2 Sheets—Sheet 1.

I. A. CHANDLER.
Street-Railway Switch.

No. 224,875. **Patented Feb. 24, 1880.**

Fig. 1.

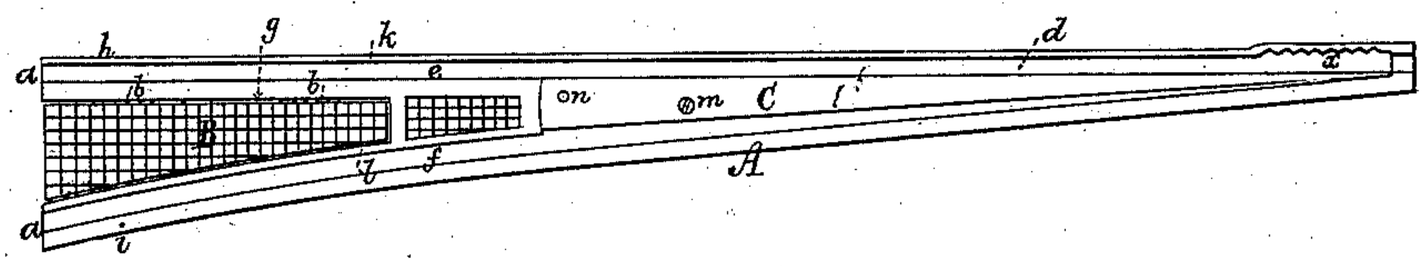

Fig. 2.

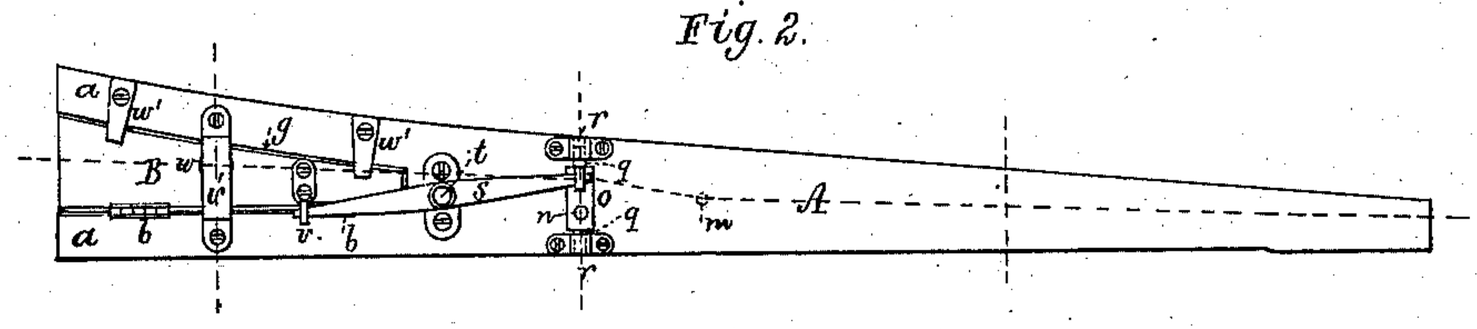

Fig. 3.

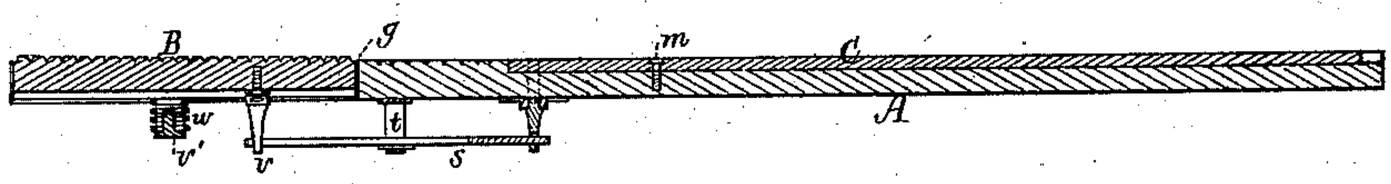

Fig. 4.

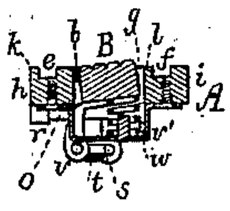

Fig. 5.

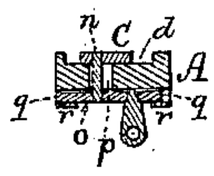

Fig. 6.

