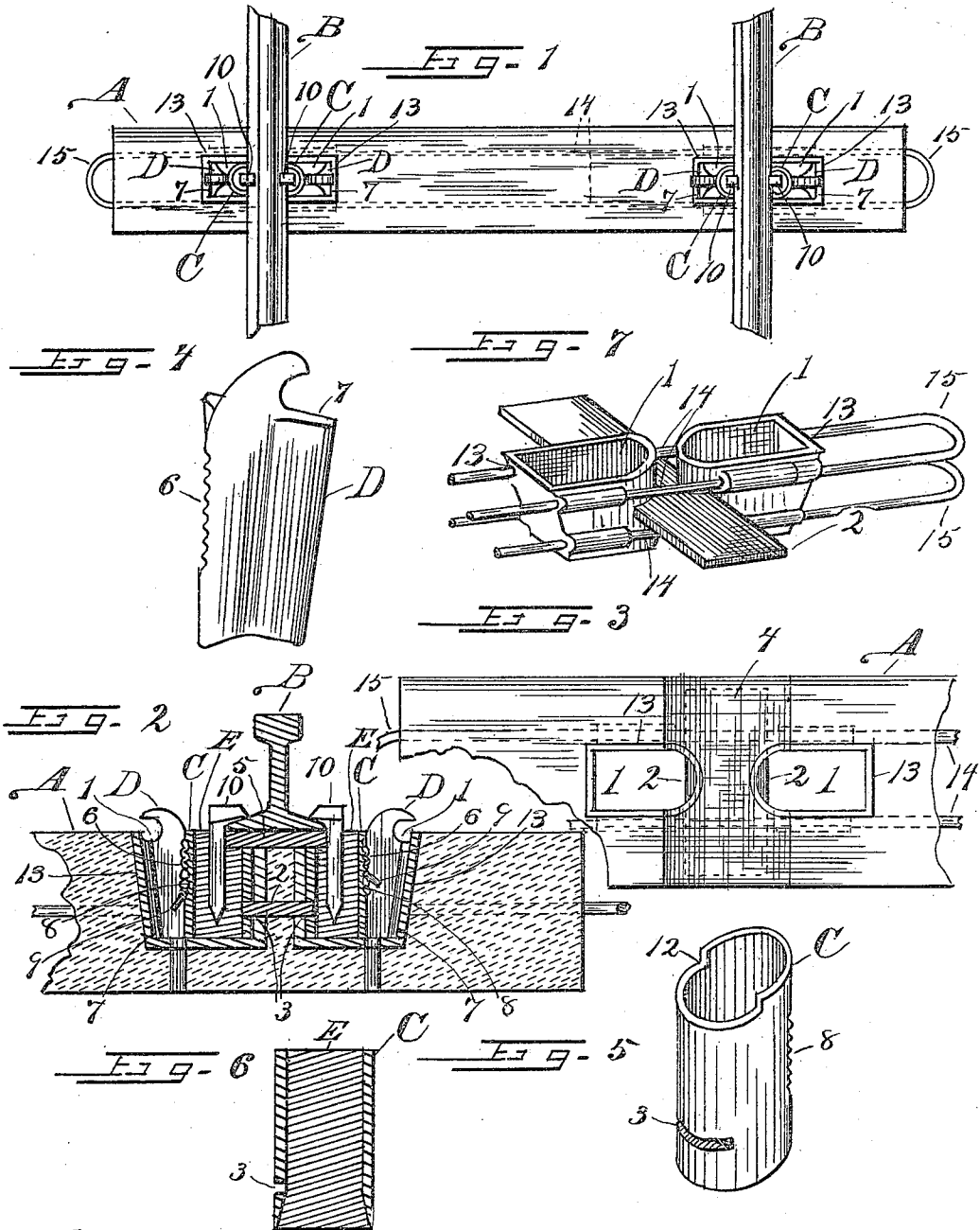


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RAILWAY TIE.

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VICTOR E. RANDALL, OF BATTLE CREEK, AND GEORGE A. HOELTZEL, OF DELTON,
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RAILWAY-TIE.

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To all whom it may concern:

Be it known that we, VICTOR E. RANDALL, a citizen of the United States, residing at Battle Creek, in the county of Calhoun and State of Michigan, and GEORGE A. HOELTZEL, a citizen of the United States, residing at Delton, in the township of Barry, county of Barry, and State of Michigan, have invented certain new and useful Improvements in Railway-Ties; and we do hereby declare the following to be a full, clear, and exact description thereof, 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 claims hereunto appended, which form a part of this specification.

