

J. O. ABBOTT.
RAILWAY TIE.
APPLICATION FILED NOV. 4, 1911.

1,020,173.

Patented Mar. 12, 1912.

FIG. 1

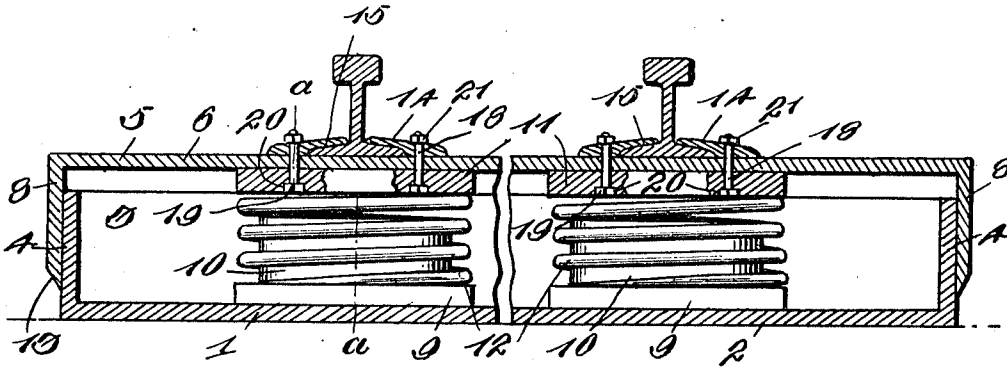


FIG. 2

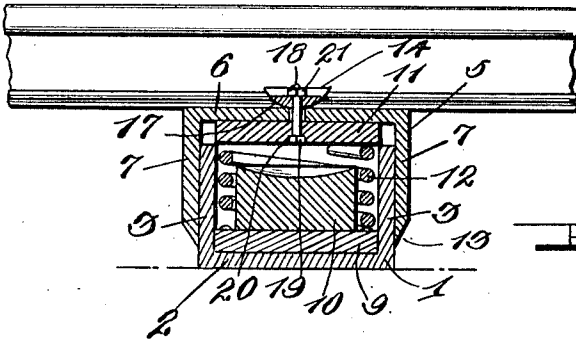
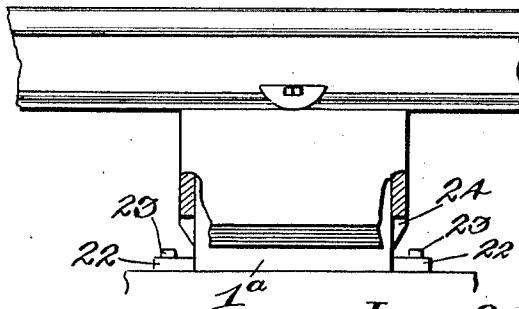


FIG. 3



Witnesses

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RAILWAY-TIE.

1,020,173.

Specification of Letters Patent.

Patented Mar. 12, 1912.

Application filed November 4, 1911. Serial No. 658,548.

To all whom it may concern.

Be it known that I, JASON O. ABBOTT, a citizen of the United States, residing at Hebron, in the county of Licking and State of Ohio, have invented certain new and useful Improvements in Railway-Ties, of which the following is a specification, reference being had to the accompanying drawings.

This invention is an improved railway tie comprising a pair of members, one of which is vertically movable on the other, and supporting springs which serve to normally raise the upper member and permit it to gradually yield and descend under the weight of a passing train, thereby greatly reducing stress on the tie and also causing the train to run much more smoothly and easily.

The invention consists in the construction, combination and arrangement of devices hereinafter described and claimed.

In the accompanying drawings: Figure 1 is a vertical longitudinal central sectional view of a railway tie constructed in accordance with my invention; Fig. 2 is a transverse sectional view of the same on the plane indicated by the line *a-a* of Fig. 1; and Fig. 3 is a transverse sectional view showing a modified form of my improved tie especially adapted for use on a bridge or trestle.

The base member 1 of my improved tie is made of metal, preferably iron or steel, is hollow, is open in its upper side and comprises a bottom 2, the vertical side walls 3, and the vertical end walls 4. The upper member 5 of the tie is also hollow and made of metal and comprises a top 6, the depending vertical side walls 7 and the depending vertical end walls 8. The upper member is slightly longer and wider than the lower member so that the latter fits within the upper member, the walls of the lower and upper members being disposed in overlapping relation as shown. In the base member 1, at a suitable distance from the ends thereof, are a pair of plates 9 which are bolted on the upper side of the bottom thereof as shown, and from each of the said plates rises a block 10. These blocks are elliptical, or substantially so, in plan and their width is somewhat less than that of the space between the side walls 3 of the lower member so that the said blocks are spaced from the said side walls.

