

W. J. MORDEN.  
RAILROAD-FROG.

No. 173,804.

Patented Feb. 22, 1876.

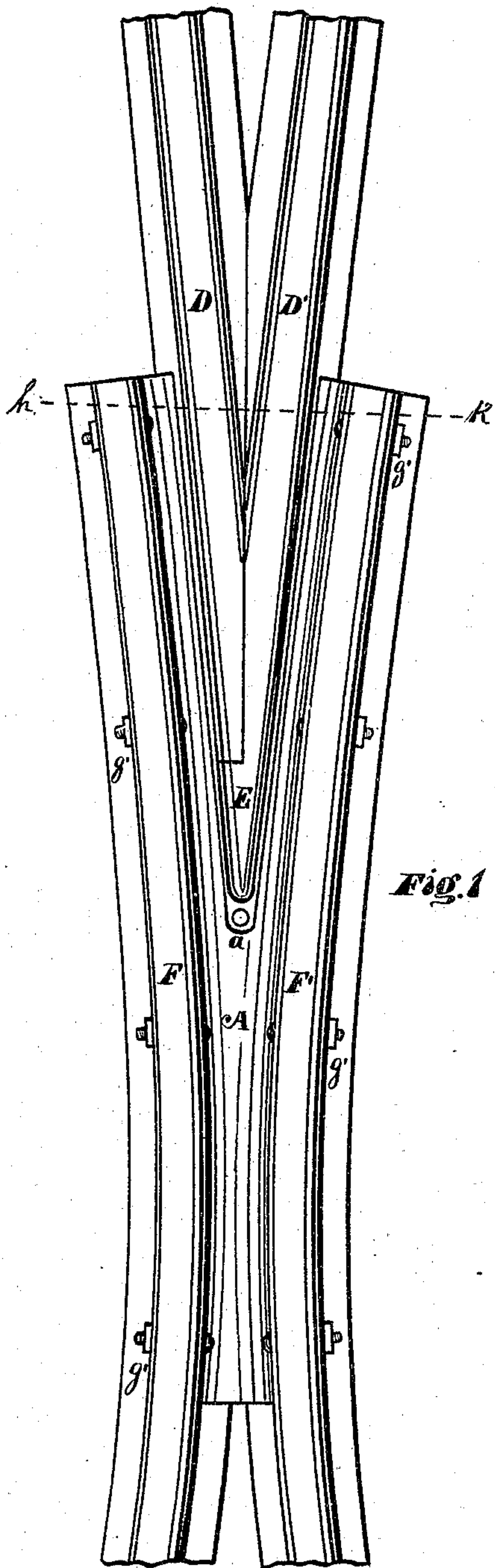


Fig. 1

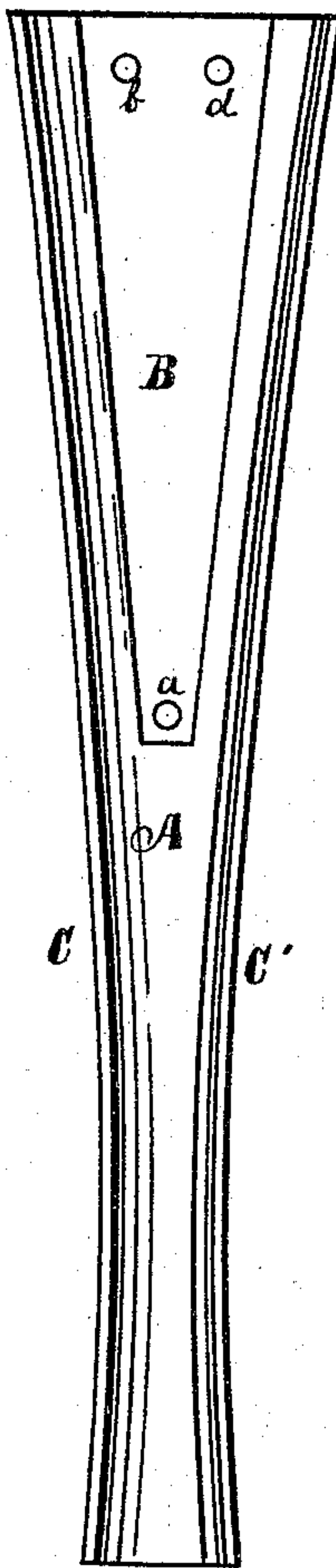


Fig. 2

