

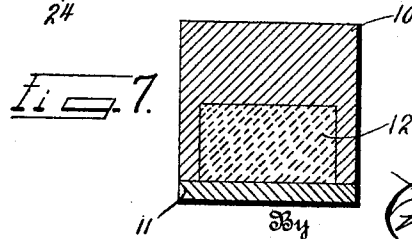
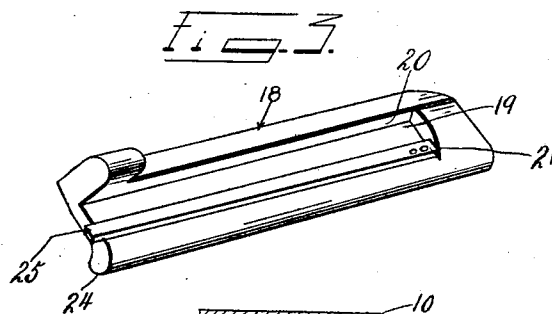
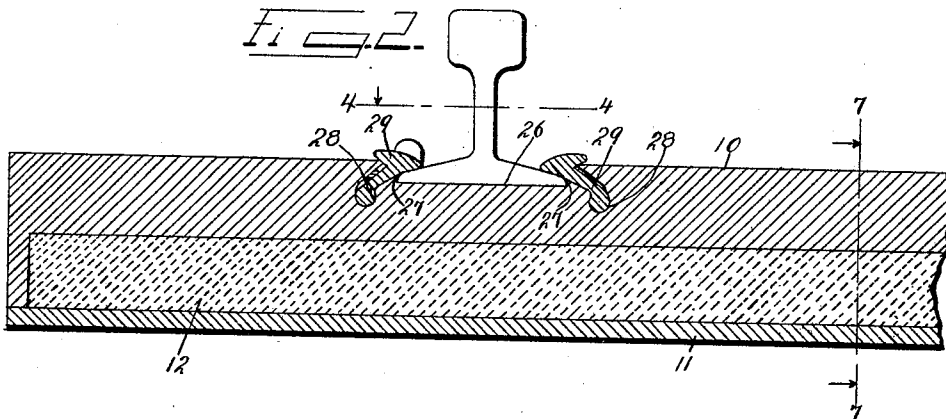
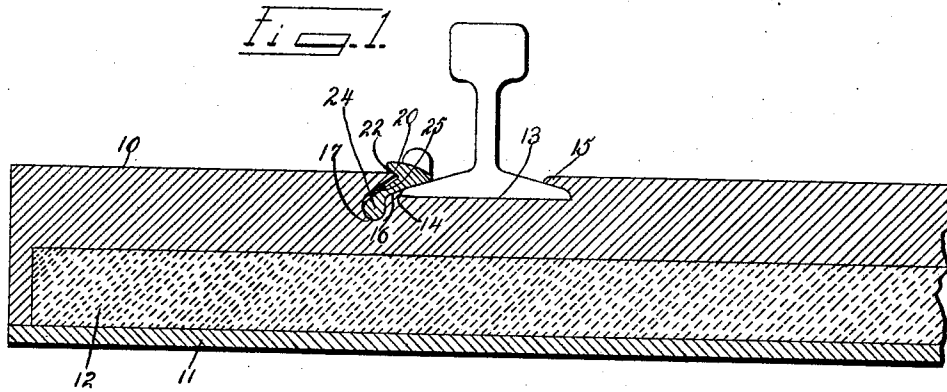
J. JORDAN.
STEEL TIE.

APPLICATION FILED DEC. 15, 1910.

1,000,093.

Patented Aug. 8, 1911.

