No. 804,618. PATENTED NOV. 14, 1905.

T. S. NEWTON.

RAIL FASTENER.

APPLICATION FILED JULY 17, 1905.

Fig. 1.

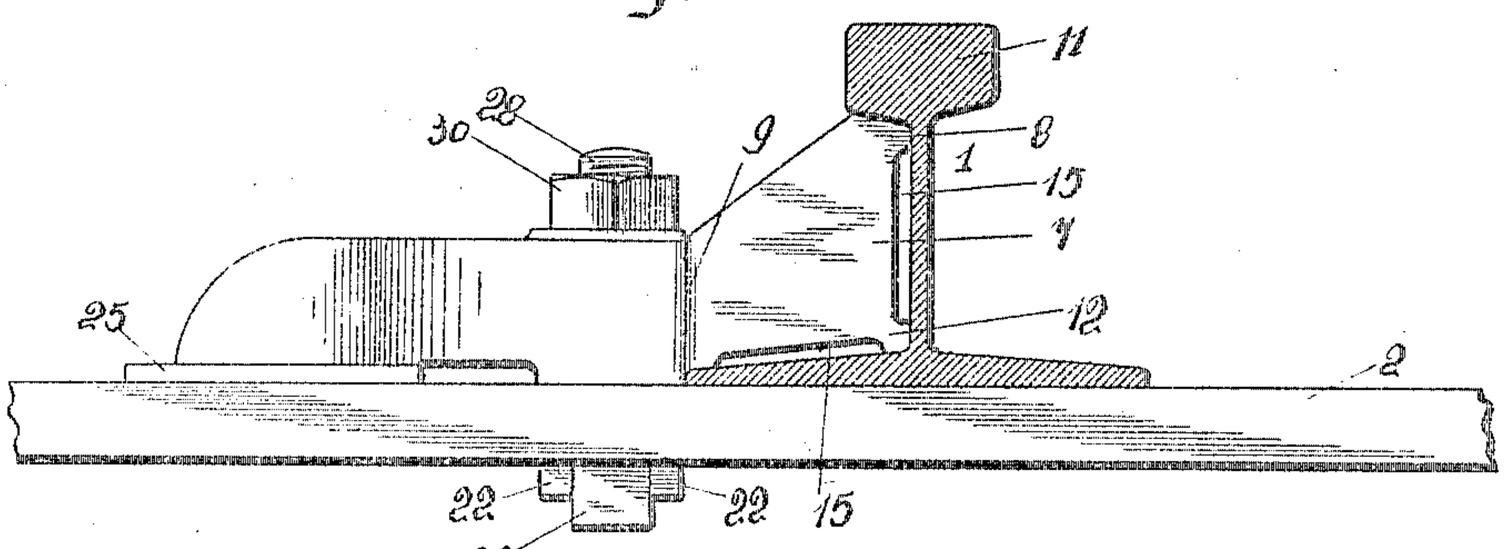


Fig. 2.

