

J. M. VAIL.

RAIL CLAMP.

APPLICATION FILED SEPT. 2, 1908.

911,686.

Patented Feb. 9, 1909.

2 SHEETS—SHEET 1.

Fig. 1.

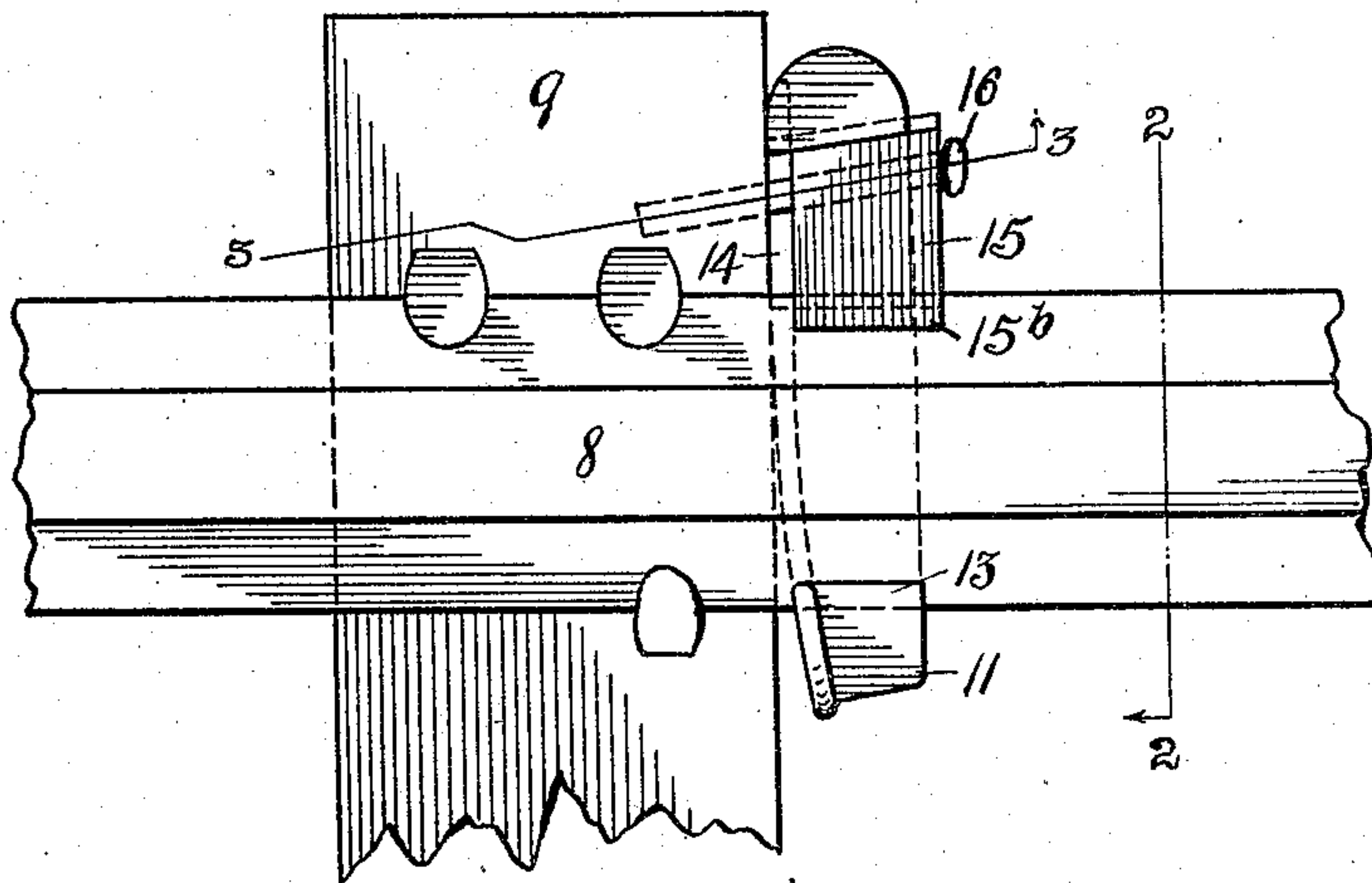


Fig. 2.

