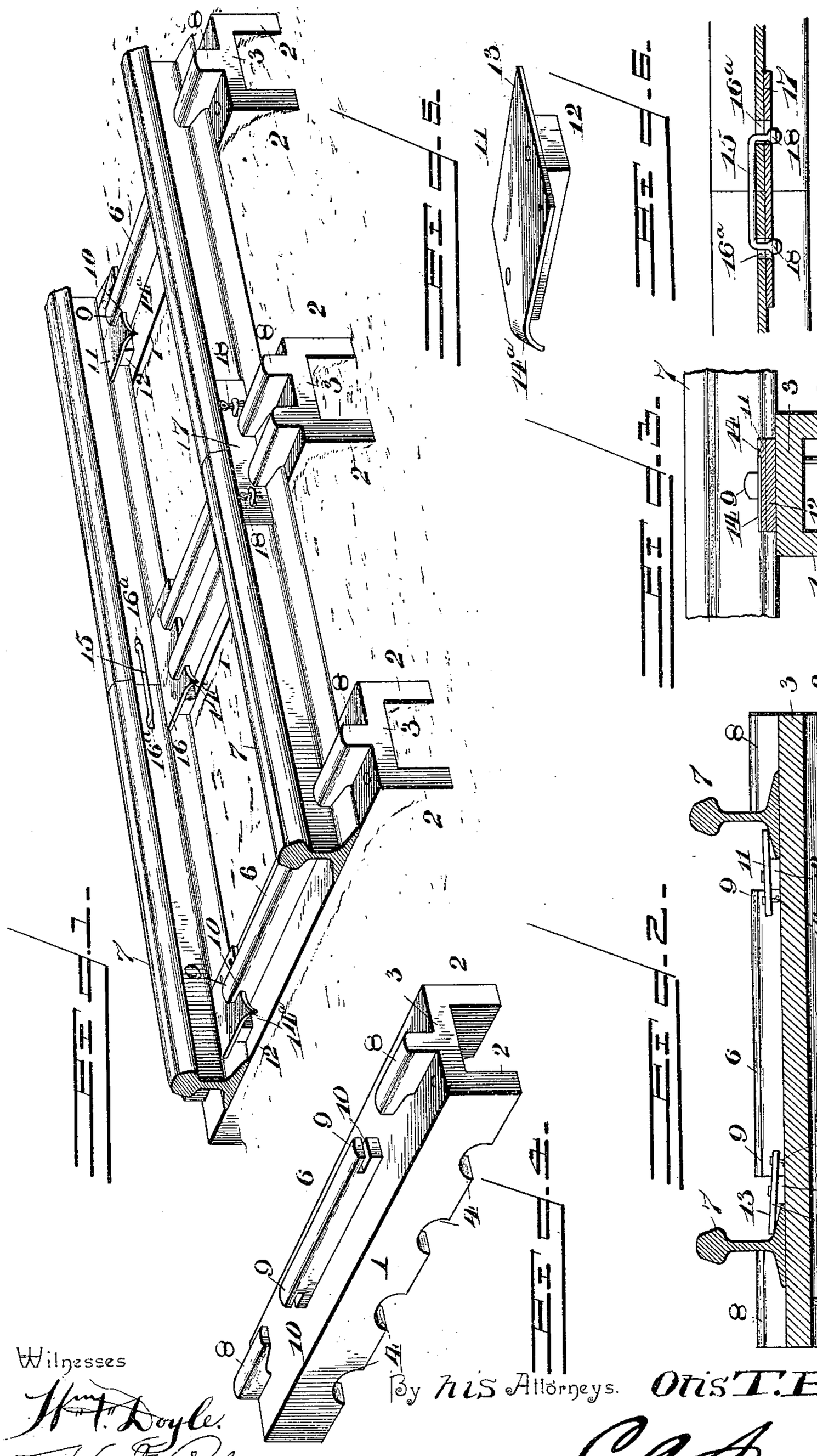
(No Model.)

O. T. BEDELL.

METALLIC CROSS TIE.

No. 546,991. Patented Oct. 1, 1895.



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UNITED STATES PATENT OFFICE.

OTIS T. BEDELL, OF CAIRO, NEW YORK.

METALLIC CROSS-TIE.

SPECIFICATION forming part of Letters Patent No. 546,991, dated October 1, 1895.

Application filed May 3, 1895. Serial No. 548,032. (No model.)

To all whom it may concern:

Be it known that I, OTIS T. BEDELL, a citizen of the United States, residing at Cairo, in the county of Green and State of New York, have invented a new and useful Metallic Cross-Tie, of which the following is a specification.

The invention relates to improvements in metallic cross-ties.

The object of the present invention is to improve the construction of metallic cross-ties, and to provide one which will possess the necessary elasticity, with great strength and durability, and which will prevent rails from spreading, sinking, or otherwise becoming displaced.

Another object of the invention is to enable rails to be quickly mounted in position on and readily removed from the cross-ties, and to dispense with the ordinary form of spikes in the attachment of the rails.

The invention consists in the construction and novel combination and arrangement of parts, hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claim hereto appended.

