No. 718,042. PATENTED JAN. 6, 1903.

D. L. WINTERS.

RAIL FASTENING APPARATUS.

APPLICATION FILED SEPT. 8, 1902.

NO MODEL.

Fig. 1.

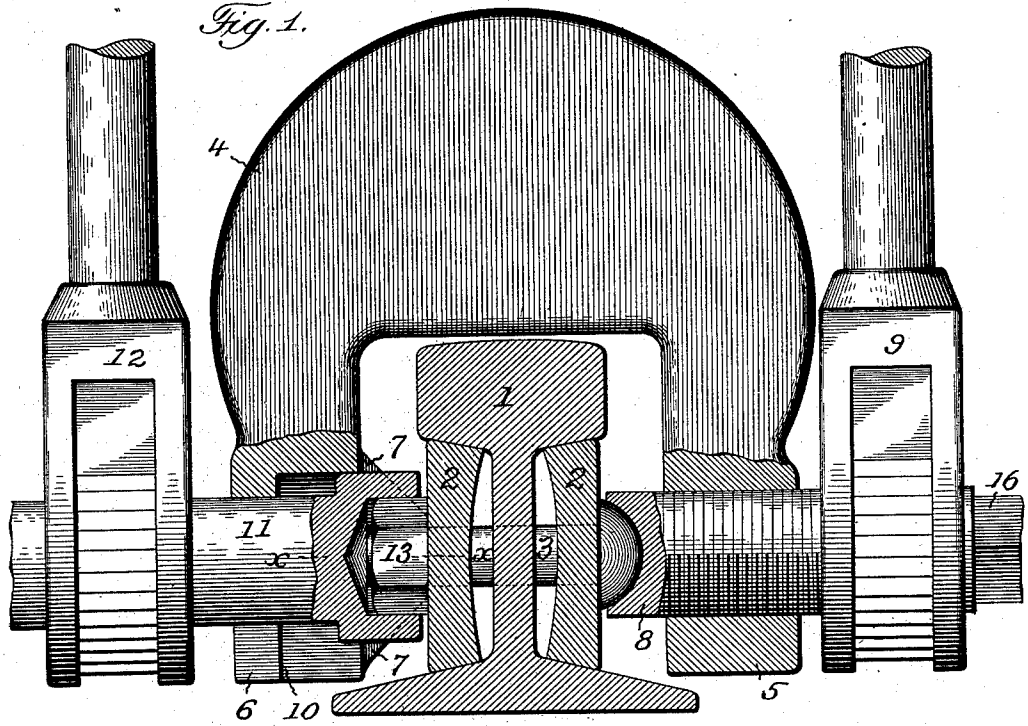


Fig. 2.

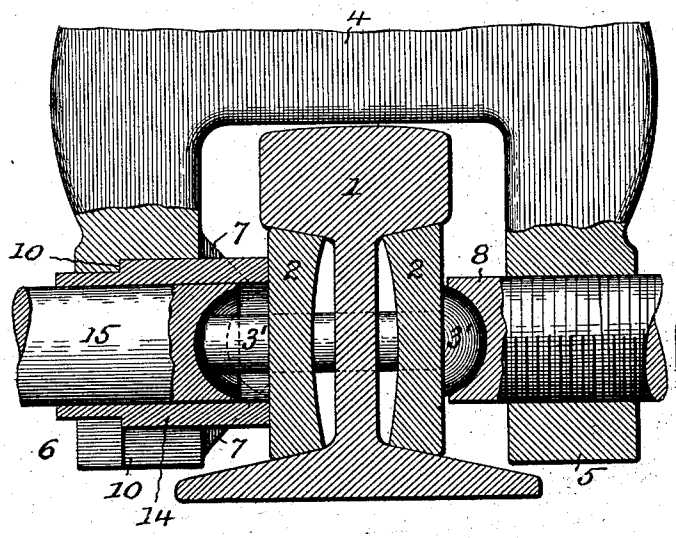


Fig. 3.

