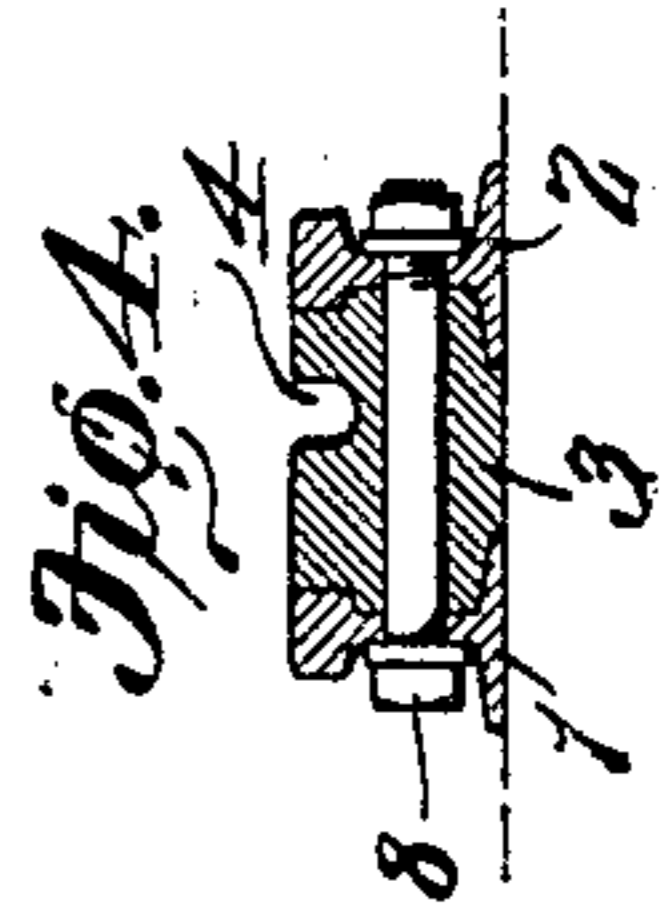
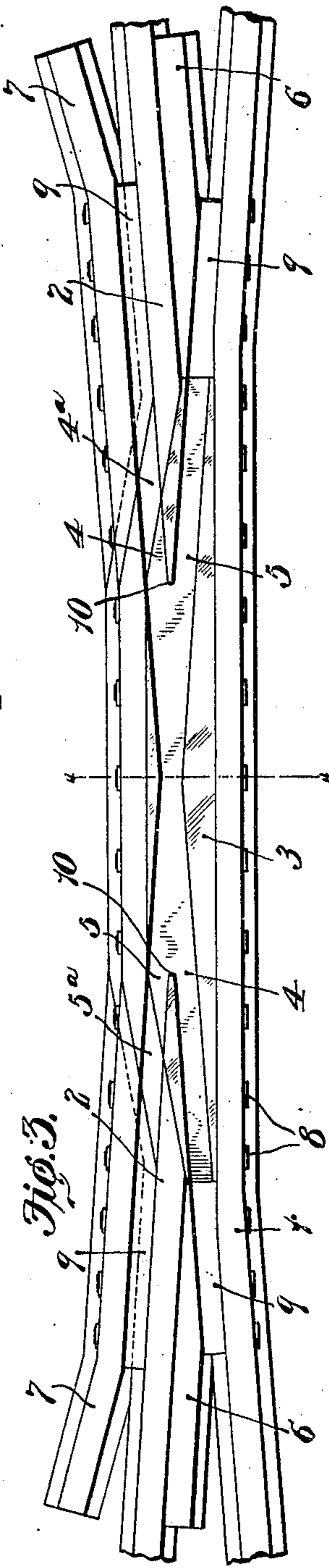
