No. 891,547. PATENTED JUNE 23, 1908.

T. JOHNSON.

RAIL TIE AND FASTENER.

APPLICATION FILED NOV. 29, 1907.

Fig. 1.

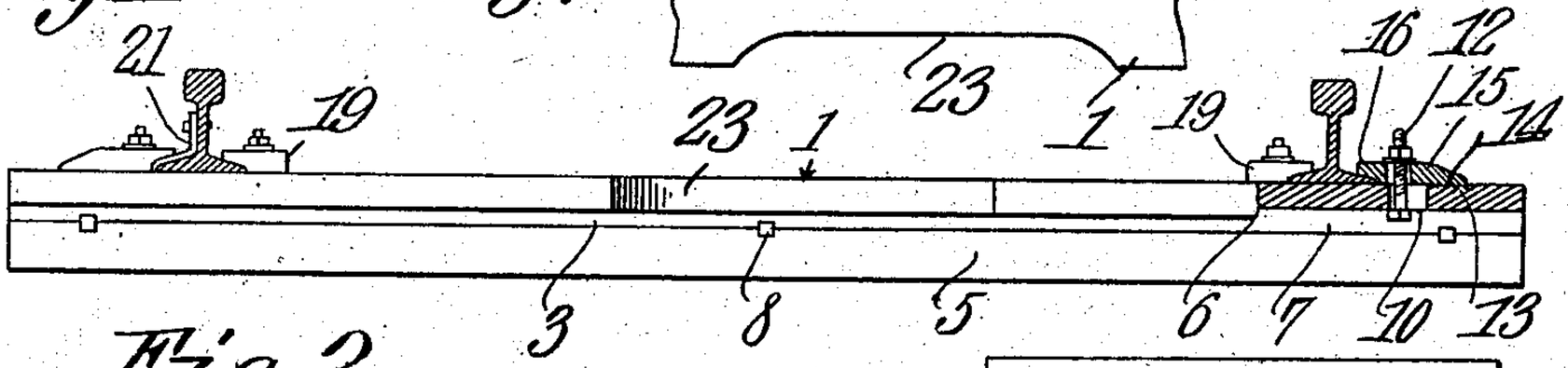


Fig. 7.

