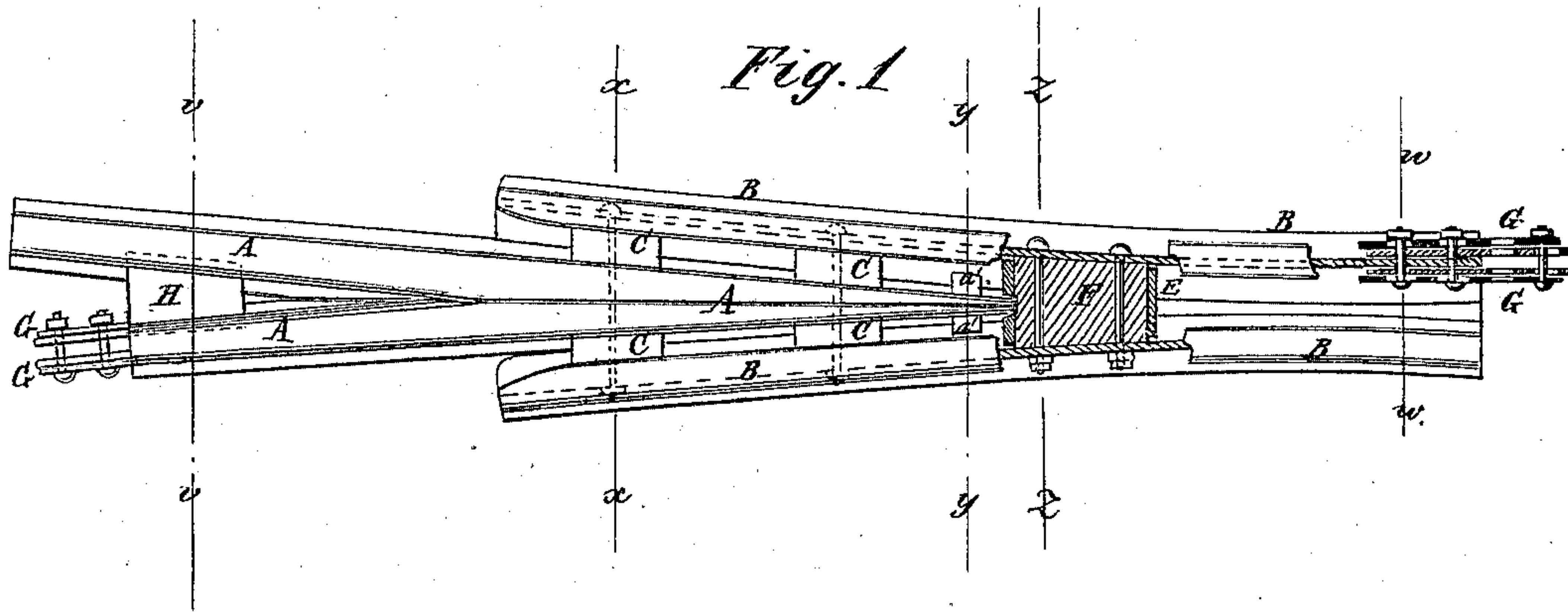


J. BRAHN.

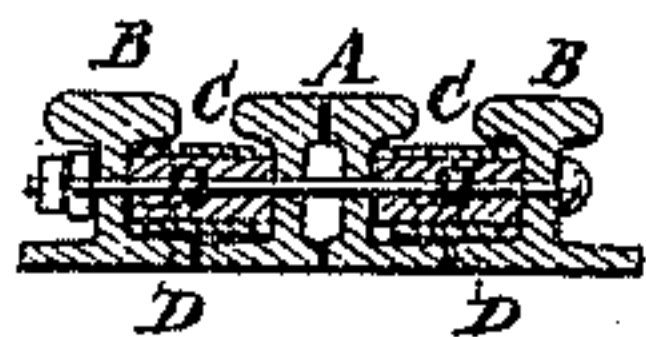
Railroad-Frogs.

No. 133,559.

Patented Dec. 3, 1872.



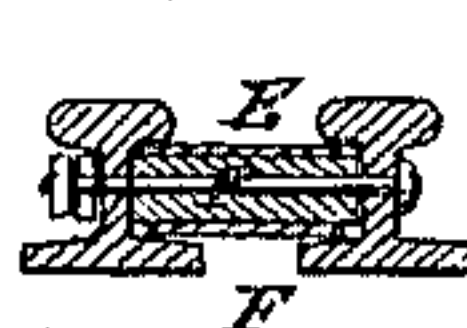
*Fig. 2*



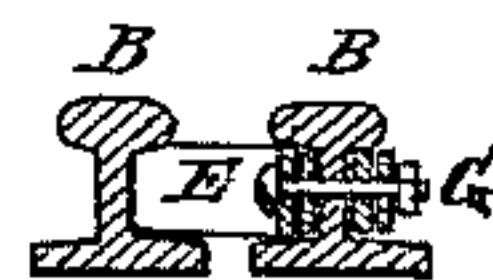
*Fig. 3*



*Fig. 4*



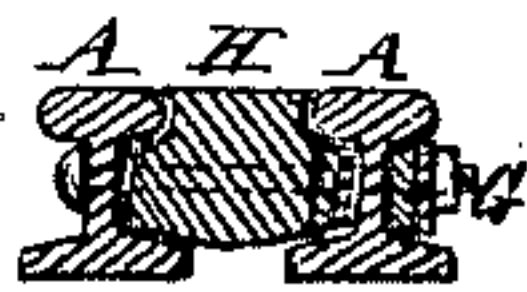
*Fig. 5*



*Fig. 6*



*Fig. 7*



Witnesses:

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*C. J. J. J.*

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PER

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# UNITED STATES PATENT OFFICE.

