C. L. COOKE.
Railway Frog.

No. 197,099. Patented Nov. 13, 1877.

Fig. 1.

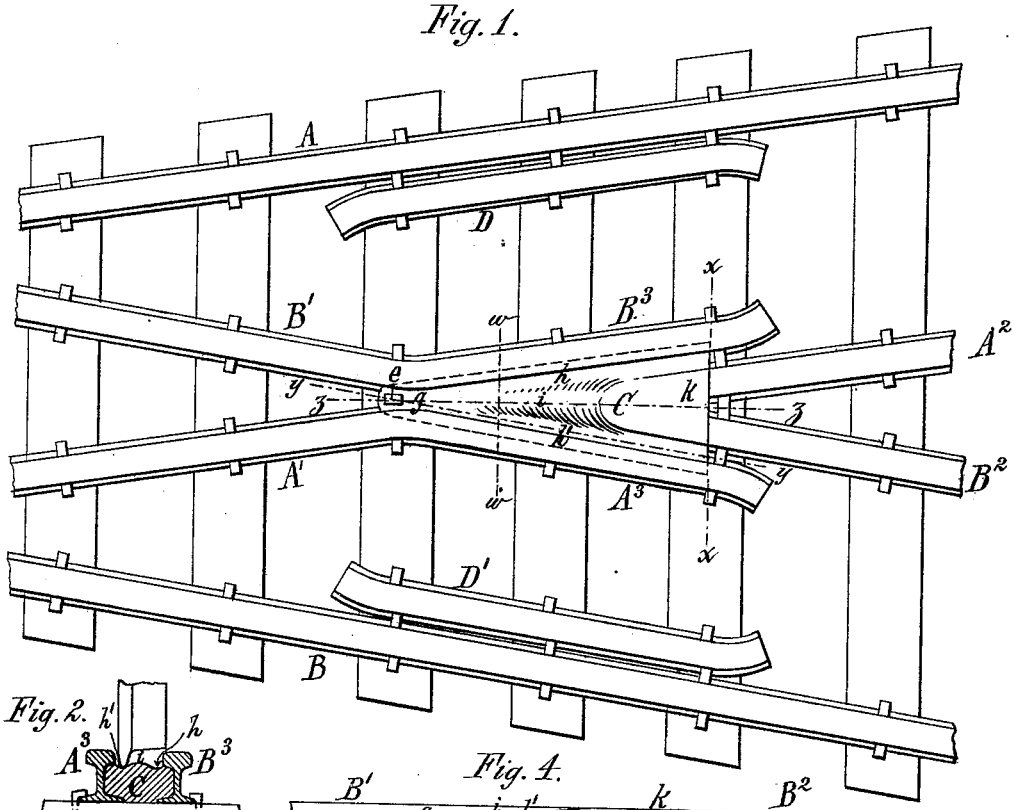


Fig. 2.

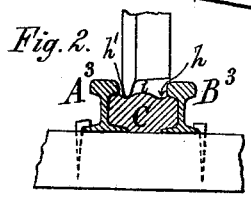


Fig. 4.

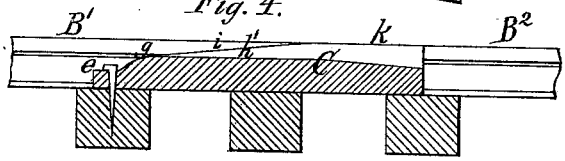


Fig. 3.

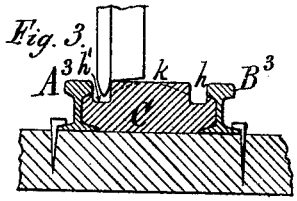


Fig. 5.

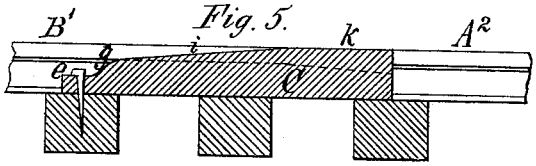
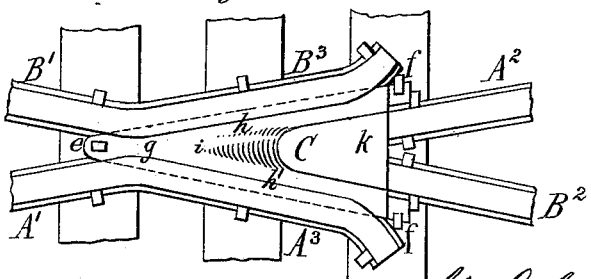


Fig. 6.



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UNITED STATES PATENT OFFICE.

CHARLES L. COOKE, OF BUFFALO, NEW YORK, ASSIGNOR OF ONE-HALF HIS RIGHT TO WILLIAM V. KISH, OF SAME PLACE.

IMPROVEMENT IN RAILWAY-FROGS.

Specification forming part of Letters Patent No. **197,099**, dated November 13, 1877; application filed October 22, 1877.

To all whom it may concern:

Be it known that I, CHARLES LEE COOKE, of the city of Buffalo, in the county of Erie and State of New York, have invented a new and useful Improvement in Railway-Frogs, of which the following is a specification, reference being had to the accompanying drawing.

