

No. 775,904.

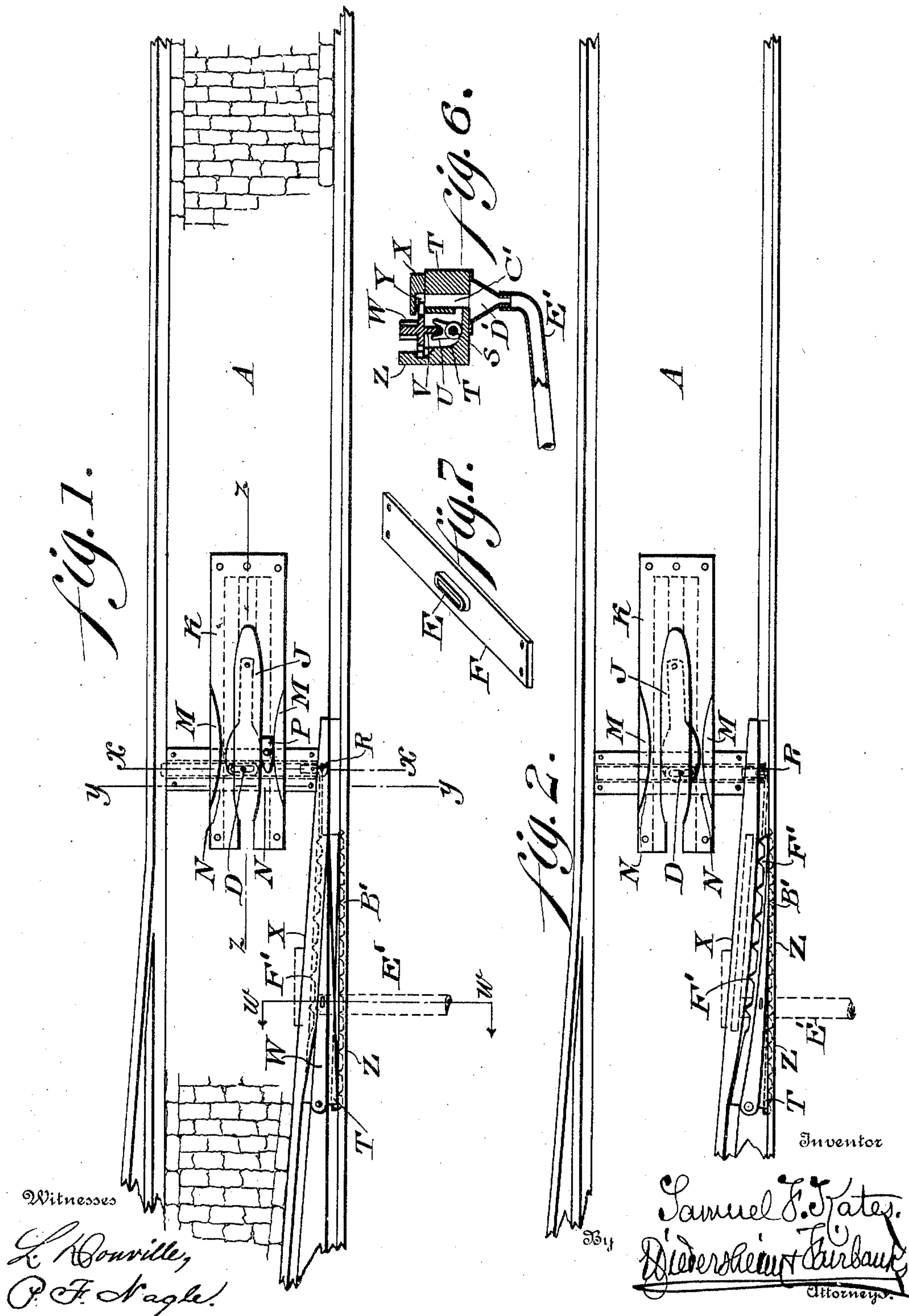
PATENTED NOV. 22, 1904.

S. F. KATES.  
RAILROAD SWITCH.

APPLICATION FILED JULY 26, 1904.

