

No. 654,462.

Patented July 24, 1900.

C. F. KRESS, JR.  
RAILWAY FROG.

(Application filed Dec. 28, 1899.)

(No Model.)

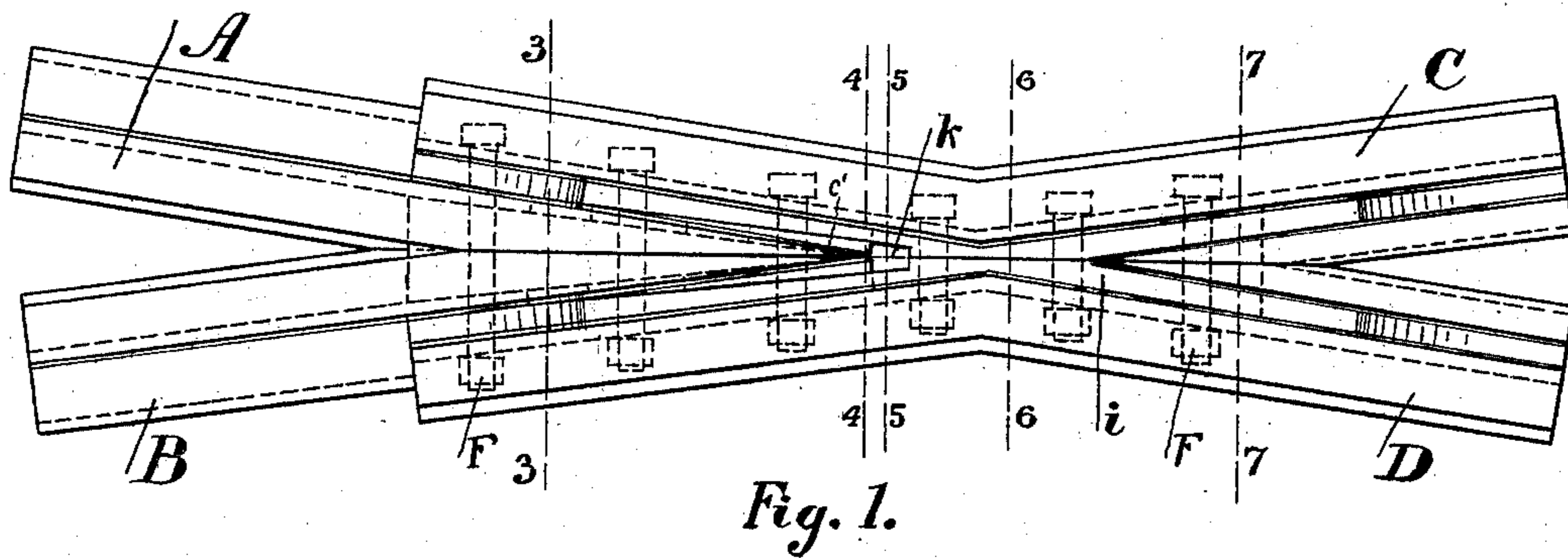


Fig. 1.