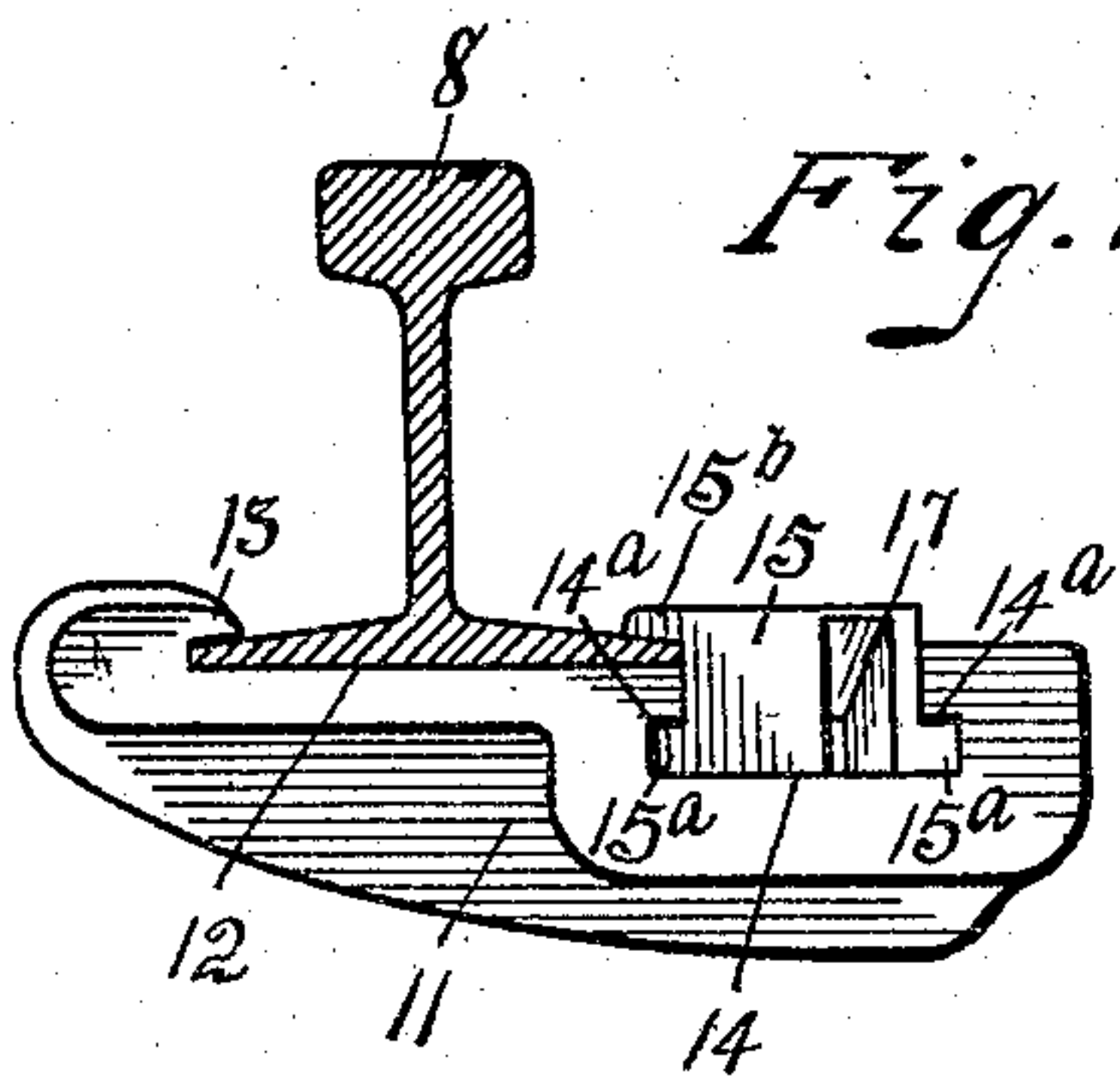


Fig. 3.

