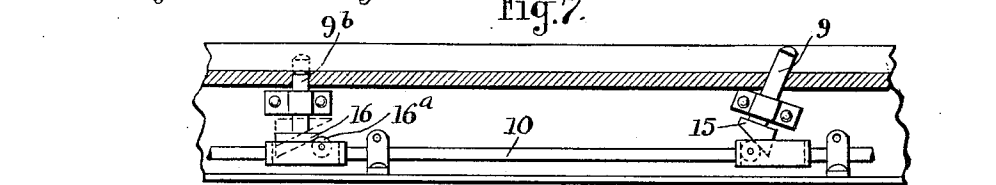
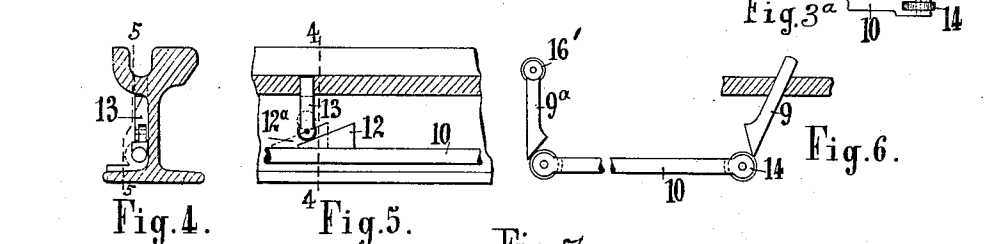
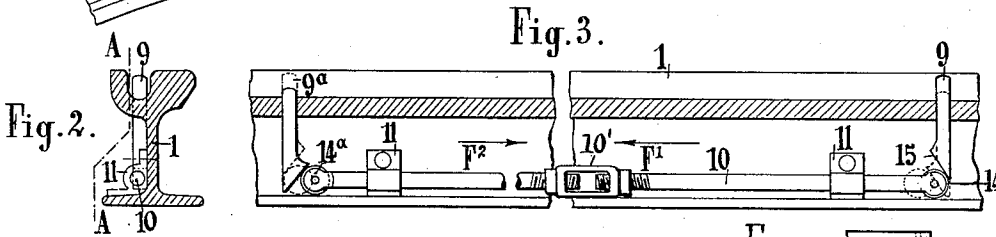
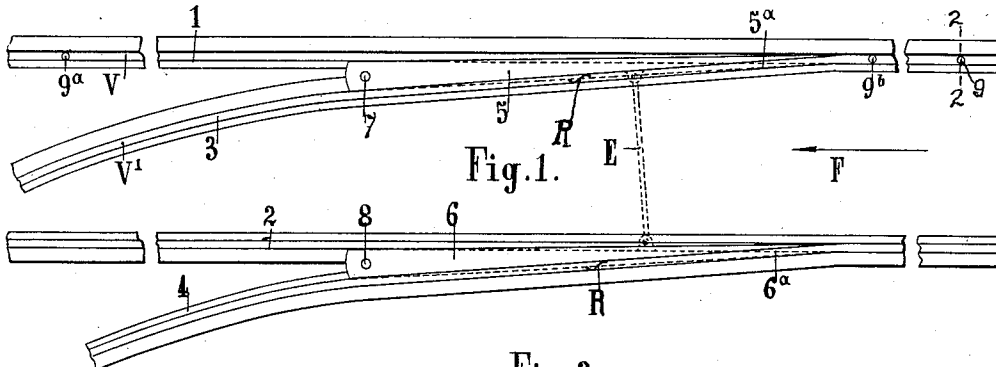


G. CHAUMERET.
 SWITCH OPERATING MECHANISM.
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1,017,851.

Patented Feb. 20, 1912.



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SWITCH-OPERATING MECHANISM.

1,017,851.

Specification of Letters Patent.

Patented Feb. 20, 1912.

Application filed December 28, 1909. Serial No. 535,350.

