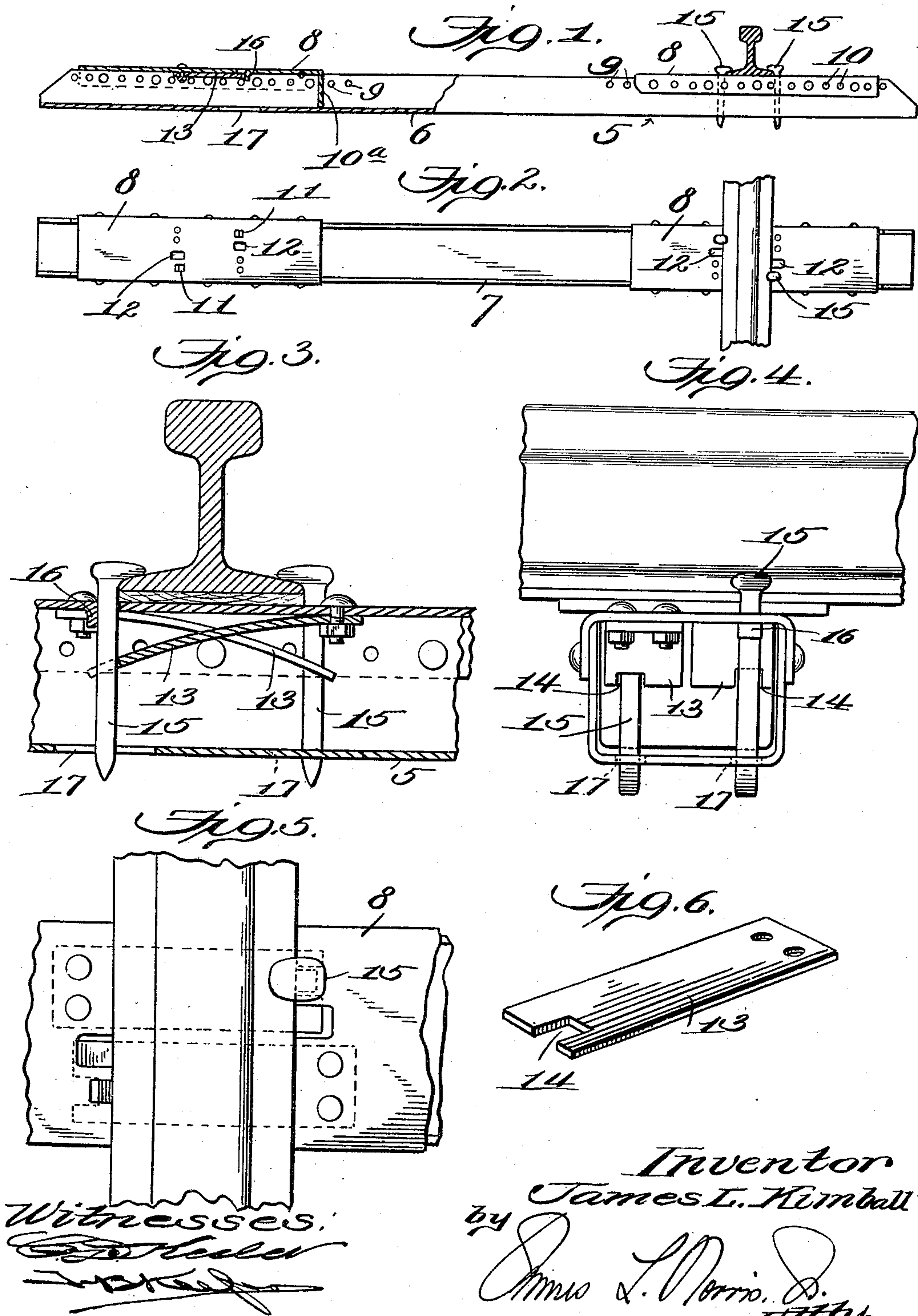


J. L. KIMBALL.  
RAILROAD TIE AND FASTENING.  
APPLICATION FILED MAR. 3, 1911.

993,254.

Patented May 23, 1911.





# UNITED STATES PATENT OFFICE.

JAMES L. KIMBALL, OF VIRGINIA, MINNESOTA.

