(No Model.) 3 Sheets—Sheet 1.

J. EVANS.

RAILWAY SWITCH.

No. 283,875. Patented Aug. 28, 1883.

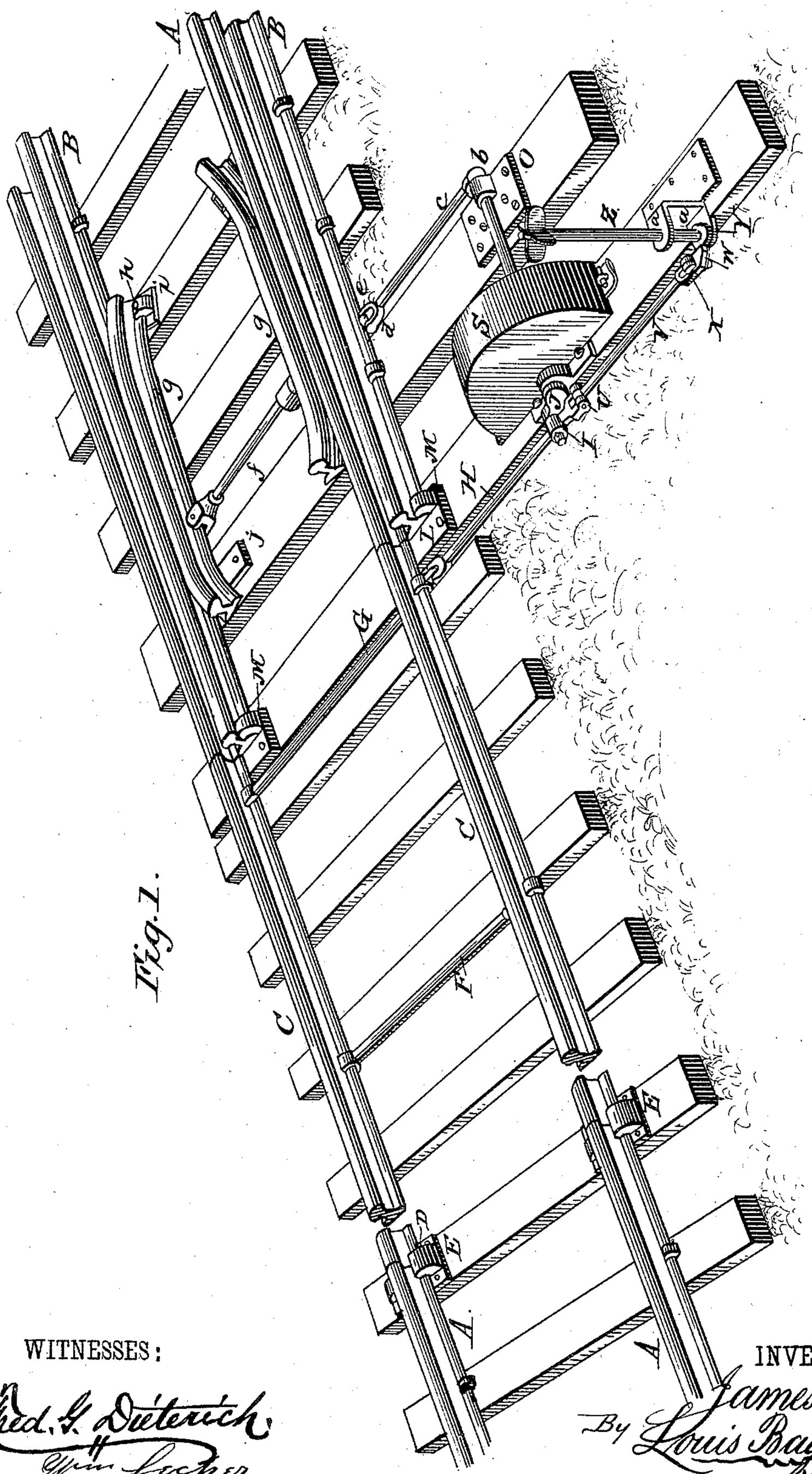

Fig. 1.

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(No Model.) 3 Sheets—Sheet 2.

