

(No Model.)

3 Sheets—Sheet 1.

A. V. DU PONT.  
SWITCH RAIL AND BLANK THEREFOR.

No. 435,408.

Patented Sept. 2, 1890.

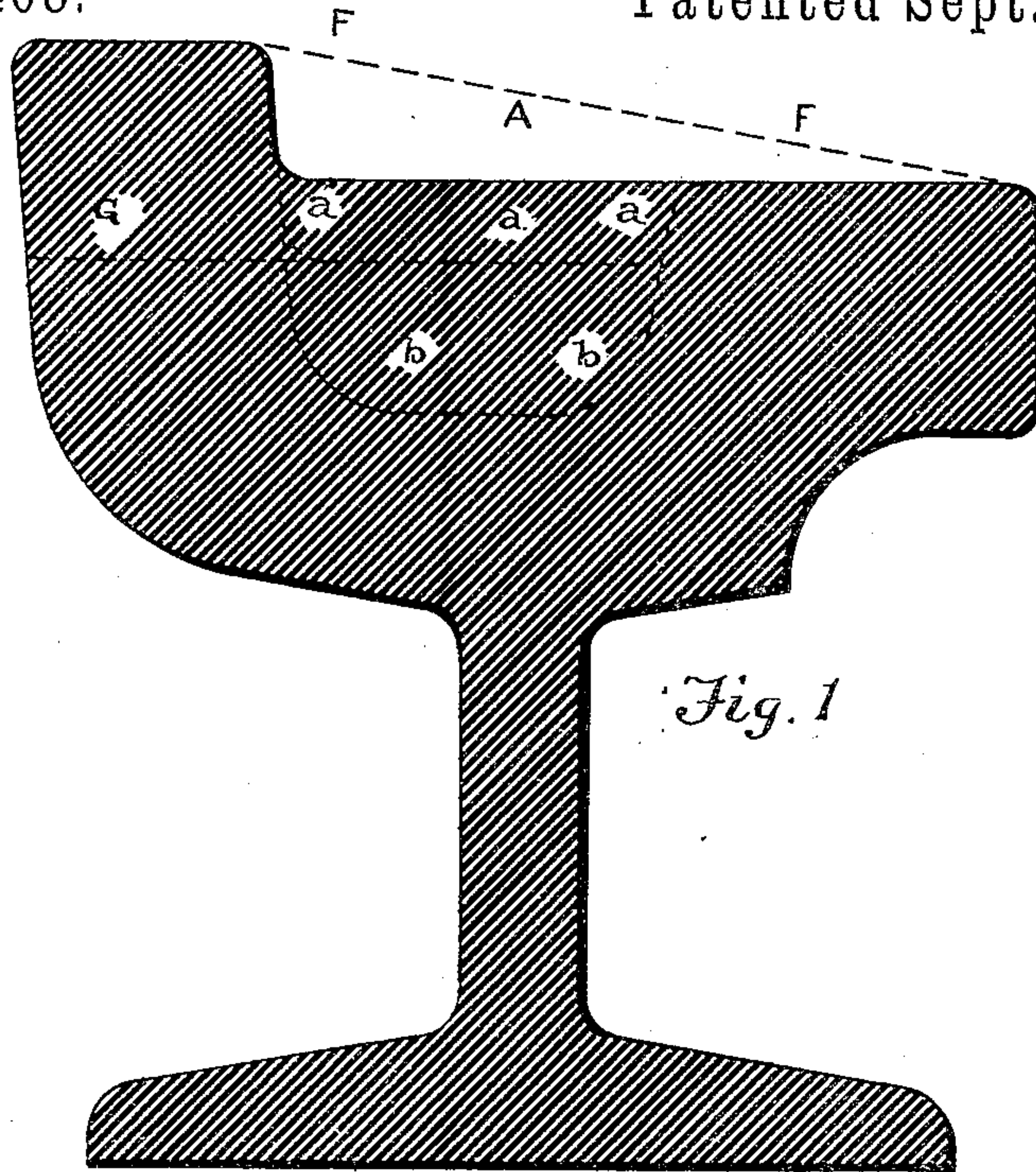


Fig. 1

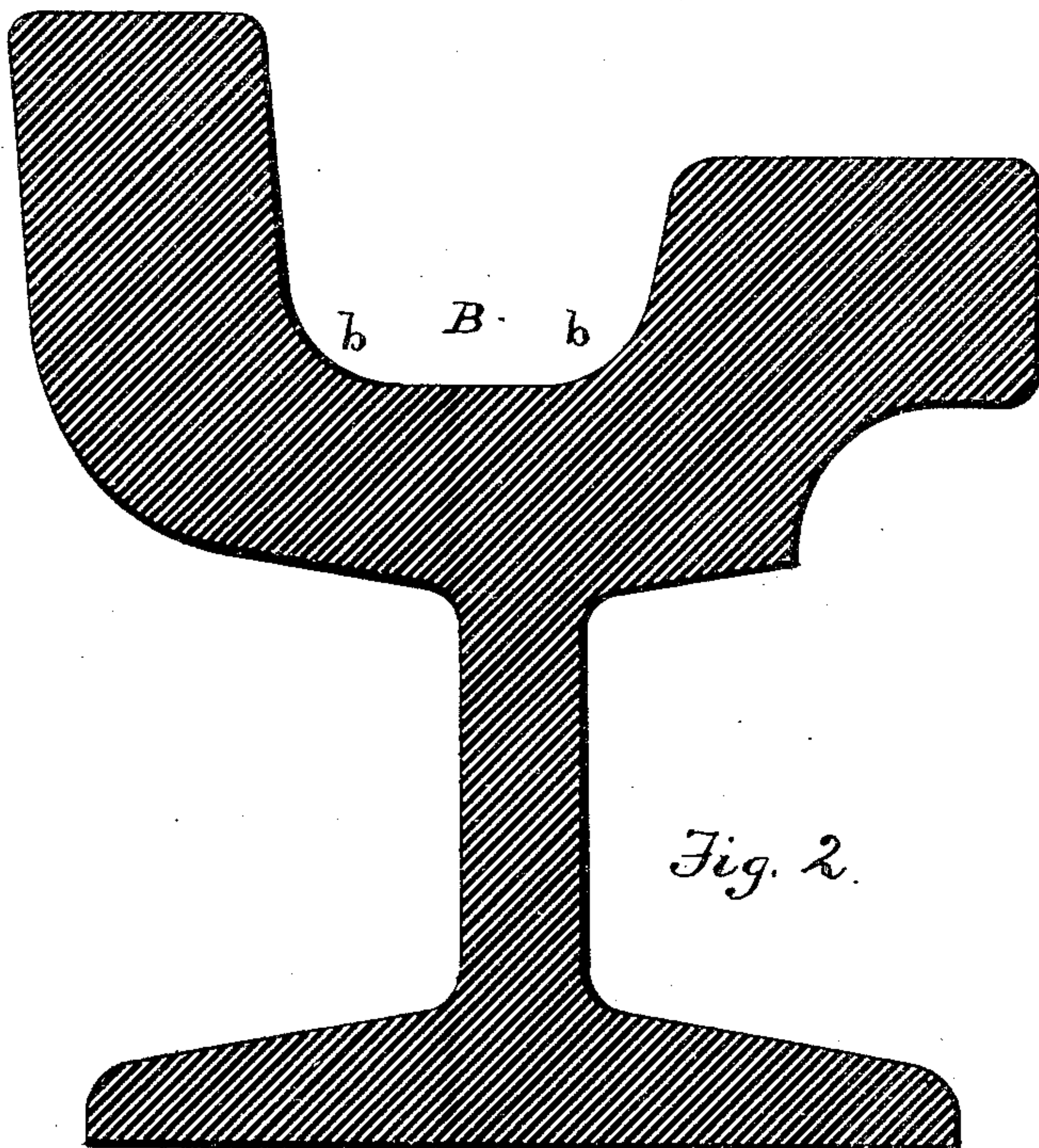


Fig. 2.

Witnesses.

*H. C. Evans*  
*Francis P. Reilly*

Inventor.

