

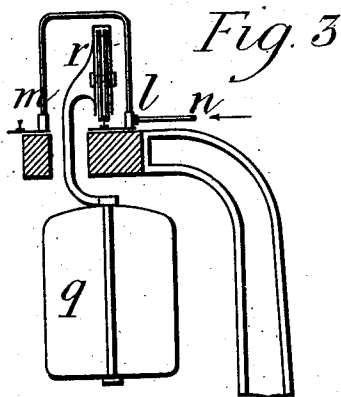
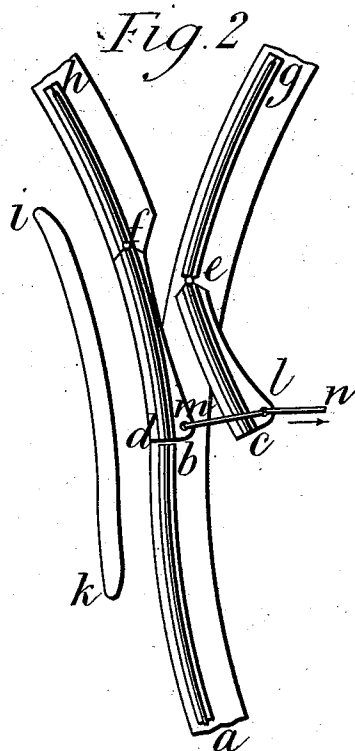
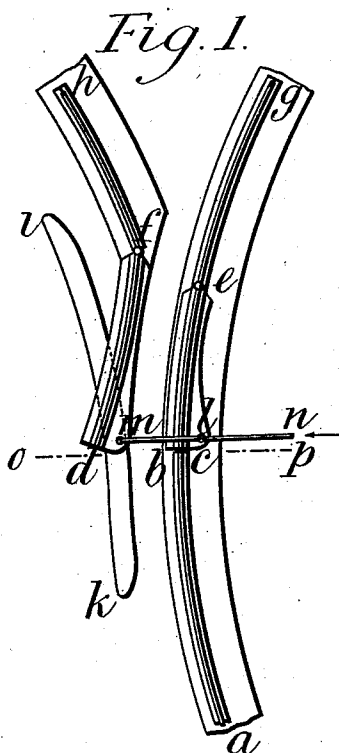
(No Model.)

2 Sheets—Sheet 1.

E. LANGEN, Dec'd.
G. LANGEN, Ancillary Administrator.
SWITCH FOR SINGLE RAIL RAILWAYS.

No. 569,972.

Patented Oct. 20, 1896.



Witnesses:
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Robert G. Smith

Inventor:
Eugen Langen,
By James L. Norris,
Atty.

(No Model.)

2 Sheets—Sheet 2.

E. LANGEN, Dec'd.

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Fig. 4.

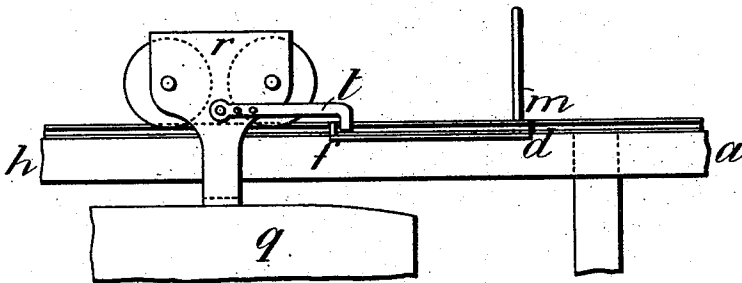


Fig. 5.

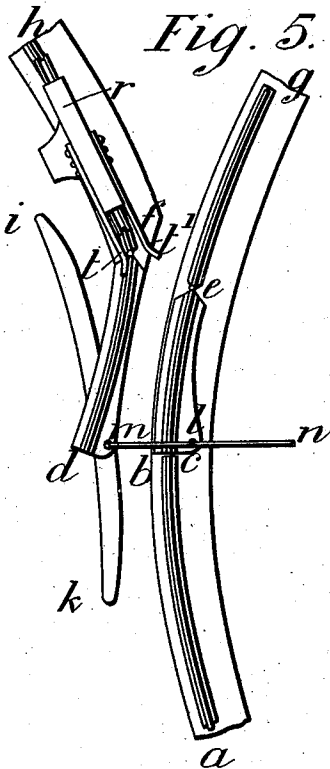
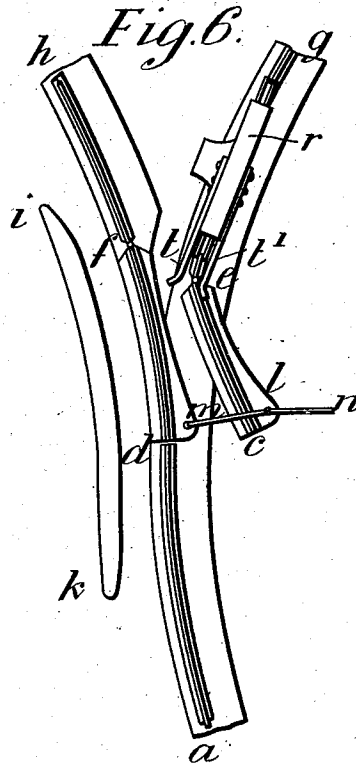


Fig. 6.



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UNITED STATES PATENT OFFICE.

EUGEN LANGEN, OF COLOGNE, GERMANY; GUSTAV LANGEN ANCILLARY ADMINISTRATOR OF SAID EUGEN LANGEN, DECEASED.

SWITCH FOR SINGLE-RAIL RAILWAYS.

SPECIFICATION forming part of Letters Patent No. 569,972, dated October 20, 1896.

