(No Model.) 2 Sheets—Sheet 1.

F. SCHULTZ, Jr.

FROGLESS RAILWAY SWITCH.

No. 503,440. Patented Aug. 15, 1893.

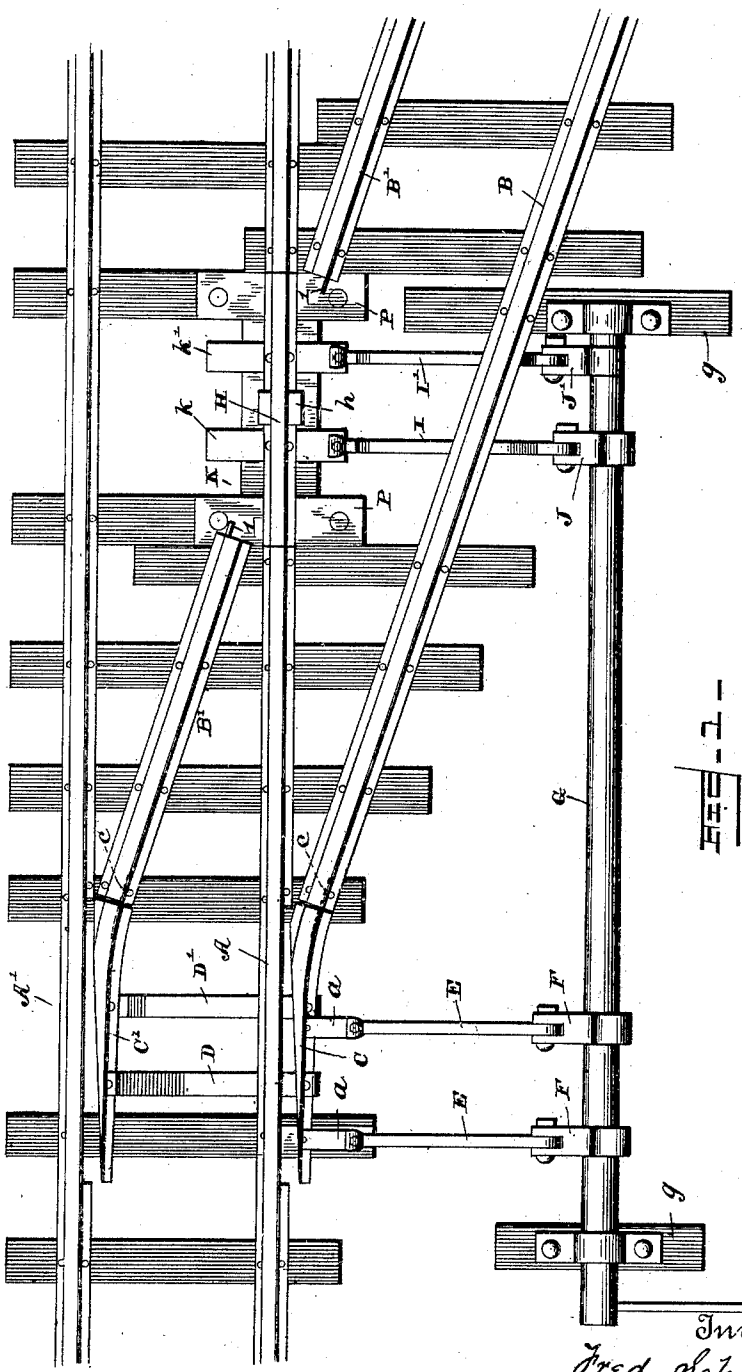

FIG. 1.

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(No Model.) 2 Sheets—Sheet 2.

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Fig. 2.

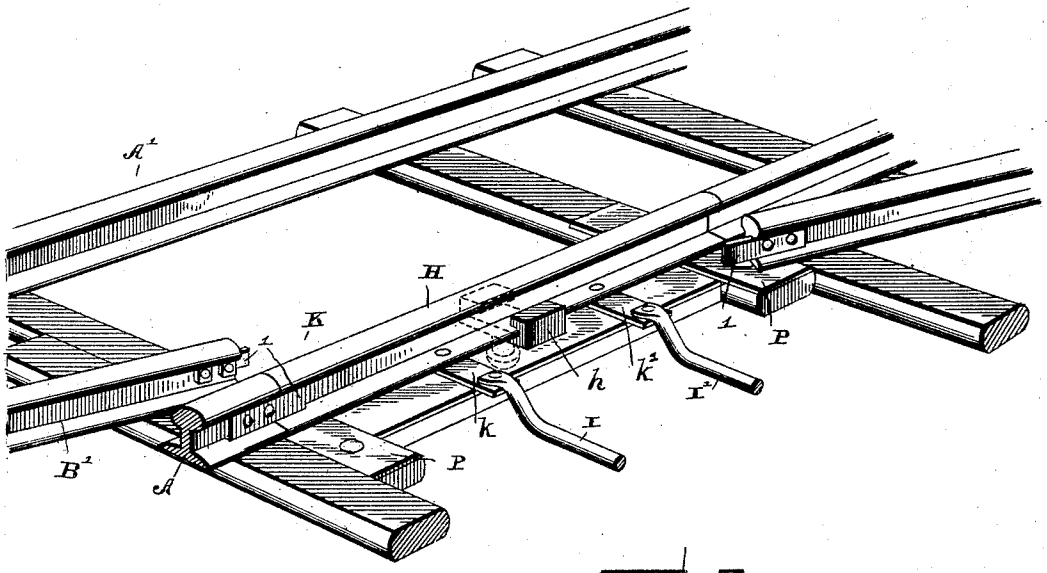


Fig. 3.