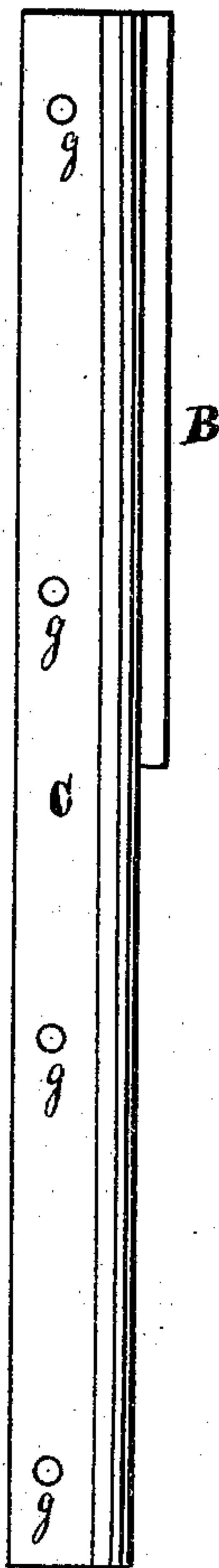


Fig. 3

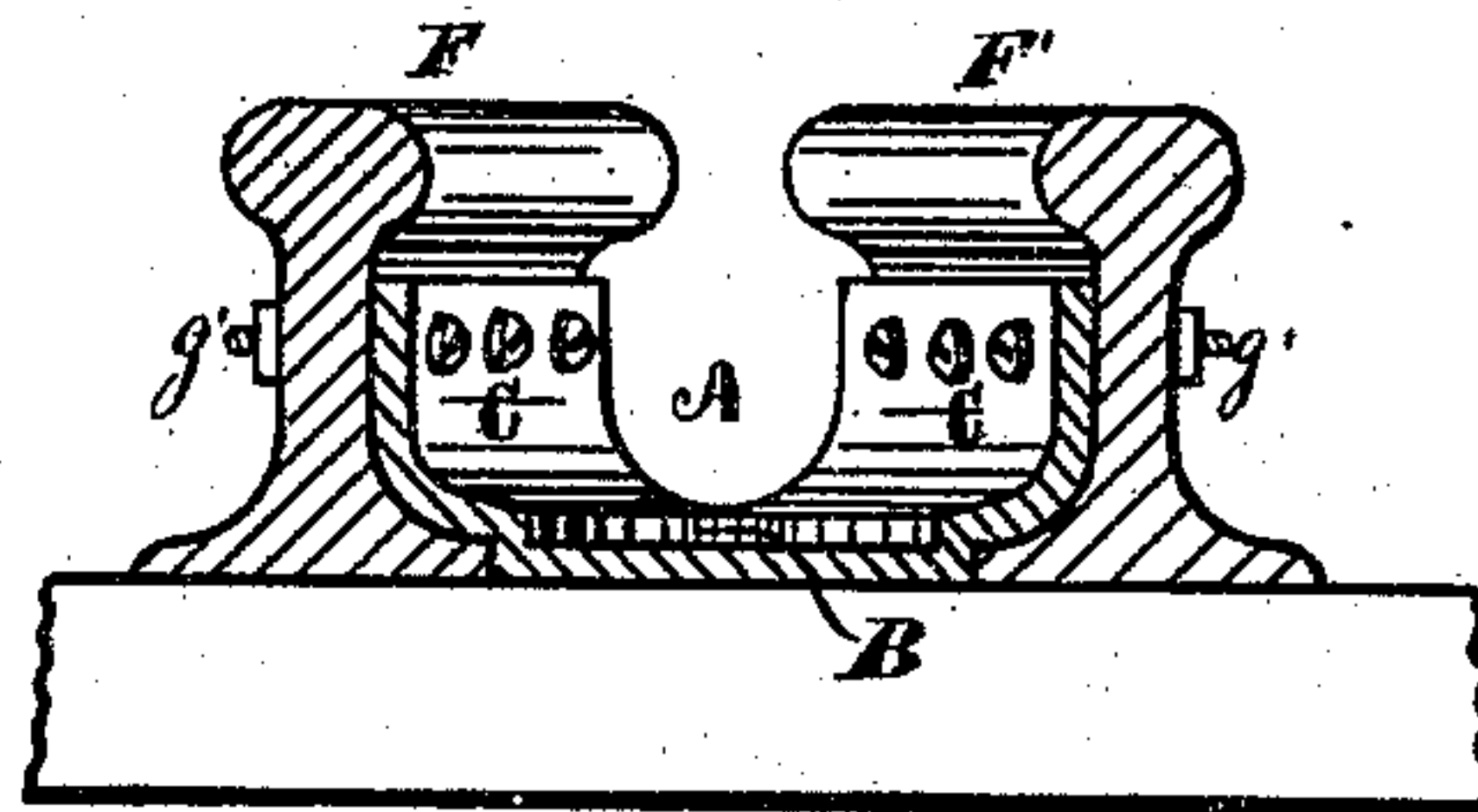


Fig. 4

WITNESSES;  
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# UNITED STATES PATENT OFFICE.