A pair of plates 11, which are similar to the plates 9, are secured to the under side of the upper member 5. The width of these plates 11 is equal to that of the space between the side walls 3 of the lower member and, hence, the said plates are adapted to enter the lower member when the upper member is forced downwardly, against the resistance of the springs 12, by the weight of a passing train. The springs 12 are coiled springs of suitable size and strength and are disposed around the blocks 10, their lower ends bearing on the plates 9 and their upper ends bearing against the under sides of the plates 11. These springs serve to normally support the upper member 5 and the rails thereon at a slight elevation, so that the under side of the top of the upper member is spaced somewhat above the upper edges of the side and end walls of the lower member, but when a train approaches its weight is gradually imposed upon the upper member and the latter is permitted, by the springs 12, to gradually sink until the top of the upper member bears on the upper edges of the side and end walls of the lower member and the plates 11 of the upper member bear on the upper sides of the blocks 10. Hence the springs serve to cushion the upper member of the tie and render the tie springy or resilient, and to such a degree as to greatly relieve the tie of the stress incident to the weight of passing trains and to also enable the trains to run much more smoothly and evenly than heretofore.

The side and end walls of the upper member are beveled on their outer sides, at their lower edges, as at 13, to prevent earth, sand or the like from packing under the edges of the side and end walls of the upper member when the latter is pressed down by the weight of a passing train.

Pairs of clamping plates 14 are employed on the top of the upper member and engage and overhang the base flanges of the railway rails indicated at 15. These clamping plates are slightly rounded on their under sides, as at 17, transversely, to permit them to rock or move angularly to a slight extent on the upper member and the clamping plates are held in place on the upper member by means of bolts 18. The heads of these bolts, indicated at 19, are square or of other than circular form and are countersunk in recesses 20 with which the plates 11 are provided.

The shanks of the bolts pass through alining openings in the plates 11, the top of the upper member, and the clamping plates 14, and nuts 21 are screwed on said bolts and bear on the said clamping plate.

In a modification shown in Fig. 3 the lower member 1^a is provided at suitable points with extensions 22 to bear on the stringers of trestles or bridges and these extensions are provided with openings for the reception of bolts 23 to secure the lower member in place on the trestle or bridge. The walls of the upper member are recessed at their lower edges, as at 24, to clear the said extensions 22 when the upper member is lowered against the tension of its springs.

Having thus described my invention I claim:

1. The herein described railway tie comprising a hollow lower member open on its upper side and having a bottom and vertical side and end walls, plates in the bottom of said lower member extending from side to side thereof, blocks rising from said plates and spaced from the side walls of the lower member, a hollow upper member open on its lower side and comprising a top and depending vertical side and end walls disposed on the outer sides of and vertically movable on the side and end walls of the lower member, plates under the top of the upper member, spaced from the side walls thereof and corresponding in width with the space between the side walls of the lower member so that said plates fit between the sides of the lower member, and supporting springs in the lower member around the blocks thereof and bearing at their lower ends on

the plates in the lower member and at their upper ends under the plates of the upper member.

2. The herein described railway tie comprising a hollow lower member open on its upper side and having a bottom and vertical side and end walls, plates in the bottom of said lower member extending from side to side thereof, blocks rising from said plates and spaced from the side walls of the lower member, a hollow upper member open on its lower side and comprising a top and depending vertical side and end walls disposed on the outer sides of and vertically movable on the side and end walls of the lower member, plates under the top of the upper member, spaced from the side walls thereof and corresponding in width with the space between the side walls of the lower member so that said plates fit between the sides of the lower member, supporting springs in the lower member around the blocks thereof and bearing at their lower ends on the plates in the lower member and at their upper ends under the plates of the upper member, pairs of rail clamping plates arranged on the top of the upper member and bolts securing said rail clamping plates and passing therethrough and also through the top of the upper member and the plates of the upper member.

In testimony whereof I hereunto affix my signature in the presence of two witnesses.

JASON O. ABBOTT.

Witnesses:

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