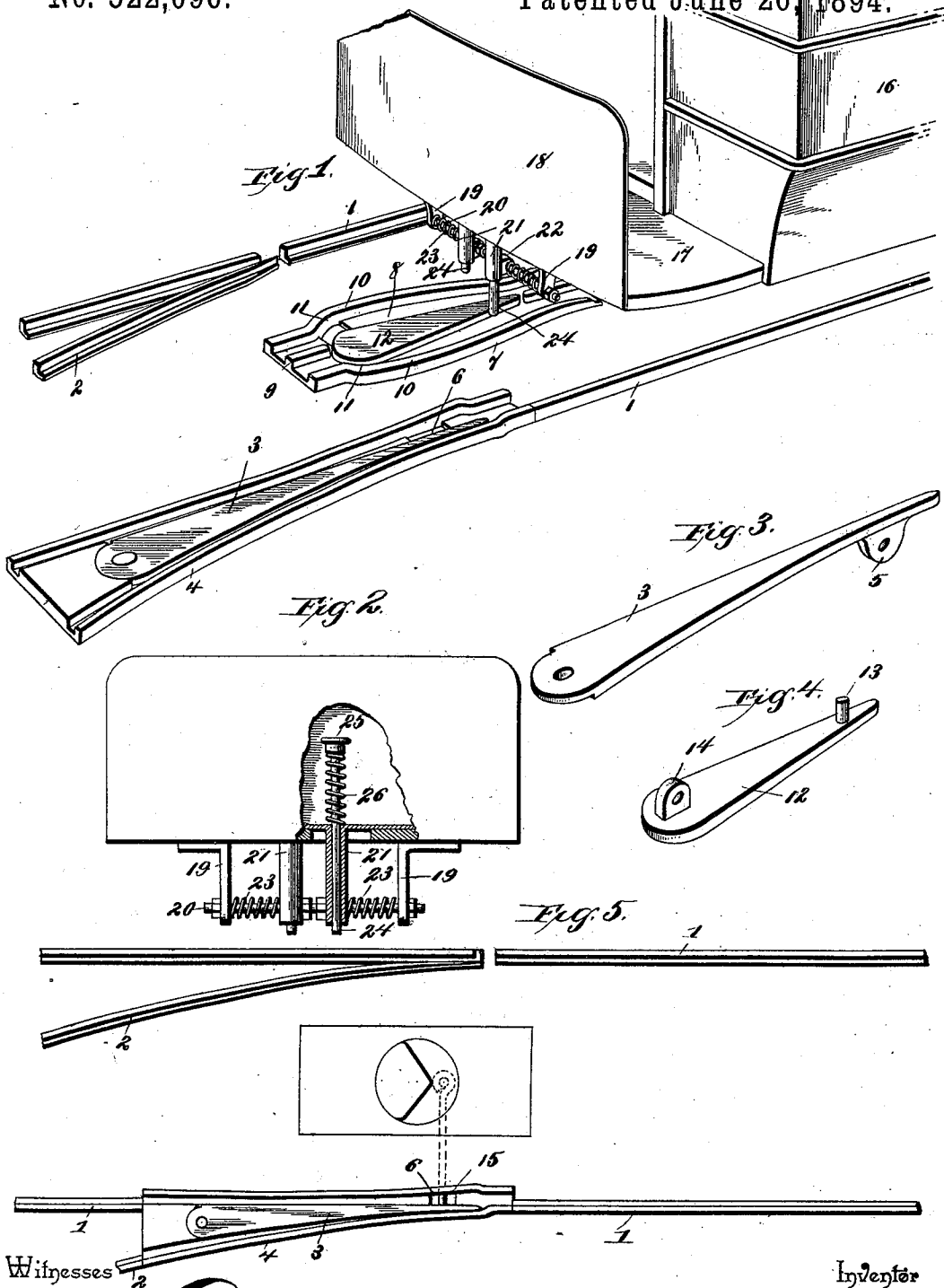


(No Model.)

C. P. BACHELDER.  
AUTOMATIC SWITCH OPERATING MECHANISM.

No. 522,096.

Patented June 26, 1894.



Witnesses

E. C. Mordeman  
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By his Attorneys,

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# UNITED STATES PATENT OFFICE.

CYRUS P. BACHELDER, OF PAWTUCKET, RHODE ISLAND.

## AUTOMATIC SWITCH-OPERATING MECHANISM.

SPECIFICATION forming part of Letters Patent No. 522,096, dated June 26, 1894.

Application filed February 23, 1893. Serial No. 463,393. (No model.)

*To all whom it may concern:*

Be it known that I, CYRUS P. BACHELDER, a citizen of the United States, residing at Pawtucket, in the county of Providence and State of Rhode Island, have invented a new and useful Automatic Switch and Operating Mechanism, of which the following is a specification.