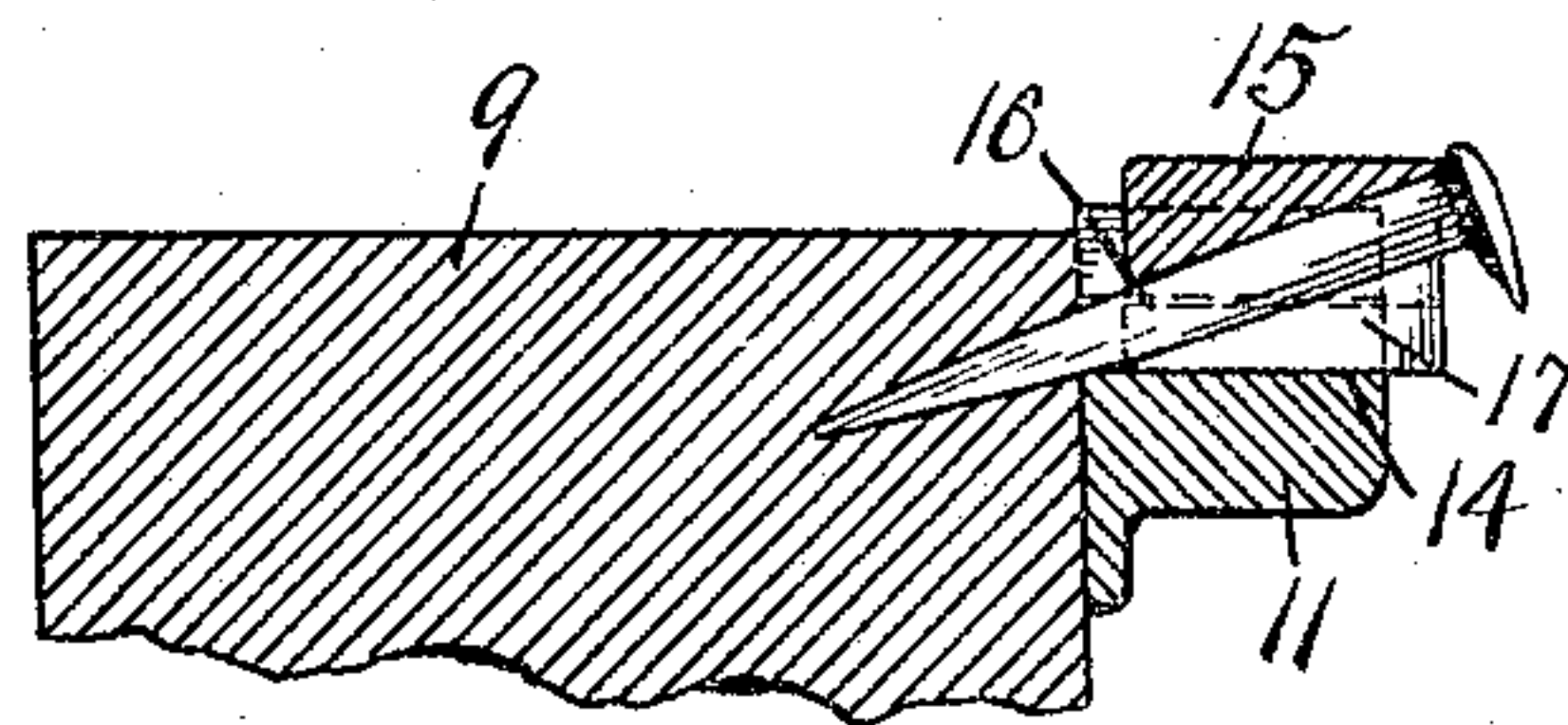
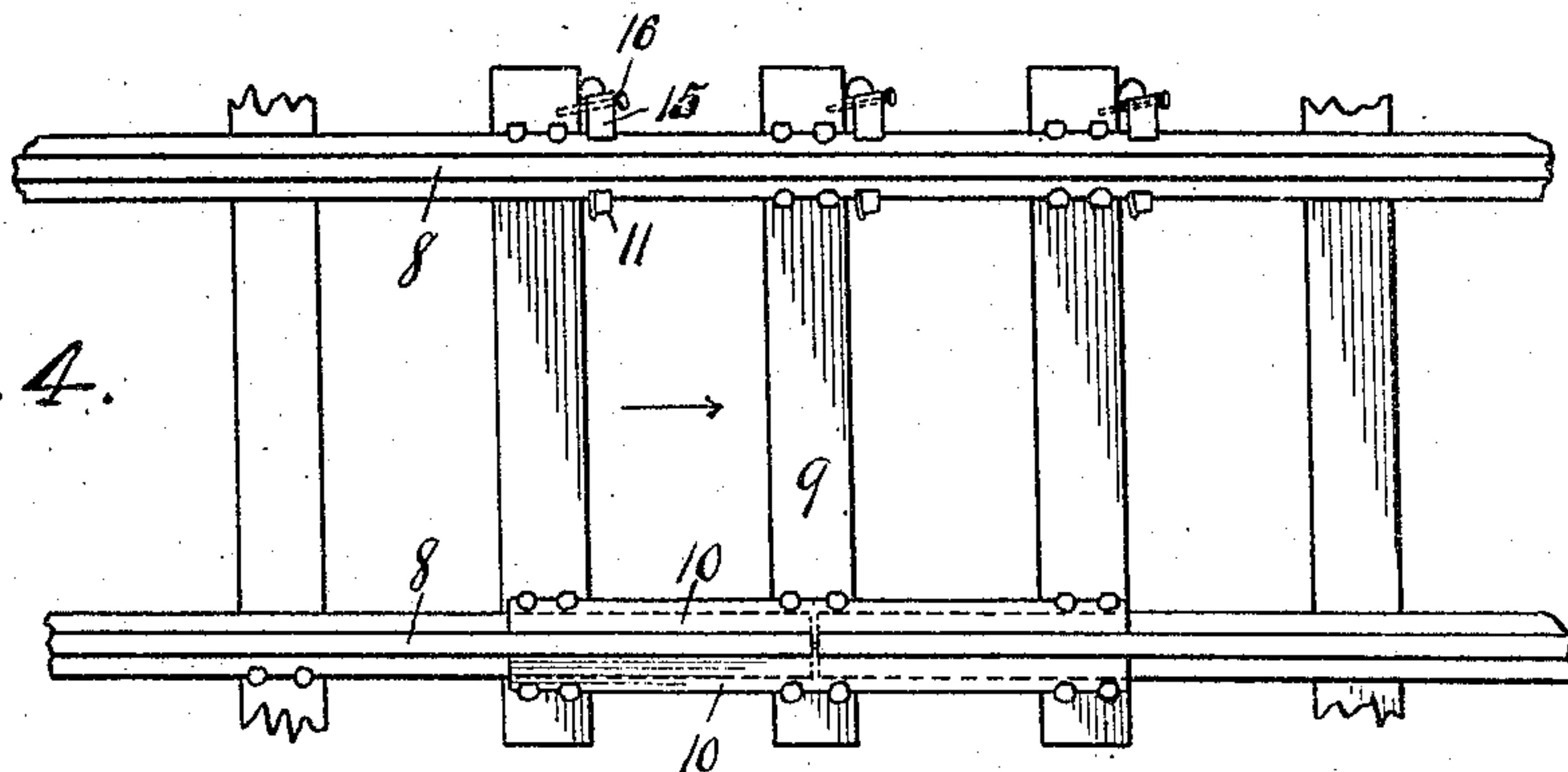


