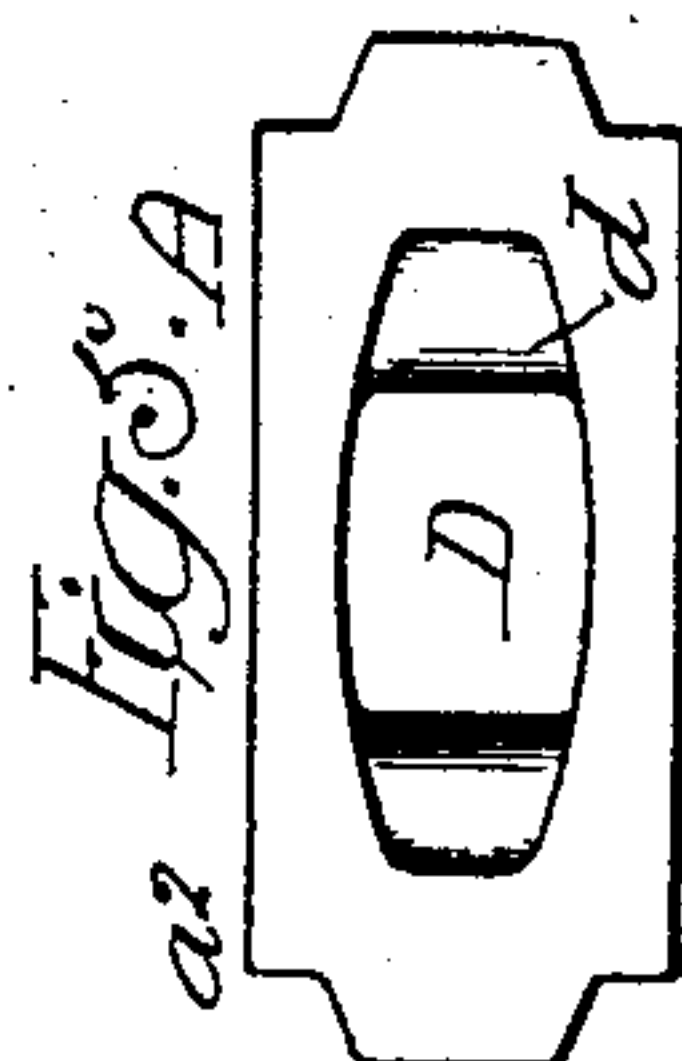
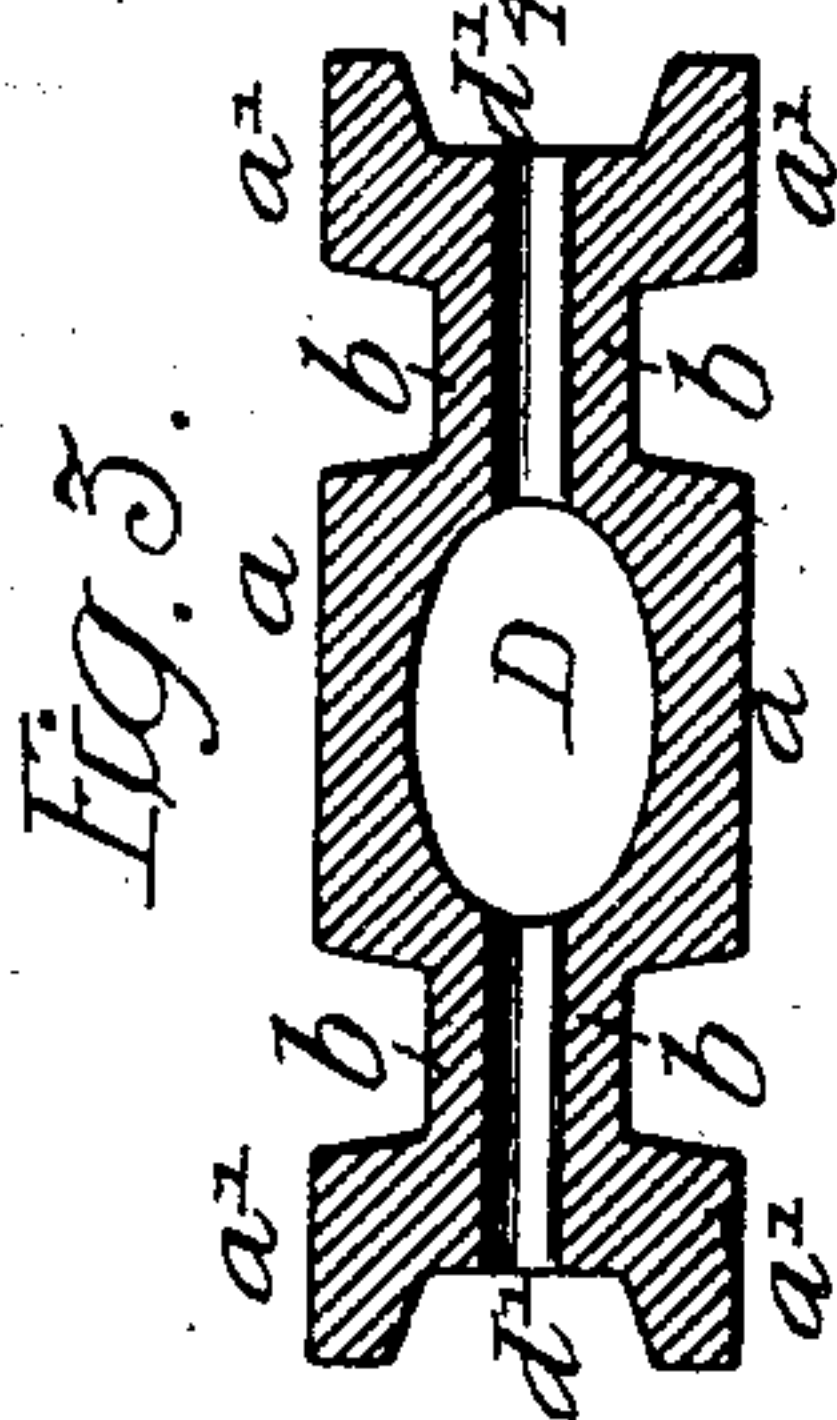
