(No Model.)

C. FISHER.

RAIL JOINT.

No. 313,067. Patented Mar. 3, 1885.

Fig. 1.

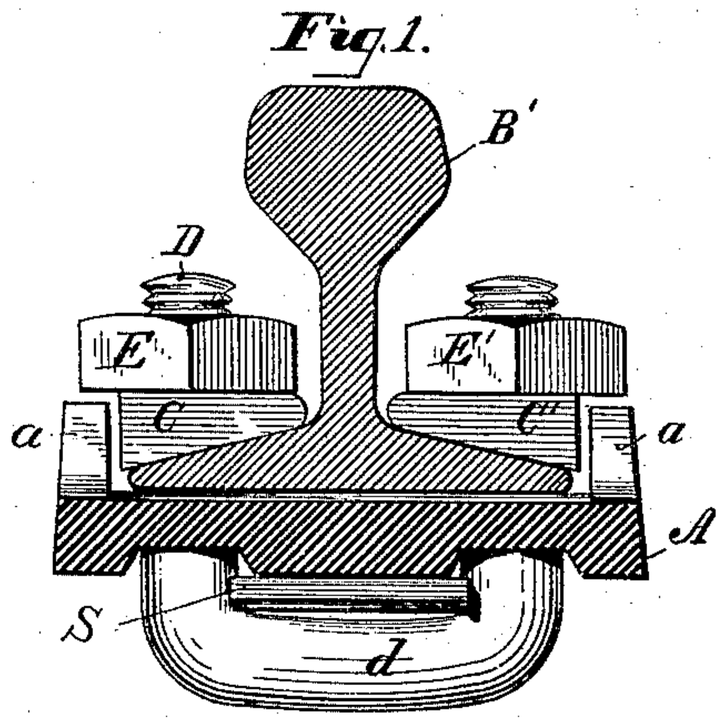


Fig. 2.

