(No Model.)

D. J. McOSKER.

SWITCH OPERATING DEVICE FOR STREET CARS.

No. 413,455. Patented Oct. 22, 1889.

Fig. 1.

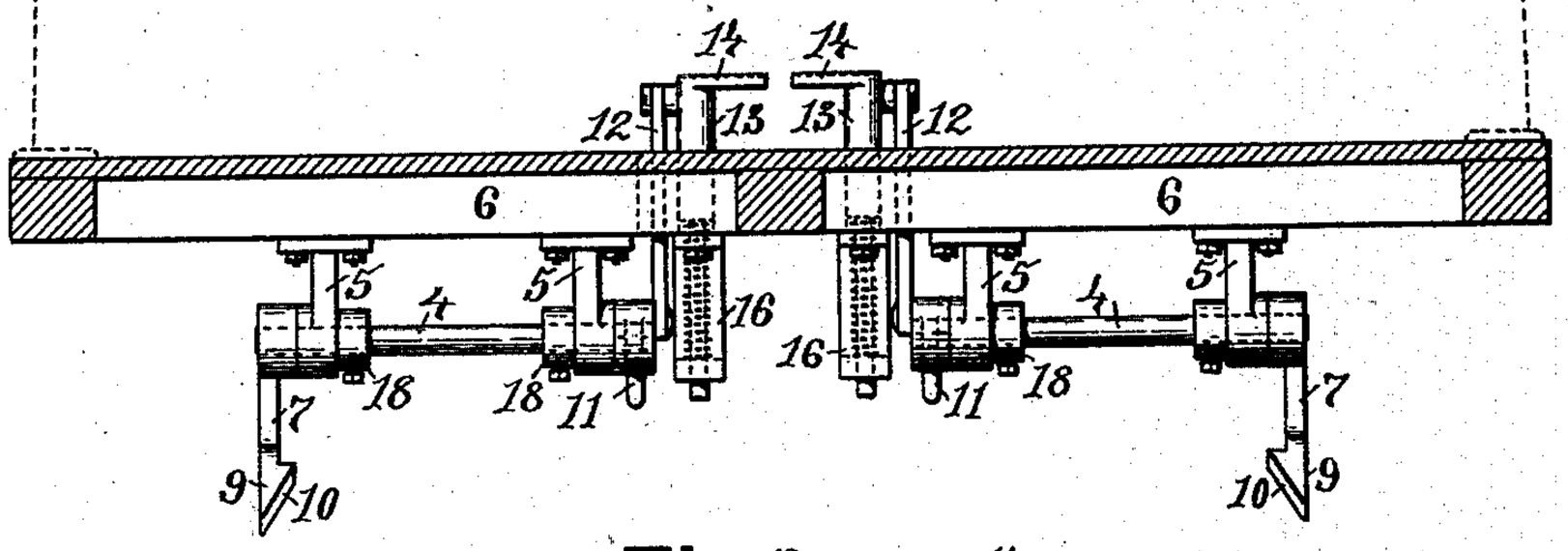
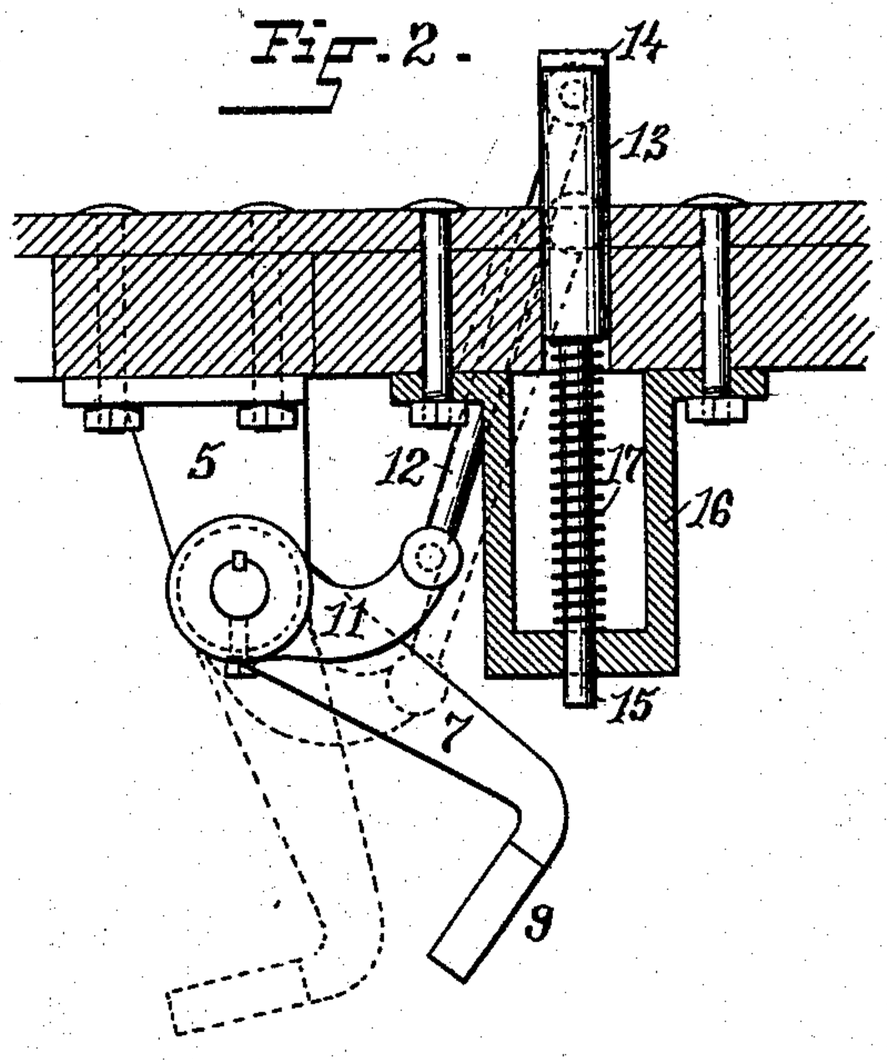


Fig. 2.



