

J. CUMMING.
Railway-Crossing.

No. 159,158.

Patented Jan. 26, 1875.

Fig. 1.

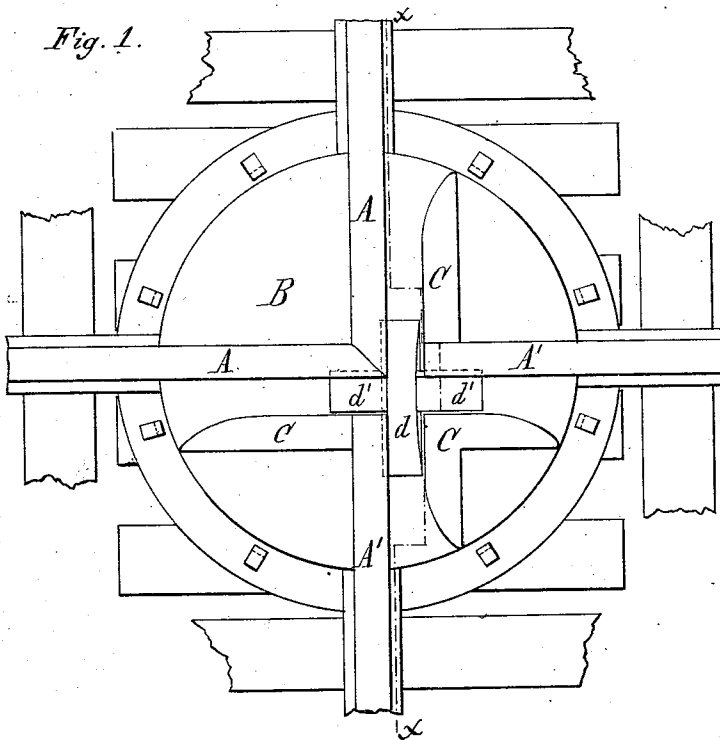


Fig. 3.

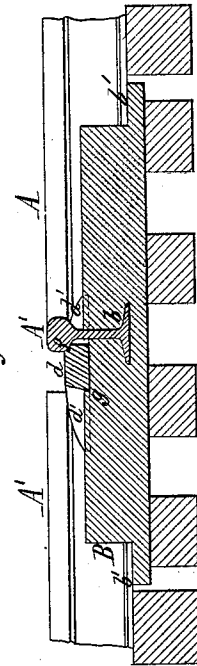


Fig. 2.

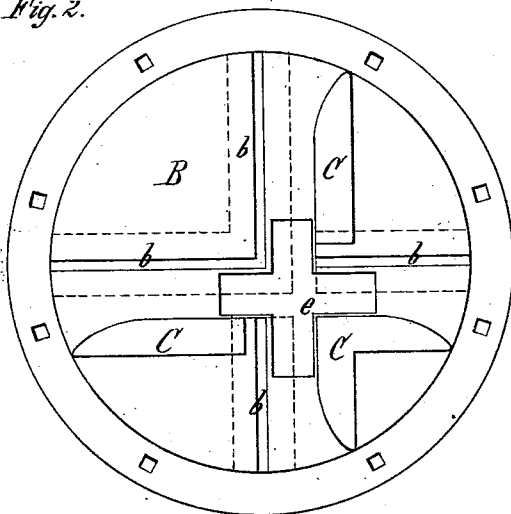
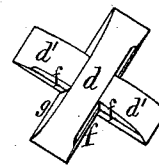


Fig. 4.



James J. Bonner.
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Witnesses

James Cumming, Inventor
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UNITED STATES PATENT OFFICE.

JAMES CUMMING, OF BUFFALO, NEW YORK.

IMPROVEMENT IN RAILWAY-CROSSINGS.

Specification forming part of Letters Patent No. 159,158, dated January 26, 1875; application filed January 9, 1875.

To all whom it may concern:

Be it known that I, JAMES CUMMING, of the city of Buffalo, in the county of Erie and State of New York, have invented certain Improvements in Crossing-Frogs for Railroads, of which the following is a specification:

My invention relates to a peculiar construction of that kind of frogs, commonly designated as "crossing-frogs," which are employed when two rails cross each other at right angles, or nearly so, as distinguished from that class of frogs which are used when the angle of the intersecting rails is more or less acute.

