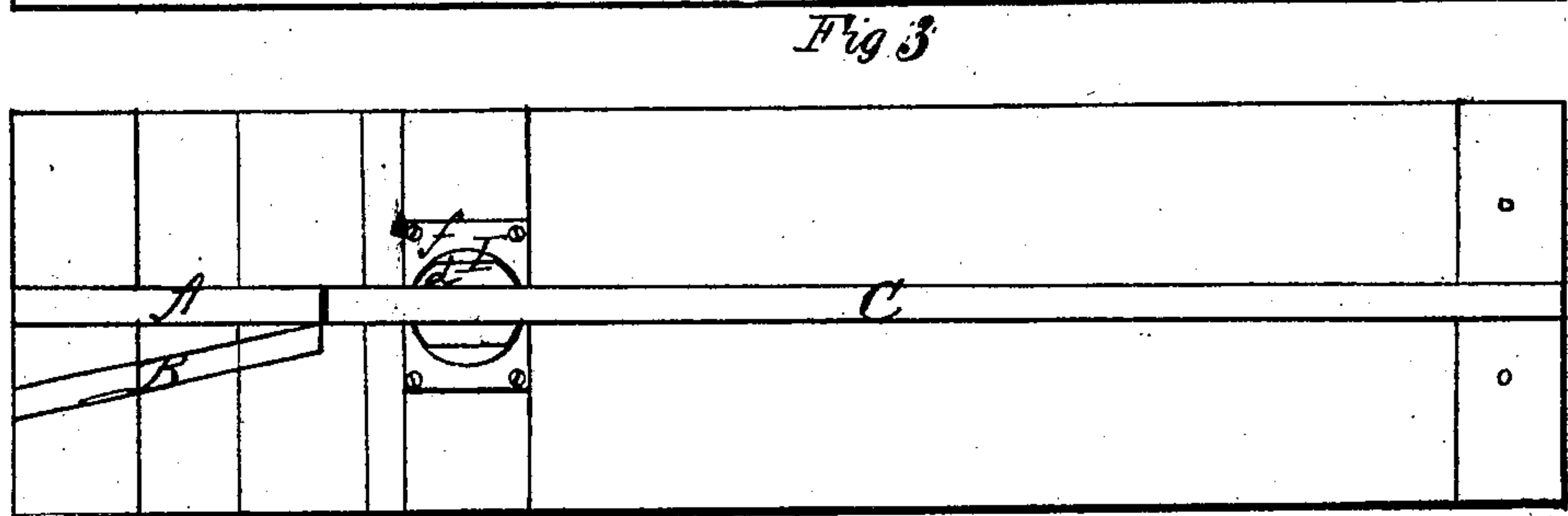
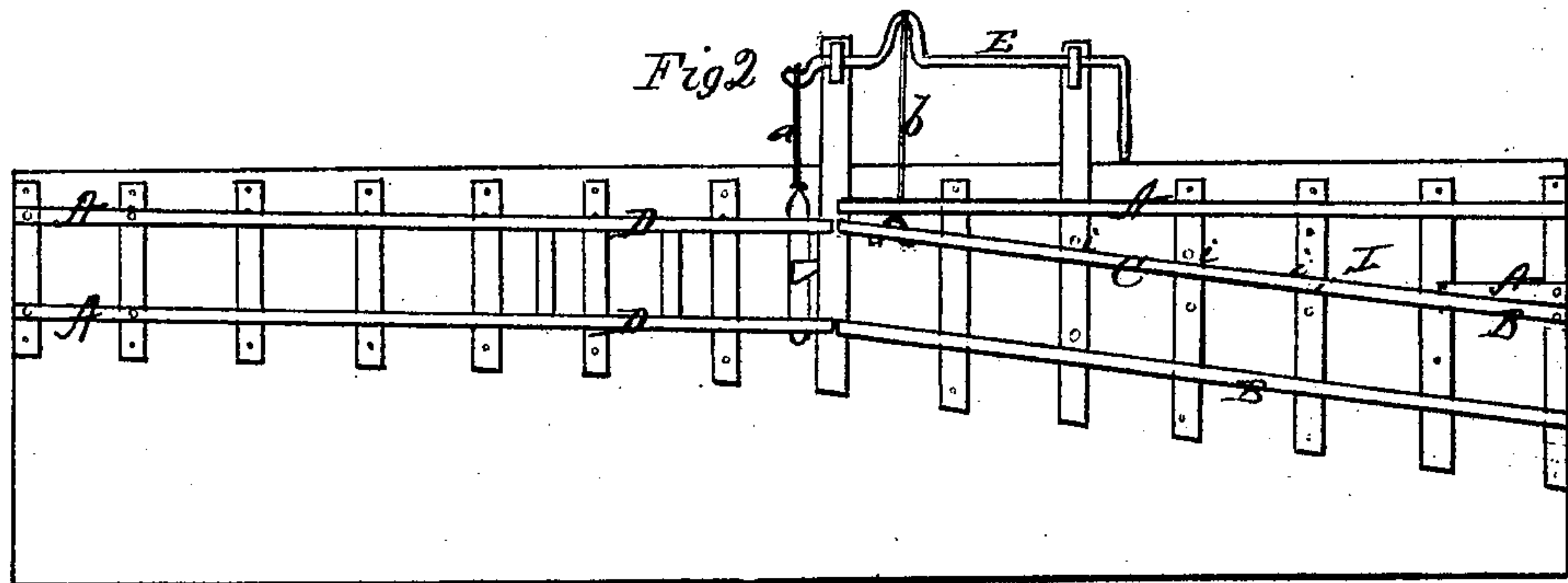
