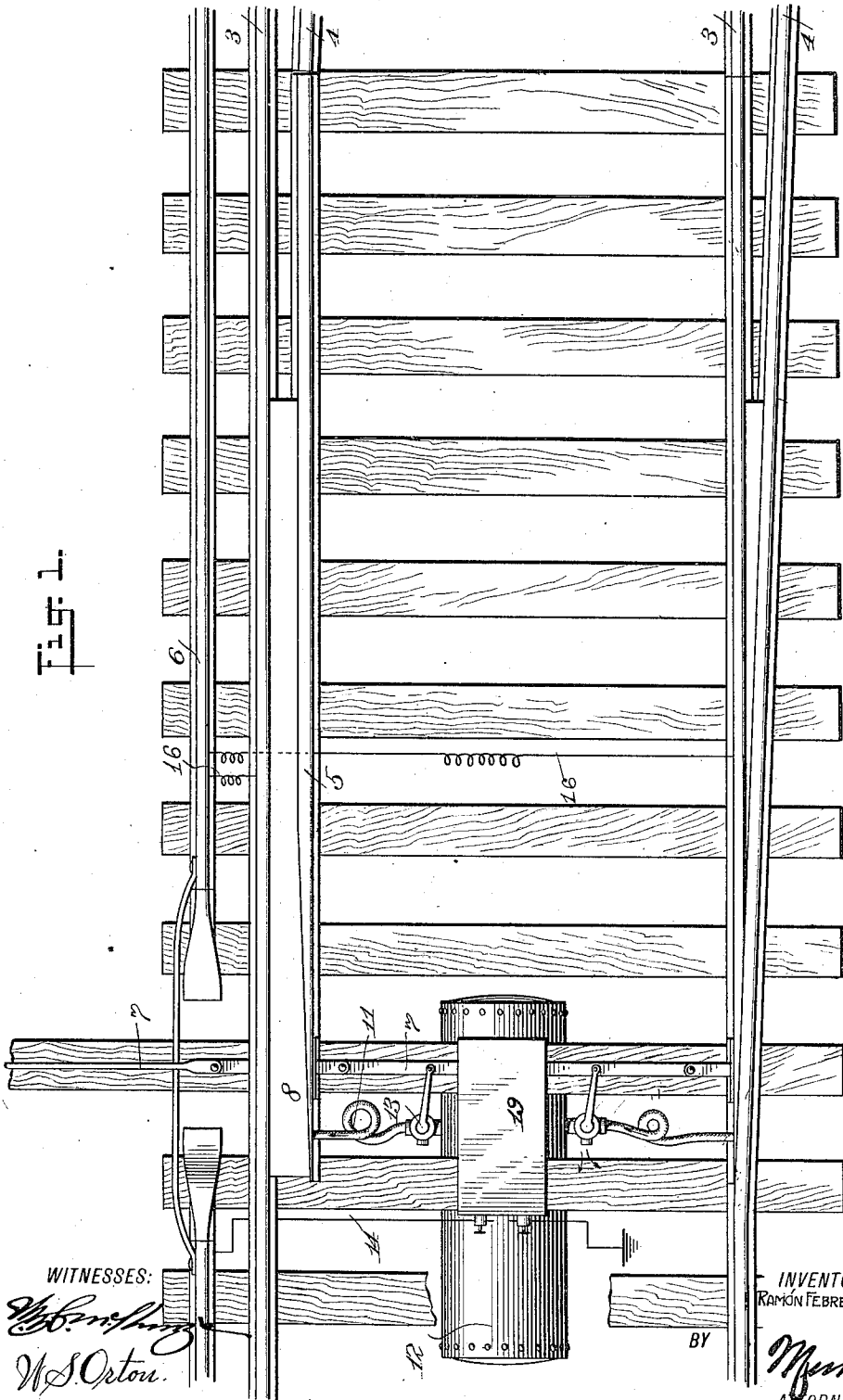


1,015,138.