Application filed September 26, 1895. Serial No. 563,757. (No model.) Patented in England September 20, 1895, No. 17,576.

To all whom it may concern:

Be it known that I, EUGEN LANGEN, a citizen of Prussia, residing at 14 Werthstrasse, Cologne, in the Empire of Germany, have invented certain new and useful Improvements in Switches for Single-Rail Railways with Suspended Vehicles; (for which Letters Patent of Great Britain, No. 17,576, were granted September 20, 1895,) of which the following is a specification.

My invention relates to an improved construction of switches for single-rail railways with suspended vehicles in which two lines of railway branching from a single one have each a separate switch pivoted thereto, which switches are connected by a transverse connecting-rod so as to be moved together, and are so arranged that if a carriage approaches the junction while the switches are in the wrong position it will automatically shift the switches so as to bring them into correct position. I will describe the construction for this purpose with reference to the accompanying drawings, in which—

Figures 1 and 2 show plans of the switches in the two positions; and Fig. 3 shows a cross-section on line *o p*, Fig. 1. Fig. 4 shows a side view; Fig. 5, a plan with the wheel-frame *r* of a vehicle *q* about to move over the switches so as to connect branch *f h* with the main line, and Fig. 6 shows a plan with the wheel-frame *r* about to throw over the switches so as to connect branch *e g* with the main line.

The single main-line rail *a b*, as also the two rails *g e* and *h f* of the branch lines, are carried by fixed supports. The rail *g e* has a switch *e c* pivoted to it at *e*, and the rail *h f* has a switch *f d* pivoted to it at *f*, both switches being adapted to connect their respective branch lines to the main line according as they are brought into the position shown at Fig. 1 or into that shown at Fig. 2. The free ends of the switches are connected together by a looped bar *l m*, so as to be moved together by means of the rod *l n*. The loop *l m* must be of such a size that the wheel-trucks can pass along underneath it when the switches are in the position shown at Figs. 1 and 3.

Thus when the switches are in the position at Fig. 2 vehicles can pass from the main line

along the left-hand branch line *f h*, or vice versa, the vehicle being supported by the line of rail without break. At the same time the bar *i k* acts as a safety-guide for the vehicle with a suitable construction of the wheel-frame *r* supporting the vehicle *q*. In like manner when the switches are in the position at Fig. 1 the connection between the main line and the right-hand branch *e g* is established, and the base of the switch *d f* serves as a safety-guide for the wheel-frame. The switches are shown consisting of a short length of rail fixed on a metal plate. They may, however, be constructed in any other suitable manner.

The switches can of course be locked in either position by any suitable locking device which may be arranged in connection with a signal or with electric indicators in such manner as effectually to guard against a vehicle passing along one of the branch lines with the switches in incorrect positions. The switches can, however, be forced over into the correct position by the vehicle itself if strongly placed.

Thus, referring to Figs. 4 and 5, assuming the wheel-frame *r* of a vehicle *q* running on the branch *f h* to be approaching the switch *f d* while this is in the open position shown at Fig. 5 then an arm or fender *t*, fixed to and projecting beyond the wheel-frame on the one side, will come in contact with the side of the switch which projects at an appreciable angle from the pivot and will push the two switches over so as to bring *f d* in line with *a b* before the wheel-frame passes onto the switch. If, on the other hand, the vehicle *q* is advancing on the branch *e g* while the switch *e c* is in the open position, as shown at Fig. 6, the arm *t* on the wheel-frame will come in contact with switch *e c* and will force it over into the closed position.

The size and weight of the switches being comparatively small, the above-described automatic adjustment could be readily accomplished. Should the switch have a locking device, as above mentioned, this would of course have to be first acted upon by the said projecting part of the wheel-frame, so as to release the switch before it is moved.

Although I have shown all the lines of rail

and switches curved, yet it will be obvious that the main line and one of the branch lines and its switch might be straight.

5 Having thus described the nature of my said invention and the best means I know for carrying the same into practical effect, I claim—

1. In single-rail railways for suspended vehicles, the combination of two switches pivoted respectively to two branch lines and adapted to make connection with a main-line rail, an upward looped bar connecting the free ends of the two switches together and adapted to allow free passage to the wheel-frame of
10 a vehicle between the two switches, and projecting arms or fenders on the wheel-frame on the vehicle, which arms on approaching the switches press directly against the sides thereof so as to force them over in the event
15 of their not being in the proper position for the passage of the approaching vehicle, substantially as described.

2. In single-rail railways for suspended vehicles, a switch device for connecting a main
20 line with two branch lines, consisting of two switches *c, e*, and *d, f*, pivoted respectively to the branch-line rails *e, g*, and *f, h*, and adapted to connect these with the main-line rail *a, b*,

and a transverse arched bar *l, m*, connected at its extremities to the two pivoted switches
30 for causing them to move in unison, the open switch being made to form a considerable angle with its line of rail so as to be forced over into the closed position by the wheel-frame of a vehicle advancing along such line, substantially as described. 35

3. In single-rail railways for suspended vehicles, a switch device for connecting a main line with two branch lines consisting of two switches *c, e*, and *d, f*, pivoted respectively to
40 the branch-line rails *e, g*, and *f, h*, and adapted to connect these with the main-line rail *a, b*, and a transverse arched bar *l, m*, connected at its extremities to the two pivoted switches for causing them to move in unison, and
45 safety-guides for guiding the wheel-trucks while passing along the switches, substantially as described.

In testimony whereof I have signed my name to this specification, in the presence of
50 two subscribing witnesses, this 30th day of August, A. D. 1895.

EUGEN LANGEN.

Witnesses:

SOPHIE NAGEL,
WILLIAM H. MADDEN.