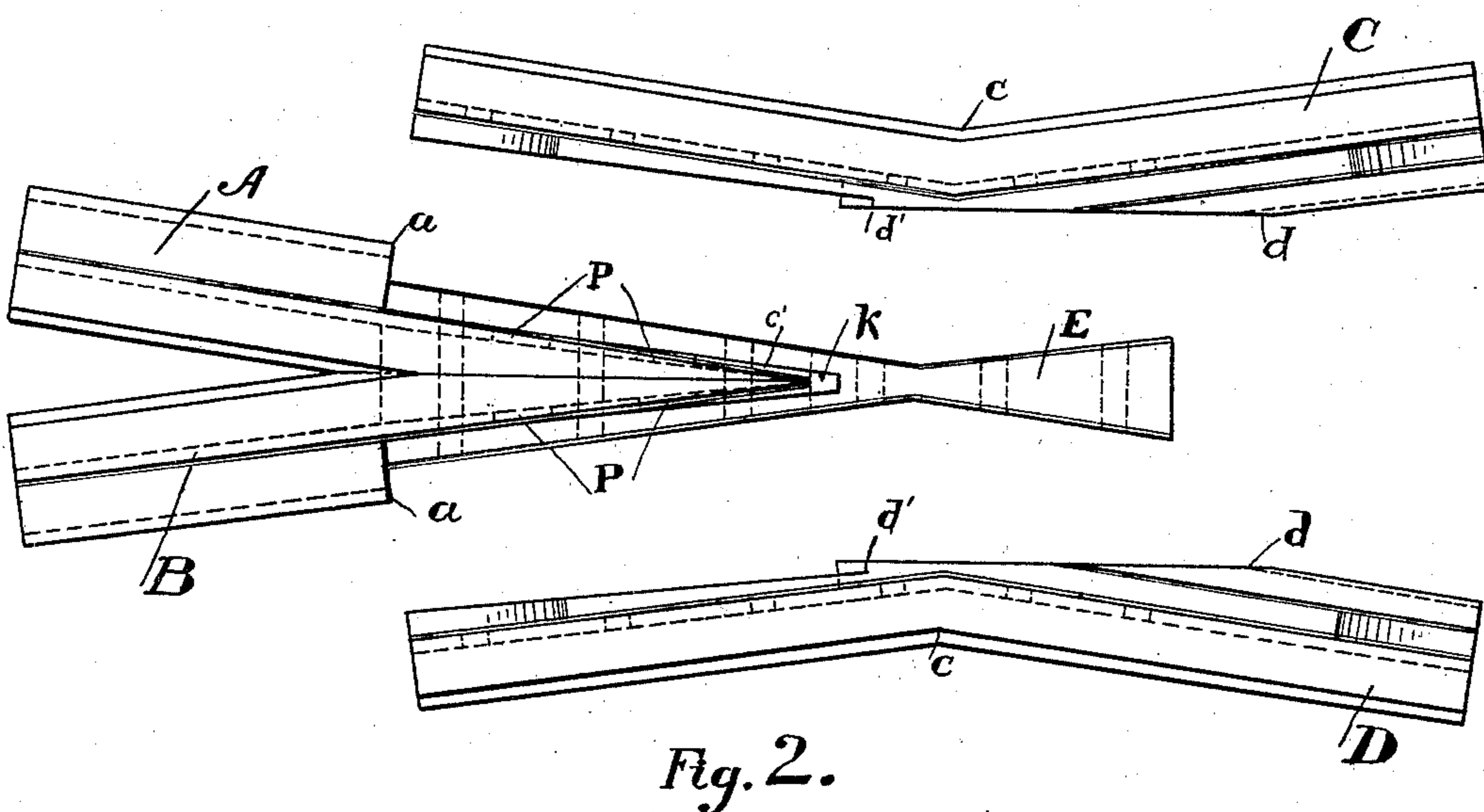


Fig. 2.