WITNESSES:

Chas. H. Luther Jr.

M. F. Bligh.

INVENTOR:

Daniel J. McOsker

by Joseph A. Miller & Co.

Attys

UNITED STATES PATENT OFFICE.

DANIEL J. McOSKER, OF PROVIDENCE, RHODE ISLAND.

SWITCH-OPERATING DEVICE FOR STREET-CARS.

SPECIFICATION forming part of Letters Patent No. 413,455, dated October 22, 1889.

Application filed August 5, 1889. Serial No. 319,781. (No model.)

To all whom it may concern:

Be it known that I, DANIEL J. MCOSKER, of the city of Providence, in the county of Providence and State of Rhode Island, have invented a new and useful Improvement in Switch-Operating Devices for Street-Cars; and I hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification.

This invention has reference to a device secured under the platform of a street-car for operating the pivoted arm of the switch at any turn-out from the main track which the car is to enter; and it consists in the peculiar and novel construction of a curved arm provided at its outer end with a plowshare end and connected with a treadle by a shaft and lever, so as to operate the plowshare-lever from the platform of a street-car, as will be more fully set forth hereinafter.

Figure 1 is a sectional view of the platform of a street-car, showing two of my improved switch-operating devices secured to the same. Fig. 2 is an end view of my improved switch-operating mechanism, shown in solid lines in the position when not in use and in broken lines in the position in use.

Similar numbers of reference indicate corresponding parts throughout.

In cities the street-cars usually pass over lengths of track used in common by two or more lines of cars at the turn-outs, and also at places where cars pass each other switches are placed, in which a tongue at one end of the width of the rail and tapering to a point is pivotally connected at its widest end with the through-rail and bearing at the point against the curved rail of the turn-out. These hinged tongues are usually moved by inserting a pointed switching-bar between the rail and the tongue, and thus moving the hinged tongue to open the switch. Elaborate and costly switch-operating devices have also been used to open and close these switches.

The device for operating these switches shown in the accompanying drawings consists of the shaft 4, journaled in the hangers 5 5, by which the shaft is suspended beneath the platform 6. On the outer end of the shaft 4 is secured the arm 7, the lower end 8 of which arm is bent at or nearly at right angles to the arm 7, and is formed like a plowshare, the outer side 9 being straight and the inner placed at an angle, so that when the forward point of the arm enters between the hinged tongue of the switch and the rail it will move the hinged tongue away from the rail, and as the end of the arm 8 enters it continues to move the tongue until the switch is opened sufficient to allow the wheel of the car to enter the curved turn-out by reason of the inward-projecting beveled form of the arm 8. To the inner end of the shaft 4 the lever 11 is secured, and the end of this lever is connected by the connecting-rod 12 with the tube 13, at the upper end of which the foot-treadle 14 is formed. The pin 15 is secured at its lower end in the yoke 16, the upper end entering the tube 13. The coiled spring 17 surrounds the pin 15 and bears on the stirrup at one end and against the tube 13 on the other end.

The operation of the device is as follows: When the car approaches a turn-out switch into which it is to enter, the driver places his foot on the foot-treadle 14 and depresses the tube 13 against the resistance of the spring 17; thus, through connecting-rod 12 and lever 11 rocking the shaft 4, the arm 7 is brought down, thus bringing the thin edge of the wedge-arm 8 between the tongue and rail until the switch is opened. On taking the foot off from the foot-treadle the spring 17 will react and raise the arm 7 and wedge-arm 8, restoring the device to the normal position shown in solid lines in Fig. 2. If the wedge-arm 8 meets with any kind of impediment, the device is free to yield to the same. It is therefore not liable to get out of order.

Two devices are shown on the platform 6 in Fig. 1. Cars required to run in opposite directions are provided with two on each end of the car.

The yielding pressure exerted by the foot of the operative against the spiral spring 17 insures great durability to the device, and sufficient flexibility to allow for the springing or shaking of the car is secured by making the connections of the connecting-rod with the lever 11 and tube 13 a loose fit, so as not to bind, placing short coiled springs between the hangers 5 and the collars 18 and giving

the shaft 4 sufficient play endwise. The two treadles on the platform are preferably close together, so that the operator, be he driver, conductor, or engineer, may readily place his foot on either, as required.

It is evident that this device is applicable to horse, cable, electric, steam, or other cars running on roads provided with the switches hereinbefore described.

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

1. In a device for operating the switches of street-railways, the combination, with the platform of a car, of a shaft supported in suitable bearings below the platform, an arm secured to the outer end of said shaft, ending in a pointed wedge-shaped arm constructed to enter between the rail and the switch-tongue, the other end of the said shaft being connected with a foot-treadle held in the raised position by a spring, as described.

2. The combination, with arm 7, having the curved wedge-arm 8, the shaft 4, and the hangers 5, of the foot-treadle 14, the spring 17, the lever 11, and connecting-rod 12, as described.

3. In combination with the platform of a car, one or more switch-operating devices, consisting of the tube 13, pin 15, spring 17, the stirrup 16, connecting-rod 12, lever 11, shaft 4, hangers 5, and the arm 7, having the wedge-arm 8, bent at or nearly at right angle, as and for the purpose described.

DANIEL J. McOSKER.

Witnesses:
J. A. MILLER, Jr.,
M. F. BLIGH.