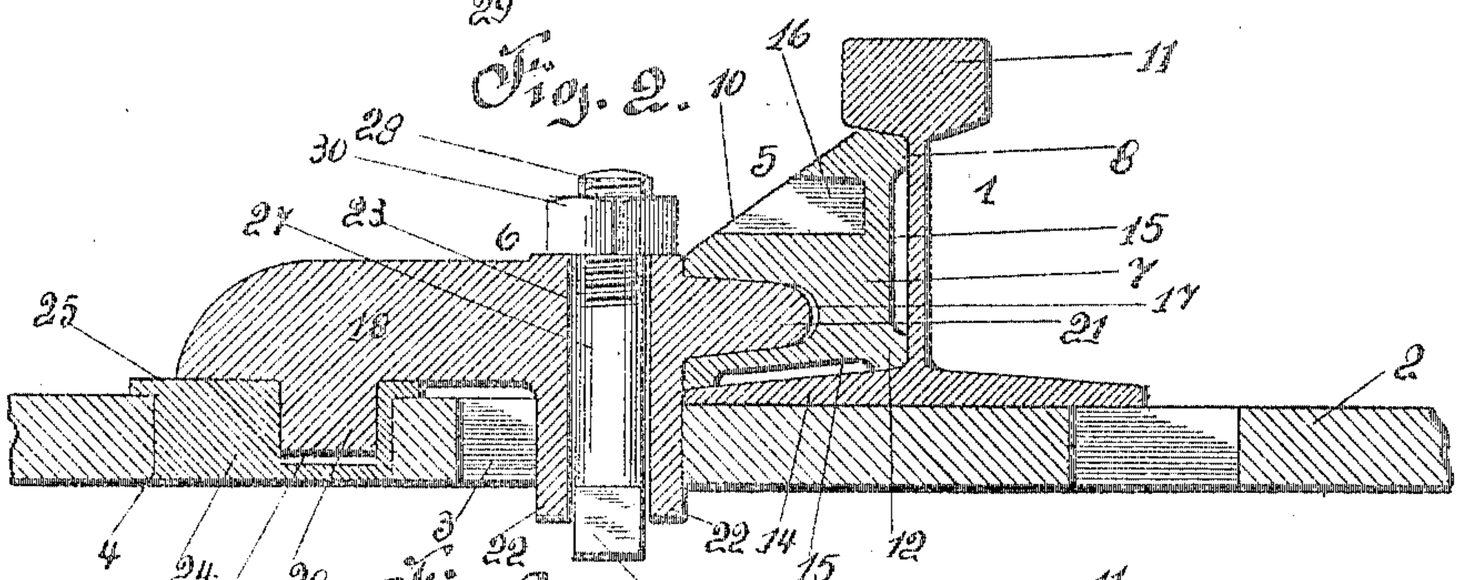


Fig 3.

