No. 856,125. PATENTED JUNE 4, 1907.

M. E. WOODBURY.

CONCRETE TIE.

APPLICATION FILED MAR. 11, 1907.

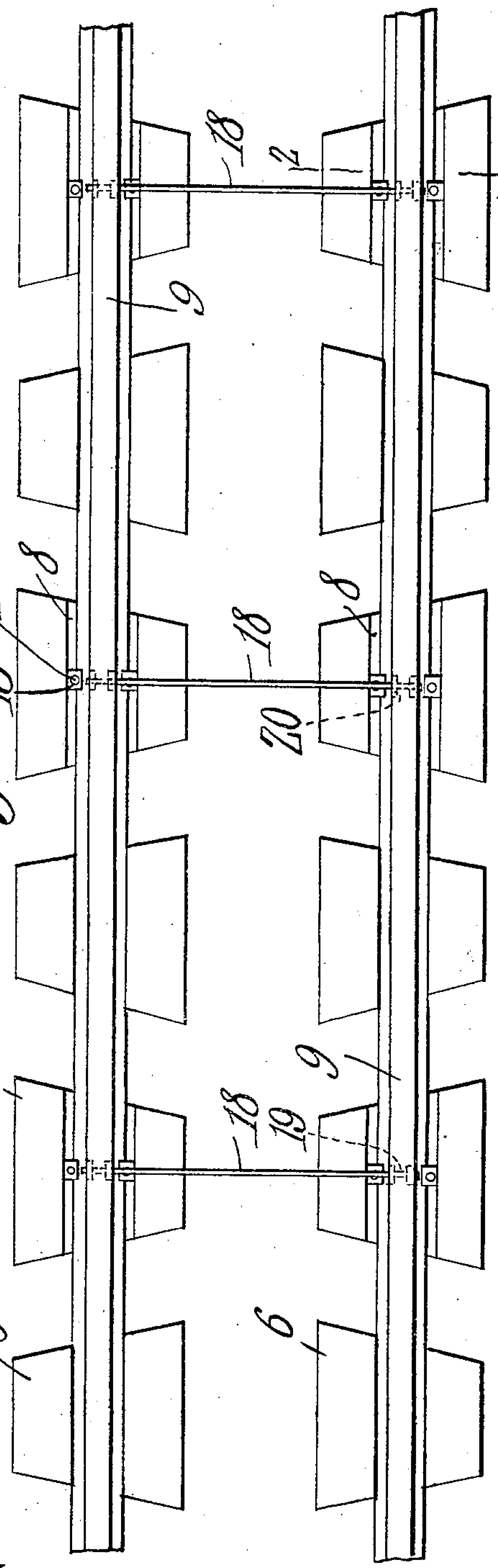

Fig. 1.

