



# UNITED STATES PATENT OFFICE.

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## CROSS-TIE.

1,001,333.

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*To all whom it may concern:*

Be it known that I, JAMES T. ANDREW, a citizen of the United States, residing at Montgomery, in the county of Montgomery and State of Alabama, have invented certain new and useful Improvements in Cross-Ties; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in the construction of railway ties or similar articles, but for brevity in the following description will be simply referred to as a cross tie.

It is a well known fact that a great number of cross ties are discarded when they deteriorate at any particular spot, although frequently a greater portion of the tie itself is in good condition. Owing to the scarcity of timber, this becomes a very important factor, and ties have been constructed of metal and concrete, etc., but they have not been found as suitable as cross ties of wood, owing to the slight give or flexure of the wooden tie.

The primary object of the present invention is to overcome the difficulties by building up a tie out of plurality of wooden sections securely held together, and any one of which sections may be readily replaced by a fresh section in the event of local deterioration.

While the invention is not restricted to the exact details shown and described, for the purpose of disclosure reference is had to the accompanying drawings, in which like letters designate the same parts in the several views, and in which—

Figure 1 is a plan view of a portion of a railway track, employing my improved tie. Fig. 2 is a perspective view of an improved tie. Fig. 3 is fragmentary perspective view showing another form of end keeper. Fig. 4 is a fragmentary sectional view showing the application of the end keeper shown in Fig. 2, and Fig. 5 is a perspective view of the end keeper shown in Fig. 2.

In constructing my improved tie, I employ a plurality of sections 1 of wood, snugly fitting together and forming a tie having a horizontal division line 2 and a vertical division line 3.

In the construction shown in the drawings, four sectional members are employed, comprising a lower layer of two members and an upper layer of two members, the members of the upper layer being directly above the members of the lower layer, so that the vertical division of the upper layer will be directly above the vertical division line of the lower layer, enabling a single end keeper for each end of the tie to securely hold the ends together. In Figs. 2, 4, and 5, this end keeper is designated as 4, and consists of a cylindrical member adapted to be centered over the intersection of the vertical and horizontal division line and to be driven into the ends of the four segmental members, encompassing the inner lower corners, or the inner adjacent corners of same, as clearly shown in Fig. 2. One of these keepers is arranged at each end of the tie, and intermediate of the ends and adjacent thereto I provide clamping bands 5, which may be securely held together in any suitable way, illustrated in the drawings by the upturned ends 6 and the bolts 7. In addition to this, staples 8 may be employed along the length of the tie for securing together two of the segmental members, and to protect the tie against the weather the same is suitably treated or creosoted in any well known way.

In Fig. 3, a slightly different form of keeper is employed, consisting in this case of the radiating integral plates 9, disposed at right angles to each other and adapted to be driven in the ends of the tie sections with each plate inserted in a tie section in a diagonal direction, firmly tying together the ends of the sections, as clearly shown in the figure.

It will be understood that where sections of smaller cross area are employed, these sections can be tied together by the end keepers in groups, and the groups similarly tied by other end keepers, although for simplicity of illustration I have simply shown four sectional members in the drawings.

I am aware of the fact that ties have been constructed by employing a plurality of wooden sections bolted or nailed together, which is very unsatisfactory, owing to splitting, and I do not claim broadly the mere building up of a tie out of a plurality of wooden sections, but

Having thus described a practical and preferred embodiment of the invention, the particular features of novelty and what I do claim will now be pointed out more succinctly in the following claims:—

5 1. A sectional cross tie containing as an element a group of four sections consisting of an upper and a lower pair, and means for tying together an end of said group comprising a common keeper driven longitudinally into the abutting corners of said group, substantially as described.

15 2. A cross tie comprising three or more sections grouped together out of straight or continuous alinement, and means for tying together each end of the tie comprising longitudinally disposed end keepers driven into and common to all of the sections, substantially as described.

20 3. A cross tie comprising three or more sections grouped together out of straight or continuous alinement, means for tying together each end of the tie comprising longitudinally disposed end keepers driven into  
25 and common to all of the sections, and trans-

verse tying means intermediate of said ends, substantially as described.

4. A cross tie containing as elements a group of four wooden sections comprising an upper and a lower pair, having a common vertical division line and a common horizontal division line, and a common end keeper centered over the intersection of said division lines and driven into all four of said sections, substantially as described. 30 35

5. A cross tie comprising a plurality of wooden sections grouped together, means for tying together each end of the tie, comprising a longitudinally disposed end keeper driven into and common to all of the sections, and transverse tying means intermediate of said ends, substantially as described. 40

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

JAMES T. ANDREW.

Witnesses:

ED. WIGGINS,

T. J. HEWLETT.

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