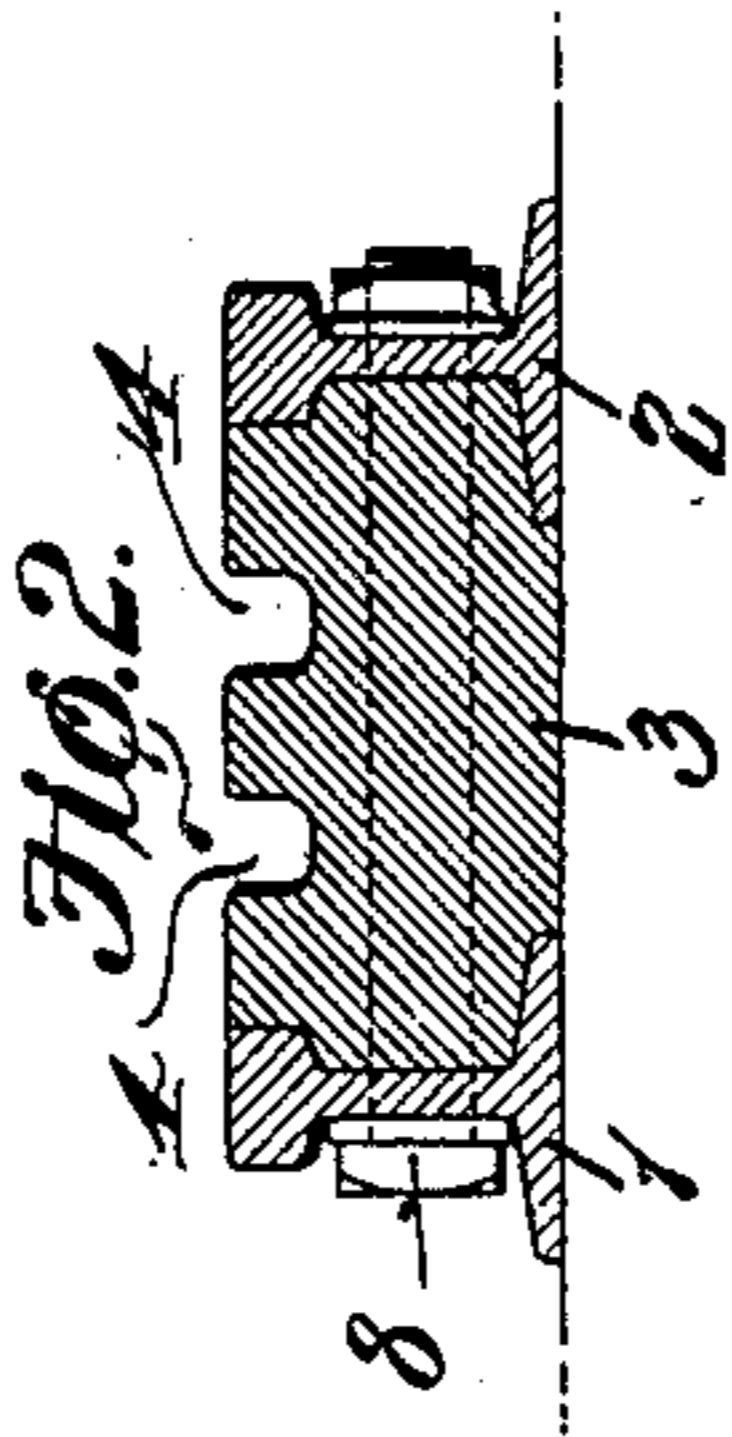
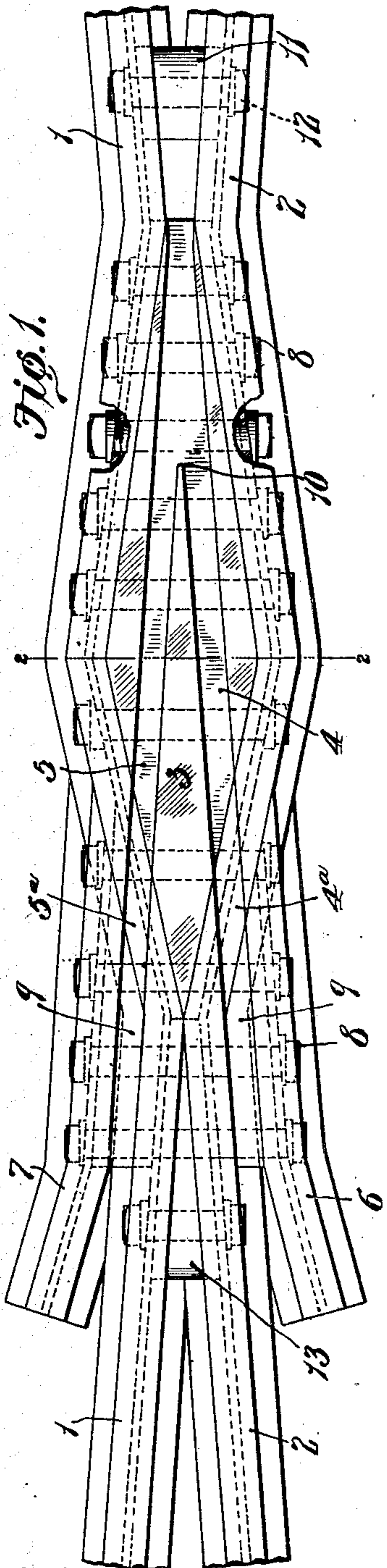


