A. PHILIPPI.

RAILROAD FROG.

No. 67,903. Patented Aug. 20, 1867.

Fig. 1

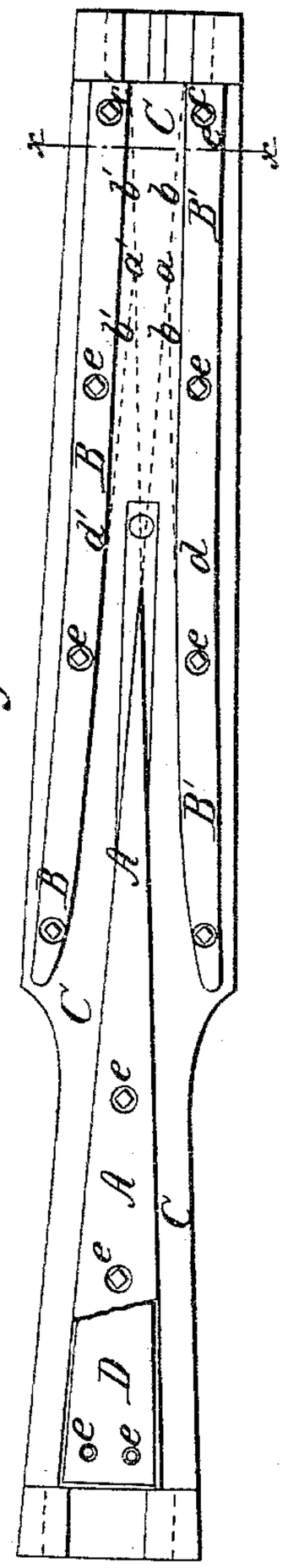
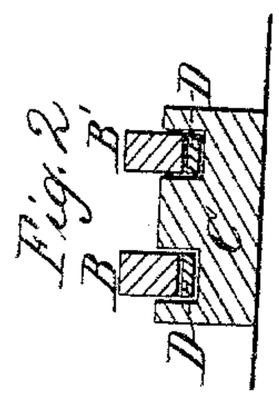


Fig. 2



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ADOLPH PHILIPPI, OF ELIZABETHPORT, NEW JERSEY.

Letters Patent No. 67,903, *dated August* 20, 1867.

IMPROVED RAILROAD FROG

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, ADOLPH PHILIPPI, of Elizabethport, Union county, New Jersey, have invented a new and improved Railroad Frog; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 represents a plan or top view of my improved railroad frog.

Figure 2 is a vertical cross-section of the same, the plane of section being indicated by the line *x x*, fig. 1.

Similar letters of reference indicate corresponding parts.

This invention relates to a new manner of forming the inner faces of the side rails so that the corner hitherto formed in the said side rails will be omitted, and a more gradual curved line produced, whereby the sudden shocks of the cars, when the same pass over the crossing of two tracks, will be overcome.

The side rails, as well as the frog, are placed upon a cast-iron chair, which is grooved for the reception of the said rails and frog. Directly underneath the rails are interposed strips of wood, the grain of which runs cross, not lengthwise; thereby a greater elasticity will be imparted to the rails and frog, the short fibres of the wood not being so easily broken or crushed as the long fibres generally employed. The side rails and the frog are secured to the aforesaid chair by means of bolts, which are passed directly through the body of the rails and through the wooden bed into the chair, and which are countersunk in the rails. Thus, if either one of the side rails or the frog should become useless by wear or otherwise, the destroyed portion may be easily removed and repaired without disturbing the rest.

A represents the point of the frog. B B′ are the side rails. The inner edges of the rails B B′ are not formed, as usual, by continuing the lines of the frog until they meet the treading edges of the inner rails of the two tracks at points *a a′*, which are as far distant from each other as any point of the edge of the frog is from one of the opposite side rails. From these points *a a′* the ordinary side rails would be continued toward the frog in lines parallel with the sides of the frog. The direction or form of the inner edge of the side rails is indicated by red lines *b b′* in fig. 1. From these it will be seen that a corner was formed at the point *a a′*, on which it was supposed that the flange of the wheel should leave the rail when moving towards the point of the frog, or arrive on it when moving from the point of the frog towards the points *a a′*. As the cheeks or guard-rails on the outer rails, by which the wheels are confined to the track while the inner wheels are off the track, (*i. e.*, between the end of the frog and the side rails,) cannot be brought so close to the rails as to strictly hold the flange of the outer wheels against the edge of the outer rails, there will always be some little play, by which the inner wheels are enabled to follow the side rails even around the corners *a a′*, thereby giving the car a shock as soon as the wheel moves around this corner, whereby frequently the wheel is thrown against the point of the frog and whole trains off the track.

To avoid this difficulty I have so shaped the inner edge of the side rails that these corners are omitted. This is done by continuing the lines of the frog until they meet the side rails at points *c c′*, where the same are about one and a half time further apart from each other than the side rails are distant from the frog-point. From these points *c c′* gradual curved lines are drawn, which meet that portion of the side rails which is parallel with the frog-point at points *d*, which are about opposite to the frog-point. All this is clearly shown in the drawing.

The side rails and the frogs are made of cast steel or other suitable material, and are secured, by means of countersunk bolts *e e*, upon a cast-iron or other chair, C, which is grooved to receive the rails, as shown in fig. 2. The heads of the bolts are countersunk in the rails.

D D are strips of thin wood, of about one-quarter or one-half inch thickness, which are interposed between the frog-point, the side rails, and the shoe, and in which the grain runs cross-ways, not up and down, nor lengthwise, whereby greater elasticity is imparted to the rails, so as to diminish the shocks when the wheels jump from the frog-point to the side rails, or *vice versa*.

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

The construction and arrangement of the frog-point A and side rails B B′, secured to the chair C by means of the bolts *e e* passing through the body of the rails and frog-point, and countersunk in the same, in combination with the wooden beds D, placed in the chair C, and upon which the frog-point A and side rails rest, the grain of the wood running crosswise, in the manner and for the purpose specified.

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Witnesses:

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