

(No Model.)

2 Sheets—Sheet 2.

M. F. FINNERTY.
SWITCH.

No. 587,655.

Patented Aug. 3, 1897.

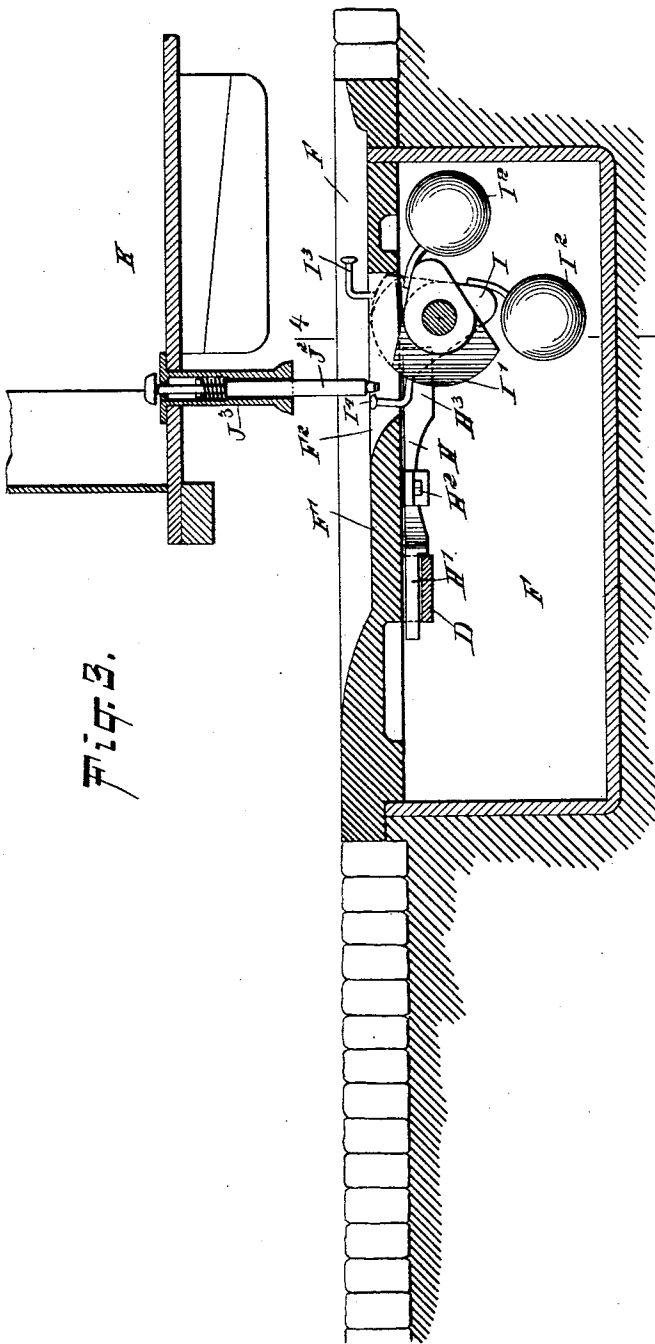


Fig. 3.

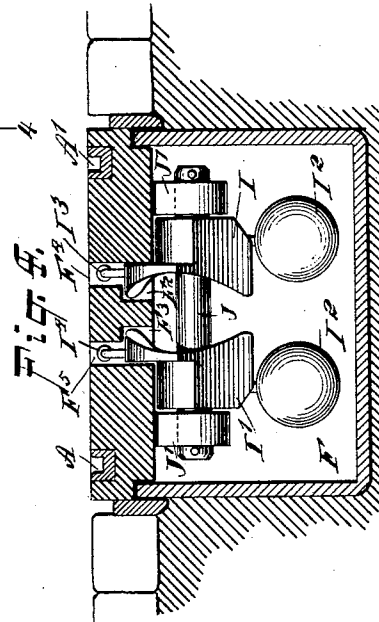


Fig. 4.

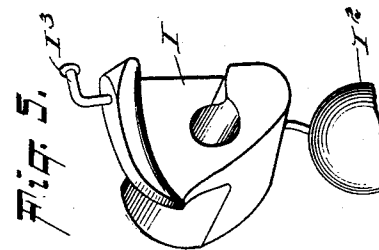


Fig. 5.