To all whom it may concern:

Be it known that I, GEORGES CHAUMERET, a citizen of France, residing at Gennevilliers, France, have invented a new and useful Improvement in Switch-Operating Mechanism, of which the following is a specification.

Heretofore it has not been possible to utilize the various means suggested for automatically switching vehicles running upon rails, owing to their being too complicated or too difficult to construct, or because of the numerous inconveniences that they presented both as regards laying them and as regards the circulation of ordinary traffic, whereby their operation was liable to be prejudicially affected.

This invention has for its object a switching device for vehicles running on rails which is controlled automatically by the passage of the vehicle itself.

Another object of my invention is to so position the actuating mechanism which is exposed to the road surface, that it will not be actuated by vehicles other than those running on the tracks, and provided with wheels so designed for such purpose.

The accompanying drawings show an embodiment of the invention in which—

Figure 1 shows on a reduced scale a portion of a tramway track in proximity to a switch. Fig. 2 is a sectional view on line 2—2 of Fig. 1. Fig. 3 is a vertical longitudinal section on line A—A of Fig. 2. Fig. 4 is a sectional view on line 4—4 of Fig. 5. Fig. 5 is a sectional view on line 5—5 of Fig. 4. Fig. 3^a is detailed plan view of one of the parts shown in Fig. 3. Fig. 6 illustrates a modification. Fig. 7 is a view similar to Fig. 3 showing details of construction.

Referring to the drawings, in which similar characters refer to similar parts throughout the several views, the principal rails are indicated at 1 and 2, while 3 and 4 are the rails of a branch line, together with the switch points 5 and 6 displaceable around pivots 7 and 8.

The various parts of the switch members

are controlled by means of the flanges of the vehicle wheels acting upon rods 9 and 9^a which pass through the rails in their grooves without however extending above the upper level of the rails. These rods 9 and 9^a, which are depressed upon the passage of a vehicle over the rails, then control the displacements of a rod 10 arranged parallel with a rail of the main track and sliding in supports 11 fixed to the base of the said rail. It is this rod 10 that controls the displacements of the points 5 and 6, suitably connected as indicated at E at the proper moment by the intermediary of a wedge 12 displaced to 12^a and then lifting a latch 13 guided along the web of the rail, its chamfered edge when lifted serving to press back the point against the resistance of springs R (Figs. 4 and 5). The rod 10 carries at one end a fork with roller 14 upon which the inclined part 15 of the rod 9 rests. Similarly, at the opposite side of rod 10, from the roller portion, is a roller 14^a upon which the inclined surface 5^a of the rod 9^a rests. The rod 10 is in two parts with turn buckle 10' for enabling the mechanism to be readily arranged in position.

If a tramcar passes onto the rails shown in Fig. 1, in the direction indicated by the arrow F; at a certain distance in front of the switch point 5, the front wheel will encounter a rod 9 and its flange will depress it to the fullest extent; the inclined part 15 pressing against the roller 14 will cause the rod 10 to advance in the direction indicated by the arrow F', Fig. 3. This advance of the rod 10 will produce: 1. By means of a roller 14^a bearing against the part 15^a, the lifting of the rod 9^a, similar to the rod 9 and arranged in the groove of the rail at a certain distance in front of the head of the point. 2. The switch is to be operated, by the intermediary of the wedge 12 advancing to 12^a, the lifting of the latch 13 and the displacement of the switch 5, 6 to 5^a, 6^a.

It should be noted that the latch 13 does not project into the groove of the rail and that consequently it is never directly sub-

jected to the action of the flange. However, if the vehicle coming from F is to pass onto the track V' instead of continuing upon the track V, in which case the switch has not to be displaced for the passage of the said vehicle, and in view of the fact that the displacement of the rod 9 will have actuated the mechanism, it will be necessary before the vehicle reaches the switch point, to cancel the initial movement by means of the action of a pedal tappet not shown in the drawings mounted upon the vehicle and operated at the proper moment by the driver for acting upon a rod 9^b which has a wedged shaped member 16 to engage a wheel 16^a carried by the rod 10 as clearly shown in Fig. 7.

