(No Model.)

R. J. COLVIN.

RAIL JOINT.

No. 419,182. Patented Jan. 14, 1890.

Fig. 1

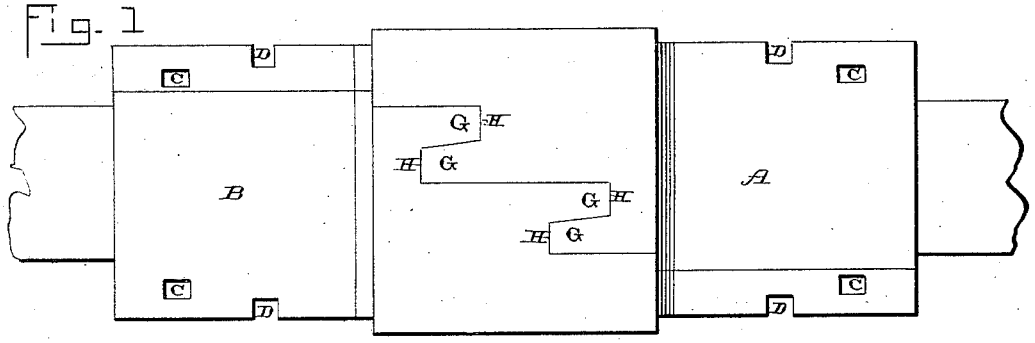


Fig. 2.

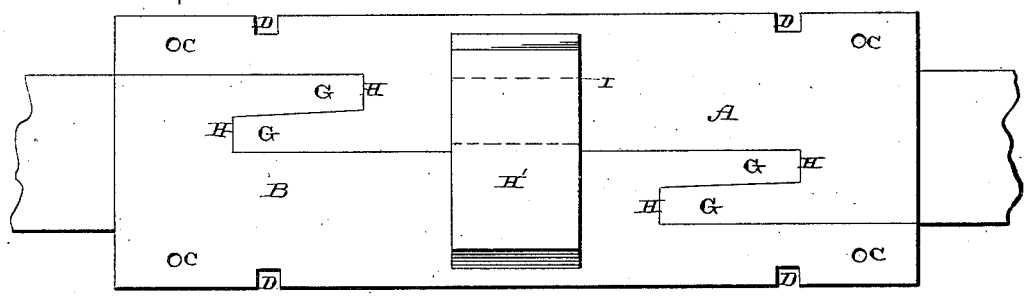
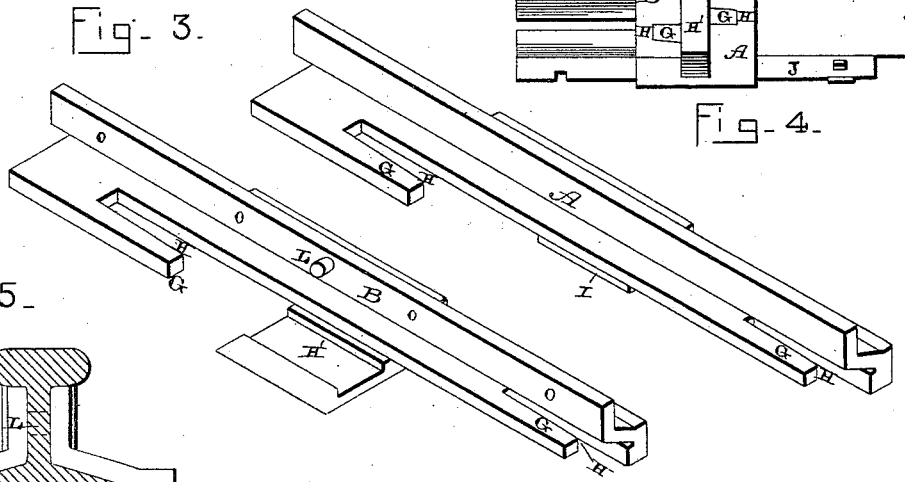


Fig. 3.



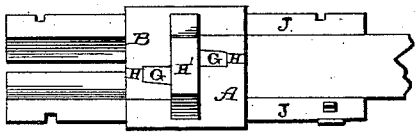
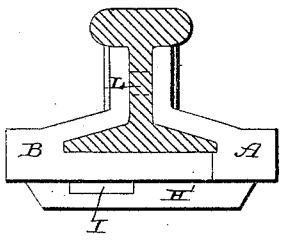


Fig. 4.

Fig. 5.



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UNITED STATES PATENT OFFICE.

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RAIL-JOINT.

SPECIFICATION forming part of Letters Patent No. 419,182, dated January 14, 1890.

Application filed April 2, 1889. Serial No. 305,690. (No model.)

To all whom it may concern:

Be it known that I, ROBERT J. COLVIN, of Lancaster, in the county of Lancaster and State of Pennsylvania, have invented certain new and useful Improvements in Rail-Joints; 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 pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to an improvement in rail-joints.

The objects of my invention are to form a joint for railroad-rails, and which is made sufficiently long to extend from one tie to another, and thus form a bridge for the ends of the rails between the ties; to form the joint of two separate pieces, which can be applied to opposite sides of the ends of the rail and made to incase them to any desired extent; to form the joint of two interlocking pieces, which are held rigidly together without the assistance of clamps, bolts, or other devices heretofore used for that purpose, and to apply to the center of the two parts which form the joint a counter-lock, so as to brace, strengthen, and still further secure the parts rigidly together when in use.