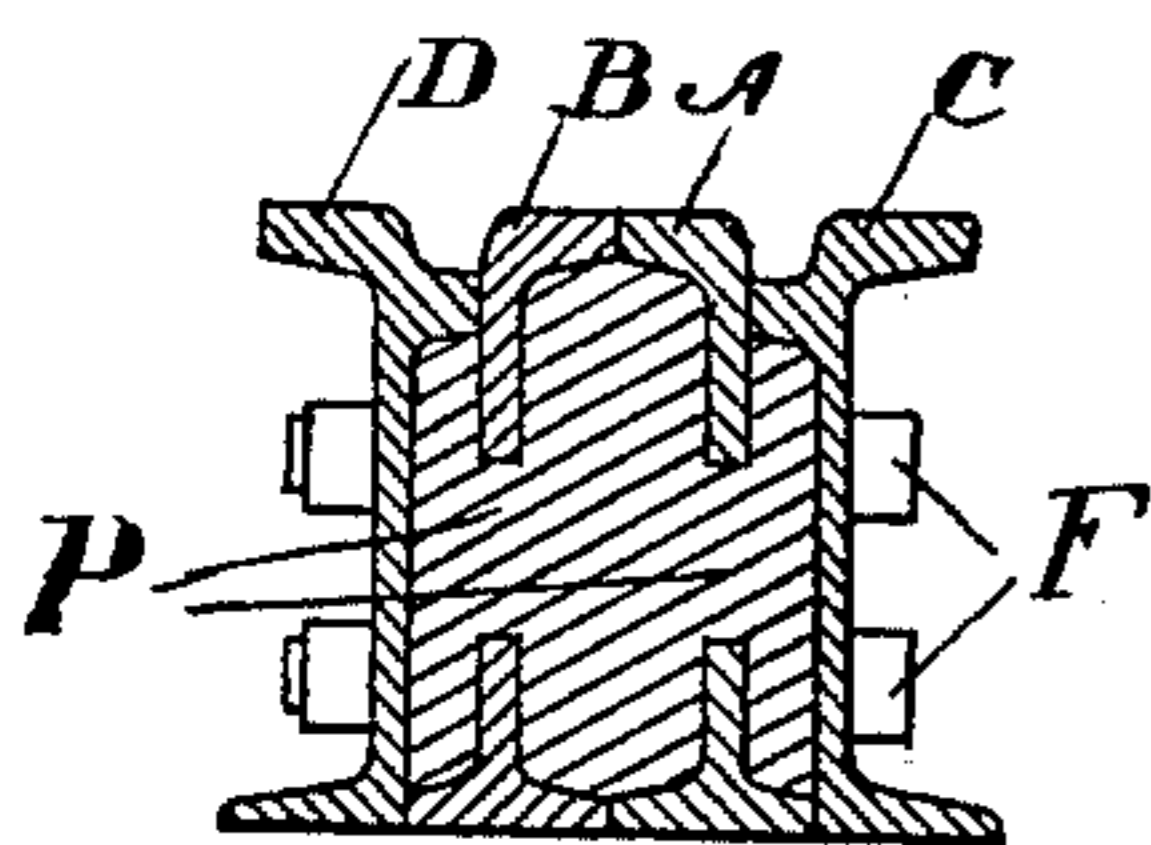


Fig. 3.

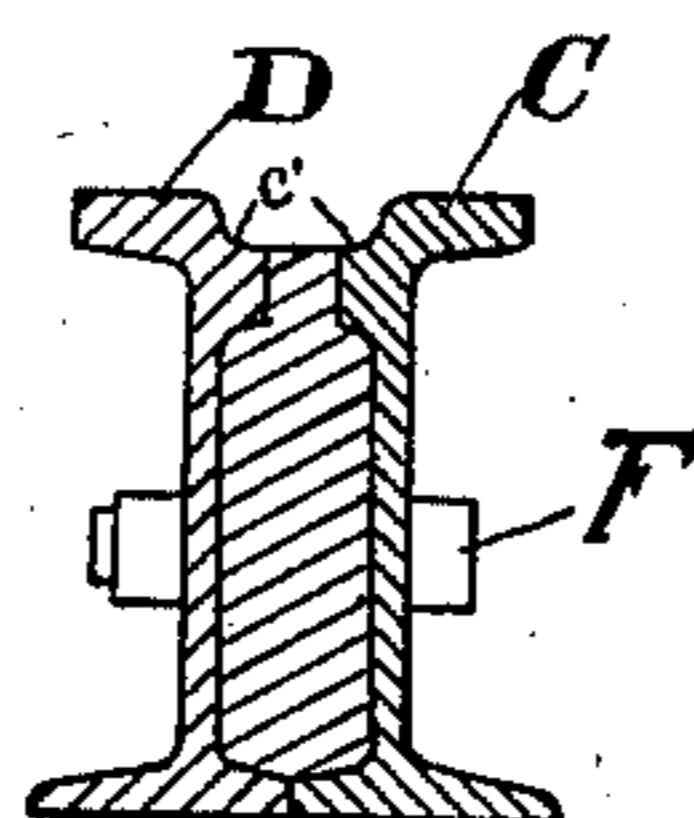


Fig. 5.

