(No Model.)

W. PHENIX.

AUTOMATIC SWITCH FOR CABLE RAILWAYS.

No. 397,610. Patented Feb. 12, 1889.

Fig. 1.

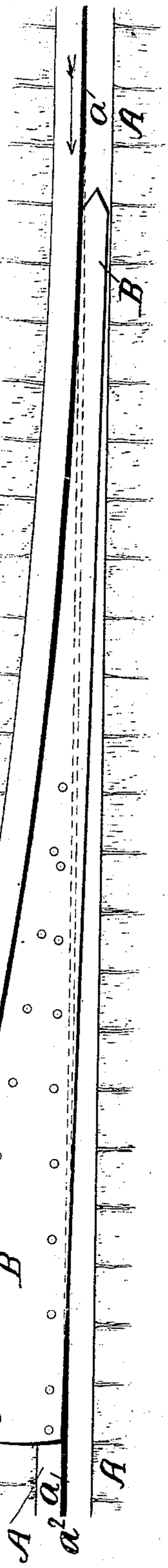


Fig. 2.

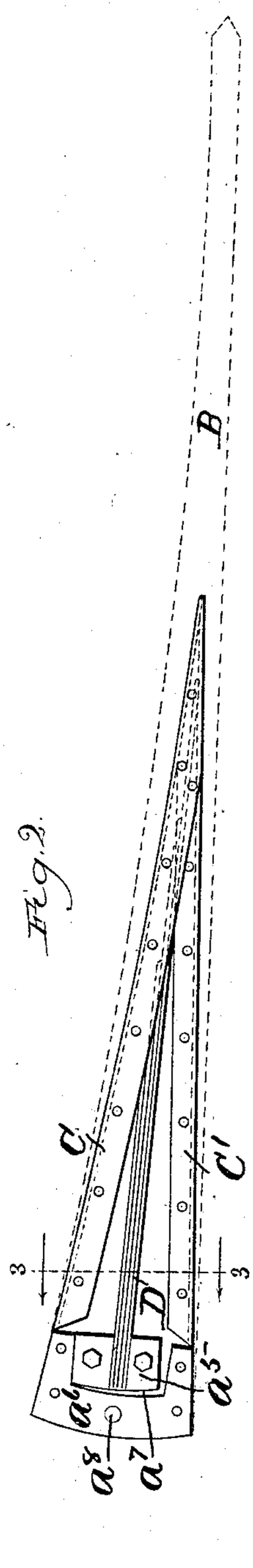
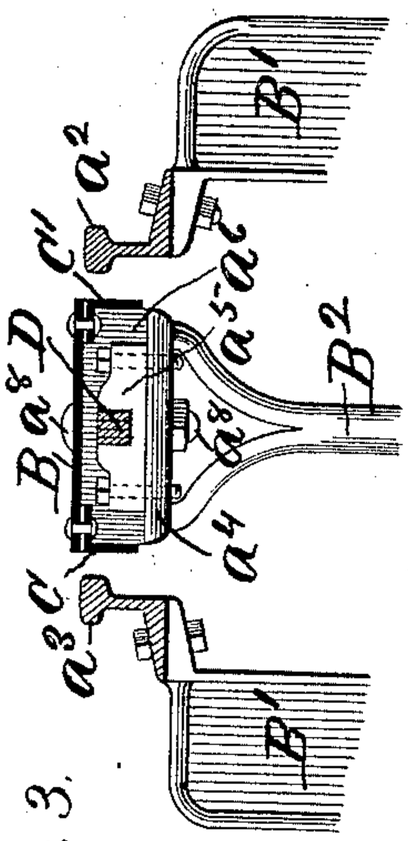


Fig. 3.



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UNITED STATES PATENT OFFICE.

WILLIAM PHENIX, OF CHICAGO, ILLINOIS.

AUTOMATIC SWITCH FOR CABLE RAILWAYS.

SPECIFICATION forming part of Letters Patent No. 397,610, dated February 12, 1889.

Application filed August 21, 1888. Serial No. 283,308. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM PHENIX, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Automatic Switches for Cable Railways, of which the following is a full, clear, and exact description that will enable others to make and use the same, reference being had to the accompanying drawings, forming a part of this specification.

The object of this invention is to provide an automatic switch or turn-out for cable roads having a single line where the cars meet and pass each other at certain switch-stations. The device may also be used on diverging or loop lines, the same consisting of certain novel features in the construction, arrangement, and operation, as will be hereinafter set forth.

