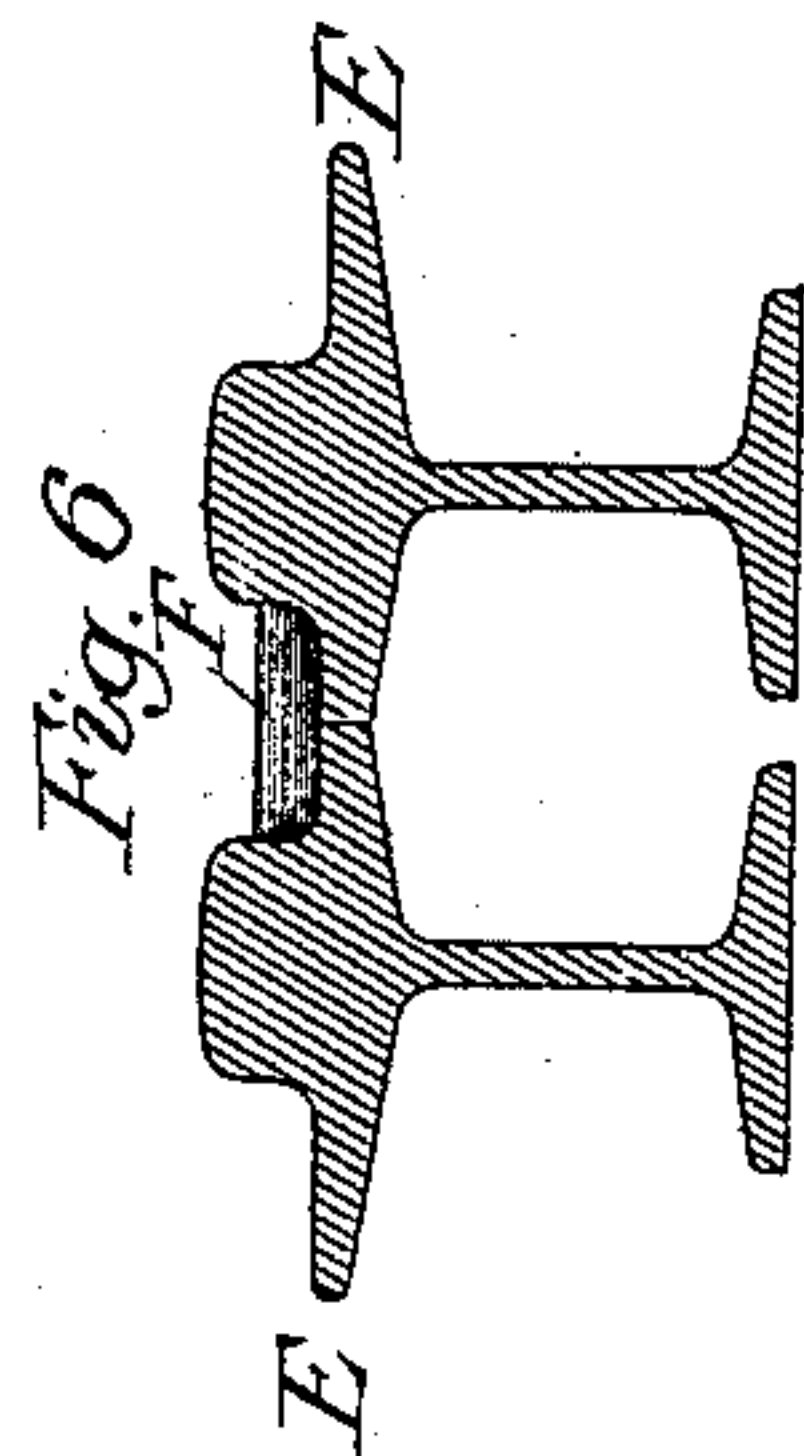
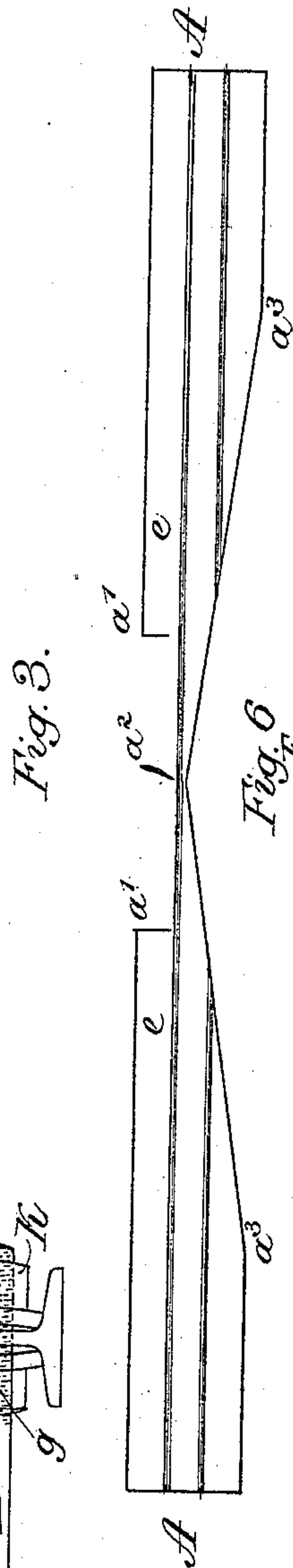