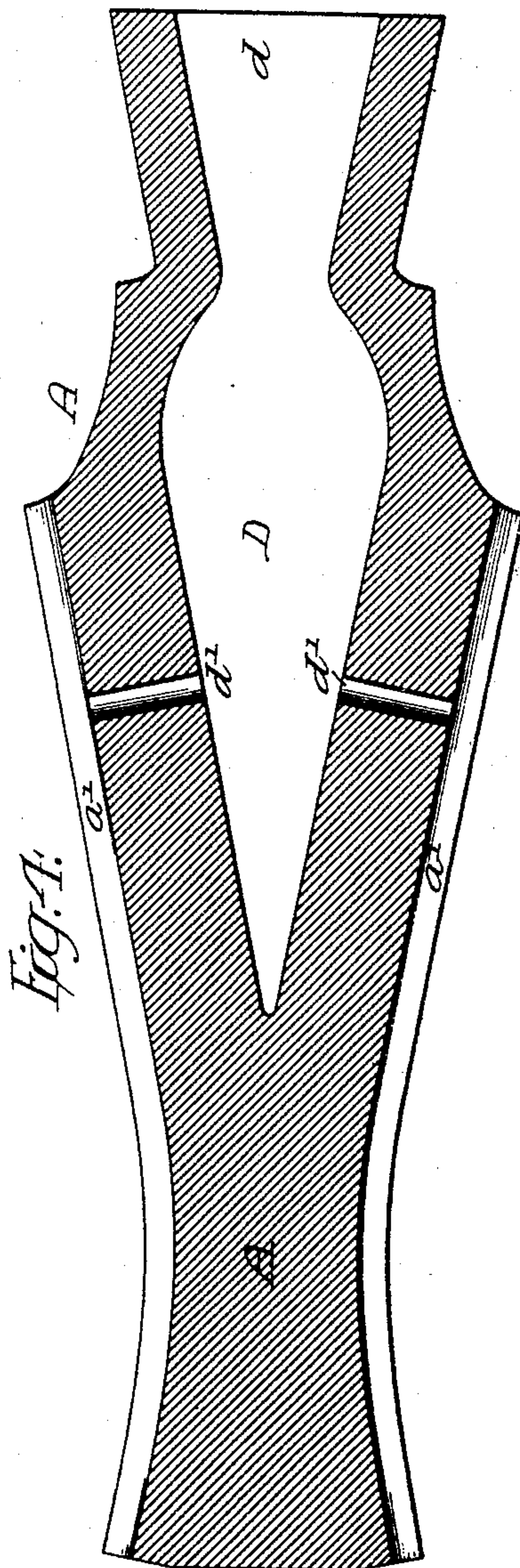