WITNESSES:
William P. Goebel.
Rev. G. Hooper.

INVENTOR
M. F. Finnerty
BY *[Signature]*
ATTORNEYS.

UNITED STATES PATENT OFFICE.

MICHAEL F. FINNERTY, OF BROOKLYN, NEW YORK, ASSIGNOR OF ONE-HALF TO C. OTTO STUMPF, OF SAME PLACE.

SWITCH.

SPECIFICATION forming part of Letters Patent No. 587,655, dated August 3, 1897.

Application filed January 21, 1897. Serial No. 620,111. (No model.)

To all whom it may concern:

Be it known that I, MICHAEL F. FINNERTY, of Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Switch, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved switch more especially designed for use on surface and elevated railroads and arranged to permit the operator in charge of a car to readily set the switch to the desired direction when the car approaches the switch.

The invention consists principally of a switch-point connected with a bar adapted to be shifted transversely, a lever connected with the said bar, and cam-levers adapted to be actuated from the approaching car and controlling the movement of the said bar to shift the switch-point into an open or closed position.

The invention also consists of certain parts and details and combinations of the same, as will be fully described hereinafter and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a plan view of the improvement, showing the switch closed to the side-track. Fig. 2 is a plan view of the same with parts broken out and parts in section. Fig. 3 is a longitudinal sectional elevation of the improvement on the line 3 3 of Fig. 1. Fig. 4 is a transverse section of the same on the line 4 4 of Fig. 3. Fig. 5 is a perspective view of one of the cam-levers, and Fig. 6 is an enlarged sectional side elevation of one of the switch-points in position on the rail.

The rails A A' for the main track are adapted to be connected with the rails B B', respectively, of the side-track by a switch-point C, pivoted at C' at the junction of the rails A and B, as is plainly indicated in the drawings. The tapered front end C² of the switch-point is beveled at the top, as is plainly shown in Fig. 6, so as to readily enter a recess under the head of the rail A when the switch-point is moved into a closed position—that is, connects the main-track rail A with the side-track rail B. By this arrangement

a continuous surface is formed for the car-wheel to readily pass from one rail to the other without danger of the flange of the car-wheel passing in between the free end of the switch-point and the rail A in case the said switch-point is not completely closed.

The free end of the switch-point C is provided with a downwardly-extending pin C³, connected at its lower end with a transversely-extending bar D, fitted to slide in suitable bearings E, attached to the under side of a cover F' for a pit or casing F. The opposite end of the bar D is connected by a pin G' with a second switch-point G for making the sections of the main-track rail A continuous at the intersection of the side-track rail B', the said switch-point G swinging simultaneously with the switch-point C for opening and closing the main track to the side-track.

The bar D is provided at or near its middle with an opening D', engaged loosely by the forward end H' of a lever H, fulcrumed at or near its middle at H² in a suitable block secured to the under side of the cover F'. The other end H³ of the lever H is rounded off, as is plainly shown in Fig. 2, to produce curved or cam edges adapted to be engaged by cam-levers I and I', mounted to swing loosely on a transversely-extending rod J as their fulcrum, the said rod being supported in suitable lugs J' from the cover F'. (See Fig. 4.) Each of the cam-levers I and I' is provided with a spring or weight I² for holding the cam-levers in a normal position, as hereinafter more fully described.

From the upper end of the cam-levers I and I' project arms I³ and I⁴, respectively, passing through slots F² and F³, respectively, into longitudinally-extending recesses or grooves F⁴ and F⁵, respectively, formed in the top of the cover F'. The arms I³ and I⁴ project rearwardly in the said recesses—that is, toward the approaching car—and the said arms are adapted to be engaged by the lower ends of spring-pressed rods J², fitted to slide vertically in suitable casings J³, attached to the platform of the car K, each rod J² being under the control of the operator in charge of the car. The rods J² normally stand in an uppermost position—that is, with the lower ends above the track—and when a car approaches the switch the operator presses the correspond-

ing rod J downward, so as to pass into the corresponding groove F⁴ or F⁵ to be in the path of the arm I³ or I⁴, so as to impart a swinging motion to the corresponding cam-lever I or I'.

