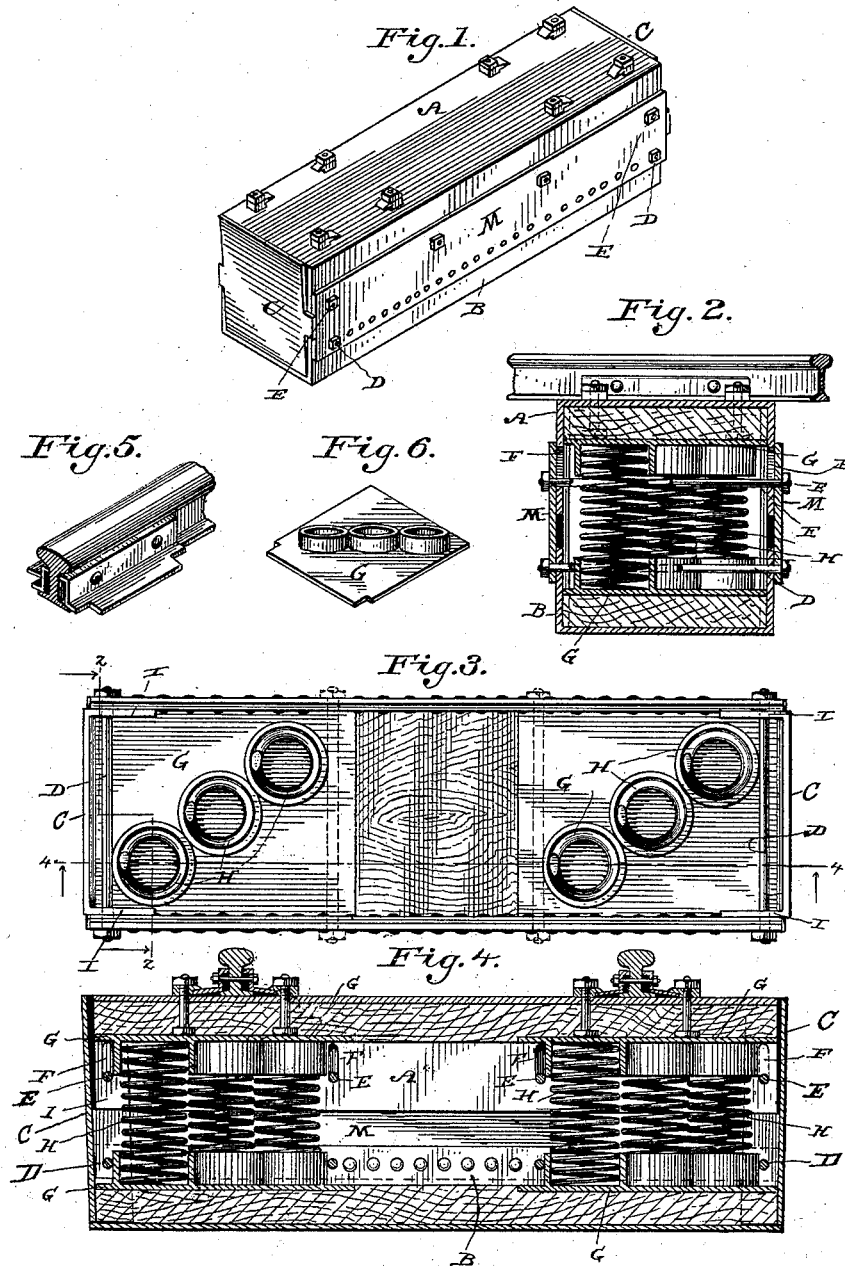


(No Model.)

F. BARHYDT.
METALLIC RAILROAD TIE.

No. 382,855.

Patented May 15, 1888.



Witnesses,

H. W. Elmore

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UNITED STATES PATENT OFFICE.

FRANK BARHYDT, OF SCHENECTADY, NEW YORK.

METALLIC RAILROAD-TIE.

SPECIFICATION forming part of Letters Patent No. 382,855, dated May 15, 1888.