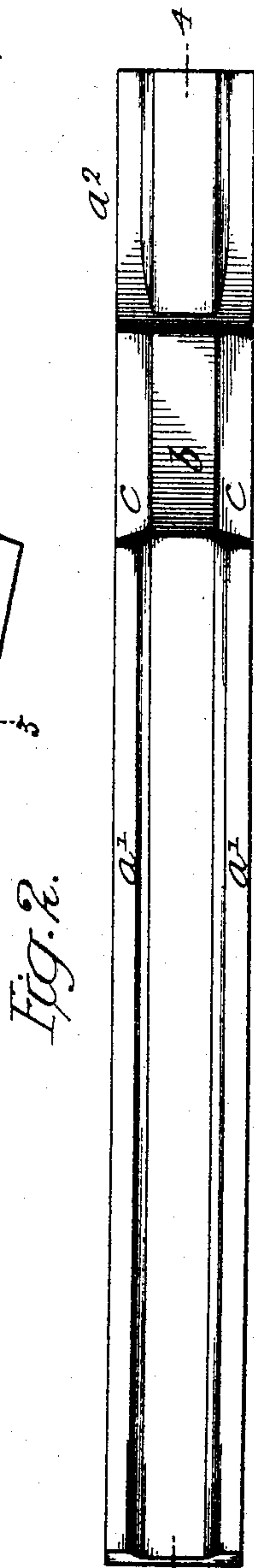
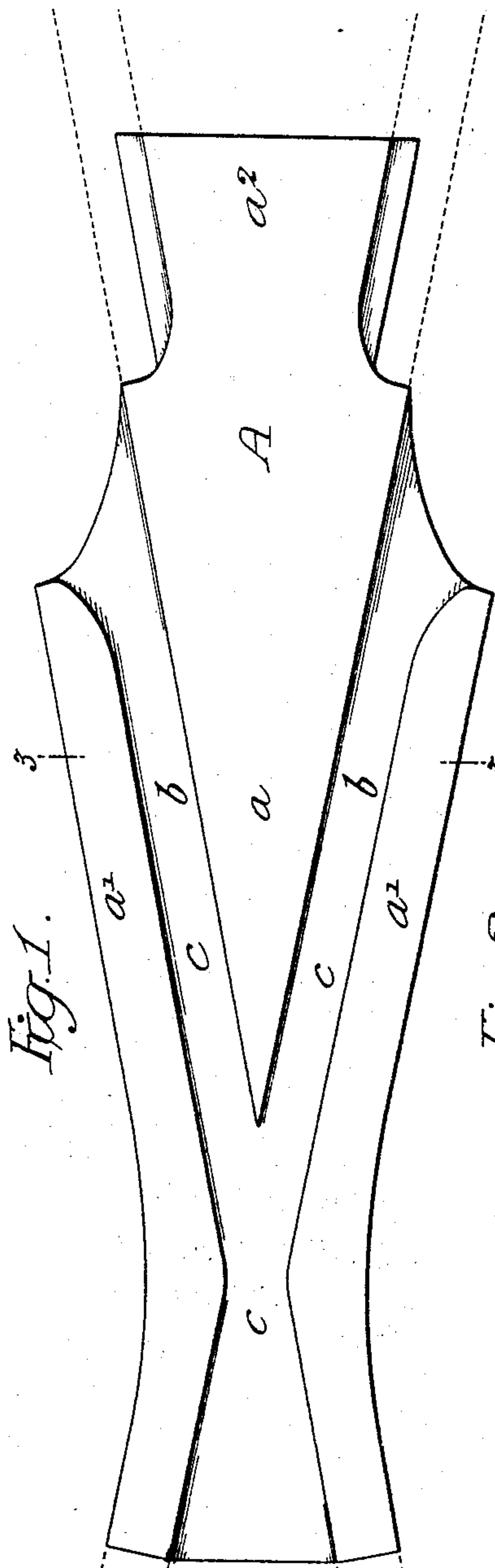