Fig. 4.



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2 SHEETS—SHEET 2.

Fig. 5.

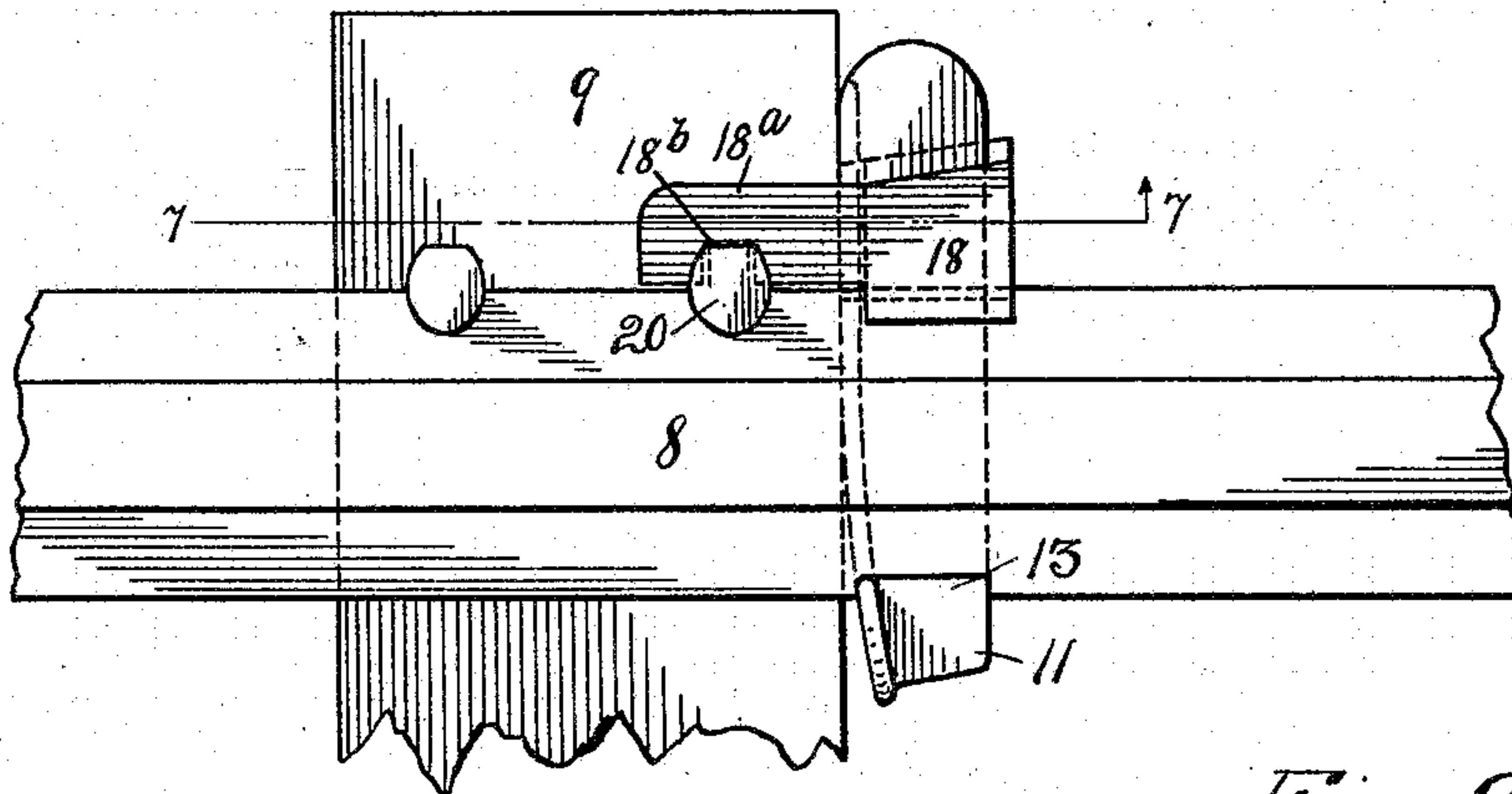


Fig. 6.