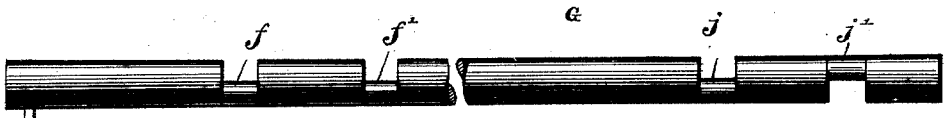
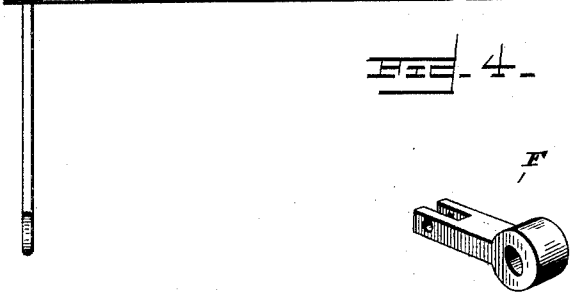


Fig. 4.



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UNITED STATES PATENT OFFICE.

FRED SCHULTZ, JR., OF BRACEVILLE, ILLINOIS.

FROGLESS RAILWAY-SWITCH.

SPECIFICATION forming part of Letters Patent No. 503,440, dated August 15, 1893.

Application filed November 30, 1891. Serial No. 413,562. (No model.)

To all whom it may concern:

Be it known that I, FRED SCHULTZ, Jr., a citizen of the United States, and a resident of Braceville, in the county of Grundy and State of Illinois, have invented certain new and useful Improvements in Frogless Railway-Switches; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

Figure 1 of the drawings is a plan view. Fig. 2 is a perspective view and Figs. 3 and 4 are detail views.

This invention has relation to certain new and useful improvements in frogless railway switches, and it consists in the novel construction and combination of parts as hereinafter described and pointed out in the claim.

In the accompanying drawings the letters A, A′, designate the main track rails, and B, B′ the side track rails, making connection with the main rails by the movable point rails C, C′. These point rails have limited swinging connections *c*, *c*, with the ends of the side track rails, and are carried and connected by the tie bars D, D′, passing under the main rail A. The point rail C has secured thereto the plates *a*, *a*, to which are respectively connected the switch bar links E, E, connected at their opposite ends to arms F, F of a horizontal rock shaft G, on the farther side of and parallel with the main track, and hung in bearings in the blocks *g*, *g*. Said point rail C is tapered up from its top so as to carry the flange of the wheel over the main rail A. The arms F, F are provided with bearings which loosely engage reduced portions *f*, *f′* on the shaft G, said portions being eccentric to the longitudinal axis of said shaft; so that when said shaft is rocked, the arms will be moved to actuate the link to throw the point rails into or out of engagement with the main track rails. Said arms F, F, should have a slight difference in length of throw in order to compensate for the movement of the rails.

The side track rail B′ is formed in two sections separated from each other by a gap K, where it is intersected by the main line rail A, and said main line rail at this point consists of a short independent section H, which is supported centrally in a pivotal chain *h*. Said section is firmly secured to the movable plates *k*, *k′*, one on each side of the chain, to which are respectively connected the bar links I, I′, at their opposite ends connected to arms J, J′ on the rock shaft G. These arms J, J′ are carried by the shaft G in the same manner as the arms F, F, except that the eccentric portions *j*, *j′* of the shaft on which they bear are formed on opposite sides of the axis of said shaft. It will be apparent, therefore, that when said shaft is operated, the rail section H will be swung out of line with the main track rails and into connection with the sections of the side rail B, or the reverse, at the same time that the point rails C, C′, are thrown into or out of connection with the main rails. Stops *l*, *l*, are provided on the end of the sections of the rail B′ and on the section ends of the main track rails to limit the movement of said swinging section, and to insure a perfect throw. Bearing or surface plates P are also provided for said section.

A switch constructed as above described comprises few parts, which are so arranged as to obviate liability of their becoming inoperative.

I am aware that it is not broadly new to provide a switch having a swinging or shifting rail section, operating simultaneously with the throw of the switch rails, and I do not claim such a switch broadly; but I am not aware that a switch has heretofore been constructed embodying the specific mechanism hereinbefore described. It will be observed that the reduced eccentric portions *f*, *f*, of the shaft G, lie entirely within the diameter of said shaft, so that they present no obstruction to the rotation of the shaft. The shaft is in this respect superior to the ordinary cranked rock-shaft, the cranks of which project beyond the shaft, and are liable to be interfered with in their movement by contact with obstructions. This form of shaft is also superior to a cranked shaft, for the reason that the cranks sometimes become sprung or bent to such an extent as to prevent the proper throw of the rails. This cannot oc-

cur with the shaft herein shown. The reduced eccentric portions also form a more secure lock for the switch when thrown, as there is no danger of their springing "off centers," and allowing the movable rails to move under the weight of the train.

Having thus fully described my invention, what I believe to be new, and desire to secure by Letters Patent, is—

In a switch, the combination with the short swinging rails C, C′, connected by parallel tie bars D, D′, and the short centrally pivoted rail section H, of the rock-shaft G, having near each end two reduced eccentric portions *f*, *f*, lying within the diameter of the shaft, arms F, F, and J, J′, journaled one on each of said eccentric portions, and projecting inwardly toward the track, and the switch bar links E, E, and I, I′, connected respectively to said arms F, F, and J, J′, and at their other ends to arms respectively secured to the rail C and to the rail H, and projecting outwardly therefrom, substantially as specified.

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

FRED SCHULTZ, JR.

Witnesses:
WM. PHILLIPS,
E. D. SCOTT.