

No. 695,823.

Patented Mar. 18, 1902.

P. J. MORAN.  
RAILROAD BED OR TIE.

(Application filed Jan. 21, 1901.)

(No Model.)

2 Sheets—Sheet 1.

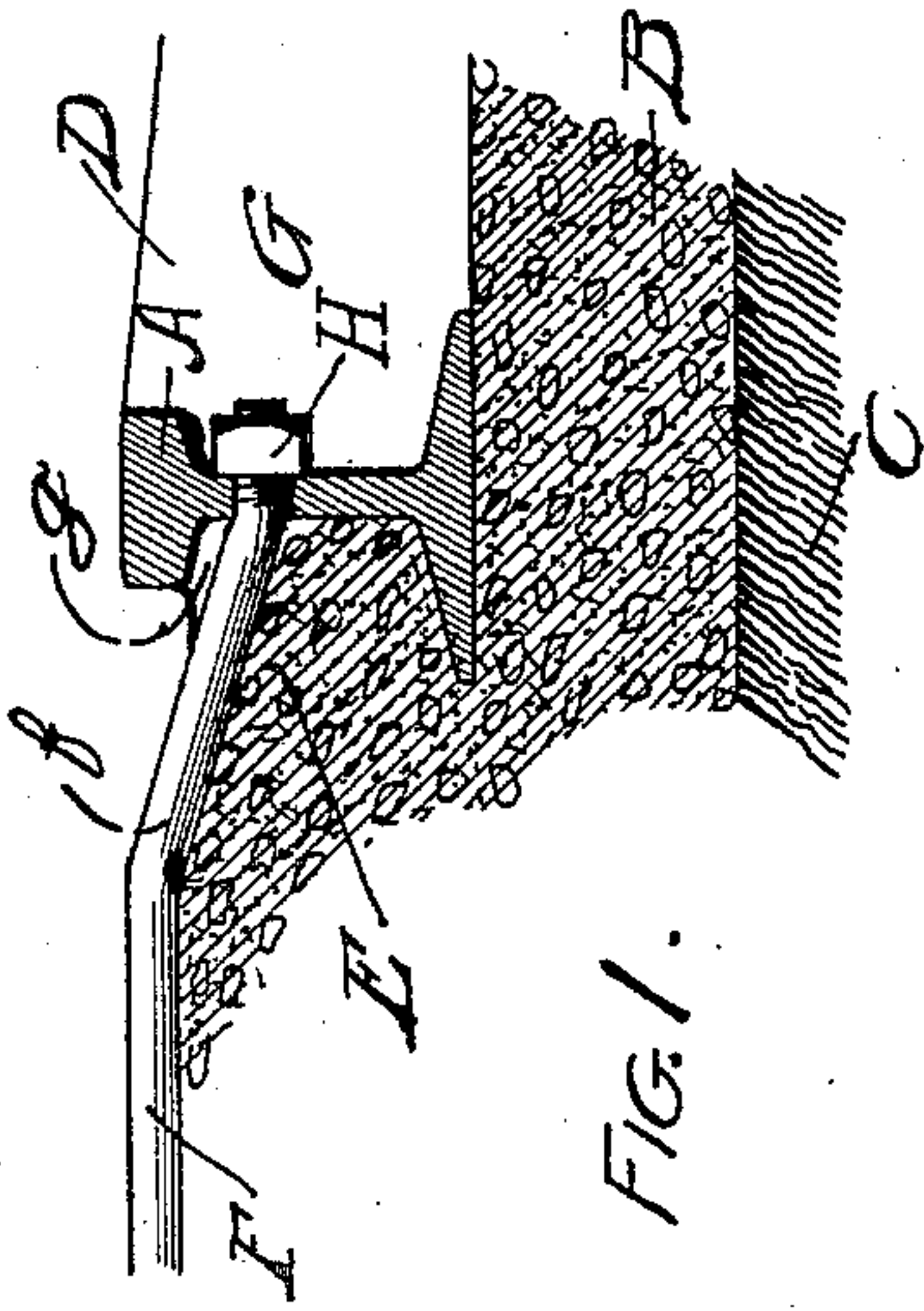


FIG. 1.

