

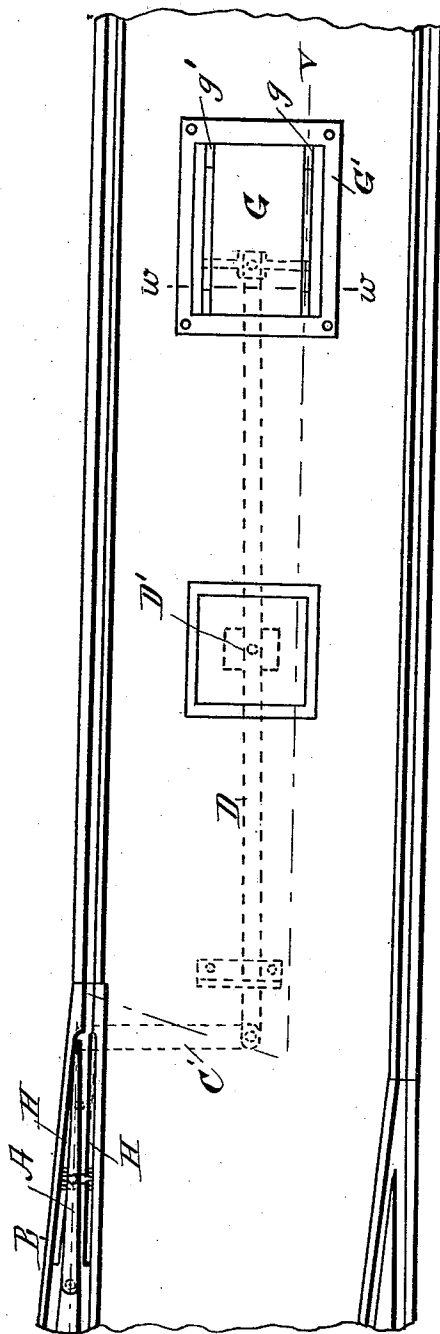
(No Model.)

2 Sheets—Sheet 1.

W. F. STEDMAN.
RAILWAY SWITCH.

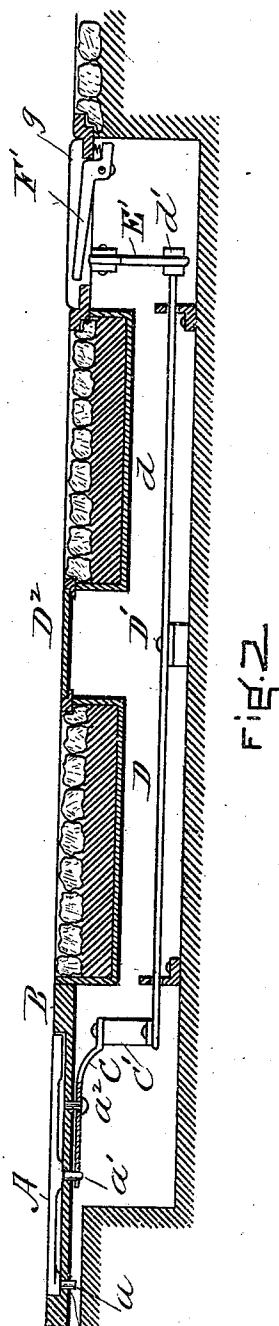
No. 515,135.

Patented Feb. 20, 1894.



