(No Model.)

E. SAMUEL.

RAILWAY TRACK STRUCTURE.

No. 521,004. Patented June 5, 1894.

FIG. 1.

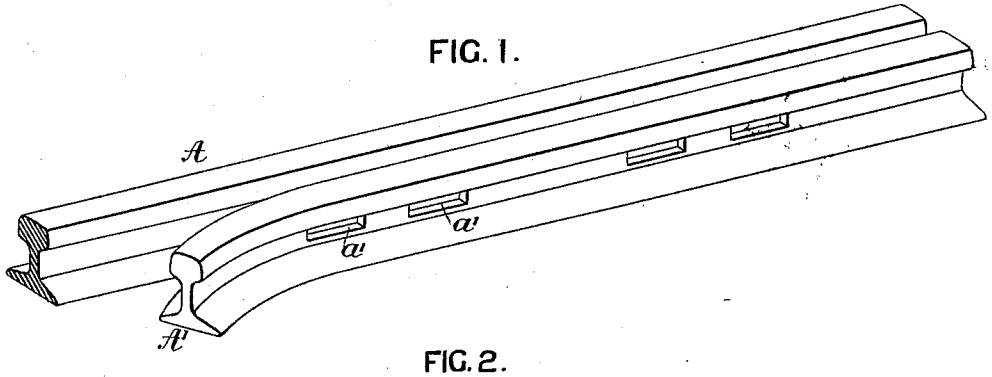


FIG. 2.

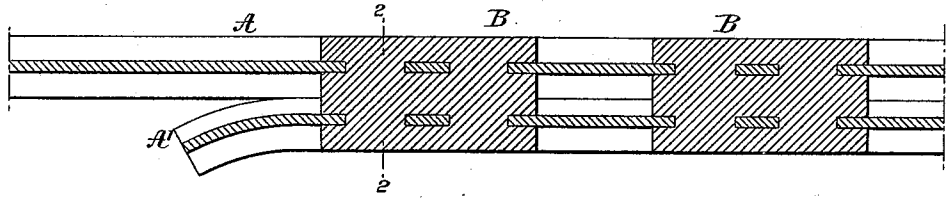


FIG. 3.

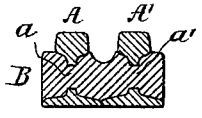


FIG. 5.

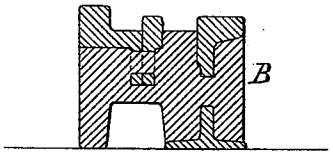


FIG. 4.

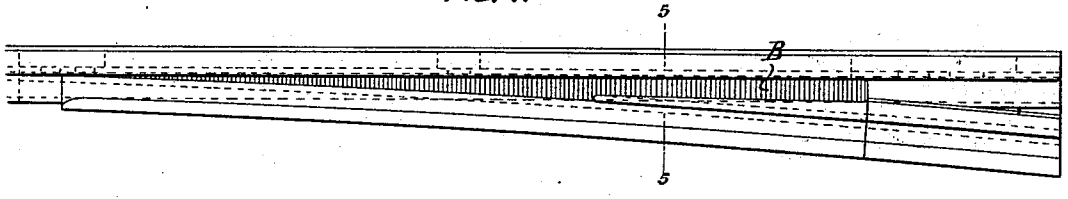
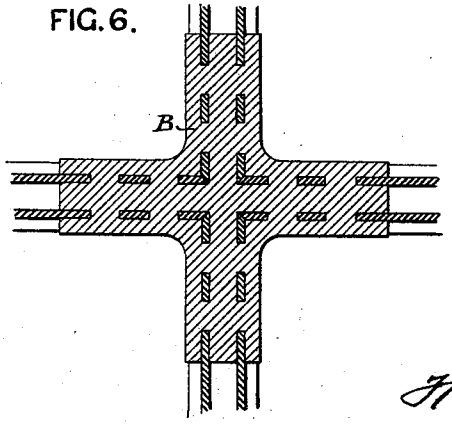


FIG. 6.



WITNESSES

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RAILWAY-TRACK STRUCTURE.

SPECIFICATION forming part of Letters Patent No. 521,004, dated June 5, 1894.

Application filed February 24, 1892. Serial No. 422,618. (No model.)

To all whom it may concern:

Be it known that I, EDWARD SAMUEL, a citizen of the United States, and a resident of Philadelphia, Pennsylvania, have invented certain Improvements in Railway-Track Structures, of which the following is a specification.

The object of my invention is to dispense with bolts and other detachable fastenings in securing together rails or other rolled or wrought shapes in forming joints, switches, frogs, crossings, &c. This object I attain by arranging the rolled or wrought pieces having openings therein at intervals, in a suitable mold and then pouring molten iron or steel or both into the mold and through the openings, so that the casting will embrace the rolled or wrought pieces, and thus produce a composite structure in which the parts are firmly united.

In the accompanying drawings:—Figure 1, is a view showing two rails situated side by side as in a guard rail structure, ready to receive the casting. Fig. 2, is a sectional plan view of the two rails shown in Fig. 1, with the uniting casting. Fig. 3, is a sectional view on the line 2—2, Fig. 2. Fig. 4, is a plan view of a mate or a fixed point switch made in accordance with my invention. Fig. 5, is a transverse sectional view on the line 5—5, Fig. 3. Fig. 6, is a sectional plan view showing rails secured together sidewise at right angles to each other forming part of a crossing.

My invention is especially adapted for use where two rails or other shapes are secured together sidewise to form guards or switches, frogs or crossings, and on referring to Fig. 1, A is the main rail and A′ is the guard rail; both of these rails have perforations *a*, *a′* formed in the web at intervals. The rails are placed, after being punched, in a suitable mold previously prepared, in which is to be cast the securing metal for confining the rails together. The metal is poured into the mold and through the openings in the webs of the rails, forming cast securing blocks at intervals as shown. When the cast blocks are sufficiently cool the structure is removed from the mold, and the portions of cast metal form fastenings B which firmly unite the two rails together.

The metal flowing through the openings *a*, *a′*, in the rails, not only secures the two sides of the casting together, but the openings are of a diameter sufficient to contain such a bulk of metal that when the casting cools, instead of the cast metal block shrinking away from the rails, it shrinks upon the same, and thereby binds the rails tightly, and forms a solid and firm joint.

In Figs. 4 and 5, I have shown a mate or fixed point switch made up of rails secured together by a casting which locks together the several rails forming the switch; and in Fig. 6, I have shown rails secured together at right angles to each other, ordinary forms of steam road rails can be readily secured to trainway rails in this manner.

In some instances the base flanges of the rails may be perforated or slotted; but I prefer to perforate the webs, as this insures the best results.

I claim as my invention—

1. The combination in a railway track structure, of two or more rails united together sidewise, each rail having a web perforated at intervals, with a continuous cast block extending through the perforations and overlapping the webs of the rails thereby holding the rails rigidly in respect to each other, substantially as described.

2. The combination in a railway track structure, of two or more rails united together sidewise, each rail having a web perforated at intervals, with cast blocks also arranged at intervals extending through said perforations and overlapping the webs of the rails thereby holding the rails rigidly in respect to each other, substantially as described.

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

EDWARD SAMUEL.

Witnesses:

HENRY HOWSON,

HARRY SMITH.