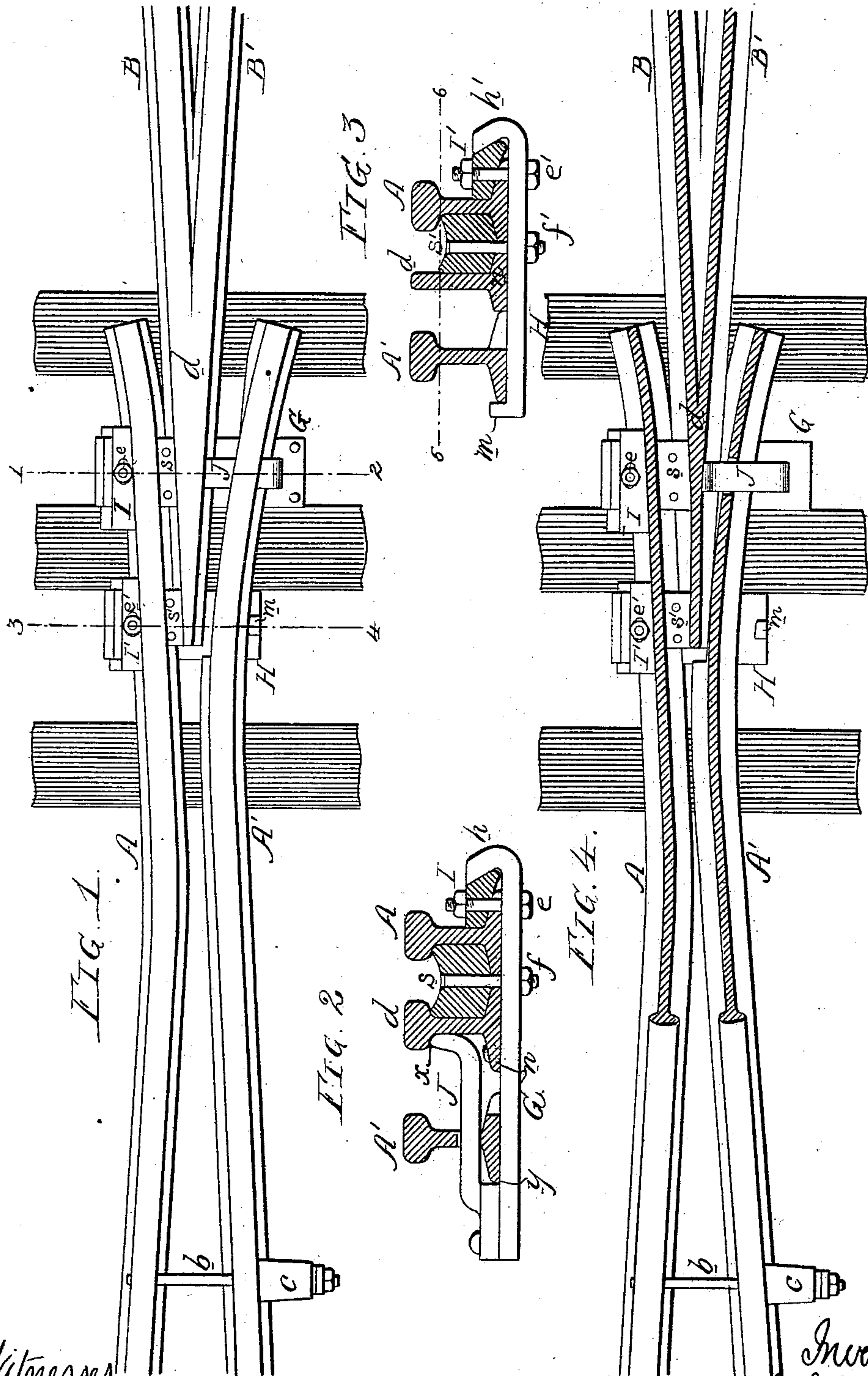


E. H. JOHNSTON.
Railroad Frog.

No. 213,204.

Patented Mar. 11, 1879.



Witnesses
McDermott
Harry Smith

Inventor
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UNITED STATES PATENT OFFICE.

EDWARD H. JOHNSTON, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO
THE WHARTON RAILROAD SWITCH COMPANY, OF SAME PLACE.

IMPROVEMENT IN RAILROAD-FROGS.

Specification forming part of Letters Patent No. **213,204**, dated March 11, 1879; application filed
February 11, 1879.

