B. B. MUIR.

STREET CAR SWITCH.

APPLICATION FILED JAN. 16, 1911.

995,364. Patented June 13, 1911.

Fig. 1

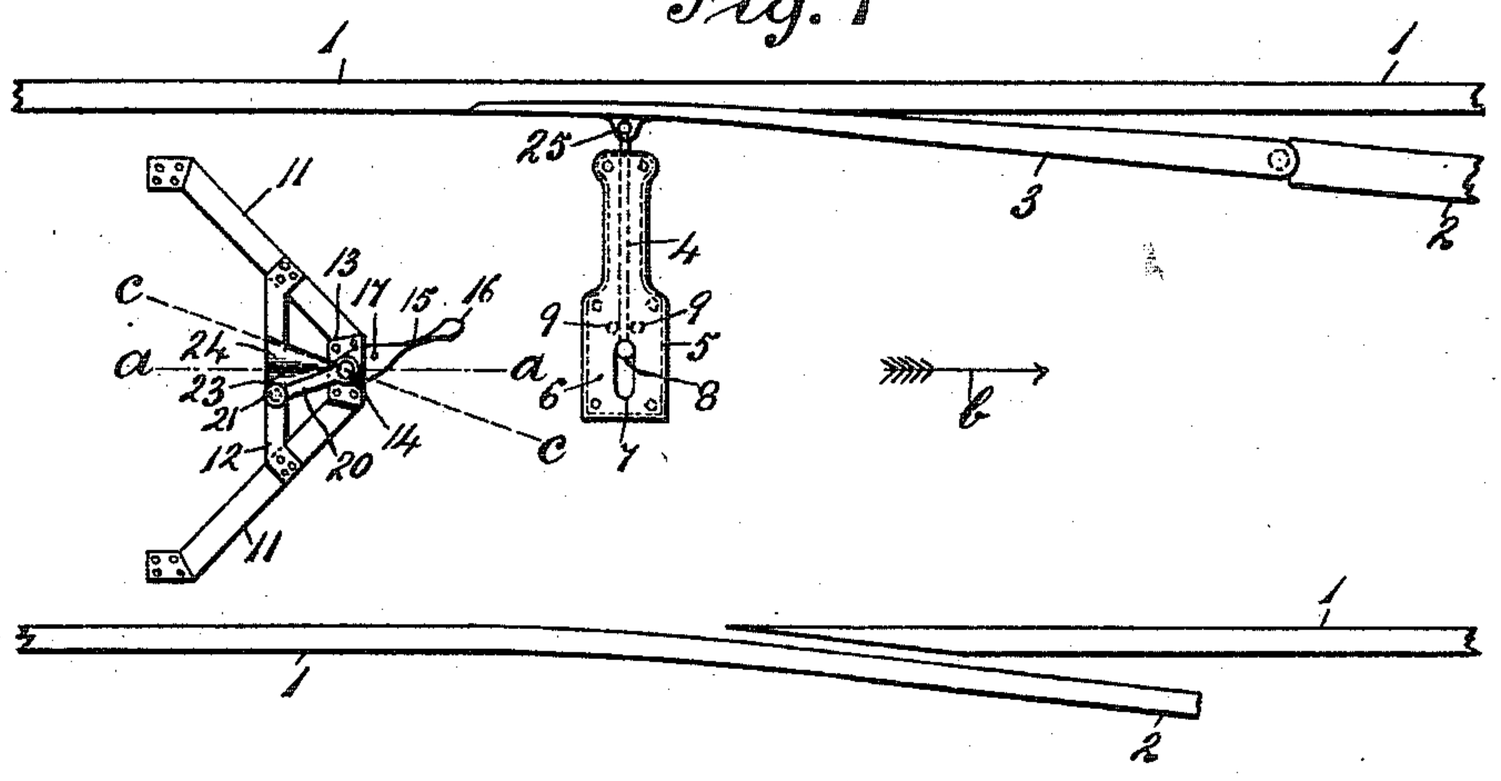

Fig. 2

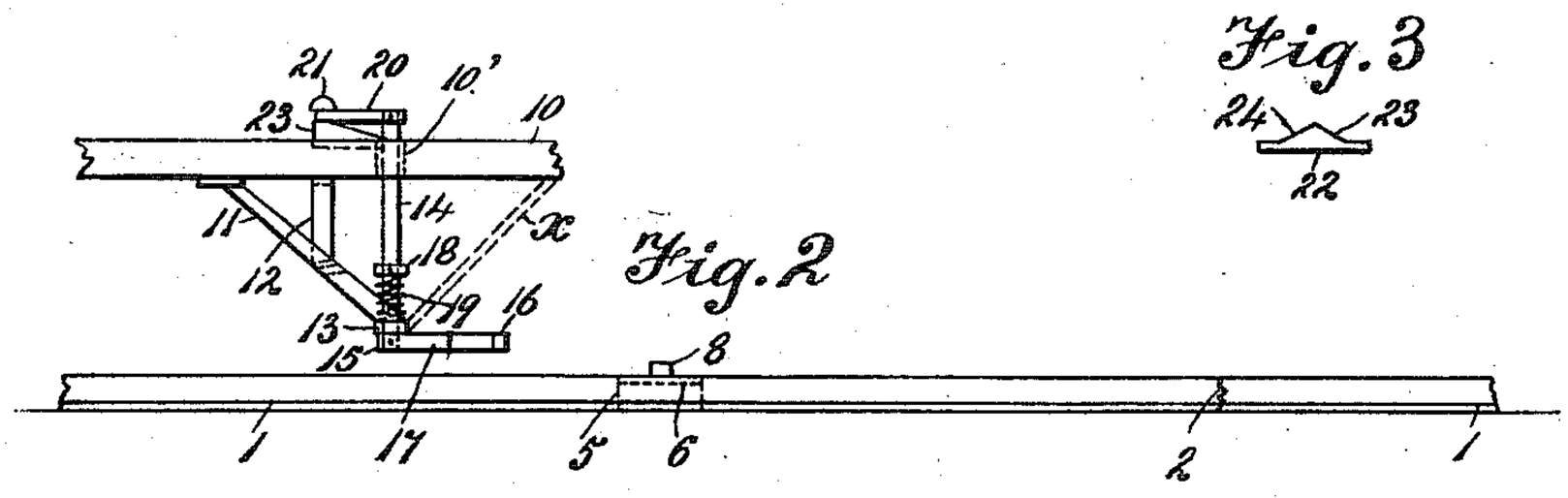

Fig. 3

Witnesses:-
W. Dongworth.
G Nicholson,

Inventor:
Benjamin Bhain Muir.
per Alfred J. Beatty
Attorney.

UNITED STATES PATENT OFFICE.

BENJAMIN BHAIN MUIR, OF HAMILTON, ONTARIO, CANADA.

STREET-CAR SWITCH.

995,364. Specification of Letters Patent. **Patented June 13, 1911.**

Application filed January 16, 1911. Serial No. 602,996.

To all whom it may concern:

Be it known that I, BENJAMIN BHAIN MUIR, residing at Mount Hamilton, in the city of Hamilton, in the county of Wentworth, in the Province of Ontario, Dominion of Canada, have invented new and useful Improvements in Street-Car Switches, of which the following is a specification.

This invention relates to street car switches and more particularly to that type of device which is manually operated from the driver's vestibule, and it has for its main object to provide an improved construction of switch which is more reliable in action, and not likely to get out of order under varying climatic conditions.

A further object of my invention is to provide a switch which is actuated by means arranged centrally of the track and which does not involve the fitment of special points and guard rails.

With these and other objects in view, my invention consists essentially of a plunger arranged centrally beneath the car platform and adapted for vertical depression and automatic return, an operating lever on the forward end of the vestibule platform for controlling said plunger which is provided at its lower end with a projecting arm capable of angular displacement in a horizontal plane to coöperate with an upstanding stop in the middle of the track and by means of a direct connection therefrom to open or close the switch.