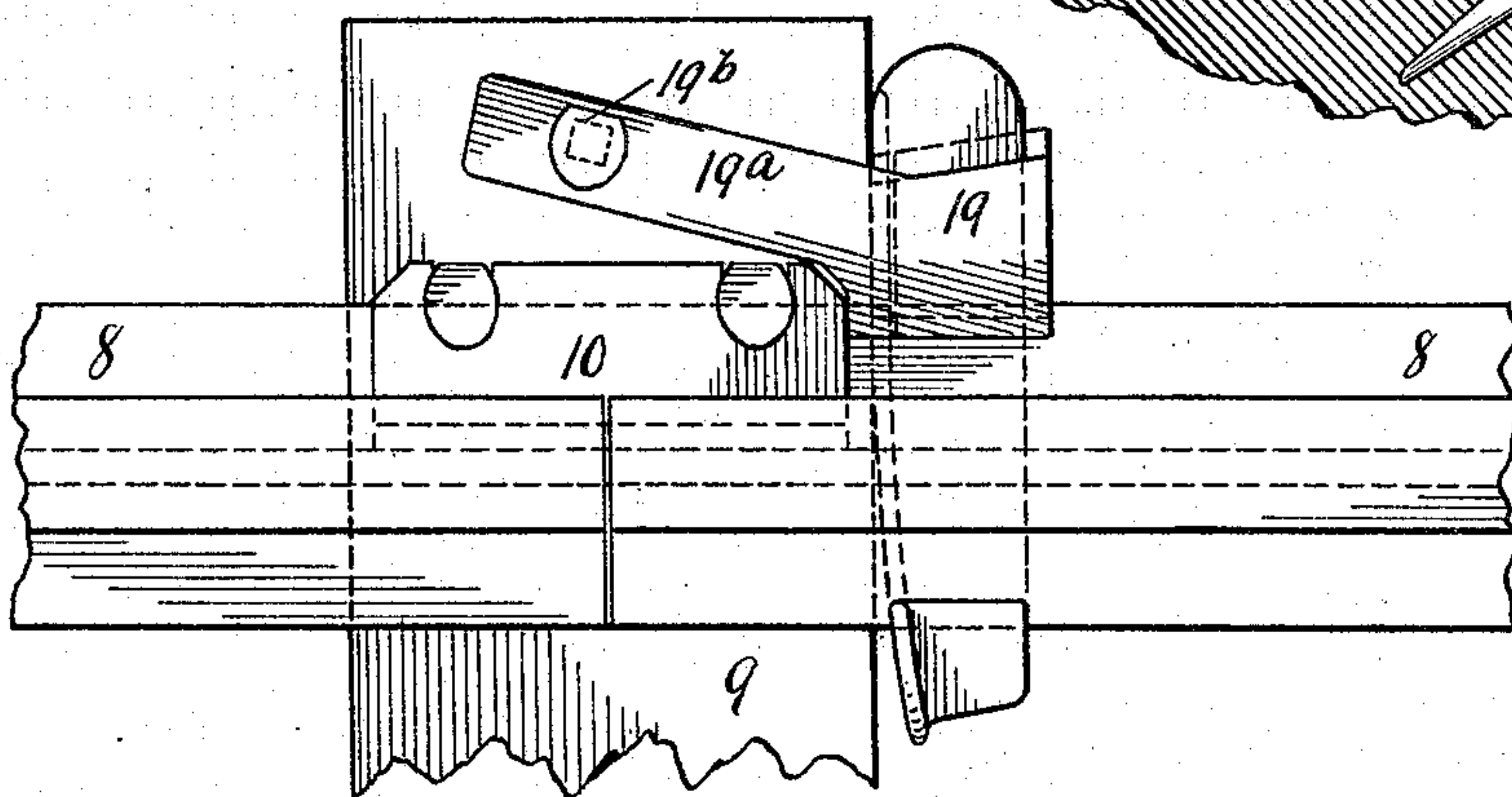


Fig. 8.