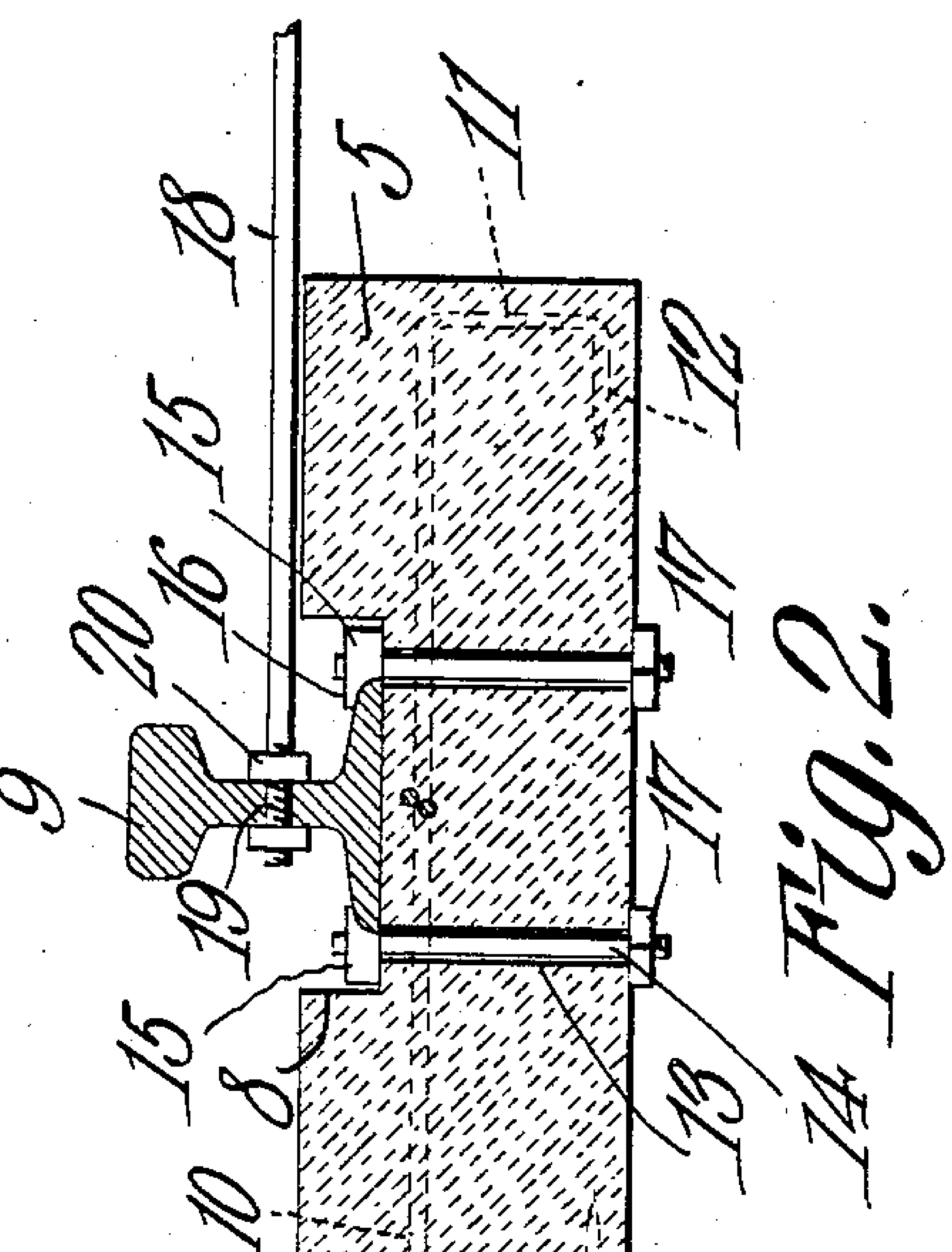

Fig. 2.

