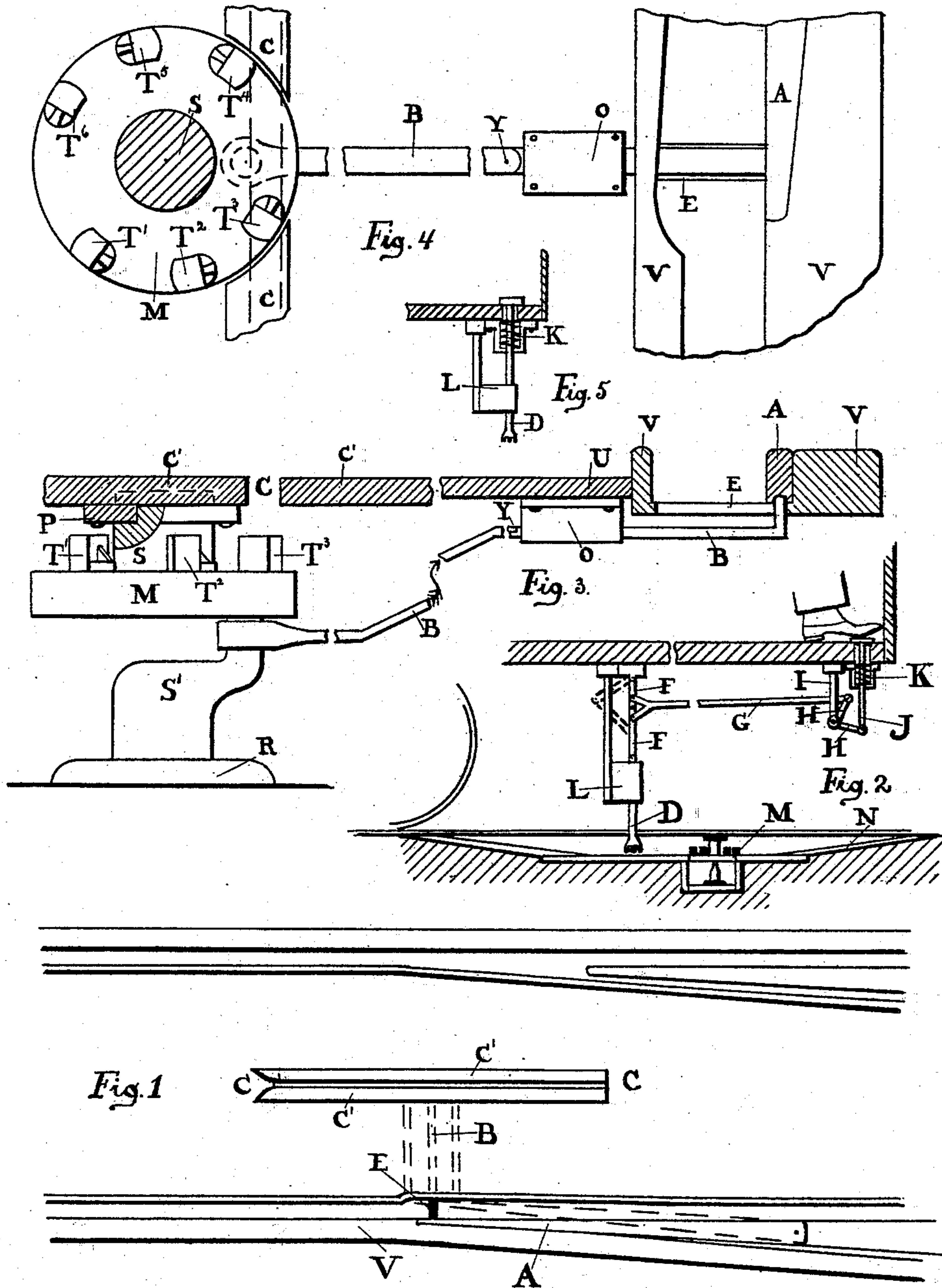


(No Model.)

S. H. CRAMPTON.  
RAILROAD SWITCH.

No. 524,847.

Patented Aug. 21, 1894.



WITNESSES:

F. A. Crampton  
O. L. Crampton

INVENTOR

S. H. Crampton.



# UNITED STATES PATENT OFFICE.

STEWART H. CRAMPTON, OF BROOKLYN, NEW YORK.

## RAILROAD-SWITCH.

SPECIFICATION forming part of Letters Patent No. 524,847, dated August 21, 1894.

Application filed October 7, 1893. Serial No. 487,527. (No model.)

*To all whom it may concern:*

Be it known that I, STEWART H. CRAMPTON, a citizen of the United States of America, and a resident of Brooklyn, in the county of Kings and State of New York, have invented new and useful Improvements in Railroad-Switches, of which the following is a specification.

My invention relates to improvements in the manner of shifting street railway switch-points by means of a simple and positive mechanism, securing reliable results.

It consists of a depending rod operating levers, carried by the car, and causing a projecting arm to engage with a crank wheel having vertical teeth and a connection with the switch-point, as will be hereinafter fully described and shown and specified in the claims. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a plan view of a railway bed, showing the applied improvements. Fig. 2 is a vertical view of the mechanism, attached to the car. Fig. 3 is a vertical view showing the mechanism in the box below the street level, and its connection with the switch-point. Fig. 4 is a top view of the mechanism, showing its connection with the switch-point, the cover of the box being removed. Fig. 5 is a modification of Fig. 2.