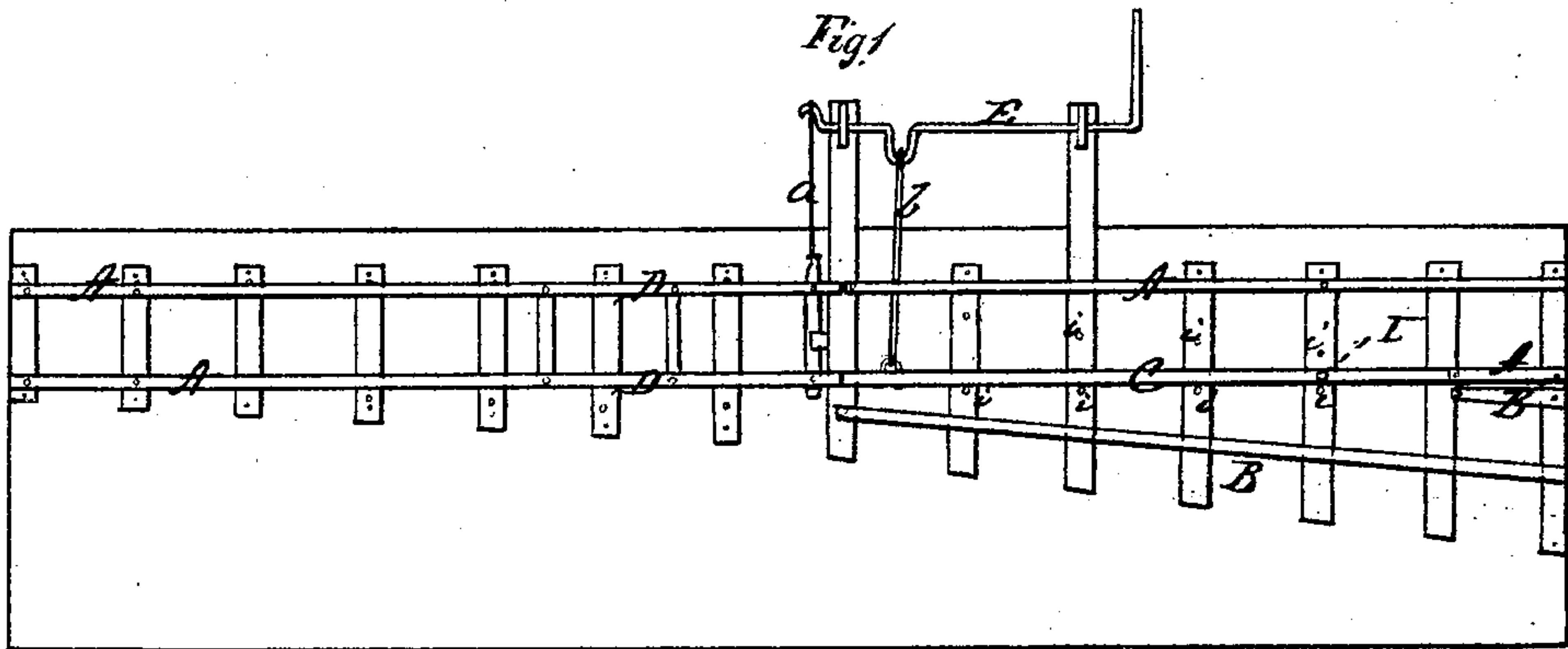


