

(No Model.)

W. A. CHAPMAN.

SPRING RAIL FROG.

No. 385,594.

Patented July 3, 1888.

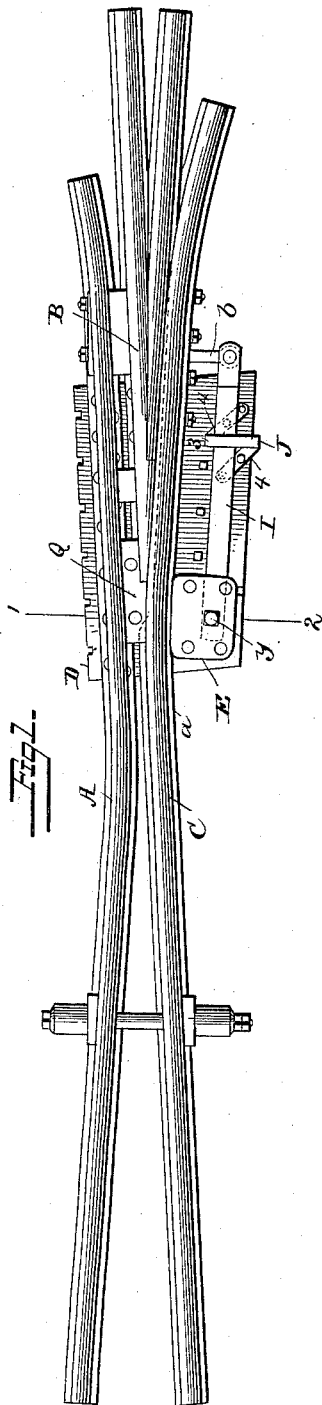


Fig. 1.

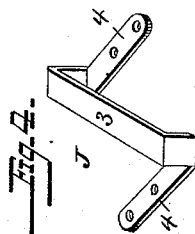


Fig. 2.

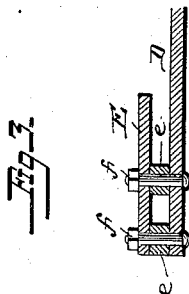


Fig. 3.

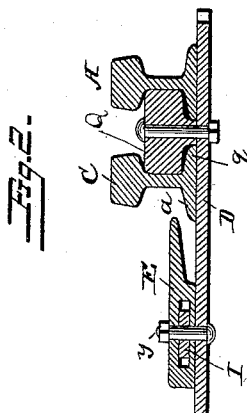


Fig. 4.

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UNITED STATES PATENT OFFICE.

WILLIAM A. CHAPMAN, OF HILLBURN, NEW YORK, ASSIGNOR TO THE
RAMAPO IRON WORKS, OF SAME PLACE.

SPRING-RAIL FROG.

SPECIFICATION forming part of Letters Patent No. 385,594, dated July 3, 1888.

Application filed February 1, 1888. Serial No. 262,611. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM A. CHAPMAN, a citizen of the United States, and a resident of Hillburn, Rockland county, New York, have
5 invented certain new and useful Improvements in Spring-Rail Frogs, of which the following is a specification.

My invention relates to spring-rail frogs; and my invention consists in the combination,
10 with the spring-rail, of means, fully set forth hereinafter, for maintaining the rail in its position upon the frog-plate even should it be fractured by the action of the wheels, thereby preventing the accidents apt to result from
15 such fractures.

In the accompanying drawings, Figure 1 is a plan view of a spring-rail frog embodying my invention. Fig. 2 is a transverse section on the line 1 2, Fig. 1. Fig. 3 is a transverse
20 section illustrating a modified mode of constructing and supporting the guard. Fig. 4 is a perspective view illustrating the construction of the yoke-plate.

A represents the fixed wing-rail of the frog,
25 B the frog-point, and C the usual moving rail, all of which parts lie upon the frog-plate D, and, with the exception of the moving rail, are bolted or riveted thereto.

