No. 850,342. PATENTED APR. 16, 1907.

C. S. CHAMBERLIN & D. HARRINGTON.

RAILWAY SWITCH.

APPLICATION FILED MAR. 5, 1907.

Fig. 1.

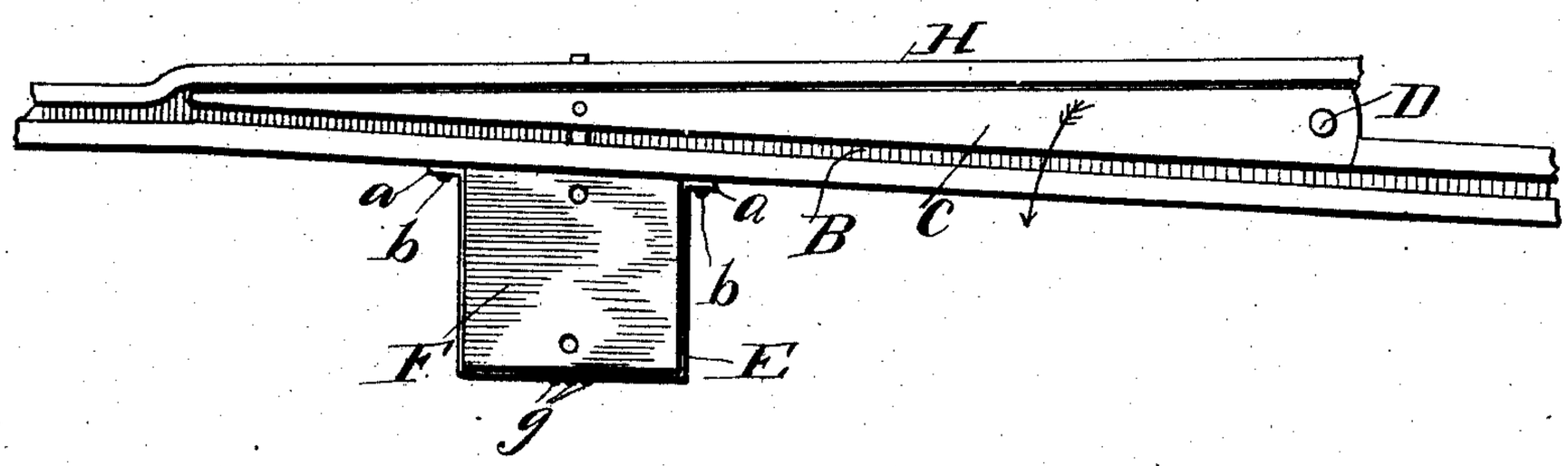


Fig. 2.

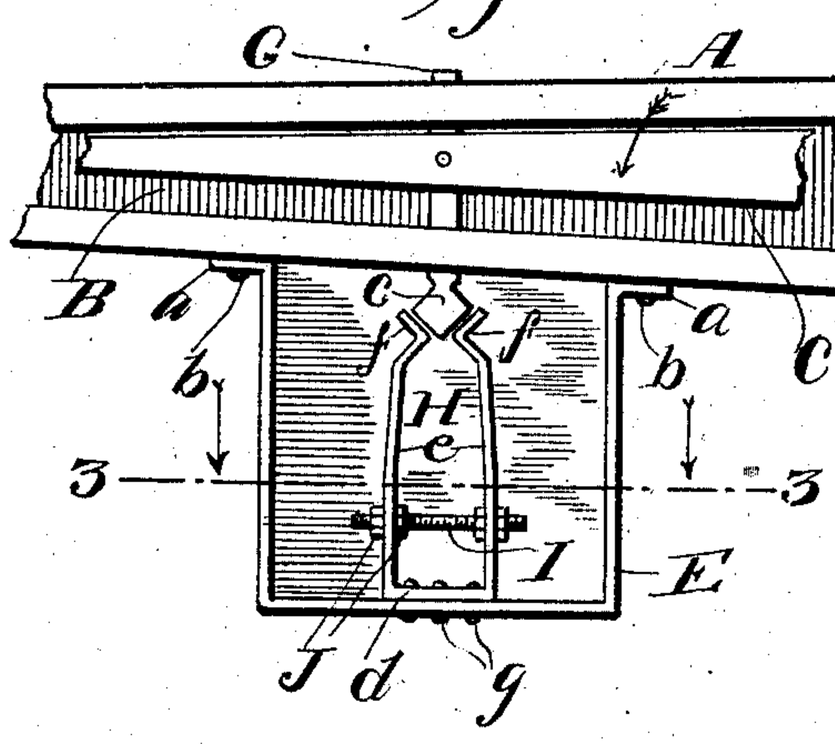
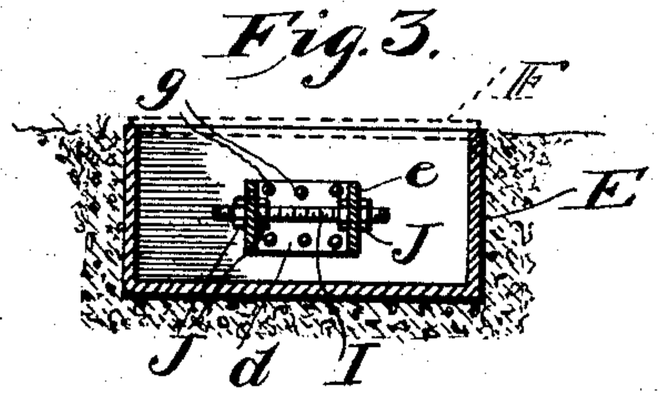


