

(No Model.)

E. H. BRYANT & H. N. HOPKINS.

RAILROAD SWITCH.

No. 304,702.

Patented Sept. 9, 1884.

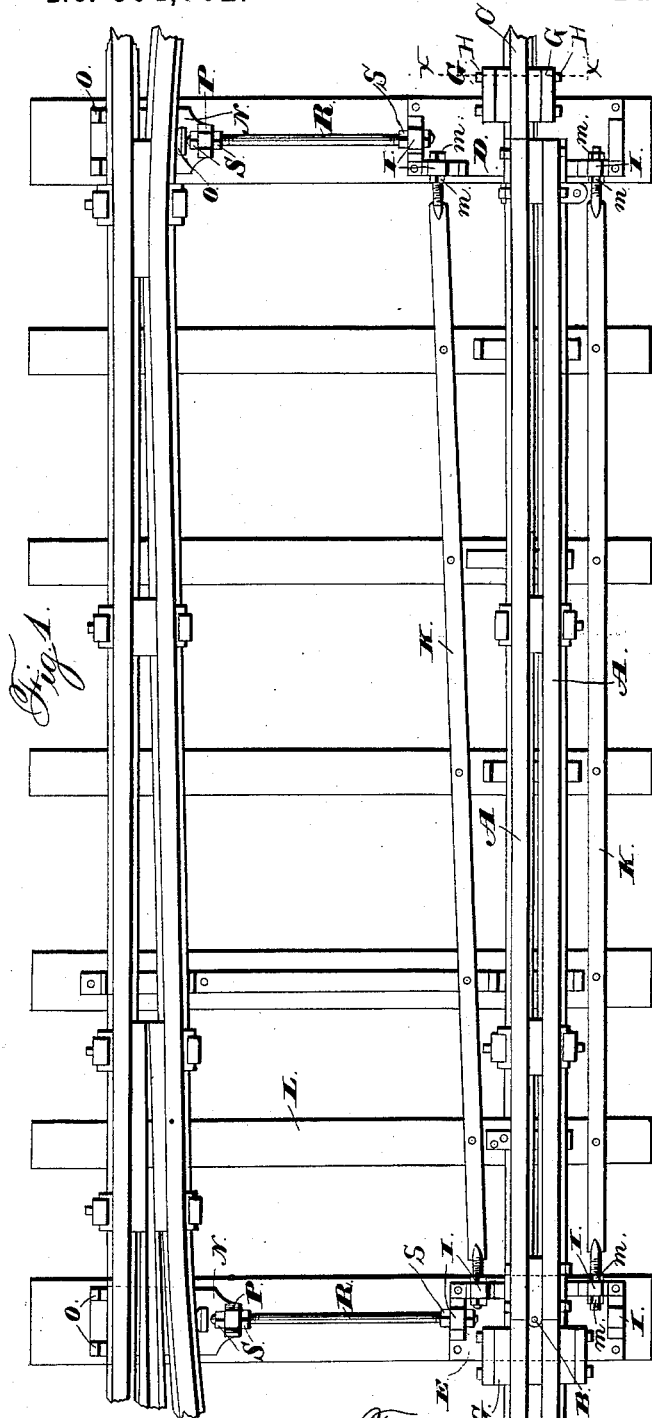


Fig. 1.

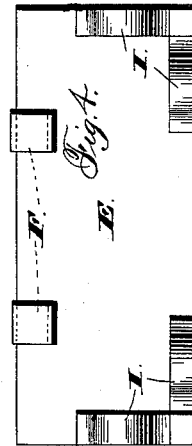


Fig. 4.



Fig. 5.

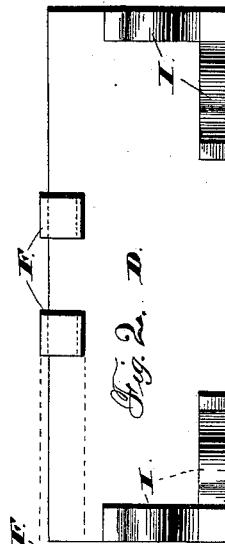


Fig. 2.



Fig. 3.

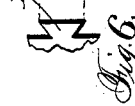
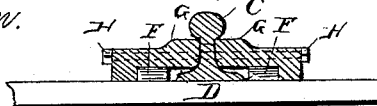


Fig. 6.

WITNESSES

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Fig. 7.



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UNITED STATES PATENT OFFICE.

