

No. 619,980.

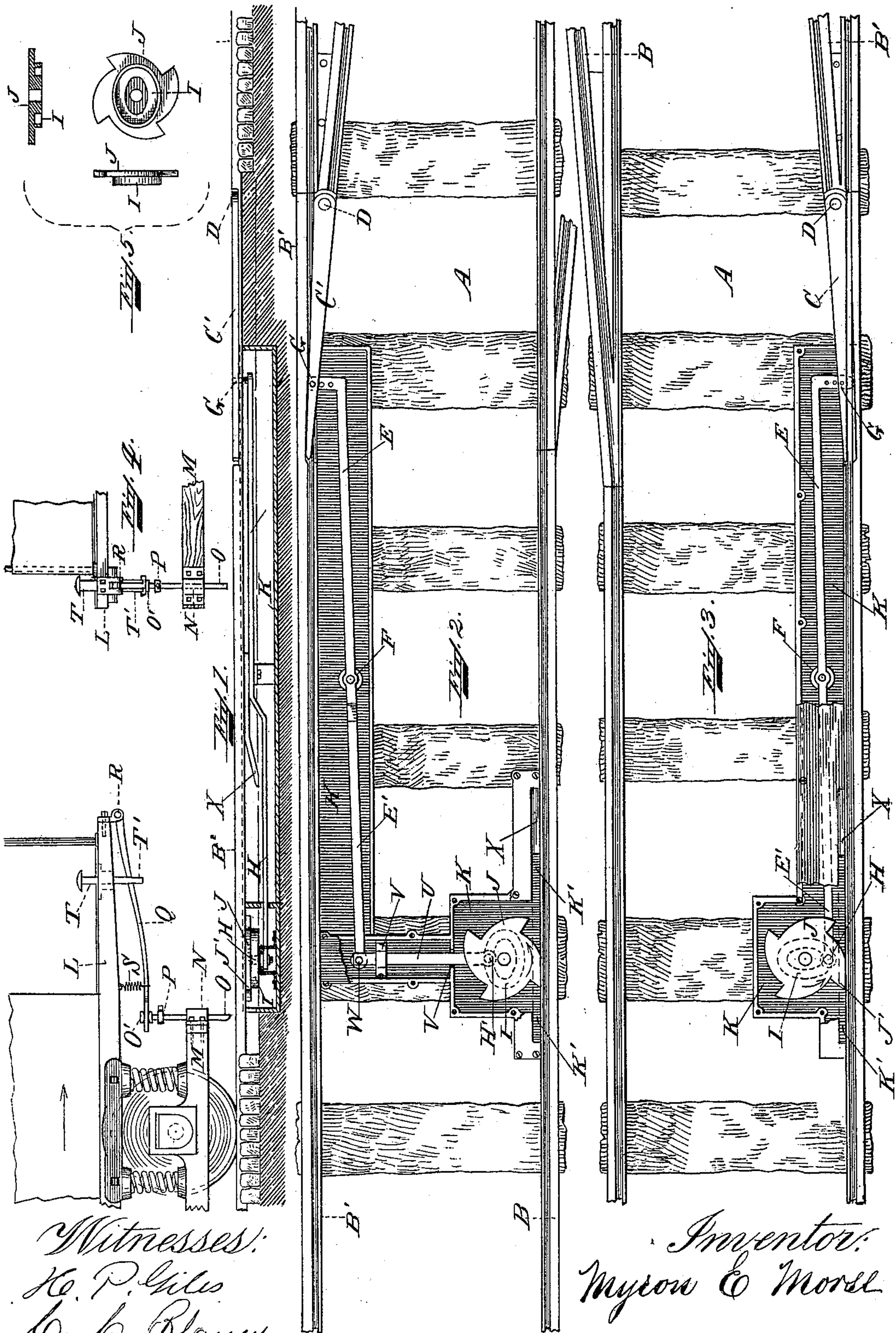
Patented Feb. 21, 1899.

M. E. MORSE.

AUTOMATIC STREET RAILWAY SWITCH.

(Application filed May 7, 1898.)

(No Model.)



Witnesses:
H. P. Giles
C. C. Blaney

Inventor:
Myron E. Morse

UNITED STATES PATENT OFFICE.

MYRON E. MORSE, OF EVERETT, MASSACHUSETTS, ASSIGNOR OF THREE-FIFTHS TO FRANK W. LOWE AND CYRIL C. BLANEY, OF BOSTON, MASSACHUSETTS.

AUTOMATIC STREET-RAILWAY SWITCH.

SPECIFICATION forming part of Letters Patent No. 619,980, dated February 21, 1899.

Application filed May 7, 1898. Serial No. 680,076. (No model.)

To all whom it may concern:

Be it known that I, MYRON E. MORSE, a citizen of the United States of America, and a resident of Everett, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Automatic Street-Railway Switches, of which the following is a specification.