R. F. CORDERO.  
SWITCH SHIELD.  
APPLICATION FILED MAR. 7, 1911.

Patented Jan. 16, 1912.

2 SHEETS—SHEET 1.



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2 SHEETS-SHEET 2.

Fig. 2.

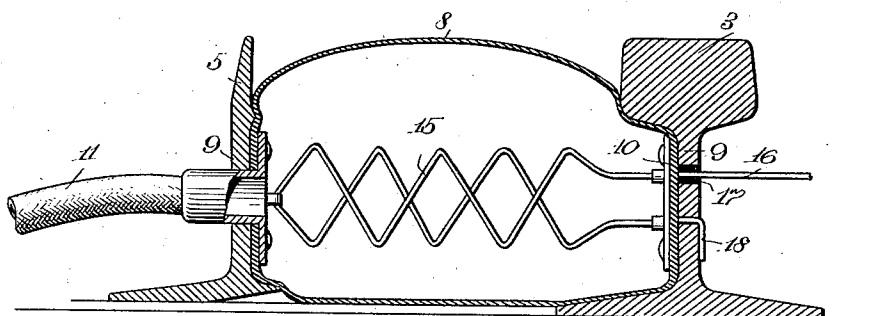
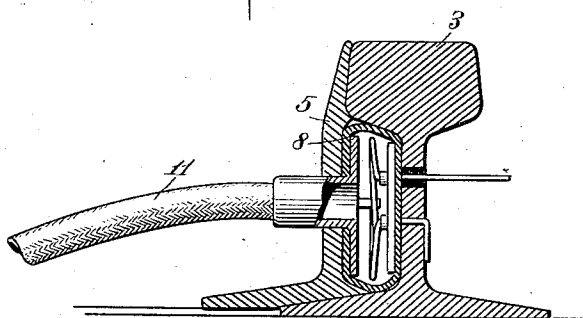


Fig. 3.



WITNESSES

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INVENTOR

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BY

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ATTORNEYS

# UNITED STATES PATENT OFFICE.

RAMÓN FEBRES CORDERO, OF RUBIO, VENEZUELA.

## SWITCH-SHIELD.

1,015,138.

Specification of Letters Patent.

Patented Jan. 16, 1912.

Application filed March 7, 1911. Serial No. 612,892.

*To all whom it may concern:*

Be it known that I, RAMÓN FEBRES CORDERO, a citizen of the Republic of Venezuela, and a resident of Rubio, in the State of Tachira, Venezuela, have invented a new and Improved Switch-Shield, of which the following is a full, clear, and exact description.

My invention relates to a new and improved shield adapted to be placed between the rails and the movable tongue of railway switches.

It is found in practice that the present form of railroad switches is deficient in that under numerous conditions it is not possible to close the switch. For instance, should a stone or other obstacle be dropped between the rail and the movable tongue, it is, of course, almost impossible to force these two members into engagement. Further, ice and snow are very apt to lodge between these members, thereby preventing the operation of the switch.

An object of my invention is to eliminate the above recited objections, and to provide a device which will at the same time prevent the insertion of any foreign obstacle between the movable parts and which will be automatic in its action and will melt any snow or ice which might tend to obstruct the operation of the switch.

A further object of my invention is to provide a device which will be automatic in its action and after installation will require no further attention to maintain it in operation.

I obtain the above outlined objects by disposing between the track and the movable tongue of the switch, a pneumatic bag which will completely fill in the space between the movable members, and which will be opened and closed by the mechanism which operates the switch.

With the above and other objects in view, as will more fully hereinafter appear, the present invention consists in certain novel details of construction and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and more particularly pointed out in the appended claims.

Reference is to be had to the accompanying drawings forming a part of this speci-

fication in which similar characters of reference indicate corresponding parts in all the views, and in which—

Figure 1 is a general plan view of a switch mechanism showing a preferred embodiment of my invention connected thereto; Fig. 2 is a transverse sectional view taken through my device showing the switch in open position; and Fig. 3 is a view similar to Fig. 2, but showing the switch closed.

