

(No Model.)

W. S. PHELPS.
RAIL FASTENING DEVICE.

No. 469,947.

Patented Mar. 1, 1892.

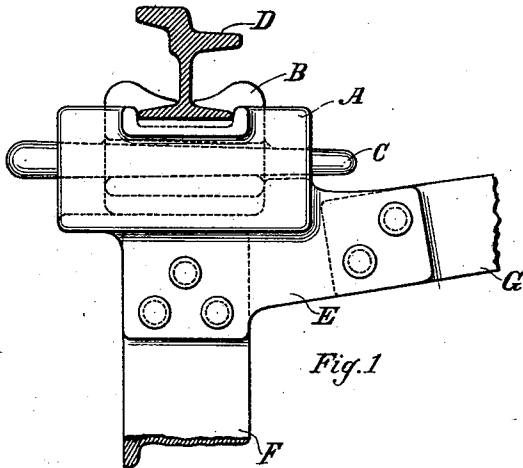


Fig. 1

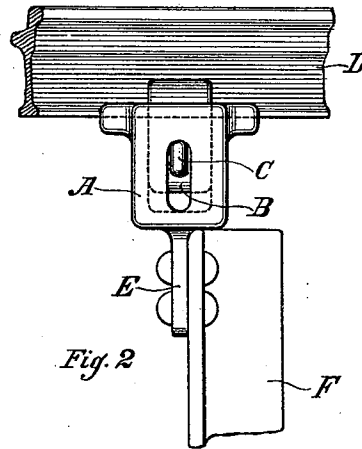


Fig. 2

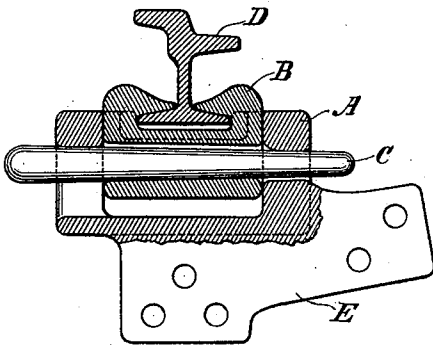


Fig. 3

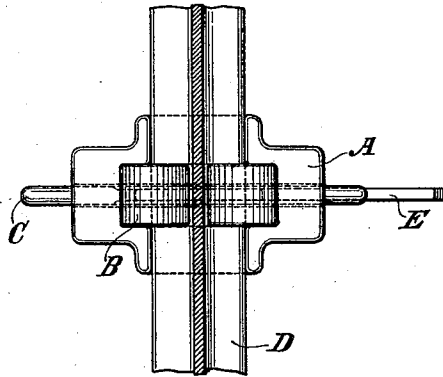


Fig. 4

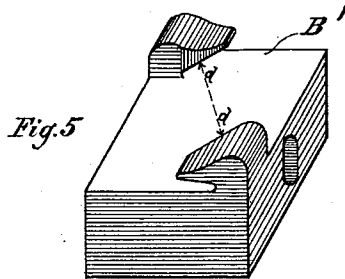


Fig. 5

Witnesses
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UNITED STATES PATENT OFFICE.

WILLIAM S. PHELPS, OF SAN FRANCISCO, CALIFORNIA.

RAIL-FASTENING DEVICE.

SPECIFICATION forming part of Letters Patent No. 469,947, dated March 1, 1892.

Application filed April 10, 1891. Serial No. 391,313. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM S. PHELPS, a citizen of the United States, residing at San Francisco, San Francisco county, State of California, have invented an Improved Rail-Fastening Device; and I hereby declare the following to be a full, clear, and exact description of the same.

The object of my invention is to provide a simple, rigid, strong, and durable method of connecting the rails of railroads and tramways to the subway.

The specification and accompanying drawings relate more especially to fastening the rails to the subway of cable roads.

Referring to the accompanying drawings for a more complete explanation of my invention, Figure 1 is a side view of my rail-fastening device riveted to the post and tie-bar of a cable subway-yoke, which are shown broken off. Fig. 2 is an end view of the same. Fig. 3 is a vertical section of the same through center line. Fig. 4 is a top plan, the head of the rail being removed to more clearly show the locking mechanism. Fig. 5 is an isometric view of a locking-block, which will be hereinafter more fully described.

A, Figs. 1, 2, 3, and 4, is a metal chair having across its top surface a channel of such depth and width as to serve as a seat and guide for the bottom flange of rail D. From the top surface of the chair A downward, and about in the middle, is a cavity for the reception of the locking-block B. A keyway is provided, passing along the longest axis of chair A through the two opposite sides at right angles to rail D.

E is a flange cast onto chair A, its object being to provide a means for fastening chair A to the post F and tie-bar G of a cable subway-yoke.

B, Figs. 1, 2, 3, and 4, is a locking-block, the general shape of which conforms to and fits into the cavity in chair A. The upper part of locking-block B is formed with lugs which overlap and conform to the shape of the upper surface of the lower rail-flanges. A keyway, to correspond with the keyway through chair A, is also provided through the longest axis of locking-block B.

C, Figs. 1, 2, 3, and 4, is a taper key so fashioned

as to fit keyways in chair A and locking-block B, its edges being preferably shown rounded. Fig. 3 more particularly shows that the key C bears on the upper surface of the keyway through chair A and on the lower surface of the keyway through locking-block B, thus admitting of bringing rail D to a perfect bearing in channel on top of chair A by driving the key C.

The operation of the device is as follows: The chairs A having been secured to the subway, the locking-blocks B are then entered on the rail from the end and placed at such distances as to correspond with and fit into the cavities in the chairs A. By then driving the keys C the locking-blocks B are drawn downward, engaging with their lugs the bottom flange of the rail D, thus bringing, when driven tight to a solid bearing, the bottom flange of rail D on its seat in the channel across top surface of chair A, thus securely and rigidly connecting the rail with the subway in a most simple manner. The small end of key C may be bent a little sidewise after the key has been driven tight, thus preventing any possibility of its working loose.

The locking-block B', Fig. 5, has the two lugs for holding the bottom flange of rail placed diagonally at two opposite corners. The distance $d d$ between the lugs, measured diagonally, will admit of entering the bottom flange of the rail between the lugs. By then revolving the block a quarter of a turn the lugs will engage with the lower flange of the rail. The same method of fastening is used with this locking-block as with locking-block B, only the dimensions and shape of chair A would have to be slightly changed to conform to the shape of locking-block B'. The object of this kind of locking-block is to do away with the necessity of entering the blocks from the end of the rail, as is the case with locking-block B.

The shape of chair A may be varied, so as to be readily attached to any style of subway, such as ties, stringers, concrete, &c.

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

1. In a rail-fastening device, the combination, with the rail-chair, of the locking-block

having a vertical play and formed with portions to grasp the bottom flange of the rail and means for drawing down said block to bind the rail to its chair, substantially as described.

2. In a rail-fastening device, the combination, with the rail-chair, of a locking-block having a vertical play and formed with portions placed diagonally at opposite corners to permit the block to be applied to the rail and

turned to bring said portions to grasp the bottom flange of the rail and means for drawing down said block to bind the rail to its chair, substantially as described.

In witness whereof I have herewith set my hand.

WILLIAM S. PHELPS.

Witnesses:

JOHN R. PHELPS,
JAMES L. MILLER.