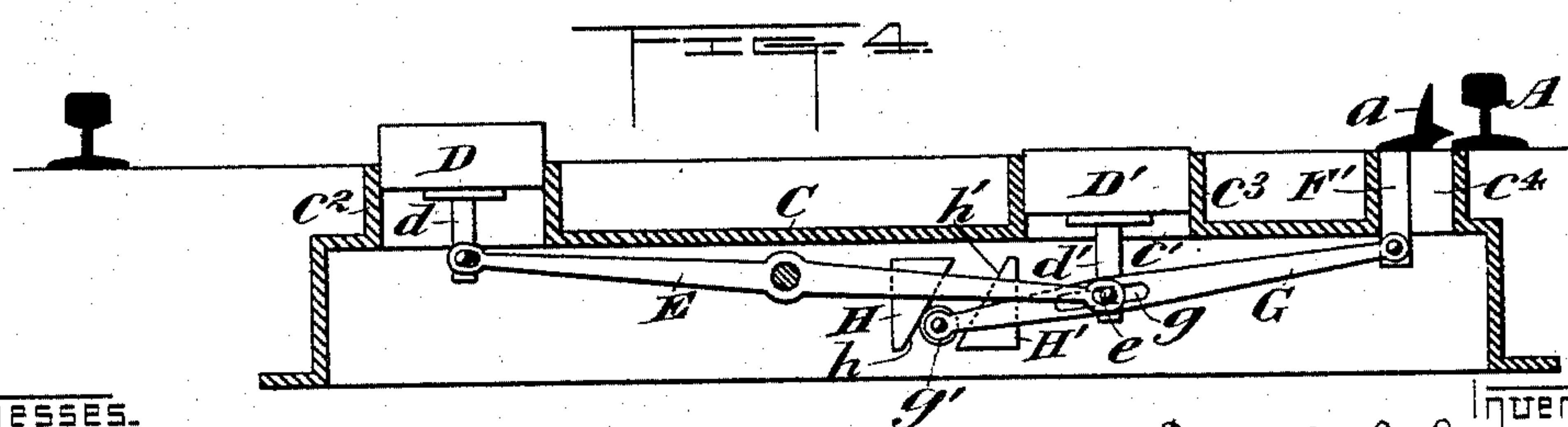
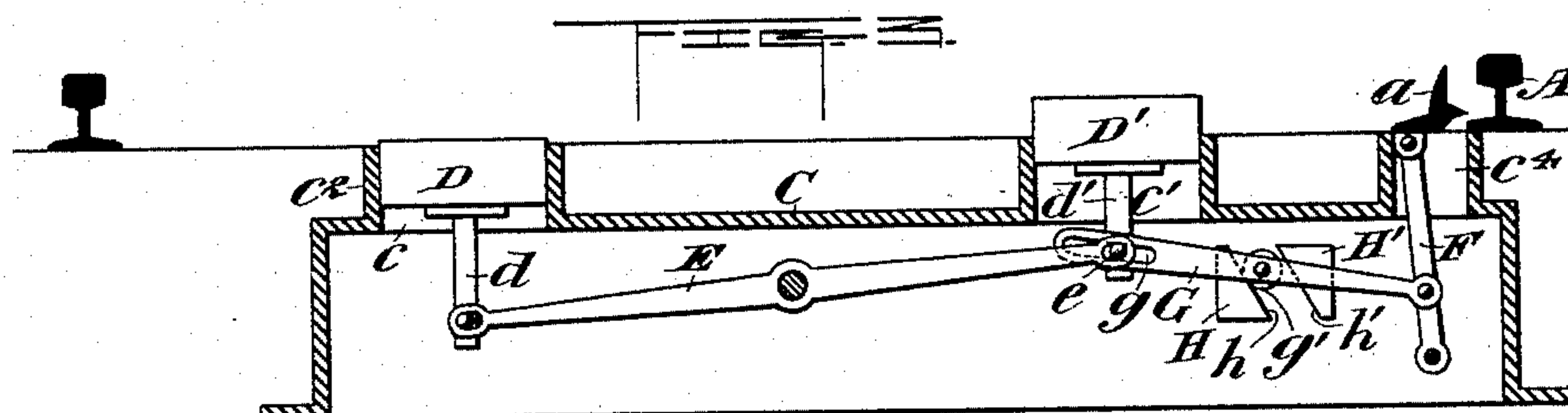