NO MODEL.

2 SHEETS—SHEET 1.



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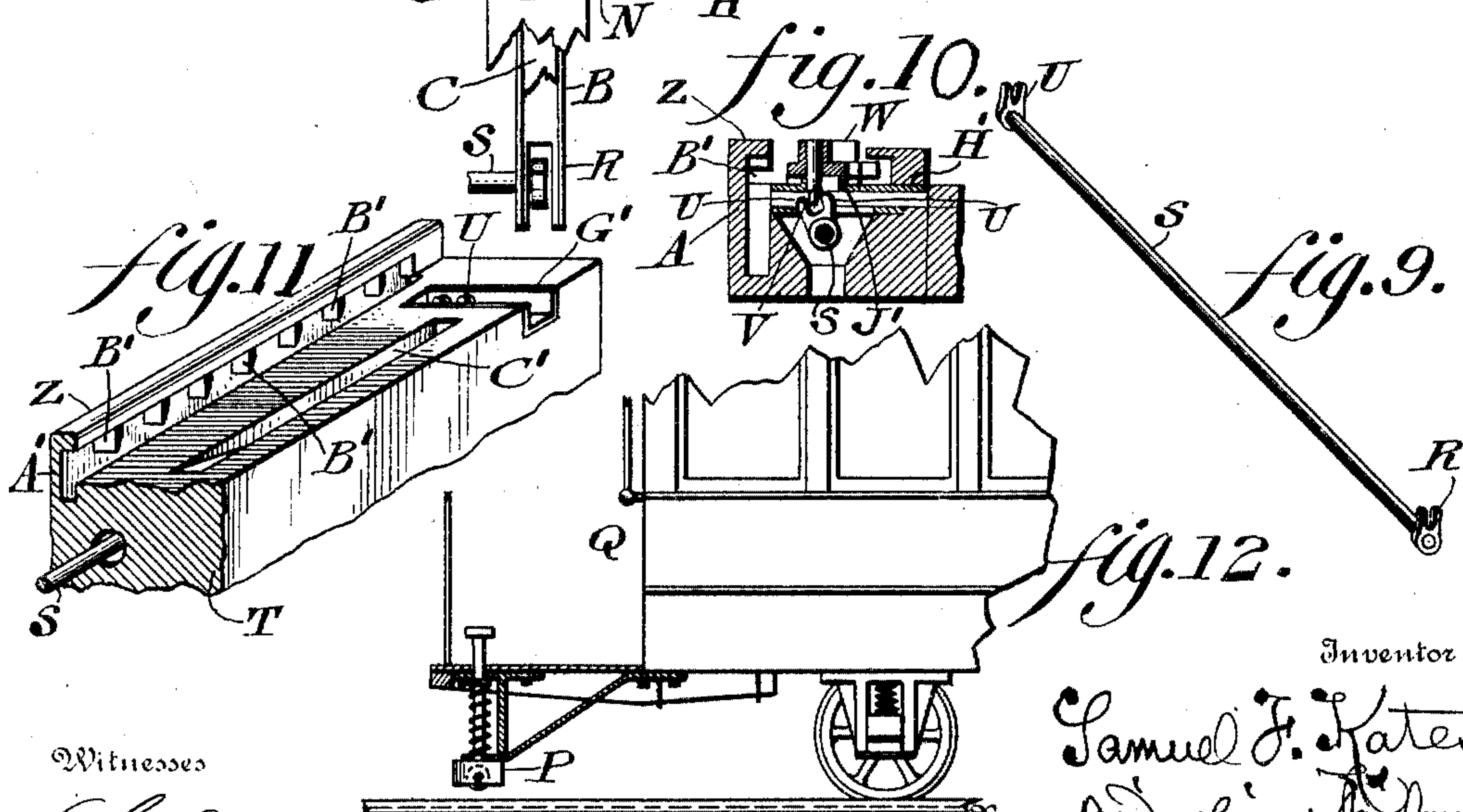