My invention relates to improvements in railway-switches; and it pertains to the class of street-trainways, and particularly to that class of automatic switches which are operated from the platform of the car and whose mechanism is governed by the foot of the motorman or driver.

The objects of my invention are, first, to secure direct and positive manipulation of the switch-tongue, and, second, to produce durable and inexpensive devices easily assembled and not liable to disarrangement. The simplicity of the aggregate devices will be manifest as my description proceeds. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a vertical longitudinal view of a street-railway in part broken away to exhibit the assembled devices. Fig. 2 exhibits a plan of a road-bed with the mechanism exposed to show its operation on the left. Fig. 3 is a similar view showing its operation on the right. Fig. 4 is a front end elevation of the car-platform and connecting devices; and Fig. 5, a plan, elevation, and section of the multiple-toothed cam.

Corresponding letters indicate like parts in the several views, referring to which—

A designates the road-bed, supporting the rails B B'. The switch is indicated at C, pivotally secured to the rail in the usual manner, as at D, and is thrown in and out by the rock-lever E, Fig. 3, which is fulcrumed at F to actuate the switch C. A pivotal connection with said rock-lever E is made with the swinging end of said switch at G to impart the reciprocating motion necessary to throw the switch into operative position against its adjacent rail B', while the opposite end of the rock-lever E' is provided with a cam-roll H, traveling in and actuated by the cam-groove I, situated on the under side and integral

with the multiple-toothed cam-gear J, suitably journaled in the box K. Both the cam-gear and the lever which it actuates are sustained in and securely housed from the elements within the metal or wooden case K, securely covered in after the assemblage of the said devices, as illustrated.

I will now revert to the mechanical devices attached to the under side of the car-platform L, (shown in Fig. 1,) which operate the cam-gear J and through it the rock-lever E and switch C, previously described. To the truck-frame M is bolted the socket-iron N, which movably supports the vertically-positioned follower O, which enters the slot K' through the cover of the case K, Figs. 2 and 3, a sufficient depth to contact with one of the gears or spurs J', one of which always lies in the path of said follower O, and rotates the cam the distance necessary to open or close the switch C through its lever E with a positive movement and in the required direction.

To limit the vertical depression of the follower O, the collar P is set firm in position beneath the double head O', which receives the bifurcated end of the depressing-rod Q, fulcrumed to the front sill of the car-platform L, as at R. Its bifurcated end, suspending the follower O, is sustained against the car-platform by the restraining helical spring S, the depression of the rod Q being effected by the foot-bolt T, vertically supported in the car-platform, its slotted end T' riding upon the rod Q. Its normal position is as illustrated. When said bolt is depressed by the foot of the operator, obviously the rod Q expands the spring S and depresses the follower O to the limit gaged by the collar P until it is in the path of the spur J', Fig. 3, and in readiness to operate the switch C, as already described. Thus the position of said switch is readily observed by the motorman or driver, and the length of the rock-lever E may be such as to regulate with precision its movement when approaching the siding, and thus dispense with the services of the usual surface or road switchman.

To preclude the necessity of changing the position of the foot-bolt O and its accompanying devices or the position of the cam-gear

J and slot K' to other situations in the road-bed than as exhibited, I provide, as in the case of the left-hand switch C', the intermediate slide-bar U, (see Fig. 2,) horizontally moving in suitable supports V, forming a part of the box K, or within it, and carrying the cam-roll H', as in the former instance, and, like it, actuated in the same manner, the end of the rock-lever E' being pivotally attached to said bar U, as observed at W.

To restore the normal position of the platform appurtenances after actuating the cam and its accessories should pressure upon the foot-bolt not be withdrawn, the incline X, underlying the slot K', receives the lower end of the follower O, (when in the dotted position, as in Fig. 1,) automatically forcing it upward to its normal position, where the several devices are ready for subsequent operations. In the practical manipulation of my invention it will be observed that the rotation of the cams is to throw alternately the switches from right to left, and it is obvious that a transposed position of these devices on the road-bed enables a change in the direction of the car-route.

Having illustrated the preferred method of constructing my invention, I desire not to be

confined to the strict interpretation thereof as herein set forth, but may employ such equivalents therefor as would come within the fair scope and spirit of my invention.

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

In a switch-controlling mechanism, the combination with the switch-tongue of a railway, of a rock-lever pivotally supported and provided at one end with means for its connection to said tongue, and at its other end with a cam-roll, a cam-wheel horizontally operative provided with multiple teeth and having an elliptical groove within its lower face to receive the aforesaid roll, means for access to said cam-wheel and means secured to the car-platform to rotate the cam to reciprocate the switch-tongue, to the right or left substantially in the manner and for the purpose specified.

Signed by me, at Boston, Massachusetts, this 6th day of May, A. D. 1898.

MYRON E. MORSE.

Witnesses:

BLANCHE IRENE BRACKETT,
CHAS. HALL ADAMS.