July 22, 1924. 1,502,581

J. G. MUELLER

RAIL BRACE

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Fig. 1.

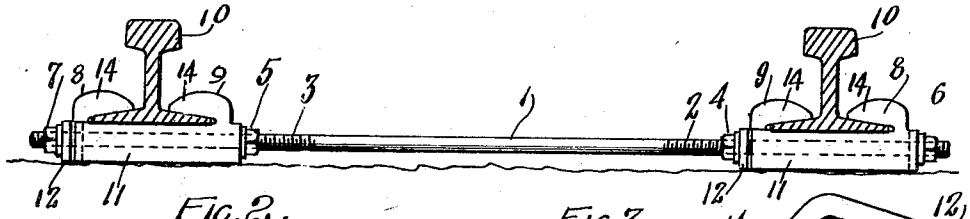


Fig. 2.

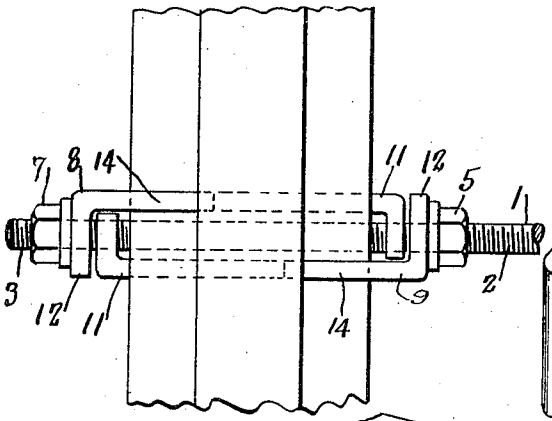


Fig. 3.

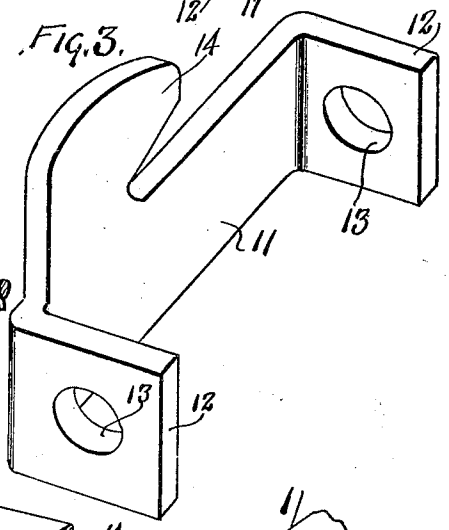


Fig. 4.

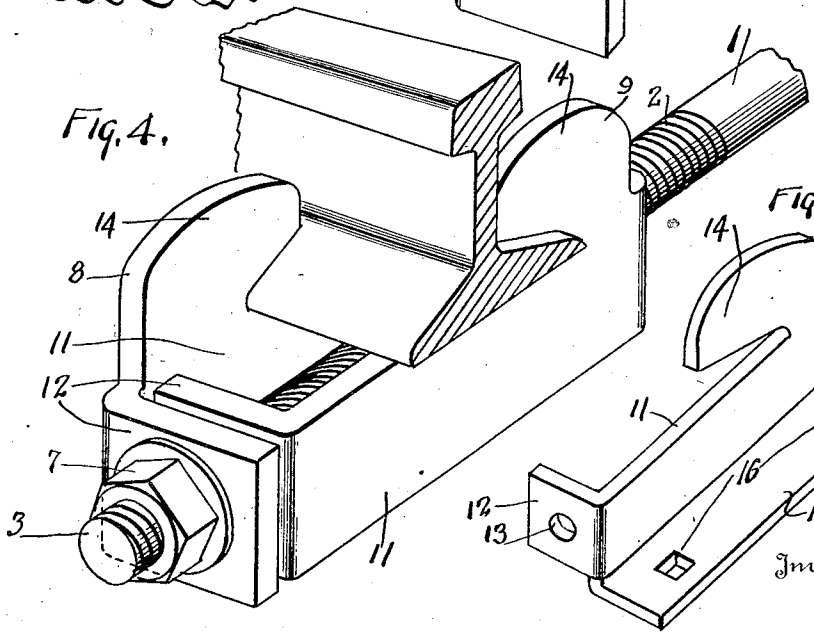


Fig. 5.