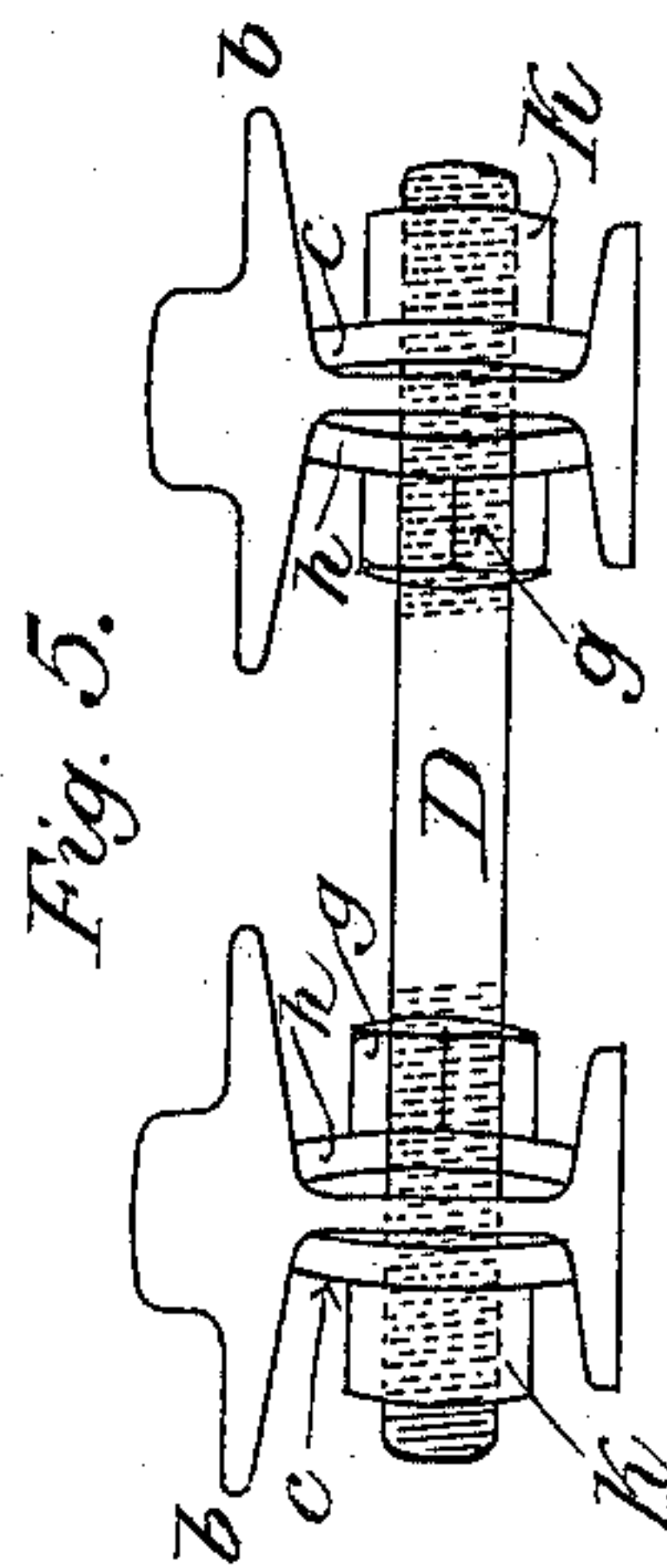