It frequently happens as a result of the
30 pounding action of the car-wheels upon the moving rail adjacent to the frog-point that the rail is fractured transversely adjacent to said point, with injurious results to the vehicles or the track, or both. To avoid such results, I
35 combine with the moving rail a guard, E, consisting of a plate situated entirely outside of the moving rail and extending longitudinally along the outer side thereof, and slightly overhanging the flange *a* of the latter when the rail
40 is in its position against the frog-point, and receiving below it said flange as the rail is moved away from the point by the action of the car-wheels, which guard is constructed and supported in any suitable manner. In the
45 construction shown in the drawings the guard consists of a plate thickened at one edge, where it is bolted or riveted to the frog-plate D, the thinner portion extending toward the flange of the moving rail, as best shown in Fig. 2.
50 Another construction is illustrated in Fig. 3, in which there is a flat plate supported upon

the frog-plate D by hollow thimbles or distance-pieces *e*, through which pass bolts *f*, that also pass through the guard-plate and into the
55 frog-plate, thereby binding the parts all together.

Whatever may be the construction of and mode of supporting the guard E, it serves to prevent the guard-rail from rising from the
60 frog-plate, so that should the rail break transversely adjacent to the frog-point the ends formed by such break will be held closely to the frog-plate and maintained in the same horizontal plane, thereby avoiding the displacement of the vehicle from the rails and
65 other accidents apt to result in such cases.

The throat-block Q is bolted to the bed-plate, and is cut away at the bottom to extend over the inner flange, *g*, of the moving rail, so as to aid in holding it down, whatever may be
70 its position, and as the flange *g* must be cut away adjacent to the point the said throat-block is extended beyond the point, as best shown in Fig. 1, to overhang the flange, as
75 shown. This extension of the throat-block also prevents the rail, if broken opposite the frog-point, from swinging in to contract the space between the frog-point and fixed wing-rail, and prevents a broken wing-rail from rising from the frog-plate.

In order further to hold the moving rail
80 down upon the frog-plate at a distance from the point of the frog, I use a lever, I, pivoted at *y* to or adjacent to the guard E, and jointed at the outer end to an arm, *b*, extending from
85 the outer side of the moving rail, and this lever passes beneath a bridge or yoke, J, bolted to the frog-plate near the outer end of the lever, and holding the lever down, so as to prevent it from rising should any force tend to
90 lift the spring-rail from its seat.

It will be seen that the pivots of the lever I, where connected with the guard E at *y* and with the arm *b*, are at the same distance from the moving rail when said rail is in its normal
95 position. As a result of this arrangement, any longitudinal thrust or creeping of the rail will have no tendency to swing the lever I laterally, as would be the case if one pivot was nearer the rail than the other, and the moving
100 rail will keep its proper position with reference to the frog-point.

The bridge or yoke J may be formed in any suitable manner. I prefer, however, to make it by bending a strip of metal so as to form the elevated bridge portions 3, Figs. 1 and 4, and two supporting-feet, 4 4, parallel to each other upon the same horizontal plane, but extending each at an angle from one side of the bridge portion. The feet 4 4 are bolted or riveted to the plate D, and serve as a rest for the lever I to hold it in an elevated position to connect with the arm b and facilitate the bolting of the bridge to the foundation-plate.

Without limiting myself to the precise construction and arrangements of parts shown, I claim—

1. The combination, with a frog-plate and the moving rail of a spring-rail frog, of a guard consisting of a separate plate secured to the frog-plate entirely outside of the moving rail, and having an overhanging flange adjacent to and arranged to receive beneath it the flange of the moving rail, substantially as described.

2. In a spring-rail frog, the combination, with the fixed wing-rail, the frog-point, the moving rail, and the frog-plate, of a separate guard-plate supported by the frog-plate entirely outside of and extending longitudinally of the moving rail toward and above the outer flange thereof, substantially as set forth.

3. The combination, with the moving rail of a spring-rail frog, of a lever, I, pivoted at

one end adjacent to the frog-point to a fixed support and connected at the other end to an arm projecting from the moving rail, substantially as set forth.

4. The combination of the moving rail of a spring-rail frog and a lever, I, pivoted to an arm thereof at one end and at the other to a stationary pivot, the two pivots at equal distances from the rail, substantially as described.

5. The combination, with the moving rail of a spring-rail frog, of a lever, I, pivoted at one end adjacent to the frog-point to a fixed support and connected at the other end to an arm projecting from the moving rail, and a bridge or yoke extending over the lever near said arm, substantially as set forth.

6. The combination, with the moving rail of a spring-rail frog and lever I, connected to the lever at one end and to a fixed support at the other, of a bridge, J, consisting of a plate bent to form the overhanging portion 3, and feet 4 4, extending at an angle from each side of the overhanging portion, substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WM. A. CHAPMAN.

Witnesses:

HENRY W. AUBE,
WM. A. REDDING.