

(No Model.)

J. D. STONE.
SWITCH OPERATING DEVICE.

No. 487,457.

Patented Dec. 6, 1892.

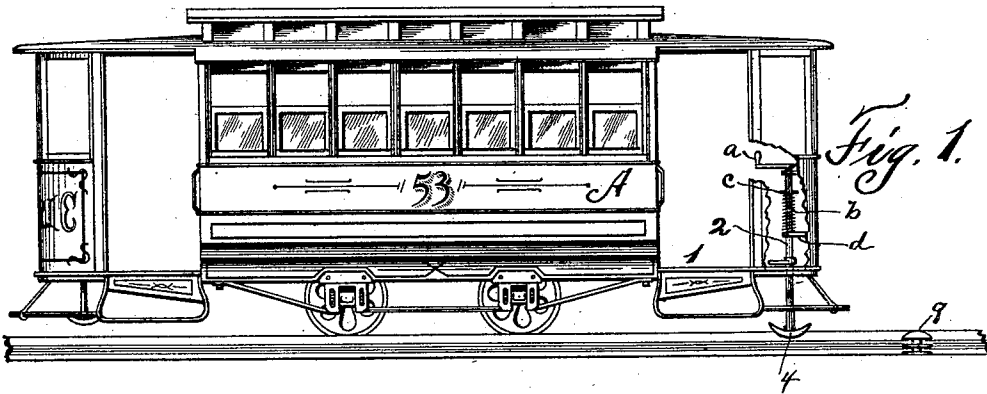


Fig. 2

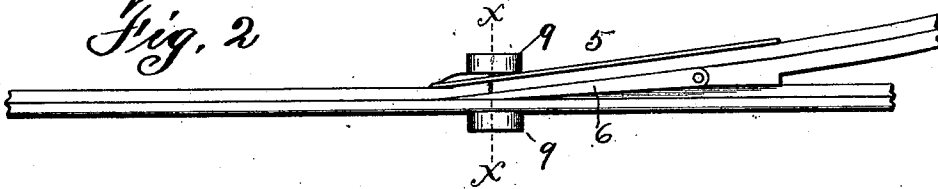


Fig. 3.

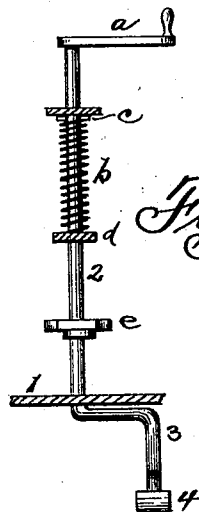
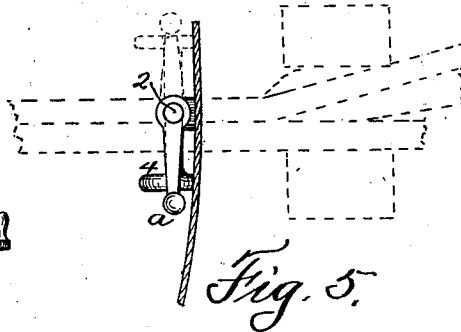
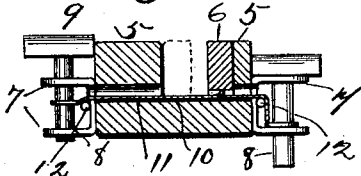


Fig. 4.

WITNESSES:

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UNITED STATES PATENT OFFICE.

JOHN D. STONE, OF SYRACUSE, NEW YORK.

SWITCH-OPERATING DEVICE.

SPECIFICATION forming part of Letters Patent No. 487,457, dated December 6, 1892.

Application filed August 6, 1892. Serial No. 442,324. (No model.)

To all whom it may concern:

Be it known that I, JOHN D. STONE, of Syracuse, in the county of Onondaga, in the State of New York, have invented new and useful
5 Improvements in Switch-Operating Devices, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

My invention relates to the construction
10 and operation of devices for turning the switch-rail of switches in railroads, it being more particularly adapted and designed for use in street-railroads.

