

E. C. PRICE & W. H. THOMAS.

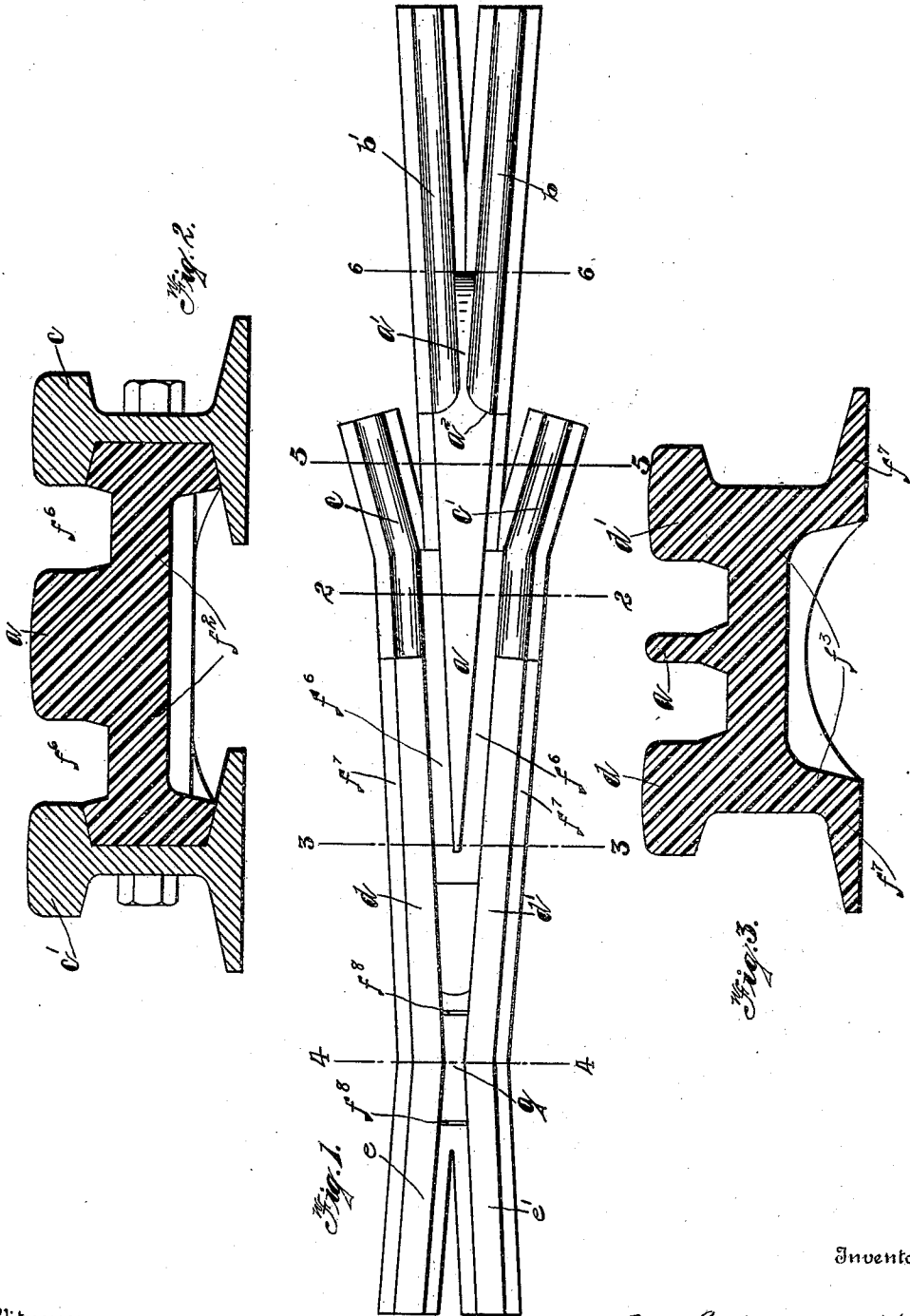
RAILWAY FROG.

APPLICATION FILED MAY 1, 1909.

934,213.

Patented Sept. 14, 1909.