In the several figures I have shown a track having parallel rails 3 and switch rails 4, which switch rails make connection with the track rails 3 by means of any preferred form of switch tongue 5. There is also disclosed any preferred form of third rail connection 6, or any preferred form of current supply for a purpose hereinafter disclosed. The switch 5 is actuated by any preferred form of switch controlled mechanism 7 which may control a switch of either the single or double rail construction. Interposed between the track 3 and tongue 4 is a bag 8 of any flexible material, preferably of rubber, and which is fastened upon its inner side to the web 9 of the track rail and switch tongue and is preferably braced in position by means of brace rods 10 of any suitable construction. It will be seen that as the opposite sides of this bag are fastened to the movable members, it will expand or contract to entirely fill up the space between these movable members in whatever position they may be adjusted. In order that this bag may fill out to fully occupy the entire space, it is preferably connected by the flexible tubing 11 to a compressed fluid reservoir, preferably an air reservoir 12, which will supply compressed air to the bag 8. The admission of compressed air to the bag is controlled by any preferable form of control valve 13 actuated by the movement of the switch controlled mechanism 7, which will automatically admit air into the bag on that side of the track which is moving into open position. Due to a leakage which cannot be avoided in such a construction, I have provided a device for replenishing the supply of compressed air in the reservoir 12 by connecting an electric pump 19, which receives its energy from the third rail 6 heretofore mentioned, through a conductor 14, and which is

actuated by the reduction of fluid pressure in the reservoir 12.

In order to melt the snow and ice which may fall in between the tracks and on the bag 8, there is disposed in the bag, in any preferred arrangement, a series of heating coils 15 in circuit through the conductor 16 attached to the third rail and passing through insulating bushings 17 in the web 9 of the rails, and which conductor is grounded at 18. Preferably the heating device is arranged in the lazy tong construction shown in Fig. 2 transversely and diagonally of the track so that as the bag is compressed the heating members will fold up into the position shown in Fig. 3.

Many changes could be made in the above construction and many apparently widely different embodiments of this invention could be made without departing from the scope thereof. It is intended that all matters contained herein, in the above description or shown in the accompanying drawings, shall be interpreted as illustrative and not in a limiting sense. It is also to be understood that the language used in the following claims is merely intended to cover all the generic and specific features of the invention herein described, and all statements of the scope of the invention, which, might be said to fall therebetween, and that materials, sizes and relativities of parts are non-essential, except as called for in the claims.

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

1. In a switch device, a rail, a switch tongue disposed adjacent to said rail, and a closed bag disposed between said rail and said tongue, thereby preventing the inser-

tion of obstacles between said tongue and said rail or of foreign matter into said bag.

2. In combination a rail, a switch movable relative to said rail, a collapsible member inserted between said rail and said switch, and means controlled by the actuation of said switch to maintain said member in inflated position.

3. In combination a rail, a switch, a member normally closing the space between said rail and said switch; and means disposed within said member to melt any ice which may form on said member.

4. In a switch device in combination a rail and a switch tongue, a rubber bag disposed between said rail and said tongue, a pneumatic reservoir in fluid connection with said bag; and means controlled by the movement of the switch tongue to admit or exhaust fluid to or from said bag.

5. A switch shield, adapted to be placed between the rail and the tongue of a switch, comprising a closed bag, a compressed fluid reservoir, a flexible tubing connecting said reservoir with said bag, and means controlled by the actuation of said switch to admit and exhaust compressed fluid to and from said bag.

6. In a switch shield, a bag adapted to be placed between the rail and the tongue of a switch, and heating means within said bag to melt the ice and snow falling on said bag which might interfere with the working of the switch.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

RAMÓN FEBRES CORDERO.

Witnesses:

W. S. ORTON,

PHILIP D. ROLLHAUS.