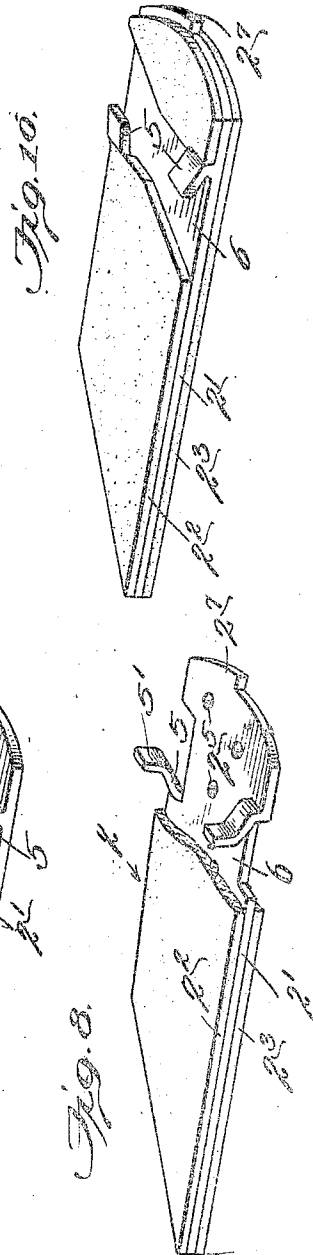
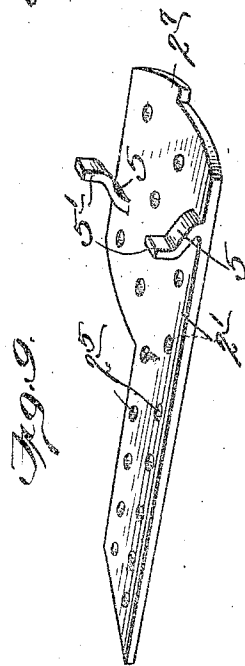
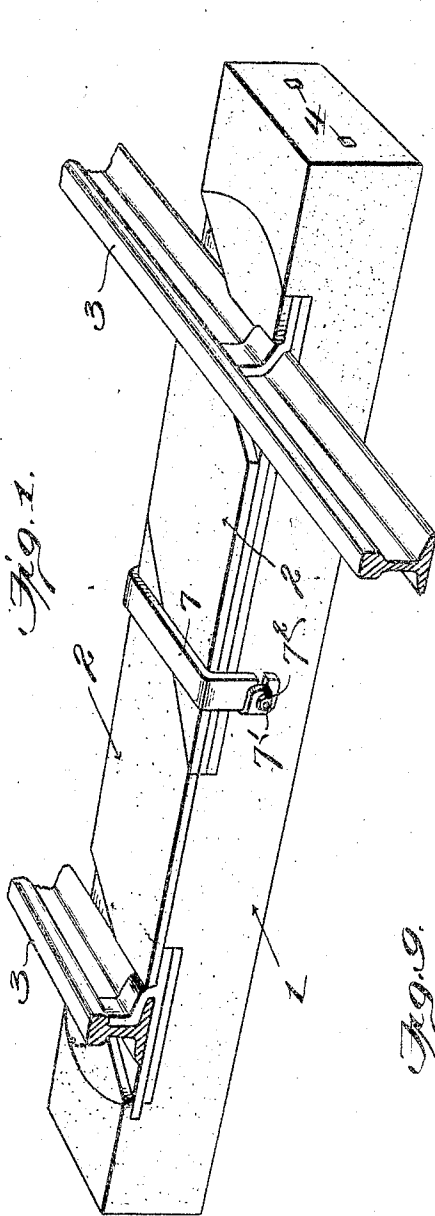


E. C. GALLUP.
RAILWAY TIE.
APPLICATION FILED AUG. 2, 1912.

1,063.023.

Patented May 27, 1913.
3 SHEETS-SHEET 1.



Witnesses:

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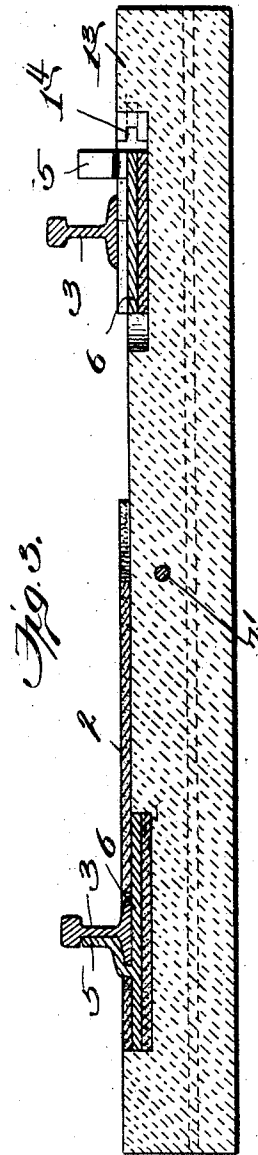
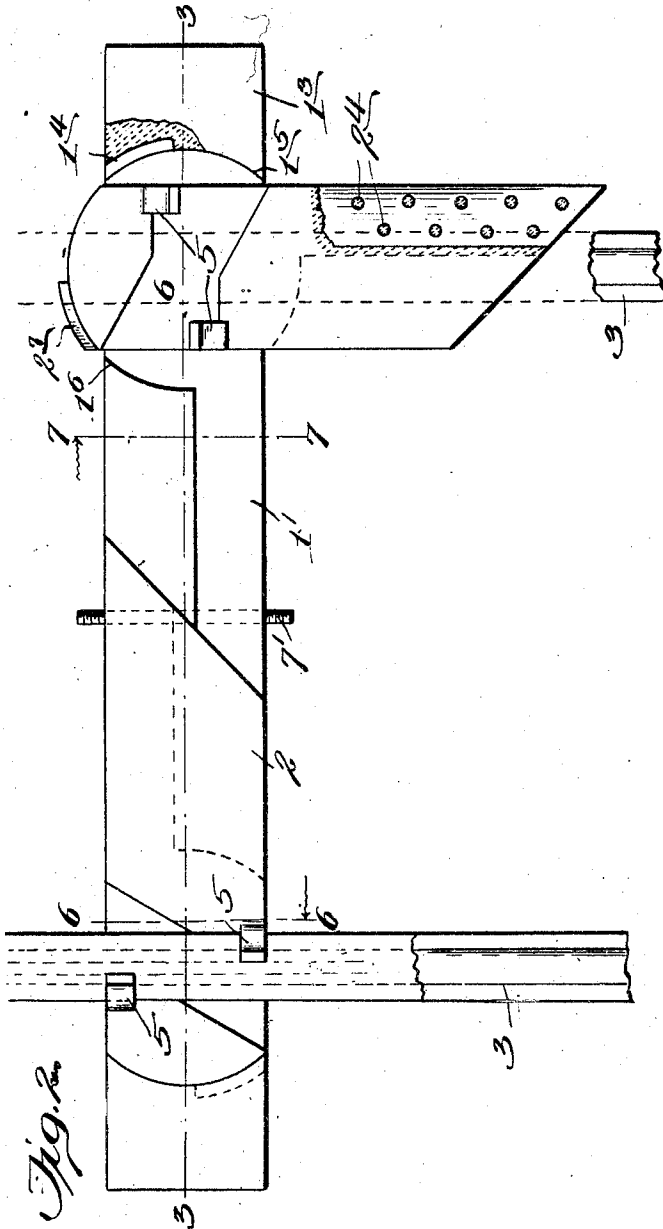
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1,063,023.