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Fig. 6.

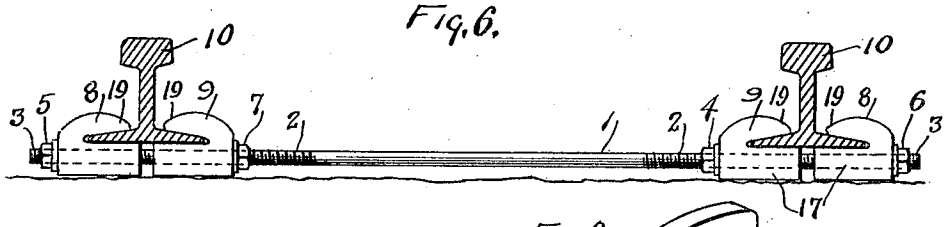


Fig. 7.

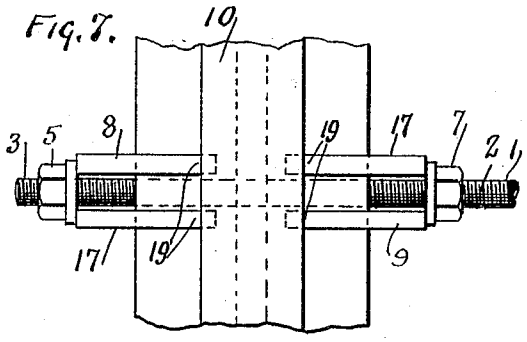


Fig. 8.

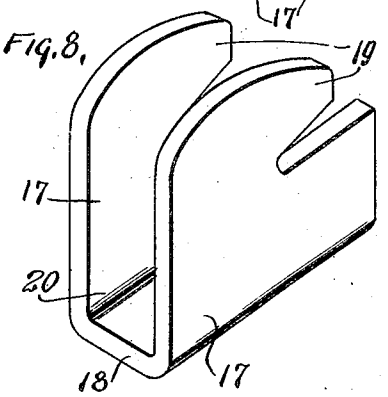
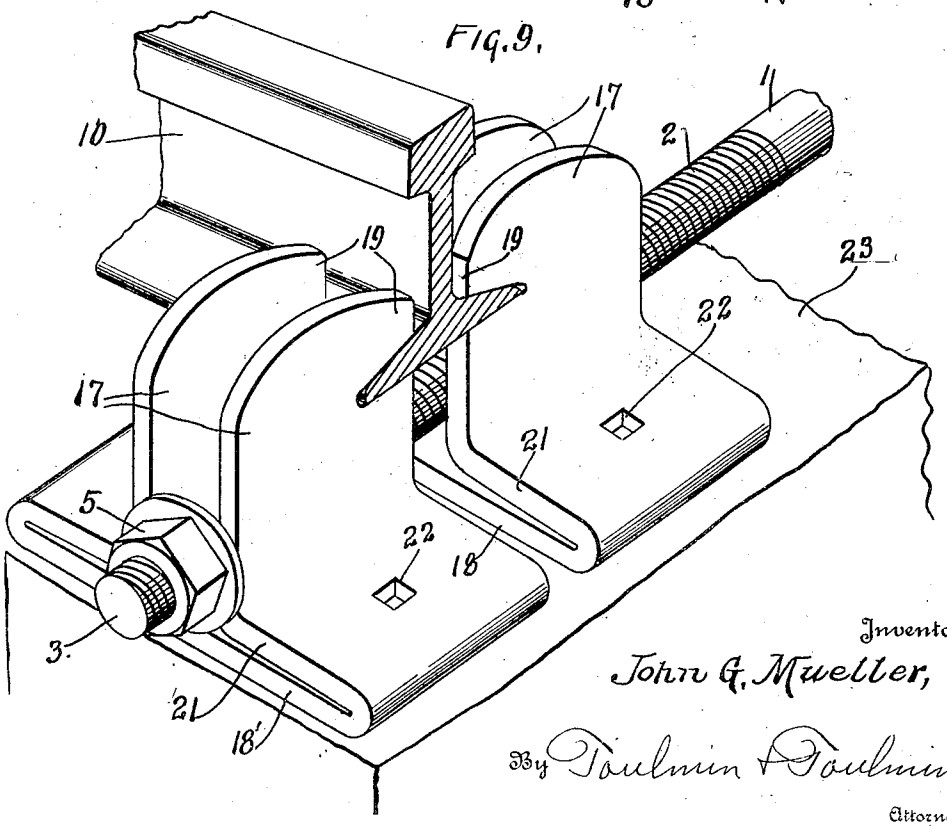


Fig. 9.