2 SHEETS—SHEET 1.



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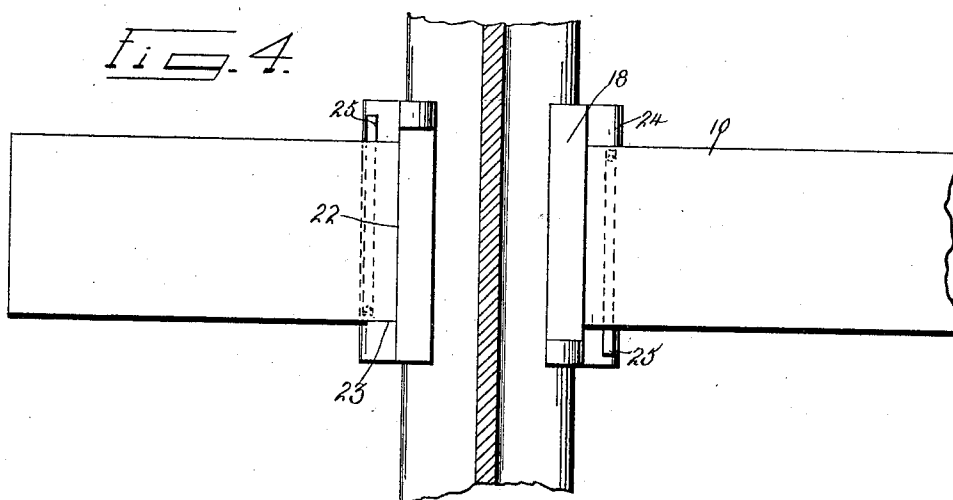
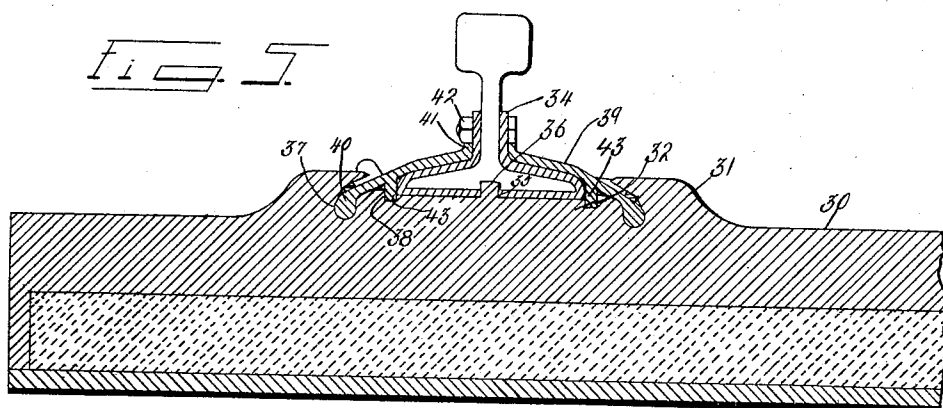
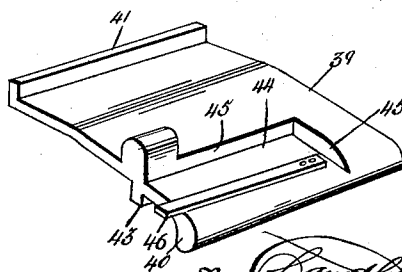


Fig. 6



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UNITED STATES PATENT OFFICE.

JOSEPH JORDAN, OF MOBERLY, MISSOURI.

STEEL TIE.

1,000,093.

Specification of Letters Patent.

Patented Aug. 8, 1911.

Application filed December 15, 1910. Serial No. 597,495.

To all whom it may concern:

Be it known that I, JOSEPH JORDAN, a citizen of the United States, residing at Moberly, in the county of Randolph, State of Missouri, have invented certain new and useful Improvements in Steel 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 metallic railway ties and has for its object to provide a metallic tie that will have novel rail anchoring keys, these keys being applied after the rails are laid and being positively anchored against accidental displacement when applied.

A further object of the invention is to provide a metallic tie having a novel rail receiving seat, the seat positively anchoring the rail held therein against lateral movement but permitting of the longitudinal movement of the rail in expanding and contracting.

A still further object of the invention is to provide a metallic tie having rail locking keys that will perform the additional function of nut locks for the rail chair bolts.

With the above objects in view the invention consists of the novel details of construction and combinations of parts hereinafter fully described and claimed, it being understood that various modifications may be made in the minor details of construction within the scope of the appended claims.

In the accompanying drawing forming part of this specification, Figure 1 is a longitudinal sectional view through a tie constructed in accordance with my invention showing a rail held therein by my improved key. Fig. 2 is a longitudinal sectional view through the tie showing the rail held therein by a key on each side, Fig. 3 is a detail perspective view of the key, Fig. 4 is a cross sectional view taken on the line 4—4 Fig. 2, Fig. 5 is a longitudinal sectional view through a modified form of tie with a modified form of key, Fig. 6 is a detail perspective view of the modified form of key. Fig. 7 is a cross sectional view taken on the line 7—7 Fig. 2.

Referring now to the drawing in which like characters of reference designate similar parts, the tie is shown to comprise top and bottom plates 10 and 11 respectively, a fill-

ing of concrete 12 being interposed between the plates. The top plate it will be noted is of considerably greater thickness than the bottom plate and by now referring to Fig. 1 it will be seen that formed in the top face of the top plate is a transverse rabbet 13, one wall of this rabbet rising vertically as shown at 14 and forming an abutment for a rail base flange and the opposite wall curving upwardly and forming a lip which overhangs the rabbet and engages over the top face of the rail base flange. It will be noted that in mounting this rail that the rail must be tilted so that the base flange opposing the lip 15 may be passed underneath the lip when the rail may be allowed to gravitate into the rabbet. As will be understood there are two of these rabbets 13 in each tie.

By virtue of the vertical wall 14 and overhanging lip 15 of the tie, the rail is positively anchored against lateral movement while being permitted to expand and contract longitudinally in the rabbet 13 or seat as it will be now called.

Formed in the top face of the tie top plate adjacent to the vertical wall of the rail seat 13 is a rabbet 16, this rabbet inclining outwardly from the rail and gradually enlarging as it approaches the center of the tie until an enlargement 17 is formed, the purpose of which will presently appear.

