G. L. HALL.

GUARD RAIL CLAMP.

APPLICATION FILED AUG. 22, 1907.

993,595.

Patented May 30, 1911.

2 SHEETS—SHEET 1.

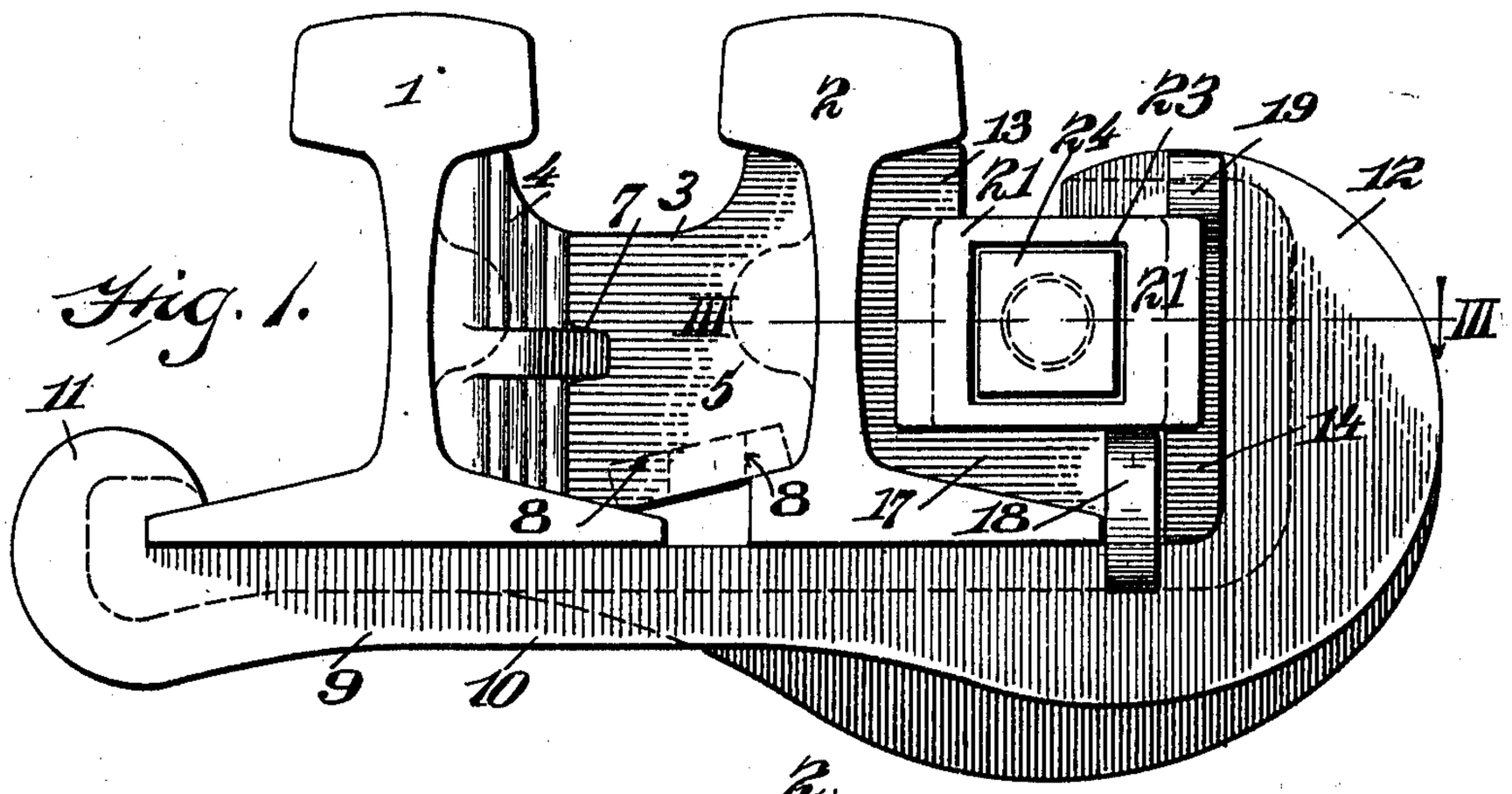

Fig. 1.

