

(No Model.)

2 Sheets—Sheet 1.

C. M. FITCH.
RAILROAD SWITCH.

No. 493,991.

Patented Mar. 21, 1893.

Fig. 1

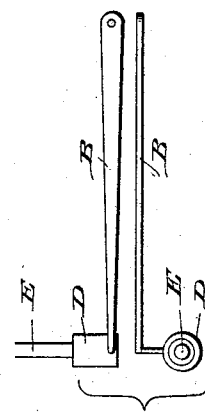
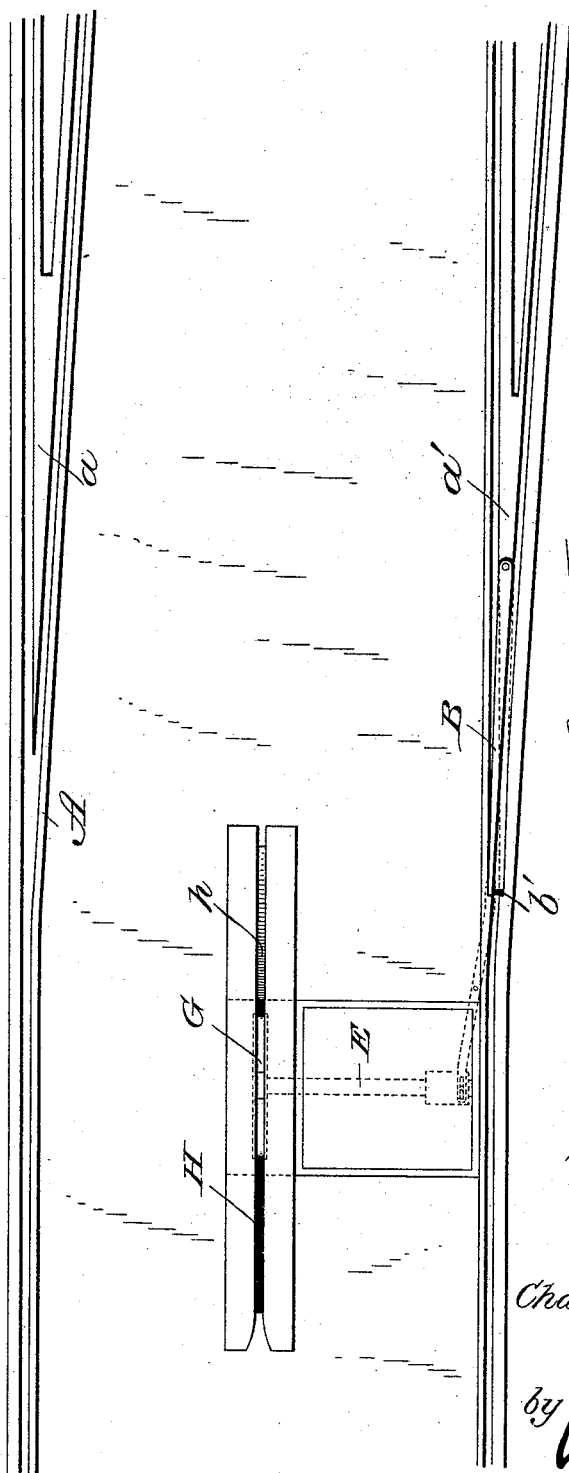


Fig. 7.

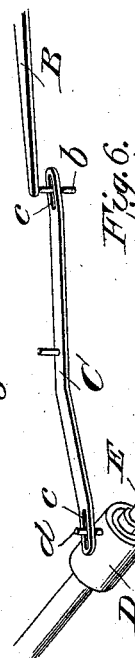


Fig. 6.