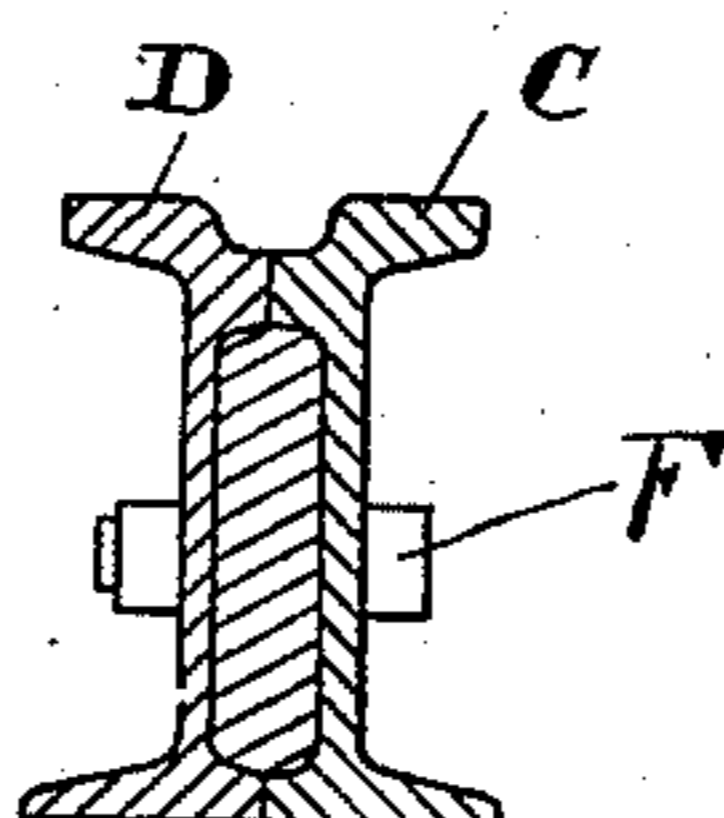


Fig. 6.

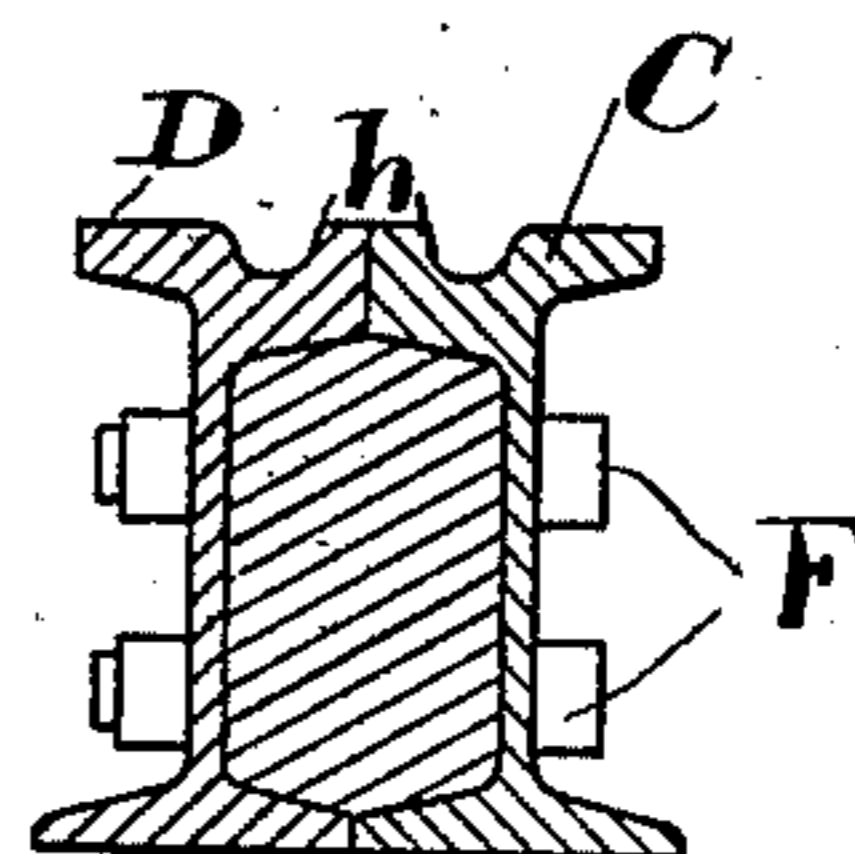


Fig. 7.