3 SHEETS—SHEET 2.



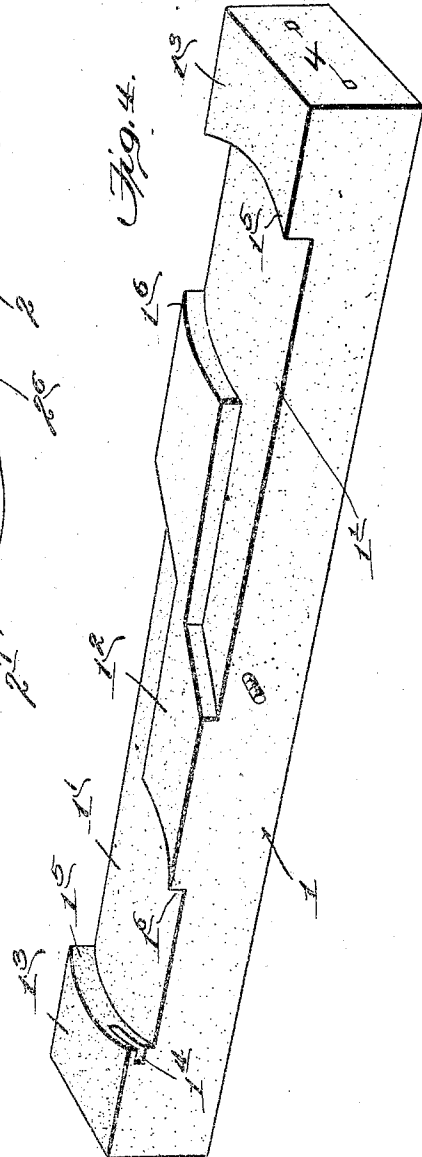
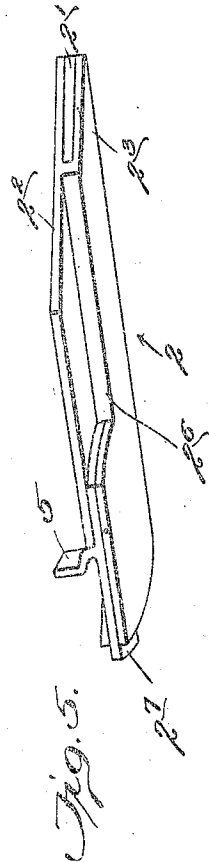
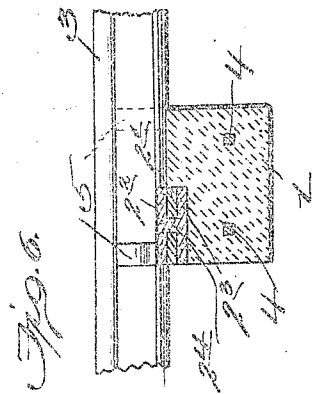
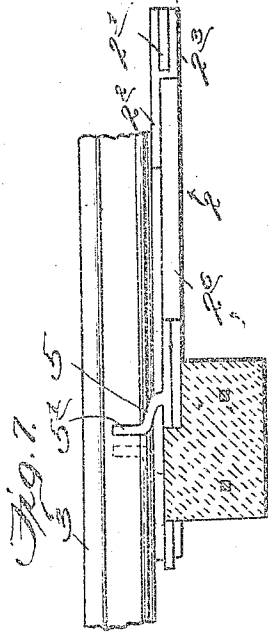
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E. C. GALLUP.
RAILWAY TIE.
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1,063,023.

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3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

ETHEL C. GALLUP, OF NEW YORK, N. Y.

RAILWAY-TIE.

1,063,023.

Specification of Letters Patent.

Patented May 27, 1913.

Application filed August 2, 1912. Serial No. 712,976.

To all whom it may concern:

Be it known that I, ETHEL C. GALLUP, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented new and useful Improvements in Railway-Ties, of which the following is a specification.

This invention has reference to improvements in railway ties, and it comprehends, briefly, the production of a highly improved combined tie and chair constructed of reinforced concrete and equipped with movable sections or members which, when swung into open position, permit the track rails to be readily engaged therewith; and which, on being closed, firmly lock said rails in place upon the tie without requiring the use of spikes, bolts or other extraneous fastening devices.

The invention also consists to a material extent in so constructing the aforesaid locking sections that, on reaching their closed position, the rails will automatically seat themselves in place.

An embodiment of the invention is illustrated in the accompanying drawing, wherein:—

Figure 1 is a perspective view showing the improved tie complete, with the locking sections in closed position and engaging the rails; Fig. 2 is a plan view partly in section, showing one of the aforesaid locking sections in open position; Fig. 3 is a longitudinal vertical section on the line 3—3 of Fig. 2; Fig. 4 is a perspective view of the tie, with the locking sections removed; Fig. 5 is a perspective view of one of the locking sections; Fig. 6 and Fig. 7 are transverse sectional views taken, respectively, on the lines 6—6 and 7—7 of Fig. 3; Fig. 8 is a perspective view of one of the locking sections, parts of the concrete being broken away to expose the reinforcing plate; Fig. 9 is a perspective view of a modified form of reinforcing plate; and Fig. 10 is a perspective view of a slightly modified form of locking section.

In said drawings, 1 designates, generally, the body portion of the tie, or tie proper, 2 the locking sections, and 3 the track rails. The tie 1 is constructed of concrete in standard shapes and sizes and is reinforced by longitudinal rods, bars, or the like, as indicated by the numeral 4. Upon the top face of said tie are mounted the hereinafter-described locking sections 2, in the particular