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

In the accompanying drawing, Figure 1 is a plan view of my improved crossing-frog. Fig. 2 is a plan view of the chair thereof, the rails being removed. Fig. 3 is a section in line *x x*, Fig. 1. Fig. 4 is a detached perspective view of the convex bridge-pieces.

Like letters designate like parts in each of the figures.

A A are the two intersecting track-rails, represented in the drawing as crossing each other at right angles. Their adjacent ends are beveled off, so as to form, when brought together, a rectangular point or corner, as clearly shown in Fig. 1. *A' A'* are the next succeeding track-rails, forming continuations of the intersecting rails *A A*, and arranged with their ends at a short distance from the point thereof, so as to leave open spaces, which permit the passage of the wheel-flanges. *B* is the body or chair of the frog, provided with T-shaped recesses or sockets *b*, in which the ends of the rails *A A A' A'* fit with their base-flanges and webs. The chair *B* is represented in the drawing as circular in form and provided with an exterior flange, *b'*, by means of which it is spiked down to the sleepers or other support. The two recesses which receive the intersecting rails *A A* meet at or near the center of the frog, while the recesses into which the rails *A' A'* are inserted stop short thereof, as clearly shown in Fig. 2, so that the ends of said recesses form stops for the rails *A' A'*. If preferred, however, the four recesses *b* may be formed of two continuous recesses intersecting each other. *C C* are the guard-rails formed on the upper side of the chair *B*,

their outer ends being curved outwardly in the usual manner to form guides for the wheel-flanges. The two adjacent portions of the guard-rails are cast together, so as to form a continuous angle-piece, as clearly shown. *d d'* are two detachable bridge or bearing pieces, arranged on the chair *B* in the open spaces at the point of intersection, for supporting the flanges of the wheels as they pass over these open spaces. The upper surface of the pieces *d d'* is concave, rising from the top plane of the chair *B* toward the central portion, which is a little higher than the under side of the head of the rails. The pieces *d d'* are arranged in a recess, *e*, of the chair, and secured in place on one side by an offset or shoulder, *f*, fitting under the head of the rail, and by forming the opposite side tapering or of dovetail form, as shown at *g*, to engage in the correspondingly-formed recess *e* of the chair. By this means the bridge-pieces *d d'* are securely held in place without requiring the use of bolts, rivets, or similar fastenings, which are liable to work loose.

One of the bridge-pieces—in the drawing the piece *d'*—may be formed in two parts, or each may be formed in one piece, and notched so as to interlock, as may be preferred.

When a wheel passes over the open space in the track-rail the flange of the wheel rides upon the respective bridge-piece, and is supported thereby until the tread of the wheel has passed the open space, whereby the jar and noise resulting in common frogs from the partial descending of the wheels into these open spaces are entirely prevented.

The track-rails *A A'*, extending to the center of the frog, or nearly so, distribute the strain more uniformly when a heavily-loaded wheel passes onto the frog, and prevent the tipping of the frog, which very frequently takes place in ordinary frogs.

The bridge-pieces *d d'* are readily detached from the chair *B*, without requiring the latter to be taken up, by loosening the rails and sliding them outwardly a short distance.

The chair *B*, with the recesses *b* and *e* and the guard-rails *C C*, is readily cast complete in one piece, and forms a most reliable and comparatively cheap support for the intersecting rails.

I claim as my invention—

1. The combination, with the intersecting track-rails A A and continuations A' A' thereof, of the chair B, cast complete in one piece with the guard-rails C C and recesses *b*, constructed and arranged substantially as hereinbefore set forth.
2. The combination, with the rails A A' and the chair B, provided with socket *e*, of the detachable bridge-pieces *d d'*, provided with the offset *f* and tapering side *g*, constructed and arranged substantially as hereinbefore set forth.

JAMES CUMMING.

Witnesses:

JNO. J. BONNER,
EDWARD WILHELM.