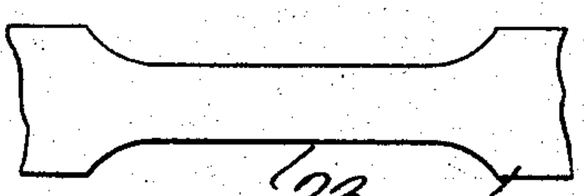
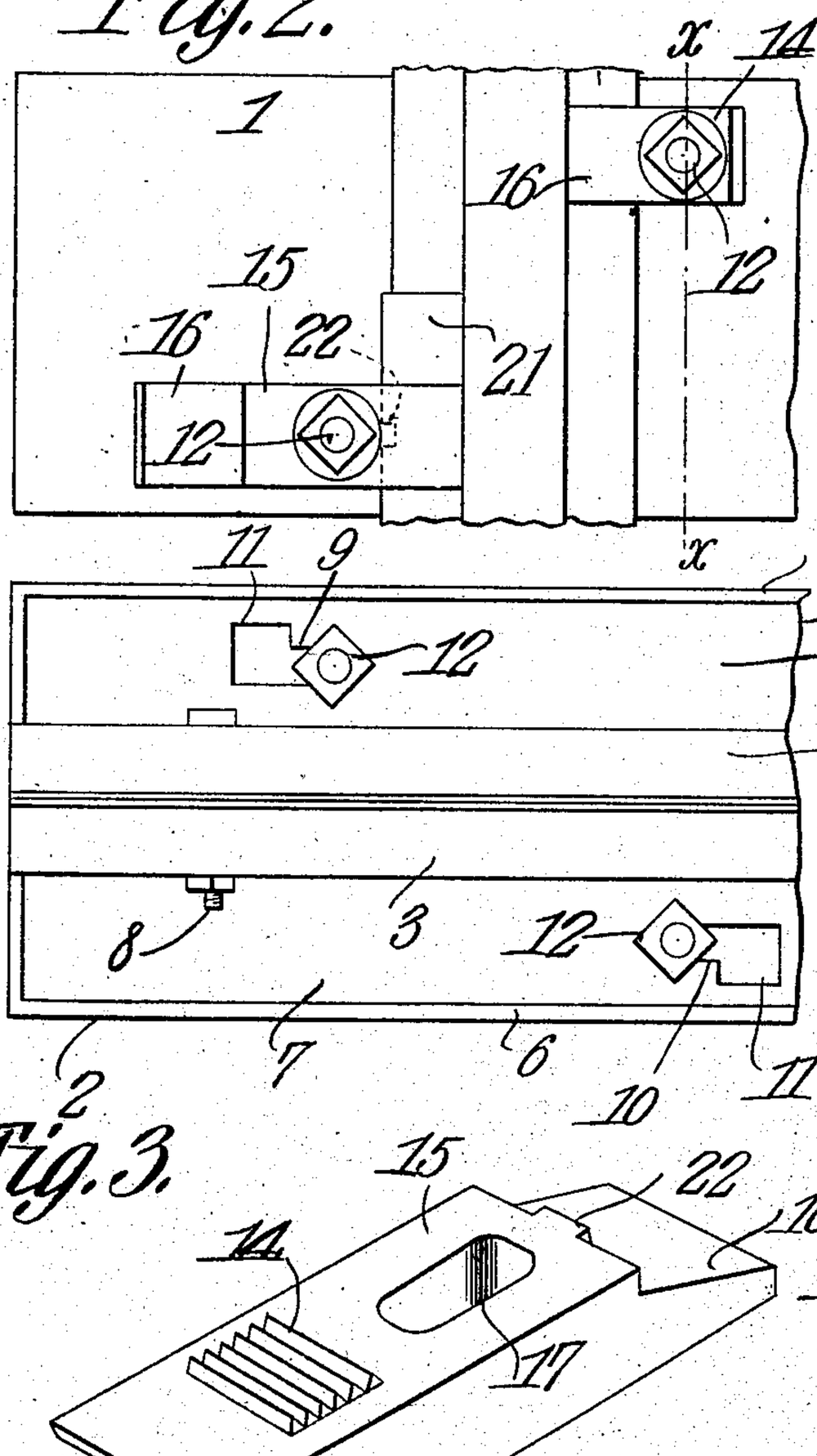


Fig. 2.