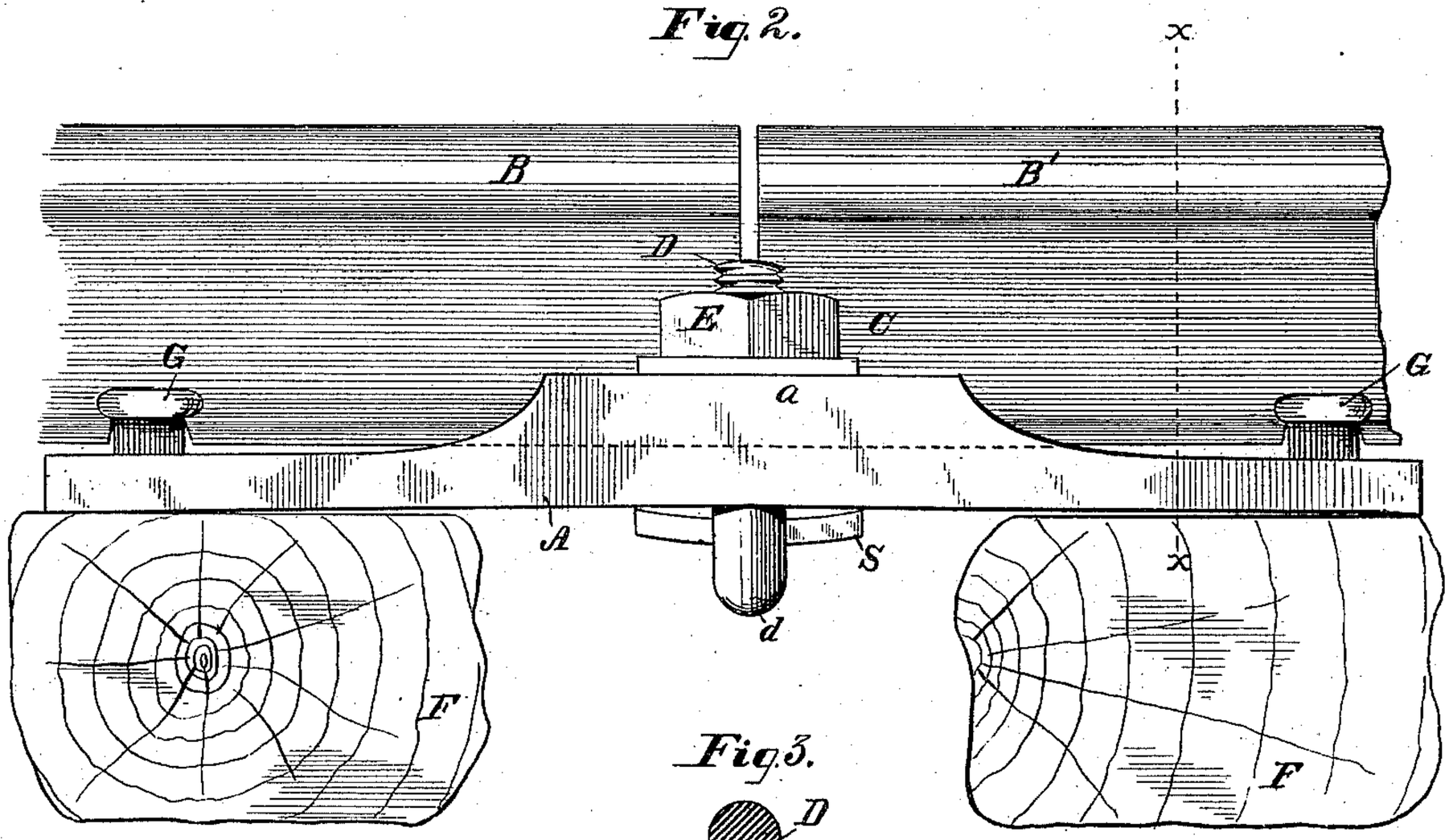


Fig. 3.

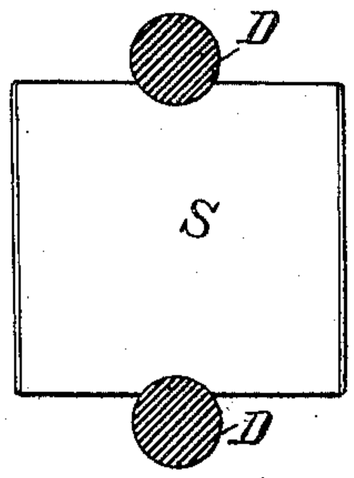
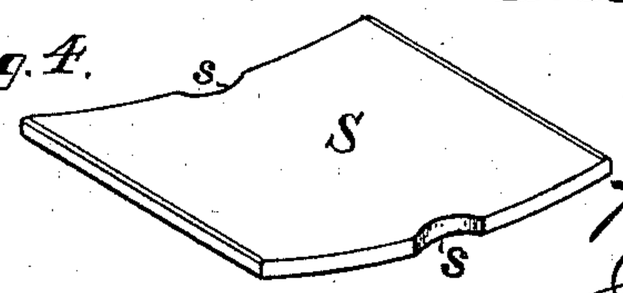


Fig. 4.



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UNITED STATES PATENT OFFICE.

CLARK FISHER, OF TRENTON, NEW JERSEY.

RAIL-JOINT.

SPECIFICATION forming part of Letters Patent No. 313,067, dated March 3, 1885.

Application filed November 1, 1884. (No model.)

To all whom it may concern:

Be it known that I, CLARK FISHER, a citizen of the United States, residing at Trenton, New Jersey, have invented new and useful Improvements in Rail-Joints, of which the following is a specification.

The object of this invention is to improve upon what is known as the Fisher rail-joint, for which Letters Patent of the United States, No. 19,555, were, upon March 9, 1858, granted to M. Fisher, of Trenton, New Jersey. The Fisher rail-joint, which relates to a class of devices known as "joints" or "splices" for the reception and secure fastening of contiguous ends of rails, consists of a sole piece or chair provided with flanges upon each side of its upper surface, against which flanges and upon the upper face of which chair-clamps or forelocks, to grasp the base of the rail ends, rest, and of one or more U-bolts the transverse or bridge portions of which lie beneath the chair and the bases of the rails, and the arms of which pass up to the side of the rail-bases and through the forelocks, and are provided with nuts, which screw down upon the forelocks, so as to hold the latter down upon the rail-bases and the chair, as by a reference to said Letters Patent, will be understood.