Witnesses
L. S. Elliott
W. H. Johnson

Charles M. Fitch.
Inventor
by *[Signature]*
Attorney

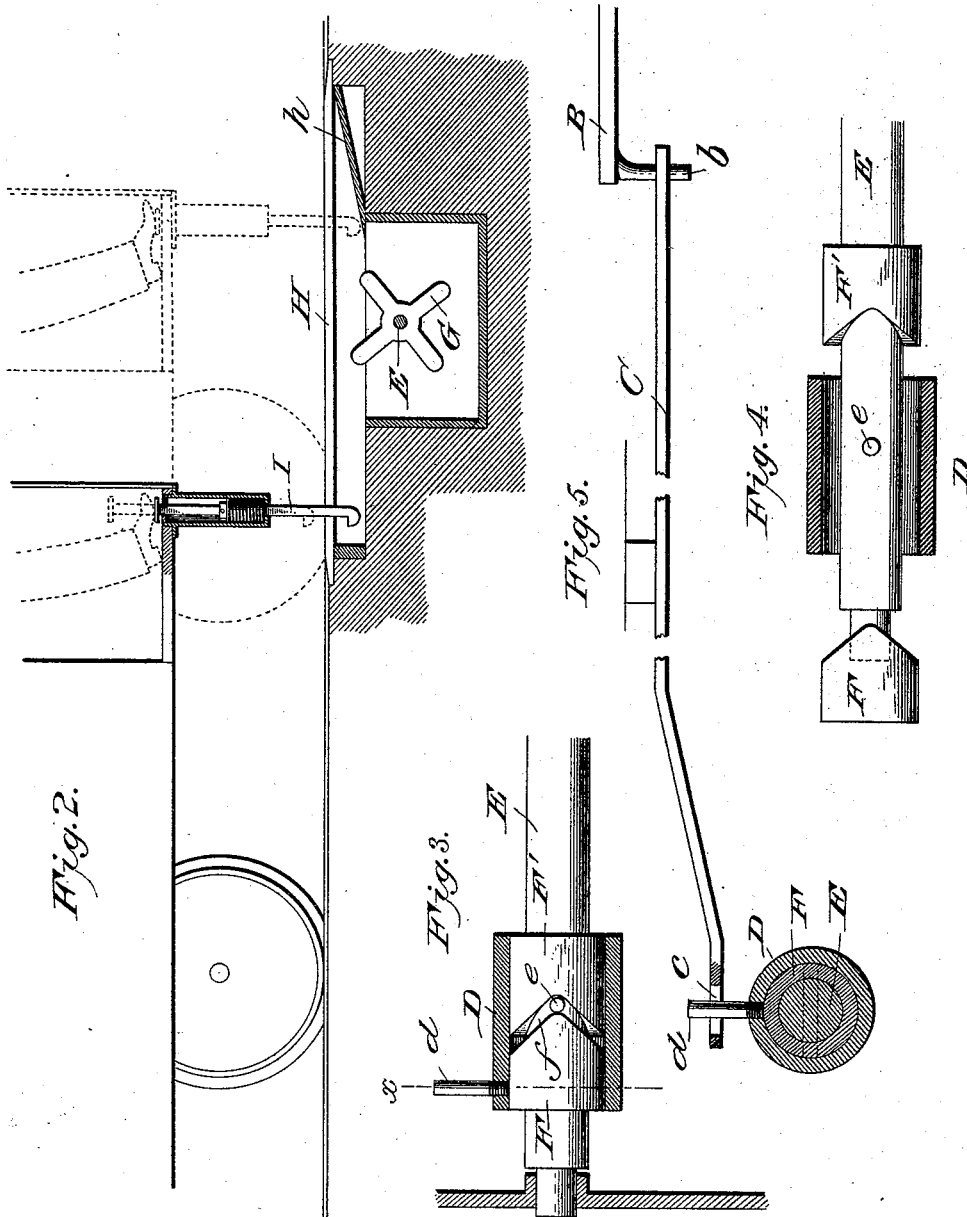
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2 Sheets—Sheet 2.

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L. S. Elliott
W. M. Johnson

Charles M. Fitch
Inventor

by *[Signature]*
Attorney

UNITED STATES PATENT OFFICE.

CHARLES M. FITCH, OF SOUTH NORWALK, CONNECTICUT.

RAILROAD-SWITCH.

SPECIFICATION forming part of Letters Patent No. 493,991, dated March 21, 1893.

Application filed November 3, 1892. Serial No. 450,887. (No model.)