*A. V. du Pont*  
by *R. M. Voorhees*  
*Atty.*



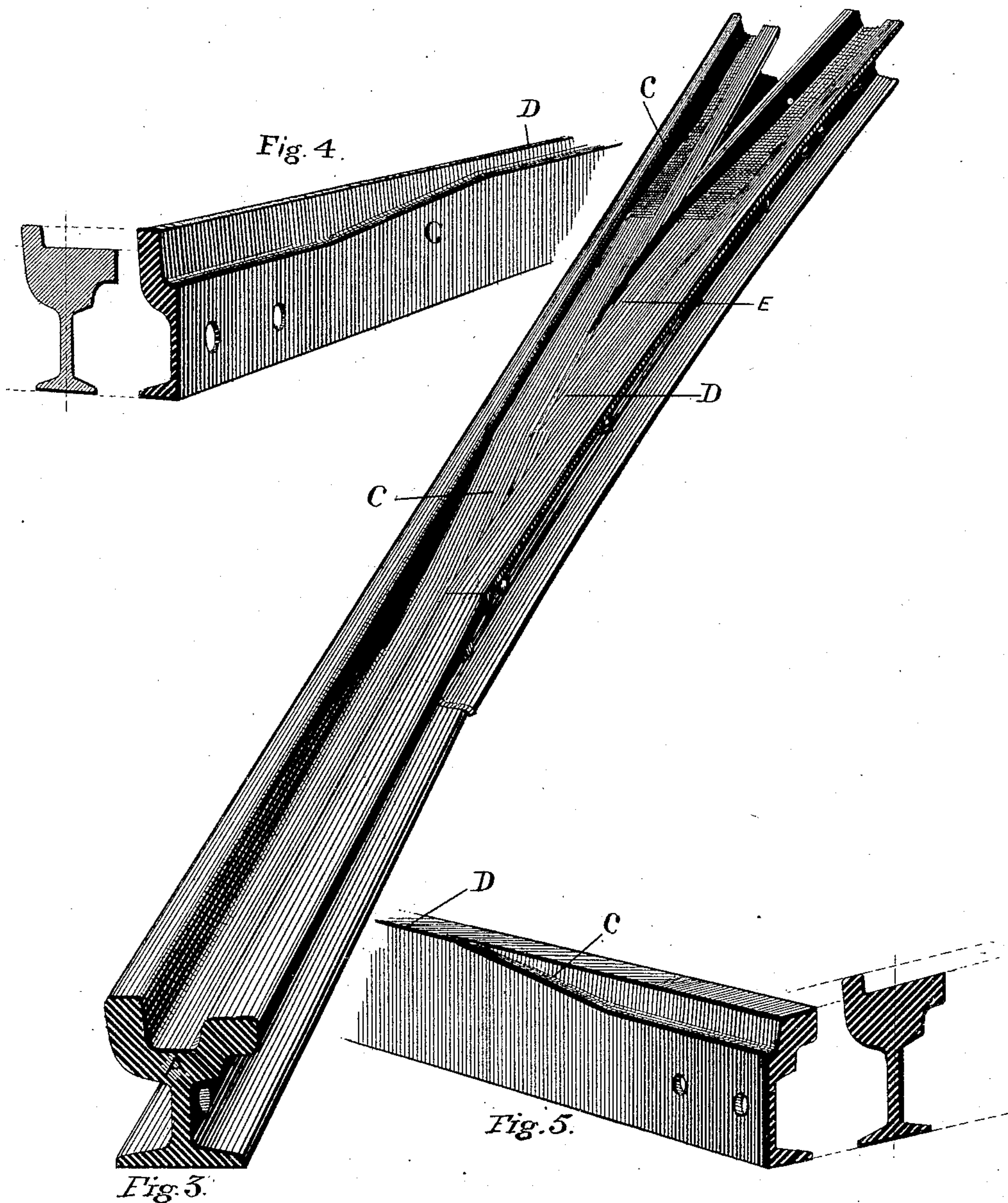
(No Model.)

3 Sheets—Sheet 2.

A. V. DU PONT.  
SWITCH RAIL AND BLANK THEREFOR.

No. 435,408.

Patented Sept. 2, 1890.



Witnesses.

*A. C. Evans*  
*Francis P. Reilly.*

Inventor.