Witnesses.
S. N. Piper.
W. W. Lund

Inventor.
Isaac A. Chandler.
by attorney.
R. H. Eddy

2 Sheets—Sheet 2.

I. A. CHANDLER.
Street-Railway Switch.

No. 224,875. Patented Feb. 24, 1880.

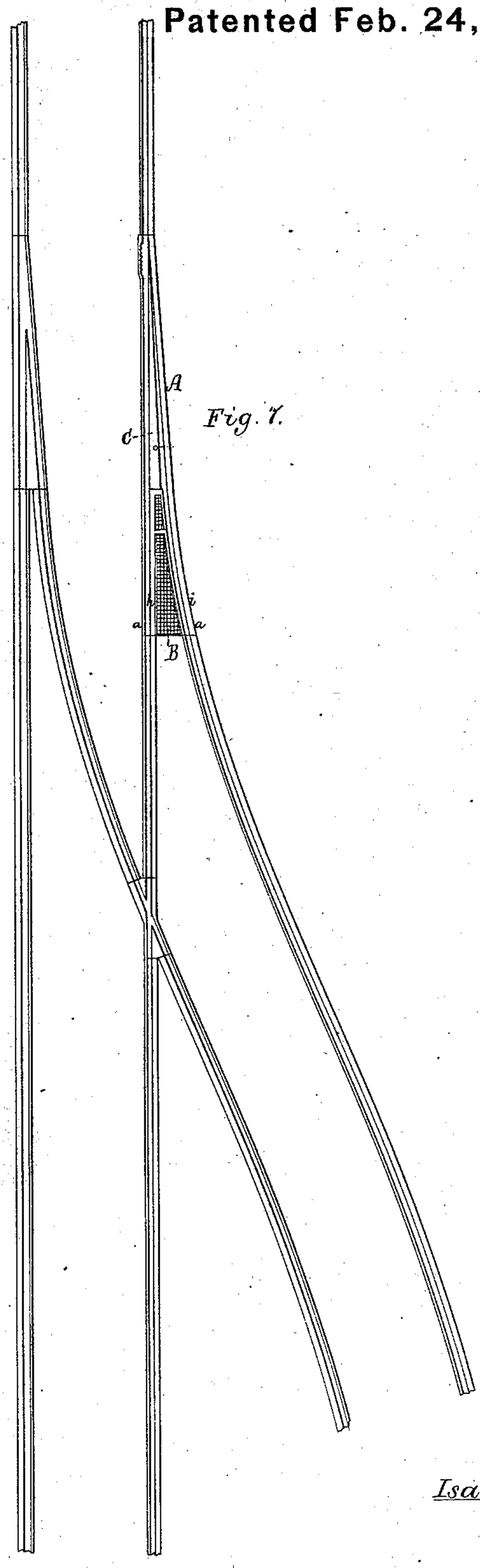

Fig. 7.

Witnesses.
L. N. Piper
W. W. Lund

Inventor.
Isaac A. Chandler
by attorney.
R. R. Eddy

UNITED STATES PATENT OFFICE.

ISAAC A. CHANDLER, OF CAMBRIDGE, MASSACHUSETTS.

STREET-RAILWAY SWITCH.

SPECIFICATION forming part of Letters Patent No. 224,875, dated February 24, 1880.

Application filed July 28, 1879.

To all whom it may concern:

Be it known that I, ISAAC A. CHANDLER, of Cambridge, of the county of Middlesex and State of Massachusetts, have invented a new and useful Improvement in Street-Railway Switches; and I do hereby declare the same to be described in the following specification and represented in the accompanying drawings, of which—

Figure 1 is a top view, Fig. 2 a bottom view, Fig. 3 a longitudinal section, and Figs. 4, 5, and 6 transverse sections, of a switch and its carrier provided with my invention, which relates to that class of switches in which the switch is moved by mechanism connected with a platform on which the horse or draft-animal treads. Fig. 7 represents a top view of my switch, its carrier, and operative platform as arranged with a main track and turn-out of a street or tram railway.

