To all whom it may concern:

Be it known that I, Michael Derrech, a subject of the Emperor of Austria-Hungary, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Switch-Operating Devices, of which the following is a specification.

This invention relates to certain new and useful improvements in switch operating devices.

The primary object of the invention is the provision of a switch construction for railway tracks adapted for connection with a railway car whereby the switch may be shifted to the desired position by the operator of the approaching car.

A further object of the device is the provision of a switch throwing means mounted upon a railway car whereby the switch mechanism upon the track is positively and resiliently engaged for shifting the switch to the desired position to allow the car to pass therethrough in the desired direction.

With these general objects in view and others that will appear as the nature of the invention is better understood, the same consists in the novel construction, combination and arrangement of parts hereinafter more fully described, illustrated in the accompanying drawings, and then claimed.

In the drawings forming a part of this application and in which like designating characters refer to corresponding parts throughout the several views:

Figure 1 is a side elevation of a car arranged upon a track, the car being provided with the present device, parts being shown in central vertical section.

Fig. 2 is a top plan view of the same with the car body removed.

Fig. 3 is a top plan view of a section of railway track including a switch provided with the switch operating mechanism illustrated by dotted lines.

Fig. 4 is a longitudinal sectional view through the road-way of the same.

Fig. 5 is a perspective view of the switch throwing member detached.

Fig. 6 is an enlarged detail view of one of the axle mounted shifting devices, and Figs. 7 and 8 are detail sectional views taken respectively, upon lines VII--VII and VIII--VIII of Fig. 6.

The device is herein illustrated in connection with a railway car having a truck 11 provided with flanged wheels 12 positioned for traveling upon the rails 13 of a railway track. In Fig. 3 the said rails are illustrated in the form of a main straight-away track 14 having a siding or switch track 15 entering the same at an acute angle with a switchable point switch 16 pivotally provided as at 17 adapted for controlling the movement of cars on to the siding 15 when desired when traveling in the direction indicated by the arrow. A casing 18 is arranged beneath the road bed 19 adjacent the point of connection between the tracks 14 and 15. A rectangular shifter 20 is provided for the point switch 16 consisting of side bars 21 and levers 22 and 23 pivotally connecting the opposite ends of the said bars. The lever 22 positioned nearest the point switch 16 is centrally pivoted as at 24 to a frame 25 secured to the top 26 of the casing 18 while substantially centrally bent portions 27 of the bars 21 are slidably arranged supported in loops 28 carried by the said casing top.

An upwardly projecting angular arm 29 is provided upon the lever 22 pivotally attached by means of a connecting rod 30 with the point switch 16. An axle 31 is secured centrally through the lever 22 journaled through the top 26 and having radially arranged operating levers 32 and 33 carried by the upper end thereof substantially centrally of the track 14, the said levers being arranged perpendicularly to each other.

From this description of the shifting means for the point switch 16, it will be understood that when the switch is closed as illustrated in Fig. 3 of the drawings, an inward forward impulse exerted upon the lever 23 will return the levers 23 and 22 for exerting a pull upon the link 30 and shifting the point switch 16 to its open position allowing a train to pass to the siding 15. When the switch is open, pressure exerted upon the lever 22 will shift the link 30 in a reverse or outward direction, moving the point switch 16 to its closed position. A car moving toward the casing 28 either upon the main track 14 or the siding 15 will readily pass the point switch 16 in whichever position the same is arranged, the point switch being shiftable by the flanges of the car wheels when the car is passing from the...
siding onto the main switch with the point switch in its closed position, such operation forcibly moving the shifting member 20 with the actuation of the said point switch. 5 Separate tripping or actuating devices for the levers 32 and 33 are provided upon the car 10, and each of the same being identical only one thereof need be fully described. A forward axle 34 of the truck 11 is provided with angular operating members 35 having journaling sleeves 36 revolvably arranged upon the said axle 34 between spacing collars 37 fixed thereto. A curved forwardly-extending lever 38 is provided upon the sleeves 36 extending to a point beneath the motorman's cab 39 of the car. A slot 40 is provided within the said lever 38 having a vertically positioned operating rod 41 pivoted within the said slot, a hand lever 42 being carried by the rod 41 within the cab 39 while a cross handle 43 is provided upon the upper end of the rod 41 at a point above the roof 44 of the car. A housing 45 forwardly projects from the sleeve 36 having a rectangular chamber 46 therein adapted for the sliding reception of a tapered contact foot 47 having a curved lower forward free end 48 adapted to ride upon the casing cover 26 and having a path of movement in the line of one of the levers 32 or 33 when the foot is depressed. A bolt 49 extends through the housing 45 freely arranged through a central longitudinal slot 50 of the foot 47 thereby retaining the foot within the said housing while springs 51 are arranged inwardly of the foot 47 for resiliently positioning the foot normally projected. Anti-friction members 52 are carried by the opposite inner wall of the housing 45 with which the foot 47 is slidably engaged. It will be understood that two sets of operating devices are arranged upon the car 10, each being provided with a separate upward operating rod 41 and each having a foot 47 radially depressed in contact with the road bed and plate 26 by forcing the rods 41 downwardly by means of either of the handles 42 or 43. A return spring 53 connects the truck 11 with each of the housings 45 for normally arranging the feet 47 in their inoperative elevated positions above the road bed. In operating the device, when the car 10 is moving in the direction of the arrow illustrated in Fig. 2, the point switch 16 being closed, the car may readily continue in its travel along the main track 14 freely passing over the said point switch. If desired to travel upon the siding 15, the operator 60 shifts the right hand shoe 47 upon the car 10, which shoe being depressed with its curved face 48 substantially engaging the plate 26, the said foot will forcibly engage the lever 33, influencing the shifter 20 in the manner hereinafter described and throwing the point switch 16 to its open position. It will be seen that another car thereafter moving upon the track 14 in the direction of the arrow when approaching the point switch 16 from the direction of the lever 33 may depress the left shoe 47 upon the car for engaging the same with the lever 32, thereby closing the point switch 16 and allowing the car to freely pass by the switch upon the main track 14. A safe and inexpensive switch throwing arrangement is thus provided readily operable from a moving car, the same having suitable cushioning means for preventing any damage to the mechanism during the operation thereof. What I claim as new is:— A car carried switch operating means comprising in combination with an axle, spaced upon the said axle, a sleeve journaling upon the axle between the said collars, a forwardly projecting operating lever upon the said sleeve, a vertically arranged operating rod pivoted to the forward end of the said lever, a forwardly projecting housing carried by the said sleeve having a chamber therein, a tapered foot slidably arranged within the said chamber, resiliently positioned projection springs in bearing engagement inwardly of the said foot, and a retaining bolt carried by the said housing restrainingly arranged with respect to the said foot. In testimony whereof I affix my signature.

MICHAEL DERRECH.