2 SHEETS—SHEET 1.



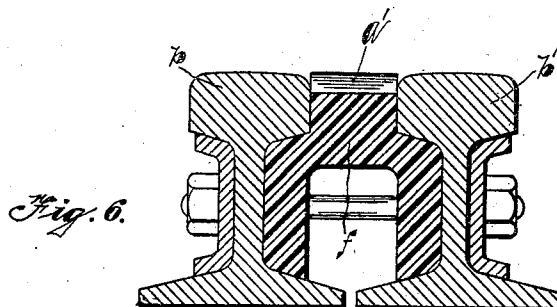
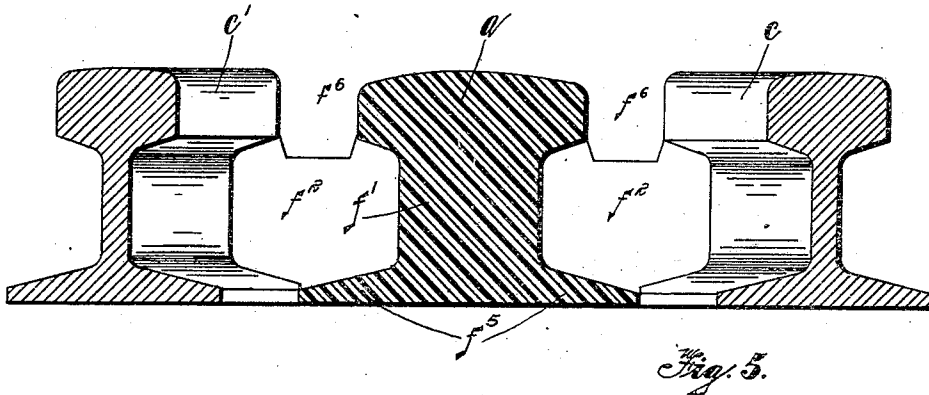
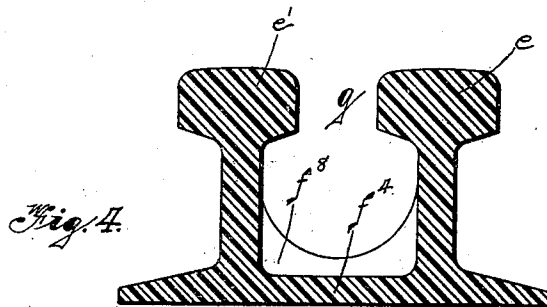
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UNITED STATES PATENT OFFICE.

EVAN C. PRICE AND WILLIAM H. THOMAS, OF SPRINGFIELD, OHIO, ASSIGNORS TO THE INDIANAPOLIS SWITCH & FROG COMPANY, OF SPRINGFIELD, OHIO, A CORPORATION OF INDIANA.

RAILWAY-FROG.

934,213.

Specification of Letters Patent. Patented Sept. 14, 1909.

Application filed May 1, 1909. Serial No. 493,421.

To all whom it may concern:

Be it known that we, EVAN C. PRICE and WILLIAM H. THOMAS, citizens of the United States, residing at Springfield, in the county of Clark and State of Ohio, have invented certain new and useful Improvements in Railway-Frogs, of which the following is a specification.

This invention relates to improvements in railway frog structures, and it particularly relates to that class of frog structures in which the wearing parts are of hardened metal.

The object of the invention is to devise a frog structure in which the vital wearing parts of the frog will be constructed of a hardened metal to withstand the wear while the less essential parts of the structure as far as the wear is concerned will be of the ordinary Bessemer or open-hearth rail metal.

A further object is to provide a frog in which no bolts or other fastening devices are employed in the main or vital part of the structure.

A further object is to provide a structure in which the softer metal parts may be inexpensively and readily renewed without disturbing the main structure of hardened material.

A further object of the invention is to simplify, cheapen and strengthen the construction of a frog of this character.

The invention consists in the construction and combinations of parts hereinafter described and set forth in the claims.

In the accompanying drawings, Figure 1 is a top plan view of a structure embodying the invention. Figs. 2, 3, 4, 5 and 6 are enlarged sectional views on the lines 2—2, 3—3, 4—4, 5—5 and 6—6, respectively, of Fig. 1.

Like parts are represented by similar characters of reference in the several views.

As before stated, the vital wearing parts of the frog are formed of one integral piece of hard metal, such as manganese steel, and the parts thereof upon which little or no wear occurs are made of a softer and cheaper material. The hardened frog structure proper consists of the point, *a*, the riser-block, *a*¹, the main rail wing portions, indicated by *d* *d*¹ *e* and *e*¹, and the base portion and filler represented by the reference characters *f*, *f*¹ *f*² *f*³ *f*⁴ *f*⁵ and *f*⁷. The soft metal parts of the structure consist of the guard portions of the wing rails, represented by *c*

and *c*¹, and the converging point rails *b* and *b*¹.

As indicated in Fig. 6, the riser block, *a*¹, is formed on and is integral with the filler indicated by *f*, and the soft metal rail portions *b* and *b*¹ are secured to this portion of the filler by bolting or splicing; said filler at this point being conformed to the shape of said point rail portions. The said rail portions abut against the rear end of the point, as indicated at *a*² in Fig. 1; that portion of the filler at this point, indicated by *f*¹, being extended to form an abutment for the base of the rail portions and also to provide a support for the structure, as indicated by *f*⁵ in Fig. 5.

