E. H. BRYANT.

RAILWAY-FROGS.

No. 193,363. Patented July 24, 1877.

Fig. 2.

Fig. 6.

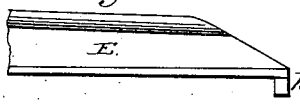


Fig. 5.

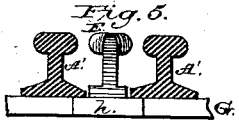


Fig. 1.

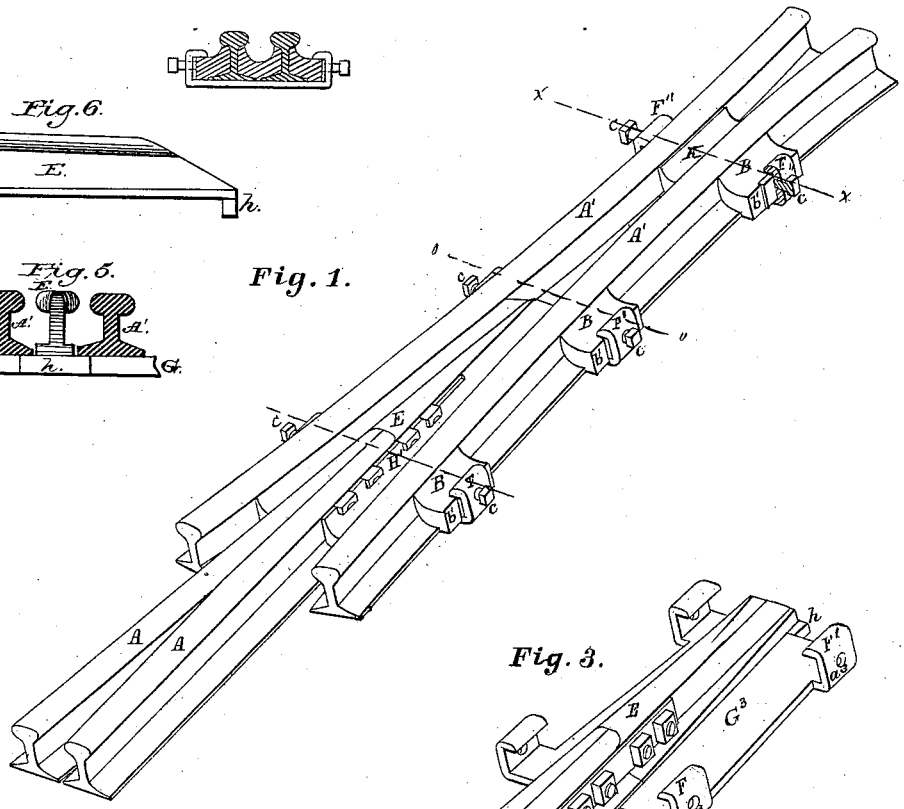


Fig. 3.

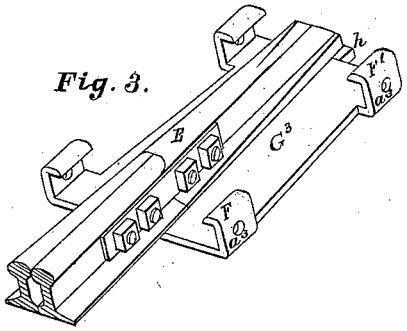
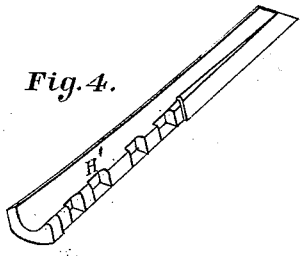


Fig. 4.



Attest:

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UNITED STATES PATENT OFFICE.

EMERY H. BRYANT, OF NEW BEDFORD, MASSACHUSETTS.

IMPROVEMENT IN RAILWAY-FROGS.

