(No Model.)

J. LEET & A. C. ISRAEL.

RAILROAD SWITCH.

No. 278,344. Patented May 29, 1883.

Fig. 1.

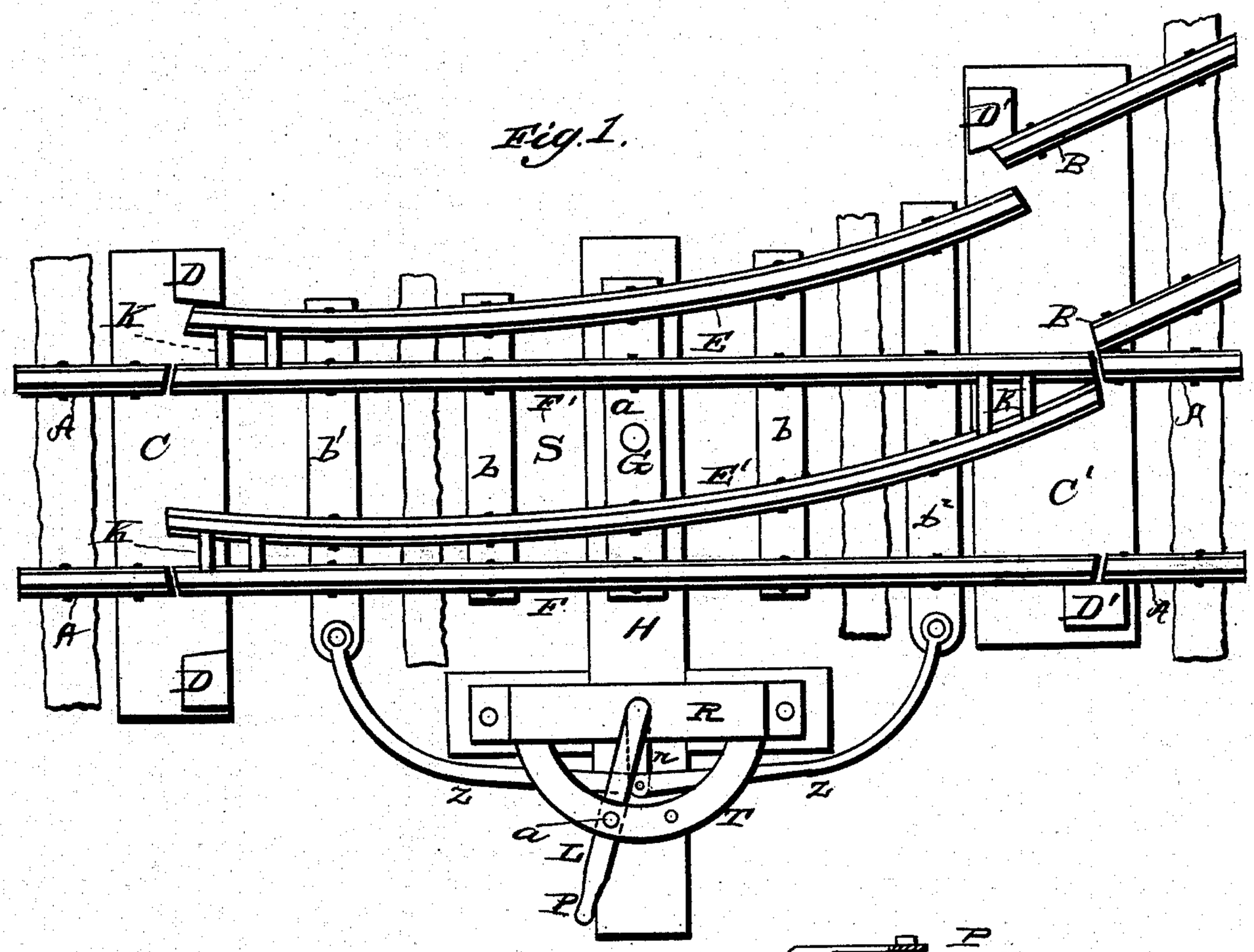
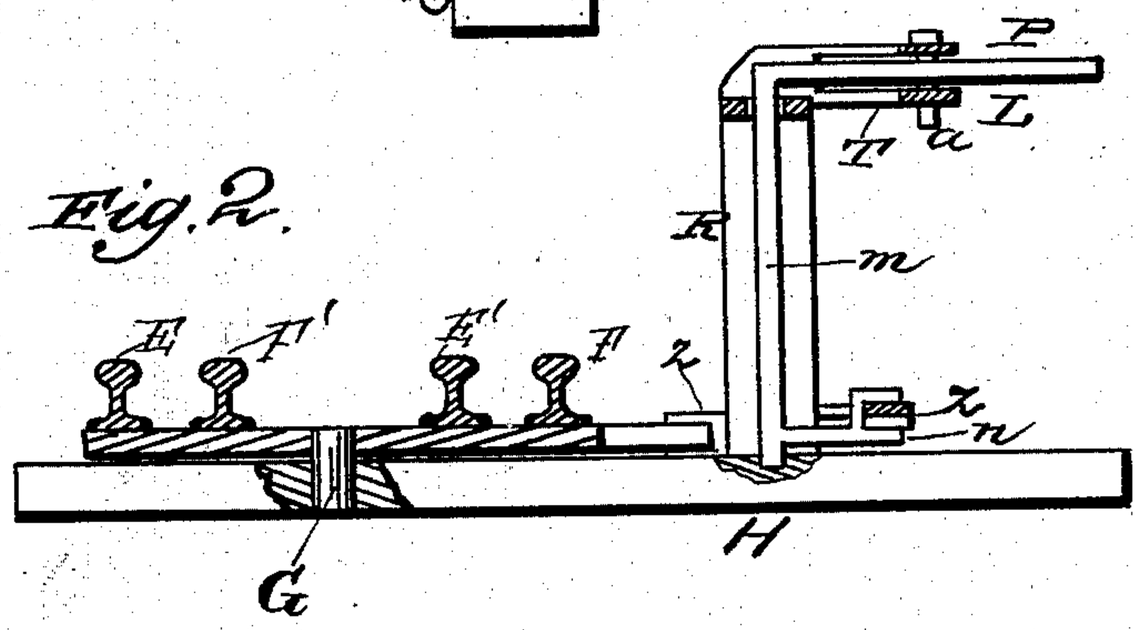