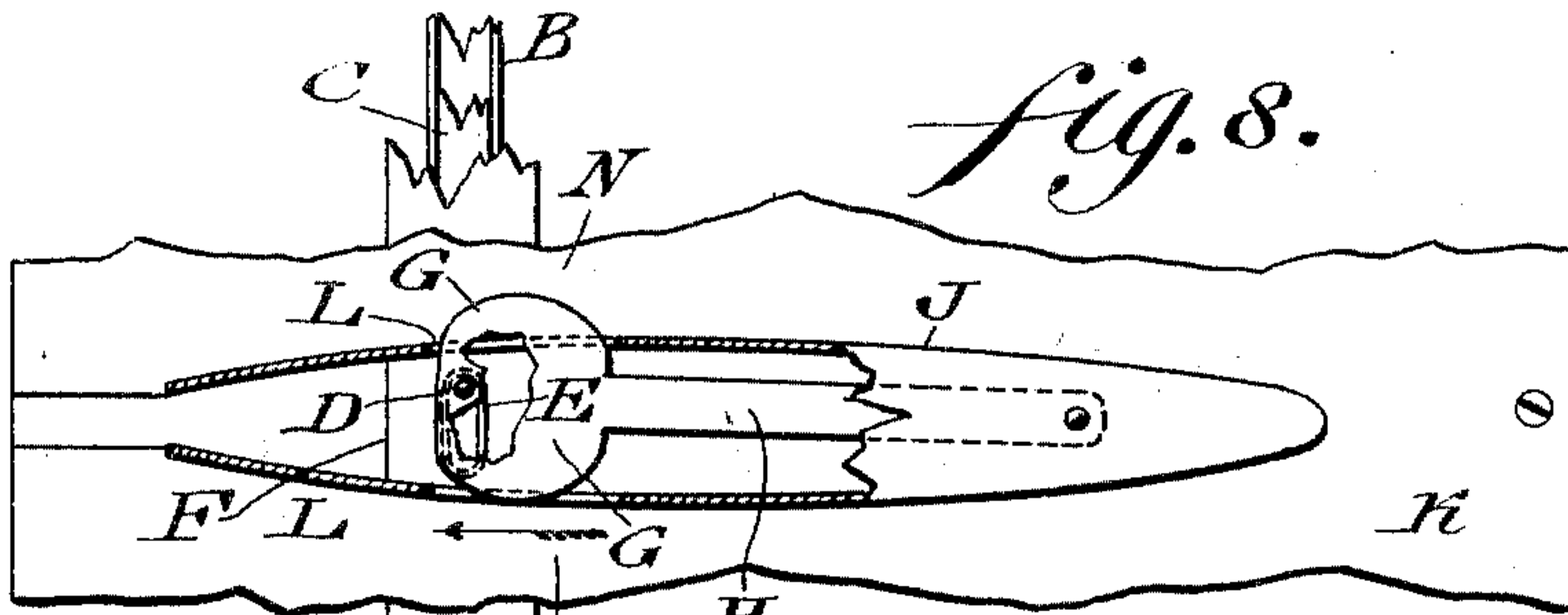
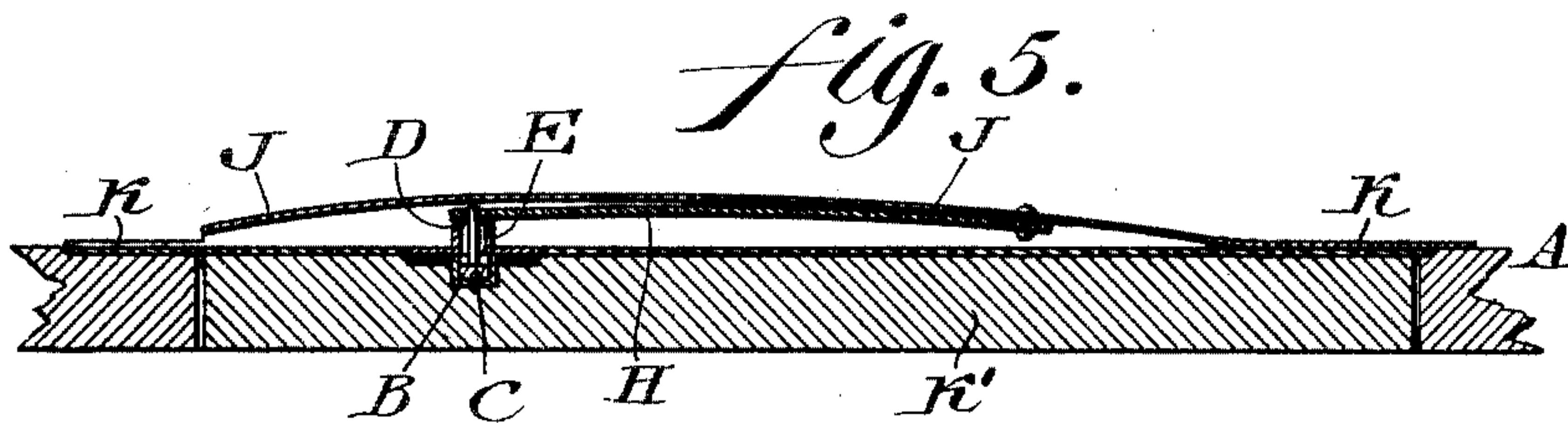