To all whom it may concern:

Be it known that I, EDWARD H. JOHNSTON, of Philadelphia, Pennsylvania, have invented a new and useful Improvement in Railroad-Frogs, of which the following is a specification:

My invention relates to certain improvements, fully described hereinafter, in that class of frogs in which a fixed wing-rail and fixed point are combined with a movable wing-rail; and the main object of my invention is to construct a light, economical, but substantial frog of this class, and one which can be secured to the wooden ties without cutting the same.

In the accompanying drawings, Figure 1 is a plan view of my improved frog; Fig. 2, a vertical section on the line 1 2; Fig. 3, a vertical section on the line 3 4, and Fig. 4 a sectional plan on the line 5 6, Fig. 3. Figs. 2 and 3 are drawn to a larger scale than Figs. 1 and 4.

A is the fixed wing-rail, and A' the movable wing-rail, of a frog, the two rails being connected together by a bolt, *b*, provided with a rubber spring, C, or the rails may be otherwise arranged in such a manner that the rail A' can be moved outward to the position Fig. 1, and will be self-restoring to the position Fig. 4. B and B' are the usual converging rails, terminating in the point *d*, which occupies the ordinary position between the two wing-rails.

The fixed wing-rail and the point *d* are secured to each other through the medium of two plates, G and H, in a manner which will be best understood by reference to Figs. 2 and 3. The plate G, Fig. 2, has at one end a lug, *h*, between which and the rail A intervenes a wedge, I, fitting snugly to the flange and web of the rail, the wedge having a longitudinal slot, through which, and through the plate and the flange of the rail, passes a bolt, *e*.

I prefer to make the lug *h* inclined inwardly, and to bevel the outer edge of the wedge to correspond with the inclined lug.

To the plate G, near the outer end of the same, is riveted or otherwise secured one end of the guide-bar J, the other end of which is made to fit snugly against the web of the point-rail, and against the shoulder *x*, formed at the

junction of the web with the tread of the said rail. The bar J passes through an opening in the web of the movable wing-rail A', and serves to keep the flange of the said rail down to its bearing on the plate G, the shoulder *y* of the guide-bar J serving as one of the stops to limit the outward movement of the said wing-rail.

A distance-piece, *s*, fits snugly between the fixed rail A and point-rail *d*, and this distance-piece is secured to its place by bolts *f*. The point may be further secured to the plate G by riveting or bolting the flange *z* to the same.

It will be seen that on tightening the wedge I the guide-bar will form an abutment for resisting the action of the wedge, and hence that the fixed wing-rail, distance-piece, and the point must be securely confined laterally by and between the end of the guide-bar and wedge, and vertically to the plate by the wedge and its bolt, the distance-piece and its bolts, and such additional bolts or rivets as may be deemed necessary.

The rail A and point-rail *d* of the frog are secured to the plate H, in the manner best observed in Fig. 3, by the wedge I' and its bolt *e'*, the distance-piece *s'*, and its bolt *f'*, in the manner described above in reference to the plate G, the plate H serving as a bearing for the movable wing-rail A', and having a lug, *m*, for limiting the outward movement of the said movable wing-rail.

The two plates G and H, with their adjuncts, connect the fixed rail and the point together quite as effectually as the more cumbrous and costly continuous base-plate of five or six feet in length, to which, in frogs of this class, the fixed wing-rail and the point-rail are usually riveted, the two plates at the same time affording ample bearings for the movable wing-rail, which is confined to said bearings by the guide-bar J.

My improved frog possesses this important advantage—that it can be laid without that cutting into and wounding of the ties which is common in laying other frogs of this class.

On reference to Fig. 1 it will be seen that each of the plates G and H occupies a position between two ties, on which the rails themselves rest, and to which the fixed rails can be secured by spikes.

I claim as my invention—

1. In a railroad-frog having one fixed and one movable wing-rail, the combination of the fixed rail and the point with two plates, G and H, which serve as bearings for the movable rail, and through the medium of which the said fixed rail and the point are connected together, all substantially as set forth.

2. The combination of the plate G, secured to the fixed rail A and point *d*, and forming a bearing for the movable rail A', with a bar, J, secured to the said plate, and passing through an opening in the web of the said rail A', all substantially as specified.

3. The combination of the plate G and its lug *h*, the fixed rail A, the point *d*, wedge I, and distance-piece *s* with the bar J, serving as a guide for the movable rail A', and adapted to and forming an abutment for the point-rail, substantially as described.

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

EDWARD H. JOHNSTON.

Witnesses:

HENRY HOWSON, Jr.,

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