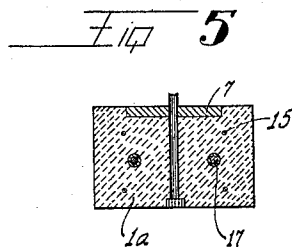
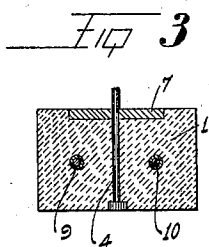
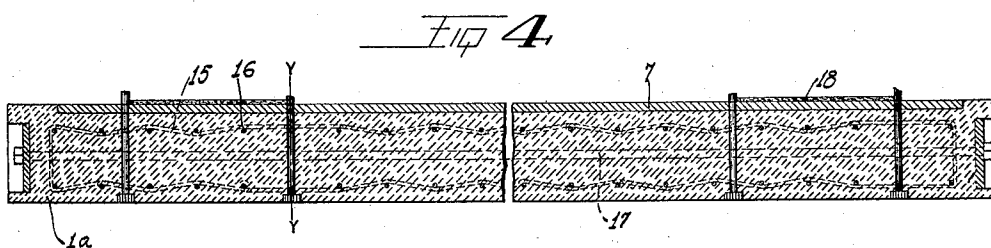
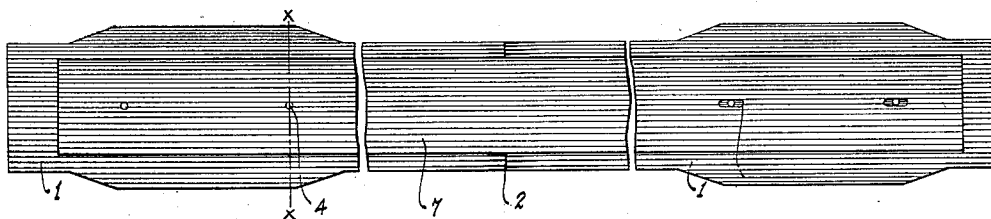
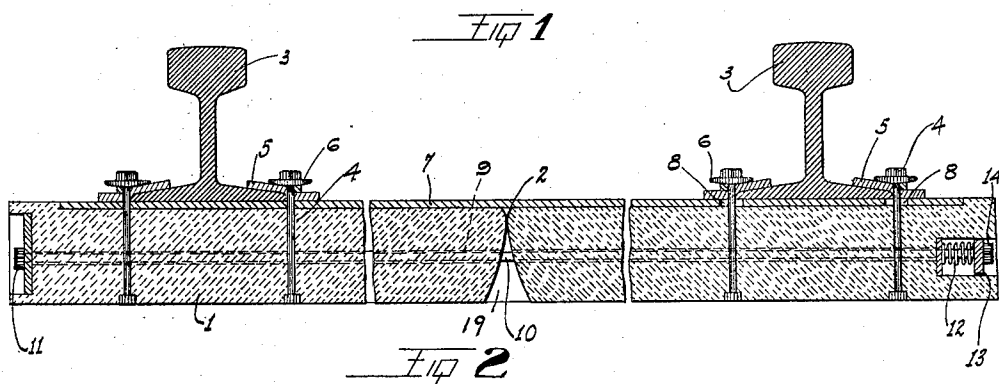


C. E. LEASE.
CONCRETE RAILWAY TIE.
APPLICATION FILED FEB. 10, 1913.

1,073,256.

Patented Sept. 16, 1913.



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CONCRETE RAILWAY-TIE.

1,073,256.

Specification of Letters Patent.

Patented Sept. 16, 1913.

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To all whom it may concern:

Be it known that I, CHARLES E. LEASE, a citizen of the United States, residing at Galt, in the county of Sacramento, State of California, have invented certain new and useful Improvements in Concrete Railway-Ties; and I do declare the following to be a clear, full, and exact description of the same, 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, and to the characters of reference marked thereon, which form a part of this application.

This invention relates to improvements in railway ties used in the construction of railroads for the support of the rails, the object of the invention being to produce a tie constructed of concrete which will be as efficient in use as a wooden tie and at the same time be so constructed as to obviate the danger of its breaking or disintegrating under the continual pounding to which it is subjected by the trains riding over such rails.