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UNITED STATES PATENT OFFICE.

JOHN G. MUELLER, OF DAYTON, OHIO.

RAIL BRACE.

Application filed October 9, 1922. Serial No. 593,235.

To all whom it may concern:

Be it known that I, JOHN G. MUELLER, a citizen of the United States, residing at Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Rail Braces, of which the following is a specification, reference being had therein to the accompanying drawing.

My invention relates to rail braces.

The object of my invention is to provide rail braces which may be utilized with rails without cross ties or special supports for rails as usually known.

It is a further object of my invention to provide a plurality of units which may be assembled to form a rigid brace between the rails to space them and maintain their alignment. It is my object to provide such a brace of parts which may be economically manufactured, may be light in weight and of such cheap character that if it is desired to abandon the railway it can be economically done because of the cheap character of the material employed in the braces. It is a further object to provide braces which may be used directly on the supporting surface such as rock, hard earth, etc. without the necessity for any special supports under the rails, or any special ties.

It is an additional object to provide a rail brace that may be assembled by ordinary labors without special mechanical skill. It is a futher essential feeature of my invention that the several parts are not only economical to manufacture, but are relatively light in weight, facilitating handling and shipment.

It is an additional object to provide rail braces which may be made out of sheet metal stamping without the necessity for great accuracy.

It is a further object to provide such a rail brace which may, if desired, be attached to a wooden block, etc.

Referring to the drawings:

Figure 1 is an end elevation of a complete assembly of rails and braces to form a finished unit.

Figure 2 is a plan view of a unit assembly of a rail and braces.

Figure 3 is a perspective of one of the elements engaging the rail.

Figure 4 is a perspective of the assembled rail clamps and brace rod.

Figure 5 is a perspective of one of the clamps for a retaining flange for attachment to a support.

Figure 6 is an end elevation of the assembly of the modified form of clamp shown in Figure 8.

Figure 7 is a plan view of one end of Figure 6.

Figure 8 is a perspective of a modified form of clamp.

Figure 9 is a perspective of a modified form of clamp for a supporting flange on either side thereof for attachment of the clamps to a base.

It will be understood that my braces, as disclosed herein, are primarily designed for use in light railways such as found in industrial establishments, mines, quarries, on sugar plantations and the like. My invention is particularly adaptable to locations where the soil is very hard or the supporting base is of rock as in quarries or mines, or blocks are available for supporting only portions of the rail and where ties are not available.

My invention is particularly adaptable in hot moist climates where the use of wood for ties is impossible, and where the labor is of a character that it has little understanding of mechanics. It is also highly essential that shipments to such locations be of the lightest weight possible, both to save expense and to make it possible to transport material. Hence it has been my object to so execute the features of my invention that they will be sufficiently strong, while still very light.

Referring to the drawings in detail:

1 is a brace rod having threaded thereon at 2 and 3 the nuts 4 and 5 and at the ends the nuts 6 and 7.

Embraced between the nuts 4 and 6 or 5 and 7 are the two units or clamps designated generally 8 and 9 which embrace the rail 10 and support it.

These clamps are composed of a side member 11 and members 12 with bolt apertures 13 and a rail hook 14 which is adapted to engage the base of the rail between it and 11.

As will be seen in Figure 4 two of these members are associated together, one hook on one side of the rail and the other hook on the other side with the ends 12 overlapping and the apertures 13 coinciding so that the rod 1 may be projected therethrough.

The nuts 4 and 6 for instance clamp the whole combination together on the rail. As will be seen in Figure 5, a flange 15 may be provided on each unit with openings 16 for the reception of spikes so that if it is desired to mount the assembly upon a block as of wood that may be done and the whole structure retained on the block by spikes.