In carrying out my improvement I provide the platform with one or more springs to force it upward after it may have been depressed by the horse, the expansive force of the spring or springs being sufficient to cause the switch to be moved the opposite way to close the turn-out. Furthermore, the switch and the platform I arrange in and apply to a furcated or recessed carrier intended to be cast in a single piece and to be made substantially as represented, such carrier, near the toe end of the switch and in its longer wheel-flange guard, being provided with a range or series of dirt-receiving recesses or notches. I would remark that the major arm of the lever-switch should be somewhat longer than the distance between the axes of the two next adjacent axles of any railway-carriage designed for use on the track in which the switch may be placed, such being to insure the switch to be in a position for the flange of the rear wheel to pass between the turn-out rail and the toe of the switch before the flange of the forward wheel may have passed the fulcrum of the switch, as while the said forward wheel may be directly between the turn-out rail and the longer arm of the switch such flange will keep the switch open or up to, or nearly to, the longer flange-guard of the switch-carrier.

In the drawings, A represents the switch and platform carrier as furcated and having the platform B arranged in the opening *g* between the prongs *a a* of the fork, such platform being connected to one of the said prongs by hinges *b b*. The platform as well as the opening between the prongs is tapering or approximately trapezoidal in form. Furthermore, the switch and platform carrier has a tapering recess, *d*, to receive the switch, such recess being open at its smaller end, while at its larger end it opens into two grooves, *e f*, which extend along and flank the platform-receiving opening *g*, in manner as represented. The main-track rail is shown at *h* and the turn-out rail at *i*, *k l* being the wheel-flange guards.

The switch is shown at C as being a flat and tapering lever arranged in the recess *d*, and to turn on a pivot or fulcrum, *m*, inserted in the carrier. Into the shorter arm of the switch C a stud, *n*, from a slide, *o*, extends, such stud also going up through a short slot, *p*, made transversely in the carrier. The said slide, arranged in the under side of the carrier and provided with journals *q q*, to enter clasps or boxes *r r*, disposed as shown, and fixed to the carrier, is pivoted or jointed to one arm of a lever, *s*, arranged as shown, and having its fulcrum *t* extending down from the carrier A. The other arm of the lever projects into a hole in an arm, *v*, extending down from the platform and arranged therewith as represented.

Furthermore, between the platform and an arched cross-piece, *v'*, fixed to the carrier, is a helical spring, *w*, which is to force the platform upward to place after each depression of it down upon stops *w'*, fixed to and projecting from one of the prongs of the carrier, in manner as shown.

The range of dirt-receiving notches of the carrier is represented at *x* as made in the flange-guard near the toe of the carrier. They are to receive any dirt that, getting between the switch near its toe and the said flange-guard, may be moved up to the latter by the switch, and be liable to prevent the switch from being forced up to the flange-guard.

With the switch and its carrier suitably arranged with the main and turn-out tracks of a railway at their junction, a car may be deflected from the main track to the turn-out by turning the draft-horse off the main track to and upon the platform, which, on his treading

upon it, will be depressed, whereby the switch will be moved up to the longer flange-guard, so as to deflect the wheels on one side of the car upon the turn-out rail of the switch, the spring being at the time contracted, in order that after the car may have passed the switch the latter, through the expansive power of the spring, may be closed or restored to its normal position—viz., against the turn-out rail of the carrier.

The spring saves the necessity of a second movable platform to effect the closing of the switch, or of having a tilting platform to be moved or tilted in any way by the horse to effect the opening of the switch for the car to be deflected upon the turn-out, and in a like manner to be moved the opposite way to effect closing of the switch for the car in passing it to continue on the main track.

What I claim as my invention is as follows, viz:

1. The switch and platform carrier having the grooves *e f*, tapering opening *g*, and recess *d* arranged in it, substantially as represented, to receive the switch, the platform, and the wheel-flanges, as set forth.

2. The switch and platform carrier having the grooves *e f*, tapering opening *g*, and recess *d* arranged in it, substantially as described, in combination with the switch, and the platform arranged with and applied to it (the said carrier) in manner as set forth, and provided with mechanism for opening the switch by means of the platform while being depressed, as explained.

3. The switch and platform carrier having the grooves *e f*, tapering opening *g*, and recess *d* arranged in it, substantially as described, in combination with the switch and with the platform arranged with and applied to it (the said carrier) in manner as set forth, and provided with mechanism for opening the switch by means of the platform while the latter is in the act of being depressed, and also with a spring for subsequently and simultaneously closing the switch and effecting elevation of the platform or automatically restoring them to their normal positions, as set forth.

4. The switch and platform carrier, recessed and grooved substantially as described, and provided with the platform-receiving opening and series of dirt-receiving notches, arranged in it in manner and for the purpose as set forth.

ISAAC A. CHANDLER.

Witnesses:

R. H. EDDY,

S. N. PIPER.