As indicated in Fig. 2, the supporting base *f*⁵ is discontinued at the point where the guard portions, *c* and *c*¹, of the wings are secured to the structure, and the sides of the filler *f*² at this point are conformed to the shape of the guard portions, which are secured thereto by bolting or splicing. Groove-ways, *f*⁶, are formed on the filler portion and extend beyond the nose of the point in the usual way.

Beginning at the points where the soft guard portions, *c* and *c*¹, of the wings abut the hard portions, *d* and *d*¹, and extending for a distance somewhat beyond the nose of the point, the filler indicated by *f*³, has formed thereon the point, *a*, and the wing portions *d* and *d*¹, of the rails, and also has the extending supporting base portions, *f*⁷, as shown in Fig. 3.

That part of the structure which comprises the throat, *g*, has the base so formed as to provide a support and carries the main rail wing sections *d* *d*¹ *e* and *e*¹. This part of the base also has two strengthening webs, *f*⁴. The wing portions *e* and *e*¹, which coincide with the main track rails, are formed of a shape corresponding to the shape of the main track rails to permit of their being spliced to said track rails beyond the point of convergence of the wing rail so that the track rails can be readily removed and replaced without disturbing the main frog structure in any respect. By the construction described, also, it will be seen that a frog structure has been provided in which the parts where the greatest wear occurs are formed of hardened material, these parts being the point, *a*, and those parts of the main wing rails which lie adjacent to the

point of convergence of said wing rails or the point which we have called the throat and indicated by the reference character *g*.

It is well known that in the use of structures of this kind in which hard and soft metal parts are joined together, the soft metal will deteriorate and wear rapidly at the joint owing to the constant pounding which occurs on the soft metal at this point due to the uneven wear between the two metals, so that renewals of the soft metal parts are necessary at frequent intervals. By the construction described, it will be seen that we have provided a structure in which these renewals may be inexpensively and readily made for the reason that it is entirely unnecessary to disturb in any way the frog structure proper, as is the case where the main line rails and soft metal parts extend more or less into points of greatest wear on the frog structure proper. As before described, this is accomplished by extending the wing portions of the rails a sufficient distance to permit the main track rails to be spliced thereto. At the opposite end of the structure the riser block, a^1 , protects the soft point rails, b and b^1 , to a great extent, but in case of renewal this may be readily accomplished without disturbing in any way the frog structure. It will also be seen that a frog structure has been provided in which all bolts in the main structure have been dispensed with—that is, through the central part of the structure—a very considerable less number of bolts being required than in any other structure of like character. It will be further seen that the wearing parts only of the structure are of hard metal, the balance of the structure being of a cheaper material; that the main structure is integral and self-contained so that its retaining its original condition is not dependent upon bolts or other fastening devices. It will also be seen that the number of separate parts in a structure of this kind are very materially reduced.

Having thus described our invention, we claim:

1. In a structure of the character described, a main integral body of hardened material comprising a point, and converged wing rails, said wing rails being extended

beyond the point of convergence and conformed to the shape of the connected track rails, and guard wing rails of softer material secured to said main body portion and coinciding with said hard wing rails, substantially as specified.

2. In a structure of the character described, a point, converged main wing rails, the said wing rails adjacent to the point of convergence and the said point being formed of one integral body of hardened material, and guard wing rails of softer material secured to said body and coinciding with said main wing rails, substantially as specified.

3. In a structure of the character described, a point, converged main wing rails, the said wing rails adjacent to the point of convergence and the said point being formed of one integral body of hardened material, a filler and base portion also integrally formed with said point and main wing rails, and guard wing rails of softer material secured to said integral body and coinciding with said main wing rails, substantially as specified.

4. In a structure of the character described, a point, converged main wing rails, and a riser block integrally formed of hardened material, said main wing rails being extended beyond the point of convergence, and guard wing rails of softer material secured to said hardened material and coinciding with said main wing rails, substantially as specified.

5. In a structure of the character described, a main body portion comprising a point, main converged wing rails, a base and filler portion and a riser block all integrally formed of hardened material, guard wing rails and point track rails of softer material secured to said hard material and coinciding, respectively with the main wing rails and point, said hardened main wing rails extending beyond the point of convergence, substantially as specified.

In testimony whereof, we have hereunto set our hands this 21st day of April 1909.

EVAN C. PRICE.

WILLIAM H. THOMAS.

Witnesses:

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