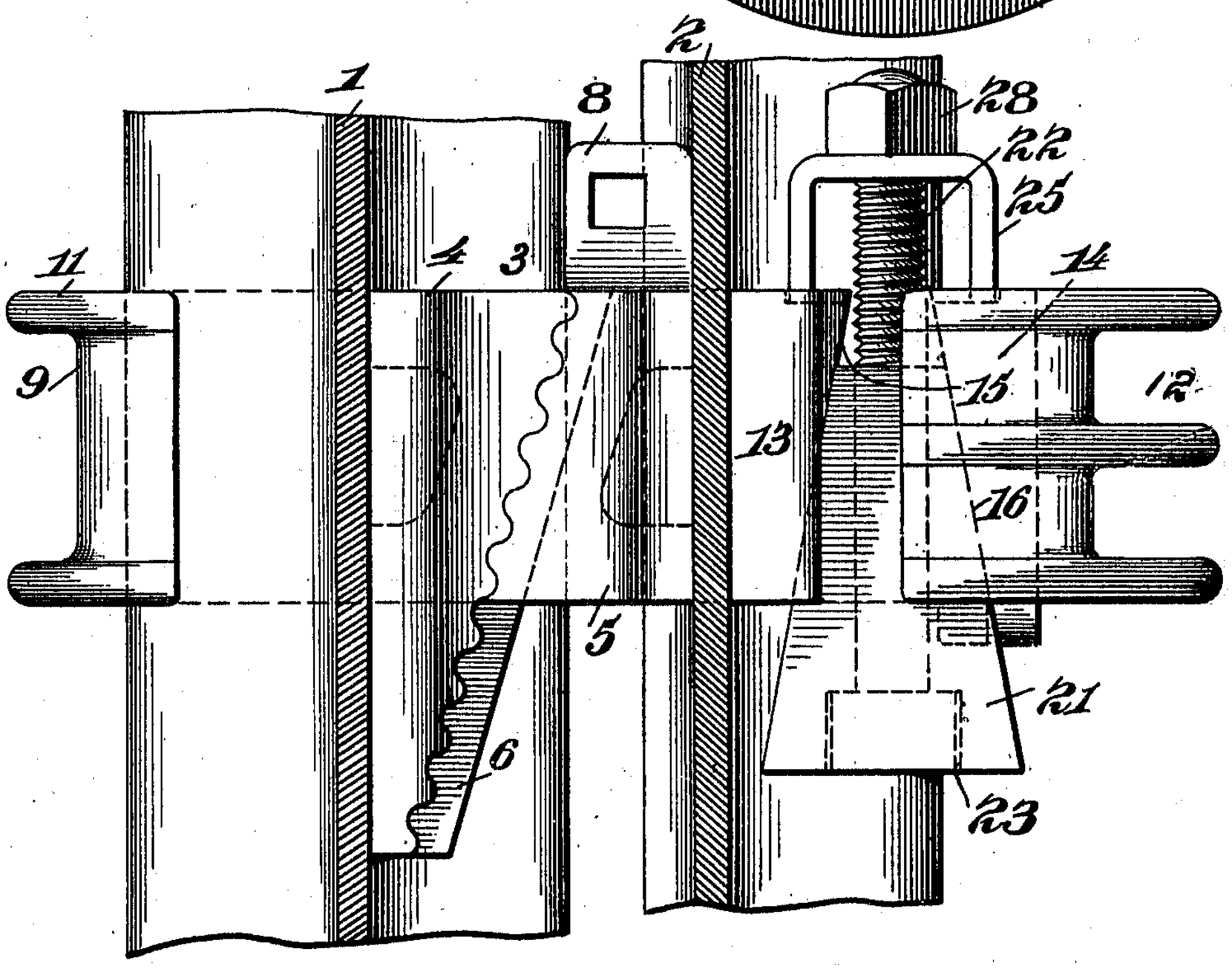

Fig. 2.

WITNESSES

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Fig. 3.