WITNESSES

George O. G. Brown
Frank G. Parker



INVENTOR

William F. Stedman

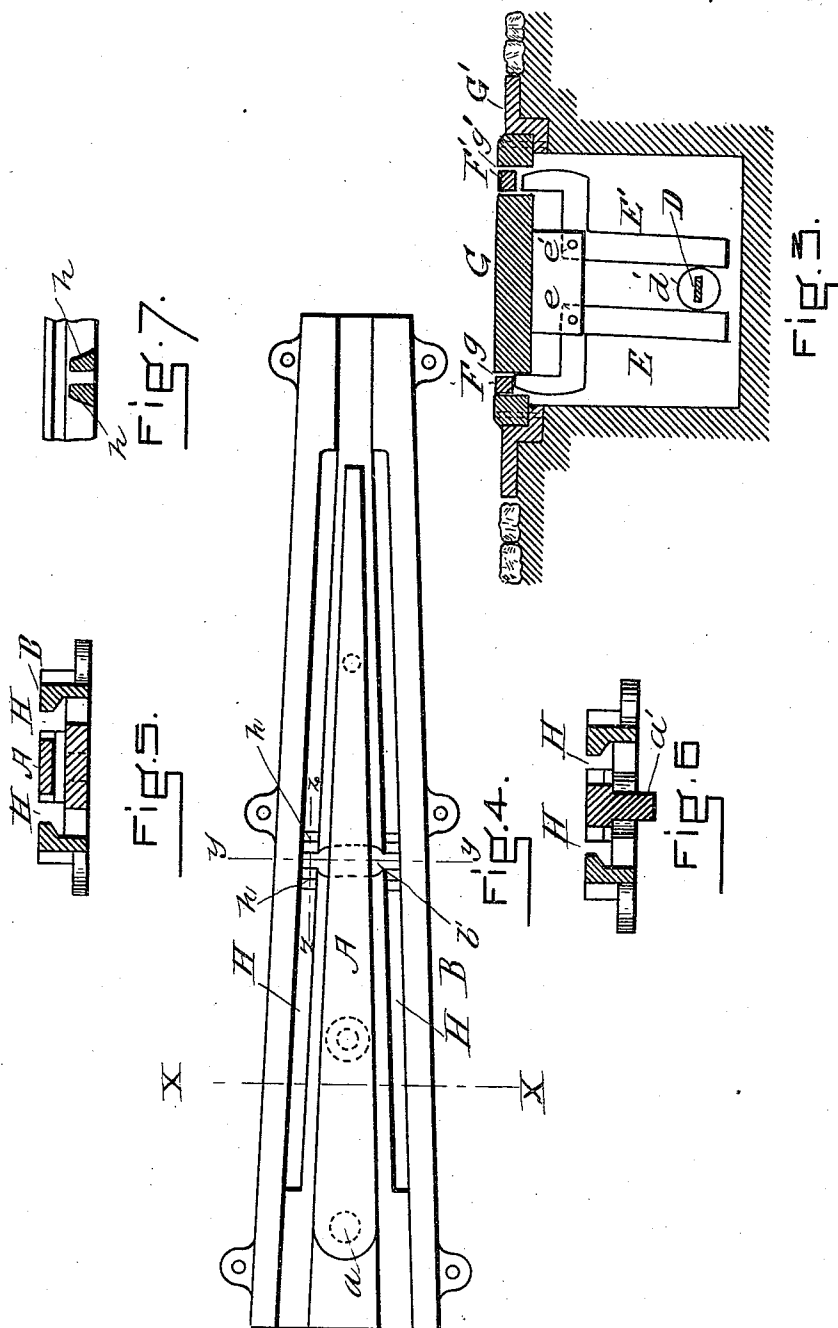
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Chas. O. G. Brown
Frank L. Parker.

INVENTOR

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UNITED STATES PATENT OFFICE.

WILLIAM F. STEDMAN, OF BOSTON, MASSACHUSETTS.

RAILWAY-SWITCH.

SPECIFICATION forming part of Letters Patent No. 515,135, dated February 20, 1894.

Application filed February 1, 1893. Serial No. 460,626. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM F. STEDMAN, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Railway-Switches, of which the following is a specification.

My invention relates to switches which are especially adapted to be used on street railways and with electric cars.

In application, Serial No. 435,505, in which William C. Stedman and myself are joint applicants, there is shown a switch throwing device attached to the car, which device was especially constructed to be used with a switch of the kind herein described, one of its peculiarities being that it is to be operated from the car and by means of the motor man instead of by a switch man or by the use of the horses which draw the car. It is evident however, that it may be thrown by other means and that portions of my invention are applicable to the construction of ordinary switches.

The peculiar construction of the switch proper, hereinafter described, renders it self-clearing and is of great value.

In the drawings Figure 1 is a plan of a switch system embodying my invention. Fig. 2 is a side elevation partly in section on line *v, v* of Fig. 1. Fig. 3 is a cross section showing the operation of the throwing levers taken on line *w, w* of Fig. 1. Fig. 4 is a plan showing the switch and its clearing mechanism and Figs. 5, 6 and 7 are sections thereof taken on lines *x, x*, *y, y* and *z, z* respectively of Fig. 4.