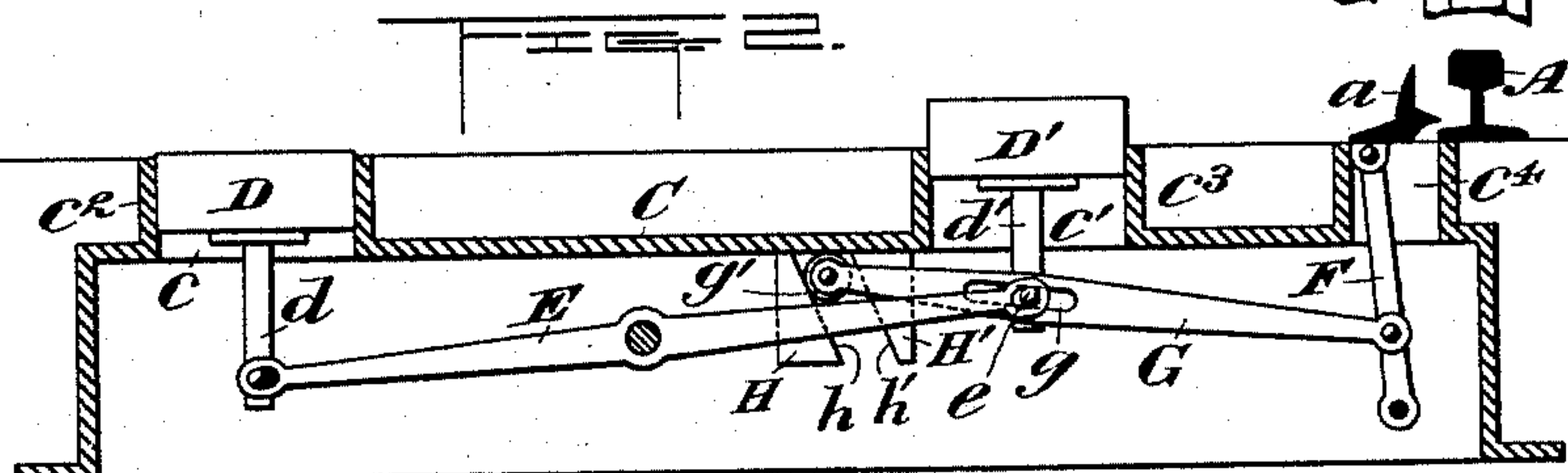
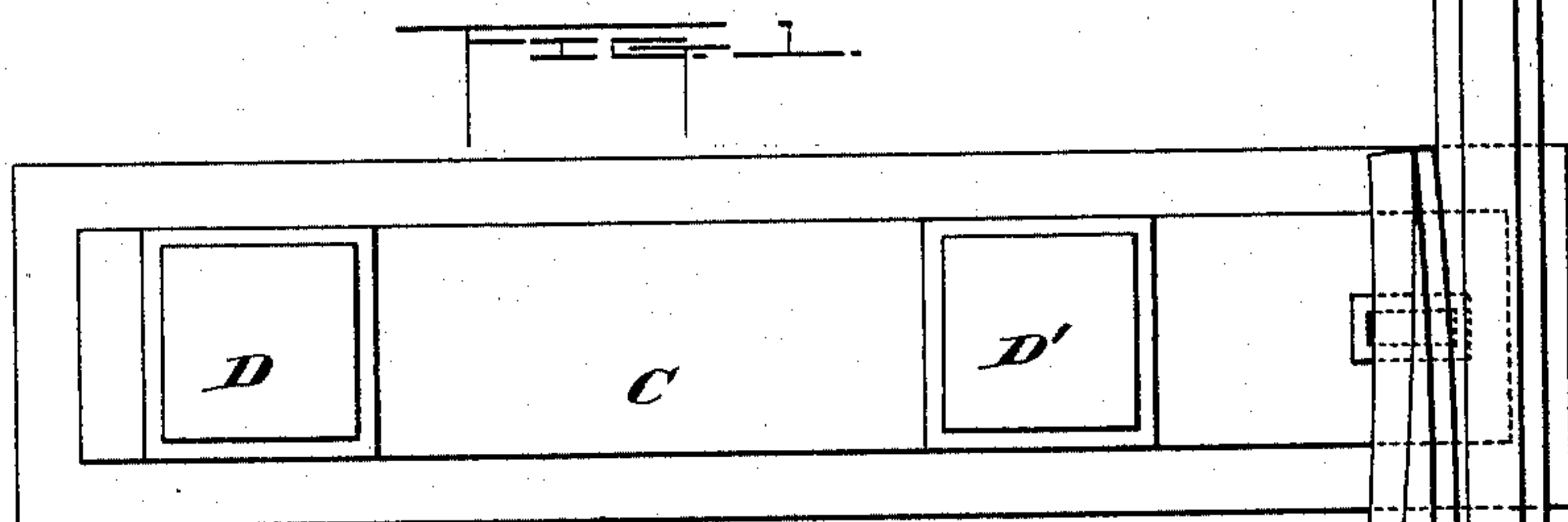