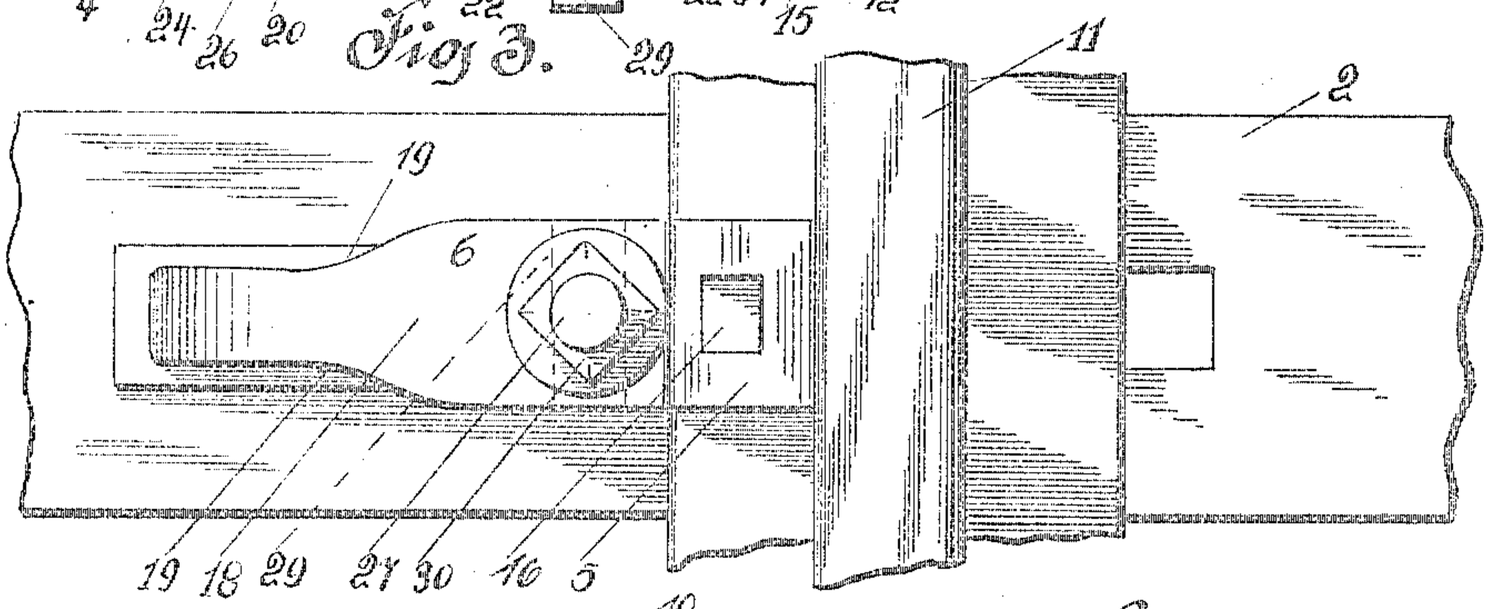


Fig. 4.

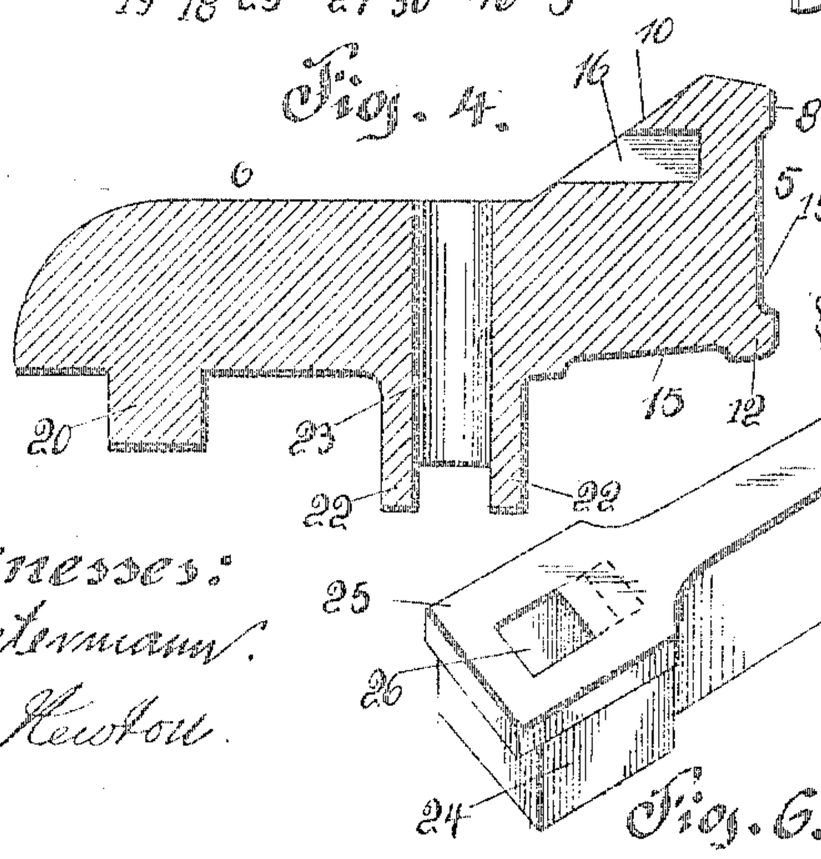
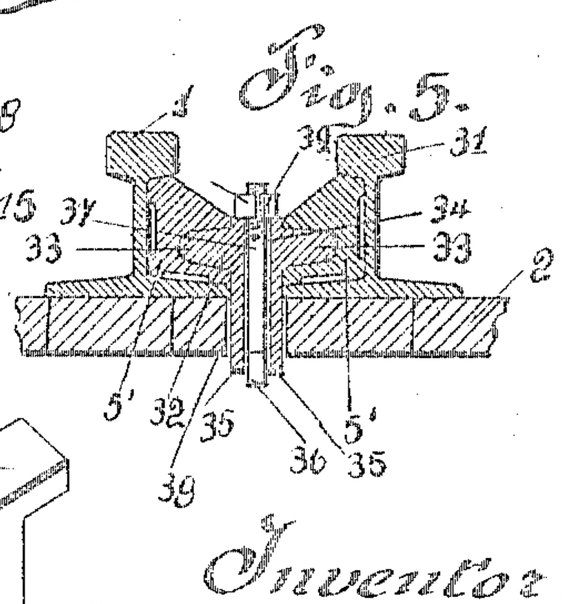


Fig. 5.



