2 Sheets--Sheet 1.

A. QUIMBY.

Railway-Switches.

No. 156,818. Patented Nov. 10, 1874.

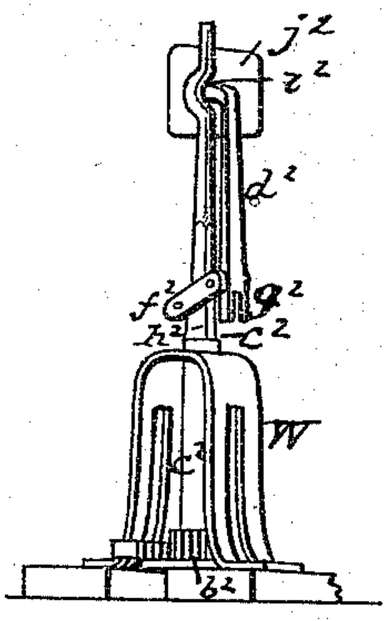

Fig. 2.

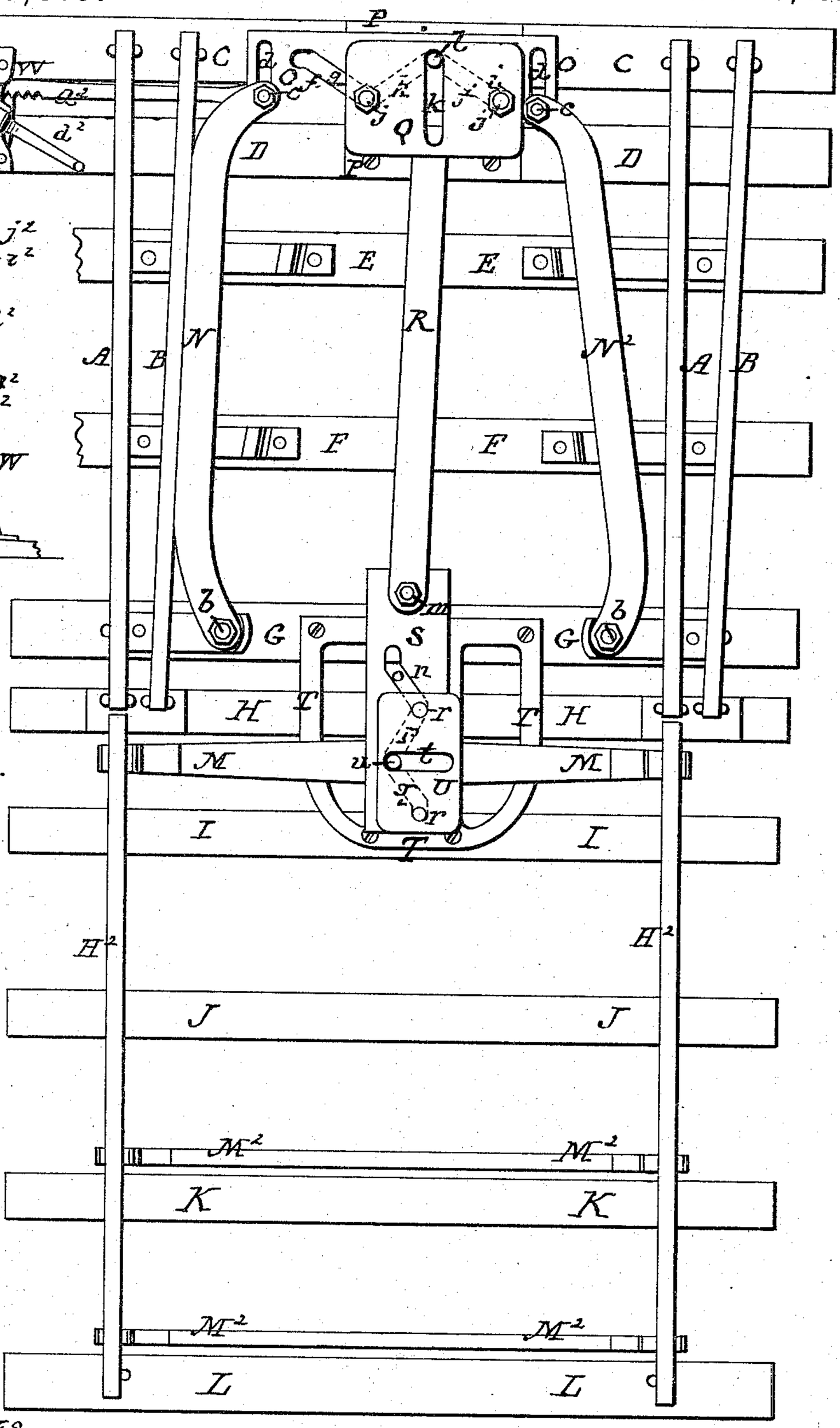

Fig. 1.

WITNESSES

Geo. H. Earl

Jas. F. Roche

INVENTOR.

Asahel Quimby

Per Brown Brothers

Attorneys

THE GRAPHIC CO. PHOTO-LITH. 39 & 41 PARK PLACE, N.Y.

2 Sheets--Sheet 2.

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Fig. 3.