A further object of the invention is to produce a simple and inexpensive device and yet one which will be exceedingly effective for the purposes for which it is designed.

These objects, I accomplish by means of such structure and relative arrangement of the parts as will fully appear by a perusal of the following specification and claims.

On the drawings similar characters of reference indicate corresponding parts in the several views.

Figure 1 is a sectional view of my improved tie showing the rails installed thereon. Fig. 2 is a top plan view of the tie without the rails. Fig. 3 is a sectional view taken on a line X—X of Fig. 2. Fig. 4 is a longitudinal section of a modified form of tie from that shown in Fig. 1. Fig. 5 is a sectional view taken on a line Y—Y of Fig. 4.

Referring now more particularly to the characters of reference on the drawings, the numeral 1 designates the tie proper which is constructed of concrete and divided into two parts having their adjacent ends, as at 2, curved for the purpose of permitting a slight oscillating movement between the two as the train rides over the rails 3 for a purpose as will appear.

At each end of the tie, two spaced bolts 4 are embedded through the thickness of the

tie and project above to receive the rail fasteners 5 which are held in position by curved nuts 6 of the usual type. Bolts 4 hold in position a joining plate 7 joining the two parts of the tie 1, one end of said plate 7 being provided with elongated slots 8 through which the corresponding bolts 4 pass in order to allow a slight longitudinal play to one of said parts of the member 1 as will appear.

Projecting longitudinally through the entire tie 1 are sleeves 9 through which project bolts 10 provided with nuts 11 at one end and at the other with springs 12. These springs are disposed around the bolts 10 and interposed between the end of the tie and a plate 13 projecting against the heads 14 of the bolts 10.

In practice, the pounding of the train over the rails 3 tends to sink the ends of the tie downwardly and consequently to force the center of the tie upwardly which would tend to break the same if it were not divided into two parts as shown in Figs. 1 and 2. By so having the same divided and the adjacent ends curved this permits a rocking motion between the two parts which will compensate for its tendency to break in the center. The plate 7 holds the parts together and the springs 12 return them to normal position each time, the slots 8 allowing the movement necessary. This movement of course is very slight and is permitted of by certain flexibility of the bolts 10, thus avoiding the chance of breaking such bolts. Figs. 4 and 5 show how a slotted tie could be constructed with reinforcing wires 15 and 16 woven in and out through the same and fixed longitudinal bolts 17 project through the tie from end to end. In practice, if the pounding of the rails 3 against the plate on the top of the tie should be annoying, I could interpose felt pads 18 between the rails and the plate.

Inasmuch as wooden ties are becoming scarcer and more expensive and metallic ties are not feasible, I believe that a concrete tie constructed and built as specifically shown in Fig. 1 would be very advantageous and practicable inasmuch as the bolt and spring structure holding the divided tie together provides a sufficient resiliency to overcome the disintegrating tendency. I also provide an open space 19 between the adjacent ends of the parts of the tie 1 on

the under side in order to permit the dirt forced toward the center of the tie to move away from the tie without forcing the same upwardly in the middle.

5 From the foregoing description it will be readily seen that I have produced such a device as substantially fulfils the objects of the invention as set forth herein.

10 While this specification sets forth in detail the present and preferred construction of the device, still in practice such deviations from such detail may be resorted to as do not form a departure from the spirit of the invention.

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

20 1. A device of the character described comprising a concrete tie consisting of two parts, the adjacent ends of said parts being curved, a plate securing said parts, one of

said parts being capable of a slight movement longitudinally of said plate, bolts projecting through said parts and resilient means on said bolts, as described. 25

2. A device of the character described consisting of two parts, bolts projecting through said parts, springs interposed between the end of one of said parts and the heads of said bolts, a plate mounted on said parts, one end of said plate being fixed stationary with respect to one of said parts and the other end of said plate being capable of a slight longitudinal movement on the other of said parts, as described. 30 35

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

CHARLES E. LEASE.

Witnesses:

STEPHEN N. BLEWETT,

CLARENCE M. SMITH.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."