## RAILROAD-TIE AND FASTENING.

993,254.

Specification of Letters Patent.

Patented May 23, 1911.

Application filed March 3, 1911. Serial No. 612,038.

*To all whom it may concern:*

Be it known that I, JAMES L. KIMBALL, a citizen of the United States, residing at Virginia, in the county of St. Louis and State of Minnesota, have invented new and useful Improvements in Railroad-Ties and Fastenings, of which the following is a specification.

This invention relates to railroad ties and fastening means cooperating therewith for the rails, and the primary object of the invention is to provide a tie having rail seat plates adjustable under certain conditions to increase the width of the gage and also having a novel form of yielding locking device for the rail fastening means which will not only lock the latter against accidental disengagement, but will prevent lateral tilting of the same in a direction parallel to the rail, the said device being rendered accessible from the exterior of the tie to release the fastening means without structurally impairing either said means or the device.

With this and other objects and advantages in view the invention consists in the construction and arrangement of the several parts which will be more fully hereinafter described and claimed.

In the drawing: Figure 1 is a sectional side elevation of a tie embodying the features of the invention and showing a rail thereon in cross-section. Fig. 2 is a top plan view of the organization shown by Fig. 1. Fig. 3 is an enlarged detail longitudinal section of a portion of the tie and one of the spike fastening devices, showing the rail in cross-section. Fig. 4 is an end elevation of the tie and the rail spike fastening devices, a portion of a rail being shown in side elevation thereon. Fig. 5 is an enlarged top plan view showing a portion of a rail and the tie with the fastening devices illustrated in dotted lines. Fig. 6 is a detail perspective view of one of the yielding spike fastening devices.

The numeral 5 designates a tie preferably formed of steel and of shallow trough-like contour in cross-section, the tie having a closed bottom 6 and a normally open top 7. On opposite extremities of the tie rail seat plates or supports 8 are secured and preferably of inverted U-shaped form. At the points where the seats or supports 8 are applied the upper edge portions of the side walls of the tie are formed with a plurality of holes 9 and the side flanges of the said

seats or supports 8 are also formed with a plurality of holes 10. The holes in the two parts or in the tie and the seat or support differ in distance apart and are so relatively spaced that there will always be a registration of a part of the holes of the one with holes of the other for the insertion or engagement of bolts or rivets, the unoccupied holes in the tie or seat as the case may be, being disposed adjacent to blank spaces of the remaining part. In other words, the holes in the seat or support 8 may be a less distance apart than the holes in the side of the tie, or the holes in the tie may be in closer relation than the holes in the seat so that there may always be unoccupied holes in one of the parts for adjustment to widen the gage. Under ordinary usage the seats or supports 8 may be riveted to the tie. Each seat or support is also formed with an inner depending flange 10<sup>a</sup> extending to the tie bottom to form a box or inclosure for the spike securing means, and to prevent buckling of the tie from pressure thereon and the ballast from engaging and interfering with the spike securing means which will now be described.

The closed top portions of the seats or supports 8 are each formed with spike openings 11 and releasing openings 12, there being a spike opening and releasing opening disposed at diagonally opposite points relatively to the transverse center of each seat or support top. To the under side of the top of each seat or support 8, pairs of spring spike locking devices or tongues 13 are applied, the one end of each locking device or tongue being bolted or otherwise attached in line with each releasing opening 12 but on the outer side of the latter or the side opposite that adjacent to which the spike opening 11 is disposed, so that the spring locking devices or tongues 13 will have their supports 8 and the spikes 15 driven through the holes 11 and through the slots 14 of the free extremities extending in reverse directions under the seat or support top. The spring locking devices or tongues 13 normally bear in flat condition against the under side of the top of each seat or support 8, and the free ends of the locking devices or tongues are constructed with outwardly opening slots 14, one in each. When the devices or tongues 13 are bearing against the under side of the top of the seat or support 8, the inner end terminal walls of the slots



14 extend across the lower portions of the spike openings 11, and the devices or tongues 13 are caused to assume the position particularly shown by Fig. 3 by driving the spikes 15 downwardly through the holes 11 and the slots 14. The outer end walls of the openings 11 are increased in vertical extent by bending the metal cut to form the said openings in a downward direction to provide a stable bearing means 16 for the backs of the spikes, as clearly shown by Fig. 3.