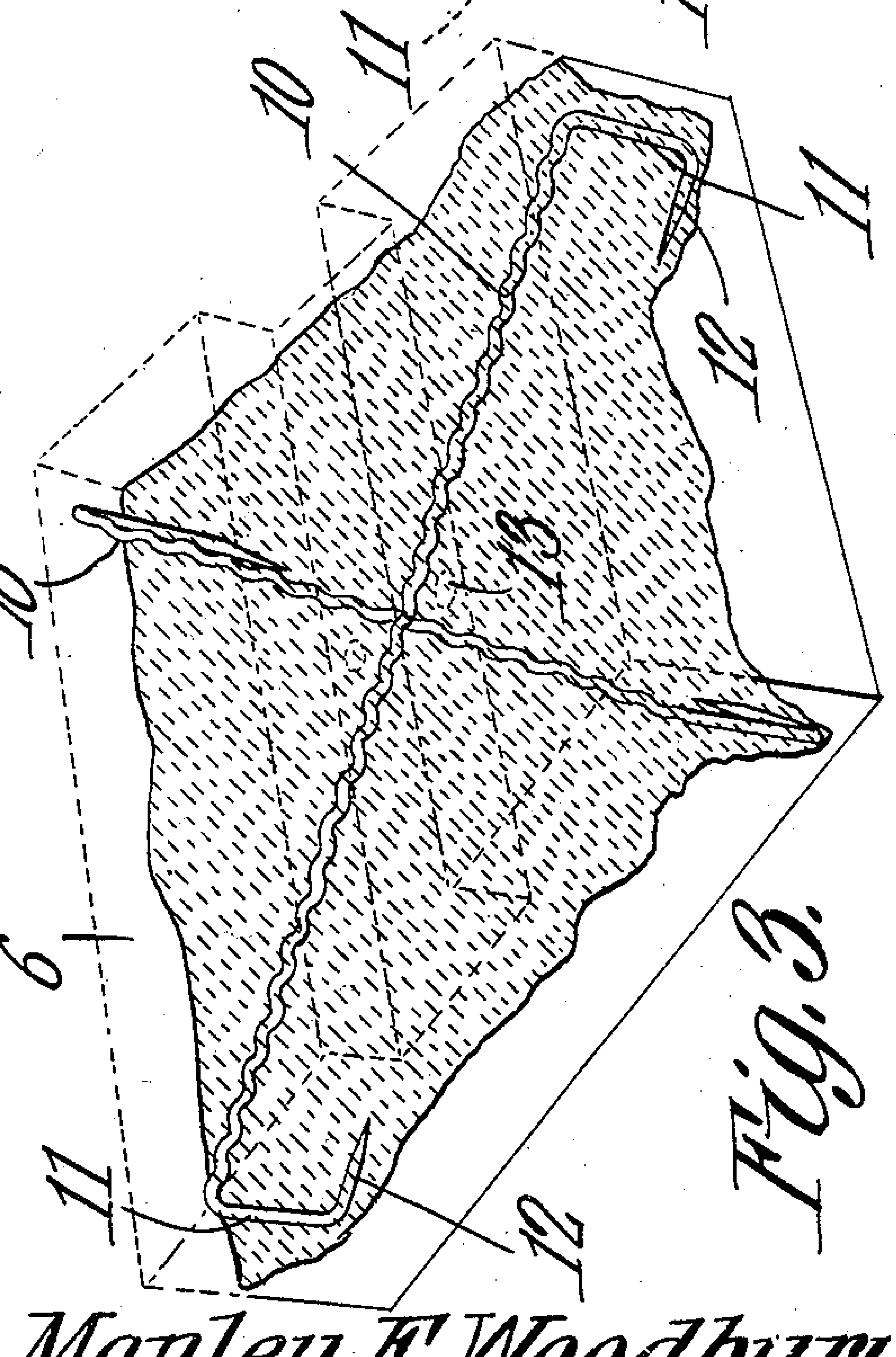

Fig. 3.

WITNESSES:

Manley E. Woodbury,
INVENTOR

By C. A. Snow & Co.
ATTORNEYS

UNITED STATES PATENT OFFICE.

MANLEY E. WOODBURY, OF BOWLING GREEN, OHIO.

CONCRETE TIE.

No. 856,125. Specification of Letters Patent. Patented June 4, 1907.

Application filed March 11, 1907. Serial No. 361,748.

To all whom it may concern:

Be it known that I, MANLEY E. WOODBURY, a citizen of the United States, residing at Bowling Green, in the county of Wood and State of Ohio, have invented a new and useful Concrete Tie, of which the following is a specification.

This invention relates to concrete rail-way ties and has for its object to provide a strong, durable tie which will effectually resist longitudinal and lateral strains incident to the passage of cars and other rail-way rolling stock.

A further object of the invention is to provide an artificial stone rail-way tie including a plurality of sections detachably connected by transverse tie rods and having seating recesses formed therein for the reception of the rails.

A further object is to provide a rail-way tie the opposite sections of which are substantially tri-angular in shape and positioned beneath the rails with the reduced end of one section disposed in alinement with the enlarged end of an adjacent section thereby to form a strong, durable foundation or bed for the rails.

A still further object of the invention is to generally improve this class of devices so as to increase their utility, durability and efficiency.

Further objects and advantages will appear in the following description, it being understood that various changes in form, proportions and minor details of construction may be resorted to within the scope of the appended claims.

In the accompanying drawings forming a part of this specification: Figure 1 is a top plan view of a road bed constructed in accordance with my invention. Fig. 2 is a transverse sectional view taken on the line 2—2 of Fig. 1. Fig. 3 is a perspective view partly in section of one of the blocks showing the manner of reinforcing and strengthening the same.

Similar numerals of reference indicate corresponding parts in all of the figures of the drawings.

The improved rail-way tie forming the subject matter of the present invention includes two sections 5 and 6 each preferably in the form of a trapezoid, and constructed of cement, concrete or other plastic material.

The lower face 7 of each block is preferably smooth and unobstructed to form a flat bearing surface for engagement with the road bed while the upper face of the block is formed with a transverse seating groove or recess 8 for the reception of the rails 9.

The blocks are preferably reinforced and strengthened by the provision of diagonally disposed corrugated reinforcing rods 10 which intersect at the center of the block and have their opposite ends bent downwardly to form depending arms 11 terminating in laterally extending anchoring members 12.