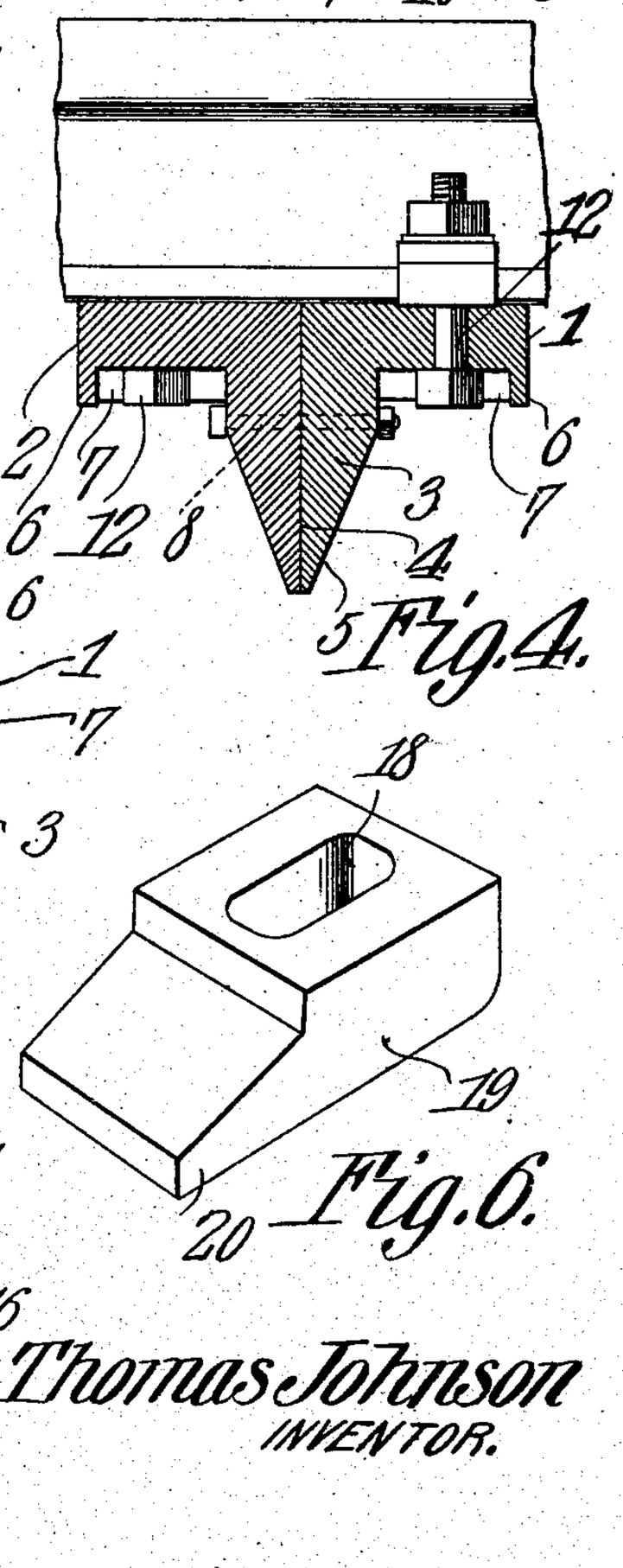


Fig. 4.

Fig. 3.

Fig. 6.

Fig. 5.

Witnesses

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UNITED STATES PATENT OFFICE.

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RAIL TIE AND FASTENER.

No. 891,547. Specification of Letters Patent. Patented June 23, 1908.

Application filed November 29, 1907. Serial No. 404,356.

To all whom it may concern:

Be it known that I, THOMAS JOHNSON, a citizen of the United States, residing at Trempealeau, in the county of Trempealeau and State of Wisconsin, have invented a new and useful Rail Tie and Fastener, of which the following is a specification.

This invention relates to rail ties and fasteners and its object is to provide a metallic tie formed of sections designed to be detachably connected and which are so shaped as to receive and engage a portion of the ballast or roadbed so that creeping of the tie is eliminated.

Another object is to combine with the tie simple and efficient means for securely fastening rails thereon, said fastening means being adjustable and disposed in such a manner that the rails upon the tie can be readily removed from or placed in position without the necessity of altering the adjustment of the fastening devices.

A further object is to provide securing bolts for the fastening means which are insertible through the tie and shiftable into engagement therewith from the top of the tie and without the necessity of raising the tie from the roadbed.

With these and other objects in view the invention consists of certain novel features of construction and combinations of parts which will be hereinafter more fully described and pointed out in the claims.

In the accompanying drawings is shown the preferred form of the invention.

In said drawings: Figure 1 is a view partly in side elevation and partly in section of a tie and fasteners embodying the present improvements. Fig. 2 is a plan view of one end portion of the tie. Fig. 3 is an inverted plan view of said end portion. Fig. 4 is a section on line *x*—*x*, Fig. 2. Fig. 5 is an inverted perspective view of one of the outside rail-fasteners. Fig. 6 is a similar view of one of the inside rail-fasteners. Fig. 7 is a plan view on a reduced scale of the middle portion of the tie and showing the concave side portions.

Referring to the figures by characters of reference, 1 and 2 designate oppositely disposed similar longitudinal tie sections each of which is preferably formed of metal and is provided along one longitudinal edge with a flange 3 extending throughout the length of the section and having its outer face flat throughout its extent as indicated at 4 while the inner face is preferably beveled as at 5. Smaller flanges 6 extend throughout the lengths of the remaining edges of each section and, with the flange 3, form an elongated recess or socket 7 extending practically throughout the extent of the lower face of the tie section. The two flanges 3 of the sections are designed to be placed with their flat faces together and to be fastened together by means of bolts 8 extended through the flanges. Each section 1 and 2 is provided with slots 9 and 10 each of the slots being provided at one end with an angular enlargement 11 of sufficient size to permit the insertion therethrough of the head of a bolt 12 used for securing rail fasteners in position. The adjoining slots of the two sections are so positioned as to extend beyond the inner and outer faces respectively of a rail upon the tie. This is clearly indicated in Figs. 2 and 3.