EMERY H. BRYANT, OF NEW BEDFORD, AND HENRY N. HOPKINS, OF
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RAILROAD-SWITCH.

SPECIFICATION forming part of Letters Patent No. 304,702, dated September 9, 1884.

Application filed February 7, 1884. (No model.)

To all whom it may concern:

Be it known that we, EMERY H. BRYANT and HENRY N. HOPKINS, of New Bedford and Taunton, in the county of Bristol and State of Massachusetts, respectively, have invented certain new and useful Improvements in Railroad-Switches; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Our invention relates to an improvement in railroad-switches, the object being to provide improved means whereby the several parts thereof will be securely retained in their proper relative positions, thus forming a safe and reliable switch; and with these ends in view our invention consists in certain details of construction and combinations of parts as will be hereinafter described and pointed out in the claims.

In the drawings, Figure 1 is a plan view of a switch embodying our invention. Fig. 2 is a plan view of the head-chair. Fig. 3 is an edge view of the same. Fig. 4 is a plan view of the heel-chair. Fig. 5 is an edge view of the same. Fig. 6 is an edge view of one of the tenons, F; and Fig. 7 is an enlarged view on the line *xx* of Fig. 1.

A A represent the movable rail section of the switch, one end of said section being pivotally secured at B, the opposite end thereof being free to swing and allow either of the rails A A to register with the rail C.

D E represent the head and heel chairs, respectively, said chairs being secured to cross-ties, and provided on their upper face with two dovetail tenons, F, between which tenons are adapted to fit the rail or rails of the fixed tracks. On these tenons F fit the mortise-plates G, provided on their under sides with dovetail mortises, in which fit the tenons F, the inner edges of said plates fitting against the web of the rails, said edges of the plates being constructed to conform to the shape thereof. These mortises do not extend throughout the entire width of the plates G, but start from the inner faces of both plates and terminate before reaching the outer edge, thereby forming abutments, which, when the plates and

rails are secured by the bolts H, prevent the parts from moving laterally. The upper faces of the head and heel chairs D E are also provided with the perforated lugs I, through which pass the screw-threaded ends of the expansion-rods K, connecting the said head and heel chairs, and securely bolted to the cross-ties L. These expansion-rods are secured to the head and heel chairs by means of the nuts *m*, fitting on the ends of the rods on either side of the lugs I, and adapted to impinge against the latter.

N represents plates securely bolted to the cross-ties, and adapted by means of lugs O to keep the stationary section of the switch in position. These plates are provided on their inner ends with perforated lugs P, similar to the lugs I, in which fit one end of the gage-rods R, the opposite ends of which fit in lugs I, formed on the head and heel chairs, said rods being secured to the lugs by means of two nuts, S S, fitting against the same, similar to those on the ends of the expansion-rods. By means of the rods K R all creeping of rails either backward or forward is prevented, the switch being always left free to be moved. It will also be seen that the lateral strain on the switch is by our improved construction more evenly distributed, and the rails prevented from lateral displacement by means of the expansion-rods K. It is also obvious that by this construction the necessity for leaving a space for expansion is overcome, and that by means of the gage-rods R the switch may be narrowed or widened, as desired.

Having fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The combination, with movable and stationary portions of the switch, of head and heel chairs and plates N, secured below the rails, and gage-rods connecting the said chairs and plates, substantially as set forth.

2. The combination, with the movable and stationary portions of the switch, of head and heel chairs secured below the rails, expansion-rods connecting said chairs, and gage-rods extending between the movable and stationary portions of the switch, substantially as set forth.

3. The combination, with the movable section of the switch, of head and heel chairs secured to the ties and provided with dovetail tenons, plates fitting against the rails and provided with mortises adapted to receive said tenons, and bolts passing through said plates and rails, substantially as set forth.

4. The combination, with the movable section of the switch, of head and heel chairs secured to the ties, and provided with lugs on their upper face, and expansion-rods fitting in said lugs and secured thereto by means of nuts, substantially as set forth.

5. The combination, with the movable rail-section of the switch, of head and heel chairs secured to the ties, and provided with per-

forated lugs adapted to receive the ends of expansion-rods connecting said heel and head chairs, said chairs being also provided with dovetail tenons, plates provided with mortises to receive said tenons, and bolts passing through the plates and rails between the tenons, substantially as set forth.

In testimony whereof we have signed this specification in the presence of two subscribing witnesses.

EMERY H. BRYANT.
HENRY N. HOPKINS.

Witnesses:

E. D. GODFREY,
E. L. CROSSMAN.