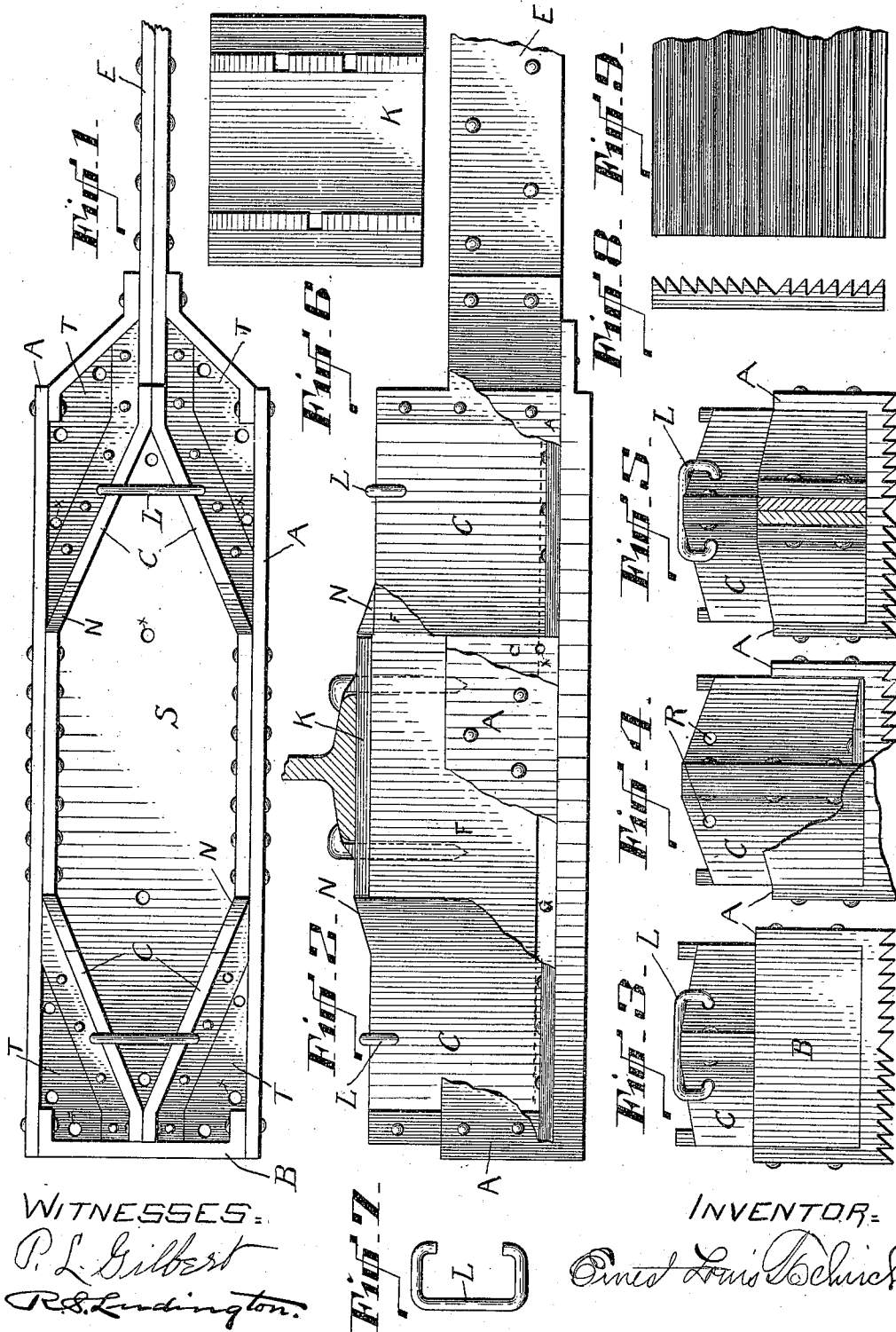


E. L. TSCHIRCH.
RAILROAD TIE.
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975,002.

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WITNESSES:
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UNITED STATES PATENT OFFICE.

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RAILROAD-TIE.

975,002.

Specification of Letters Patent.

Patented Nov. 8, 1910.

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To all whom it may concern:

Be it known that I, ERNEST L. TSCHIRCH, a citizen of the United States, residing in the county of Douglas, State of Washington, have invented a new and useful Improvement in Railroad-Ties, of which the following is a specification.

My invention relates to improvements in railroad ties, in which I provide a metallic tie and encompassed blocks to which the rails are spiked.

The object of my improvement is to substitute for the wooden tie in common use a structure or device which will economize in timber, yet retain the elasticity peculiar to the wooden tie, to prevent the rails spreading by providing safety guards integral with the metallic tie, to keep the tie tamped by a system of conduits and ridges on and in the metallic framework of the tie, and to increase the life of the working parts of the tie.