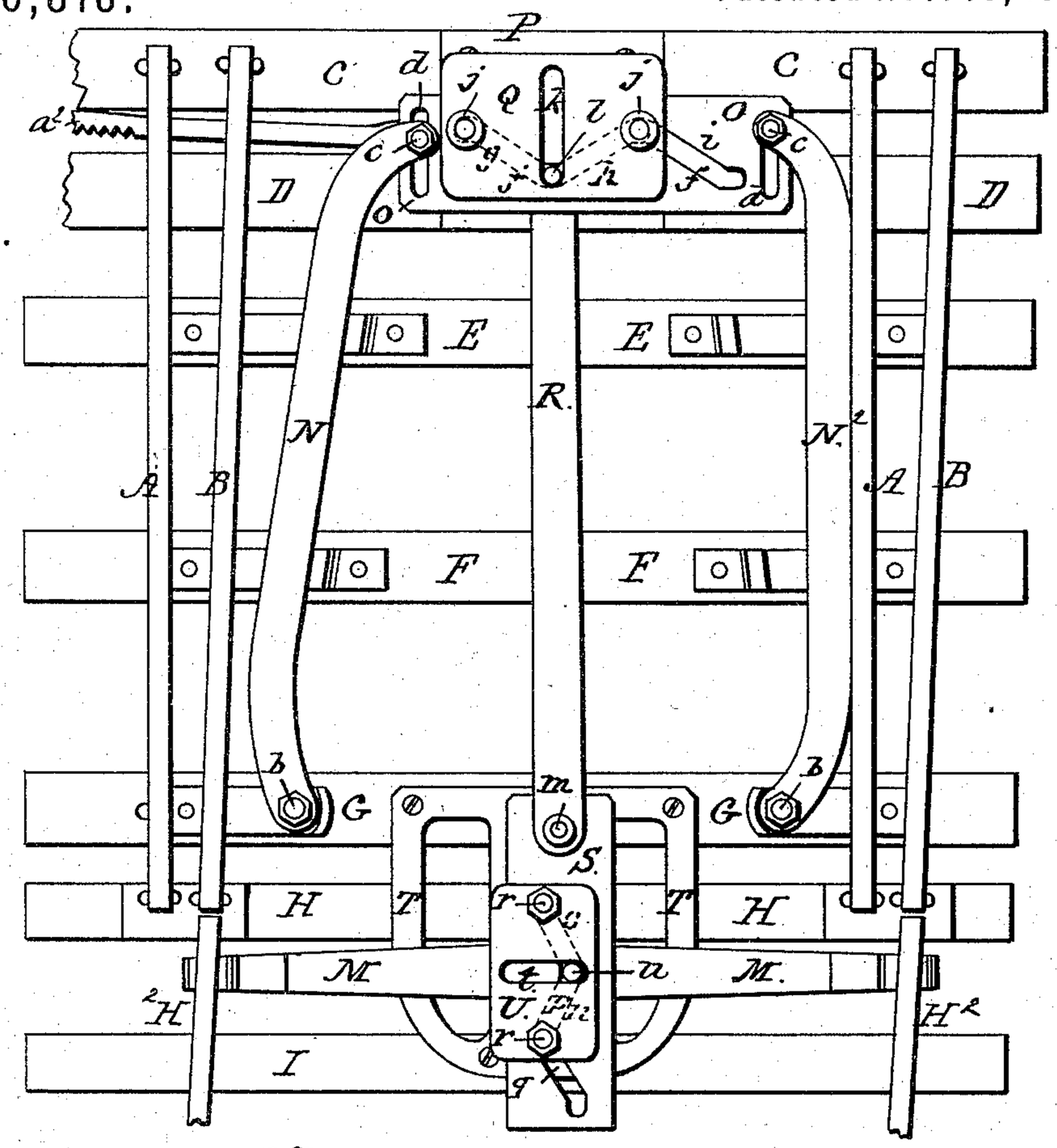


Fig. 4.

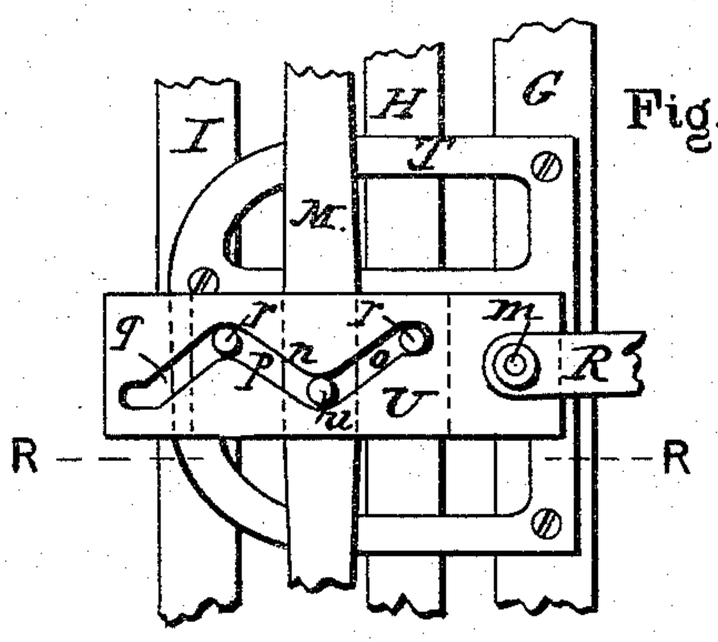


