

(No Model.)

2 Sheets—Sheet 1.

P. H. KANE.  
RAILWAY FROG.

No. 579,647.

Patented Mar. 30, 1897.

Fig. 1.

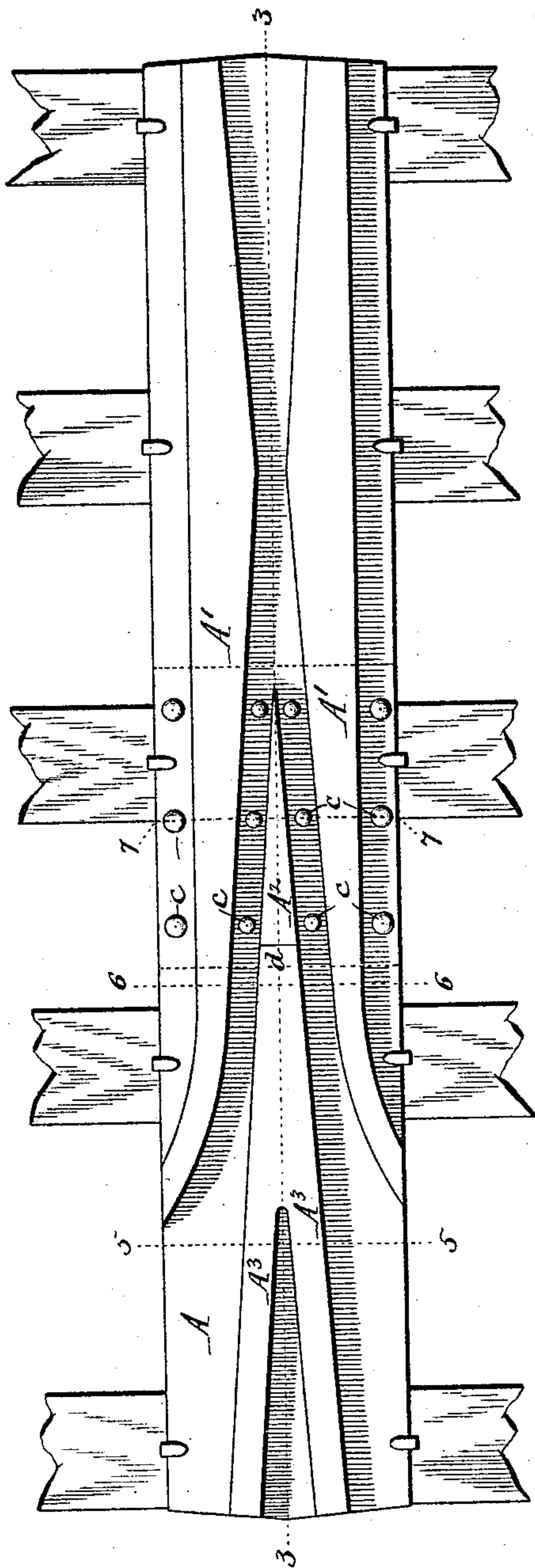
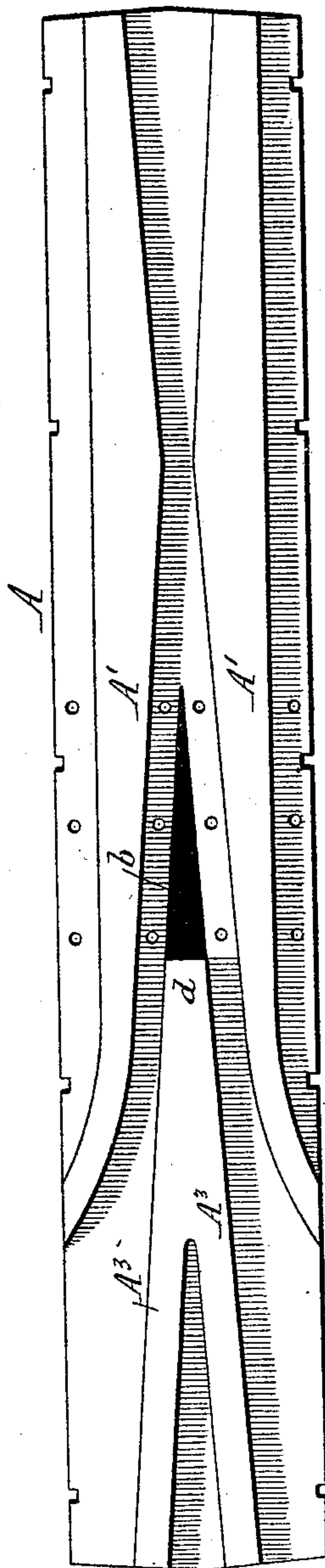


Fig. 2.