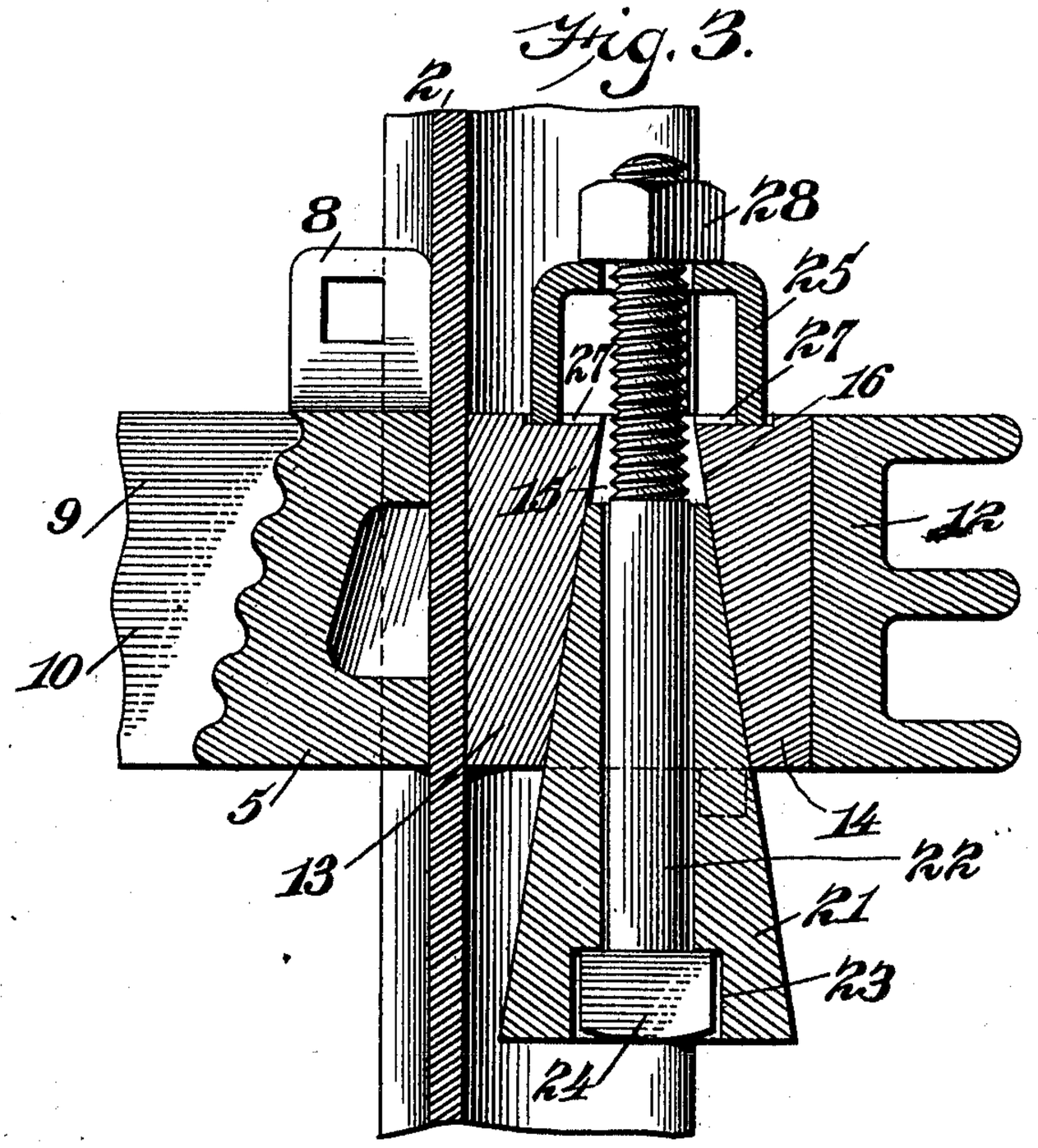


Fig. 4.