The arms 11 and anchoring members 12 are preferably disposed at the corners of the block so as to prevent the cement or other plastic material forming the body of said block from cracking or disintegrating when subjected to longitudinal and lateral strains incident to the passage of cars and other rail-way rolling stock.

The recesses in some of the tie sections are wider than the recesses in adjacent sections and are pierced by vertically disposed openings 13 for the reception of rods or bolts 14.

The rods or bolts 14 are provided with terminal clamps 15 having their edges inclined or beveled, as indicated at 16 to conform to the base of the adjacent rail so that by tightening the clamping nuts 17 the members 15 will be clamped in engagement with the rail and thus effectually prevent accidental displacement of the same.

Attention is here called to the fact that the bolts 14 are disposed one on each side of the intersection of the reinforcing rods 10 so that the cement wedged between the reinforcing rods will form a firm anchorage for the fastening devices 14.

Extended transversely across the rails at each cross tie is a brace rod 18 having its opposite ends threaded and extended through suitable perforations 19 formed in the web of the adjacent rail, there being clamping nuts 20 engaging the threads on the brace rods 18 and bearing against the adjacent face of the web for locking the braces in position on the rails.

It will thus be seen that the transverse braces 18 serve as a means for connecting the block sections of each cross tie and also as a means for properly spacing the rails.

In constructing the road bed the block sections 5 and 6 are preferably positioned beneath the rails with the reduced end of one section disposed in alinement with the enlarged end of an adjacent section thereby forming a firm, solid foundation for the rails.

If desired, however, the several block sections may be laid with the enlarged ends of the blocks or sections disposed in alinement with each other on the outside of the rails or the reduced ends of the blocks disposed in alinement with each other on the outside of the rails.

From the foregoing description it is thought that the construction and operation of the device will be readily understood by those skilled in the art and further description thereof is deemed unnecessary.

Having thus described the invention what is claimed is:

1. A rail-way tie including a plurality of trapezoidal sections having their adjacent ends spaced apart and their upper faces formed with seating grooves for the reception of the rails, and brace rods connecting the rails and serving to maintain the tie sections in spaced relation.

2. A rail-way tie including a plurality of trapezoidal concrete sections having their inner ends spaced apart and each having a flat base and provided with a transverse seating groove for the reception of the adjacent rail, and braces connecting said rails and serving to maintain the tie sections in spaced relation.

3. A rail-way tie including a plurality of trapezoidal concrete sections reinforced by diagonal strengthening rods and having seating grooves formed in their upper faces for the reception of the adjacent rails, and transverse braces connecting the rails and serving to maintain the tie sections in spaced relation.

4. A rail-way tie including a plurality of trapezoidal concrete sections having transverse grooves formed in their upper faces for the reception of adjacent rails, intersecting reinforcing rods embedded in each section and having their opposite ends bent downwardly and thence extended inwardly to form laterally projecting anchoring members, transverse brace rods extending through openings formed in the web of the rail and having their opposite ends threaded, and clamping nuts engaging the threads on the braces and bearing against the rails for maintaining the tie sections in spaced relation.

5. A rail-way tie including trapezoidal concrete sections each having a seating groove formed in its upper face and intersected by vertically disposed bolt-receiving openings, said grooves being adapted to receive the rails, intersecting reinforcing rods embedded in each section, bolts passing through the openings and engaging the base of the adjacent rail, and brace rods connecting the rails and serving to maintain the tie sections in spaced relation.

6. A road construction including a plurality of cross ties each formed of trapezoidal sections spaced apart and provided with seating recesses for the reception of the rails, said tie sections being laid with the enlarged end of one section disposed in alinement with the reduced end of an adjacent section, and transverse braces connecting the rails and serving to maintain the sections of the several ties in spaced relation.

7. A road construction including a plurality of cross ties each formed of trapezoidal sections spaced transversely and provided with seating grooves for the reception of the rails, some of the seating grooves being wider than other and intersected by vertical openings, said tie sections being laid with the enlarged end of one section disposed in alinement with the reduced end of an adjacent section, brace rods connecting the rails and serving to maintain the sections of each tie in spaced relation, and fastening devices passing through the openings in some of the tie sections and engaging the base of an adjacent rail for locking said rail in the adjacent seating groove.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

MANLEY E. WOODBURY.

Witnesses:
GUY C. NEARING,
ZOLA BRISBIN.