WILLIAM J. MORDEN, OF INDIANAPOLIS, INDIANA.

## IMPROVEMENT IN RAILROAD-FROGS.

Specification forming part of Letters Patent No. **173,804**, dated February 22, 1876<sup>7</sup>; application filed January 12, 1876.

*To all whom it may concern :*

Be it known that I, WILLIAM J. MORDEN, of Indianapolis, county of Marion and State of Indiana, have invented a new and useful Frog for railroad purposes, of which the following is a description, reference being had to the accompanying drawings:

My invention consists of a metallic plate swaged or formed into a trough, a cross-section of which has the form of a **U**, and a plan view has the form of a **Y**. The sides of my improved trough-plate, at or near the center, form a narrow neck or throat, and the sides of the trough-plate diverge at any required angle from the narrow throat.

The end opposite to the end that receives the point, or pointed rails, diverges slightly, while the end that receives the point or pointed rails diverges more abruptly, so as to leave sufficient room between the point and the side wings to allow the flanges of the wheels to pass freely through.

The bed of the plate that forms the trough at the wide end is provided with a **V**-shaped recess, in which are secured the point or **V**-shaped ends of the point-rails, and prevents any lateral motion, and relieves the fastenings of the point or pointed rails thus secured from any side or twisting strain when a train is passing over the frog. The sides of the trough-plate are made to conform to the curve of the side rails, as well as to the form of the neck and base of the rails, and are firmly secured to the neck of the rails by bolts, rivets, or in any manner that would suggest itself to the mind of an ordinary mechanic.

The side sections of the rails or wings are nicely fitted, and supported by the sides of the plate, which are turned up and fitted nicely to the base and neck, as above described, and securely fastened in any manner thereto.

The sides of the plate thus secured to the side rails or wings give additional strength thereto, and prevent the wings from breaking, and form a light frog that is strong, elastic, and durable, and not liable to become disarranged by continual use.

Figure 1 represents a plan view of a frog embodying my improved trough-plate. Fig. 2 is a plan or top view of the trough-plate. Fig. 3 is a side view of Fig. 2. Fig. 4 is a cross-section of the frog taken through the line *h k* of Fig. 1, showing the side rails or wings attached to the sides of the trough-plate, and the **V**-shaped point or pointed rails removed from the recess at the bottom of the plate.

My improved trough-plate is represented by the letters **A B C C'**, each letter representing a different part of the same plate. From the center of the trough to the narrow end a cross-section would show the shape of a **U**, the extreme end being wider at the top than near the center, the shape of which is shown at **A**, in Fig. 4, more fully. The other or point-supporting end of the trough-plate is made considerably wider, and is provided with a **V**-shaped recess, into which the **V**-shaped ends of the rails or point **D D'** are securely fastened in any ordinary manner by means of the holes *a b d*, and it will be seen that the sides of the base of the rails or point **D D'**, which fit into the recess **B** of the trough-plate, are firmly secured to the bottom, and are further secured by the sides of the **V**-shaped recess, as shown in Figs. 1, 2, and 4, and the rails or point **D D'**, thus secured, will resist all lateral strain that may be placed on them by passing trains, and will not become loose or displaced.

The sides **C C'** of the trough-plate are made to conform with the curve of the sides of the rail sections or wings, as well as with the form of the neck and base of the rails, as shown in Figs. 1, 2, and more fully in Fig. 4, and are securely fastened in any manner to the rails **F F'**, as at *g' g'*.

The trough-plate is formed of any metallic substance, swaged, rolled, or forged into its proper shape, and is made of the proper thickness to withstand all strain that it may be subjected to.

What I claim as my invention, and new, and wish to secure by Letters Patent, is—

A metallic plate, **A**, formed into a trough, the diverging sides of which are made to con-

form to the shape of the sides of the rail-sections F F', and the bottom of the wide end is formed with a V-shaped recess to receive and hold secure the ends of the rails or point D D', all constructed and arranged to be secured to the rail D D' F F', and form a railroad-frog, substantially as and for the purposes set forth.

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

WILLIAM J. MORDEN.

Witnesses:

O. S. LONG,

THOMAS A. COLE.