No. 637,827. Patented Nov. 28, 1899.

H. C. QUESENBERRY.

RAIL JOINT CLOSER.

(Application filed Aug. 31, 1899.)

(No Model.)

Fig. 1.

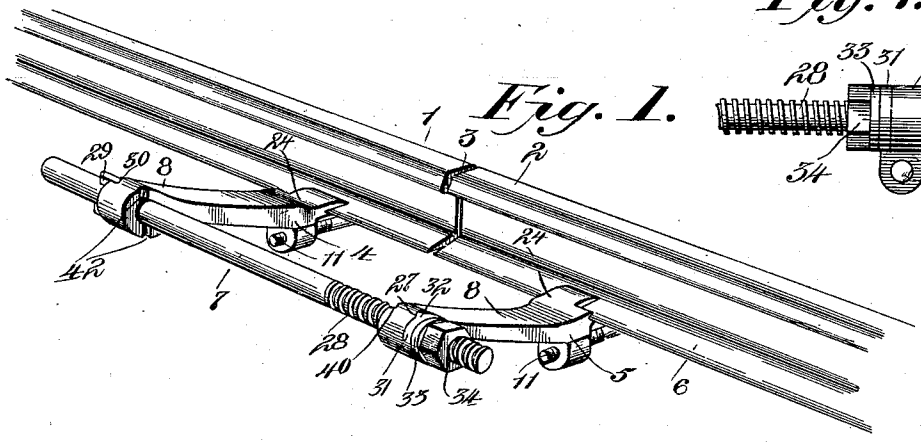


Fig. 7.

Fig. 2.

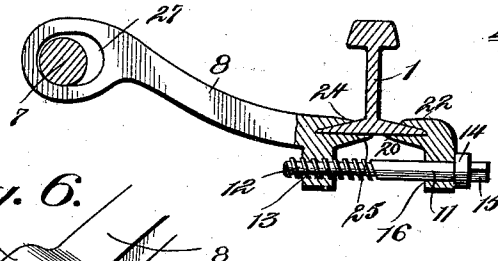


Fig. 3.

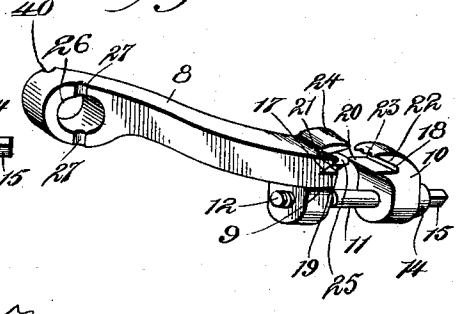


Fig. 6.

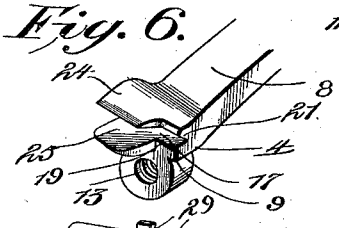


Fig. 4.

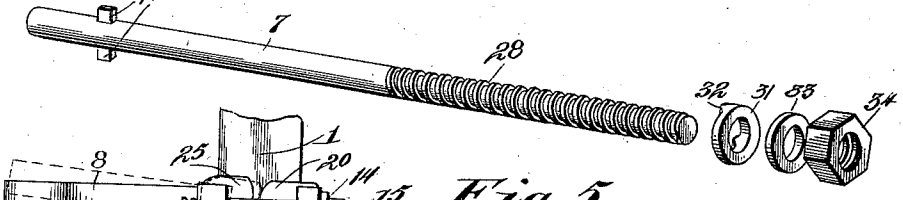
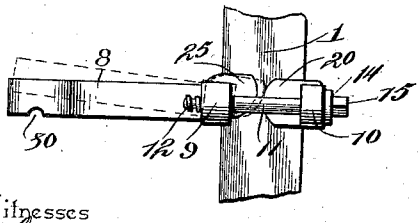


Fig. 5.



Witnesses
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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

HENRY C. QUESENBERRY, OF TAZEWELL, VIRGINIA.

RAIL-JOINT CLOSER.

SPECIFICATION forming part of Letters Patent No. 637,827, dated November 28, 1899.

Application filed August 31, 1899. Serial No. 729,124. (No model.)

To all whom it may concern:

Be it known that I, HENRY C. QUESENBERRY, a citizen of the United States, residing at North Tazewell, in the county of Tazewell and State of Virginia, have invented a new and useful Rail-Joint Closer, of which the following is a specification.

This invention relates to rail-joint closers. The device is intended to be applied for adapting the positions of railroad-rails with respect to each other, to close or open the joints, and comprehends a pair of clamps and mechanism connecting the clamps and operating first to effect the clamping of the rails and then to move the clamps with respect to each other for the purpose of opening or closing the joints.

The specific construction of the invention and its application will appear more fully hereinafter.