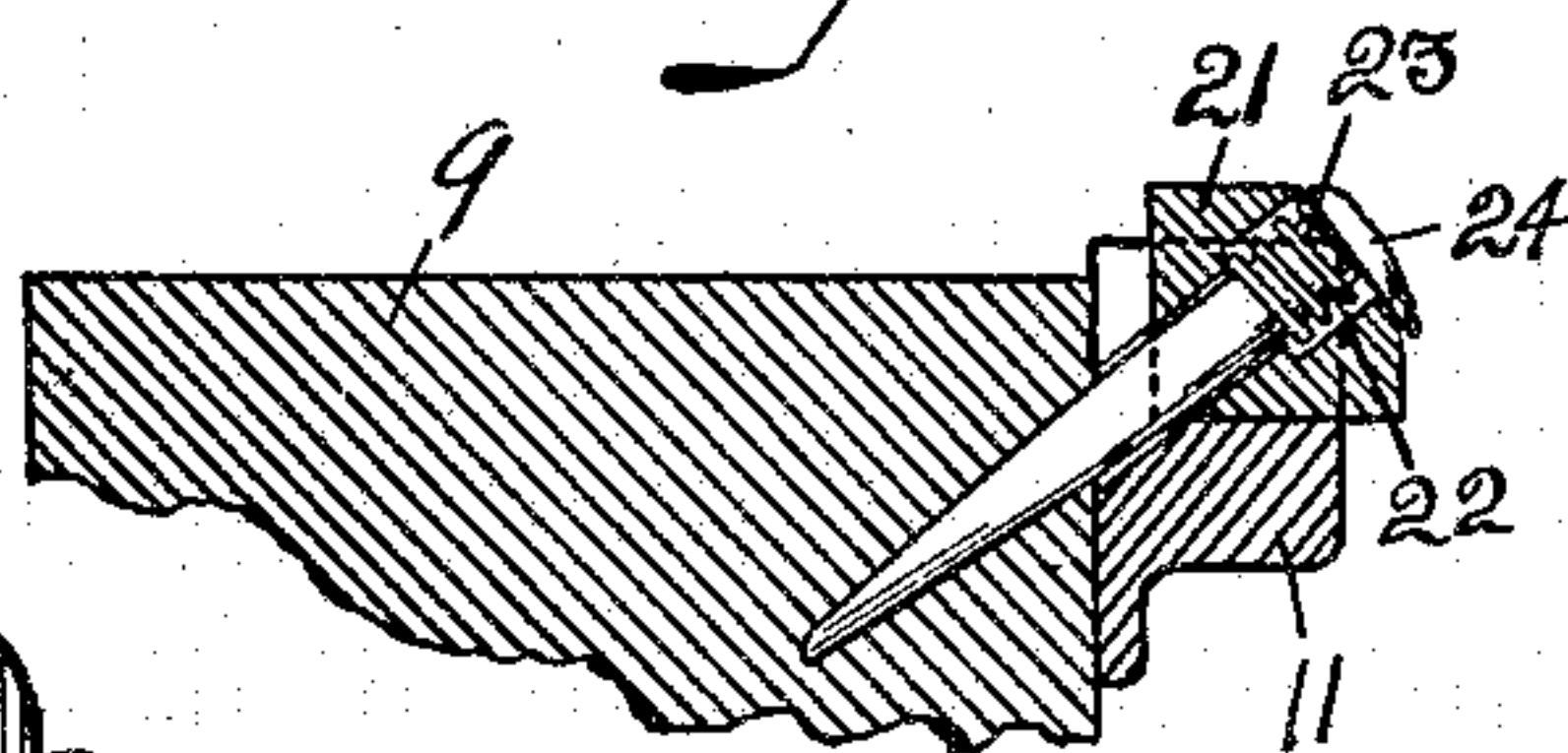
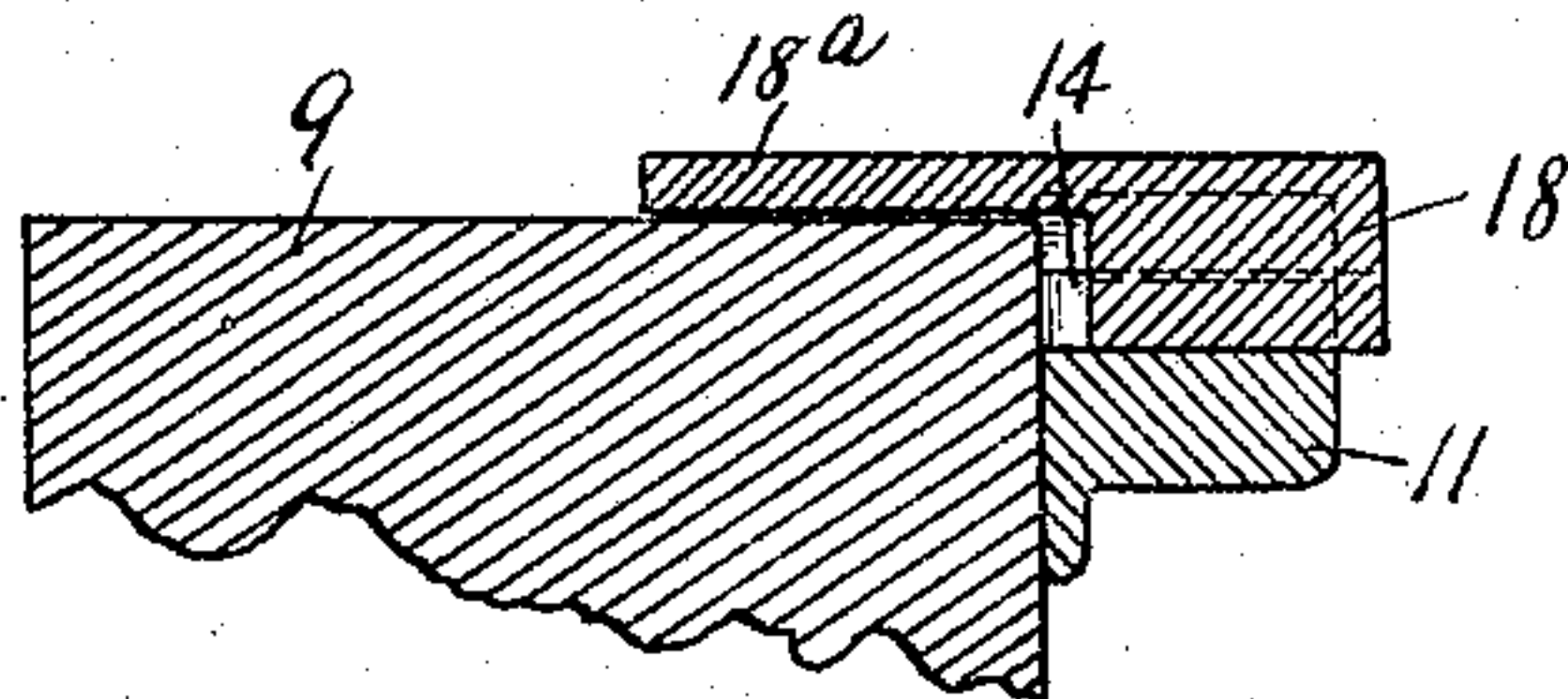