The accompanying drawing is in illustration of my invention, Figure 1, being a diagrammatic plan of part of a street car track and switch as well as the means attached to the underside of the car vestibule constructed and arranged according to my improvements the operating means occupying a position to open the switch. Fig. 2, is a side view of the same with the operating means in the normal position; and Fig. 3, is a detail hereinafter more fully described.

Like reference numerals designate similar parts in the several figures.

In the drawings, 1, 1, are track rails, 2, 2, are branch lines, and 3, is the switch point for turning traffic from said rails 1, 1, to the branch lines 2, 2.

According to my invention, I connect to the switch point 3, at any convenient part thereof a rod 4, which is adapted for movement at right angles to the line of track. For this purpose I embed between the rails 1, 1, and flush with the road surface a box or casing 5, which is fitted with a cover 6, adapted to be rigidly secured in place in any of the well known ways. Centrally and longitudinally of the cover 6, I form a slot 7, through which projects for a short distance a stop 8, formed integral with or attached to the inner end of the aforesaid rod 4. Anti-friction rollers 9, 9, may be fitted in the box 5, where desired to insure easy working of the rod 4.

10, is part of the vestibule platform of an ordinary street car beneath which I rigidly secure by bolts or otherwise a depending framework 11, which is suitably braced by means of a cross stay 12, likewise firmly connected to the underside of said platform. Additional stays may be fitted leading forwardly as indicated by the dotted lines *x*, in Fig. 2. At the lower and forward end of this framework 11, I form a bracket 13, which constitutes a bearing for a plunger 14, having secured to its lower end a laterally projecting arm 15. Where the plunger 14 passes through the platform 10, I fit a strong metal bushing or sleeve 10′, for strengthening purposes. The arm 15, is preferably made in configuration as shown, that is to say, it is provided with a somewhat arrow-headed leading end 16, and a club shaped body part 17, for the purpose hereinafter fully explained.