A key 18 for securing the rail in the rail seat, is formed of a single blank of material, the top face of which is provided with a recess 19, the recess terminating in vertical walls 20 and 21 which form abrupt shoulders, the longitudinal shoulder 20 engaging the edge of the key seat as shown at 22, and the shoulder 21 engaging the upper corner of the tie top plate as shown at 23. That longitudinal edge of the key remote from the longitudinal shoulder 20 is considerably thickened and forms a rib 24 which fits in the enlargement 17 of the key seat. For locking the key in operative position a leaf spring 25 is fixed at one end to the floor of the recess 19, adjacent to the shoulder 21 of the key, the free end of this spring projecting considerably beyond the opposite end of the key. As the key is driven home until the shoulder 23 engages with the tie, the spring will slide freely along the inner wall of the key seat and when the key reaches its final position, the spring will exert a pressure upon the wall of the key seat sufficient

to prevent jarring out of the key under heavy traffic conditions.

In Fig. 2 the top face of the tie top plate 10 is shown to be formed with a transverse rabbet or rail seat 26, this rabbet having its opposite longitudinal walls rising vertically as shown at 27 and forming stop shoulders which engage the longitudinal sides of the rail base flange and prevent lateral movement of the rail. In applying the rail to this form of seat, the rail may be dropped vertically downward into the seat without any tilting as must be necessary with the form of rail seat shown in Fig. 1. With a rail seat constructed without overhanging lips, it will be necessary to use a key on each side of the rail, and to this end key seats 28 are formed in the top face of the top plate and receive keys 29 that are formed identically as above described, both keys in this instance bearing directly upon the top face of the rail base flange and preventing displacement of the rail.

In Fig. 5 is shown a further modification of the tie, the top plate 30 in this instance being provided with an enlargement 31 and in the top face of this enlargement is formed a rabbet or rail seat 32. A rail chair 34 which embraces the meeting ends of two rails of a rail joint, is shown seated in the rail seat, the chair being provided with an opening 35 through which a stud 36 formed in the rail seat projects, this stud engaging in the crevice at the confronting ends of the rails and preventing "creeping" of the parts. It will be observed in Fig. 5 that key seats 37 are formed on opposite sides of the rail seat, these key seats differing from the key seats above described by each having a groove 38 formed in its floor. The keys 39 carried in the seats 37 are each formed from a plate, one edge of which is considerably thickened and forms a rib 40 for engagement in the key seat, and the opposite end of which is provided with an up-standing flange 41, the main body of the key bearing directly upon the top face of the rail chair, and the flange of the key engaging the chair seat bolts 42 and serving as nut locks to prevent escape of the chair nuts from their bolts. It is obvious that there will be a tendency during vibration of the rails for the keys to become fractured and to prevent this a depending rib 43 is formed on the bottom face of each key, this rib engaging in the groove 38 of the key seat and anchoring the key at this point against vibration so that the tendency for the key to become snapped off is reduced to a minimum. In this form of key as in the preferred form a recess 44 is formed in the top face of the key, having abrupt stop

walls 45 which engage the longitudinal edge of the rail seat and corner of the tie and anchor the key against displacement in one direction while a leaf spring 46 fixed in the key recess binds against the inner wall of the key seat and anchors the key against displacement in the opposite direction as above described.

What is claimed, is:—

1. A metallic railway tie including outer metallic plates, and an inner concrete filling element between the plates, one of said outer plates having rail base flange receiving rabbets formed in its top face, said outer plate further having key rabbets adjacent to said rail rabbets, said key rabbets inclining in the direction of the concrete filling element and having enlarged interior extensions, plate like keys engaged over said rail base flanges and having portions extending into said key rabbets, and conforming to the outline of said extensions, and means for anchoring said keys against displacement.

2. A metallic railway tie having rail base flange receiving rabbets formed in its top face, and having key receiving rabbets formed in its top face adjacent to said base flange receiving rabbets, and a key in each key rabbet formed from a plate having a recess in its top face terminating in abrupt walls, one of said walls bearing against the corner edge of said tie, a leaf spring in said recess binding against the inner wall of the key rabbet and cooperating with said abrupt walls in preventing displacement of said key.

3. A metallic railway tie having rail base flange receiving rabbets in its top face, and further having key rabbets formed adjacent to said rail base flange receiving rabbets, each of said key rabbets having a groove in its floor, and a key fitting in each rabbet having a body portion extending over the rail base flange and terminating at one edge in an up-standing flange engageable with rail chair bolt nuts and preventing displacement of said nuts, said key further having a portion projecting into and conforming to the outline of said key rabbets, said portion having a depending rib snugly fitting in said groove and reinforcing said body portion against vibration, and means on said key engaging said tie and preventing accidental displacement of the key.

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

JOSEPH JORDAN.

Witnesses:

FRANK JORDON,
EARL G. JORDAN.