Referring to the drawings, Figure 1 is a perspective view of the contiguous ends of two rails with my adjustment applied in use. Fig. 2 is a sectional view through the rail, one of the clamps, and the draw-rod, the clamping-bolt being shown in elevation. Fig. 3 is a detail perspective view of one of the clamps. Fig. 4 is a detail perspective view of the draw-rod, its nut, and washers. Fig. 5 is a bottom plan view of one of the clamps and a fragment of rail, the clamped position of the former being illustrated in dotted lines; and Fig. 6 is a detail view of one of the jaws 9 with a portion of its arm broken away. Fig. 7 shows a different arrangement of the parts for separating or increasing the separation of the ends of the rails.

Referring to the numerals of reference, indicating corresponding parts throughout the several views, 1 and 2 indicate the contiguous ends of a pair of rails constituting sections of a railway-track, and 3 indicates an open rail-joint to be closed quickly and with a minimum expenditure of labor.

My rail-adjustment comprises a pair of clamps 4 and 5, arranged to grip the bed-flanges 6 of the rails and to be urged together to effect the closing of the joint by what may be designated a "draw-rod" 7, passing through the outer ends of arms 8, extending from the clamps 4 and 5. Inasmuch as the clamps 4 and 5 are constructed identically, I will describe one of them in detail and will then define its relation to the other. The clamp comprises a pair of jaws 9 and 10, through the lower ends of which is passed a clamping-bolt 11, screw-threaded at one end, as indicated at 12, to engage internal screw-threads in the bolt-opening 13 of the jaw 9. The outer end of the bolt—that is to say, the end opposite the thread 12—is enlarged or headed, as indicated at 14, and terminates in a squared end or wrench-lug 15. The opening 16 in the jaw 10, through which the clamping-bolt passes, is smooth or unthreaded for the reception of a plain portion of the bolt in order that the latter when turned by the application of the wrench to the wrench-lug will draw the jaws together. The contiguous or inner faces of the jaws are provided with flange-recesses 17 and 18 for the reception of the bed-flanges of the rails and defined by horizontal ledges 19 and 20 and overhanging biting-flanges 21 and 22. The flange 22 is serrated or toothed at its edge, as indicated at 23, to cause it to bite into the bed-flange and possibly into the web of the rail. This biting-flange 22 at the upper edge of the jaw 10 practically conforms to the somewhat-inclined surface of the bed-flange, and the depressions forming the serrations or teeth 23 may, if desired, be extended partially or entirely across the bottom face of the flange to obtain a maximum frictional surface to prevent slipping of the jaw when clamped upon the rail.

The biting-flange 21 of the jaw 9 is extended beyond the side of the jaw and somewhat beyond the edge of the opposite end of the flange and is sharpened, this extension constituting what may be termed a "beak" 24 at that point upon the clamp which receives the greatest strain and located immediately over a corresponding beak 25, projecting from the contiguous end of the ledge 17.

Extending from the jaw 9 in the general direction of the bolt 11, but having a slight upward inclination, is the arm 8, heretofore referred to, provided at its end opposite the clamp with the slightly-elongated opening 26 for the reception of the draw-rod 7, and in its outer face and at diametrically opposite sides of the opening 26 is formed with notches 27, for a purpose to be defined.

In practice a clamp thus constructed is connected to the rail by passing the opposite

edges of the rail-bed flanges 6 through the recesses 17 and 18. The clamping-bolt is then turned to bring the jaws tightly against the opposite sides of the rail, causing the serrations 23 of the biting-flange 22 to bite into the bed-flange and at the same time bringing the beak 24 into contact at its edge with base of the web of the rail, the beak 25 extending under the rail nearly to the edge of the ledge 18. A second clamp, identically constructed, is then placed upon a contiguous rail, and the outer ends of the arms 8 are connected by mechanism which serves to draw them together with considerable pressure.

Inasmuch as the beaks 24 and 25 of the jaws 9 are located adjacent to the contiguous faces of the clamps, the application of pressure to the outer ends of the arms in opposite directions, or, in other words, in the direction of each other, will first effect the tightening of the clamps upon the rails, and continued pressure will then effect the closing of the joint by the drawing up of the rail-sections.

It has been asserted that the exertion of pressure, or, more properly, of opposed pressures, upon the outer ends of the arms 8 will effect the clamping of the rails. This is by reason of the fact that the pressure exerted upon the clamps is directed in a plane substantially parallel with the gripping-faces, but at a point so far to one side of the clamps that a torsional strain is effected. This causes the beaks 24 to bite into the rails and to limit the twisting or torsional movement of the clamps. In this connection the function of the beak 25 will appear, since it may sometimes happen that the beaks 24 not being sufficiently extended to reach the web of the rail a considerable lateral strain will be exerted upon the bolts 11, which might result in the bending of the bolts were it not for the provision of these lower beaks 25, which, extending under the rail, are designed to contact with the ledges 20 of the jaws 10 to compel approximate parallelism of the jaws, and thereby prevent the bending of the bolts. This lateral movement of the arms 8 is permitted by reason of the elongated openings therein.