E. C. SEWARD.
RAILWAY SWITCH.

Patented July 10, 1894.



Witnesses.

W. Howard.
George Barry.

by attorneys.

Edward E. Seward

Brown Puwani

UNITED STATES PATENT OFFICE.

EDWARD C. SEWARD, OF MONTCLAIR, NEW JERSEY, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE NEW YORK CAR SWITCH COMPANY, OF NEW YORK, N. Y.

RAILWAY-SWITCH.

SPECIFICATION forming part of Letters Patent No. 522,803, dated July 10, 1894.

Application filed February 13, 1894. Serial No. 500,068. (No model.)

To all whom it may concern:

Be it known that I, EDWARD C. SEWARD, of Montclair, in the county of Essex and State of New Jersey, have invented a new and useful Improvement in Railway-Switches, of which the following is a specification.

My invention relates to an improvement in railway switches with the object in view of providing a simple, durable and effective switch operating mechanism, particularly adapted for use in connection with trolley, cable and horse railways.

A practical embodiment of my invention is represented in the accompanying drawings, in which—

Figure 1 is a plan view of a portion of a track at the point where the switch is located. Fig. 2 is a longitudinal vertical section taken transversely across the track, showing the operating parts in elevation. Fig. 3 is a similar view, showing the inclines located in a different position from that shown in Fig. 2, and Fig. 4 is a similar view, showing the thrust bar connected with an arm rigidly fixed to the movable switch rail or tongue as distinguished from the vibrating arm as shown in Figs. 2 and 3.

The rails of the main track are denoted by A, A' and the movable switch rail or tongue is denoted by α . The switch rail or tongue α is pivoted as usual to swing toward and away from the rail A to guide the train onto the shunt track or permit it to pass along the main track, as may be desired.

A box or casing C for convenience in supporting the operating parts of the switch is arranged to be located transversely across the track and sunk below the surface. It is provided at its top with openings c, c' surrounded by rims c^2, c^3 which form guides for the reciprocating treadles D, D'. The treadles are adapted to move up and down within the rims c^2, c^3 with an easy sliding fit. Bars d and d' depend from the treadles D and D'. The bars d, d' may be fixed rigidly with respect to the treadles.

A lever E fulcrumed within the casing C is loosely connected at its opposite ends with the bars d and d' for the purpose of causing the treadles to act in unison in opposite directions; i. e., when the treadle D is depressed,

it will raise the treadle D' and when the treadle D' is depressed, it will raise the treadle D.

In the form shown in Figs. 2 and 3, the movable switch tongue α is connected with the upper end of a vibrating arm F pivoted at its lower end on a suitable bearing within the casing C, and extending thence up through a narrow opening c^4 in the top of the casing.