In railway-frogs as ordinarily constructed the V-shaped or triangular point has its upper surface arranged in line with the upper surface of the rails, so that the tread of the wheel passes directly from the rail to the tip of the point. This is objectionable for the following reasons: When a wheel has, from any cause, become loose on the axle, or when the gage of the wheels does not correspond exactly with the gage of the track upon which they are running, as is frequently the case in the so-called "compromise cars," which run over tracks having gages of slightly-different widths, the flanges of the wheels are apt to strike the tip of the point, instead of passing on the inner side thereof. This results, when the displacement of the wheel is slight, in a chipping of the tip of the frog-point or of the wheel. When the displacement of the wheel is considerable, so that the flange of the wheel strikes the tip of the frog-point on the outer or wrong side, the wheel is deflected out of its straight course, whereby the wheel is broken or the car thrown from the track. The treads of the wheels of these compromise cars are made wider than those of wheels constructed for one particular gage, which results in the wheels wearing fastest near the flange, leaving the outer portion of the tread larger in diameter than the portion adjacent to the flange on which the wheel usually runs. These wheels in crossing from one rail to another run on the outer portion of the tread, and wear the rails, opposite the tip of the point, down below the level of the point, whereby the wheels are frequently caused to strike with the tread against the front edge of the tip, instead of running upon the upper surface thereof, which, owing to the hardness of the points, also results in a chipping of the wheel.

The object of my invention is to overcome these difficulties by a wheel-supporter, which is so constructed as to convey the wheels safely from one rail to another.

The nature of my invention will be fully understood from the following description.

In the accompanying drawing, Figure 1 is a plan view of a railway-frog provided with my improvement. Figs. 2 and 3 are cross-sections, respectively, in lines *w w* and *x x*, Fig. 1. Figs. 4 and 5 are longitudinal sections, respectively, in lines *y y* and *z z*, Fig. 1, and Fig. 6 is a plan view, showing a slightly modified manner of securing the wheel-supporter in place.

Like letters of reference designate like parts in each of the figures.

A B represent the outer track-rails, and A^1 B^1 A^2 B^2 the inner intersecting rails. C represents the V-shaped or triangular wheel-supporter, forming a continuation of the rails A^2 B^2. A^3 B^3 are the outwardly-bent portions of the rails A^1 B^1, bearing against the sides of the supporter C. D D' are the guard-rails, arranged, in a common manner, on the inner sides of the outer rails A B, opposite the supporter C. The sides of the supporter C are formed so as to fit snugly between the heads and bases of the diverging rails A^3 B^3, whereby the supporting-block C is firmly held in place when the rails are spiked to the ties.

The front end of the block C is, preferably, secured by a spike, *c*, and, if desired, the rear end of the block may be secured in place by spikes *f f*, engaging over suitable ears formed with the block, as represented in Fig. 6.

The upper surface of the triangular wheel-supporter C is constructed in the following manner: The upper surface of the tip *g* of the supporter C is arranged at such a height below the level of the heads of the rails that the flange of the wheel will run upon the tip, and be supported thereby, as soon as, or before, the tread of the wheel leaves the rail. The diverging side portions *h h'* of the upper surface of the block adjacent to the diverging rails A^3 B^3 are made of the same height, or arranged in line with the tip *g*, and made of a width to accommodate the flange of an ordinary wheel. The portion *i*, between the side portions *h h'*, is made convex or arching, and

gradually rising from the tip g to the rear portion k, which latter is made level with the heads of the rails A^2 B^2, of which it forms a continuation. The side portions h h', adjacent to the rear portion k of the block, are depressed, so as not to support the flange of the wheel where the tread of the latter is supported on the portion k.

In crossing from the rail A^1 to the rail A^2 the wheel runs with its flange upon the tip g of the supporter C as its tread leaves the rail A^1. The wheel now runs with its flange over the side portion h of the supporter C until the tread of the wheel is received by the rear portion k of the supporter, whence the wheel runs upon the rail A^2. The guard-rail D keeps the wheel in its straight course during its passage over the supporter C.

If, from any of the before-mentioned causes, the wheel should run upon the supporter in an improper manner, or toward the side portion h', the guard-rail D will readily cause the wheel to ride over the convex portion i of the supporter, and return it to its proper position on the portion h, there being no raised point in the way to prevent this transverse movement of the wheel over the supporter. In this manner the wheels are guided from one rail to another in an easy and safe manner without any danger of breakage or running off the track.

The supporter C, constructed of chilled cast-iron or of hammered iron, as may be preferred, is produced at comparatively small expense, and readily secured in place or taken up when required to be repaired or replaced.

I claim as my invention—

1. The triangular wheel-supporter C, having its tip g arranged at a height to support the flange of the wheels passing over it, the diverging side portions h h', arranged in line with the tip g, rear portion k, arranged in line with the heads of the rails, and convex central portion i, rising gradually from the tip g to the rear portion k, substantially as and for the purpose set forth.

2. The combination, with the triangular wheel-supporter C, having its tip g, side portions h h', rear portion k, and central portion i, constructed, as described, of the diverging rails A^3 B^3, intersecting rails A^1 B^1 A^2 B^2, outer rails A B, and guard-rails D D', substantially as and for the purpose set forth.

C. L. COOKE.

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