In the drawings, Figure 1 is a perspective view of a portion of a track provided with cross-ties constructed in accordance with this invention. Fig. 2 is a sectional view taken longitudinally of a cross-tie. Fig. 3 is a similar view taken transversely of the cross-tie. Fig. 4 is a detail perspective view of one of the cross-ties. Fig. 5 is a similar view of one of the removable rail-engaging clamping-keys. Fig. 6 is a horizontal sectional view illustrating the manner of connecting the ends of the rails on a double-ribbed cross-tie.

Like numerals of reference indicate corresponding parts in all the figures of the drawings.

1 designates a hollow metallic cross-tie, composed of similar depending vertically-disposed sides 2 and a horizontal top 3, and designed to be embedded in the road-bed and to be filled with the material thereof. The cross-tie is provided in its sides, at the lower edges thereof, with curved notches or recesses 4, which enable the sides to take a firm hold on the road-bed and to be securely held against longitudinal shifting, and the top of the cross-tie is provided with perforations receiving depending elongated pins, bolts or other fastening devices 5, which are located between the sides 2 and which prevent the ballast or material of which the road-bed is constructed, from shifting, and this will be found especially advantageous at curves and other places where there is greater liability of such shifting. The notched or recessed sides of the cross-ties may be dispensed with when the cross-ties are employed on iron or wooden road-beds, such as trestles, bridges, and the like, and they will be bolted or otherwise secured to the iron or wood work.

On the top of the cross-tie is located a longitudinal rib 6, provided with breaks or openings to receive rails 7. The end portions 8 of the ribs have their inner terminals recessed or beveled to conform to the configuration of the outer portion of the bottom flange of the rail and to interlock therewith, and the central portion of the rib has its terminals located a short distance from the inner portion of the bottom flange of each rail to provide an intervening space. The ends of the inner portions 9 of the rib are provided with longitudinal slots 10, adapted to receive rail-engaging keys 11, substantially T-shaped in cross-section and composed of a lower portion or block 12 and an upper portion or plate 13. The lower portion or block 12 is wedged between the central portion of the rib and the adjacent edge of the bottom flange of the rail, and it may be either wedge-shaped or rectangular, and the upper portion or plate, which may be either constructed integral with or separate from the block, projects laterally therefrom and has one edge or side portion arranged in the slot 10 and the other edge overlapping the inner portion of the bottom flange of the rail and firmly clamping the same in proper position. When the plate is constructed separate from the block, it is secured thereto by suitable fastening devices. The outer portion of the bottom flange of the rail is firmly interlocked with the outer portion of the rib, and the inner portion of the bottom flange of the rail is engaged by the clamping-key, and the rail is firmly held in proper position on the upper face of the cross-tie and cannot move outward thereon or sink into the tie.

The rail-engaging key is detachably secured

to the cross-tie and held against accidental displacement by a removable pin 14, located at one end of the plate and arranged in a perforation thereof and disposed at one side of the central portion of the rib. The other end of the plate is provided with a stop 14^a, which is formed by bending the corner of the plate up or down, it being preferable to bend it down, as shown in the drawings. By removing the pin 14 the key may be readily detached, which will leave the rail 3, and the latter may be shifted or removed. A space between the end and central portions of the rib is sufficient to permit a curved rail to be readily adjusted to its proper position.

At suitable intervals, preferably at the ends of the rails, the cross-ties are provided with a pair of ribs, and the rail-engaging keys are correspondingly increased in length, as shown at 16, and engage the adjacent ends of both rails.

The rails are connected without the use of the ordinary bolts and nuts by means of a substantially rectangular clip 15, consisting of a stem arranged on the inner faces of the webs of the rails and a pair of arms extending outward through perforations or openings 16^a and provided with eyes. The arms extend through perforations of a fish-plate 17 and receive split keys 18, and are oval-shaped in cross-section similar to the ordinary bolts usually employed at rail-joints. The openings or perforations of the rails and the fish-plate are slightly elongated to permit the creeping of the rails. It will be seen that the rails are firmly secured in proper position on the cross-ties and are prevented from spreading or sinking into the ties, and that they may be quickly mounted on and readily removed from the cross-ties. It will also be apparent that the ordinary form of spikes and their corresponding perforations are dispensed with and that nuts are not employed at the rail-joints.

The cross-ties may, if desired, be filled with wood or any other suitable substance or material, and I desire it to be understood that changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention, such as constructing the rib of the cross-tie either integral or separate from the body portion of the cross-tie.

What I claim is—

The combination of a cross-tie provided with a longitudinal rib having rail openings or spaces, the outer portions of the rib being provided with recesses to conform to the configuration of and interlock with rails, and the inner portion of the rib being provided at its ends with slots, the substantially T-shaped keys consisting of a bottom portion to be interposed between the central portion of the rib and a rail, and a top portion or plate projecting laterally from the bottom portion and fitting in the adjacent slot of the rib and adapted to extend over the bottom flange of a rail, and means for locking the keys in position, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

OTIS T. BEDELL.

Witnesses:
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