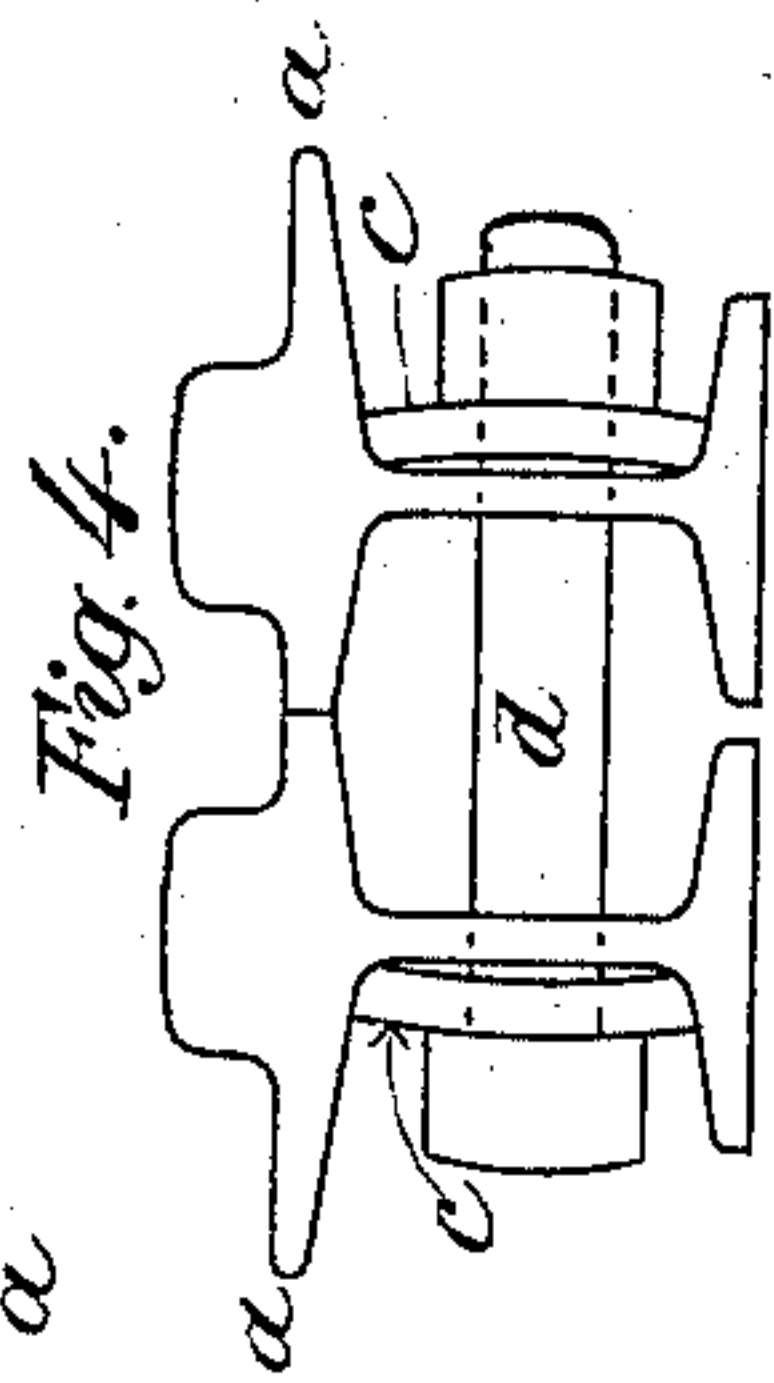
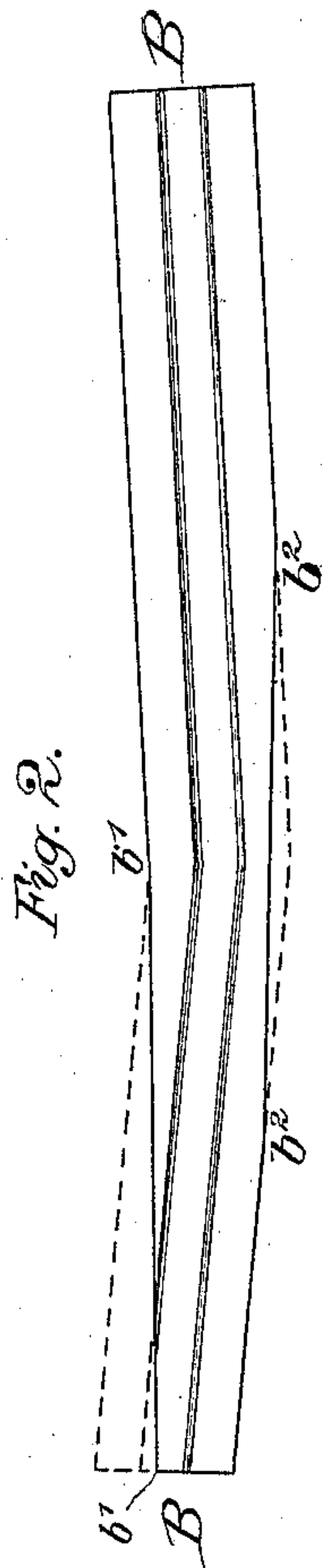