Fig. 3.



Witnesses
D. E. Nelson.
J. J. Shelby Jr.

Inventors
C. S. Chamberlin &
D. Harrington.

By James J. Shelby
Attorney

UNITED STATES PATENT OFFICE.

CARL S. CHAMBERLIN AND DANIEL HARRINGTON, OF COLORADO SPRINGS, COLORADO.

RAILWAY-SWITCH.

No. 850,342. Specification of Letters Patent. Patented April 16, 1907.

Application filed March 5, 1907. Serial No. 360,774.

To all whom it may concern:

Be it known that we, CARL S. CHAMBERLIN and DANIEL HARRINGTON, citizens of the United States, residing at Colorado Springs, in the county of El Paso and State of Colorado, have invented new and useful Improvements in Railway-Switches, of which the following is a specification.

Our invention pertains to switches, particularly switches such as are employed in city and suburban railways of the trolley type; and it contemplates the provision, in combination with the tongue, of a switch of simple and efficient means for preventing casual movement of the tongue from either of its working positions, and this without interfering with shifting or throwing of the tongue by hand by a car running off the tongue, or otherwise.

The invention will be fully understood from the following description and claims when the same are read in connection with the accompanying drawings, forming part of this specification, in which—

Figure 1 is a plan view of our novel switch construction. Fig. 2 is an enlarged plan view of the structure with the cover of the casing comprised in our improvements removed. Fig. 3 is a vertical section taken in the plane indicated by the line 3 3 of Fig. 2 looking in the direction indicated by the arrow.

Similar letters designate corresponding parts in all of the views of the drawings, referring to which—

A is a portion of a railway-rail structure, in a groove or depression B of which is arranged a swinging switch-tongue C, which has its center of movement at D and may be of the form shown or of any other suitable form consonant with the purpose of our invention.

E is the casing of our improvements. This casing E, which is preferably of cast metal is arranged in the ground or street at one side of the structure A and is provided, by preference, with lateral flanges *a* for the passage of bolts *b*, through the medium of which it is connected to the adjacent side of the said structure A. The said casing E is also provided with a removable cover F, and this latter is so arranged that when it is in proper position on the casing its upper side is flush with the surface of the street or road-bed.

G is a plunger pivoted at an intermediate point of its length to the tongue C and having one of its ends disposed in the casing E and there provided with a head *c* generally square in top plan, as shown in Fig. 2.

H is a keeper arranged in the casing E and opposed to the head *c* of the plunger G, so as to coöperate with said head in preventing casual movement of the tongue C from either of its working positions. We prefer to form the said keeper H of a single piece of steel possessed of more or less resiliency and to have it comprise an end cross-bar *d* and arms *e*, reaching from the said cross-bar toward the head *c* on plunger G and provided at their extremities with lips *f*, each of which is of approximate right-angle form. The said lips *f* on the arms *e* of keeper H are arranged about the proportional distance illustrated apart and in the position shown in Fig. 2 relative to the head *c* of the plunger G. It will also be understood that when pressed outward in the manner hereinafter described the said lips *f* will be returned by the resiliency of the keeper to the position shown in Fig. 2. The keeper H is connected to the wall of the casing E, that is remote from the structure A by bolts *g*, which are passed through the end cross-bar of the keeper and the mentioned wall of casing E, as shown.

