

UNITED STATES PATENT OFFICE.

CHARLES FORTH, OF CLEVELAND, OHIO.

AUTOMATIC RAILWAY-SWITCH.

SPECIFICATION forming part of Letters Patent No. 423,865, dated March 18, 1890.

Application filed September 21, 1889. Serial No. 324,695. (No model.)

To all whom it may concern:

Be it known that I, CHARLES FORTH, a citizen of the United States, and a resident of Cleveland, county of Cuyahoga, and State of Ohio, have invented certain new and useful Improvements in Automatic Railway-Switches; and I hereby declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in automatic switches operated by a passing car; and its object is to obviate the disadvantages of the switches now in common use and lessen the expense of tending track-switches, and avoid the loss of time thereby incurred.

My invention is especially adapted to street-car tracks; and it consists in means for operating the switch-tongue automatically from a passing car, and in the combination and arrangement of the various parts of the switch and manner of connecting with a car-body, with means for operating the same, as herein-after described, shown in the accompanying drawings, and more particularly pointed out in the claims.

In the drawings, Figure 1 is a view of a car resting upon a switch, showing my improved mechanism for operating the same. Fig. 2 is a plan view of the track and switch. Fig. 3 is a transverse section of track, showing hanger from car-body and switch. Fig. 4 is a detail of switch mechanism, and Fig. 5 a detail of the pivoted bar and attachments in perspective. Figs. 6 and 7 show sectional views of a car-wheel adapted to operate the switch.

In the drawings, A is the tongue of a switch operating upon the pivot *a* to connect the main track B and side track C. A plate, as D, is placed underneath the tongue, provided with the ridges *d* and *d'*, to receive and guide the wheels of the car between the ends of the rails, and also to receive and support the operating mechanism for the tongue. Each of these ridges *d* and *d'* is perforated at *d²* to receive a pin, as E, projecting slightly above the surface of the ridge, and provided with a conical or beveled upper extremity, as E'. A strip of metal, as F, is pivoted in end bearings, as *f*, underneath the plate D, and receives the lower ends of the pins E, pivot-

ally attached at *e* on either side of the pivotal line. A bar or arm, as G, passes upward through a slot *d³* in the plate and engages with the tongue A, preferably near its pivotal point *a*, in such a manner that the depression of either of the pins E will cause the arm G to vibrate and connect the free end of the tongue with one or the other open ends of rails B or C, and admit a passing car to either the switch or main tracks.

To avoid the loss of time involved and the inconvenience of operating the switch from outside the car, an automatic attachment is shown, by means of which it may be operated from the car. In Fig. 3 is shown in detail a view of a simple device for this purpose, in which G' is a horizontal bar centrally suspended from a pivot *g* underneath the car, preferably near its center, but in front of the wheels. From this bar depend two rigid lugs *g'*, provided with rollers *g²* in their lower ends, so arranged as to engage with either of the projecting pins E on either side of the wheel, as it is desired to pass the car into the main or side tracks. Means is shown for oscillating the pivoted bar G, consisting of a bell-crank H, rod I, and lever J on the front platform. (See Fig. 1.) The pins E are placed on either side of the track of the wheels, so as not to be operated by them, but so as to be easily moved by the passing rollers.

In Figs. 6 and 7 is shown a wheel provided with an extended flange, as K, for operating the pin E, the flange of the usual width not disturbing it in passing. It will be observed that this arrangement of the pins and flanges allows all common wheels of a car to pass over the tread of the rail without influencing the switch, while only the wheels provided with flanges operate the switch-tongue. One of these wheels in front of the car may depress the pin on the exterior of the rail, while the rear wheel may be provided with an interiorly-projecting flange and return the switch to its former position; or the different wheels may be on separate cars intended for separate lines of track connected by the switch.

I do not claim the exact shape or details of construction herein described and shown. Other equivalent forms may be used to accomplish the same purpose—as a rod and

system of cranks to operate the tongue from the pins, or rigid hangers depending from the car. Such is not of the spirit of my invention; but

5 What I claim as new, and desire to secure by Letters Patent, is—

1. In an automatic switch operated by the car in passing, a main rail provided with a side extension exterior to the tread of the wheel, 10 a pin adapted to move vertically through said extension, a pivoted switch-tongue, and mechanism connecting the pin with the tongue and changing the vertical movement into a horizontal one of the tongue, in 15 combination with an extended flange on the periphery of the wheel, and means for returning the tongue to its original position,

substantially as shown, all as and for the purpose set forth.

2. In an automatic switch, a main rail and 20 vertical pins working in sockets on either side of the rail exterior and interior to the tread, respectively, in combination with wheels provided, respectively, with extended exterior or interior flanges on their peripheries, and 25 mechanism connecting the vertically-moving pins with a horizontally-moving tongue, whereby the action of one of the pins offsets the action of the other, substantially as and for the purpose set forth.

CHARLES FORTH.

Witnesses:

WM. M. MONROE,
F. H. MOORE.