

(No Model.)

2 Sheets—Sheet 1.

H. P. COGSWELL.
SWITCH OPERATING DEVICE.

No. 513,883.

Patented Jan. 30, 1894.

Fig. 1

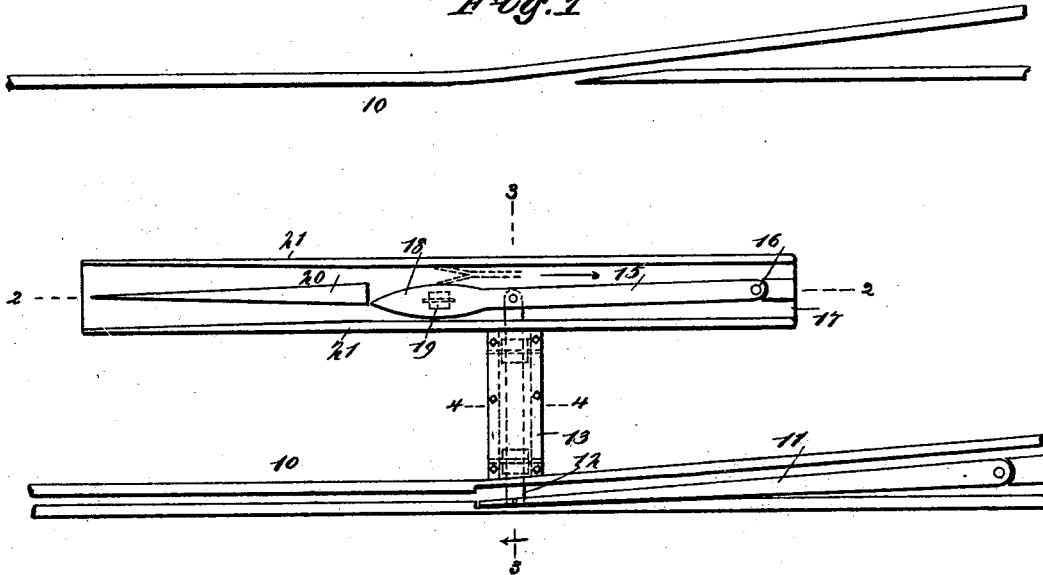


Fig. 2

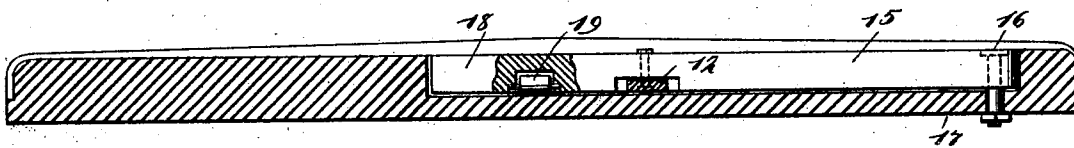


Fig. 5

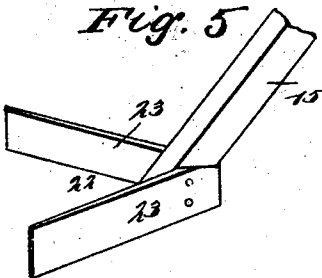


Fig. 3

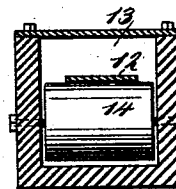
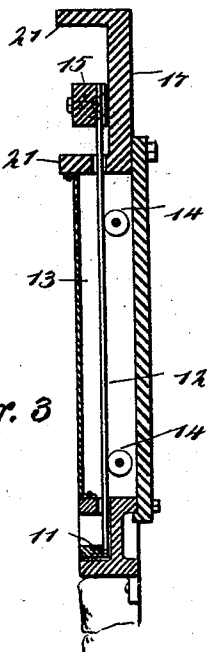


Fig. 4

WITNESSES:

J. a. Bergeth
C. Sedgwick

INVENTOR

H. P. Cogswell
BY *Wm H*

ATTORNEYS.

(No Model.)

2 Sheets—Sheet 2.

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No. 513,883.

Patented Jan. 30, 1894.