In the device of my invention, in the preferred construction, I provide a metal tie of built up parts, provided with recesses in either end, in which are placed wooden blocks. Surrounding the recesses or compartments holding the wooden blocks are other compartments in which sand or other fine ballast may be placed to add weight to the tie, and also to feed the conduits leading to the tamping device. On the sides of the compartments for holding the wooden blocks are projections integral with said sides, extending upward on either side of the place for the rail, to prevent the rail from moving laterally or spreading.

I have illustrated my invention in the accompanying drawings, wherein like letters refer to like parts in the several figures, and in which—

Figure 1 is a plan view of one end of the tie; Fig. 2 is an elevation of the same, the portions of the sides cut away to indicate the construction; Fig. 3 is an end view; Fig. 4 is a view from the center of the tie looking toward the end, with portions of the surrounding frame work cut away to show the outside of the compartment holding the wooden block; Fig. 5 is a similar view with the outside compartment intact; Fig. 6 is a rail plate; Fig. 7 is the spring staple for holding the wooden blocks in place; Figs. 8 and 9 are details of the notched or serrated or saw tooth bottom of the tie ends.

The tie is a combination of built up metallic parts, which form two oblong compart-

ments at each end of the tie, one of the same being illustrated in Fig. 1. The compartments are rigidly connected by vertical plates, E, which are integral with portions of the built up compartments. The oblong compartment has two parallel sides, A A Fig. 1. The square end, B, Fig. 1, and the corners of this oblong compartment are cut off to form adjacent compartments for ballast, T Fig. 1. The compartment for holding the wooden bearing, S, is higher and its sides extend above the adjacent ballast compartments. The wooden bearing compartments are wedge shaped at the ends. Over the points are the spring staples, L L Figs. 1 and 7, adapted to be held in place by the holes, R Fig. 4, and thereby to hold the wooden bearing in place. In the bottom of the compartments are provided channels or openings X, those in the ballast being for the purpose of conducting the dirt or ballast to the under side of the tie to fill in the cavities that may be occasioned by the traffic over the road, while the channels or openings X in the bearing compartments are for the purpose of draining off any moisture, keeping the wooden bearing dry, and thereby preserving it from decay. The bottom of the metallic end has saw tooth ridges, designed to separate and pack the ballast fed from the ballast compartments, and thereby make the tie practically self tamping. In the sides C C of the bearing compartment are provided projections, N N, adapted to extend above and engage the rail plate, K Figs. 2 and 6, and thereby to prevent the rail from spreading or moving laterally.

In the preferred construction I place between the wooden bearing and the metallic framework a layer of resilient substance, such as asphaltum, upon which to rest the wooden bearing. By the construction of the wooden bearing, I can use the same in four different positions: first, in its normal position; second, turning the wooden bearing over end to end; third, by taking it out and turning it over; fourth, turning it end to end with the bottom side up, thus increasing the wearing life of the wooden part approximately three hundred per cent.

Having described my invention, what I claim as new, and desire to secure by patent, is:

1. In a metallic railroad tie, the combination with built up compartments at either end of the tie, of wooden bearings adapted

to fit in said compartments, of adjacent compartments for ballast and of openings for conducting said ballast to the under side of said tie, substantially as described.

5 2. In a metallic railroad tie, the combination with built up compartments at either end of the tie, of wooden bearings adapted to fit in said compartments, of adjacent compartments for ballast, of openings for conducting said ballast to the under side of said tie, and of serrations on the bottom of the metallic compartments, substantially as described.

15 3. In a metallic railroad tie, the combination with built up compartments at either end of the tie, of wooden bearings adapted to fit in said compartments, of adjacent compartments for ballast, of openings for conducting said ballast to the under side of said tie, of serrations on the bottom of the metallic compartments, and of projections integral with the sides of the bearing compartment adapted to engage the rail plate and prevent rail spreading, substantially as described.

25 4. In a metallic railroad tie, the combination with built up compartments at either end of the tie, of wooden bearings adapted to fit in said compartments, of means for

holding said bearings in place, of adjacent compartments for ballast, of openings for conducting said ballast to the under side of said tie, of serrations on the bottom of the metallic compartment, and of projections integral with the sides of the bearing compartment adapted to engage the rail plate and prevent rail spreading, substantially as described. 30 35

5. In a metallic railroad tie, the combination with built up compartments at either end of the tie, of wooden bearings adapted to fit in said compartments, of means for holding said bearings in place, of a resilient body between the wooden bearing and the bottom of the compartment holding the bearing, of adjacent compartments for ballast, and of openings for conducting said ballast to the under side of said tie, substantially as described. 40 45

In witness whereof I have hereunto subscribed my name in the presence of two witnesses. 50

ERNEST LOUIS TSCHIRCH.

Witnesses:

R. S. LUDINGTON,
F. E. McCUTCHIN.