construction of which the invention primarily resides. These sections are counterparts and are arranged reversely with respect to each other, as shown, the aforesaid tie face being seated or recessed to receive them. Each of said sections, as depicted in Figs. 5, 8 and 10, comprises a metal plate 2' faced upon opposite sides with concrete layers 2² and 2³, which layers are preferably integrally connected together by concrete keys 2⁴ produced by the passage of the concrete, while plastic, through the perforations 2⁵ formed in said plate. These plates, and the under layers 2³ as well, are approximately wing-shaped, while the seats 1' on the tie have a corresponding shape, as will be understood, the said seats having a depth, however, which is equal to the combined thickness of the parts of said sections. The top layers 2² of said sections are of the same width throughout as the tie and their projecting inner portions are designed to rest upon the central projections 1² resulting from the formation of the seats 1', these projections being about only two-thirds the height of the end projections 1³. The mutually-adjacent inner ends of the top layers 2² which are reversibly inclined, abut directly against each other when the sections are in place in their seats. As a result of this construction, it will be apparent that the complete tie will present a substantially unbroken upper face when said sections are seated, the upper faces of the layers 2² being flush with each other, and with those of the end projections 1³, while the inner ends of the said layers are in abutting relation. At the same time, the inner longitudinal walls of the seats 1' are engaged by the connecting webs 2⁶ of concrete between the layers 2² and 2³, while the inner ends of the layers 2³ and plates 2' abut directly against the corresponding walls of the central projections 1².

It is intended to provide for a bodily swinging movement of the sections 2 in a horizontal plane, as already stated, and to this end the body portions of the seats 1' are given an approximately circular shape, while the corresponding walls of the outer end portions of the sections are rounded. By forming the seats and sections in this manner, it is possible for the latter to be swung laterally away from each other outwardly of their seats, and toward each other into said seats, their rounded ends or heads

constituting the fulcra on which they turn. The inward movements of the sections are terminated when the webs 2⁶ strike against the inner longitudinal walls of the seats 1¹, but additional stops 2⁷ may be provided for the same purpose, these stops 2⁷ being in the nature of lips which are formed upon the rounded outer ends of the plates 2¹ and are designed for reception in recesses 1⁴ provided in one corner of the inner walls of the end projections 1³. The said stops, therefore, serve not only to limit the inward swinging movement of the sections, but also, in a measure, as a means for preventing any upward movement of said sections when the same are in place in their seats. The other inner corner 1⁵ of each projection 1³, and the diagonally opposite corner 1⁶ of the adjacent central projection 1² form shoulders which limit the outward swinging movement of the sections.

The rail-engaging and locking devices are carried directly by the swinging sections, and consist, in the present embodiment of the invention, of upwardly projecting tongues 5. These tongues are formed integral with the metal plate members 2¹ of the sections, and they may be constructed either by reversely slitting the heads of the plates at opposite sides and then bending the slit portions upwardly, as represented in Fig. 8, or by being cast in upstanding position with said plates, as in Fig. 9; also they may be of such a length as to extend across only the opposite base flanges of the rails as depicted in Fig. 10, or across said flanges and part way across the opposite faces of the rail webs, as depicted in Fig. 8, the web-engaging extensions of the tongues in the latter construction, which are indicated by the numeral 5', acting as braces in much the same manner as the fish-plates of a rail-joint. In either instance, a pair of tongues is provided upon the head portion of each plate, the tongues being disposed at diagonally opposite points upon the side edges thereof.

Across the fulcrum or outer end portion of the top layer 2² of each locking section is formed a transverse channel 6, shown best in Figs. 2 and 10. The end portions of each of these channels are somewhat flared, as shown, this being produced by forming the opposite side walls of the channel as equal obtuse angles whose apices directly confront each other. The locking tongues on the plate members of the sections project laterally across said channels, as will be understood.

In attaching the rails to the ties, the locking sections are swung outwardly of their seats into open position; (see the right-hand end portion of Fig. 2.) The rails are thus positioned so as to extend transversely across the channels 6 and between the pairs of

tongues 5, as shown in the figure indicated. The sections are then swung inwardly, during which time they move beneath the rail bases until the tongues engage the webs of the rails at diagonally opposite points. Simultaneously with this engagement, the channels are brought into what may be considered as axial alignment with the rails; whereupon the latter drop thereinto by reason of their weight, and thus automatically center themselves, while the stops 2⁷ on said sections enter the recesses 1⁴, thereby completing the seating of the sections.

To lock the sections in place in their seats any suitable clamp may be used, the present locking device embodying an inverted U-shaped strap 7, which straddles the tie and the inner end portions of the sections and is engaged at its ends with the projecting terminals of a cross-bolt 7' embedded in the tie body; the aforesaid strap ends are held against displacement by nuts 7² which are threaded upon the bolt terminals.

It will be apparent, therefore, from the foregoing, that when the sections are in place in their seats, and the rails in position in the channels 6 and gripped by the tongues 5, the sections will not only lock the rails against movement, but will also act as chairs whereon the said rails rest. Furthermore, the said sections, in addition to serving the purposes just specified, will act as braces or reinforcements for the upper parts of the ties, owing to their being themselves reinforced and held in position. Finally, it is to be observed that the attachment of the rails to the ties requires no spikes, bolts or other devices of a like nature to be used, and, hence, does away with the difficulties ordinarily attendant upon the employment of such devices.

