

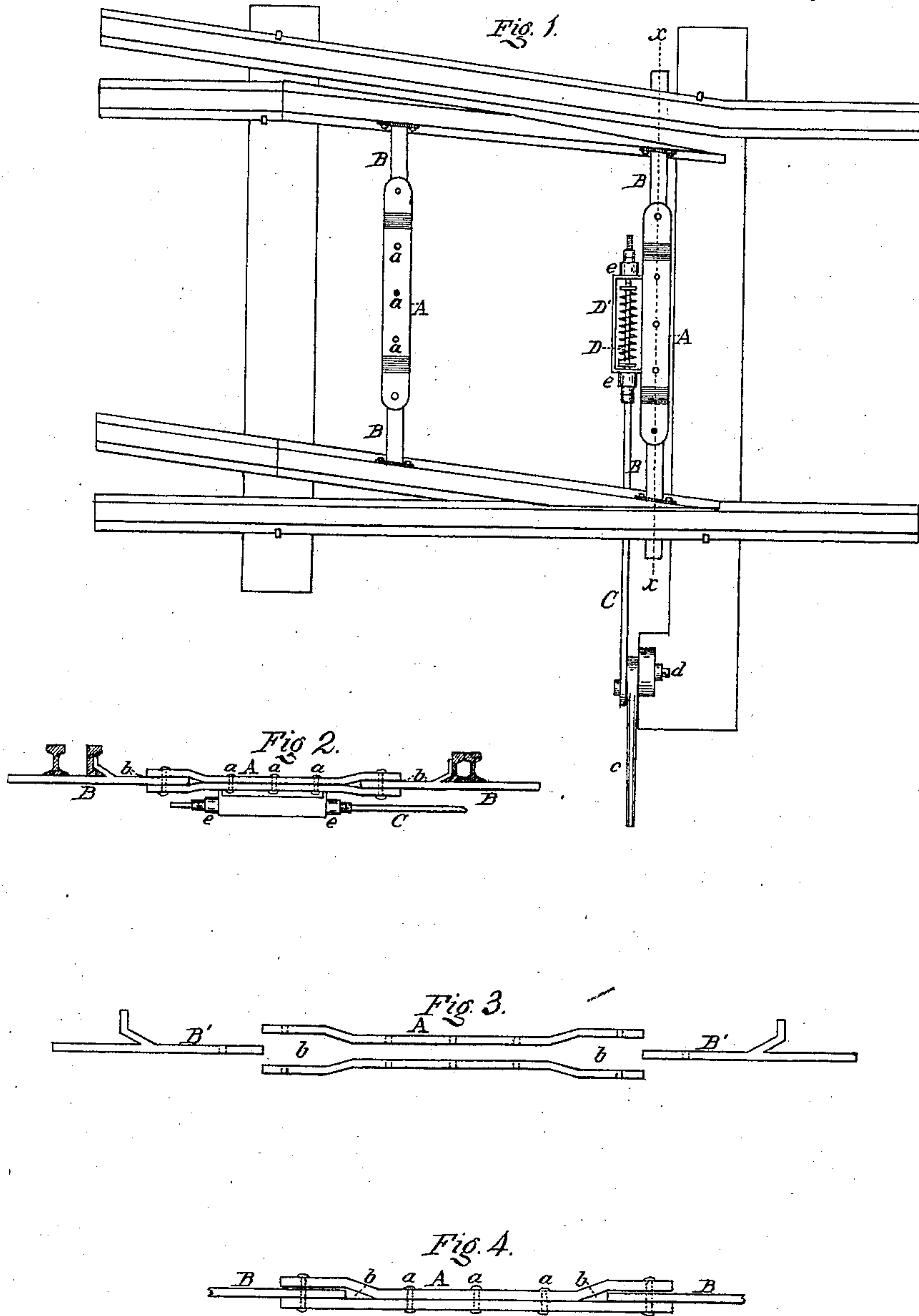
(No Model.)

J. T. RICHARDSON.

RAILWAY SWITCH.

No. 322,067.

Patented July 14, 1885.



WITNESSES.

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# UNITED STATES PATENT OFFICE.

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## RAILWAY-SWITCH.

SPECIFICATION forming part of Letters Patent No. 322,067, dated July 14, 1885.

Application filed June 12, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN T. RICHARDSON, a citizen of the United States, residing at Harrisburg, in the county of Dauphin and State of Pennsylvania, have invented certain new and useful Improvements in Railway-Switches; and I 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, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention is an improvement upon a patent granted to me July 6, 1880, No. 229,754, which was entitled a "railroad-switch," and related to that class of jointed connections for securing the movable point-rails of a railroad-switch. It consisted of a central transverse brace formed with slots extending out each way from the solid middle portion thereof, with connecting-bars rigidly attached at one end to the point-rails and extending into the said slots and pivoted to the ends of the said brace, so as to form a stiff-jointed connection vertically between the point-rails, and thus cause them to maintain an upright position, and at the same time allow the connecting-bars a free play in the slots of the brace during the movement of the point-rails.