Figure 1 is an inverted view of one form of a joint which embodies my invention. Fig. 2 is an inverted view of another form. Fig. 3 is a perspective of the two parts which form one of the joints detached from each other. Fig. 4 shows an inverted view of a joint which is of a lighter construction than those shown in Figs. 1, 2, and 3, but which embodies the same general construction. Fig. 5 is an end view of a joint embodying my invention.

A B represent the two parts which constitute one of my joints, and which are made sufficiently long to extend from one tie to the other, and thus form a bridge for the ends of the abutting rails between the ties. Each one of these parts A B is provided with both bolt-holes C through their bases and slots D through their edges. Each one of these parts is provided with a vertical flange, which extends up the side of the rail, as shown, and with a recess or groove extending its full length to receive the base of the rail. Each part is also provided with two tenons G and two recesses H, by means of which the parts are made to interlock together, so as to prevent any possibility of any lateral movement of the two parts, no matter what strain may be brought to bear upon them, and thus do away with all necessity for the usual bolts, clamps, and hooks, which have been heretofore used to secure the different parts of the joint together. In order to make the tenons catch in the recesses prepared for them, the two parts of the joint are applied to the rails from opposite sides, and then they are moved endwise, so that these tenons or projections will catch in the recesses, as shown.

It is immaterial whether the tenons and recesses are made at the center of the joint or at the ends, for they may be made in either manner, just as preferred. When the interlocking parts are made at the center of the joint and no counter-lock is used, the joint is thickened at the center in between the ties, so as to give greater strength and security at the point where the greatest strain is brought to bear upon it. In case the tenons and recesses are formed at the ends, as shown, for the purpose of still further securing the two parts of the joints together and bracing and strengthening the parts midway between the ties, a counter-lock is formed, and this lock consists of a dovetailed tenon I, which is formed upon one part, and which catches in a dovetailed recess or groove which is formed of the horizontal part H′, which is cast as a part of this piece of the joint, and which extends across the under side of the other part of the joint, as shown. This counter-lock still further serves to prevent any spreading of the rails or any possibility of any lateral movement of the two parts of the joint.

In case it is desired to form a lighter joint than is shown in Figs. 1, 2, and 3, a portion of the base of each part of the joint is removed, and then the outwardly-projecting flanges J of the two parts of the joint rest directly upon the top of the ties and without having a base-plate to rest upon the ties, as shown in Fig. 4. The interlocking parts and the

counter-lock are made in the same manner and the operation of the parts is the same. The only difference between the two forms of joint is that a portion of the base is cut away where the ends of the joint rest upon the ties, and such a bridge is not formed for the rails, as is shown in Figs. 1, 2, and 3.

In order to prevent any creeping of the rails, there is formed upon one of the parts of the joint a stop L, which extends horizontally across the space between the two parts of the joint, and which extends through recesses formed in the stem of the rail, as shown. Each rail abuts against this stop, and it is impossible for the rail to move past it. Each rail may have an endwise movement between two of these stops in two different joints; but it can have no possible movement beyond either of the stops of the joints. As no bolts are passed horizontally through these joints and through the rails in the usual manner, each rail is left independent of the other, and hence, if there should be any tendency on the part of one rail to creep, it cannot draw or affect any other abutting rail.

In case this joint should be used in connection with old rails which have the horizontal bolt-holes through them, in the usual manner, one or more openings may be made through each end of the vertical flanges, so that a bolt or bolts can be passed through the rails, and the parts thus secured together when so desired. This, however, is an unnecessary construction, because the two parts of the joint incase the ends of the rail to such an extent as to rigidly hold them in position, and then the interlocking parts of the joint lock the joints, so that no lateral movement is possible. The heavier the rolling-stock the greater the weight that is brought to bear upon the ball of the rail, and the greater the weight upon the rail the more the vertical flanges of the two parts of the joint are made to clamp the rail and hold it more tightly in position.

By means of the construction here shown an elastic joint-support is produced, which admits of an easy movement of the cars over it and insures greater safety on account of less wear of the rail ends, and prevents the depression of one rail end below the other by each approaching wheel. Where one end of a rail is depressed each wheel strikes the end of the other rail a blow, and hence the hammering and splitting of the rails. By means of my construction the rail ends rise simultaneously when brought under pressure of the rolling-stock, and, being firmly incased in the joint, are always in line.

Having thus described my invention, I claim—

1. The combination, in a rail-joint, of the two parts A B, which catch against the opposite sides of the rail and are provided with tenons G and recesses H, and the counter-lock I H′ across their centers, substantially as shown.

2. In a rail-joint, the combination of the two parts A B, which are applied to opposite sides of the rail and made long enough to extend from one tie to another, and provided with the tenons G and the recesses H, whereby the two parts are made to interlock, the counter-lock across their bottoms, and the stop L, to catch between the ends of the rails, substantially as described.

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

ROBERT J. COLVIN.

Witnesses:
F. A. LEHMANN,
ALLEN S. PATTISON.