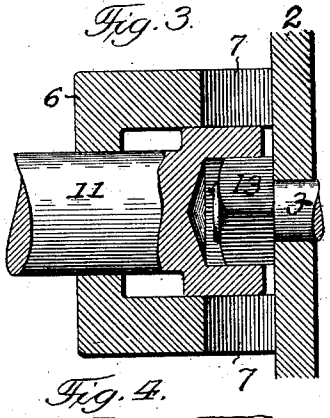
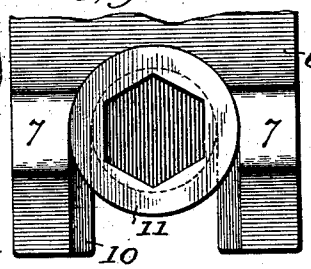


Fig. 4.



Attest:

John Enders Jr.

Henry A. Nott

Inventor:

David L. Winters,

by Robert Burns

Attorney

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

UNITED STATES PATENT OFFICE.

DAVID L. WINTERS, OF CHICAGO, ILLINOIS.

RAIL-FASTENING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 718,042, dated January 6, 1903.

Application filed September 8, 1902. Serial No. 122,508. (No model.)

To all whom it may concern:

Be it known that I, DAVID L. WINTERS, a citizen of the United States of America, and a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Rail-Fastening Apparatus, of which the following is a specification.

The present invention relates to a clamping apparatus for use in the operation of securing railway-rails together by means of fish-plates and bolts or other equivalent fastening means; and the object of the present improvement is to provide a simple, convenient, and effective appliance which in the operation of fastening railway-rails together is adapted to initially effect a forcible clamping of the fish or splice plates against the sides of the rails, as well as the holding of the bolt or other fastening means in place while being fastened, and which also affords means for the support and guidance of the tool or implement by which the final fastening of the securing-bolt or other fastening means is effected, all as will hereinafter more fully appear and be more particularly pointed out in the claims.

In the accompanying drawings, illustrative of the present invention, Figure 1 is a side elevation with the railway-rail, fish-plates, and other parts in section and illustrating the employment of the present invention in connection with the ordinary bolt-and-nut fastening and the ratchet-wrench for tightening such nut; Fig. 2, a fragmentary sectional elevation showing the employment of the present apparatus in connection with a rivet-fastening and the heading-die and holder for the same; Fig. 3, a fragmentary horizontal section at line x x, Fig. 1; Fig. 4, a fragmentary elevation of the inner side of the jaw of the crank-yoke with the head of the ratchet-wrench in place.

Similar numerals of reference indicate like parts in the several views.

Referring to the drawings, 1 represents the railway-rail; 2, the fish or splice plates arranged as usual at the opposite sides of the rail ends and adapted to embrace the webs and contiguous portions of the rail.

3 is the fastening means employed to secure the fish or splice plates in position in a substantial manner to complete the rail-joint, and such fastening means may comprise the ordinary nut-and-bolt fastening 3, (shown in Fig. 1,) the ordinary rivet-fastening 3′, (shown in Fig. 2,) or any other equivalent type of fastening which passes from fish-plate to fish-plate through openings therefor in the webs of the rails.

4 is a cramp-yoke of a size to freely straddle the parts of an ordinary rail-joint, with its depending jaws at opposite sides of such joint outside the fastening means thereof. Said jaws are formed with guide-eyes 5 and 6, preferably arranged in axial alinement, as shown, and which are adapted to support and guide the clamping and fastening mechanism of the present apparatus.

7 7 are twin bearing-lugs arranged at opposite sides of the guide-eye 6 of the yoke and project inwardly to constitute bearing-points for one jaw of the yoke in opposite relation to the compression-head hereinafter described and which is carried by the other jaw of the yoke.

8 is a compression head or plunger moving in the guide-eye 5 of the main yoke and receiving a positive and powerful inward movement from any usual and suitable operating means. In the construction shown in the drawings as illustrative of this part of the present improvement such head or plunger is formed with a screw-threaded periphery which has engagement with an internal screw-thread in the bore of the guide-eye 5 aforesaid.