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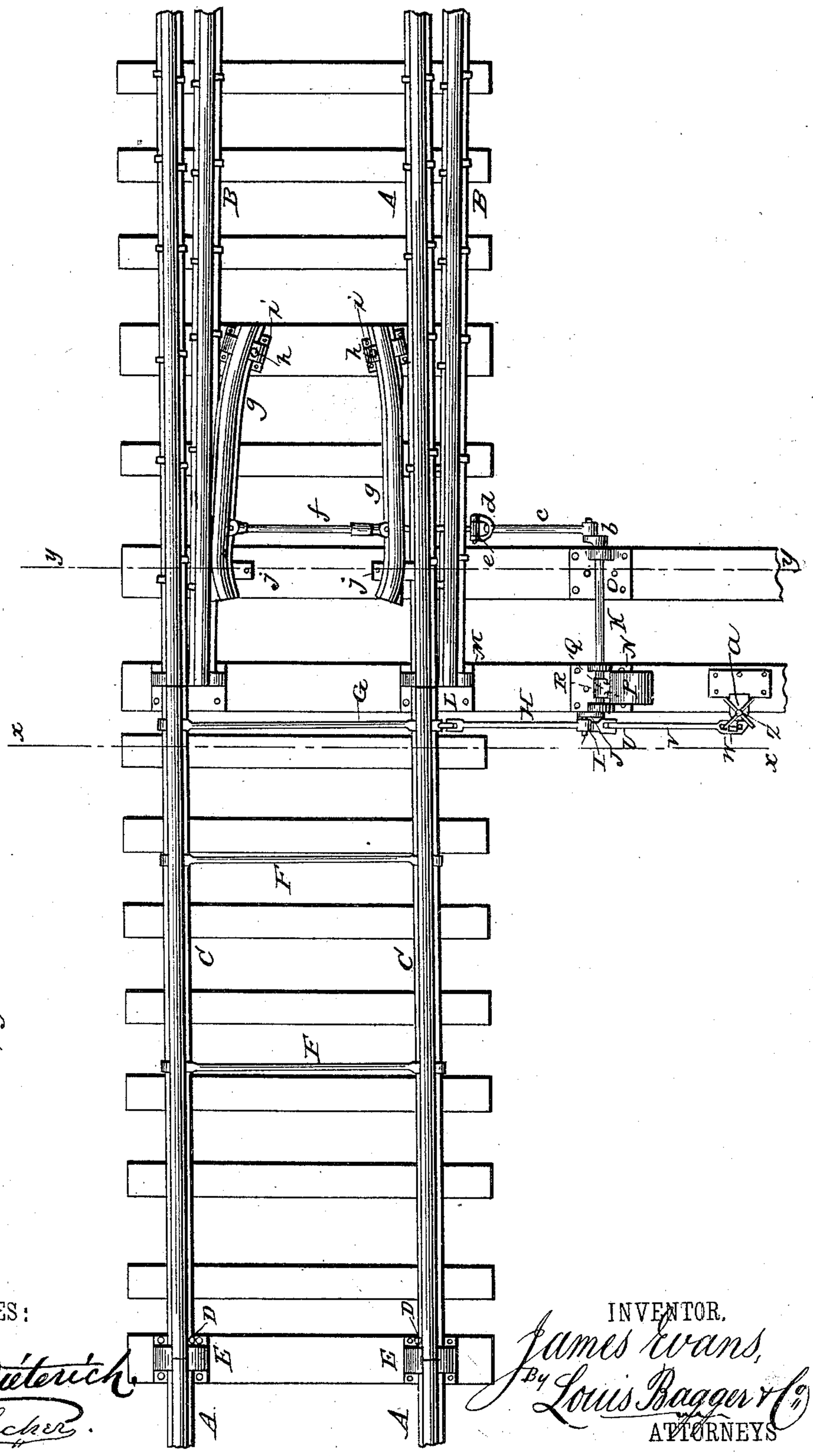

Fig. 2.

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RAILWAY SWITCH.

No. 283,875. Patented Aug. 28, 1883.

Fig. 3.