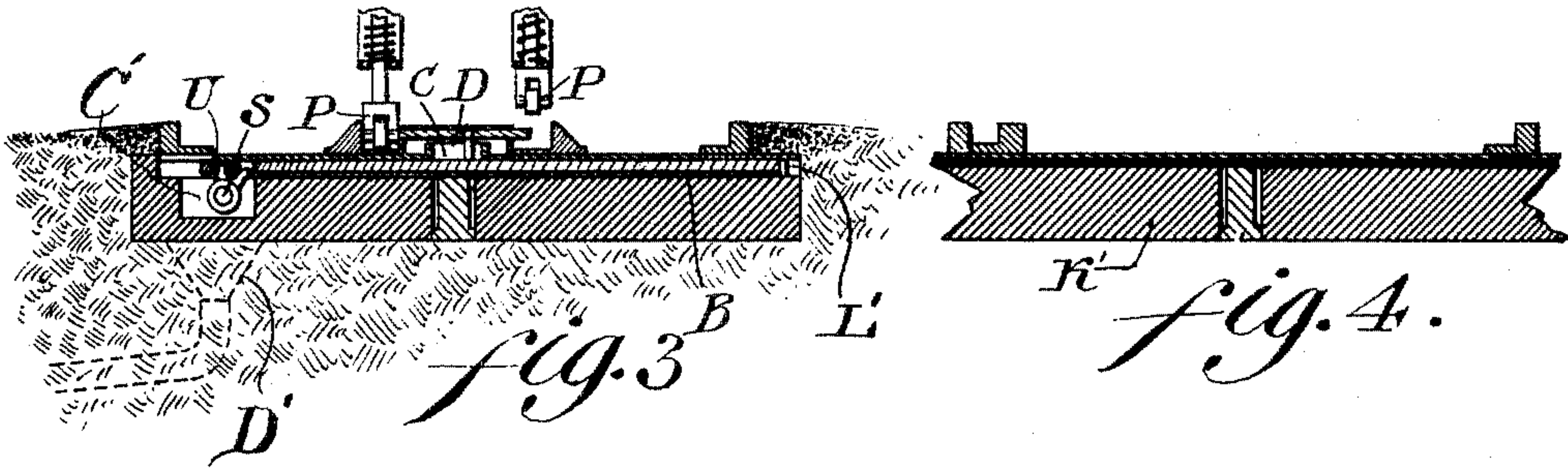
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2 SHEETS—SHEET 2.