Specification forming part of Letters Patent No. **193,363**, dated July 24, 1877; application filed March 13, 1877.

To all whom it may concern:

Be it known that I, EMERY H. BRYANT, of New Bedford, county of Bristol and State of Massachusetts, have invented a new and useful Improvement in Railroad-Frogs, of which the following is a specification:

This invention relates to certain improvements in railroad-frogs; and consists of certain arrangements whereby the curved wing-rails, distance-pieces, and a rail-point of peculiar construction, are held in place by clamps having set-screws that press against the sides of the rails and hold the different parts together without the use of bolts passing through any of its parts.

The advantages claimed for this form of construction are, that the liability to accident from the breaking of bolts caused by the concussion of passing trains is avoided; that there is greater elasticity to the tread of the wheels than when the parts are held rigidly in place by bolts; and that the frog can be easily repaired in its place on the track.

The nature and operation of my invention will be clearly understood by reference to the drawings accompanying this specification.

Figure 1 is a perspective view, showing the uniting-rails A A, point E, distance-pieces H H and H′, wing-rails A′ A′, held in place by the clamps F F′ F″, and set-screws *c c*, *c c*, *c c*. The set-screws are not threaded into the clamps, but pass loosely through holes provided for that purpose, and have nuts that fit into notches in the filling B, as shown at *b′*.

Fig. 2 is a vertical section taken on the line *x x*, and shows all the parts in position.

Fig. 3 shows the bed-plate G^3, with projections at the corners, turned to form the clamps F F F′ F″. It also shows the position of the point E on the plate G^3; and at *h* is shown the end of the point, turned down to form the lip *h*, that extends below the surface of the plate G^3, and also extends laterally beyond the sides of the point, so as to be covered by the flanges of the wing-rails A′ A′.

Fig. 4 shows the distance-piece H′, with notches to receive the fish-plate and bolts.

Fig. 5 is a vertical section taken in the line *o o*, and shows the position of the point E, with the lip *h* extending under the rails A′ A′, and against the end of the base-plate G^3.

Fig. 6 is a side elevation of the point E, with lip *h*.

From this description it will be seen that each piece is held securely in its place by the pressure of the set-screws on the sides of the rails A′ A′.

The point E with distance-pieces H′ H′ cannot be moved forward because of their tapering or wedge-shaped form, and are prevented from a backward movement by the lip *h*, resting against the base-plate G^3. The lip *h* also prevents the plate G^3 from moving forward, while the spread of the rails A′ A′ prevents any backward movement. The point E is held down by the flanges of the wing-rails A′ A′ covering the lateral projections of lip *h*.

The filling-blocks H are made to fit the throat of the rails on the inner edges, while their outer edges extend under the turned edge of the clamp F″, and is mortised to receive the nut to which the set-screws *c c* are threaded.

It is frequently necessary to move the wing-rails of a frog to accommodate it to the expansion or contraction of the adjoining rails. With the frog herein described the set-screws may be turned back, when the rails will be loosened, and may be moved to the place desired, and again secured by turning up the set-screws, the spring of the rail allowing it to be brought firmly against the distance-pieces.

I am aware that the clamping-bar with the ends turned to hold a wedge have long been in use.

I am also aware that the distance-piece for keeping the rails a proper distance apart is not new; and that wedges placed between the flanges of the clamping-bar and the rails

are in common use; but I do not know of such distance-pieces or wedges being used, wherein they are not dependent upon bolts passing through them, for the strength and permanency of the frog; therefore,

What I claim as new, and desire to secure by Letters Patent, is—

In a railroad-frog, the rail-point E, with lip *h*, operating in combination with the wing-rails A′ A′, distance-pieces H′ H′, bed-plate G^3, with clamps F F′, filling-blocks B B B B, and set-screws *c c*, *c c*, substantially as and for the purpose specified.

E. H. BRYANT.

Witnesses:
S. F. CLARK,
WM. B. SHERMAN.