*Lee, Lafontaine, & Harris,*

*Railway Switch.*

*No. 104,860.*

*Patented June 28, 1870.*



*Fig 4*



*Witnesses*  
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# UNITED STATES PATENT OFFICE.

GEORGE W. LEE AND JOHN A. LAFONTAINE, OF BARLOW COUNTY, AND  
ASA L. HARRIS, OF ATLANTA, GEORGIA.

## IMPROVEMENT IN RAILWAY-SWITCH.

Specification forming part of Letters Patent No. 104,860, dated June 28, 1870.

*To all whom it may concern:*

Be it known that we, GEORGE W. LEE and JOHN A. LAFONTAINE, of Barlow county, and ASA L. HARRIS, of Atlanta, in the county of Fulton and in the State of Georgia, have invented certain new and useful Improvements in Railroad-Switches; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

The nature of our invention consists, first, in cutting the track at such convenient point that the united movement of switch-bars and frog-bars will be equal to the entire width of the track—that is, the switch-bars moving in opposite direction to the movement of the frog-bar; and, second, in moving the frog-bar on a pivot at such a point that, while the end next to the switch-bars moves more than one-half the entire width of the track, the other or pivot end will move a distance of twice the tread of a rail or bar, said pivot being fastened firmly to the frog-bar and spiked to sleeper, the whole being operated by a double crank, vertical or horizontal, or by gearing, or any other device which will move simultaneously the frog-bar and switch-bars, thereby making the frog-bar take the place of two bars and frog.

In order to enable others skilled in the art to which our invention appertains to make and use the same, we will now proceed to describe its construction and operation, referring to the annexed drawings, in which—

Figure 1 is a plan view, showing the switch closed. Fig. 2 is a plan view, showing the switch open. Fig. 3 is an enlarged plan view of the frog-bar with its pivot, and Fig. 4 is a transverse vertical section of the frog-bar through the pivot.

A A represent the rails of the main track, and B B those of the side track. C is the frog-bar pivoted to one of the sleepers, as will be hereinafter described. The main track is cut so as to allow us to make two of the rails movable at one end, said bars making the switch-bars, marked D D. The switch-bars D D are connected together, and by a rod, *a*, with a crank-shaft, E. The frog-bar C is also by a rod, *b*, connected with the same crank-

shaft, the two cranks on said shaft pointing in opposite directions. The switch-bars and frog-bar are thus moved in opposite directions, and the point where the main track is cut is selected, so that the united movement of the switch and frog bars will be equal to the entire width of the track, the frog-bar, however, moving more than half the distance. The frog-bar C is, as above mentioned, pivoted to one of the sleepers by means of the pivot I at such a point that while the end next to the switch-bars O O, as already stated, moves more than one-half the entire width of the track, the pivot end will move a distance of twice the tread of a rail or bar, so as to accommodate itself to either the main or the side track, according to as the switch is closed or open. The pivot I consists of a turn-table, *d*, secured firmly to the frog-bar, and then inserted and pivoted within a circular recess on a plate, *f*, which is spiked firmly to the sleeper. The frog-bar moves on friction-strips laid on or inserted in the sleepers, and at each end thereof is a stop, *i*, against which the frog-bar will bear firmly when on either track. The double crank E, with which the switch and frog bars are moved, may be either vertical or horizontal, as may be most convenient, or in place of a double crank we may use gearing or any other device which will move the frog and switch bars simultaneously, thereby making the frog-bar take the place of two bars and frog.

Having thus fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

The rail C, pivoted to the circumferential plate *f* by means of the circular plate I, provided with flanges *d d* which grasp the rail, this rail having relation to the rails A B and D D, and all operated by the crank-rod E, as set forth.

In testimony that we claim the foregoing we have hereunto set our hands this 3d day of February, 1870.

G. W. LEE.

JNO. A. LAFONTAINE.

A. L. HARRIS.

Witnesses:

CALVIN FAY,

THOMAS SPENCER.