My object is to produce a device mounted
15 upon either end of the car, so arranged and adapted that it will pass upon a tread located upon each side of the frog in which the switch-rail is located, thereby throwing the point of the switch-rail as desired.

My invention consists in the several novel
20 features of construction and operation hereinafter described, and which are specifically set forth in the claims hereunto annexed. It is constructed as follows, reference being had
25 to the accompanying drawings, in which—

Figure 1 is a side view of a street-car provided with my improved mechanism for operating the tread which moves the switch-rail. Fig. 2 is a top plan view of the rail-
30 frog, showing the switch-rail therein and the treads upon the sides thereof. Fig. 3 is a cross-section on line *xx* in Fig. 2. Fig. 4 is a view of the device carrying the shoe which rides upon the tread, detached. Fig. 5 is a
35 top plan view thereof, showing the same mounted, its reverse position in dotted lines, and showing the position of the rail and treads in dotted lines.

A is a car provided with a platform 1 in the
40 ordinary way, and 2 is a vertical shaft mounted upon the front end and at one side of the platform and having its lower end provided with a crank-arm 3 and upon its extreme end a shoe 4, for the purposes hereinafter set forth.
45 Upon its opposite end is a crank-arm *a*, by which the shaft 2 is rotated, as desired. *b* is a spiral spring interposed between the frog *c* and the shoulder *d* upon the shaft 2 for the purpose of raising automatically and keeping
50 the shoe 4 off from the track when not in use,

and *e* is a foot-piece by which the shoe 4 is forced down upon the tread when it is desired to operate the switch.

5 is the ordinary switch-frog, having guide-rails in the ordinary way and a switch-rail 6, 55 pivoted therein, substantially as shown.

7 are brackets mounted upon the opposite side of the frogs and provided with openings upon their lateral faces, through which the shank 8 passes, having the convex tread 9 60 upon their upper ends.

10 is a cable, wire, cord, or chain passing through the opening 11 in the frog and connected at each end to the shafts 8 or a shoulder upon said shafts. 65

12 are friction-rollers located at the end of the opening 11, over which the chain 10 passes in moving to and fro.

The chain 10 is secured, preferably, to the under side of the switch-rail 6. 70

My invention is operated as follows: When it is desired to operate the switch and turn the switch-rail in either direction, I first turn the shaft 2 by means of the handle *a* until the shoe 4 will pass upon one of the treads which
75 I desire to operate. I then press my foot upon the foot-piece *e*, allowing the car in its forward movement to depress it, by which the switch-rail is moved in either direction.

What I claim as my invention, and desire 80 to secure by Letters Patent, is—

1. The combination, with a frog and a switch-rail thereon, of brackets having openings therein secured upon the sides of said frog, shanks adapted to travel in said openings, and
85 a flexible connection between said shanks and adapted to move laterally the switch-rail.

2. The combination, with a frog, of brackets having openings therein secured upon the sides of said frog, shanks adapted to travel 90 in said openings, treads secured to the top of said shanks, and a flexible connection between said shanks and adapted to move laterally the switch-rail.

3. The combination, with a frog, of brackets having openings therein secured upon the sides of said frog, shanks adapted to travel in said openings, antifriction-rollers upon the lower side of the openings in the frog, and a flexible connection between said shanks pass- 100

ing through said openings and over said rollers and adapted to move the switch-rail laterally.

4. The combination, with a frog and switch-rail, of brackets having openings therein secured upon the sides of the frog, shanks adapted to travel in said openings, treads upon said shanks, a flexible connection between said

shanks, and means upon the car for depressing said treads, as set forth. 10

In witness whereof I have hereunto set my hand this 21st day of July, 1892.

JOHN D. STONE.

In presence of—

HOWARD P. DENISON,

C. W. SMITH.