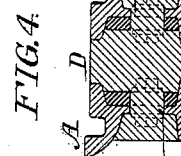
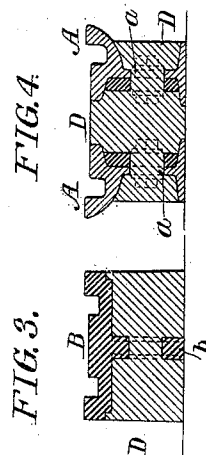
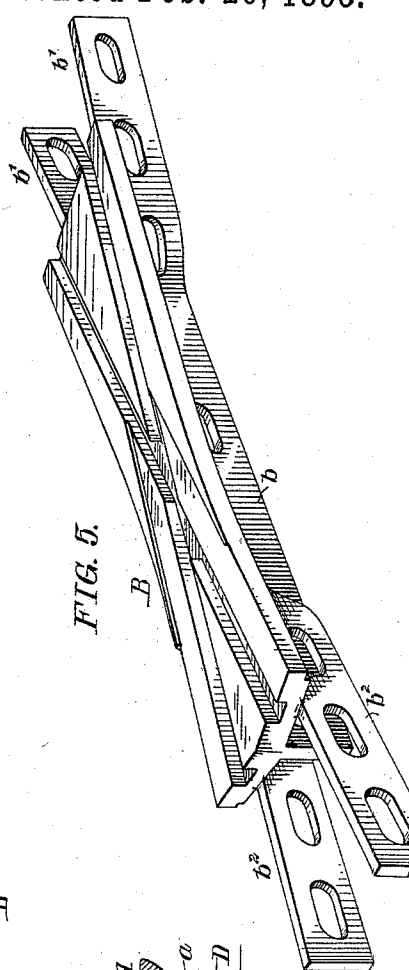
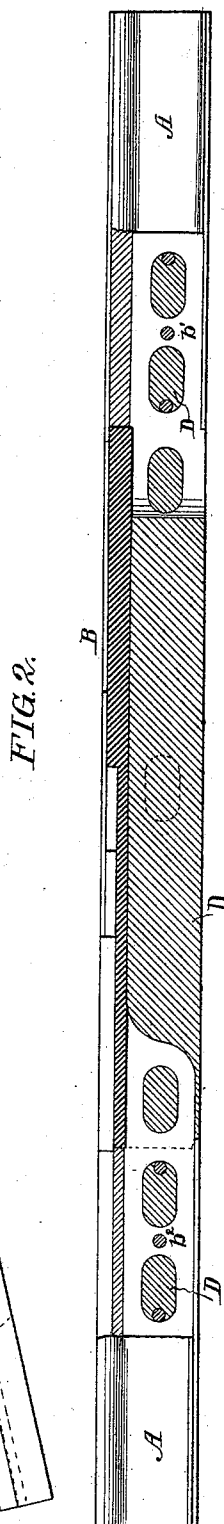
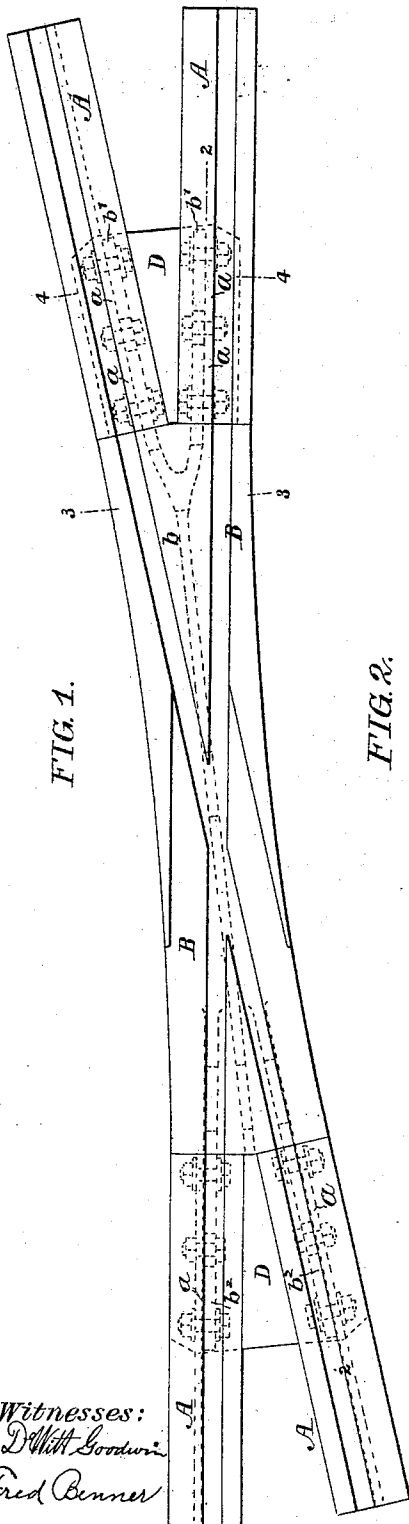