Fig. 5.

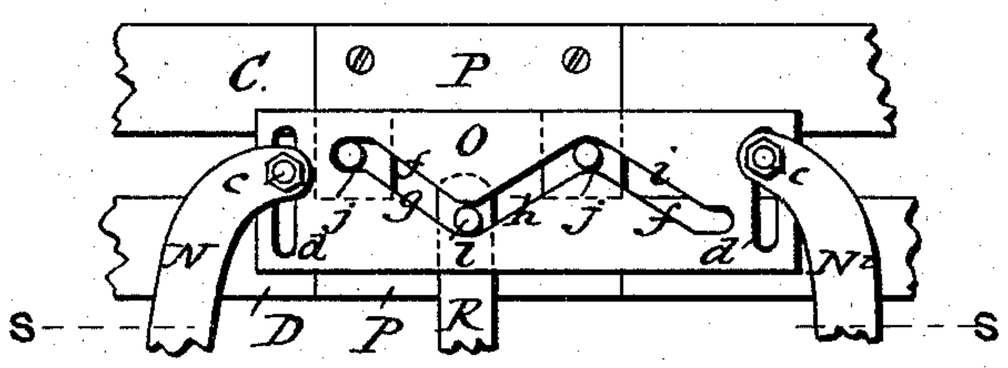


Fig. 6.