Our invention relates to railway ties, and more particularly relates to artificial stone or concrete ties within which a stiffening bond is molded for giving the same rigidity and preventing fracture, the same being adapted to extend from the ends of the tie to form eyelets, by which means the tie may be readily moved from place to place, or be placed within or removed from the road bed.

Other objects are to provide a tie that will have all due resiliency for the rail base; whereby the rail-securing mechanism may be replaced without molesting the tie when set; whereby the ordinary spike may be employed for securing the rail; whereby but a very small amount of timber will be necessary for holding the spike; whereby the same will be comparatively simple, readily comprehended by an artisan of ordinary ability, be thoroughly practical, enduring in service and inexpensive to manufacture.

Other objects and advantages will hereinafter be set forth in the following specification, in which—

Figure 1 is a plan view of our improved tie with rails secured thereto in working position. Fig. 2 is a detail longitudinal section. Fig. 3 is a detail plan view of the tie at the rail seat with the rail-securing mechanism removed. Fig. 4 is a perspective view of a locking wedge. Fig. 5 is a perspective view of a spike-bearing thimble. Fig. 6 is a vertical section in modification of a spike-bearing thimble, and Fig. 7 is a detail perspective view of a pair of pockets for receiving the rail-holding mechanism.

In the drawings, like marks of reference refer to corresponding parts throughout the

different views, in which A, represents a cross tie; B, the T-rail; C, spike-bearing thimbles; and D, locking or retaining wedges.

The tie may be made from Portland cement, or any artificial stone formation adequate to the purpose, and as herein shown, is of rectangular construction in the form of a parallelogram in section having a bearing surface somewhat wider than its depth. Within and near either end thereof, at points where the rails cross the tie, twin pockets, 1—1, are provided. These pockets have vertical, rounded or semi-circular spaced ends and upwardly-flaring outer extremities; they are somewhat deeper than the length of a spike and long enough to receive thimbles, C.

Cast within the tie crosswise thereof and intersecting the rounded ends of the pocket, 1, flat metallic bonds, 2, are located. These bonds project into the pockets sufficiently to receive gains or notches, 3, formed on the spike-bearing thimbles, as will be better comprehended in Figs. 2 and 3. The thimbles are of iron, such as tubing formed into the required shape, within which wooden gluts or plugs, E, are tightly driven.

In placing a tie in a road bed the tie is slid beneath the rails until the rails cross between the pockets in either end thereof, and by preference the tie is provided at these crossings with gains, 4, within which wooden shims, 5, are placed, the shims forming resilient rail-seats which can be quickly and easily replaced at trifling expense when worthless. After the rails are thus seated, the thimbles, C, after having been supplied with wooden spike plugs, E, are placed in the pockets and slid to seats within the rounded ends of the pockets, the gains, 3, of the thimbles engaging the bonds, 2, of the tie and preventing the thimbles from lifting. The thimbles having been thus placed, metallic wedges, D, are introduced within the flaring ends of the pockets, 1. These wedges by preference have a straight serrated rear edge, 6, and a broad tapering forward edge, 7, and are of such shape that when a thimble is in working position within a pocket, the wedge will span and fill the space between the thimble and the flaring end of the pocket, as will be comprehended in Fig. 2. To prevent a wedge having any tendency toward loosening or becoming displaced, the thim-

ble is also serrated on one side, as at 8, where the serrated edge of the wedge impinges, the serration being such that some portion of it will at all times correspond with the serrations of the wedge. When the wedge has been thus placed, a cotter pin or small piece of wire, 9, (see Fig. 2), is driven between the serrations of the thimble and wedge and bent at either end, forming a key which thoroughly prevents the parts from displacement until removed. Spikes, 10, are thence driven within wooden plugs, E, of the thimbles and firmly hold the rails to the tie.

Where a tie is gained to receive a shim, as in Fig. 2, the thimbles, C, by preference are recessed, as at 12, at the upper ends the back of the thimble terminating flush with the shim, as shown. In so doing the wooden plugs within the thimbles may also be made flush, thus giving spikes driven therein a backing to the spike head.

As shown in the drawings, we prefer to form the pockets, 1, so that the thimbles will fit somewhat beneath the rail edges so that spikes when driven within the same will be more centrally located within the wooden plugs.