Application filed February 26, 1887. Serial No. 228,689. (No model.)

To all whom it may concern:

Be it known that I, FRANK BARHYDT, a citizen of the United States, residing at the city of Schenectady, in the county of Schenectady and State of New York, have invented a new and useful Metallic Railroad-Tie, of which the following is a specification.

The objects of my invention are to prevent the rapid decay incident to wooden ties, to increase the smoothness and elasticity of the railroad-track, and particularly to prevent the jar which takes place on the wheels passing from the end of one rail to the other when wooden rails are used. These objects are accomplished by means of my metallic railroad-tie illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of the tie ready for the rails to be fastened; Fig. 2, an end view of the tie as it appears after the removal of the end plate; Fig. 3, a top view as it appears after the removal of the top plate; Fig. 4, a vertical section taken near the side, showing the springs and the manner in which the rail is fastened; Fig. 5, a perspective view of a section of a rail with the fish-plates ready to be bolted to the tie, and Fig. 6 a perspective view of one of the four cast-iron plates having annular raised ribs, forming sockets into which the ends of the springs rest.

Similar letters refer to similar parts throughout the several views.

The plates A B are bent longitudinally, so as to form side flanges, as shown, and to the flanges of the plate B are connected, by the bolts D D, &c., the exterior plates, M M, forming extensions of the flanges of the said plate B. The bolts D also pass through the flanges I I of the end plates, C C. The side flanges of the plate A pass between the plates M M, so as to permit of an up-and-down movement without undue friction. Bolts E E pass through slots F F in the side flanges of the plate A and connect the plates M M. At each end of the tie, under the place where the rail is to cross, are the cast-iron plates G G both above and below. Between these plates are the spiral steel springs H H, the ends of the same resting in the sockets of the cast-iron plates. (Shown in Fig. 6.) The end plates, C

C, are held in place by the flanges I I, through which pass the bolts D D.

The springs H H are of sufficient number and strength to support the ordinary weight which rests upon the wheels of a locomotive, the top plate remaining normally in the position shown in Figs. 2 and 4, and the upward pressure of the springs being just sufficient to sustain the weight which would rest on the tie when any wheel of a train at rest is upon it. When any greater pressure is exerted upon the top plate—such as rolling-stock of extraordinary weight or such as is caused by an uneven wheel—such additional weight or momentum will cause the springs H H to give to an amount sufficient to overcome such additional weight, the plate A being forced down over the bolts E E to a corresponding degree. The tie which is at the end of either or both rails may have larger or stronger springs than those between the ends. The rails are attached to the top plate by means of the fish-plates shown in Fig. 5 and the bolts shown in Fig. 4. By means of this arrangement a railroad-tie is obtained which, by reason of its durability, is more economical than a wooden tie, and which, by reason of its elasticity, counteracts all heavy shocks and the wear and tear of rolling-stock caused thereby.

What I claim, and desire to secure by Letters Patent of the United States, is—

1. A railroad-tie consisting of an upper and a lower section and springs intermediate between the two sections, said upper section being normally held at a point between the extreme limits of expansion and contraction of said springs, thereby compressing the latter to sustain without contraction a given load, while at the same time permitting of further contraction to compensate for heavier loads, substantially as described.

2. A railroad-tie consisting of an upper and a lower section and springs intermediate between the two, the sections being provided with stops to prevent separation of the sections from each other, and retaining the springs in a normally-compressed condition corresponding to a given load, substantially as described.

3. A railroad-tie consisting of an upper and

a lower section and compressed springs intermediate between the two, one of said sections being provided with slots and the other with cross-bolts engaging within said slots, substantially as described.

5 4. A metallic railroad-tie consisting of a U-shaped base having side flanges and cross-bolts, a U-shaped upper section fitting within

said flanges and having slots, springs intermediate between the base and upper section, 10 and end caps, substantially as described.

FRANK BARHYDT.

Witnesses:

EVERETT SMITH,
JAMES A. VAN VOAST.