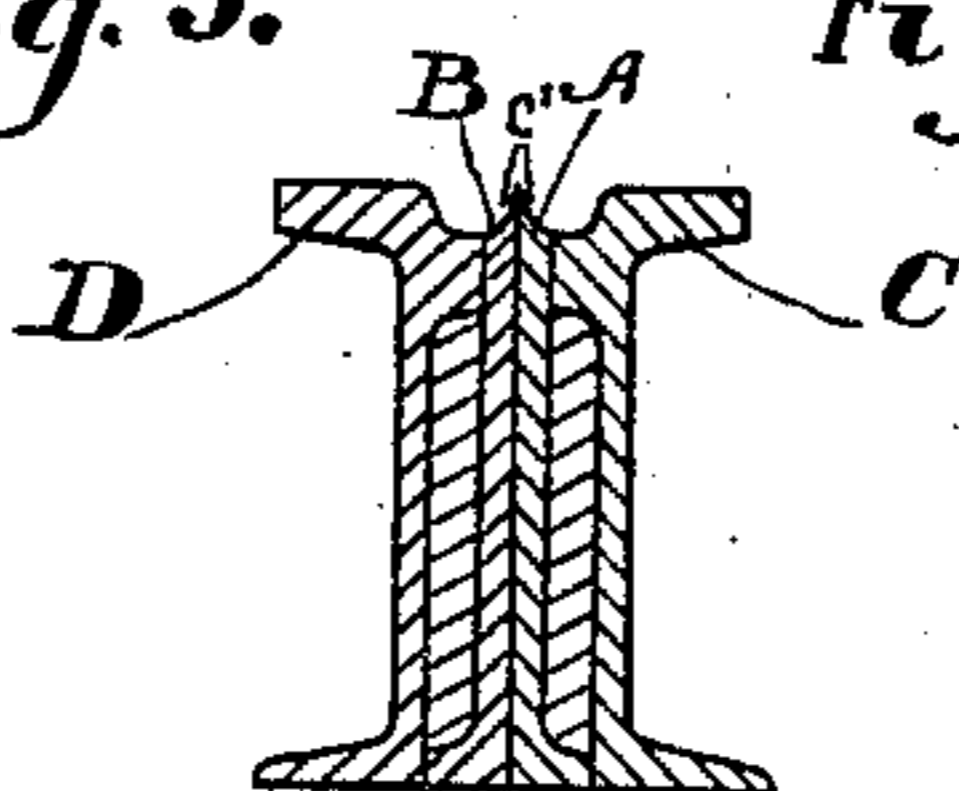


Fig. 4.

WITNESSES:

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# UNITED STATES PATENT OFFICE.

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## RAILWAY-FROG.

SPECIFICATION forming part of Letters Patent No. 654,462, dated July 24, 1900.

Application filed December 28, 1899. Serial No. 741,818. (No model.)

*To all whom it may concern:*

Be it known that I, CARL F. KRESS, Jr., of Johnstown, in the county of Cambria and State of Pennsylvania, have invented a new and useful Improvement in Railway-Frogs, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, which form a part of this specification.

My invention has relation to certain new and useful improvements in railway-frogs of that type which are constructed from a number of rails or rail-sections with a metal chock cast in place between the meeting or adjacent end portions of the rails.

The invention is designed to provide a frog of this type constructed from girder-rails in which the rails themselves form the entire wearing portions or surfaces of the frog, the cast-metal chock serving to unite the rails and form a perfect support for their head portions without forming any part of the wear-surface. It is also designed to provide a solid durable structure composed of girder-rails, which can be readily built up and in which the wing rails are readily removable.

With these objects in view the invention consists in the novel construction and combination of parts, all as hereinafter described, and pointed out in the appended claims, reference being had to the accompanying drawings, in which—

Figure 1 is a plan view of a frog constructed in accordance with my invention. Fig. 2 is a similar view with the parts separated from each other; and Figs. 3, 4, 5, 6, and 7 are sections on the lines 3 3, 4 4, 5 5, 6 6, and 7 7, respectively, of Fig. 1.

The letters A and B designate the two point-rails; C and D, the two wing rails; E, the cast-metal chock, and F the securing-bolts. These rails are all girder-rails, the rails A and B being side-bearing tram-rails, and the rails C and D guard-rails.