No. 871,493.

PATENTED NOV. 19, 1907.

R. E. EINSTEIN.
RAILWAY TRACK STRUCTURE.

APPLICATION FILED JUNE 25, 1906.



Witnesses:

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UNITED STATES PATENT OFFICE.

ROBERT E. EINSTEIN, OF ST. LOUIS, MISSOURI.

RAILWAY-TRACK STRUCTURE.

No. 871,493.

Specification of Letters Patent.

Patented Nov. 19, 1907.

Application filed June 25, 1906. Serial No. 323,252.

To all whom it may concern:

Be it known that I, ROBERT E. EINSTEIN, a citizen of the United States, residing at St. Louis, Missouri, have invented a certain new and useful Improvement in Railway-Track Structures, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a plan view of a single-pointed frog constructed in accordance with my invention; Fig. 2 is a sectional view of same taken on the line 2—2 of Fig. 2; Fig. 3 is a plan view of a double-pointed frog constructed in accordance with my invention; and Fig. 4 is a sectional view of same taken on the line 4—4 of Fig. 3.

This invention relates to railroad track structures such, for example, as crossings and frogs, and particularly to that class which have a piece of very hard and durable metal inserted at the point of greatest wear for the purpose of prolonging the life and increasing the efficiency of the structure.

The object of my invention is to provide a structure of the character referred to which can be manufactured cheaply and in which the piece of hard and durable metal cannot work loose under traffic.

To this end I have devised a track structure consisting of ordinary track rails and a piece of hard and durable metal inserted at the point of greatest wear, said piece of hard metal being embraced and supported by the track rails so that all liability of its working loose is obviated. Said piece of hard metal is of such shape and form that it can be easily worked or planed down to fit the rails, thereby reducing greatly the cost of manufacturing the structure, and as the piece of hard metal is embraced on all sides by the rails which are continuous from end to end of the structure, a very rigid structure is insured.

Referring to the drawings which represent the preferred form of my invention, 1 and 2 designate the intersecting rails of a turnout or crossing, and 3 designates a piece of metal that is harder and more durable than the rails and which is hereinafter referred to as a "hard center". The hard center 3 is approximately diamond shape and is embraced on both sides by the rails 1 and 2 which are continuous from the toe to the heel of the frog,

said hard center being provided with flangeways 4 and 5, and the heads of the track rails adjacent the ends of said grooves being provided with notches 4^a and 5^a. For guiding the flanges of the car wheels into the flangeways in the hard center, guide rails 6 and 7 are provided, said rails being connected to the track rails and to the hard center by means of bolts 8 which extend therethrough and through filling pieces 9 interposed between the guide rails and the track rails, these guide rails and filling pieces also acting to greatly strengthen the structure.

At the crotch of the frog ahead of the point 10, which is blunted for well-known reasons, I place a block 11 which is interposed between the track rails and is connected thereto by a bolt 12, said block also strengthening the structure and acting as an additional support for the track rails.

At the heel of the frog is a heel riser 13 that is interposed between the track rails and is connected thereto by a bolt, as shown in Fig. 1, said heel riser also acting as an additional strengthening means. As the hard center is approximately diamond shape and has no sharp angles or corners it can be worked down to fit the fishing sections of the rails with very little labor and the embracing rails can be continuous from the toe to the heel of the frog which, of course, produces a very strong structure. As said hard center is constructed to fit the fishing sections of the rails it will be supported by the rails and securely locked in position between the heads and flanges of the rails, as shown in Figs. 2 and 4. Another object in forming the hard center approximately diamond shape is to enable the bearing part of the car wheel to roll from the track rail onto the hard center gradually and without a sudden jar or shock, and as the top surface of the hard center provides a bearing for the wheels as they cross the flangeways therein, the force of the blow of the wheel is transmitted through the hard center to the track rails and foundation of the structure.

The double-pointed frog shown in Figs. 3 and 4 embraces practically the same features as the single-pointed frog just described, and comprises a hard center 3 having straight-faced sides which are embraced by continuous rails 1 and 2, the hard center being provided with flangeways 4 and 5 and the heads of the rail 2 being provided with grooves or notches 4^a and 5^a. Guide rails 6

and 7 and filling blocks 9 are also provided and all of the members which form the structure are secured together by bolts.

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

1. A railway track structure comprising a hard center provided with flangeways, continuous track rails embracing said hard center, guide rails which are spaced away from the track rails by filling pieces, and devices passing through all of said members to connect them securely together; substantially as described.

2. A track structure comprising a hard center and continuous track rails which embrace and support said hard center, said hard center being of approximately diamond shape and having all of its side edges straight and uniform; substantially as described.

3. A track structure comprising a hard center of approximately diamond shape provided with flangeways, and track rails embracing said hard center and being continuous for the entire length of said hard center, the side edges of said hard center being free from curves; substantially as described.

4. A railway track structure comprising a hard center, track rails which embrace and support said hard center and are continuous for the entire length of the hard center, flangeways formed in the upper surface of the hard center, guide rails, and means for connecting all of said members together; substantially as described.

5. A railway frog comprising a hard center of approximately diamond shape which is provided with flangeways, continuous track rails which embrace said hard center and support same, guide-rails, filling pieces interposed between said track rails and guide rails, fastening devices passing through all of said members, a riser interposed between the track rails at the heel of the frog, and a block interposed between the track rails at the crotch of the frog; substantially as described.

In testimony whereof, I hereunto affix my signature, in the presence of two witnesses, this 23rd day of June 1906.

ROBERT E. EINSTEIN.

Witnesses:

WELLS L. CHURCH,
GEORGE BAKEWELL.