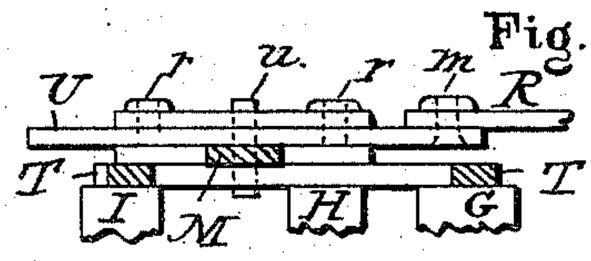
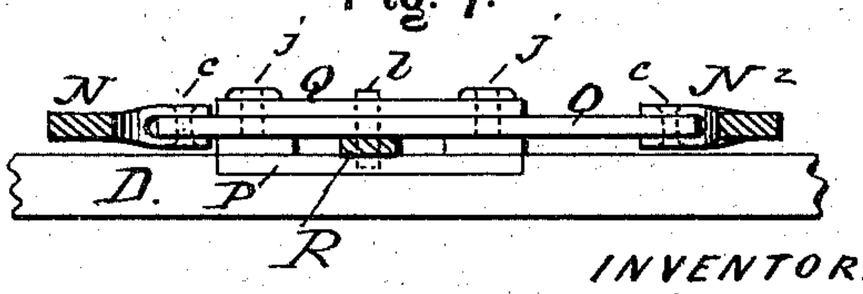


Fig. 7.



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INVENTOR.

Asahel Quimby

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Attorneys

THE GRAPHIC CO. PHOTO-LITH. 39 & 41 PARK PLACE, N.Y.

UNITED STATES PATENT OFFICE.

ASAHEL QUIMBY, OF SALEM, MASSACHUSETTS.

IMPROVEMENT IN RAILWAY-SWITCHES.

Specification forming part of Letters Patent No. **156,818**, dated November 10, 1874; application filed August 3, 1874.

To all whom it may concern:

Be it known that I, ASAHEL QUIMBY, of Salem, in the county of Essex and State of Massachusetts, have invented an Improved Arrangement for Operating Railroad-Switches, of which the following is a specification:

The object of this invention is to prevent steam or other cars from leaving the rails should a switch be misplaced. This object is accomplished by the arrangement of levers and other mechanical devices between the inner pair of rails to which the switch-rails are adapted, which levers and other parts are connected to the switch-rails, and in their arrangement are adapted to be operated upon by the flanges of the car-wheels, so that, in the approach of the cars over either pair of rails to which the switch-rails are adapted toward the switch-rails, with a misplacement of the switch-rails, the switch-rails will be moved automatically into line with the rails along which the cars are passing before such cars reach and come upon the switch-rails.

In Plate 1, Figure 1 is a plan view of the present improved arrangement of devices for operating the switch-rails automatically by the approach of a car along either line of the two lines to which the switch-rails are adapted. Fig. 2 is a perspective view of parts arranged for the manipulating by hand of the parts for operating the switch-rails.

In Plate 2, Fig. 3 is a plan view similar to Fig. 1, Plate 1, but with the switch-rails in line with the other pair of rails; Figs. 4 and 5, plan views in detail; and Figs. 6 and 7, sectional views in detail along lines R R and S S, Figs. 4 and 5, respectively.

In the drawings, A and B represent, respectively, the rails of two pairs of rails, suitably located upon sleepers C, D, E, F, G, and H, for cars running upon either pair of the two pairs to pass upon the pair of switch-rails H^2, should the switch-rails H^2 be properly set. The switch-rails H^2 are arranged, as ordinarily, upon sleepers H, I, J, K, and L, and connected by cross-bars M M^2 M^2, so that their two rails, when operated, will move as one. N N^2, two levers located between the inner rails of the two pairs of rails. These two levers N N^2 are of equal length, and similarly curved at each end, as shown, and in their location, as above stated, they are hung at one end upon pivots *b* of the sleeper G, and at their other end upon pivots *c*, that are arranged within separate slots *d* of a common plate, O. The slots *d* are parallel to each other, and at right angles to the length of the sleepers, and the plate O having the said slots rests upon the sleepers C D, so that it can move freely thereon between the inner rails of the pair of rails A B. *f*, a zigzag slot of three parts, *g h i*, in plate O, between parallel slots *d* of said plate; *j*, two pins fixed to a plate, P, under the plate O, which plate P, in turn, is fixed to the sleepers C D. The pins *j* pass through the zigzag slot *f* of plate O, and are fastened above to a plate, Q, resting on the plate O. The plate Q has a slot, *k*, which is parallel to the parallel slots *d* of the plate O, and in this slot *k* is a pin, *l*, which passes down through the zigzag slot *f* of plate O, and under such plate O is attached to one end of a lever, R. This lever R is between, and it extends in the same direction as, the two levers N N^2, and at its end *m* it is pivoted to a plate, S, which plate S along its length has a zigzag slot, *n*, in three parts, *o p q*. In zigzag slot *n* of plate S there are two pins, *r*, which are fixed to the bed-plate T of sleepers G H I, and also fixed to a plate, U, above the zigzag slotted plate S, and said upper plate is slotted at *t* in the direction of the length of the sleepers, and, by a pin, *u*, in such slot *t*, and the zigzag slot *n* of under plate T, the upper plate is connected to the cross-bar M, tying the switch-rails H^2 H together.