*A. V. du Pont*  
*by P. M. Woodhull*  
*Atty.*

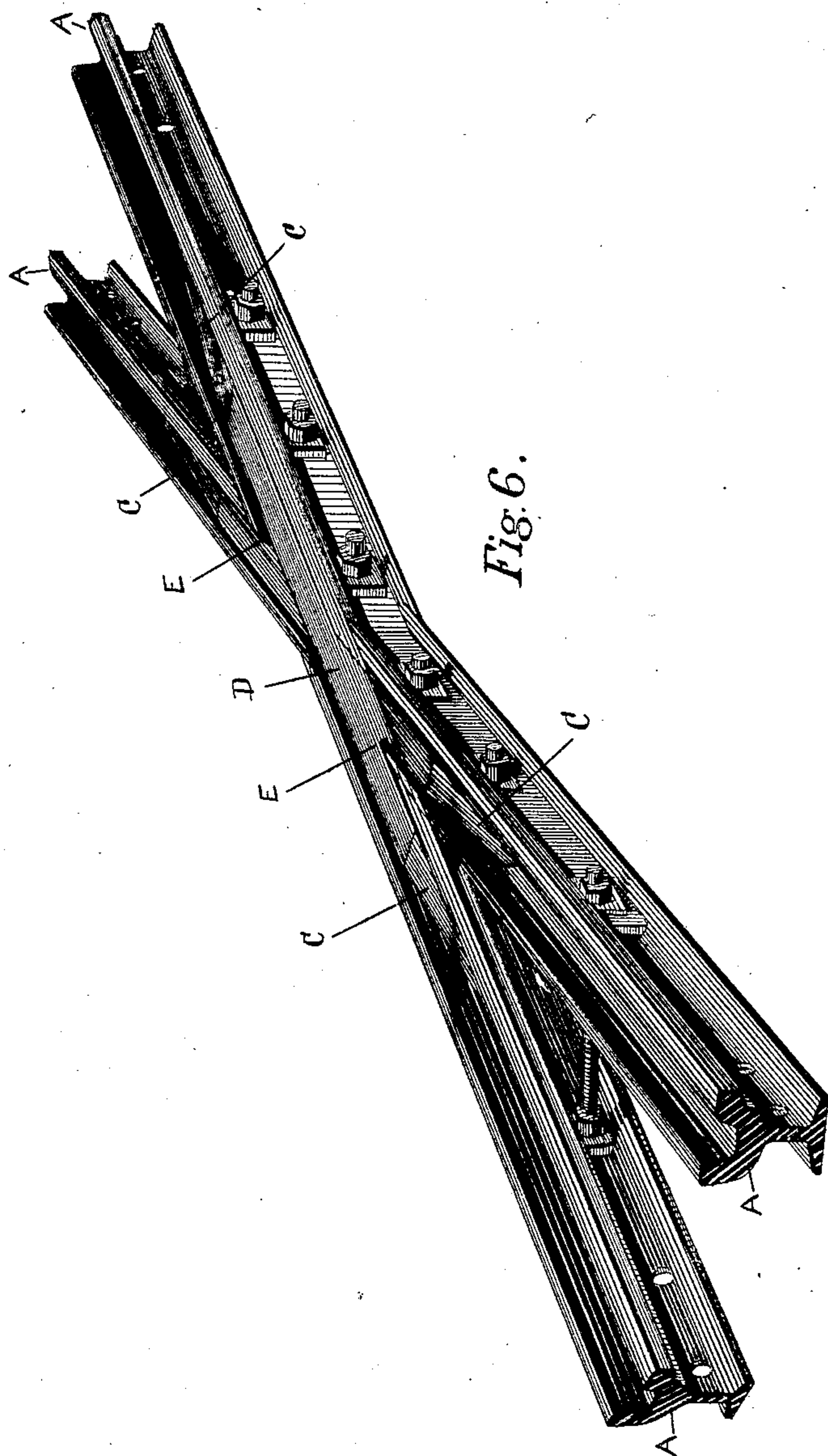
(No Model.)

3 Sheets—Sheet 3.

A. V. DU PONT.  
SWITCH RAIL AND BLANK THEREFOR.

No. 435,408.

Patented Sept. 2, 1890.



Witnesses.

*H. C. Evans*  
*Francis P. Reilly*

Inventor.

*A. V. du Pont*  
by *P. A. Voorhees*  
*Atty.*



# UNITED STATES PATENT OFFICE.

ALFRED V. DU PONT, OF LOUISVILLE, KENTUCKY, ASSIGNOR TO THE JOHNSON STEEL STREET RAIL COMPANY, OF KENTUCKY.

## SWITCH-RAIL AND BLANK THEREFOR.

SPECIFICATION forming part of Letters Patent No. 435,408, dated September 2, 1890.

Application filed February 20, 1888. Serial No. 264,659. (No model.)

*To all whom it may concern:*

Be it known that I, ALFRED V. DU PONT, of Louisville, in the county of Jefferson and State of Kentucky, have invented a new and  
5 useful Switch-Rail and Blank Therefor, 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  
10 rail for switch-pieces which will dispense with removable or separate floor-plates, and consequently diminish the number of parts in the structure and increase its durability.