Witnesses

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# UNITED STATES PATENT OFFICE.

SAMUEL F. KATES, OF SALEM, NEW JERSEY, ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, OF TWO-THIRDS TO SAMUEL FRENCH BANKS, JOHN L. KATES, AND DANIEL TRACY DAVIS, OF SALEM, NEW JERSEY.

## RAILROAD-SWITCH.

SPECIFICATION forming part of Letters Patent No. 775,904, dated November 22, 1904.

Application filed July 26, 1904. Serial No. 218,185. (No model.)

*To all whom it may concern:*

Be it known that I, SAMUEL F. KATES, a citizen of the United States, residing in the city and county of Salem, State of New Jersey, have invented a new and useful Improvement in Railroad-Switches, of which the following is a specification.

My invention consists of an improvement in railroad-switches, the same embodying novel means for shifting the switch-piece for opening and closing the switch primarily operated from a car, the same being hereinafter described and the novel features pointed out in the claims.

Figures 1 and 2 represent top or plan views of a switch embodying my invention, the switch-piece being in different positions. Fig. 3 represents a transverse vertical section on line *xx*, Fig. 1. Fig. 4 represents a transverse section on line *yy*, Fig. 1. Fig. 5 represents a longitudinal vertical section on line *zz*, Fig. 1. Fig. 6 represents a transverse vertical section of a portion on line *ww*, Fig. 1. Fig. 7 represents a perspective view of a detached portion of the switch. Fig. 8 represents a partial top or plan view and horizontal section of the portion shown in Fig. 5. Fig. 9 represents a perspective view of the rock-shaft of the switch employed. Fig. 10 represents a sectional perspective view of a block in which the rock-shaft is mounted, showing also the portion adjacent to the switch-piece on said block. Fig. 11 represents a perspective view of a detached portion. Fig. 12 represents a partial side elevation and partial vertical section of a part of a car having the primary switch-operating mechanism thereon.

Similar letters of reference indicate corresponding parts in the figures.

Referring to the drawings, A designates a road-bed or street in which is seated a transversely-extending channel-plate B.

C designates a sliding bar which occupies said plate B and has a pin D rising therefrom, the same passing through an elongated eye E, which projects upwardly from the plate F,

the latter being supported on the road-bed over said channel-plate. Connected with said pin D is the head G of the lever H, which is pivoted to the guard J, which extends longitudinally along the road-bed and is elevated therefrom, it being connected with the plate K, which is secured to the road-bed, it being noticed that the opposite sides of said guard have slots L herein, through which the sides of the head G of the lever H may protrude, it being noticed that the sides of the plate K have flanges M rising therefrom, forming passages N to receive either of the shoes P, which are supported on the car Q and adapted to be lowered, so that a proper shoe may engage with the protruding side of the head G, and thus shift the lever H to the opposite side, the motion being communicated to the pin D, and consequently to slide C. One end of said slide engages with the crank-arm R on the rock-shaft S, the latter being properly supported in the block T in the road-bed, said shaft having at its opposite end the crank-arm U, the latter engaging with the lower end of the pin or stud V, which depends from the switch-piece W, it being evident that as the slide C is operated motion is communicated to the rock-shaft S, and consequently to the switch-piece, so as to set the switch for the main line or a siding or turn-off in ample time before the car-wheel reaches the point of said switch-piece.

X designates the guard-rail of the switch-piece, the same having its ends secured to the road-bed or block T in any suitable manner, and has a channel Y therein to receive the switch-piece when shifted toward said guard.

On the inner side of the rail Z is a longitudinally-extending channel A', from the top wall of which depends the lugs B', the spaces between which prevent the closing of said channel A', it being noticed, as in Fig. 6, that said channel extends vertically through the block T and communicates with a vertical channel C' in said block, the discharge end of said channel communicating with a funnel D',



which has connected with it the pipe E', which leads to a sewer or other receptacle.

On the side of the switch-piece opposite to the rail Z are laterally-extending lugs F', the same being adapted to ride over the top of the passage C' in the block T, so that the spaces between said lugs are in communication with said passage, and the latter will be practically open to the atmosphere, so that rain or water reaching the switch-piece will flow into said passage C' and also into the passage A', and thus opposite sides of the switch-piece will be drained, it being also noticed that as the switch-piece moves to the right or left it will wipe the top of the block T, and so push dirt, &c., thereon to the passages C' A', and consequently keep the base and sides of the switch-piece clean and unobstructed.

It will also be seen that the eye E on the plate F rises sufficiently above the latter and the pin or stud D as to prevent water from entering said eye and reaching the slide C and adjacent portions.