JAMES BRAHN, OF JERSEY CITY, NEW JERSEY.

## IMPROVEMENT IN RAILROAD FROGS.

Specification forming part of Letters Patent No. 133,559, dated December 3, 1872.

*To all whom it may concern:*

Be it known that I, JAMES BRAHN, of Jersey City, in the county of Hudson and State of New Jersey, have invented a new and useful Improvement in Railway Frog, of which the following is a specification:

Figure 1 is a top view of my improved frog, parts being broken away to show the construction. Fig. 2 is a detail cross-section of the same taken through the line *x x*, Fig. 1. Fig. 3 is a detail cross-section of the same taken through the line *y y*, Fig. 1. Fig. 4 is a detail cross-section of the same taken through the line *z z*, Fig. 1. Fig. 5 is a detail cross-section of the same taken through the line *w w*, Fig. 1. Fig. 6 is a side view of the same. Fig. 7 is a detail cross-section of the same taken through the line *v v*, Fig. 1.

Similar letters of reference indicate corresponding parts.

The invention consists in slotted iron blocks with wood filling between point and wings, or between the wings; in two-part fish-plates with round holes and short slots; and in a block between the rails that forms the point of frog, and flush with the top of rails; all as hereinafter fully described.

A is the point or central part of the frog, and B are the wings or side parts. The point A is made of two pieces of railroad rail, which are tapered to a point, the bodies of both pieces extending to the extreme point. The two tapering pieces are welded to each other at their points, and are riveted to each other at intervals. Upon the opposite sides of the point A are formed lugs *a'*, which rest upon the base-flanges of the adjacent wings B, and hold the point up to its place and prevent it from being pressed down. The point A and the wings B are held at the proper distance apart by blocks interposed between them, two or more upon each side of the point. These blocks consist of an iron block, C, slotted horizontally, and the wooden blocks D fitted into said slots, and which are made a little longer than the iron blocks C, so that the wood alone will bear against the point A and wings B. The wings B and point A are connected to each other by bolts, which pass through the wings B, the blocks C D, and the point A, as shown in Figs. 1 and 2. This construction greatly facilitates the putting together of the

frog, as the blocks C D can be driven in till they fit, and then holes to receive the bolts can be bored through the wooden blocks D through the holes in the wings and point. The wooden blocks alone bear the strain, and thus allow the point and wings to be drawn together more firmly and held more securely. The wood D, by its spring, takes up the wear, and serves as a cushion to prevent jar and noise from the wheels. The wooden parts of the blocks C D thus do the work, while the iron parts strengthen the wood, and protect and preserve it from decay and from losing its elasticity. A block, E F, similar in construction to the blocks C D, is interposed between the wings B in such a position that the point of the point A may rest against it, or in a notch formed in it, said block being secured to said wings by bolts, as shown in Figs. 1 and 4. The ends of the parts of the frog are provided with fish-plates G, which are so formed as to adapt them to be connected with the rails of different railroads, thus obviating the difficulty heretofore experienced in making frogs that can be used upon different roads, arising from the fact that different roads have the holes in the rails for the fish-plate bolts at different distances from the end of the rail and from each other. To accomplish this I make each fish-plate G in two parts, which can slide upon each other. The inner part has two round holes formed in the end that is bolted to the end of the frog, and two short slots in the ends that are to be bolted to the end of the rail. The outer part of each fish-plate has one round hole formed in its outer end to receive the outer bolt, and three slots to receive the other bolts.

This construction enables the fish-plates to be readily adjusted and secured to the ends of the rails of any road, and so long as one of the bolts remains tight the rail cannot move.

The tread of the wheels, especially the drive-wheels of the engine, is made considerably wider than the head of the rails, and by use becomes hollowed along the flange, so that the outer edge of the wheel, when running upon or leaving the point of a frog, will strike the other rail of said point and chip it out and injure it.

To remedy this I place a solid iron block, H, between the rails of the point at the place



where the outer edge of the wheels strikes or leaves the rail of the point, so that the outer part of the tread will be held up level with the top of the rail when passing upon or leaving it. The block H also rests against and supports the inner fish-plates, and is secured in place by the bolts that secure said fish-plates, as shown in Fig. 7.

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

1. The slotted iron blocks C filled with wood D, to adapt them to be interposed and bolted between the point and wings or between the wings of the frog, substantially in the manner

herein shown and described, and for the purposes set forth.

2. The fish-plates G, each made in two parts and provided with round holes and short slots, substantially in the manner herein shown and described, and for the purposes set forth.

3. The block H interposed between the rails that form the point of the frog, and so formed that its top will be flush with the tops of said rails, substantially as herein shown and described, and for the purposes set forth.

JAMES BRAHN.

Witnesses:

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