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UNITED STATES PATENT OFFICE.

THOMAS S. NEWTON, OF PITTSBURG, PENNSYLVANIA.

RAIL-FASTENER.

No. 804,618. Specification of Letters Patent. Patented Nov. 14, 1905.

Application filed July 17, 1905. Serial No. 269,952.

To all whom it may concern:

Be it known that I, THOMAS S. NEWTON, a citizen of the United States of America, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Rail-Fasteners, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to certain new and useful improvements in rail-fasteners; and the invention has for its object the provision of novel means for adjustably fastening a rail to a tie.

The invention is primarily intended to be used in connection with metallic ties of a standard or conventional form, and in this connection the invention aims to provide positive and reliable means for adjustably securing a rail upon a tie in such a manner that the fastening means can be easily and quickly manipulated to be placed in position or adjusted at any desired time. To this end I have devised a fastener to be used upon each side of a rail-section to retain it upon a tie in proper relation to its associate rail, the fastener consisting of a plurality of parts which can be easily and quickly placed together and secured to the tie to retain the rail-section in a fixed position until it has been moved by the vibratory stresses and strains exerted upon it, at which time the fastener can be adjusted to replace the rail in its original position. The rail-fastener can also be used for retaining a guard-rail in position relative to a main rail. In constructing the fastener I have embodied certain novel and inexpensive features of construction which will permit of the fastener being used extensively without materially increasing the expense of maintenance in connection with a railroad.

With the above and other objects in view, which will more readily appear as the nature of the invention is better understood, the same consists in the novel construction, combination, and arrangement of parts to be hereinafter more fully described, illustrated, and then specifically pointed out in the claims.

The essential features of the invention are necessarily susceptible to structural change without departing from the spirit and scope of the invention; but the preferred embodiments are illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of my improved fastener as applied to a rail. Fig. 2 is a longitudinal vertical sectional view of the same. Fig. 3 is a top plan view. Fig. 4 is a longitudinal sectional view of a portion of the fastener, illustrating a modified form of construction. Fig. 5 is a longitudinal sectional view of my improved fastener as constructed to be used in connection with a guard-rail and a main rail, and Fig. 6 is a perspective view of a cup used in connection with the fastener.

In the accompanying drawings, I have illustrated my improved fastener as applied to one side of a rail 1, which is supported upon a tie 2, this tie being of a standard or conventional form such as generally constructed of metal. I desire it to be understood that my improved fasteners are used upon both sides of the rail 1 for bracing the same, and the fasteners may be either arranged diametrically opposite one another or may be staggeredly arranged along the rails. To accommodate my improved fastener, the top of the tie is provided with two oblong openings 3 and 4, and as the fastener secured in these openings is to be opposed to another fastener upon the opposite side of the rail similar openings are formed in the top of the tie 2. The fastener proper consists of two members—a rail-block 5 and a tie-block 6. The rail-block consists of a body portion 7, having vertical sides 8 and 9 and an inclined or beveled top 10. The one edge of the top of the block 5 is adapted to engage the underneath side of the head 11 of the rail 1, while the bottom 12 of the block is adapted to rest upon the base flange 14 of the rail 1. The vertical sides 8 and the bottom 12 of the block 5 are cut away, as at 15, to reduce the weight of the same. The inclined top of the block 5 is provided with a horizontally-disposed recess or concavity 16, which reduces the weight and expense of manufacturing the block, also providing means whereby the block can be readily gripped and manipulated to be properly positioned relative to the rail 1. The vertical side 9 of the block is provided with horizontally-disposed tapering recesses 17, the object of which will be presently described.

The tie-block which is employed for retaining the rail-block in position consists of an oblong body portion 18, the outer end of which is contracted, as at 19, and provided with a substantially rectangular depending lug 20. The opposite end of the block 6 is provided with an outwardly-extending protuberance 21, adapted to fit within the recess 17 of the rail-block 5. The end of the block 6 adjacent to the outwardly-extending protuberance 21 is

provided with depending lugs 22 22, and formed in the body portion 18 of the block between these lugs is a vertically-disposed opening 23.