My invention is also applicable to and for use in connection with a certain rail-joint invented by me and patented to me in and by Letters Patent No. 214,032, granted April 8, 1879, in which the essential feature of novelty was a sole-piece or rail-joint chair arched in the direction of its length, so as to be adapted to support the rails beneath their intersections upon its highest portion, and to rest, as to its extremities, upon the ties.

The specific object of my present improvements is to so construct the old Fisher rail-joint as, first, to provide for automatically taking up any wear of the various horizontal surfaces, which are held together in contact by the U bolt or bolts; second, to insure to these bolts a certain amount of elasticity, without which the bolts are too rigid and unyielding, this elastic tension thus imparted incidentally aiding to prevent the unscrewing of the nuts of the bolts; third, to furnish a better wearing-surface of steel under the chair and between it and the cross-head of the bolt; and, fourth, to distribute the strains coming upon the bolt to a region on either side of and at right angles to the cross-head of the bolt, and at some distance from the said cross-head.

To the above end my invention consists in devices, a preferred form of a convenient embodiment of which is represented in the accompanying drawings and described in this specification, the particular subject-matter claimed upon being hereinafter definitely specified.

In the drawings, Figure 1 is a transverse sectional elevation through a rail-joint embodying my improvements, section being supposed in a plane of the dotted line *x x* of Fig. 2, and sight being taken from the right hand of said Fig. 1. Fig. 2 is a side elevation of the devices represented in Fig. 1. Fig. 3 is a top plan view of the spring bearing-piece, the arm of the bolt being sectioned; and Fig. 4 is a perspective view of the spring bearing-piece.

Similar letters of reference indicate corresponding parts.

In the drawings, A represents the sole-piece bridge or chair, the flanges of which are designated by the letter *a*. B B′ are the meeting ends of contiguous sections of rails. C C′ are the forelocks. D is the U-bolt, one only being shown. E E′ are the nuts with which the threaded arms of the bolt are provided. F are the ties upon which the sole-piece or flanged beam rests, and G are the spikes by which the said beam is secured to the ties.

All of the foregoing devices are component elements of the original Fisher joint.

The sole-piece represented in the drawings is slightly arched in the direction of its length, after the manner of the improved sole-piece of my Letters Patent No. 214,032. It is not, however, essential that the sole-piece should be arched, although I prefer such construction.

S is an elliptic spring bearing-piece of heavy steel interposed between the under surface of the sole-piece or bridge and the upper surface of the cross-head *d* of the U-bolt. This bearing-piece is of sufficient strength to take up any wear in the forelocks, rails, and bolt, nearly equals in compressibility the strain on the bolt when the nuts are fully screwed up, prevents any slackening of the strain, and serves also to impart additional elasticity ver-

tically to the device as an entirety, tending to neutralize such small jarring strains as the bolt is subject to.

It is obvious that, should more than one U-bolt be employed, either a separate spring bearing-piece may be applied to each, or a longer spring bearing-piece common to all the bolts be employed.

The bolt may be slightly notched for the reception and more certain retention of the bearing-piece, or notches S, Fig. 4, may be made in the edges of the bearing-piece.

The bearing-piece assists to retain the forelocks down upon the bases of the rails, adding to the strength and solidity of the joint.

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

1. A steel spring bearing-piece interposed between the under face of the sole-piece and the cross-head of the U-bolt of the Fisher rail-joint, substantially as and for the purposes set forth.

2. The combination of the sole-piece, rails, forelocks, U-bolt, nuts, and spring bearing-piece, substantially as and for the purpose set forth.

In testimony whereof I have hereunto signed my name this 18th day of October, A. D. 1884.

CLARK FISHER.

In presence of—
ISAAC F. RICHEY,
THEO. C. MAPLE.