Similar letters refer to similar parts throughout the several views.

The switch-point, Figs. 1, 3 and 4, is designated by A. The dotted lines B in Fig. 1 indicate the connecting rod B in Figs. 3 and 4.

C. C. in Figs. 1, 3 and 4, is the slot through which the projecting arm passes in working the mechanism to shift the switch-point A. C' C' are flanges on each side of the slot to guide the projecting triple pointed rod D. (Figs. 1 and 3.) These flanges are so constructed as to deftly guide the rod into the slot.

E, (Figs. 1, 3 and 4) is a slot through which the upright projection of rod B, which is attached to the switch-point, passes.

F. F. (Fig. 2) is a toggle-joint, to one arm of which the projecting rod D is connected by a movable joint. The rod D preferably has three points or projections on its lower

end adapted to engage with the teeth as placed on wheel M.

G. is a rod connecting the toggle-joint to the levers H. H.

I. is a support for the rod and levers attached to the bottom of the car.

J. is a depending rod by which the mechanism is operated when pressed by the foot.

K. is a spring which returns and holds the rod J. in its normal position after the foot of the operator has been removed.

L. is a support and guide for the triple pointed rod D.

It is preferable on cars raised some distance from the street, to have the depending rod D. supported near the wheels, and operated by the toggle and levers, as shown in Fig. 2. It can be supported at the front of the car, as shown in the modification in Fig. 5, where the triple pointed depending rod D. is operated directly by the foot.

M is a wheel rigidly connected to and supported by the shaft S. Said shaft has a bearing in the flange C' (Fig. 3) and is held in position by means of the collar P. Connected to the wheel M. on its lower face is a crank shaft S'. This shaft turns in the bearing R. at the base of the box. The connecting rod B. is fastened to the crank and operated by it. T', T<sup>2</sup>, T<sup>3</sup> are vertical teeth on the upper face of the wheel (Fig. 4) placed diametrically opposite similar teeth, T<sup>4</sup>, T<sup>5</sup>, T<sup>6</sup>. The teeth are preferably rounded on their working faces for nice action.

N. is an incline (Fig. 2) to raise the rod D out of the slot after it has engaged the teeth of the wheel M.

O. is a sleeve fastened to the top of the box U. and acts as a guide for the connecting rod B.

V. is the rail.

The connecting rod B has a joint at Y. (see Fig. 4) which allows a side motion.

The manner of operation is as follows:—

When the operator desires to move the switch-point, he presses the depending rod J. with his foot. This operates the levers, H. H., and pulls the toggle-joint in a straight line, forcing the projecting rod D. downward, so its points can successively engage the three teeth, T', T<sup>2</sup>, T<sup>3</sup> of the wheel M. as it passes through the slot. As the last point of rod D.



ceases to engage with tooth T', the wheel has made a half revolution and tooth T<sup>6</sup> has taken the place of tooth T<sup>3</sup> in the drawings. The turning of the wheel in this manner moves  
 5 the switch-point by means of the crank and its connecting rod, and places the teeth of the wheel in such position that when engaged again by the triple pointed rod an alternate movement is given to the connecting rod,  
 10 which reverses the switch-point, placing it in the position held before the first movement described.

Having fully explained my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a switch operating mechanism, the combination, with a pivoted switch-point and connecting rod, of a wheel with teeth so placed as to alternate a crank, when operated, said  
 20 crank connected to said wheel on the opposite face to which the teeth are fastened; substantially as set forth.

2. In a switch operating mechanism, the combination of a depending rod with points  
 25 on the end, and supported by the car, and a wheel with teeth placed on one face in such a manner as to alternate when engaged by said rod, substantially as set forth.

3. In a switch operating mechanism, the  
 30 combination of a depending rod with points, attached to the car, of a wheel with teeth arranged to alternate when engaged by said rod, and a crank attached to the wheel, substantially as set forth.

35 4. In a switch operating mechanism, the combination of a wheel with teeth so placed on its surface as to be alternating when op-

erated, of a crank connected to said wheel, of a rod connecting the crank to a switch-point, and a movable switch-point, substantially as  
 40 set forth.

5. In a switch operating mechanism, the combination of a depending rod with points on the end and supported by the car, of a  
 45 wheel with teeth so placed on its surface as to alternate when engaged by the points of the rod, of a crank connected to said wheel, of a rod connecting the crank to a switch-point, and a movable switch-point, substantially as set forth.  
 50

6. In a switch operating mechanism, the combination of a depending rod with points, supported by the car, of mechanism attached thereto to operate said rod, of a wheel with  
 55 teeth arranged to alternate when operated, of a crank attached to the under face of the wheel, of a rod connecting the crank to a switch-point, and a movable switch-point, substantially as set forth.

7. In a switch-operating mechanism, the  
 60 combination of a depending rod with points on its end and supported by the car, of a toggle-joint attached thereto, of levers adapted to operate the toggle-joint, and a depending rod, as J, to operate said mechanism by press-  
 65 ure on the same, substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 23d day of September, 1893.

STEWART H. CRAMPTON.

Witnesses:

JAMES R. COE,

M. H. CRAMPTON.