When the several parts are in the position illustrated in Fig. 1 and the main-track rails A A' are closed to the rails B B' of the side-track and the car approaching is to be transferred from the main track to the side-track, then the operator in charge of this car presses the rod J² on the approaching car downward to pass into the groove F⁵ and engage the arm I⁴, so as to impart a swinging motion to the cam-lever I', the said cam-lever by its cam-surface acting on one side of the end H³ of the lever H, so that the latter is swung in the direction of the arrow a' and the bar D is shifted from the right to the left in a transverse direction to move the switch-point C and connect the main-track rail A with the side-track rail B and to open, by means of the switch-point G, the main-track rail A' to the side-track rail B'.

It is evident that as the car K passes along the lower end the pressed rod J² finally slips off the arm I⁴, so that the cam-lever I' swings back to its former position, owing to the spring or weight I² on the said lever. Now the switch-points remain in this position until the next car approaches, and if this car is for the side-track also then no further action is necessary on the part of the operator in charge of the car; but in case the approaching car is for the main track only then the operator presses the rod J², which is so arranged as to pass down into the groove F⁴ to engage the arm I³ and impart a swinging motion to the cam-lever I. The cam-lever I now engages the other edge of the end H³ of the lever H and swings the same in the inverse direction of the arrow a', so that the bar D is shifted transversely from the left to the right and the switch-points C and G are moved back into the position shown in Fig. 1. The car can now proceed along the main-track rails past the switch. After the switch-points are set the operator releases the rod J², so as to permit the spring thereof to move the rod back into an uppermost position.

It will be seen that this device is very simple and durable in construction, is not liable to get out of order, is very effective in operation, and completely under the control of the operator in charge of the approaching car.

It is understood that the pins C³ and G' pass through transverse slots in the cover F' to permit transverse movement of the said pins when the bar D is shifted laterally.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

1. A switch, comprising a pivoted switch-point, a bar connected with the free end of the said switch-point and adapted to be shifted transversely, a lever loosely connected with the said bar, and cam-levers between which

the end of the said lever projects, said cam-levers being adapted to be actuated from the approaching car and controlling the said levers, to shift the bar transversely and impart a swinging motion to the switch-point, to move the latter into an open or closed position, substantially as shown and described.

2. A switch, comprising two pivoted switch-points, one of which is for opening and closing the outer side-track rail and the other switch-point is for opening the inner side-track rail to the main-track rail, a transverse bar connected with the said switch-points, a lever loosely engaging the said bar, and cam-levers between which the end of the said lever projects for imparting a swinging motion to the said levers, said cam-levers being adapted to be actuated from the approaching car, substantially as shown and described.

3. A switch, comprising two pivoted switch-points, one of which is for opening and closing the outer side-track rail and the other switch-point is for opening the inner side-track rail to the main-track rail, a transverse bar connected with the said switch-points, a lever engaging the said bar, and cam-levers for imparting a swinging motion to the said levers and adapted to be actuated from the approaching car, each cam-lever being arranged to return automatically to a normal position when the car passes the switch, substantially as shown and described.

4. In a switch, the combination with switch-points, of a transversely-sliding bar having its ends connected with the switch-points, cam-levers arranged to return automatically to their normal position and provided with upwardly-projecting arms, and a lever having one end loosely connected with the said sliding bar and its other end projecting between the cam-levers, substantially as described.

5. In a switch, the combination with switch-points, of a transverse sliding bar having its ends connected with the switch-points and provided with an opening at its center, loosely-mounted cam-levers provided with upwardly-projecting arms and with weights for holding them in their normal positions, and a lever having one end projecting into the opening of the sliding bar and its other end extending between the cam-levers, substantially as here shown and described.

6. A switch provided with a switch-point having its upper bearing-face beveled downwardly and forwardly, substantially as described.

7. The combination with a track-rail having a recess under its head, of a switch-point having its upper bearing-face beveled downwardly and forwardly to enter the recess of the track-rail, substantially as described.

MICHAEL F. FINNERTY.

Witnesses:

C. O. STUMPF,
EDWARD F. RILEY.