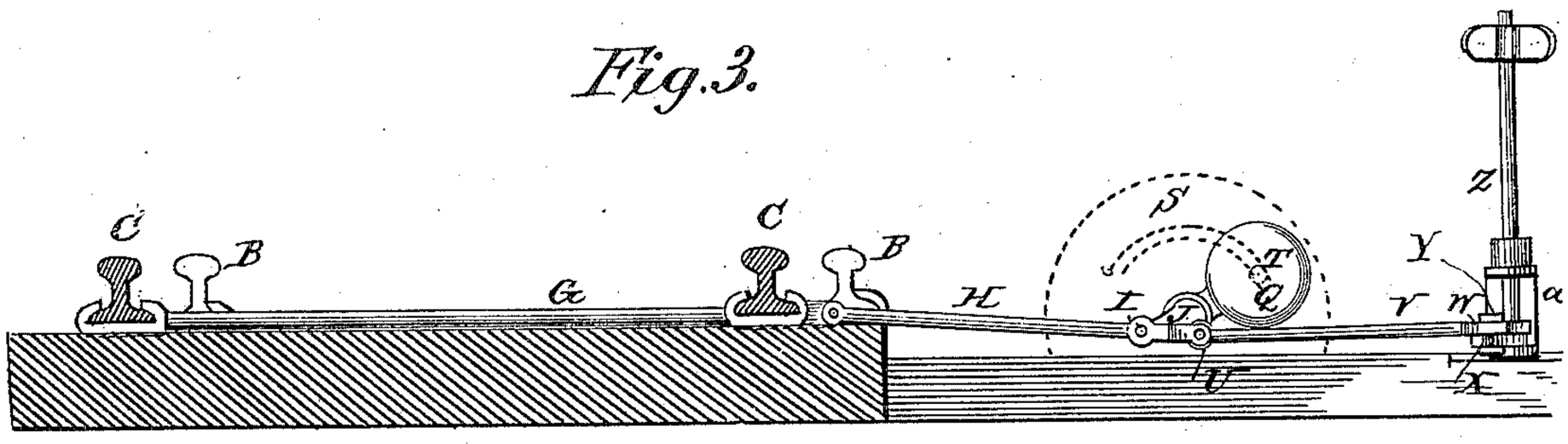


Fig. 4.