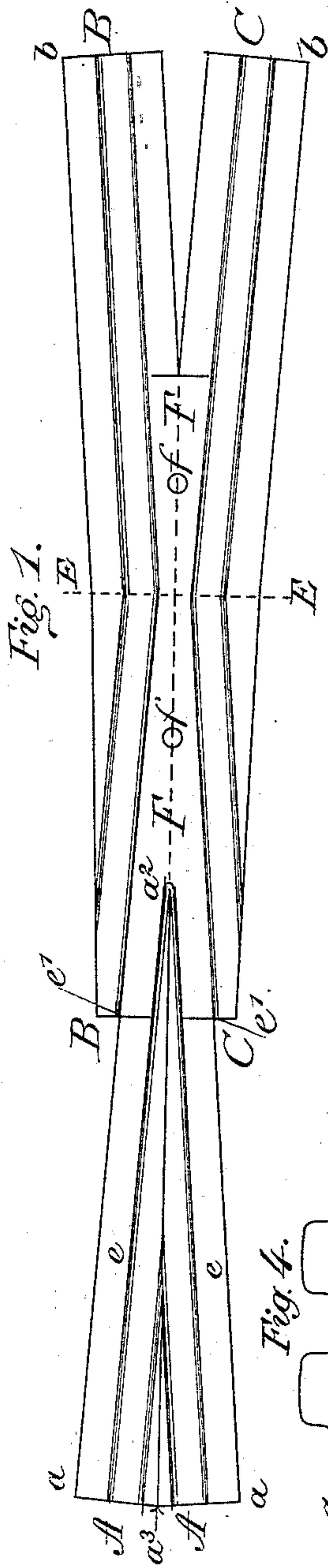