9 is a ratchet-lever mechanism of any ordinary and usual construction having engagement with the outer end of the head or plunger 8 and adapted to impart forcible rotation thereto in manner usual to this particular type of mechanisms.

10 is a shouldered socket formed in the guide-eye 6 and adapted to receive and hold in operative position the shank of the tool or implement by which the final fastening of the connecting bolt or rivet of the rail-joint is effected. In Fig. 1 of the drawings such socket is shown as containing the revoluble shank 11 of a ratchet-wrench 12, which shank is in turn adapted for operative engagement with the nut 13 of the rail-joint bolt 3, as shown, while in Fig. 2 such socket is shown as containing the die-sleeve 14 of a rivet-heading

die 15, by means of which the end of the rail-joint rivet 3′ is upset to form a holding-head in the final fastening operation on the rail-joint.

With a view to attain a rapid assemblage and subsequent detachment of the above-described parts the aforesaid socket 10 is made open-bottomed, as shown in the drawings.

16 is an extension at the outer end of the compression head or bolt 8 for the reception of a handle or hand-wheel, by which a quick rotation of such bolt may be effected in a preliminary tightening of the parts upon the rail-joint, as well as in the subsequent releasing of such parts after the joint has been completed.

In the operation of the present apparatus the main yoke 4 is placed over the rail-joint with the bearing-prongs 7 resting midway the vertical height of an adjacent fish-plate 2 and with the inner end of the compression head or bolt 8 bearing upon the head of the fastening bolt or rivet 3 or 3′, as the case may be and as shown in Figs. 1 and 2 of the drawings. With the parts so arranged and with a powerful inward movement of the compression-head 8 by means of the ratchet-lever 9 the parts of the rail-joint are forcibly compressed together in a very perfect and efficient manner and are so held during the screwing up of the nut 13 in the one case or in the heading of the rivet 3′ in the other case. Under the described conditions the usual frictional resistance met with in the ordinary manner of screwing the nut 13 into place is reduced in a very material degree, and in consequence a much tighter attachment of the rail-joint parts can be effected without danger of stripping the threads of the joint-bolt or of twisting off the end of the bolt, both of which contingencies are of frequent occurrence in the ordinary method now employed.

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

1. In an apparatus for fastening rail-joints of the character herein described, the combination of a cramp-yoke one jaw of which is provided with a compression-head, and the other with a pair of bearing-lugs arranged in separated relation and a receiving-socket intermediate of such lugs, means for imparting inward movement to the compression-head, and means fitting the aforesaid socket and adapted to complete the fastening of the rail-joint, substantially as set forth.

2. In an apparatus for fastening rail-joints of the character herein described, the combination of a cramp-yoke one jaw of which is provided with a compression-head and the other with a pair of bearing-lugs arranged in separated relation and a shouldered receiving-socket intermediate of such lugs, means for imparting inward movement to the compression-head, and means fitting the shouldered receiving-socket and adapted to complete the fastening of the rail-joint, substantially as set forth.

3. In an apparatus for fastening rail-joints of the character herein described, the combination of a cramp-yoke one jaw of which is provided with a compression-head and the other with a pair of bearing-lugs arranged in separated relation and a receiving-socket intermediate of such lugs, means for imparting inward movement to the compression-head, and a ratchet-wrench adapted to fit said socket and engage the nut of the joint-bolt to effect the final fastening movement of the nut, substantially as set forth.

4. In an apparatus for fastening rail-joints of the character herein described, the combination of a cramp-yoke formed of a single piece and adapted to straddle the rail-joint, one jaw of the yoke being provided with a compression-head and the other with an abutment end affording bearing upon the opposite side of the rail-joint in line with such compression-head, means for imparting inward movement to the compression-head, and means for completing the fastening of the rail-joints, substantially as set forth.

Signed at Chicago, Illinois, this 23d day of August, 1902.

DAVID L. WINTERS.

Witnesses:
ROBERT BURNS,
HENRY A. NOTT.