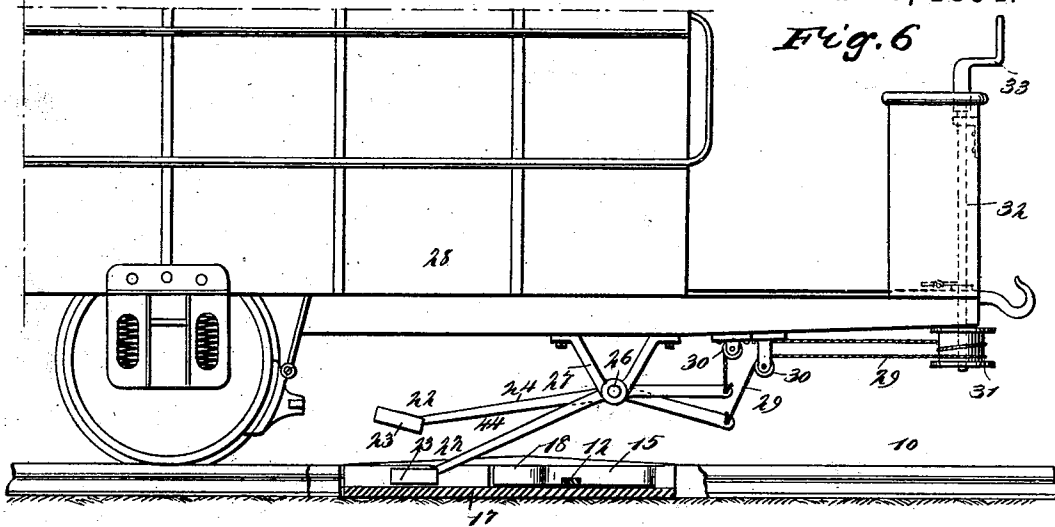


Fig. 7

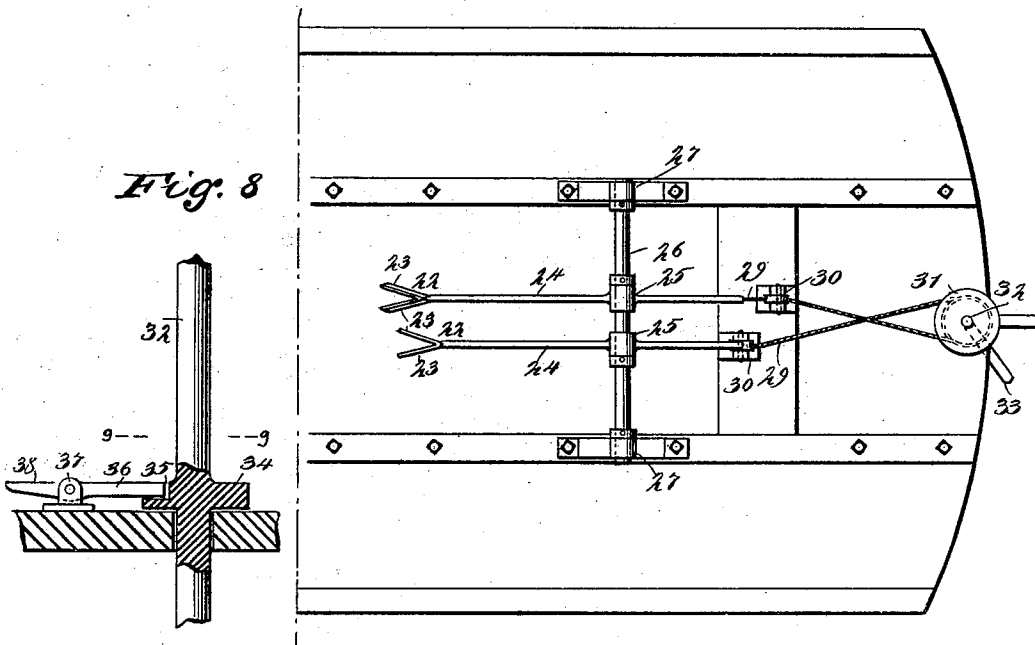
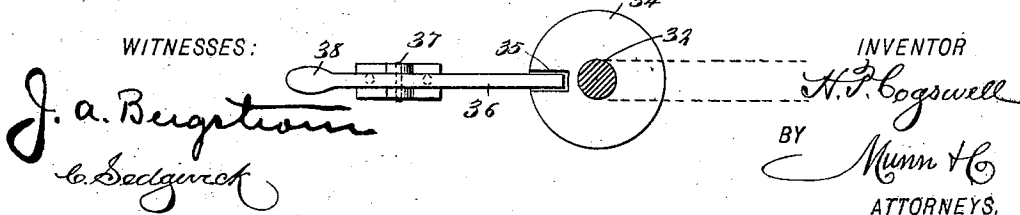


Fig. 9



UNITED STATES PATENT OFFICE.

HANDLEY P. COGSWELL, OF BROOKLYN, NEW YORK.

SWITCH-OPERATING DEVICE.

SPECIFICATION forming part of Letters Patent No. 513,883, dated January 30, 1894.

Application filed May 2, 1893. Serial No. 472,757. (No model.)

To all whom it may concern:

Be it known that I, HANDLEY P. COGSWELL, of Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Switch, of which the following is a full, clear, and exact description.

My invention relates to improvements in that class of switches which is adapted to be operated from a moving car; and the object of my invention is to produce a very simple, strong switch operating device which may be conveniently applied to an ordinary street car, and which may be very easily operated from the car so as to open or close the switch.

To this end my invention consists of certain features of construction and combinations of parts, as will be hereinafter described and claimed.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar figures of reference indicate corresponding parts in all the views.