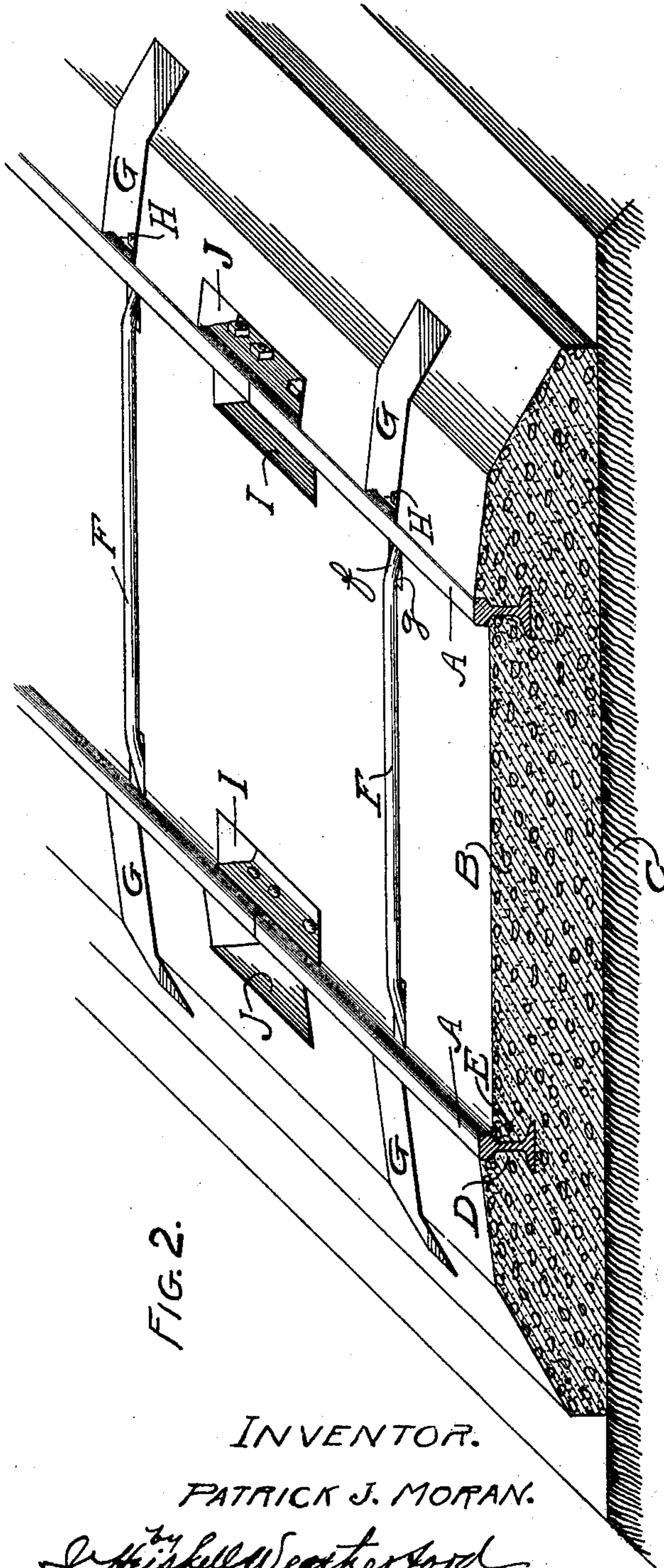


FIG. 2.

WITNESSES.