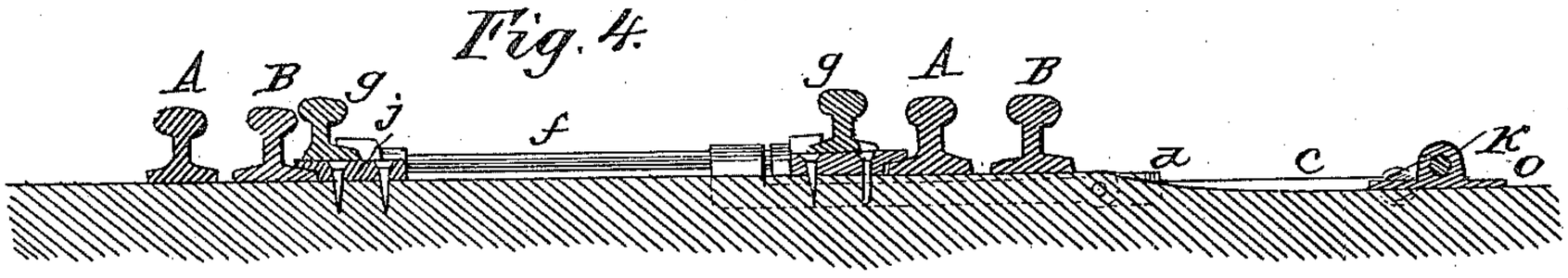


Fig. 5

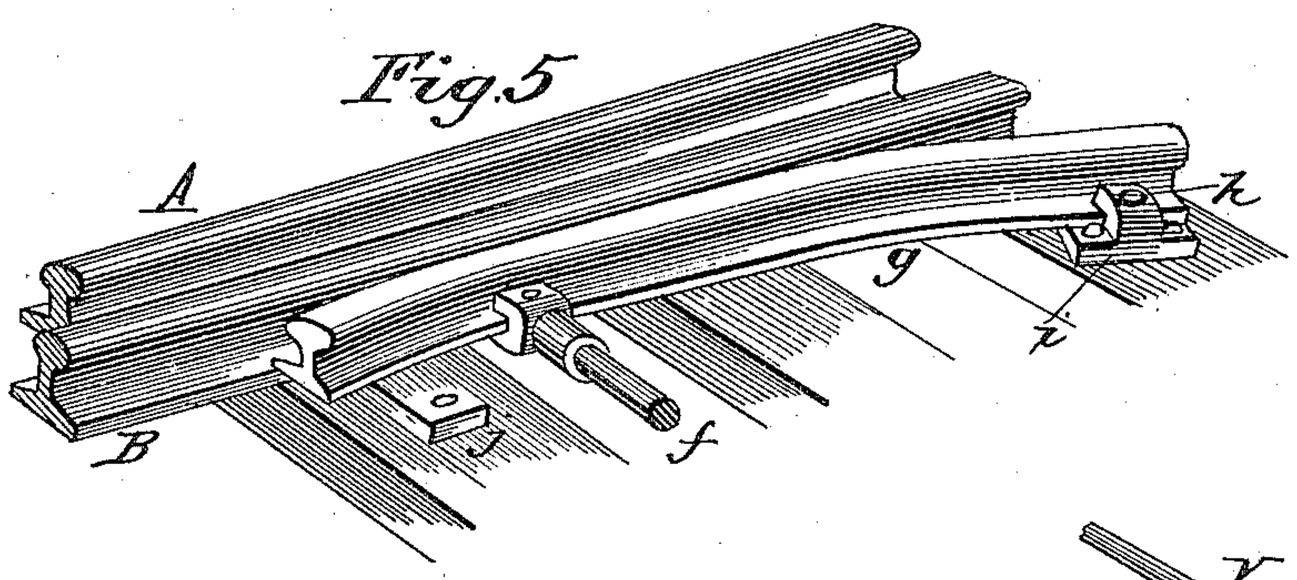


Fig. 6.

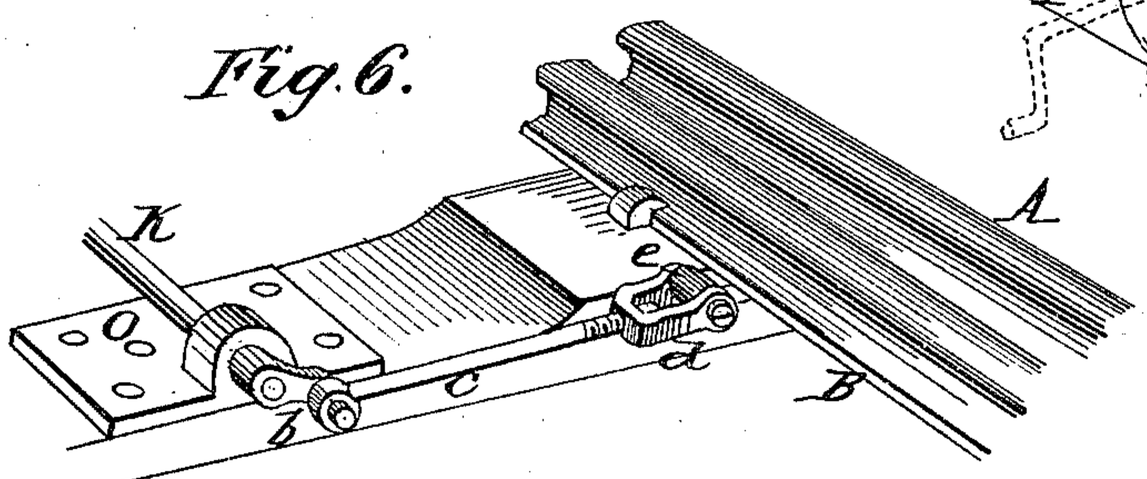
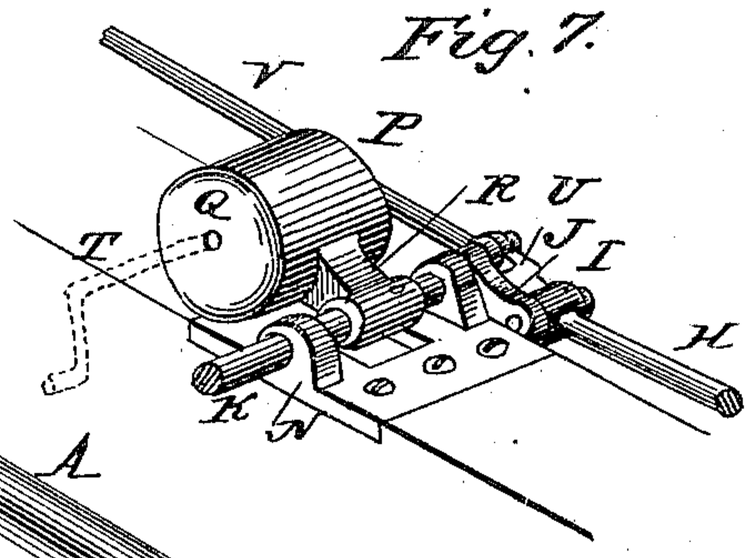