Fig. 7.



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UNITED STATES PATENT OFFICE.

JOSEPH M. VAIL, OF BRYAN, OHIO.

RAIL-CLAMP.

No. 911,686.

Specification of Letters Patent.

Patented Feb. 9, 1909.

Application filed September 2, 1908. Serial No. 451,291.

To all whom it may concern:

Be it known that I, JOSEPH M. VAIL, a citizen of the United States, and a resident of Bryan, in the county of Williams and State of Ohio, have invented a certain new and useful Rail-Clamp; 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, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to railway appliances, and has reference more particularly to clamps of the class adapted to cooperate with the rails and ties of a track to prevent relative movements thereof.

The object of my invention is to improve upon the construction and efficiency of the clamp described and claimed in my former application for United States Letters Patent, filed July 13, 1908, Serial No. 443,287, whereby the rails of a track are not only effectually prevented from spreading and creeping relative to the ties supporting them, but are also strengthened and more rigidly supported at curves than is the case with the clamps heretofore used.

The operation, construction and arrangement of the parts of the invention are fully described in the following specification, and illustrated in the accompanying drawings, in which,—

Figure 1 is a plan view of portions of a rail and tie with the device comprising my invention associated therewith. Fig. 2 is a section on the line 2 2 in Fig. 1 with the spike removed from the locking wedge. Fig. 3 is a section on the line 3 3 in Fig. 1. Fig. 4 is a plan of a section of a track having my invention associated therewith. Figs. 5 and 6 are plan views of portions of a rail and tie with different modifications of my invention associated therewith. Fig. 7 is a section on the line 7 7 in Fig. 5, and Fig. 8 is a section similar to Fig. 3 of another modification of my invention.

Referring to the drawings, 8 designates the rails of a track, 9 the ties supporting the same, and 10 the usual fish-plates joining the ends of abutting rails together.

My improved clamp is intended to be clamped to the base of a rail 8, and comprises the clamp-bar 11, which is intended to

underlie the rail with its top portion 12 adapted to rest against the under side of the rail-base and one end formed with an upwardly and inwardly turned hook 13 for engaging over one flange or side of the rail-base. The opposite end of the clamp-bar 11 is made heavier than the hooked end 13 and has its top surface provided with a transversely-disposed groove 14 in which a wedge-block 15 is mounted for movements transversely of the bar. This wedge-block is formed at its lower side edges with ribs 15^a for working in ways 14^a in the walls of the groove to prevent vertical movement of the block therein, and has its upper inner edge formed with a lip or flange 15^b for overhanging the edge of the contiguous base flange of the rail to cooperate with the hook 13 to firmly hold the clamp-bar to the rail-base, as shown. To adapt the block 15 to have a wedge-like action on the rail-base when moved longitudinally in its groove the outer sides of both the groove and block are tapered to effect a gradual contraction of the width of each from one end to the other thereof, as shown.