E. SAUMEL.
TRACK STRUCTURE.

Patented Feb. 26, 1895.



Witnesses:
F. D. Witt Goodwin
Fred Benner

Inventor:
Edward Samuel
by his Attorneys
Howson & Howson

UNITED STATES PATENT OFFICE.

EDWARD SAMUEL, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO THE
WILLIAM WHARTON, JR., & COMPANY, INCORPORATED, OF SAME PLACE.

TRACK STRUCTURE.

SPECIFICATION forming part of Letters Patent No. 534,972, dated February 26, 1895.

Application filed October 6, 1894. Serial No. 525,078. (No model.)

To all whom it may concern:

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

The object of my invention is to provide a frog, switch or other rail structure with an independent special shape forming a continuation of the wearing portion of the rail and preferably of metal having greater durability than the rails, and this object I attain by securing the metal center piece to the rails by
10 cast metal, forming an integral structure.

Referring to the accompanying drawings, Figure 1, is a plan view of a railway frog made in accordance with my invention. Fig. 2, is a longitudinal sectional view on the line 2—2, Fig. 1. Fig. 3, is a transverse sectional
15 view on the line 3—3, Fig. 1. Fig. 4, is a transverse sectional view on the line 4—4, Fig. 1. Fig. 5, is a perspective view of the center or crossing piece.

While I have illustrated my invention in
25 connection with a crossing frog, it will be understood that it can be applied to switches, switch mates, crossings, or analogous rail structures.

My present invention is based upon the
30 patent granted to me on the 5th day of June, 1894, for railway track structures, No. 521,004, the cast metal in its fluid state passing through openings in the sections, my present invention being restricted to the union of one or
35 more independent shapes to the rails, by the cast metal and to the insertion of one or more shapes having greater durability than the rails.

Referring to Fig. 1, A are the rail sections
40 which have one or more perforations *a* in their webs, and B, in the present instance, is the independent shape in the form of a crossing piece, made preferably of metal of greater durability than the rails. This crossing piece
45 B has a web *b* and extensions *b'*, *b''*, to which the rails are secured by bolts. The web and extensions are perforated at intervals to allow the molten metal to pass therethrough. The center piece and rails are properly ad-
50 justed and secured together by the bolts and mounted in the mold, and the cast metal D is so poured that it will flow around and through a portion of the web of each rail and the web and extensions of the center piece.

When the casting is cooled the integral
55 structure is removed from the mold, the rail sections and center piece being firmly attached in their respective positions to the casting.

The center piece may be made in some in-
60 stances without the extensions, the rails being adjusted in line with the center piece and clamped to the mold, but I prefer to bolt the rails and center piece together, as by this means the parts can be adjusted accurately
65 before the cast metal is poured thus dispensing with special clamps. The molten metal flows around the bolts and nuts preventing their becoming loose and thus adding materially to the strength of the structure.
70

I claim as my invention—

1. As a new article of manufacture, a frog or other rail structure consisting essentially
75 of a center piece, rail sections forming extensions of the center piece and secured thereto by cast metal passing through the rails and center piece, substantially as described.

2. As a new article of manufacture, a frog or other rail structure consisting essentially
80 of a center piece having one or more webs, rail sections forming extensions of the center piece and secured thereto by cast metal passing through openings in the rails and the webs of the center piece, substantially as described.
85

3. As a new article of manufacture, a frog or other rail structure, consisting essentially
90 of a center piece having one or more webs or extensions, rail sections secured to said webs or extensions by bolts and by cast metal, substantially as described.

4. The process herein described of making integral structures, said process consisting in
95 first making a special shape, having one or more webs or extensions, second securing said sections to said extensions by bolts, third, casting molten metal around the webs of the rails and shape, substantially as described.

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

EDWARD SAMUEL.

Witnesses:

WILL. A. BARR,
JOSEPH H. KLEIN.