided for the metal body of the tie, which base is made of cement or of other plastic material and at its bottom portion is wider than the face-plate 10 of the body, so that the tie in its entirety will rest as firmly as possible upon the ground or other support.

Immediately beneath the slots 12 and 13 in the face-plate of the said body channels 19 are produced in the base 18, and the said channels are usually made to extend from end to end of the base and are inclined from their centers in opposite directions to the end portions of the base, so as to conduct water from the base as rapidly as possible should water enter the said channels through the said slots 12 and 13. I desire it to be understood, however, that it is only necessary for said slots to extend from the slots 14 nearest the center of the tie.

The base 20 of the rail A is made to rest firmly upon the upper face of the face-plate 10

of the body of the tie, as is shown in Figs. 4 and 5, and the rail is secured in place upon the tie by means of suitable fastening devices, which fastening devices comprise rail-clamps 21, locking-plates 23, and bolts 25.

The rail-clamps 21 are made to fit firmly upon the upper face of the face-plate 10 on the body of the tie and are recessed upon their under faces, so as to fit over the flange of the rail and rest thereon, as is best shown in Fig. 5. Each rail-clamp 21 is provided with a longitudinal slot 22, and the locking-plates 23 are located just below the rail-clamps 21 within the channels 19, as is also best shown in Fig. 5. The under faces of the locking-plates 23 are inclined correspondingly to the outer faces of the rail-clamps 21, and the outer or upper faces of the said locking-plates 23 are provided with teeth 24, which mesh with the teeth 15 at the side portions of the slots 12 and 13, as is clearly shown in Fig. 5. The rail-clamps 21 and the locking-plates 23 are firmly held in their respective positions by bolts 25, which extend upward and outward through suitable apertures in the locking-plates and through the slots 22 in the rail-clamps, the outer ends of the bolts 25 being provided with suitable nuts 26. It will thus be observed that the rails can be placed at any desired point on the ties, as the locking devices may be placed at any point between the ends of the slots 12 and 13. It is further evident that frogs and other attachments may be attached to the same ties with the rails in the same manner as the rails are secured. I desire it to be understood that while the fins 17 are preferably employed to effect a secure bond between the metal body and the concrete base the said fins, if desired, may be omitted and the apertures 16 only retained; but the presence of the fins is preferred. It is evident also that the tie is exceedingly durable, compact and economic, and exceedingly well adapted for the purpose intended.

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

1. In composite railway-ties, a body-plate having a central longitudinal web extending downwardly therefrom and having longitudinal slots adjacent to its side edges, and a plastic base for the body-plate, having channels therein beneath the said slots, the central longitudinal web being provided with oppositely-arranged tongues for engaging the plastic base.

2. In composite railway-ties, a body-plate having a web extending downwardly therefrom, longitudinal slots adjacent to its side edges, which slots have enlargements at their ends, and a plastic base for the body-plate, provided with channels which extend from the central enlargement of said longitudinal slots

to the ends of the base, which channels are oppositely and downwardly inclined from their inner portions.

3. In composite railway-ties, a body-plate having a web provided with openings therein and slots adjacent to its side edges overlapping at the central portion of the plate, which slots are enlarged at their ends, teeth upon the under face of the body-plate at the side marginal portions of the slots, and a plastic base on which the body-plate rests and in which the said web is embodied, the said base being provided with longitudinal channels extending from end to end and located beneath the slots in the body-plate.

4. In composite railway-ties, a body-plate having a downwardly-extending web provided with openings and outwardly-extending fins adjacent to the openings, the said body-plate being also provided with longitudinal slots adjacent to its side edges, and having their terminals enlarged, teeth on the underside of the body-plate at the side marginal portions of its slots, a plastic base on which the said body-plate rests and in which the web is embedded, which base is outwardly flared at its bottom and is provided with longitudinal channels beneath the slots in the body-plate, which channels taper downwardly in opposite directions from their central portions.

5. In composite railway-ties, a body-plate having a downwardly-extending web provided with openings and outwardly-extending fins adjacent to the openings, the said body-plate being also provided with longitudinal slots adjacent to its side edges, having their terminals enlarged, teeth on the under side of the body-plate at the side marginal portions of its slots, a plastic base on which the said body-plate rests and in which the web is embedded, which base is outwardly flared at its bottom and is provided with longitudinal channels beneath the slots in the body-plate, which channels taper downwardly in opposite directions from their central portions, clamps each having an opening therein, which clamps are adapted to fit to the upper surface of the body-plate and the flange of the rail resting on said plate, a locking-plate beneath each clamp, having teeth for engagement with the teeth on the under side of the body-plate, and bolts provided with nuts, which bolts extend through the locking-plates, the slots in the body-plate and the openings in the clamps, as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JAMES STANLEY FRAZER.

Witnesses:

F. LAVIS,

C. H. QUIMBY, Jr.