In the drawings, Fig. 1, the switch-rails H^2 H^2 are in line for the rails A A, and in this position the one lever, N, lies against and along the inner face of the inner rail B of the series of rails A B A B, while the other lever, N^2, is away from the other inner rail A of the said series of rails A B A B.

With the switch-rails H^2 H^2 in line with the rails B B, as shown in Fig. 3, the position of the levers N N^2 is reversed.

Should a car be approaching along a line of rails other than the one in line with the switch-rails, the flanges of the car-wheels, as they move along over such rails, pass in and between the lever N or N^2, as the case may be, and the rail

A or B, as the case may be, with which such lever is in contact, and in so passing swings such lever on its fulcrum *b* away from contact with the rail A or B, and through such movement of the lever, and of the mechanism herein described connecting it with the switch-rails, the switch-rails are automatically moved into line with the line of rails over which the car is passing before the car reaches and passes over the line of joint between the switch-rails and rails A B, thereby keeping the cars on the rails.

The above-described movement of the lever N or N^2, as the case may be, moves its opposite lever into contact with the rails, and operates, through the arrangement of slotted plates connected to the levers N N^2, the lever R, which, in turn, operates the slotted plates connected to the cross-bar M of the rails H^2 H^2.

At V, Fig. 1, and by Fig. 2, an arrangement of mechanism is shown for operating the switch-rails by hand. This mechanism consists of a rack-bar, a^2, which is hung at one end to the slotted plate O, and is extended therefrom under one set of the rails A B, along the length of the sleeper C, to a position somewhat outside of said rails. With this rack-bar a^2 engages a pinion-wheel, b^2, of an upright operating-rod, c^2, arranged to turn in a standard, W, fixed to the sleepers C D. The rod c^2 has an operating-handle, d^2, and the handle d^2 is hung to a clasp, f^2, of the rod c^2, so that it can be swung up out of the way, as shown in Fig. 2, and there caught by its bent end about the rod c^2 by the bent end passing through a hole, i^2, in a plate, j^2, and there secured by pin or otherwise, and it is constructed with a forked end, g^2, for being interlocked with the square portion h^2 of the operating-rod c^2 when it is swung down into a horizontal position, as shown in Fig. 1. Swinging round the rod c^2, pinion-wheel b^2 is turned, and thus slides the rack-bar a^2, moving the slotted plates O, and thus, through them, as before described, the switch-rails. The handle d^2, through its bent end in the plate j^2, can be securely fastened by pin or padlock, as desired.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. The levers N N^2, hung and connected to slotted plates O and Q, which are arranged between the rails A B, in combination with the slotted plates S and U, connected to switch-rails H^2 H^2, and the lever R, connecting-plates S and U, and plates O Q, substantially as herein described, and for operation as specified.

2. The plate j^2 on operating-rod c^2, having hole i^2 to receive the bent end of handle d^2, substantially as and for the purpose specified.

The above specification of my invention signed by me this 9th day of March, A. D. 1874.

ASAHEL QUIMBY.

Witnesses:

EDWIN W. BROWN,

GEO. H. EARL.