Fig. 7.



WITNESSES:

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UNITED STATES PATENT OFFICE.

JAMES EVANS, OF ONEONTA, NEW YORK.

RAILWAY-SWITCH.

SPECIFICATION forming part of Letters Patent No. 283,875, dated August 28, 1883.

Application filed April 20, 1883. (No model.)

To all whom it may concern:

Be it known that I, JAMES EVANS, of Oneonta, in the county of Otsego and State of New York, have invented certain new and useful Improvements in Railway-Switches; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a perspective view of a portion of a railroad-track provided with my improved switch. Fig. 2 is a plan view of the same. Fig. 3 is a cross-section on line *x x*, Fig. 2. Fig. 4 is a similar view on line *y y*, Fig. 2; and Figs. 5, 6, and 7 are detail views.

Similar letters of reference indicate corresponding parts in all the figures.

My invention has relation to automatic railway-switches operated by two pivoted guard-rails and having an automatically-operated signal; and it consists in the improved construction and combination of parts of the signal-operating mechanism, as hereinafter more fully described and claimed.

In the accompanying drawings, the letters A A indicate the main-track rails; B B, the rails of the siding, and C C the switch-rails, which are pivoted at the ends, connected to the rails of the main track upon bolts D, and resting upon the flat upper surface of two chairs, E, provided with inward-bent projecting lips, which clamp over the flanges of the foot of the rails, preventing them from becoming displaced.

The switch-rails are held together at an equal distance by means of switch-rods F, of the usual construction, the outer one, G, of which, nearest to the sliding ends, is extended at one end beyond the rail, and a connecting-rod or pitman, H, is hinged to it at that end. This pitman forms an eye, I, near its outer end, which fits upon the wrist-pin of a crank, J, fastened upon the end of a rock-shaft, K, and turns below the plane of the said shaft, drawing the pitman, and through it the sliding ends of the rails, slightly downward, holding them down upon the chairs L, upon which they slide. These chairs consists of flat plates M, fastened to the tie, upon which the ends of the rails of the siding and main track rest, upon the outer portion of which plates the sliding ends of the switch-rails slide, while their inner portions are provided with upward and inwardly bent flanges, which clamp the bottom flanges of the siding and main-track rails.

The two ties nearest the ends of the stationary rails of the switch are extended to one side, and bearings N and O are fastened upon their upper surfaces, in which bearings the rock-shaft K turns.

A weighted lever, P, is fastened to the rock-shaft at bearing N in such a manner that it will rest upon the tié upon either side of the bearing when it is tilted, throwing the switch-rail in position before the end of either of the tracks. This lever consists of a cylindrical heavy body, Q, having a short shank or stem, R, projecting from one side of its surface, which is fastened to the rock-shaft, and is protected from damage from the outside by a semi-cylindrical casing, S, having a segmental slot in one of its heads concentric with the arc described by the center of the cylindrical weight Q, and at the same distance from their common center, through which slot a handle, T, is inserted into the weight, by which the lever may be operated.

