

Improvement in Railway-Frogs and Rail-Couplings.
No. 114,409. Patented May 2, 187

No. 114,409.

$$H \square f$$

Amos Venture
John Tyler

Witnesses

John W. Close Inventor
by Forbush & Nyall
attys.

UNITED STATES PATENT OFFICE.

JOHN W. CLOSE, OF BUFFALO, NEW YORK.

IMPROVEMENT IN RAILWAY-FROGS AND RAIL-COUPPLINGS.

Specification forming part of Letters Patent No. 114,409, dated May 2, 1871.

To all whom it may concern:

Be it known that I, JOHN W. CLOSE, of the city of Buffalo, in the county of Erie and State of New York, have invented certain Improvements in Railroad-Frogs and Rail-Coupling, of which the following is a specification:

My improvements relate to the means for securing in place railroad-frogs and the rails which connect therewith, consisting of a wrought-iron base-plate extending under both rails and overlapping the outer edges thereof, in connection with fish-plates, wedge-plates or blocks, and bolts for securing the parts together, as hereinafter more specifically and fully set forth.

In the accompanying drawings, Figure I is a plan view of my improved frog and rail-couplings. Fig. II is a partially sectional plan view, showing some of the parts removed. Fig. III is a cross-section on line *w w*, Fig. I. Fig. IV is a similar section on line *x x*, Fig. I. Fig. V is a section on line *y y*, Fig. I. Fig. VI is a cross-section on line *z z*, Fig. I. Fig. VII is a plan view of the wedge-plate.

Like letters designate like parts in each of the figures.

A A are the converging rails of a railroad-frog. B B are the wings thereof. C is the point formed by the junction of the rails D D, and fitting between the wings, so as to form a connection with the rails B B. E is a bed-plate of wrought-iron, of nearly the length of the wing-rails, arranged under the latter and the point. Its edges *e e* are swayed or bent up, so as to overlap and inclose the outer edges of the bases of the wing-rails B B. The overlapping flanges *e e* may be made to inclose the exterior side of the webs of said rails, to which they may be fastened by screw-bolts, if this construction is preferred.

The contiguous edges of the base of the point C and the bases of the wing-rails B B are provided with rectangular notches *g g*, through which pass bolts *g' g'*, which penetrate the bed-plate E and are fastened on the under side of the latter by a key, or equivalent, as clearly represented in Fig. V.

F is a wedge or stay plate, introduced between the wing-rails and resting on the bases thereof and on the base *e* of the point C of

the frog. The latter fits in a notch, *f*, formed in the adjacent edge of said wedge-plate. The bed-plate E and the wedge-plate F are secured together by a bolt, *f'*, passing through both, and locked by a key or screw-nut, or by any other suitable means.

The operation of this part of my improvements is as follows: The base-plate E connects, by means of its overlapping edges *e e*, the wing-rails B B, and prevents separation of said rails, and forms at the same time a support for the point C of the frog. The combination of the wedge-plate F with the base-plate E serves to keep the wing-rails at the proper distance apart, and to secure the point C against lateral and vertical displacement. The bolts *g' g'*, by fitting in the contiguous notches of the base of the point C, and the bases of the wing-rails securely hold the same against longitudinal displacement, and, by their being fastened to the bed-plate E, prevent relative vertical displacement of the parts.

H represents my improved coupling and chair for double rails. It also consists of a plate, J, of wrought-iron, which extends under the ends of the four rails D D D' D', with the edges *j j* of the plate turned up, so as to overlap the outer bases and webs of the rails, in the manner and as clearly represented. Fish-plates *k k* are applied to the inner sides of the webs, opposite these upturned edges *j j*. Wedge blocks, or stays N are introduced between these fish-plates, filling the space between them and pressing them against the webs of the rails. Fastening-bolts *n n* pass through the flanges *j j*, webs, and fish-plates, and through these wedge blocks, or in a groove or channel, *n'*, formed in their upper side, and secure the whole together. If desired, the wedge block N may be omitted and the fish-plates *k k* fastened to the rails and outer flanges by bolts, as in any ordinary fish-joints. This device firmly holds the ends of the rails abutting against displacement in either direction, and secures both rails in their proper relative position from each other. It can be applied to a joint intermediate the ties, as no base support is required therefor.

I represents a coupling and chair, which may be used for single rails. It consists of a plate of wrought-iron arranged under the

abutting ends of the rails A B, with its edges *i i* swaged or bent up, so as to overlap the bases and webs of the rails on both sides. Bolts *i' i'* pass through the edges *i i* and the webs of the rails, securing the parts together as represented. This joint is also adapted for intermediate joints, since no base support is necessary.

What I claim is—

1. The arrangement of the bolts *g' g'* with the notches *g g*, point C, rails B B, and base-plate E, as hereinbefore set forth.

2. The wedge-plate F and bolt *f'*, arranged with the rails B B, point C, and base-plate E, substantially as and for the purpose hereinbefore set forth.

3. The combination and arrangement, with the rails D D D' D', of the wrought-iron base-plate J, with overlapping edges *jj*, and fish-plates *k k*, secured by bolts, substantially as hereinbefore set forth.

4. The combination and arrangement with the rails D D D' D', base-plate J, flanges *jj*, and fish-plates *k k*, of the wedge-blocks N N, and bolts *n n*, as hereinbefore set forth.

J. W. CLOSE.

Witnesses:

EDWARD WILHELM,
JNO. J. BONNER.