The elongated opening 4 of the tie 2 is provided with a snugly-fitting cup 24, the upper edges of which are flanged, as at 25, to support the cup within the opening 4. This cup is provided with a substantially rectangular recess 26, adapted to receive the depending lug 20 of the block 6.

When the block 6 is positioned upon the tie 2 to retain the rail-block 5 in position, the outwardly-extending protuberance 21 is placed in the recess 17 and the lug 20 within the recess 26 of the cup 24. In so positioning the blocks 6 the depending lugs 22 22 of the block extend downwardly in elongated openings 3 of the tie, and to retain the blocks 6 in this position I employ a bolt 27, having its one end screw-threaded, as at 28, while its opposite end is provided with a substantially T-shaped head 29. The bolt is adapted to be placed in the opening 23 and rotated until the substantially T-shaped head 29 engages the underneath faces of the tie 2 upon the side of the opening 3, this operation taking place from beneath the top of the tie 2, and after the bolt has been inserted in the opening 23 of the block 6 a nut 30 is placed on the screw-threaded end 28 of the bolt and rotated until the head 29 of the bolt has firmly gripped the tie and pressed the blocks 6 into engagement with the blocks 5 and the tie.

In order that the gage of the track can be at all times maintained, I have constructed my improved fastener whereby it can be easily and quickly adjusted to retain the rail in proper position relative to its associate rail. To accomplish this, it has been necessary that I employ means which will permit of the rail being moved in either direction, and for this reason I employ the cups 24, one of which is illustrated in Fig. 6 of the drawings. Instead of changing the size or rearranging the openings in the top of the tie or employing variable sizes of blocks I preferably change the size of the recesses 26, formed in the cup 24. By shifting or forming the recesses 26 of the cup 24 I am enabled to move the blocks 6, the block 5, and the rail and fastener to any desired position by the bolt 27. In dotted lines in Fig. 6 of the drawings I have illustrated the positions the recesses 26 may assume when the rail is to be moved and secured to the tie, whereby it and its associate rail will have a requisite gage relative to the rolling-stock which passes over the same. In operation the cups will be of the same size; but the position of the recesses within the cups will vary in fractions of an inch, whereby if it is found necessary to shift a rail one-sixteenth or one thirty-second part of an inch it will only be necessary to remove the fastener and place another cup in the opening 4 of the tie and then replace the fastener, which will retain the rail in its proper position. This adjustment of the block 6 is permitted by the elongated opening 3 of the tie 2, which permits of the depending lugs 22 22 being moved in the opening 3, these openings being laid out to the standard gage of track. The depending lugs prevent a bolt or the substantially T-shaped head 29 of the bolt from rotating after it has been once placed in position. The adjustable features of the blocks 6 which I have just described are also applicable to the fastener secured upon the opposite side of the rail, it being such that when the rail is shifted it is necessary that the fastener upon each side be adjusted in order to retain the rail in its proper position.

In Fig. 4 of the drawings I have illustrated a fastener which may be employed in lieu of the rail-block 5 and tie-block 6, this fastener simply being a combination of the two blocks, the fastener proper being in one integral piece constructed similar to the blocks 5 and 6.

In case my improved fastener is to be used in connection with a guard-rail 31 and the main rail 1 rail-blocks 5′ 5′ are used similar to the rail-block 5, the blocks being arranged to confront one another between the guard-rail 31 and the main rail 1, and the fastener 32, having outwardly-extending protuberances 33 33, is employed to lock the blocks in engagement with the tie 2. The fastener 32 is provided with a vertically-disposed aperture 34, having depending lugs 35 35, which permit the substantially T-shaped head 36 of a bolt 37, mounted in the aperture 34, from turning, the lugs 35 and the bolt 37 being adapted to extend through an opening 38, formed in the tie 2, the substantially T-shaped head 36 of the bolt 37 engaging the underneath surface of the tie upon each side of the opening 38, similar to the bolt 27, heretofore described. A nut 39 is employed for holding the fastener 32 in engagement with the tie 2 and the blocks 5′ 5′. In connection with this modification it will of course be understood that the fasteners are used upon the outer side of the rails 1 and 31.

