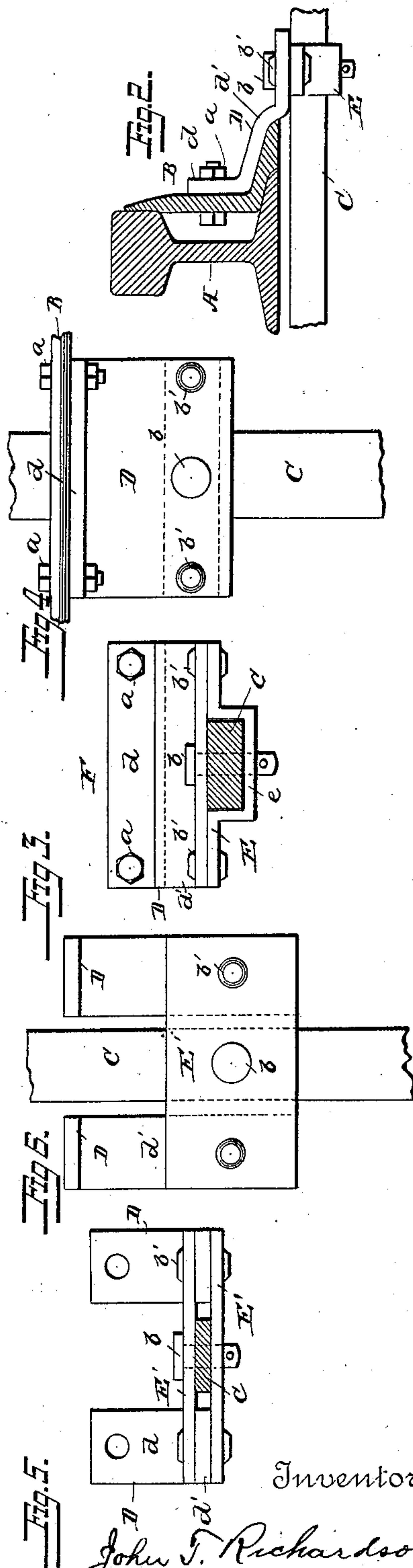


J. T. RICHARDSON.  
RAILWAY SWITCH.

Patented June 11, 1889.



Witnesses  
Judy Hinkel, Jr.  
J. N. Parker.

Inventor  
John T. Richardson,  
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# UNITED STATES PATENT OFFICE.

JOHN T. RICHARDSON, OF HARRISBURG, ASSIGNOR OF ONE-HALF TO ALEXANDER H. EGE, OF MECHANICSBURG, PENNSYLVANIA.

## RAILWAY-SWITCH.

SPECIFICATION forming part of Letters Patent No. 404,864, dated June 11, 1889.

Application filed August 22, 1888. Serial No. 283,484. (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, of which the following is a specification.

My invention relates to railway-switches; and it consists of novel connecting pieces or brackets adapted to be carried by the movable switch-rails, and to form bearings in which are swiveled or pivoted the connecting-bars which unite these rails and properly direct their movements, permitting them, by reason of their swivel or pivotal connections with the said bracket-pieces, to move from their respective centers of motion without any cramping or bending of parts.

I have illustrated my invention in connection with what is known as a "point or split switch."

In the drawings, Figure 1 is a plan view of so much of a switch as is necessary to illustrate the invention. Fig. 2 is a cross-section on the line 2 2 of Fig. 1, looking in the direction of the arrow; and Fig. 3 is a section on the line 3 3, looking in the direction of the arrow 2. Fig. 4 is a plan view of the connecting-bracket detached. Figs. 5 and 6 are detached views illustrating a different form of the invention from that shown in the other figures.

In the drawings, A A represent the fixed rails, B B the movable point-rails, and C C the connecting-bars of the latter. These bars are supported at or near their ends in seats provided therefor in the brackets F, carried by the movable switch-rails, to which they are secured by the pivot-pins *b*.

The preferred form of bracket, which is that shown in Figs. 1 to 4, is made up of two metal plates D and E, the upper one of which D is bolted at *a a* to the web of the switch-rail, while it and the lower plate E are united together by the rivets *b'*.

The upper vertical portion *d* of the upper plate D of the bracket is formed to fit the web of the point-rail to which it is secured, lying between the head and the foot or lower flange thereof, as seen in Fig. 2, and the horizontal portion *d'* of this plate is formed on

its under side to fit the upper surface of the flange and to extend sufficiently far beyond the edge thereof to admit of the attachment of the lower plate E. This lower plate is stirrup-shaped, as shown in Fig. 3, whereby there is formed between its central depressed portion *e* and the plate D a seat for the bar C. This seat is by preference rectangular in cross-section, of a size slightly larger than the cross dimensions of the bar C, so as to permit the latter to turn freely therein to the necessary extent upon the pins or bolts *b* as the switch-rails are moved, and is open at both ends, so that the bar may be passed therein from either side, as may be most convenient.

The connecting-bracket shown in Figs. 5 and 6 is formed of two plates D, separated a short distance from each other, and the two plates E' E', one lying above and the other below the horizontal portions of the plates D, to which they are secured. This arrangement provides the seat for the bar C between the plates E' and the horizontal portions *d'* of the plates E.

If desired, the bar C nearest the point ends of the rails B may be extended, as shown in Fig. 1, so as to lie beneath the fixed rails, and thereby assist in preventing the point ends from springing upward when the weight of a passing car or locomotive is upon the heel ends of such rails.

The above-described brackets provide a means for a swivel attachment of the connecting-bars, which is simple in construction and easy to manufacture, while it possesses great strength, since all the parts, whichever form of my invention is used, are made from ordinary merchant plate or bar-iron, thus obviating the necessity of having specially-constructed tools or apparatus in order to make the attachments.

I am aware that cast-metal connecting-pieces having sockets for the connecting-bars have been used; but my invention possesses superior strength, is less liable to breakage, and at the same time is less expensive to manufacture.

I claim—

1. The combination, with the movable switch-rails, of the connecting-bars and the

brackets having the seats in which the connecting-bars are swiveled open at both ends, the said brackets consisting of the plates D, secured to the rails and bent to have longitudinal projecting portions, and other plates secured to the said horizontal portions of the plates D and forming the bottom of the said open-ended seats, substantially as set forth.

2. The combination, with the movable switch-rails, of the connecting-bars and the brackets in which they are swiveled, consisting of the plates D, secured to the rails and

having the horizontal projecting portions  $d'$ , and the stirrup-shaped plates E, secured to the portions  $d'$  of the plates D, and forming in connection therewith the seats for the bars, substantially as described. 15

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

JOHN T. RICHARDSON.

Witnesses:

JNO. B. LANDIS,  
C. S. THUMMA.