Where there might be difficulty in the assembly having the edges of 11 and 12 sink into the ground, a continuous double hook or clamp is provided having side walls 17, a bottom wall 18 and hooks 19 spaced from one another, but parallel to each other. This provides a continuous hook of one piece with a solid bottom 18 which prevents the edges of 17 sinking into a relatively soft support.

When assembled, the two clamps as shown in Figure 8 engage the rail as shown in Figures 6 and 7 while the bolt 1 passes thru the trough designated 20 between the walls 17, and the nuts 4 and 6 clamp the entire structure together in the usual manner.

In Figure 9 a broader base has been provided for the clamping hooks than that illustrated in Figure 8. The wall 17 has been extended into a flange 21 with spike openings 22 which may or may not be used for inserting the spike into a supporting block 23. 21 is continued into an unusually broad bottom 18'. Otherwise the assembly is the same.

It will be understood that I desire to comprehend within my invention suitable and necessary modifications, some of which I have shown and others of which will be found to be within its scope when adapting my invention to varying conditions.

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

1. In a rail brace, a one-piece clamp having side and end members and a clamping hook thereon, and a similar member having a hook in a reverse position and its ends overlapping the ends of the first member and means for retaining the said members to one another in an engagement with the base of a rail, said clamps having their side members in spaced relation and the end members of one clamp being directed inwardly toward the other clamp.

2. In a rail brace, a one-piece clamp having side and end members and a clamping hook thereon, and a similar member having a hook in a reverse position and its ends overlapping the ends of the first member, said clamps having their side members in spaced relation and the end members of one clamp being directed inwardly toward the other clamp, means for retaining the said members to one another in an engagement with the base of a rail, said means passing through the overlapping end members, and means on the retaining means for engaging with the outer walls of said end members.

3. A new article of manufacture consisting of a strip of plate metal having a rectangular body portion and a hook projecting from one of its longitudinal edges and having its ends bent at right angles to said body in the same direction.

4. A new article of manufacture consisting of a strip of plate metal having a rectangular body portion and a hook projecting from one of its longitudinal edges and having its ends bent at right angles to said body in the same direction, said ends being provided with alined bolt receiving apertures.

5. In combination, a U-shaped clamp member having a hook for engaging the base of the rail or one portion thereof, a second member of similar character having a hook in the reverse position and means in the side walls of the U-shaped members for the insertion of a retaining rod therethrough, a retaining rod and nuts carried thereby to clamp the several members to one another and to the base of a rail.

6. In a new article of manufacture used as a rail clamp, a U-shaped member having one of the arms of the U longer than the other, apertures in said arms in alignment transversely with one another and a hook carried by one portion of the U-shaped member.

7. In combination, a pair of U-shaped members having one arm longer than the other, said longer arm being adapted to overlap the shorter arm within the longer arm of the respective U-shaped members, eyes in said arms aligning with one another to carry a clamping bolt, a clamping bolt passing therethrough, nuts to engage the outer ends of the arms of the U-shaped members, and rail engaging hooks carried by said U-shaped members for engaging a rail therebetween, the opposite sides of said U-shaped members being adapted to rest upon a support for supporting the rail.

8. In combination, a pair of oppositely disposed one-piece rail engaging hooks having their members overlapping one another and apertures therein, a rod passing therethrough and nuts to lock two of said rail engaging members to one another to engage the base of a rail and a second assembly of the same character embracing the base of an associated rail, a single rod being used for spacing said rails and assembling said clamps in connection with either rail.

9. Means for clamping and holding a rail comprising upstanding walls, each wall having a hook thereon and also serving as a support for the rail, each wall being parallel with but spaced from the other wall, means lying between the two parallel

hook carrying walls for holding the hooks clamped to the rail, said means comprising a screw-threaded rod with nuts, the rod lying between the parallel walls, and means extending from one upstanding wall to another to hold them in spaced parallel relation to each other.

10. Means for embracing and supporting rails comprising U-shaped members arranged in pairs, the spaced upstanding walls of which are provided with hooks for engaging with opposite sides of the base of a rail, and means passing between said walls to clamp the hooks on the opposite sides of a rail to the rail.

In testimony whereof, I affix my signature.

JOHN G. MUELLER.