Any suitable means for drawing the arms 8 together to apply the clamps and close the joint may be provided; but I prefer to employ the draw-rod 7, passed through the openings 26 in the arms and provided at its opposite ends with screw-threads 28 and diametrically-extending lugs 29. The lugs 29 extend into notches 30 in the outside face of the arm 8, and the threaded end 28 of the rod is provided adjacent to the outer face of the other arm 8 with a set-washer 31, provided with lugs 32, engaging the notches 27, and behind this washer is located a plain washer 33 and a nut 34.

It will be obvious that by the application of a wrench to the nut 34 the latter will be rotated, effecting the drawing up of the draw-rod and urging the arms 8 to effect successively the application of the clamps and the closing of the rail-joint.

In Fig. 7 of the drawings is shown one of the arms 8 and an adjacent portion of the draw-rod 7 and illustrating the arrangement of the drawing-nut and washers when it is desired to increase the separation of the rail ends under those conditions where the rail ends are too close, or to draw the ends apart when they are in actual contact, and thus to prevent disarrangement of the parts of frogs, switches, &c.

As shown in the drawings, the arm 8 against which the washer 31 impinges is provided with a second series of notches 40 upon its inner face, and when it is desired to separate the rails the nut 34 is first engaged with the threads of the rod 7, and the rod is then inserted in the opening of the other arm 8, with the lugs 29 lying against the inner face thereof and in the recesses 42. The washer 33 is then placed upon the rod 7, and then the washer 31, with its lugs 32 lying in the recesses 40. The arm 8 which has been disengaged from the flange 6 of the rail 2 is adjusted to said flange and in the position to receive the rod 7. By then rotating the nut 34 it will force the intervening washers in the direction of the arm 8, and a continued rotation of the nut will force the arms 8 apart and separate or increase the separation of the rail ends.

What I claim is—

1. In a rail-joint adjuster, a pair of opposite clamps, each of the latter comprising relatively-movable jaws for detachable engagement with respective rail-sections, means for adjustably connecting the respective jaws, located below the gripping-faces thereof, and extending beneath the rail-sections, and operating means connecting the opposite clamps, for moving the latter in opposite directions, and located at one side of the clamps and below the treads of the rails.

2. In a rail-joint adjuster, a pair of opposite clamps for application to the respective rail-sections, each clamp having a laterally-extending arm provided with an elongated opening, a draw-bar loosely fitted in the elongated openings of the arms and connecting the clamps, and means carried by the bar, and for moving the clamps in opposite directions.

3. In a rail-joint adjuster, a pair of opposite clamps for application to the respective rail-sections, each clamp having a laterally-extending arm provided with an opening, slots intersecting the opening and located at opposite sides of the arm, a draw-bar fitting loosely in the openings in the arm, one end of the bar being provided with a stop-lug for engagement with either of the slots in one of the arms, and the opposite end of the bar being threaded, a set-washer upon the threaded end of the bar and having lugs for engagement with either of the slots of the adjacent arm,

and a nut carried by the threaded portion of the bar and for engagement against the set-washer, at either side of the adjacent arm.

4. In a rail-joint adjuster, a pair of opposite clamps for application to the respective rail-sections, each clamp comprising jaws engaging opposite sides of the rails, and provided with a beak and a ledge, respectively, for engagement with each other beneath the rails, and one of the jaws having an arm, a draw-bar slidable loosely through the arms of the clamps, and means for moving the clamps in opposite directions, and carried by the draw-bar.

5. In a rail-joint closer, the combination with a plurality of clamps comprising relatively-movable jaws having flange-recesses in their contiguous faces, of adjusting-bolts connecting the jaws below said recesses, arms extending from said clamps, and mechanism intermediate of the arms for urging them in opposite directions.

6. In a rail-joint closer, the combination with a pair of clamps respectively comprising a pair of relatively-adjustable jaws provided with flange-recesses in their contiguous faces defined between horizontal supporting-ledges and overhanging biting-flanges, the biting-flange of one jaw being extended to form a beak, and mechanism operatively connecting the clamps.

7. In a rail-joint closer, the combination with a clamp comprising a pair of jaws having flanged recesses in their opposed faces, said recesses being defined between horizontal supporting-ledges and overhanging biting-flanges, beaks extending from the supporting-ledge and biting-flange of one of the jaws adjacent to one side thereof, an arm extending from one of the jaws and provided with a terminal opening, a clamping-bolt adjustably connecting the jaws and located below the flange-recesses, a second clamp similarly constructed, a draw-rod extending through the openings in the arms, and means for preventing the rotation of the draw-rod, and a nut upon the draw-rod.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

HENRY C. QUESENBERRY.

Witnesses:

H. BANE HARMAN,

R. S. GILLESPIE.