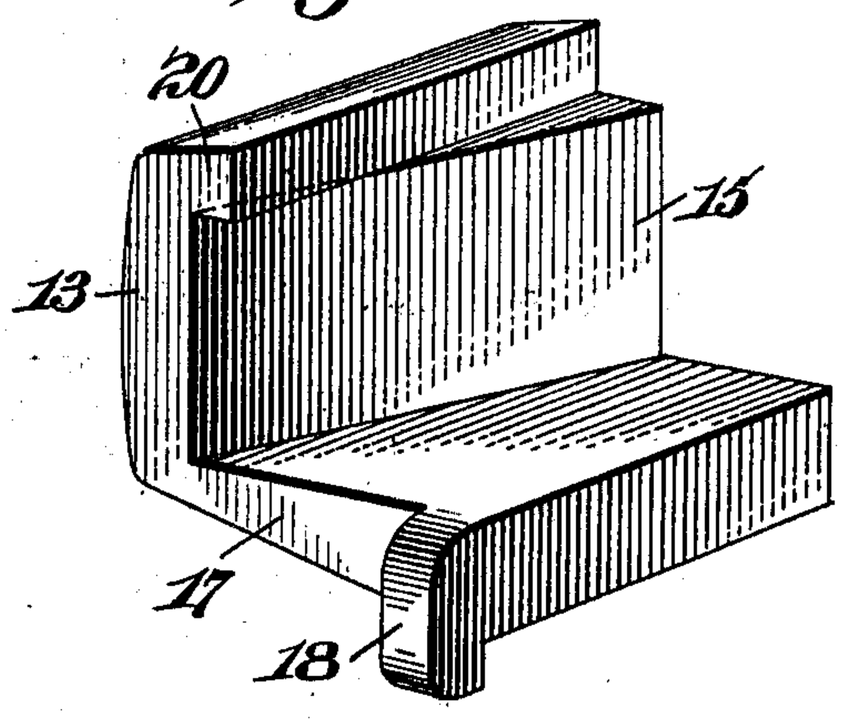
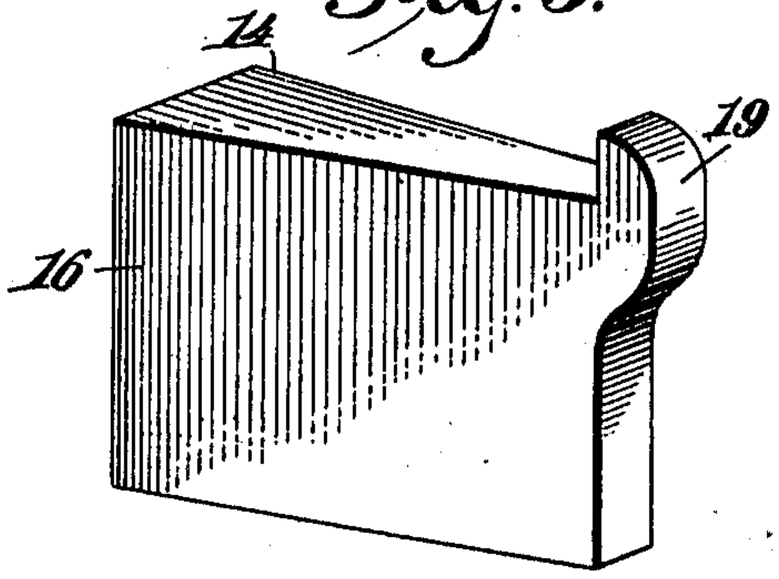


Fig. 5.



WITNESSES

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GEORGE L. HALL, OF NEW YORK, N. Y.

GUARD-RAIL CLAMP.

993,595. Specification of Letters Patent. Patented May 30, 1911.

Application filed August 22, 1907. Serial No. 389,675.

To all whom it may concern:

Be it known that I, GEORGE L. HALL, a citizen of the United States, residing in the borough of Manhattan, city, county, and State of New York, have invented certain new and useful Improvements in Guard-Rail Clamps, of which the following is a specification, reference being had therein to the accompanying drawings, in which—

Figure 1 is an end elevation of the device in position; Fig. 2 a plan view, the track and guard rails being shown in horizontal section; Fig. 3 a horizontal sectional view taken on the line III—III of Fig. 1; Fig. 4 a detail perspective view of one member of the wedge-block; and Fig. 5 a similar view of the other member of the wedge-block.

This invention relates to that class of devices known as guard rail clamps, and which are used for the purpose of clamping a guard rail to the adjoining track rail, a filler-block or spacing means being interposed between the two rails to hold them a fixed distance from each other.