It is thought from the foregoing that the construction, operation, and advantages of the herein-described rail-fastener will be apparent without further description, and various changes in the form, proportion, and minor details of construction may be resorted to without departing from the spirit of the invention or sacrificing any of the advantages thereof.

What I claim, and desire to secure by Letters Patent, is—

1. In a rail-fastener, the combination with a rail and a tie, said tie having elongated openings formed therein, of rail-blocks adapted to engage both sides of said rail, said rail-blocks having recesses formed therein, tie-blocks adapted to engage in said recesses, cups mount-

ed in said openings, said cups having recesses formed therein, a depending lug carried by each tie-block and adapted to fit within said recesses, said tie-blocks having vertically-disposed openings formed therein, depending lugs carried by each tie-block upon the sides of said openings, and adapted to extend downwardly in one of the openings of said tie, bolts passing through the openings of said tie-block, a T-shaped head carried by each bolt and adapted to engage the underneath surface of the top of the tie, and means for securing said bolts in said tie-blocks, substantially as described.

2. In a rail-fastener, the combination with a rail and a tie, said tie having elongated openings formed therein, a rail-block adapted to engage said rail, said rail-block having a recess formed therein, a tie-block mounted upon said tie, and engaging in said recess, a cup mounted in one of the openings of said tie, a depending lug carried by said tie-block and adapted to engage in said cup, said tie-block having an opening formed therein, a bolt mounted in said opening and adapted to hold said tie-block in engagement with said tie, means to prevent said bolt from rotating, substantially as described.

3. In a rail-fastener, the combination with a rail and a tie, said tie having openings formed therein, a rail-block adapted to engage said rail, a tie-block mounted upon said tie and adapted to engage said rail-block, a cup mounted in one of said openings, a depending lug carried by said tie-block and adapted to engage in said cup, means to hold said tie-block in engagement with said tie, means to adjust said tie-block, substantially as described.

4. In a rail-fastener, the combination with a rail and a tie, of a rail-block adapted to engage said rail, a tie-block adapted to engage in said rail-block, means to hold said tie-block in engagement with said tie, and means to adjust said tie-block upon said tie, substantially as described.

5. In a rail-fastener, the combination with a rail and a tie, of a rail-block adapted to engage said rail, a tie-block adapted to engage in said rail-block, means to adjustably fix said tie-block to said tie, substantially as described.

6. The combination with the rail and a tie having an opening, of a rail-block seating on the base-flange of the rail, a tie-block engaging said rail-block having a depending lug extending through the opening in the tie, and having a vertical opening through said lug, and a bolt passed through said opening in the lug and having a head engaging the underneath face of said tie, substantially as described.

7. In a rail-fastener, a rail-block provided on its outer face with a recess, a tie-block having a projection on its inner end seating in said recess, in combination with a tie, and means detachably securing the tie-block to the tie.

8. In a rail-fastener, a tie-block provided on one end with a projection and having a lug on its underneath face, in combination with means for detachably securing the tie-block to a tie, and a detachable cup engaged by said depending lug.

9. In a rail-fastener, the combination with a tie, of a tie-block detachably secured to the tie, and a removable cup seated in the tie and engaged by said tie-block.

10. In a rail-fastener, a rail-block, and a tie-block, engaging each other, the rail-block engaging a rail, and the tie-block engaging a tie, in combination with a bolt passed through the tie and tie-block, and having a T-shaped head engaging the underneath face of the tie, substantially as described.

11. In a rail-fastener, a rail-block seating on the base-flange of a rail and having a recess in its outer face, in combination with a tie-block detachably secured to a tie, and having a projection engaging in the recess in the rail-block.

12. In a rail-fastening, a tie-block provided with depending lugs projecting through the tie, and adjusting means for the block engaging one of said lugs and removably mounted in the tie.

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

THOMAS S. NEWTON.

Witnesses:

JNO. J. SWAN,

DAVID NEWTON.