While we have described a tie having pockets formed directly therein, we have also shown these pockets as formed of metal. In making the pockets of metal, we prefer to cast the same so that the bond, 2, will form a part therewith, in which 13 represents the pockets. These pockets are held together by wrought iron strips, 14—14, connecting the same, and in Fig. 1 we have shown strips connecting the pockets in either end and protruding from the ends of the tie and forming eyelets, 15, by which means a hook or bar may be placed for handling or moving the tie from place to place, or sliding or withdrawing the same from beneath the rails of the road bed. In connecting the pockets at both ends of the tie, the strips, 14—14, also provide a truss or center stay preventing the tie from fracture. It will be evident that a single strip could be made to connect the pockets in both ends of the tie, but we prefer to employ four strips arranged in double parallel pairs and provide that at least one of the strips shall extend beyond the ends of the tie for the purpose of forming eyelets, as hereinbefore set forth.

In Fig. 6, we have shown a thimble having a tapering or flaring bottom end. In making thimbles thus, wooden plugs driven therein from the flaring end very firmly hold the wood thus driven and prevent the same from working upward and out at the spike extremity thereof.

It would be evident that in the construction of the strips, 14—14, extending from the ends of the tie, the tie might be pocketed on the ends thereof and the eyelets extend

within the pockets. It would also be evident that the strips could be formed independently of the metallic pockets, 13, and we reserve the right to construct and arrange the parts thereof in any manner compatible with the purpose and scope of our improvement.

From the foregoing description it is believed a more extended statement of its working and advantages will not be necessary.

Having, therefore, described our invention, what we claim as new and desire to secure by Letters Patent, is—

1. A railway tie having twin pockets at the rail crossings, portable thimbles within each of said pockets, wooden plugs in said thimbles, means to prevent said thimbles from vertical movement within said pockets, and spikes driven within the wood of said thimbles to secure the rails to said tie.

2. A railway tie having iron pockets at the rail crossings, portable thimbles within said pockets, wooden plugs within said thimbles, means to prevent said thimbles from vertical displacement when in a normal position, wedges interposed within said pockets between said thimbles and the outer ends of said pockets to retain said thimbles within said pockets, and spikes driven within the wooden plugs of said thimbles to secure the rails to the tie.

3. A railway tie having twin pockets at the rail crossings, portable thimbles having inverted wedge shaped openings within said pockets, resilient plugs fitted within said thimbles, means to retain said thimbles from vertical movement within said pockets, and spikes driven within said resilient plugs to secure the rails to said tie.

4. A railway tie having twin pockets at the rail crossings, portable thimbles within said pockets, gains in the sides of said thimbles, means within said pockets to engage said gains and prevent vertical movement of said thimbles, wooden plugs within said pockets between said thimbles and the outer ends of said pockets to retain said thimbles within said pockets, and spikes driven within the wooden plugs of said thimbles to secure the rails to the tie.

5. A railway tie having twin pockets at the rail crossings, portable thimbles within said pockets, gains in the sides of said thimbles, a locking strip within said tie adapted to engage said gains and prevent said thimbles from vertical displacement, wooden plugs within said thimbles, wedges interposed within said pockets between said thimbles and the outer ends of said pockets to retain said thimbles within said pockets, and spikes driven within the wooden plugs of said thimbles to secure the rails to the tie.

6. A railway tie having twin longitudinal

nally-arranged pockets near either end thereof, each pair of said pockets having vertical rounded adjacent ends and upwardly-inclined outer ends, portable open-ended thimbles adapted to be vertically fitted within the rounded ends of said pockets, wooden plugs within said thimbles, means to prevent said thimbles from vertical displacement, means to retain said thimbles within said pockets, and spikes driven within said plugs to hold the rails to said tie.

7. A railway tie having twin longitudinally-arranged pockets in either end thereof, each pair of said pockets having vertical rounded adjacent ends and upwardly-inclined outer ends, portable open-ended thimbles adapted to be vertically fitted within the rounded ends of said pockets, means to prevent said thimbles from vertical displacement, wooden plugs driven within said thimbles, wedges interposed between said thimbles and the inclined outer ends of said pockets to prevent said thimbles from lateral displacement, and spikes driven within said wooden plugs to secure the rails to a tie.