18, is a collar formed on or secured to the plunger 14, between which and the aforesaid bearing bracket 13, I arrange a strong compression spring 19, which it will be seen normally tends to keep the said plunger 14 raised.

At the extreme upper end of the plunger 14, which projects above the platform in the car vestibule I securely fix a laterally and rearwardly projecting lever 20, provided at its free end with a toe or foot piece 21. In order that the lever 20, may be readily moved to the right or left hand by depressing on the toe piece 21, I attach to the car platform 10, for example, a metal block 22, having inclined faces 23, 24, (Fig. 3), to the right and left hand of its center line respectively, and said faces are also tapered down from the rear to a point at the front of the block as will be readily understood from the drawings, as also to make provision for the swinging of the lever 20. Obviously the block 22, may be fitted below the platform and carried by the framework and

stays 11, 12, in which event an additional lever 20, will be provided for coöperation therewith as hereafter explained.

Normally the plunger 14, is kept raised to its highest point by the compression spring 19, with the lever 20, and the arm 15, directly central and longitudinal of the car or as indicated by the dot-and-dash line *a*,—*a*, in Fig. 1. Assuming that a car which has traveled over the track rails 1, 1, has been switched on to the branch lines 2, 2, leaving the switch point 3, in the position shown by Fig. 1, and that the next car is to travel in the direction of the arrow *b*, the motorman presses on the foot piece 21, in a right hand direction which causes the lever 20 to descend the inclined face 23. This depression of the foot piece 21, moves the parts 20, 14, and 15, to the position shown in Fig. 1, or ready to open the switch 3, by the arrow head 16, and club shaped part 17, contacting with and moving the stop 8, as the car travels forward, and thereby pushing said stop to the right hand. If the succeeding car is to travel over the branch lines 2, 2, the motorman swings the lever 20, to the position indicated by the dotted line *c*—*c*, which will place the arm 15, ready to close the switch by moving the stop 8, to the left hand. Obviously where several lines of track intersect each other separate casings 5, rods 4, and stops 8, will be fitted in connection with each switch point. Where objection is raised to the projecting stop 8, I may hinge the rod 4, to the switch rail at 25, and fit a resilient buffer for the stop 8, to always rest on, so that said stop 8, may be easily depressed if trodden on but always returned to its slightly projected position.

From the foregoing description and accompanying drawing it will be readily seen that by my invention I provide an exceptionally simple and effective device for the purpose specified, which will dispense with the employment of a points-man and thereby reduce working expense, furthermore the motor-man will be able to see whether or not the points are as required before moving his foot controller.

I claim.

1. The combination in a street car switch of a spring influenced plunger arranged centrally beneath the car platform, a depending framework having a bearing at its lower part for housing said plunger, cross stays from said framework to the underside of the car platform, a laterally and rearwardly projecting lever secured to the upper end of the said plunger and fitted at its free end with a foot piece, means for deflecting said lever to the right or left hand when depressed, a laterally and rearwardly projecting lever secured to the upper end of the said plunger and fitted at its free end with a foot piece, means for deflecting said lever to the right or left hand when depressed, a laterally and forwardly projecting arm fixed to the lower end of the aforesaid plunger adapted to coöperate with an upstanding stop in the middle of the track, and means for housing said stop and directly connecting same with the switch point, substantially as described for the purpose specified.

2. The combination in a street car switch, of a plunger arranged centrally beneath the car platform and adapted to project thereabove, a depending framework secured beneath said platform and having a bearing at its lower part for housing the said plunger, cross stays from said framework secured to the underside of the platform, a collar on said plunger, a compression spring interposed between said collar and the aforesaid bearing, a laterally and rearwardly projecting lever secured to the upper end of the plunger and having at its free end a foot piece, a block fitted into the upper face of the car platform immediately behind the plunger and having inclined tapered faces with which the laterally projecting lever is adapted to coöperate, a forwardly projecting arm fixed to the lower end of the plunger having an arrow shaped end and club shaped body adapted to coöperate with an upstanding stop arranged in the middle of the track, said stop being directly connected by means of a laterally disposed rod inclosed in a box shaped casing with the switch point, all constructed and arranged substantially as shown for the purpose specified.

Signed at Hamilton, in the Province of Ontario, Dominion of Canada, the 12th day of January, 1911.

BENJAMIN BHAIN MUIR. [L. S.]

Witnesses:
ALFRED T. BRATTON,
GERTIE NICHOLSON.