I claim as my invention:—

1. A tie having a pair of seats formed in its upper face, and a pair of rail-supporting sections movable horizontally beneath the rails into and out of said seats, each of said sections having a pair of retaining devices arranged to engage the adjacent rail at diagonally opposite points, the upper faces of said sections being flush with the upper face of said tie when said sections are in place in said seats.

2. A tie having a pair of seats formed in its upper face, and a pair of rail-supporting sections movable horizontally beneath the rails into and out of said seats, each section having a transverse rail-receiving channel adapted to be brought into alignment with the adjacent rail when said section is in position in its seat, to permit said rail to automatically seat itself therein, and having a pair of retaining devices arranged to engage said rail at diagonally opposite points when said section is in such position, the upper faces of said sections being flush with

the upper face of said tie when said sections are in place in said seats.

3. A tie provided with a pair of swinging rail-supporting sections having each a transverse rail-receiving channel formed in its upper face and flared at the ends thereof and a pair of diagonally-arranged rail-engaging members, said sections being movable horizontally beneath the rails into position to bring said channels into alignment with the rails, to permit the latter to automatically seat themselves therein, and to engage said members with the opposite sides of said rails.

4. A tie having a pair of seats formed in its upper face, which seats have recesses formed in certain of the walls thereof, and a pair of rail-supporting sections movable beneath the rails into and out of said seats, each section having a pair of rail-engaging members adapted to engage the adjacent rail at diagonally-opposite points, and a stop movable into the adjacent recess to limit the inward movement of the section.

5. A concrete tie provided upon its upper face with a pair of swinging rail-supporting sections each comprising a metal plate faced upon opposite sides with layers of concrete, each plate having a pair of diagonally-arranged tongues adapted to engage the adjacent rail at opposite sides.

6. A concrete tie provided upon its upper face with a pair of swinging rail-supporting sections each comprising a perforated metal plate faced upon opposite sides with layers of concrete, the concrete, while plastic, passing through the perforations in said plate to form keys which connect said layers together, each of said plates having a pair of diagonally-arranged tongues adapted to engage the adjacent rail at opposite sides.

7. A concrete tie provided upon its upper face with a pair of swinging rail-supporting sections each comprising a metal plate faced upon opposite sides with layers of concrete and provided with a pair of diagonally-arranged rail-engaging members, the upper layer having a portion thereof cut away to produce a transverse rail receiving channel across which said tongues project, said sections being movable beneath the rails into position to bring said channels in alignment with the rails, to permit the latter to automatically seat themselves therein, and to engage said members with the opposite sides of said rails.

8. A concrete tie having a pair of seats formed in its upper face, which seats are provided with recesses in certain of the walls

thereof, and a pair of rail-supporting sections movable beneath the rails into and out of said seats, each section comprising a metal plate which is faced upon opposite sides with layers of concrete and is formed with a pair of diagonally-arranged rail-engaging members and with a stop movable into the adjacent recess to limit the inward movement of the section.

9. A tie provided upon its upper face with a pair of reversely-arranged wing-shaped seats having approximately circular body portions and having their outer longitudinal edges opening through the adjacent side faces of the tie, and a pair of similarly-shaped rail-supporting sections mounted to swing beneath the rails in a horizontal plane into and out of said seats, each section having its body portion provided with a pair of rail engaging members.

10. A tie provided upon its upper face with a pair of reversely-arranged wing-shaped seats having approximately circular body portions and having their outer longitudinal edges opening through the adjacent side faces of the tie, the outer end wall of each seat being provided at one corner thereof with a recess, and a pair of similarly-shaped rail-supporting sections mounted to swing beneath the rails in a horizontal plane into and out of said seats, each section having its body portion provided with a pair of rail-engaging members and with a projection movable into the adjacent recess to limit the inward movement of the section.

11. A tie provided upon its upper face with a pair of reversely-arranged wing-shaped seats having approximately circular body portions and having their outer longitudinal edges opening through the adjacent side faces of the tie, the outer end wall of each seat being provided at one corner thereof with a recess, and a pair of similarly-shaped rail-supporting sections mounted to swing beneath the rail in a horizontal plane into and out of said seats, each section comprising a metal plate faced upon opposite sides with layers of concrete and having its body portion provided with a pair of rail-engaging members and with a projection movable into the adjacent recess to limit the inward movement of the section.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

ETHEL C. GALLUP.

Witnesses:

OTTO E. STRAUB,
BOWMAN PRICE.