No. 782,714.

PATENTED FEB. 14, 1905.

V. ANGERER.  
REVERSIBLE RAILWAY FROG.

APPLICATION FILED DEC. 23, 1904.



Witnesses:  
Hamilton S. Jumper  
Titus N. Leno.

Inventor:  
Victor Angerer  
by his Attorneys:  
Hudson & Hudson



# UNITED STATES PATENT OFFICE.

VICTOR ANGERER, OF RIDLEY PARK, PENNSYLVANIA, ASSIGNOR TO WILLIAM WHARTON, JR., & COMPANY, INCORPORATED, OF PHILADELPHIA, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

## REVERSIBLE RAILWAY-FROG.

SPECIFICATION forming part of Letters Patent No. 782,714, dated February 14, 1905.

Application filed December 23, 1904. Serial No. 238,115.

*To all whom it may concern:*

Be it known that I, VICTOR ANGERER, a citizen of the United States, residing at Ridley Park, Pennsylvania, have invented certain  
5 Improvements in Reversible Railway-Frogs, of which the following is a specification.

The object of my invention is to make a cast-metal reversible railway-frog in such a manner that a perfect casting will be obtained and  
10 that a saving of metal will also result.

Referring to the accompanying drawings, Figure 1 is a plan view of my improved railway-frog. Fig. 2 is a side view. Fig. 3 is a transverse sectional view on the line 3-3, Fig.  
15 1. Fig. 4 is a longitudinal sectional plan view on the line 4-4, Fig. 2; and Fig. 5 is an end view.

A is the cast-metal body forming the reversible frog structure, having on each face a point  
20 *a* and wing-rails *a'*, and *b* is a central web by which the wing-rails are laterally connected together and to the point-sections. It also forms the bottom of the grooves *c c* for the wheel-flanges.

At the heel of the frog is an extension *a*<sup>2</sup> to which track-rails are attached, the rails of the track being shown in dotted lines, as they form  
25 no part of this invention.

It is very desirable in castings to avoid having large or thick masses of metal in conjunction with much lighter or thinner parts, for the reason that the latter cool and become fixed much sooner than the former, and in this way cracks, serious internal strains, and other defects are produced, causing great injury and weakness to the casting, often resulting in its being totally unfit for use. In very many cases these defects are not visible and cannot be detected by the most careful inspection.  
35

Owing to the nature of the material, castings made from manganese steel or steel of  
40

like character are especially difficult to make when the metal is unequally distributed.

In making a reversible railway-frog in the ordinary way it is evident that there is a very  
45 large mass of metal in the point of the frog and the part adjacent thereto where the frog widens out.

In order to produce a reversible railway-frog in which the metal will be of comparatively even thickness throughout, I form a cavity D in the body portion A horizontally intermediate between the point-sections of the two faces, the mouth *d* of the cavity being at the heel end of the frog structure, as  
50 shown clearly in Fig. 4. This cavity is formed by a core, which can be removed through this mouth *d*, and in some cases I may provide lateral supports for the core, as at *d'*, on each side of the casting. 5c

By my invention I am enabled to make a stronger, lighter, and cheaper reversible railway-frog than by any other method.

I claim as my invention—

1. A cast-metal reversible railway-frog with  
65 wing-rails and a point portion on each of its faces, and having a cavity horizontally intermediate between its upper and lower point portions, substantially as described.

2. A cast-metal reversible railway-frog with  
70 wing-rails and a point portion on each of its faces, and having a cavity horizontally intermediate between its upper and lower point portions, the cavity being open at the heel of the frog, substantially as described. 75

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

VICTOR ANGERER.

Witnesses:

WILL. A. BARR,  
JOS. H. KLINE.