Figure 1 is a plan view; Fig. 2, a similar view with the switch plate or tongue removed, and Fig. 3 a transverse section in the plane 3, Fig. 2.

Referring to the drawings, A represents the slot-rails of the main line; a, the grip-slot; A′, the slot-rails of the turn-out or branch line; a', the grip-slot of the same, and B the switch-plate.

The back and wider end of the switch plate or tongue is located between and extends from one grip-slot to the other, as shown in Fig. 1. From this point the switch-plate gradually narrows, and terminates in a width about equal to that of a slot-rail. The narrow or tapering end stops at or a little beyond the junction of the grip-slots, or where the turn-out leaves the main line. The switch-plate is in its normal position in Fig. 1, and covers the slot of the main line for some distance, as indicated by the dotted lines.

Under the back end of the switch-plate B is placed the conduit or structure yoke B′, which is wider than the ordinary yoke, and at this point supports the slot-rails a^2 a^3 of both the main and the branch line. Projecting upward from the center of the yoke B′, and formed integral therewith, is the bifurcated standard B^2, (see Fig. 3,) which supports the back end of the switch-plate mechanism. The base-plate a^4 is rigidly mounted on the bifurcated ends of the standard B^2, and the spring-head a^5 is in turn rigidly bolted to the base-plate. The cap a^6 is set back of the spring-head, (see Figs. 2 and 3,) and is cut out on the inner side to form the recess a^7, and loosely inclose the spring-head a^5 on three sides. A sufficient space is left between the cap and spring-head, so that the former may have a pivotal movement on its pivot-bolt a^8. To the cap a^6 are rigidly secured the back ends of the angle-plates C C′, which are gradually contracted in the direction of each other, and finally overlap near their front ends, as shown in Fig. 2.

D represents a spring composed of a number of leaves set up edgewise and laid flat together. The back ends of these leaves are inserted in the head a^5, the opposite loose ends running some distance forward, and normally bear against the inner side of the angle-plate C and against the companion plate C′ when returning the switch-plate to a normal position after the passage of the grip-car.

The spring-leaves are of different lengths, in accordance with the contracting plane of the angle-plates, so that the several ends may have a direct bearing on the normal side.

The switch-plate B is placed flat on top of the angle-plates and cap a^6, and are riveted or otherwise rigidly secured to the same, as shown in Fig. 1, and indicated by dotted lines in Fig. 2.

The back end of the switch-plate is secured in proper position by means of the pivot-bolt a^8, which also passes through the cap a^6 and the rigid base-plate a^4. By this arrangement the narrow front end of the switch is adapted to have a lateral movement in a horizontal plane.

As shown in Fig. 1, the turn-out or branch line is normally open, and a grip-train going in the direction indicated by the arrow would pass onto the turn-out or branch line as the switch-plate covers the slot on the main line. When a train is coming in the opposite direction on the main line, the grip is brought in contact with the edge of the switch-plate and gradually pushes the same to one side over the turn-out. When the train has passed by, the switch-plate is automatically returned to its normal position by means of the compound spring D. The cut-out sides of the cap a^6,

coming in contact alternately with the corresponding sides of the spring-head a^5, confines the movement of the switch-plate within the required limit. This arrangement is particularly applicable for a single line where turn-outs or side tracks are, as a matter of course, necessary features. It is obvious, however, that the automatic switch may be used for branch or loop lines. I do not confine myself to the specific arrangement shown, but may make such changes in construction as may become necessary in practical working without departing from the spirit of my invention.

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

1. In an automatic switch for cable roads, the combination, with a supporting-standard, of the base-plate a^4, the fixed spring-head a^5, the cap a^6, cut out as described, the angle-plates C C′, the compound spring D, the switch-plate secured to said angle-plates, and the pivot-bolt a^8, whereby the loose end of said switch-plate is adapted to have a lateral movement in a horizontal plane, substantially as and for the purpose set forth.

2. The combination, with a conduit-yoke having the bifurcated standard formed integral therewith, of the base-plate a^4, the fixed spring-head a^5, the cap a^6, provided with the recess a^7, the angle-plates C C′, secured at their back ends to said cap, the spring D, having one end inserted in said head a^5 and the opposite end bearing alternately against the inner sides of said angle-plates, and the switch-plate loose at one end and pivoted at the other, the loose end being adapted to normally cover the grip-slot of the main line, whereby a train coming in one direction is thrown onto the turn-out and the main line automatically opened by a train passing in the opposite direction, substantially as set forth.

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