WITNESSES:

Chas. F. Burkhardt.  
Henry L. Deck.

P. H. Kane

INVENTOR.

By Wilhelm H. Pomeroy

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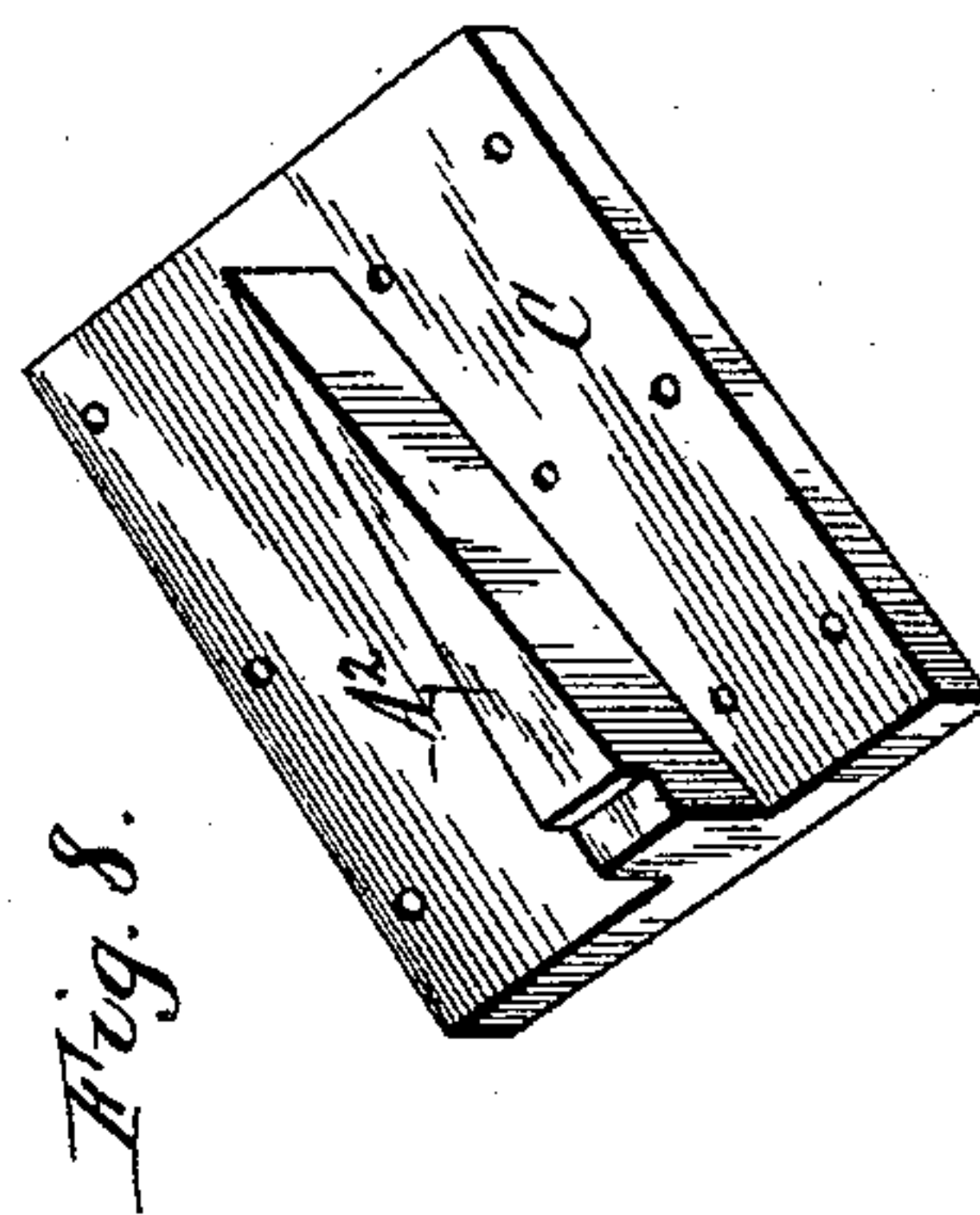
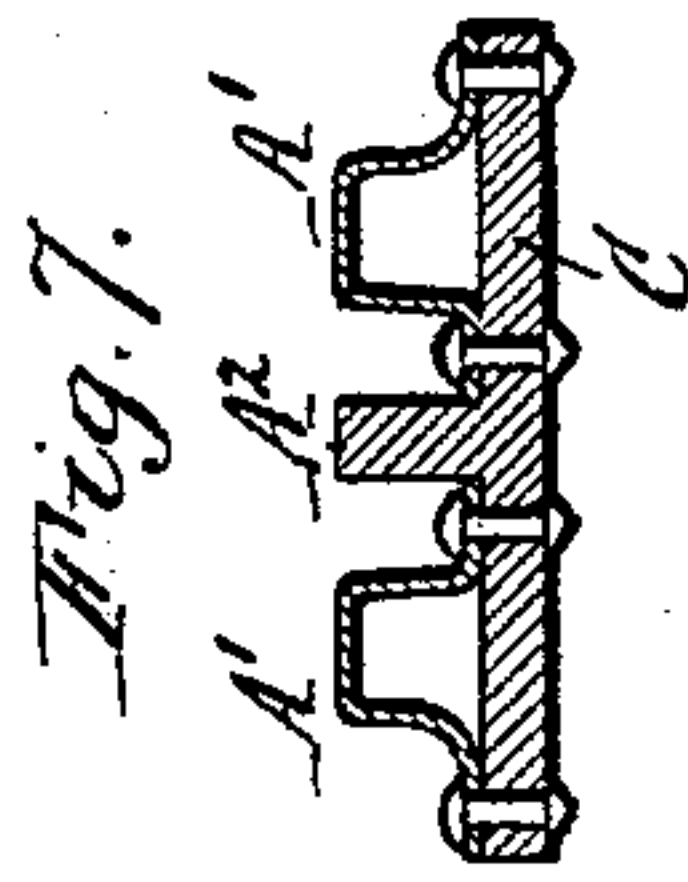
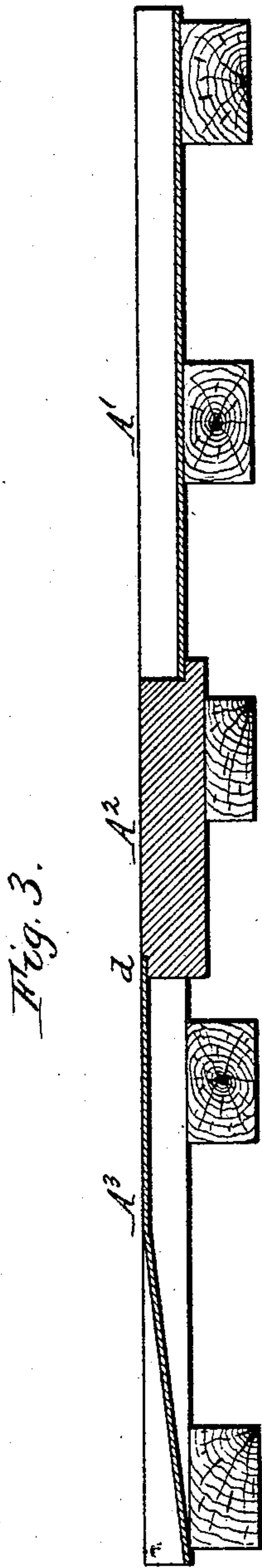
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2 Sheets—Sheet 2.

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# UNITED STATES PATENT OFFICE.

PATRICK H. KANE, OF BUFFALO, NEW YORK.

## RAILWAY-FROG.

SPECIFICATION forming part of Letters Patent No. 579,647, dated March 30, 1897.

Application filed May 21, 1896. Serial No. 592,423. (No model.)

*To all whom it may concern:*

Be it known that I, PATRICK H. KANE, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented a new and useful Improvement in Railway-Frogs, of which the following is a specification.