One of the objects of this invention is to provide means by which the clamp may be rigidly held in position without spiking the clamping means to the tie, or keying it to the guard rail.

Another object of the invention is to provide means whereby the clamp will be held in place by a wedge device, and a tension device mounted on said wedge device, to hold the same tightly in engagement with the wedge block or co-acting wedge piece; and a further object of the invention is to provide means whereby the wedge may at any time be forced into closer engagement with the wedge block to increase the clamping effect on the rails.

It is well known that in devices of this character where a wedge is used to secure the clamp in place, a very slight movement of the wedge will loosen the clamp and render the entire device practically useless. The means heretofore used for holding the wedge against the co-acting parts were defective in that they did not provide for a convenient and efficient adjustment of the wedge to tighten the parts.

This invention provides means for holding the wedge tightly in position and under a tension; and also provides means for increasing this tension and for taking up any slack which may occur between the wedge and its co-acting part by reason of wear, or expansion or contraction of the parts of the device or the rails.

Referring to the various parts by numerals, 1 designates the track rail and 2 the guard rail. To space the guard rail a suitable distance from the track rail I employ the two-part filler block 3. This block is composed of two parts, 4 and 5, which are separated vertically on a diagonal line, the adjoining surfaces thereof being ribbed and grooved vertically so that the two parts may be interlocked to prevent independent end-wise movement of said sections or members. The member 4 is provided midway between its upper and lower edges with an outward extending horizontal rib 6 which extends the entire length of the block; and the co-acting member 5 is formed with a corresponding groove 7 to receive said rib, whereby the two members will be held against independent vertical movement. The member 4 is considerably longer than the member 5 to provide for a considerable range of adjustment. It will be seen that by adjusting the blocks on each other the guard rail may be spaced various distances from the track rail. The member 5 is provided with a longitudinally extending lug 8 which is perforated vertically to permit a spike to be driven through it into the adjoining tie for the purpose of anchoring the filler block at the desired point between the two rails.

The clamp bar proper 9 is formed with a main horizontal portion 10 which extends under the two rails, as shown in Fig. 1. At one end of said clamp bar is formed with a short upward extending hook 11 which is designed to engage the edge of the base of the track rail. The other end of the bar is formed with a large upward extending yoke 12 and within said yoke and against the adjoining side of the guard rail 2 is arranged the wedging device by which the clamp bar is held in position. This wedging device consists of a wedge-block formed of two parts 13 and 14, having the oppositely inclined faces 15 and 16, the face 15 being formed on the part 13 and the face 16 being formed on the part 14. These faces incline toward each other, as shown clearly in Fig. 3. The outer face of the part 13 fits against the vertical web of the guard rail and under the head thereof. This part 13 is also formed with a base piece 17 which fits on the top of the base of the guard

rail, as shown clearly in Fig. 1; and this base piece, at one end of its outer edge, is formed with a downward extending holding lug 18 which engages the side of the clamp bar 9 and holds the block 13 against movement in one direction. The other part of the wedge block, 14, fits against the inner side of the yoke 12 and is provided at its upper end with an upward extending lug 19 which is adapted to engage the upper part of the yoke 12 and to hold the said member of the wedge block against movement in one direction through the clamp bar. The block 13 is formed at its upper end with an over-hanging head 20 which extends out beyond the rear edge of the inclined face 15, as shown clearly in Figs. 1, 2 and 4, and for a purpose which will hereinafter appear.

Fitting between the two inclined faces 15 and 16 of the members of the wedge block is a wedge 21 whose vertical sides are tapered to correspond with the inclinations of the faces 15 and 16. This wedge rests upon the upper surface of the base part 17 of the wedge block member 13 and fits under the overhanging part of the head 20 of said member, so that said wedge is held against vertical movement by said wedge block member. The upper end of the yoke 12 of the clamp bar extends over and engages the upper side of the wedge 21, as shown clearly in Figs. 1 and 2, and holds the wedge in position against vertical movement. This inward extending portion of the yoke 12 also holds the member 14 of the wedge-block against vertical movement.