8. A railway tie having twin longitudinally-arranged pockets in either end thereof, each pair of said pockets having vertical rounded adjacent ends and upwardly-inclined outer ends, portable open-ended thimbles adapted to be vertically fitted within the rounded ends of said pockets, means to prevent said thimbles from vertical displacement, wooden plugs driven within said thimbles, wedges interposed between said thimbles and the inclined outer ends of said pockets to prevent said thimbles from lateral displacement, and means to lock said thimbles and wedges from displacement, and spikes driven within said wooden plugs to secure the rails to the tie.

9. A railway tie having twin longitudinally-arranged pockets near either end thereof, gains within said tie intersecting said pockets, wooden shims within said gains, portable open-ended thimbles vertically fitted within said pockets below said shims and adapted to vertically abut against said shims, means to prevent said thimbles from vertical displacement, means to prevent said thimbles from transverse displacement, wooden plugs driven within said thimbles and spikes driven within said plugs to secure rails to said tie.

10. A railway tie having twin longitudinally-arranged pockets near either end thereof, portable open-ended thimbles vertically fitted within the adjacent ends of said pockets, means to prevent said thimbles from vertical displacement, wedges interposed between said thimbles and the opposite ends of said pockets, the adjoining edges of both said wedges and thimbles having mismatched serrated edges so arranged that at least the serrations of both wedges and

thimbles will register at some point, and wire introduced through the registering serrations and bent at its ends to prevent said thimbles from displacement, and spikes driven within said wooden plugs to secure rails to said tie.

11. A railway tie having twin longitudinally-arranged pockets near either end thereof, gains within said tie intersecting said pockets, wooden shims within said gains, portable open-ended thimbles vertically fitted within said pockets, said thimbles having a cutaway portion adapted to engage said gains and prevent vertical displacement of said thimbles, means to prevent said thimbles from lateral displacement, wooden plugs driven within said thimbles and spikes driven within said plugs to secure rails to said tie.

12. A railway tie having twin longitudinally-arranged pockets near either end thereof, portable vertically-arranged tapering-bored open-ended thimbles fitted within the adjacent ends of said pockets, means to prevent said thimbles from lateral displacement, means to prevent said thimbles from vertical displacement, wooden plugs driven within said thimbles from their bottom ends, and spikes driven within the upper ends of said plugs to secure rails to said tie.

13. A railway tie having twin metallic pockets longitudinally arranged near either end thereof, said pockets having vertically-rounded adjacent ends and upwardly-inclined outer ends, bonds cast within said pockets and projecting internally from the rounded ends thereof, vertically-arranged portable open-ended thimbles adapted to fit within the rounded ends of said pockets, said thimbles having gains in one side thereof adapted to receive said bonds and prevent vertical displacement of said thimbles, means to prevent said thimbles from lateral displacement, and spikes driven within said plugs to secure rails thereto.

14. A railway tie having twin metallic pockets longitudinally arranged near either end thereof, metallic bars connecting each set of said pockets and extending from either end of the tie to form eyelets, said pockets having vertically-rounded adjacent ends and upwardly-inclined outer ends, bonds cast within said pockets and projecting internally from the rounded ends thereof, vertically-arranged portable open-ended thimbles adapted to fit within the rounded ends of said pockets, said thimbles having gains in one side thereof adapted to receive said bonds and prevent vertical displacement of said thimbles, means to prevent said thimbles from lateral displacement, and spikes driven within said plugs to secure rails thereto.

15. A railway tie having twin metallic pockets longitudinally arranged near either

end thereof, metallic bars longitudinally disposed within said tie and adapted to connect the pockets in both ends thereof, said pockets having vertically-rounded adjacent
5 ends and upwardly-inclined outer ends, bonds cast within said pockets and projecting internally from the rounded ends thereof, vertically arranged portable open-ended
10 thimbles adapted to fit within the rounded ends of said pockets, said thimbles having gains in one side thereof adapted to receive said bonds and prevent said thimbles from lateral displacement, and spikes driven within said plugs to secure the rails thereto.
15 16. A railway tie having twin metallic pockets longitudinally arranged near either end thereof, metallic bars longitudinally disposed within said tie either side of said pockets and adapted to connect the pockets

in both ends thereof, said pockets having 20 vertically-rounded adjacent ends and upwardly-inclined outer ends, bonds cast within said pockets and projecting internally from the rounded ends thereof, vertically-
25 arranged portable open-ended thimbles adapted to fit within the rounded ends of said pockets, said thimbles having gains in one side thereof adapted to receive said bonds and prevent vertical displacement of
30 said thimbles, means to prevent said thimbles from lateral displacement, and spikes driven within said plugs to secure the rails thereto.

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