A is an ordinary switch point located in a plate B. This plate is provided with a hole or socket *b* in which a stud *a*, forming part of the switch point, sets. It is also provided with a slot *b'* within which a second or guiding stud *a'* can move as the switch is thrown. The switch point A is connected at *a*² by means of suitable connecting rods C, C' with a lever D fulcrumed at D' and running preferably midway between and parallel with the rails at say one foot or more below the surface of the street in a suitable box like structure *d*. The end of this lever D farthest from the switch is provided with a friction roll *d'*, which lies between the lower ends of two bell crank levers E, E' pivoted to a ver-

tical frame at *e, e'*. Each bell crank is adapted to be thrown by the depression of a lever F, F', the free end of which is raised slightly above a horizontal line, being kept in position either by a spring or by being overweighted. These levers F, F' are each pivoted in a slot formed in a depression *g, g'* in the slotted plate G. These parts are so combined together that by depressing the movable end of one of the levers F, F', a corresponding motion is given to one of the bell cranks E, E' and consequently to the long lever D, so that the switch A will be pulled or pushed in either direction according to circumstances. I find it is of great advantage to have the levers F, F' disconnected from the levers E, E' and these levers in turn disconnected from the long lever D, these pairs of levers F, F' E, E' being so shaped and hung that each will return to its normal position after it has accomplished its work. Thus the device is always ready for operation, and no part is obliged to perform any other function in the normal operation of the device than throw the switch.

G' is a frame in which the plate G sets. This plate G I prefer to set slightly above the ordinary level of the street and to curve its edge on all sides, so arranging the parts that the slots or depressions in which the levers F, F' lie will be about on a level with the surface of the street. I also prefer to make this plate the cover of a manhole so that the parts will be easily reached.

D² is a manhole cover located above the pivot D'.

The plate B for holding the switch point is provided with openings H located on each side of the switch point A, and extending more or less under the car rail.

My improvement consists in making such openings larger on the under than on the upper side, as will be seen from Figs. 5 and 6. Their location and construction is such that as the switch point is thrown, it will scrape whatever dirt, &c., has collected in the depression between it and the rail, toward which it is to move into the openings. As the surface of the rail against which this accumulation of dirt, &c., is being pushed is at an angle as shown, the rubbish on striking it is directed downward, and as the opening is

larger underneath than on top, a free passage is afforded into the pit below. By locating a pit of proper size under the switch point, the scrapings can be allowed to accumulate for a time, and removed when necessary.

The plate B as shown is provided with four openings H, two on each side of its central longitudinal line, those at the end being separated from those of the other by cross bars *h* which serve not only to strengthen the frame, but also serve to guide the stud *a'*. I prefer to make these cross bars of the shape in cross section shown in Fig. 7 so that while they will be sufficiently strong they will not furnish any appreciable surface for the collection of dirt. It is evident however, that openings into which dirt may be scraped by a switch point can be arranged in a different manner from that shown, the peculiarity of this part of my invention consisting in providing openings of the kind described, each wall of each opening inclining outward and downward so that the opening is larger at the bottom than at the top, thus coacting with the switch point to carry off the collection from the plate.

What I claim as my invention is—

1. The switch throwing mechanism of the kind described consisting of the lever D connected with a switch point at one end, its other end being located between the lower

ends of the bell crank levers E, E', each hung independently of said lever D, but adapted to be moved into contact with and to move the adjacent end of said lever D, in combination with a switch point and means whereby said bell cranks may be thrown, all as set forth.

2. The switch throwing mechanism above described consisting of a plate adapted to be located at or about the street level, having parallel slotted depressions located therein, and a lever pivoted in each depression, one end of such lever being located within reach of and adapted to operate a bell crank hung below it, in combination with said bell cranks and a switch point and the lever D, one end of said lever lying between the lower ends of said bell cranks, all as set forth.

3. The self clearing switch above described consisting of the skeleton plate B carrying the pivoted switch point A and provided with one or more openings H, the walls of said openings flaring outwardly and downwardly, each opening being larger at the bottom than at the top, all as set forth.

In testimony whereof I have hereunto subscribed my name this the 23d day of January, 1893.

WILLIAM F. STEDMAN.

Witnesses:

FRANK G. PARKER,
GEORGE O. G. COALE.