The ties 5 are disposed on the roadbed in the usual manner at regular distances apart with the seats or supports 8 thereon. Each tie is tamped under the bottom portion in a manner similar to tamping the ordinary wooden ties, and the opening in the top of the tie between the flanges 10<sup>a</sup> of the rail seats or supports is filled with ballast, and the spaces between the several ties are likewise filled with ballast so as to give elastic and spring motion to the ties and permit them to be easily surfaced and lined. After the ties are placed in position the rails are disposed on the seats over the spring locking devices or tongues 13, the spikes 15 are then inserted through the openings 11 and through the slots 14 in the free extremities of the springs or tongues 13 and driven home, the free extremities of the devices or tongues being bent downwardly, as shown by Fig. 3, with the inner terminal or end walls of the said slots 14 bearing tightly against the adjacent sides of the spikes and force the heads of the latter to remain in securing contact or engagement relatively to the base flanges of the rails, and the spring locking devices or tongues not only firmly secure the spikes against accidental disengagement or loose movement, but also prevent lateral tilting of the spikes in a direction parallel to the rails. The tie is of less depth than the standard length of the spikes, and in the bottom of the tie slots 17 are formed in alinement with the spike openings 11 to permit the lower extremities of the spikes to project therethrough. The slots 17 are long enough to permit the rails to be set for different gages. When it is desired to release the spikes it is only necessary to insert a suitable implement through the openings 12 under which a portion of the free extremities of the locking devices or tongues 13 extend. By causing a downward pressure on the free extremities of the locking devices or tongues 13 by a proper manipulation of the implement, said locking device or tongue extremities will be disengaged from the spikes or the bite or pressure of the inner terminal walls of the slots 14 will be released from the spikes and the latter may then be readily drawn upwardly and the rails released or loosened. Subsequently the same spikes may be driven

into place and engage the tongues in a manner similar to their previous assemblage.

One of the most important features of the spike holding and releasing means just explained is that they permit ready removal of the spikes for the purpose of shimming the track, especially in cold or freezing weather when a track frequently heaves, the shims being readily introduced between the rail flanges and the ties in order to maintain a level track surface. This operation may be readily accomplished by the use of the spike fastenings above described with material advantages in maintaining a track in proper condition at all times, and especially in winter, with very little trouble and practically no expense.

Another of the important features of the present construction is the formation of the opening or slot 14 in the free extremity of each tongue 13, said slot or opening when engaged by a spike serving to maintain a reliable association of the spike with the tongue irrespective of vibration to which the tie as a whole and the tongue particularly may be subjected.

What is claimed as new is:

1. A railroad tie having an open top with openings in the sides near the upper edges, rail seats having closed tops and side flanges formed with openings therein, the openings in the sides of the tie and the flanges of the seats being different distances apart so that a part of the openings in the two devices will be in registration for the reception of fastening devices and the remaining openings unoccupied, and fastening devices for rails coöperating with the tops of the seats.

2. A railroad tie having rail seats on opposite extremities thereof with spike openings and releasing openings in the top portions of the same, and spring locking tongues having one extremity of each secured to the under side of the tops of the seats and projecting in reverse directions, the free extremities of the tongues being slotted for engagement by spikes for securing the rails on the seats.

3. A railroad tie having a closed top portion with an opening therethrough, a spring tongue secured under the top portion at one end and having a slot in its free extremity normally disposed under the opening in the top portion of the tie, and a rail securing spike insertible through said opening and the slot in the tongue and maintained in association with the latter by said slot, the spike being releasable by pressing the tongue downwardly to disengage the said spike.

4. A railroad tie having rail seats on opposite extremities thereof with spike openings and releasing openings in the top portions of the same, the bottom of the tie



having slots therein directly under the spike  
openings, and spring locking tongues hav-  
ing their upper extremities secured to the  
under sides of the top portions of the seats  
5 and their free extremities projecting in  
reverse directions and having openings  
therein for engagement by spikes for secur-  
ing the rails on the seats.

In testimony whereof I have hereunto set  
my hand in presence of two subscribing wit- 10  
nesses.

JAMES L. KIMBALL.

Witnesses:

WM. J. ARCHER,  
NOBLE I. KIRKBY.

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