In Figs. 1 to 4 the wedge-block is shown as being secured in locked position with an associated rail-base by inserting a spike 16, or other suitable securing means, through the transversely-disposed bottom groove or aperture 17 in the block and driving the same in or otherwise rigidly securing it to the side of the tie against which the clamp-bar 11 abuts. The groove or aperture 17 is preferably, but not necessarily, inclined both vertically and horizontally relative to the wedge-block, as shown, to cause the inner end of the spike to be more deeply embedded into the tie and to render its withdrawal more difficult when a strain in the direction of outward movement of the block is exerted thereon. With this construction it is evident that a driving home of the spike 16 or other securing means tends to tighten the wedge-block upon its rail.

The constructions shown in Figs. 5, 6 and 7 are the same as that above described, except that instead of passing the spike or other securing means through the body of the wedge-block to secure it to the associated tie, the wedge-block, which is designated 18 in Figs. 5 and 7, and 19 in Fig. 6, is formed at its small or inner end with a tongue, which projects over the contiguous top portion of the tie. In the form shown in

Figs. 5 and 7 this tongue, which is designated 18^a, parallels the edge of the rail-base in contiguous position thereto, and is provided in its inner or rail side with a notch, as at 18^b, through which the shank of one of the rail-holding spikes 20 passes, thus utilizing a single spike to secure both the rail and the wedge-block to the tie. In Fig. 6 the tongue, which is designated 19^a is shown as being offset from the side of the rail-base to adapt it to escape a fish-plate 10, and is secured to the tie by a spike 19^b, which is passed through an aperture therein.

The construction shown in Fig. 8 is similar to that shown in Figs. 1 to 4, except that the wedge-block, which is designated 21, has its spike receiving aperture enlarged at its outer end, as at 22, to form an internal shoulder against which one end of a coiled compression spring 23 is intended to seat. This spring is intended to encircle the shank of the spike 24 holding said block to the tie and to have its outer end thrust against the spike head, as shown, thus tending to prevent a loosening of the wedge-block relative to the rail should the spike work out a short distance.

In practice the clamps comprising my invention are secured to the base of a rail in position to abut against a side of each tie, the opposite end portion of which is spiked to a fish-plate. The clamps are preferably placed in abutment with the far sides of the ties in the direction in which the rails have a tendency to creep, or in other words if the rails creep to the right the clamps are placed at the right of the coacting ties. The clamp-bar having been engaged with a rail and the wedge-block forced home to securely hold the clamp thereto, the block is attached to the side of the associated tie by inserting a spike through the body thereof and driving it into the side of the tie, as in Figs. 1 to 4 and 8, or by driving the spike through the tongue and into the tie, as in Figs. 5 to 7. It is now evident that a creeping of the rail will carry the engaged clamp with it and will also move the tie therewith due to the wedge-block of the clamp being attached thereto, and also that a creeping of the rail will tend to effect a tightening of the clamp thereon, due to resistance exerted on the wedge-block by the attached tie.

It is apparent that my improved clamp not only prevents a creeping of the rails relative to the attached ties, but that they also tend to prevent a spreading of the rails due to the clamps being attached to the ties, and very materially assist in supporting the rails on curves when used at such points.

I desire it to be understood that my invention is not limited to any specific form or arrangement of parts except in so far as such limitations are specified in the claims.

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

1. The combination with a rail and a tie, of a clamp-bar adapted to underlie the rail-base and having rail-engaging means at one end, a wedge-block carried by the clamp-bar and adapted to cooperate with said means to firmly hold the clamp-bar to the rail, and means piercing the block transversely of the bar and engaging the tie to prevent relative movements of the tie and block.

2. The combination with a rail and a tie, of a clamp-bar adapted to underlie the rail-base and having rail-engaging means at one end, a wedge-block carried by and cooperating with the clamp-bar to firmly hold a rail, said block having a transverse opening, a member projected through said opening and cooperating with the tie to prevent relative movements of the block and tie, and means permitting a horizontal but preventing a vertical movement of the block relative to the bar.

3. The combination with a rail and a tie, of a clamp-bar and a wedge-block which cooperate to firmly grip the rail-base, means projected through the wedge-block and engaging the tie, and means yieldingly coacting with said first means and block to prevent relative movements of the block and tie.

4. In combination with a rail and tie, a clamp comprising a bar adapted to underlie the rail-base and having a rail-flange engaging hook at one end and a transverse groove in its top surface near its other end, said groove having its outer wall inclined relative to its inner wall to restrict one end of the groove, a wedge-block mounted for movement in said main groove transversely of the bar and having a rail-flange engaging lip which cooperates with said hook to rigidly hold the bar to the rail, said groove and block having complementary portions which permit horizontal but prevent vertical movements of the block in the groove, and means for attaching the wedge-block to the tie, substantially as described.

In testimony whereof I have hereunto signed my name to this specification in the presence of two subscribing witnesses.

JOSEPH M. VAIL.

Witnesses:

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