(No Model.)

J. TOWNSEND.  
RAILROAD FROG.

No. 331,013.

Patented Nov. 24, 1885.



Witnesses:  
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Atty.



# UNITED STATES PATENT OFFICE.

JOHN TOWNSEND, OF JOHNSTOWN, PENNSYLVANIA, ASSIGNOR TO THE  
JOHNSON STEEL STREET RAIL COMPANY, OF SAME PLACE.

## RAILROAD-FROG.

SPECIFICATION forming part of Letters Patent No. 331,013, dated November 24, 1885.

Application filed October 1, 1885. Serial No. 178,726. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN TOWNSEND, of Johnstown, in the county of Cambria and State of Pennsylvania, have invented a new and useful Improvement in Railroad-Frogs, which invention or improvement is fully set forth and illustrated in the following specification and accompanying drawings.

The object of this invention is to provide a form of frog—more particularly for street-car tracks—which shall be made of center-bearing girder-rails capable of being connected by splice-bars to the rails which are used for the rest of the track.

The invention consists of the parts as hereinafter described, and set forth in the claim.

In the accompanying drawings, Figure 1 is a plan of the frog complete. Fig. 2 is a plan of the rail marked B in Fig. 1. Fig. 3 is a plan of a rail having portions of its head and flanges cut away preparatory to bending into the point of the frog shown at A A in plan in Fig. 1. Fig. 4 is an end view of the frog, from the left, at the points marked *a a* in Fig. 1. Fig. 5 is an end view of the frog, from the right, at the points marked *b b* in Fig. 1. Fig. 6 is a vertical cross-section through Fig. 1, taken at the line E E.

The method of constructing said frog is as follows: The rail B B is first bent, as shown detached in Fig. 2, and then the parts indicated by dotted lines are planed off from *b'* to *b'* and from *b''* to *b''*, parts of both the upper and lower flanges and head being thus cut to the same line or angle. The rail C C (shown in Fig. 1) is bent similarly to the rail B B, except that the bend is the reverse of the bend given to the rail B B. The head and both side flanges of the rail C C are also planed off in the manner just described for the rail B B. The two rails are then put together, as shown in Fig. 1. The rail A A, as shown detached in Fig. 3, has both its upper and lower flanges planed off on one side between the points *a' a'*. On its other side the upper and lower side flanges and head are planed off from the points *a'' a''* to the central point, *a''*. At the point *a''* a sufficient thickness of head is left to stand

the bend, which is effected while the rail is sufficiently heated for the purpose. The rail A A is then bent over until it assumes the form A A *a''*, shown in plan in Fig. 1. If desired, the rail A A may be made of two separate pieces of rail—namely, from A to *a''*, respectively—connected together at their points, and also to the rails B C, Fig. 1, respectively, by splice-bars, or chocks and bolts, or otherwise. A beveled plate, F, Figs. 1 and 6, is fastened through the adjoining flanges of the rails B C by bolts with countersunk heads, as shown at *f f*, Fig. 1. The spacing-bolts D, Fig. 5, hold the ends *b b*, Fig. 1, of the rails B C properly apart. The splice-bars *c c* are continued so as to lap the main rails of the track, and thus they serve to effect a junction between frog and main rails by a strong splice-joint. The bolt D is also provided with nuts *g* K, and washers *h*, having a splice-bar fit. The rails are thus properly adjusted and tied apart by the adjustment of said nuts hard up against the splice-bars and washers. In Fig. 4 the spacing-bolt *d* is not provided with inside nuts and washers, as such are obviously not necessary when the rails or their flanges are abutting each other. It is not a necessity to plane off the rail B between the points *b' b'*, Fig. 2; but such a construction adds to the neatness of proportion of the frog. The flanges *e e* of the rail A A abut against similar flanges on the rails B C at the points *e' e'*, Fig. 1. In Fig. 3 the rail A A is therein shown in plan, continued on outwardly in either direction from the points *a'' a''*; but in Fig. 1 the rear of the frog-point A A is shown as cut off at the points *a'' a''* of Fig. 3, to which points the points *a a* in Fig. 1 correspond.

It is obvious that a frog can be constructed according to the description herein given, and without any material departure therefrom, so long as the bearing of the tread of the wheels on the center of the head of the rail is central to the web of such rail, irrespective of any minor variations in the form or proportion of the side flanges or their equivalents.

Having thus fully described my said im-

provement in railroad-frogs as of my invention, I claim—

5 A frog forming a crossing for the wheels of railway-cars, composed of rolled center-bearing girder-rails, having the webs of said rails secured together by rivets or bolts, with or without interposed chocks, and the di-

vergent ends of said rails secured to the rails of the track, substantially as and for the purposes set forth.

JOHN TOWNSEND.

Witnesses:

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