To all whom it may concern:

Be it known that I, CHARLES M. FITCH, a citizen of the United States of America, residing at South Norwalk, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Railroad-Switches; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

This invention relates to improvements in mechanism for shifting railway switch-points operated by a depending bar carried by the car, said operating bar engaging with the projecting arms of a tappet-wheel mounted on a shaft having cams which reciprocate a sleeve connected to the switch-point, as will be hereinafter fully set forth and particularly pointed out in the claims.

The invention consists in the particular construction and combination of the parts.

In the accompanying drawings, forming part of this specification: Figure 1 is a plan view of a railway showing my improvements applied. Fig. 2 is a side elevation, partly in section. Fig. 3 is a detail sectional view showing the cam and sleeve located on the horizontal shaft. Fig. 4 is a detail view showing the cams separated. Fig. 5 is a sectional view through the line *xx* of Fig. 3. Fig. 6 is a detail perspective view. Fig. 7 is a view illustrating a modification.

A designates a section of a street railway track, which is provided on one side with a stationary switch-tongue *a* and on the other with a tongue *a'* to which is connected a movable switch-point B. The switch point is pivoted to the tongue in the usual manner and is provided at its forward end with a depending pin *b* which passes through a transverse slot or aperture *b'* in the track to extend beneath the same.

C designates a lever, which is pivotally mounted below the plane of the tracks and adjacent to the rail carrying the movable switch-point. This lever is provided at each

end with a slot *c*, so that it can engage at one end with an upwardly projecting pin or stud *d* upon the sleeve D and at the other end with the downwardly projecting pin *b* on the switch-point.

E designates a shaft which is supported by a suitable housing or casing located beneath the roadway, the sides of said housing having bearings in which the reduced ends of the shaft lie. This shaft near one end has rigidly secured thereto an outwardly projecting stud *e*, on each side of which are loosely mounted the cams F and F'; said cams being positioned on the shaft so as to provide a sinuous groove *f* within which the stud lies. The sleeve D, hereinbefore referred to, encircles these cams and is rigidly secured thereto by means of set-screws or equivalent devices. It will be understood that when the shaft E is rotated the pin carried thereby will contact with the cams F F' and reciprocate the same, and that the sleeve being connected with said cams will move therewith and operate the lever and switch-point. The faces of the cams are such that each quarter turn of the shaft E will cause a full movement of the sleeve D in one direction.

The shaft E at a certain point, preferably beneath the center of the roadway, has keyed thereon a tappet-wheel G having four arms or projections, and the roadway immediately above this tappet-wheel is provided with a slot H, at one end of which is an inclined guideway *h*. The plates forming the slot are flared at the end opposite the guideway to provide means for guiding the operating bar into the slot to engage with the tappet-wheel.

The operating bar, I, is carried by the front platform of the car, and is suitably incased and provided with a spring for holding the same normally elevated. When it is desired to bring the bar to an operative position it is only necessary for the driver or motor-man to depress the same, and when depressed at the proper time will enter the slot and contact with one of the arms of the tappet-wheel and cause a partial rotation of the shaft E, which operates to move the switch-point as hereinbefore described.

It will be noted that by means of the mech-

anism herein shown and described there is but a single arm to be operated by the driver, and that the parts are simple and positive in action.

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

1. In a switch operating mechanism, a movable switch-point connected to a reciprocating sleeve, said sleeve having cam portions with which contacts an outwardly projecting pin carried by a shaft, and means for actuating said shaft, substantially as shown.

2. In a switch operating mechanism, the combination of a horizontal shaft carrying a tappet-wheel, a sleeve which is adapted to be reciprocated when said shaft is turned, said sleeve engaging with mechanism for shifting

the switch-point, the tappet-wheel being adapted to be operated by a bar carried by the car, substantially as set forth.

3. In a switch-operating mechanism, the combination of the reciprocating sleeve enclosing cams, a pin secured to a shaft for engaging with said cams, and a tappet-wheel mounted on the shaft, together with a lever adapted to engage with the sleeve and with the switch-point, for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES M. FITCH.

Witnesses:

RICHARD H. GOLDEN,
CHAS. I. STERLING.