My present improvement upon said invention consists in securing a stronger, more simply constructed, and less expensive brace by dispensing with the use of the solid middle portion of the same and confining the length of the terminal slots to much shorter aggregate limits. These ends are secured by bending either the upper or lower bar or both bars of the brace centrally at a more or less abrupt incline to a distance equal to the vertical distance between the bars at the slotted ends, if but one bar is bent, or one-half of said distance if both bars are bent, said bend extending longitudinally over a space about one-third or one-half of the length of the entire brace, in which case the two bars when in position will be in lateral contact throughout said space, in which position they are permanently held by two or more strong rivets.

The object to be attained by this mode of juncture is to distribute the resistance to shock over a greater distance, and without the medium of an independent block or central solid piece, (which is an element of weakness,) by fastening the two bars constituting the brace directly together at two or more points of contact, as hereinafter more fully set forth.

In the drawings, Figure 1 is a plan view of my improved railroad-switch. Fig. 2 is a transverse elevation taken in the line *xx* of Fig. 1, the rails being shown in section, and Fig. 3 is a view of the central brace and connecting-bars detached from the point-rails. Fig. 4 shows a modification, in which but one bar of the brace is bent.

Like letters in all the figures of the drawings indicate like parts.

Referring to the drawings, *A A* are central parallel braces consisting each of two plates having their central portions for a distance about one-third or one-half the aggregate length of the same in close lateral contact with each other, in consequence of said plates being bent centrally in opposite directions to a degree sufficient to bring the lateral faces of both plates into said contact throughout the longitudinal extent of said central distance, as shown in all the figures.

*B B* are the connecting-bars or swivel-arms, which are rigidly attached by means of T-shaped ends and rivets to the webs of the point-rails, and made to extend into the slots of the braces about one-fourth the distance longitudinally toward the center, and secured by pivots to the ends of the braces, which, in connection with the bars, form stiff-jointed connections vertically between the point-rails, thus preventing any lateral yielding or turning over of the point-rails and causing them to maintain a steady upright position during their movement or otherwise, and at the same time allowing the bars a free horizontal movement in the slots of the braces, according to the movement of the point-rails.

*C* is the usual operating-switch rod, connected with a lever, *c*, having its fulcrum at *d*.

*D'* is a spring-housing attached to the lower edge of a brace, and provided with sleeves *ee*, through which and a spiral spring, *D*, the rod



passes, screw-nuts being placed on the rods to regulate the tension of the spring, as shown in Fig. 1.

In the use of the brace as formerly constructed undue consideration, as shown by practice, was given to the length of the swivel-arms B B at the expense of the central structure of the brace, whereas experience has shown in all the other forms of self-adjusting tie-bars in extensive use that the rigid central portions of the brace should be the stronger, due regard being given at the same time to the strength of the swivel-connections. This required distribution of strength I have more accurately made to meet the demands of the case by limiting the length of the swivel-arms and their corresponding slot-housings; and hence by this means I have been able to secure increased central support by bringing the bars constituting the brace into lateral contact centrally for a distance equal to about one-half the aggregate length of the brace, and riveting the two plates directly together at two or more different points without the medium of an interposed center piece or block or lug projection from either.

The advantages also gained in the point of economy are shown in the diminished length of the swivel arms and the proportionate length of the slots; also, the central solid portion or block being discarded, its cost is not taken into consideration. This advantage is still more evident if the brace should be constructed

of a solid piece of metal, as implied or provided for in the original invention, in which case the slots would require to be sawed or otherwise wrought into the body of the solid metal; hence the additional and readily-conceded advantages and value of my present improved device.

Having thus fully described my invention, what I claim therein as new, and desire to secure by Letters Patent, is—

1. A railway-switch having a central transverse brace formed with slots extending from each end centrally, but limited in length by a vertical bend in one or both the plates, with connecting-bars rigidly attached at one end to the point-rails and extending into the said slots and pivoted to the ends of the brace, substantially as and for the purposes set forth.

2. The parallel braces A A, consisting each of two plates, one or both of which are bent centrally toward each other and riveted fast each to each at the points *a a a* to form terminal slots *b b*, in combination with the connecting-bars B B, attached at one end to the point-rails and pivoted to the ends of the braces, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN T. RICHARDSON.

Witnesses:

A. D. B. SMEAD,  
JNO. B. LANDIS.