The two point-rails are each planed or cut away on their inner sides to bring their head and web portions together to form the usual point, as shown in Figs. 3 and 4. From the points *a* to their inner ends their tram portions are planed out, as shown at *c'*, and their base-flanges are also partially cut away (see Fig. 3) on the tram sides.

The two wing rails are each bent in the usual manner at the point *c*, opposite the center of the frog. From the point *d* to a point *d'* somewhat beyond the center of the frog the inner side of each of these rails is cut away on a line coinciding with the longitudinal center of the frog, this cut being made through both the top and foot portions of the rail, thereby gradually and finally entirely removing the guard portions *h*, a portion of the floor of the flangeway, and also the inner flange of the foot. At the point *d'* an outward offset is made into the floor of the flangeway, and from this offset the cut is made obliquely through said floor to the end of the rail. When the rails are assembled, the partially-removed guards of the wing rails fit together to form the point *i*, and the flangeway-floors abut each other at the center of the structure and also fit the sides of the head portions of the point-rails, the offsets at the point *d'* making an opening *k*, which forms a gate through which is poured fluid metal to form the cast chock E. The web portions of the rails A and B are formed with openings *p* for the cast metal to flow through, and thus unite them solidly together. Before pouring this metal suitable core-rods are placed in position through the rails to form openings through which in the finished structure are passed the bolts F. These bolts serve to secure the wing rails solidly but removably in place. The cast metal entirely fills the spaces between the rails at the center of the structure and forms a support for the head portions of the severed rails. It forms, however, no part of the wear-surface of the frog, its only exposed portion being where it fills the small gate-opening *k*.

It will be seen that the frog thus constructed is one of great strength, having throughout the equivalent cross-section of two rails.

While I have shown the rails A and B as being side-bearing girder tram-rails, they may just as well be guard-rails, in which case the cuts made from the points *a* would remove the entire guard portions from these points. The rails C and D may also be tram-rails, in which case the trams would be cut in substantially the same lines as the guards in the construction shown. Hence I do not wish to limit myself to the particular construction

and combination which I have herein shown and described.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a railway-frog, the combination with the girder-rails abutted to form the point of the frog, and cut away at their inner end portions at their outer sides, of the girder wing rails, having a portion of their heads removed at their inner sides on lines coinciding with the longitudinal center of the frog and abutting each other, and other portions cut obliquely to abut the cut-away faces of the head portions of the point-rails, and a central chock cast to said rails, substantially as described.

2. In a railway-frog, the combination with the two girder-rails abutted at their heads to form the point of the frog, of the two girder wing rails cut away at their inner sides on two different lines, whereby the floor of their flangeways or grooves abut each other at the central portion of the frog, and also abut the sides of the point-rails, together with a central chock cast to said rails, substantially as described.

3. In a railway-frog, composed of girder-rails and a metal chock cast to said rails, the combination with the point-forming rails, of the wing rails the floors of whose flangeways are cut on two different lines offset from each other and forming at the offset a gate-opening to receive the chock-forming metal, substantially as described.

4. In a railway-frog, the combination with

the point-rails cut away at their inner end portions at their outer sides, of the wing rails having the floors of their flangeways partially removed, and abutted at their central portions and at their guard-forming ends having said floors abutting the sides of the point-rails, a cast-metal chock uniting said point-rails, and removable bolts holding the wing rails to the chock, substantially as described.

5. In a railway-frog, the combination with the girder point-rails A and B, having portions of their heads removed at their outer sides, of the girder wing rails having the inner portions of their heads removed on a straight line from the points  $d$  to  $d'$ , and on an oblique line from the point  $d'$  to the guard-forming end of the rail, the cast-metal chock and the removable bolts for securing the wing rails to the said chock, substantially as described.

6. A railway-frog composed of girder-rails and a central metal chock cast to said rails, said rails having their head portions fitted and abutted to form the entire wear-surface of the frog, and the cast-metal chock filling the entire space between and underneath the abutted portions of said rails, substantially as described.

In testimony whereof I have affixed my signature in presence of two witnesses.

CARL F. KRESS, JR.

Witnesses:

MYRTLE E. SHARPE,  
H. W. SMITH.