With a view of permitting of the tension of the arms of the keeper H being increased or diminished as occasion or conditions demand we provide a bolt I, which extends loosely through the said arms at about the distance shown from the end cross-bar *d*. The said bolt I is threaded and is equipped at the inner and outer sides of the arms *e* with nuts J, and by adjusting these nuts it will be apparent that the arms *e* may be moved inward to increase their tension or outward to diminish the tension.

With the switch-tongue C resting in the position shown in Figs. 1 and 2 it will be seen that the head *c* on the plunger G will rest between the lips *f* of keeper H and at the outer side of the apices of said lips, with the result that the keeper is enabled to effectually prevent accidental movement of the tongue in the direction indicated by arrow in Figs. 1 and 2. When, however, the tongue C is positively moved in the direction indicated by arrow by hand by a car running off the tongue, or otherwise, the square head of the plunger G will press the lips *f* of the keeper H

apart and will pass said lips and assume a position at the inner side thereof. In this latter position it will be observed that the head C will coöperate with the lips *f* in preventing accidental movement of the tongue C in the direction opposite to that indicated by arrow, and yet when the tongue is positively moved in such direction the lips *f* will give outwardly and permit the head *c* to pass the same and will then spring inward to the positions illustrated ready to prevent kicking or casual movement of the tongue in the direction of the arrow.

As will be observed by reference to Fig. 3, the keeper H is located above the bottom of the casing E, and hence a space is afforded below said keeper for water or mud, and consequently the keeper is not liable to be deteriorated by being maintained in contact with the water or mud.

We prefer to pivotally connect the plunger G to the tongue C in the manner described for the reason that such connection enables the head *c* of the plunger to more freely move between the lips *f* of the keeper H; but we do not desire to be understood as confining ourselves to the pivotal connection, inasmuch as the plunger G might be connected to the tongue C in other ways without materially affecting the merit of our invention.

It will be gathered from the foregoing that in addition to the advantages hereinbefore ascribed to our improvements the said improvements are advantageous because of their simplicity, the facility with which they may be applied to existing switch structures, and their adaptability to withstand the rough usage to which railway devices are ordinarily subjected.

Having described our invention, what we claim, and desire to secure by Letters Patent, is—

1. The combination in a railway, of a movable switch-tongue, a plunger connected with and extending laterally from the tongue and terminating in a square head, and a keeper having resilient arms provided with lips of right-angle form opposed to the head of the plunger on the switch-tongue and normally resting adjacent to and at opposite sides of the said head.

2. The combination in a railway, of a movable switch-tongue, a plunger pivotally connected with and extending laterally from the tongue and terminating in a square head, and a keeper having resilient arms provided with lips of right-angle form opposed to the head of the plunger on the switch-tongue and normally resting adjacent to and at opposite sides of the said head.

3. The combination in a railway, of a movable switch-tongue, a plunger connected with and extending laterally from the tongue and having a head, a keeper having resilient arms provided with lips for engaging the head of the plunger and thereby holding the tongue against casual movement, and means whereby the arms of the keeper may be adjustably fixed at various distances apart to increase or diminish the tension thereof.

4. The combination in a railway, of a rail structure, a movable switch-tongue therein, a casing fixed with respect to the rail structure and arranged at one side of the same, a plunger connected with and extending laterally from the tongue and having a head, and a keeper formed of one piece of resilient metal arranged in the casing and having an end cross-bar fixedly connected to one wall of the casing and also having resilient arms reaching from the end cross-bar, and lips on said arms opposed to and adapted to engage the head of the plunger.

5. The combination in a railway, of a rail structure, a movable switch-tongue therein, a casing fixed with respect to the rail structure and arranged at one side of the same and having a removable cover, a plunger connected with and extending laterally from the tongue and having a head of square form movable in the casing, a keeper formed of one piece of metal, arranged in the casing and having an end cross-bar fixedly connected to one wall of the casing and also having resilient arms reaching from the end cross-bar and lips of right-angle form on said arm and opposed to and adapted to engage the head of the plunger, and means whereby the arms of the keeper may be adjustably fixed at various distances apart to increase or diminish the tension thereof.

In testimony whereof we have hereunto set our hands in presence of two subscribing witnesses.

CARL S. CHAMBERLIN.
DANIEL HARRINGTON.

Witnesses:
CHAS. T. FERTIG,
C. S. GAMBRILL.