Figure 1 is a plan view of a track provided with a switch; such as may be used in connection with my improved switch-operating device. Fig. 2 is a detail section of the switch lever and its bed plate on the line 2—2 in Fig. 1. Fig. 3 is a cross section on the line 3—3 in Fig. 1. Fig. 4 is a detail cross section on the line 4—4 in Fig. 1. Fig. 5 is a detail perspective view of one of the switch operating shoes or plows. Fig. 6 is a broken sectional elevation of my improved switch mechanism as applied to a car. Fig. 7 is a broken inverted plan of a car and the switch mechanism thereon. Fig. 8 is a sectional view of the mechanism for fastening the switch shoes in place; and Fig. 9 is a sectional plan on the line 9—9 in Fig. 1.

The track 10 may be of any usual kind, and it is provided with the customary switch rail 11 which is the ordinary pivoted rail and works in the usual manner. The switch rail is connected with a switch lever located about centrally of the track, and adapted to be operated by shoes extending beneath the car. In the drawings, I have represented a preferred mode of operatively connecting the switch lever with the switch rail, but any suitable construction may be adopted. To this rail is secured a rod 12 which extends trans-

versely inward through a casing 13, and to decrease friction and prevent excessive wear the casing is provided with rollers 14 to support the switch rod. The rod at its inner end is pivoted to a switch lever 15 which is pivoted at one end, as shown at 16, upon a bed plate 17, and this lies flat upon the track parallel with the rails and preferably near the center of the track. The lever 15 is, at its free end, enlarged and formed into a pointed head 18 which has journaled in its under side a roller 19, this being arranged to run upon the bed plate and prevent friction. The lever 15 is adapted to swing behind the pointed guide rail 20 which is produced on the bed plate 17 and the base or board end of which is arranged next the point of the lever 15. The bed-plate has edge flanges 21 which project upward and these flanges diverge slightly, or rather are thinned opposite the point of the guide rail 20, so that the slot or slideway between the flanges and the guide rail is wider opposite the point of the rail than it is opposite the wider end of the rail, and this arrangement enables the switch-operating shoes or plows 22 to enter readily between the guide rail and the flanges. The plows 22 are arranged in pairs, one being adapted to enter on one side of the guide rail 20 and the other on the opposite side of the rail, and each plow is made of side pieces 23 which meet at one end and diverge at their other ends, thus forming a V-shaped plow well adapted to enter between the guide rail and a flange 21 of the bed plate. Each plow 22 is carried by a bent lever 24, which is provided with a collar 25 turning loosely on a transverse shaft 26, which is journaled in brackets 27 on the under side of the car 28. The levers 24 are arranged parallel with each other, and when the rear end of one lever is depressed it brings the shoe 22 upon the bed plate 17 and into engagement with the switch lever 15, so that the shoe, when it strikes the head 18 of the lever, presses the lever to one side and this, acting on the rod 12, shifts the switch rail 11. The levers 24 and their shoes are, of course, arranged so that one shoe will align with the slideway on one side of the guide rail 20, while the other shoe registers with the slideway on the opposite side of the rail. In this

way by depressing the correct shoe, the switch may be thrown in either direction. The front ends of the levers 24 are secured to the ends of the cable 29 which extends forward over 5 suitable guide pulleys 30 and is wound around a drum 31 on a vertical shaft 32 which is journaled on the car fender, or other suitable support, and has at its upper end a crank 33 by which it may be revolved. The cable is 10 crossed, as shown in Fig. 7, and by turning the shaft 32 in one direction, one shoe 22 will be raised and the other depressed. It will be seen that the shoes are easily controlled from the car and that by their action the switch 15 is also readily thrown in any necessary direction.

The shaft 32 is provided with a collar 34 in one side of which is a recess 35, although more recesses may be provided if necessary, 20 and this recess engages a swinging dog which is fulcrumed near the center, as shown at 37, on the platform of the car and which, at its rear end, terminates in a treadle or foot-plate 38 upon which the operator may step when 25 the dog is to be raised and the collar 34 and shaft 32 released. This arrangement enables the shaft to be locked rigidly so as to hold one of the shoes down, and it also enables

the shaft to be released so as to be freely turned.

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

1. The combination, with a projection in the track for operating the switch rail, of the 35 tilting levers fulcrumed beneath the car and arranged parallel with each other, fixed or rigid shoes carried by the levers and adapted to engage the shifting lever, and a cable mechanism for actuating the levers, substantially 40 as described.

2. The combination, with a projection in the track for operating the switch rail, of parallel tilting levers fulcrumed beneath the car 45 and provided with fixed or rigid shoes at their rear ends to engage the shifting lever, the revoluble drum journaled upon the car, a lock for the drum, and a cable wound around the drum and secured at its ends to the forward 50 ends of the parallel levers, substantially as described.

HANDLEY P. COGSWELL.

Witnesses:

GEORGE DICK,
GEORGE E. O'HARA.