A thrust bar G is connected at its end to the vibrating arm F and is provided with an elongated slot g through which the bolt e , which connects the lever E with the depending bar d' , extends so that when the treadle D' is depressed it will force the thrust bar G downwardly. The bar G is also provided with a bearing g' adapted to travel along down an incline h on the lug H, preferably cast integral with the casing C, and projecting downwardly from its side. The said bearing g' may be either an anti-friction roller of well known or approved form or it may be a cylinder or lug fixed to or cast integral with the thrust bar G.

As the thrust bar G is depressed by the treadle D', its bearing g' , passing down the incline h , will force the bar toward the vibrating arm F and thereby swing the latter arm and the tongue α over toward the rail A. When, on the other hand, the treadle D is depressed, it will lift the bar G and, by the engagement of the bearing g' with an opposite incline h' on a lug H'—preferably cast like the lug H integral with the casing C—the bar G will be forced in the opposite direction, drawing the vibrating lever F and the tongue α attached thereto away from the rail A to open the switch.

It will be observed that when the treadle D' is depressed to close the switch, it will bring the connections of the thrust bar with the vibrating arm F and depending bar d' into substantial alignment with the fulcrum of the lever E, so that the switch will be maintained in a closed position against any ordinary jar which might tend to disturb it during the interval between its operation and the entrance of the wheels thereon or their passage thereover.

Instead of locating the inclines H and H' in position to engage a bearing on the projected

end of the thrust bar G, they may be located in the position shown in Fig. 3, and the bearing g' may be formed on the bar G intermediate of the treadles and the vibrating arm F, this will give a greater purchase upon the bearing g' by the treadle but the inclines, in this case, would require to approach a little nearer the horizontal in order to secure the same length of thrust of the bar F, the point of attachment of the thrust bar with the arm F remaining constant.

In the form shown in Fig. 4, I have reversed the inclines shown in Fig. 2, for connecting the thrust bar G directly with a depending arm F', fixed rigidly to the tongue α . In this arrangement the depression of the treadle D will effect the closing of the switch and the depression of the treadle D' the opening of it, in other respects the operation, construction and arrangement of parts is quite similar to that shown in Fig. 2.

It is evident that slight changes might be resorted to in form and arrangement of the several parts without departing from the spirit and scope of my invention, hence I do not wish to limit myself strictly to the structure and arrangement herein set forth, but

What I claim is—

1. Switch operating mechanism, comprising a vertically and longitudinally movable thrust bar, means for connecting one end of the thrust bar with the movable tongue or switch rail, reciprocating treadles, means for causing the treadles to move simultaneously in opposite directions, one of the treadles having a connection with the said thrust bar to move it in one direction and the other treadle having a connection with the thrust bar to move it in the opposite direction, and inclines fixed relatively to the thrust bar the said bar being adapted to engage one of the inclines when forced in one direction and the other incline when forced in the opposite direction, substantially as set forth.

2. The combination with the reciprocating treadles and the lever connecting them to cause them to move simultaneously in opposite directions, of the thrust bar, means for connecting it with the movable switch tongue, the said thrust bar having a connection with one of the treadles to permit it to move longitudinally relative thereto while being forced to move transversely with the treadle, inclines fixed relatively to the thrust bar and a bearing on the thrust bar in position to engage one of the inclines when the thrust bar is swung in one direction and another of the inclines when the thrust bar is swung in the opposite direction, substantially as set forth.

3. The combination with the reciprocating treadles and the lever connecting them to move together in opposite directions, of a vibrating arm, means for connecting it with the movable switch tongue, a thrust bar connected at one end to the vibrating arm and having an elongated slot through which it is connected with one of the reciprocating treadles, inclines fixed relatively to the thrust bar and the bearing on the thrust bar in position to engage one of the inclines when the bar is moved in one direction and the opposite incline when the bar is moved in the opposite direction, substantially as set forth.

4. The switch operating mechanism, comprising reciprocating treadles, means for connecting them to move simultaneously in opposite directions, a thrust bar, means for connecting it with the movable switch tongue, the said thrust bar having a swinging movement under the control of one of the treadles and means for imparting to the thrust bar a longitudinal movement simultaneously with its swinging movement, substantially as set forth.

EDWARD C. SEWARD.

Witnesses:

IRENE B. DECKER,
FREDK. HAYNES.