This invention relates to a railway-frog designed more especially for steam-railways, although my improvement is equally applicable to other railway-frogs. Heretofore such frogs have generally been built up of separate rail sections or pieces, but this construction is expensive. It has also been proposed to cast the same, but such a cast frog is affected by the weather and is liable to crack or break from the jars or concussions of the car-wheels, rendering its use unsafe.

The object of my invention is the production of a railway-frog which can be produced at less cost than a built-up or cast-metal frog, and which at the same time is stronger and more durable than such frogs.

In the accompanying drawings, consisting of two sheets, Figure 1 is a top plan view of my improved frog. Fig. 2 is a similar view with the toe and its base-plate omitted. Fig. 3 is a longitudinal section in line 3 3, Fig. 1. Fig. 4 is a view of the rear or heel end of the frog. Figs. 5, 6, and 7 are cross-sections in the correspondingly-numbered lines in Fig. 1. Fig. 8 is a detached perspective view of the toe and its base-plate.

Like letters of reference refer to like parts in the several figures.

A represents the base or body of the frog, A' the wing or guard-rails, A<sup>2</sup> the toe, and A<sup>3</sup> the converging rails which merge into the toe, these parts being arranged in the usual and well-known manner. The base A and all of the several rails of the frog, excepting the toe A<sup>2</sup>, are formed in one piece from a plate or blank of sheet metal, preferably sheet-steel, of the requisite thickness, by passing the plate between rolls having suitable shaping-faces or by pressing the same between suitable dies. The shaping-faces of these rolls or dies correspond to the contour of the rails A' and A<sup>3</sup> and produce raised hollow ribs or ridges in the sheet-metal blank which form the rails, as clearly shown in Figs. 4, 5, 6, and 7. The toe is preferably separate from the remain-

ing portion of the frog and cast or forged of steel, and the same projects through a V-shaped or correspondingly-shaped opening *b*, formed in the base between the guard-rails, as shown in Figs. 2 and 7. In the construction shown in the drawings the toe is arranged on a base-plate C, formed in one piece therewith and secured to the underside of the sheet-metal base of the frog by rivets *c* or other suitable fastenings. The wide end of the toe is fitted against the adjacent front portion *d* of the converging rails A<sup>3</sup>, and this portion *d* preferably overlaps the toe, the rear end of the latter being recessed to receive the same, as shown in Fig. 3, so as to form a firm and flush joint at this point.

In pressing or rolling the frog from the sheet-metal blank the latter is originally formed with a complete toe, but this toe portion is afterward cut or punched out to form the V-shaped opening *b* for the reception of the solid steel toe.

My improved frog, as shown in the drawings, comprises but two parts, and can therefore be produced at considerably less cost than a built-up frog, and being constructed of sheet metal it will not crack or break, as will a frog cast of iron or steel, thus rendering the same safer than such a frog and averting accidents that are liable to result from broken frogs. As the rails of the frog consist, practically, of hollow ribs or corrugations, they possess great strength and durability, while the side walls of the hollow rails brace or stiffen each other, enabling the rails to effectually withstand any lateral strains to which they may be subjected.

I claim as my invention—

1. A railway-frog having its base and its several rails except the toe formed in one piece, and provided with a separate toe arranged on a base-plate which is secured to the base of the frog, the frog-base having an opening for the passage of said separate toe, substantially as set forth.

2. A railway-frog having its base and its several rails, except the toe, formed from a single plate of sheet metal and provided with a separate toe of solid metal arranged on a base-plate, which is secured to the sheet-metal base of the frog, said sheet-metal base being formed with an opening through which

the solid metal toe projects, substantially as set forth.

3. In a railway-frog the combination with a sheet-metal base having the several rails of  
5 the frog, except the toe, formed integrally therewith, of a separate solid metal base-plate secured to the under side of said sheet-metal base and provided with the toe of the frog, said toe passing through an opening formed

in the sheet-metal base and being provided at its wide end with a recess which receives the adjoining sheet-metal portion of the frog, substantially as set forth.

Witness my hand this 16th day of May, 1896.

PATRICK H. KANE.

Witnesses:

CARL F. GEYER,  
KATHRYN ELMORE.