To the end U of the pitman H, extending beyond the eye I, is hinged a rod, V, having a flat slotted head, W, and a vertical pin or bolt, X, projecting upward from the end of a crank, Y, turning in a horizontal plane, projects through the slot in the said head. Crank Y is fastened to the lower end of an upright rod, Z, turning in bearings *a* upon the outer end of the tie, upon which bearing N is fastened, and winged signal is fastened upon the top of rod Z, so that as the switch is turned the signal will be turned, showing the position of the switch, and the head of rod V, being slotted, will admit of the signal-rod being revolved one-fourth of a revolution while the crank J makes one-half a revolution, or nearly that. A crank, *b*, is fastened upon the other end of the rock-shaft K, outside bearing O, and a pitman, *c*, is hinged to the said crank at one end, while its other screw-threaded end is inserted into a screw-threaded socket in the middle of a bent bar or stirrup, *d*, which is hinged to the end of an arm, *e*, which passes under the two rails of the

siding and main track, and is fastened at its inner upwardly-bent end to a rod, *f*, the ends of which clasp and hold the bottom flanges of two pivoted guard-rails, *g*, near their free ends. These guard-rails are slightly curved at their ends away from the rails, between which they are placed, and the ends pointing away from the switch are pivoted upon two bolts, *h*, passing through the inner lips of two chairs, *i*, similar to the chairs E, through the inner bottom flanges of the rails and into the bases of the chairs. The free ends of the guard-rails rest and slide upon two plates, *j*, secured upon the upper side of one of the ties, and are raised slightly above the inner rails of the siding and main track, inside and close to which they are placed, and when slid to one side or another one of the guard-rails will bear against the side of one of the stationary rails, the tread of the guard-rail overlapping the tread of the stationary rail.

The two cranks J and *b* point in the same direction, and when the weighted lever is tilted away from the track the switch-rails are slid before the ends of the rails of the siding, while the guard-rails are slid in the same direction, throwing the one of them away from the rail of the siding, while the other is brought to bear against the side of the main-track rail, and vice versa, by tilting the lever toward the track. It will thus be seen that one of the guard-rails will always bear against the inside of the inner rail of the track, which is not connected with the switch-rails, and if, by accident or carelessness, a train comes in upon this track, the flanges of the wheels will strike the guard-rail, forcing it aside and throwing the switch-rails in position, the guard-rail operating the crank upon the rock-shaft, which again turns the switch-operating crank, the lever P assisting in turning the shaft by its weight when it has passed its perpendicular position.

The throw of the guard-rails may be regulated by screwing the screw-threaded end of the pitman *c* farther in or out in the socket in stirrup *d*, drawing them closer to one side or the other, according to the wear of the rails.

In this manner I obtain a stub-switch easy of construction and operation, and which will act automatically, preventing any accident caused by the switch being placed before the wrong track.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

1. The combination of the switch-rail-operating pitman H, having eye I and projecting end U, rock-shaft K, having operating-lever P and crank J, connecting-rod V, having flat slotted head W, and pivoted upright signal-rod Z, having crank Y at its lower end, as and for the purpose shown and set forth.

2. The combination of two pivoted guard-rails adapted to be displaced by the flange of a passing car-wheel, and having means for connecting them to the switch-operating rock-shaft, the said rock-shaft having a crank at one end and operated by the said guard-rails, a connecting-rod hinged between the switch-rod and the crank, having an eye extending beyond the point, where it is hinged upon the crank, a connecting-rod hinged to the said extended eye and having a flat slotted head at its other end, and a vertically-pivoted signal-rod having a crank turning in a horizontal plane at its lower end, and provided with a pin projecting into and sliding in the said slotted head, the said slot being of such a length as to admit of the vertical shaft turning one-fourth revolution for every one-half revolution of the rock-shaft and its crank, as and for the purpose shown and set forth.

In testimony that I claim the foregoing as my own I have hereunto affixed my signature in presence of two witnesses.

JAMES EVANS.

Witnesses:
BURR MATTICE,
D. W. BRAINARD.