The invention will first be described in detail, and then particularly set forth in the  
15 claim.

In the accompanying drawings, Figure 1 shows the blank in cross-section with solid floor or devoid of groove. Fig. 2 shows in  
20 cross-section the form assumed by the blank when it has been grooved to full depth, having then also assumed the form of the connecting-track rail. Fig. 3 is a perspective view showing the manner in which the invention is applied to switch-pieces. Fig. 4 shows  
25 in perspective a longitudinal vertical section of the guard side of the rail, showing the inclination or variation in depth of the groove. Fig. 5 shows in perspective a view, similar to that of Fig. 4, of the head side of the rail. Fig. 6 shows the invention applied to a curve cross or frog in perspective.

In said figures the several parts are indicated by letters of reference, as follows: The  
35 blank A, Fig. 1, being first rolled, either as shown in full lines or as indicated by dotted lines *a a*, that portion indicated by dotted lines *b b* corresponding to the level of the groove *b* in the rail B, Fig. 2, may be cut  
40 away or otherwise removed on an incline from *a* to *b*, so as to leave an elevation at *a* above the level of the groove at *b*, as shown at C D in the several figures. The wheels of approaching cars are lifted by their flanges taking  
45 on and running up the inclines C on one side and down on the other side, thereby elevating the treads of the wheels over and clear of the point of the frog in one case and clear of the slots and grooves through the  
50 head and guard of the rail in the other case

for the passage of the wheel-flanges. Descending the opposite side or incline C, the treads of the wheels again take upon and run on the head of the rail.

The rail B (shown in Fig. 2) has the exact  
55 shape in cross-section as that part of the blank A, Fig. 1, where the groove is cut to the maximum depth *b b* desired, and is also the same as that of the rail which connects thereto.  
60

It is evident that a girder-rail of any cross-section may be treated as described. I do not therefore confine myself to the shape of the blank as shown in Fig. 1, as this invention is applicable to any form of girder-rail.  
65

The raised bottom or floor of the groove, which forms the bearing-surface for the wheel-flanges, may be varied, either in angle of inclination or in shape of cross-section, from those shown, the object being accomplished by removing from the groove superfluous metal, as described.  
70

The blank, Fig. 1, is shown with level upper surface and a partial projection, which may form part of the guard, if a guard be  
75 desired. If desired, the upper portion of the blank can be rolled solid, as shown by dotted lines F F, or partially grooved, as shown by dotted lines *a a*, or partially offset, as shown by dotted lines *a G*. The exact shape of the  
80 upper portion of the blank is not essential, the important point being to leave a maximum of metal in the blank, so that the bearing-surface for the wheel-flanges is obtained by cutting away. It will be observed, there-  
85 fore, that in this invention the object is attained by abstracting from a blank, not by adding to a finished rail.

Switch and groove rails, as heretofore constructed of rolled steel, have been of uni-  
90 form section throughout, and the filling of the groove required of frogs and crossings has heretofore been effected by forging or otherwise forming the floor-plates and then inserting them in the grooves of the rails, being  
95 therein held by rivets or other suitable devices. These floor-plates, being subject to great wear, soon become worn away, and their rivets or other holding devices work loose, making frequent repairs and renewals nec-  
100



essary at great expense and trouble. By this invention (discarding removable floor-plates) the bearing-surfaces for the wheel-flanges, being integral with the rails, are practically  
5 as durable as the other parts of the same. By making, therefore, switch-pieces from blanks such as that shown in Fig. 1, where a groove is required at crossing-points, said pieces may be made of harder steel than is necessary or  
10 desirable for the other parts of the track, thereby insuring the durability of the point or points of greatest wear, or said finished blank may be subjected to a hardening treatment to increase its durability, if found nec-  
15 essary or desirable so to do, such treatment being manifestly difficult and too expensive for through-track rails, and, further, not so essential at other than the switch-points, as

it is at these points that the greatest wear occurs. The blanks after being treated as de- 20 scribed are cut and fitted at the proper angles to make the class of work desired, whether switch or crossing. The method, however, of fitting and connecting the rails together I do not claim. 25

Having thus fully described my said improvement, as of my invention I claim—

A switch, frog, or other railroad-crossing provided with a two-part floor-plate, one part of each floor-plate being formed integral with 30 one rail, as set forth.

A. V. DU PONT.

Witnesses:

T. C. DAINGAN,  
CHAS. K. MINARY.