Fig. 2.



WITNESSES
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UNITED STATES PATENT OFFICE.

JAMES LEET AND ALEXANDER C. ISRAEL, OF KIMMSWICK, MISSOURI.

RAILROAD-SWITCH.

SPECIFICATION forming part of Letters Patent No. 278,344, dated May 29, 1883.

Application filed November 8, 1882. (No model.)

To all whom it may concern:

Be it known that we, JAMES LEET and ALEXANDER C. ISRAEL, citizens of the United States, of Kimmswick, in the county of Jefferson and State of Missouri, have invented a new and valuable Improvement in Railroad-Switches; and we do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a top or plan view of our switch, and Fig. 2 is a cross-sectional view of the same.

This invention has relation to railroad-switches designed to be used without frogs; and it consists in the construction and novel arrangement of the centrally-pivoted four-rail switch-frame, having its middle rails a little longer than the outer rails, the horizontally-vibrating switch-lever, its guides and catch, and the lateral rods connecting the lower horizontal crank-arm of the switch-lever to the ends of the switch, all as hereinafter set forth.

In the accompanying drawings, the letter A designates the rails of the main track, and B those of the side track. At one end of the switch the ends of the rails A are secured to a broad bearing-plate or tie, C, and exterior to said ends are secured to said plate or tie the stops D, which are separated from the main rails by an interval. At the other end of the switch the ends of the main rails and side-track rails are secured to a bearing-plate, C′, the outer rails projecting a little farther over the plate than the inner rails to suit the circular movement of the end of the switch. This plate or tie is provided with stops D′, which are located immediately outside of the ends of the outer rails and in contact therewith.

The switch S consists of the straight rails F F′ and the curved rails E E′, alternately arranged on a pivot-bar, *a*, and connecting-bars *b*, as shown. The middle or intermediate rails, E′ and F′, are respectively longer than the outer rails, E and F, and are arranged to describe a convex curvature at each end of the switch when operated, the curvature centering at the pivot-bolt G, which is at the center of the switch, and connects the same to the middle plate, H. The ends of the middle switch-rails, E′ and F′, are strongly connected by lateral bolts K at that end of the switch which is next the side track, while at the other end of the switch the outer and inner rails on each side, E′ and F and E and F′, are similarly connected by lateral bolts, so that, although the ends of the switch-rails project over and rest only on the guide-plates or ties C and C′, their relative position is firmly secure. The middle bearing-plate or tie, H, is laterally extended to form a bearing for the lower pivot of the switch-lever L, which is formed with a vertical shaft, *m*, a horizontal crank-arm, *n*, at its foot, and a horizontal operating-arm, P, at its upper end. The upper portion of the shaft *m* is journaled in a suitable frame, R, and the operating-arm P passes through between the arc-guides T, which are perforated to receive the fastening-pin *a*. The lever-arm *n* is pivoted to the inner ends of the curved horizontal rods *z z*, the outer ends of which are secured to the ends of the connecting-bars $b' b^2$. When the switch-lever is moved the switch turns on its pivot G. After movement the switch is secured in position by the catch-pin *a*, which is passed through the perforations of the guides T.

The arrangement of switch-rails herein shown is identical with that shown in Letters Patent No. 163,198, and is therefore not broadly claimed herein, as in that patent is found two inside converging rails and two outside rails, the four being connected together.

Having described this invention, what we claim, and desire to secure by Letters Patent, is—

The switch described, consisting of the centrally-pivoted four-rail switch S, having its middle rails, E′ F′, a little longer than its outer rails, E F, the horizontally-vibrating switch-lever L, its guides T, and catch *a*, and the lateral rods *z*, connecting its lower horizontal crank-arm to the ends of the switch-frame, substantially as specified.

In testimony that we claim the above we have hereunto subscribed our names in the presence of two witnesses.

JAMES LEET.

ALEXANDER C. ISRAEL.

Witnesses:

S. W. BOWEN,

F. D. WATERS.