As shown in Fig. 7, the top of the rod 9^b is normally flush or below the lower portion of the rail groove, and when the rod 9 is actuated by the car flange the rod 9^b is raised to a position indicated by dotted lines. In this position, the rod 9^b is, however, not raised enough to be actuated by the car wheel flange and permits the car to travel on track V. The rod 9^b is actuated for directing the car on track V' by the tappet, before mentioned, which is brought into the groove sufficiently to depress the rod 9^b, which returns the rod 10 to its normal position and consequently the switch points are similarly actuated. When, on the other hand, the vehicle is to follow track V, it will shift the points 5 and 6, the rod 9 will be depressed, and at the same time the front rod 9^a will be lifted before the point is traversed. Then, when the vehicle has passed the points, the rod 9^a will be acted upon by the first front wheel, the rod 10 will resume its initial position in the direction indicated by the arrow F²; the wedge of the point will move from 12^a to 12, the latch 13 will be depressed and the point will return from 5^a to 5 under the influence of the usual springs R. The advanced rod 9 will be lifted in its turn to permit of a fresh operation of the mechanism when the next vehicle arrives.

The device is applicable equally well to power propelled vehicles and to trains of vehicles; it is merely necessary to arrange the rods 9, 9^a at a sufficient distance from the switch to insure the opening and closing of the points taking place at the proper moment, particularly the closing of the switch when the whole of the train has passed beyond the same. If there is a likelihood of an impact of excessive violence between the wheel flanges and the advanced rod 9, the latter may be given the inclined arrangement shown in Fig. 6, in such a manner that it is attached tangentially to the wheel flange. If desired, the rod 9^a might also be provided with a roller 16'

mounted on a fork at its upper part as shown in Fig. 6.

It is obvious that the two switch points 5, 6 are connected in the ordinary way by a rigid stay E. The device is of course applicable to the tracks and vehicles of all tramways, railways of narrow or full gage and so forth.

I claim:

1. A switch operating mechanism comprising in combination with main grooved rails and switch points connected to move in unison, a longitudinally movable operating rod, bearings slidably mounting said rod on one of said rails, a vertically movable chamfered switch operating element slidably mounted in one of said main rails for shifting the points, a cam on said rod for actuating said element, and members vertically movable in one of the main rails and projecting into the path of the wheel flanges for reciprocating said rod, said members being disposed at points remote from the switch and at opposite ends therefrom.

2. A switch operating mechanism comprising in combination with main grooved rails and switch points connected to move in unison, a main operating rod, a vertically movable switch operating element arranged to be actuated by said rod, and members vertically movable in the main rails and alternately projecting into the path of the wheel flanges for actuating said rod, said members being disposed at points remote from the switch and at opposite ends therefrom.

3. In switch operating mechanism, the combination with main rails and switch points adapted to move in unison, a longitudinally movable operating member mounted laterally of the web of said rails, mechanism for normally retaining said switchpoint in operative relation to the rails for switching a vehicle in one direction, means operatively connected with said operating member for throwing said switch points out of a normal position for switching a vehicle in another direction upon movement of said operating member, mechanism operated by the flange of the car wheel to actuate said operating member in one direction for throwing said switch from a normal position, and means situated intermediate said mechanism and said switch points for actuation of said operating member in a counter-direction for return of said switch to a normal position.

4. A switch operating mechanism comprising in combination with main grooved rails, and switch points connected to move in unison, a longitudinally movable operating rod, means for adjusting the length of said rod, a vertically movable beveled switch operating element slidably mounted in one of

said main rails for shifting the points, a cam
on said rod for actuating said element, and
members vertically movable in one of the
main rails and projecting into the path of
5 the wheel flanges for reciprocating said rod,
said members being disposed at points re-
mote from the switch and at opposite ends
therefrom.

In testimony whereof I affix my signa-
ture.

GEORGES CHAUMERET.

In the presence of—
VICTOR PRÉVOST,
DEAN B. MASON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."