The wedge 21 is bored longitudinally to receive the clamping bolt 22, and the larger end of the wedge is formed with a recess 23 to receive the head 24 of said bolt. A U-shaped washer or bridge piece 25 is placed over the threaded end of the bolt, its ends resting in recesses 27 formed in the vertical faces of the members 13 and 14 of the wedge block. To force the wedge inward between the two members of the wedge-block a nut 28 is screwed on the projecting end of the bolt and bears against the outer end of the U-shaped washer. The washer or bridge-piece is somewhat flexible so that when the nut 28 is forced against it the wedge will be held between the two members of the wedge block with a spring tension, the U-shaped washer tending to hold the wedge tightly in position and taking up any slight variation in the expansion or contraction of the wedge or the members of the wedge block or other parts of the clamp.

It will readily be seen that the wedge may be tightened conveniently and quickly at any time by screwing up the nut 28 against the U washer 22, and that by this means the wedge is securely held in its position. It will, therefore, be unnecessary to spike it to a tie, or key it to the guard rail, or to secure it in any other way against endwise movement. It will also be understood that by providing the holding lugs 18 and 19 the members of the wedge block will be held in their proper positions with respect to the clamp during the operation of screwing up the nut 28 to force the wedge between the members of the wedge block.

By providing one member of the filler block with the perforated lug 8, said filler block may be placed at any desired point between the track rail and the guard rail and spiked to the tie to hold it in position. By this means it will be unnecessary to always place the filler block between the rails and over the clamping bar; it may be placed at one side of the clamp bar.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is:—

1. A guard rail clamp comprising a clamp arm provided with means at one end to engage the track rail and at its other end with upward extending means to engage a wedge device, a two-part wedge block fitting between the clamp arm and the guard rail, one of said parts being provided with a substantially vertical portion to engage the web of the guard rail, and a horizontal portion to engage the base of the guard rail and to support the wedge, both of said parts being provided with inwardly inclined vertical faces, and a wedge between the two parts of the wedge block, each part of the wedge block being provided with means to engage the clamp arm, and means for drawing the wedge in between the parts of the wedge block and holding it in position.

2. A guard rail clamp comprising a clamp arm provided with means at one end to engage the track rail and at its other end with an upwardly extending yoke adapted to receive a wedge device, a two-part wedge block fitting within the yoke and bearing against the guard rail, said parts being provided with means for engaging the yoke to hold them against longitudinal movement through the yoke, a wedge between the two parts of the wedge block and adapted to separate them, a bolt connected to the wedge and projecting from the smaller end thereof, means on the bolt to engage the parts of the wedge block, and a nut on said bolt, whereby the wedge may be drawn in between the two parts of the wedge block.

3. A guard rail clamp comprising a clamp arm provided with means at one end to engage the track rail and at its other end with an upwardly extending yoke, a two-part wedge block fitting within said yoke and adapted to bear against the outer side of the guard rail, said blocks being formed with converging adjacent faces, a double wedge adapted to fit between the parts of the wedge block, a bolt connected to the smaller end

of said wedge, a nut on said bolt, means to prevent the nut contacting with the ends of the wedge block, and means connecting the wedge blocks to the clamp yoke whereby they will be held stationary during the movement of the wedge.

4. A guard rail clamp comprising a clamp arm provided with means at one end to engage the track rail and at its upper end with an upwardly extending yoke, a two-part wedge block fitting within the yoke and adapted to bear against the guard rail, the inner adjoining faces of said wedge block sections converging, a double wedge fitting between the parts of said wedge block, a bolt projecting from the smaller end of said wedge, and a nut on said bolt to draw the same inwardly between the parts of the wedge block.

5. A guard rail clamp comprising a clamp arm provided with a yoke at one end, a two part wedge block in said yoke and adapted to bear against the adjoining side of the guard rail, the inner faces of the parts of said wedge block converging, and a double wedge between said parts.

6. A guard rail clamp comprising a clamp arm provided with a yoke at one end, a two-part wedge block in said yoke and adapted to bear against the adjoining side of the guard rail, the inner faces of the parts of said wedge block converging, a double wedge between said parts and means for adjusting said double wedge.

In testimony whereof I hereunto affix my signature in the presence of two witnesses this 8th day of August 1907.

GEO. L. HALL.

Witnesses:
WM. R. DAVIS,
E. H. H. KAUFMANN.