The crank-arm U of the rock-shaft S plays in the open box G' in the block T. (See Figs. 10 and 11.)

Owing to the guard J, wheels of vehicles can pass over the same without injuring the lever H and said wheels may pass through the passages N without materially affecting or injuring the head of said lever. Placed on said box is the plate H', in which is a flanged opening J', in which the pin or stud V plays in the motion of the switch-piece, the flange of said opening rising above said plate and serving as a guard for preventing water from entering said opening and reaching said pin or stud V and the portion of the rock-shaft below the same. In the road-bed is a longitudinally-extending bed-piece K', which is properly anchored within the same and surrounded by paving material, the same having the plate K superimposed thereon and secured thereto, forming a firm foundation for the guard J, as well as the respective portions of said plate K. The channel-plate B occupies a recess L' in the upper side of said bed-piece and provides a firm support for the same, preventing any sinking of both the guard J and said channel-plate B, with the connecting parts thereof.

In Fig. 6 the pin or stud V is shown integral with the switch-piece W, while in Fig. 12 it is shown as inserted in said switch-piece.

Various changes may be made in the details of construction shown without departing from the general spirit of my invention, and I do not, therefore, desire to be limited in each case to the same.

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

1. In a railway-switch, a lever adapted to be operated by a member of the car, a rock-

shaft, a connection for said lever with one end of said rock-shaft, and a switch-piece with which the other end of said rock-shaft is engaged, a transversely-extending slide in connection with said lever, a rock-shaft with one end of which said slide is engaged, and a switch-piece with which the other end of said rock-shaft is engaged.

2. In a railway-switch, a lever adapted to be operated by a member of a car, a transversely-extending slide in connection with said lever, a support for said slide, a rock-shaft with one end of which said slide is engaged, and a switch-piece with which the other end of said rock-shaft is engaged.

3. In a railway-switch, a lever adapted to be operated by a member of a car, a guard for said lever having its top raised and covering said lever and flanges on the sides of said guard, said guard having its side portions adapted to permit the head of said lever to alternately protrude therethrough for engagement of said member, in combination with a transversely-extending slide in connection with said lever, a rock-shaft with one end of which said slide is engaged, and a switch-piece with which the other end of said rock-shaft is engaged.

4. In a railway-switch, a lever, a slide engageable with said lever and a member extending to the switch-piece, a stationary guard-plate over said slide, the same having therein a transversely-extending slot through which a depending piece of said lever has its play, and a wall rising from said plate about said opening.

5. In a railway-switch, a switch-piece having lugs on the sides thereof and a water-discharge passage in the support of said piece with which the spaces between said lugs are in communication, a rail at the side of said switch-piece having a channel therein, lugs depending from the top wall of said channel into said channel.

6. In a railway-switch, a switch-piece, a rail at the side thereof having a channel therein, a support for said piece and a water-discharge passage therein in communication with said channel, the wall of said channel having lugs depending therefrom, said switch-piece being adapted to abut with said lugs, the spaces between which are in communication with said passage.

7. In a railway-switch, a lever mounted on the road-bed, a transversely-extending slide, a channel-plate in which said slide is fitted, a guard-plate over said slide, a piece depending from said lever and freely passing through said guard-plate and connected with said slide, a rock-shaft having a crank-arm at each end and a switch-piece, one of the crank-arms being engaged with said slide and the other crank-arm being engaged with said switch-piece.

8. In a railway-switch, a switch-piece, a de-



pending member thereon, a rock-shaft with a crank-arm freely attached to said member, a sunken box on the road-bed in which said arm and piece are adapted to play and a guard over  
5 said box.

9. In a railway-switch, a switch-piece, a depending member thereon, means connected with said member for moving the same in opposite directions, and a plate interposed between said switch-piece and said means, said  
10 plate having an opening therein and a flange rising from said plate about said opening in

which opening and flange said depending member is adapted to have its play.

10. A railway-switch, an operative lever, a  
guard therefor, and a longitudinally-extending  
plate in the road-bed supporting said guard,  
said lever being interposed between said guard  
and bed-plate and being pivoted to said guard.

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Witnesses:

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