My invention relates to improvements in switch operating mechanism for street-railways, and it consists in a certain novel construction, combination and arrangement of devices hereinafter fully described and specifically pointed out in the claims.

In the drawings: Figure 1 is a perspective view of a portion of a street-railway track, a switch embodying my invention and a portion of a car provided with means for operating the same. Fig. 2 is an end view, partly in section of the car, to show the construction of the operating mechanism. Fig. 3 is a detail view, in perspective, of the switch-rail. Fig. 4 is a similar view of the switch-tongue. Fig. 5 is a plan view of a portion of the track showing a slightly modified form of switch-tongue.

Referring by numerals to the drawings, in which similar numerals designate corresponding parts in all the various figures: 1 designates the main-track rails, 2 the branch rails, and 3 a pivoted switch-rail, arranged at the intersection of said main and branch rails and adapted to align with either. Said switch-rail is seated in a casting 4 whereby the lateral movement of its free end is limited, and it is provided with a depending lug 5 which projects through a transverse slot 6 in the floor of said casting.

Arranged midway between the rails of the main-track, opposite the point of intersection of the main and branch-rails, is a stationary guide 7, depressed into the road-bed so as to project at no point above the plane thereof, such guide comprising, essentially, a horizontal plate 8, the central vertical longitudinal web 9, and the lateral divergent webs 10. At the outlet end of the guide the lateral webs are drawn inward or shouldered, as shown at 11. The central web 9 is partly cut-away and in the interval thus formed is arranged a switch-tongue 12 which is pivoted

at its smaller or reduced end to the plate 8 by means of a depending pivot 13. The switch-tongue is substantially of a wedge-shape, with its enlarged end rounded and arranged in the enlarged end of the guide 7, the relative divergence of the lateral guide-webs 10 and the sides of the tongue being such that when the free end of the latter is deflected and arranged in contact with one lateral web the opposite or free edge of the tongue is parallel with the opposite web, thus providing a parallel-sided channel between the tongue and the web. The tongue is provided at its free end with a depending lug 14 which is connected by means of a transverse connecting-rod 15 to the lug 5.

16 represents a portion of a street car, 17 the front platform, and 18 the dash. Depending from the underside of said platform are the brackets 19 whose lower free ends are connected by the transverse stationary guide-rod 20. 21 represents a pair of vertical tubular guides also depending from the platform and provided at their lower ends with guide-eyes or blocks 22 which fit slidably upon the rod 20. Arranged upon the guide-rod 20, between said guide-eyes or blocks and the, respectively, adjacent brackets 19 are coiled springs 23, which normally maintain the tubular guides in a vertical position.

Fitting slidably in the tubular guides are pins 24, whose upper ends are provided with heads 25 and which are normally held elevated by the actuating-springs 26 which are coiled upon the shanks of the pins and bear at their upper and lower ends, respectively, against the heads 25 and the surface of the platform of the car.

This being the construction of my invention, the operation thereof is as follows: By the depression of one or the other of the slidable pins, which may be accomplished by the driver or motor-man by pressing his foot thereupon, the pivoted tongue is engaged and swung to one side of the other, thereby setting the switch-rail as the operator may desire. The laterally slidable spring-actuated guide-eyes or blocks with which the vertical tubular guides are provided enable the latter to yield under a severe lateral strain to avoid fracture. It occasionally happens that an ob-

struction prevents the setting of the switch, and it is to avoid breakage of the parts under such circumstances that the springs 23 are provided.

5 In Fig. 5 I have shown a slightly modified form of switch-tongue, also wedge-shaped or V-shaped, but arranged upon a centrally pivoted disk. The operation is the same and the same means are employed in its operation.

10 It is to be understood that changes in the form, proportion and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

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

1. The combination with a car, a stationary transverse guide-rod supported below the same, a block loosely mounted thereon a vertically-reciprocating spring-actuated pin arranged on the car and connected with the block, and a spring for supporting the block normally at a certain point upon the rod whereby it is adapted to operate a switch-tongue, substantially as specified.

2. The combination with a track mechanism, of a transverse guide-rod carried by the rolling-stock, vertically reciprocable spring-actuated pins slidably connected to said guide-rod and capable of yielding to a lateral strain, and springs arranged on the opposite sides of said pins to normally hold them in certain predetermined relations, substantially as specified.

3. The combination with a transverse guide-rod, guide-eyes or blocks slidably fitted upon said rod, vertical tubular guides fixed at their lower ends to said eyes or blocks and carried by the rolling-stock, actuating-springs 23 connected to the said eyes or blocks, pins slidably fitted in the tubular guides and actuating-springs connected thereto, said pins being adapted to operate a track mechanism, substantially as specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

CYRUS P. BACHELDER.

Witnesses:

MYRON T. KINYON,  
HENRY H. SHELDON.