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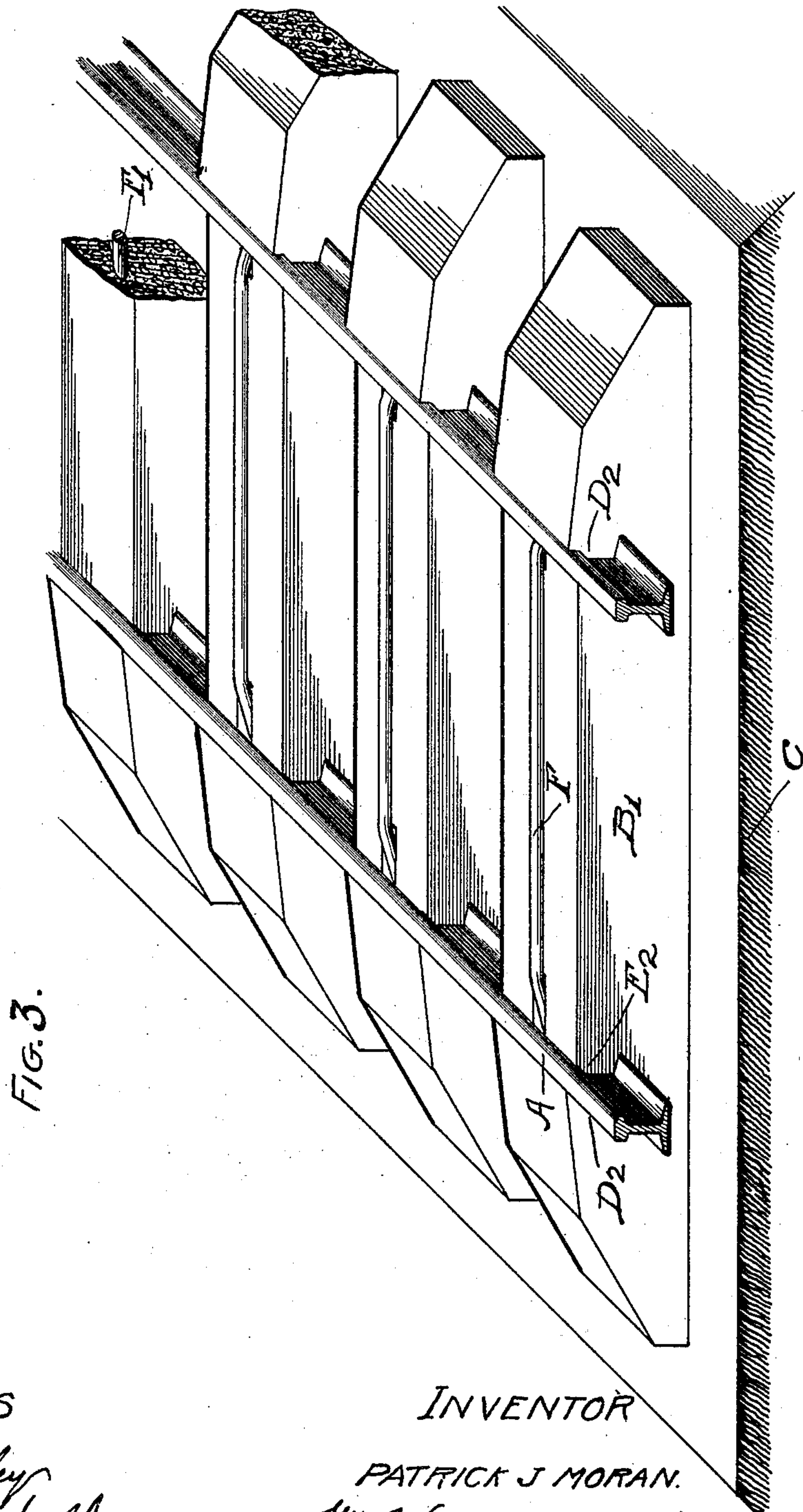
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WITNESSES

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# UNITED STATES PATENT OFFICE.

PATRICK J. MORAN, OF MEMPHIS, TENNESSEE.

## RAILROAD BED OR TIE.

SPECIFICATION forming part of Letters Patent No. 695,823, dated March 18, 1902.

Application filed January 21, 1901. Serial No. 44,101. (No model.)

*To all whom it may concern:*

Be it known that I, PATRICK J. MORAN, a citizen of the United States, residing at Memphis, Shelby county, State of Tennessee, have invented certain new and useful Improvements in Railroad Beds or Ties, of which the following is a specification.

My invention relates to certain new and useful improvements in railroad and other car beds or ties. It has for its object to provide a solid and permanent bed or tie which will hold the rails positively and without the use of spikes, bolts, or other common means of fastening them down and to also minimize the effect of joints by providing a permanent foundation under the rail at the joint and a rigid support for lateral movement at or near the joint. I carry out these objects as will be more fully hereinafter set out in the specifications, drawings, and claims.

In the drawings, Figure 1 is a sectional detail showing a T-rail. Fig. 2 is a mechanical perspective showing a short section of continuous bed. Fig. 3 is a mechanical perspective of the bed laid in the form of ties.

Referring now to the drawings, in which like letters indicate the same or like parts in all the views, A is an ordinary railroad-rail which is supported and held by a concrete tie or foundation B. This foundation differs from all heretofore used in that it closely embraces the rail A at D and E on the outer and inner side of same, respectively, and thereby holds the rail against movement of any kind whatsoever without the use of spikes, bolts, or like extraneous means. The concrete at D comes flush, or nearly so, with the top of the rail at the outside, while the part at E comes only to the bottom of the ball of the rail, thus supporting the rail completely on the outside and as thoroughly on the inside as is permissible without interfering with the flange of the wheel.