Formed upon the upper face of each tie section adjacent that slot thereof disposed beyond the outer face of a rail on the tie are teeth 13 designed to engage corresponding teeth 14 on the lower face of a rail fastening device comprising a block 15 provided with an end extension 16 for engaging the outer rail flange. This block has a longitudinal slot 17 through which bolt 12 is designed to project and it will be obvious that by tightening the bolt the teeth 13 and 14 will be held in engagement and longitudinal displacement of the fastener will be prevented. Those slots located within the tie sections and between the rails are designed to receive bolts which extend through longitudinal slots 18 in fastening devices consisting of blocks 19 having end extensions 20. The faces of these blocks are all smooth and the end extensions 20 thereof are designed to lap the inner base flanges of the rails.

Where fish plates are located upon the rails, as indicated at 21 in Fig. 1, the fastening devices 15 are provided preferably with integral lugs 22 overhung by the flanges 16 and these lugs are designed to fit within the notches 22 in the fish plates so as to prevent the parts from shifting longitudinally.

When it is desired to secure rails in position upon a tie such as described said tie is first positioned upon the roadbed, a portion of the ballast extending into the recesses 7 and the flanges 5 and 6 projecting sufficient

distances into the roadbed to positively prevent the tie from creeping. Before the tie is thus positioned bolt heads may be inserted downward through the enlarged ends 11 of slots 9 and 10 and then shifted longitudinally so that the bolts will assume positions within the reduced portions of the slots. After the rails have been placed upon the tie the fasteners 15 and 19 are placed upon the upwardly extending bolts and the outer fasteners 15 are adjusted so as to hold the rails against outward movement after they have been adjusted to the proper gage. By providing teeth 13 and 14 upon the tie and fastening devices respectively accidental displacement of the fastening devices is prevented and they can not be readjusted unless the bolts are loosened. The inner fastening devices 19 receive the bolts extending upward from the slots thereunder and are designed to be adjusted upon the bolts so as to lap and bear upon the inner base flanges of the rails. Should it be desired at any time to remove one of the rails it is merely necessary to loosen the bolts of the inner fasteners 19 whereupon said fasteners can be shifted away from the rail and turned out of engagement therewith. The rail can then be pulled toward the fasteners and from under the extensions 16 and conveniently raised from the tie. Should any of the bolts break or should it be desired to remove one of them for any reason it is merely necessary to shift the bolt longitudinally of the slot in which it is seated and until the head of the bolt assumes a position below the enlarged end of the slot whereupon the bolt can be raised from engagement with the tie and a new one substituted by reversing the operation. It will be seen that by providing fasteners such as described the outer fasteners need not be disturbed after they have once been placed at the proper distances apart, it merely being necessary to shift the inner fasteners for the purpose of removing or replacing a rail. Importance is attached to the fact that the bolts can be placed within the tie without the necessity of lifting the tie from the roadbed.

As indicated in Fig. 7 the sides of the tie may be concave at the centers thereof as shown at 23. The ballast will thus become packed within these recessed portions and prevent the tie from creeping longitudinally.

What is claimed is:

1. A railway tie comprising oppositely disposed longitudinal sections, each section having a longitudinal downwardly extending flange, said flange having a flat face and a beveled face, smaller flanges depending from the edges of the sections, and means extending through the first mentioned flanges for securing the sections together.

2. The combination with a tie having a slot therein provided with an enlarged portion, and teeth upon the tie; of a rail engaging device comprising a toothed block having a rail engaging extension, a fish plate engaging lug integral with the block and overhung by the extension, and means within the slot and engaging the block for holding said block against movement, said means being removable through the enlarged portion of the slot.

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

THOMAS JOHNSON.

Witnesses:
NEILS PEDERSON,
W. S. WADLEIGH.