The gist then of my invention consists in thus supporting and holding the rail by surrounding it on three sides with concrete without interfering, however, with those parts of the rail which come in contact with the wheels.

F represents tie-rods which extend across the top of the concrete (or are slightly embedded in same) and are bent down at the ends *f* through depressions *g* in the concrete

and are thence passed through the rail to support the concrete foundation should a crack develop. G is an opening left in the concrete to permit access to the nuts H on the end of these tie-rods. The position of the tie-rod makes, in effect, with the concrete a truss which is very effective in holding the foundation together in case of failure from any cause. The holes G may be made by inserting blocks of wood, tamping the concrete around them, and removing them after same has set. The detail of the end of this tie-rod is best shown by the detail section, Fig. 1.

In Fig. 3 I show the ends of the tie-rods F and the nuts closely surrounded by the concrete, thus making same inaccessible.

I and J are openings left at the joint between the rails to permit access to the bolts and angle-bars. These openings are not absolutely necessary and may be omitted, if so desired. The angle-bars may also be omitted, in which case no openings are left at the rail ends. Where openings have been left, it is preferable if they are to be filled that the edges be coated with soft wash, so that the new cement will not bond with the old, and that the openings be then filled with concrete, which, not bonding with the original bed, may be broken out and removed without breaking or disturbing same. The same material, with the addition of new cement, may be reused, if so desired.

In Fig. 3 I show a modified form of my road-bed, which differs from that first shown in that the foundation is made up of ties which are placed as is commonly the practice.

D<sup>2</sup> and E<sup>2</sup> show more clearly the form of the concrete where it fits against a T-rail. The tie-rod, while preferably used, is not necessarily so, since where good concrete is used the danger of breakage is so small that in many cases they are entirely unnecessary. If so desired, a wider tie may be used at the rail-joint in order to thoroughly support both rail ends, in which case the concrete would be made to closely embrace the angle-bar or else be made wide enough to permit openings I and J, such as are in the continuous bed.

While I have in this specification used the word "concrete," I wish it distinctly understood that I do not intend by this to indicate



a specific mixture of cement, stone, and sand, but rather to use the term generically as embracing all that class of materials in which a bonding material is used which may serve the purpose of the cement. Notable among these is asphalt, which, though ordinarily too costly, may be used in special cases.

Having now fully described my invention, what I claim, and desire to secure by Letters Patent in the United States, is—

1. The combination with the rails properly spaced, of a support of concrete surrounding the rails on three sides but leaving the top and inside edges of the balls of same free, and tie-rods extending across the top of said support substantially at right angles to the rails, substantially as shown and described.

2. The combination with rails properly spaced, of a continuous support of concrete surrounding the rails on three sides, but leaving the top of the rails and the inside edges of the balls of same free, and tie-rods extending across the top of said support at right angles to the rails, substantially as shown and described.

3. The combination with rails properly spaced, of a continuous bed of concrete surrounding the rails on three sides and supporting and binding same but leaving the top of the rail and the inside edges of the balls of same free, the said bed having openings at the rail-joints to permit access to the angle-bars and tie-rods crossing over the top of the bed substantially at right angles to the rails, the ends of said tie-rods being bent down to pass through the web of the rail, substantially as shown and described.

4. The combination with rails properly

spaced, of a continuous bed of concrete surrounding the rails on three sides and supporting and binding same, but leaving the top of the rail and the inside edges of the balls of same free, the said bed having openings at the rail-joints to permit access to the angle-bars, and tie-rods crossing over the top of the bed substantially at right angles to the rails, the ends of said tie-rods being bent down to pass through the web of the rail, nuts on the ends of said rods and openings outside the rails in the said concrete bed to permit access to the said nuts, substantially as shown and described.

5. The combination with rails properly spaced, of a continuous bed of concrete supporting and surrounding the rails and tie-rods extending across the top of the bed at right angles to the rails, substantially as shown and described.

6. The combination with rails properly spaced, of a support of concrete binding and bracing the rail on the bottom and sides, the said support having openings at the rail-joints to permit access to the angle-bars, and tie-rods crossing over the top of the bed substantially at right angles to the rails, the ends of said tie-rods being bent down to pass through the web of the rail, substantially as shown and described.

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

PATRICK J. MORAN.

Witnesses:

J. S. ROSAMOND,  
J. R. FLIPPIN.