

No. 835,532.

PATENTED NOV. 13, 1906.

T. JACKSON.  
RAILWAY SWITCH MECHANISM.  
APPLICATION FILED SEPT. 26, 1904.

2 SHEETS—SHEET 1.

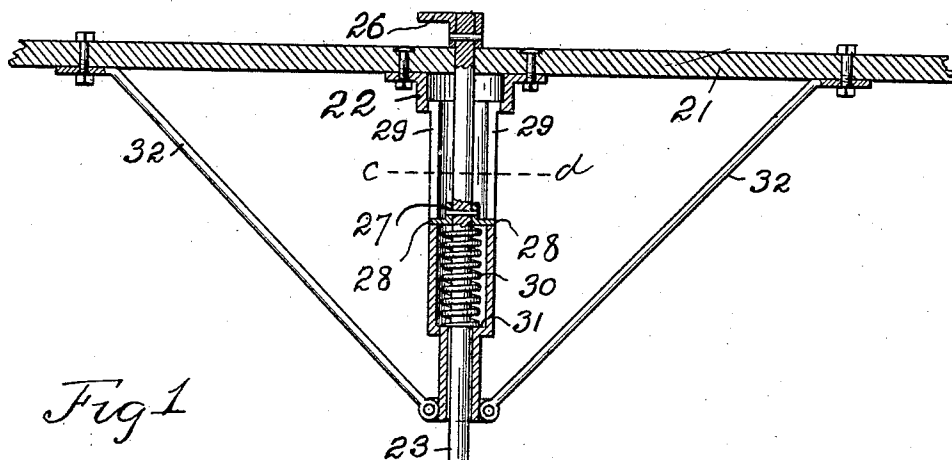


Fig 1

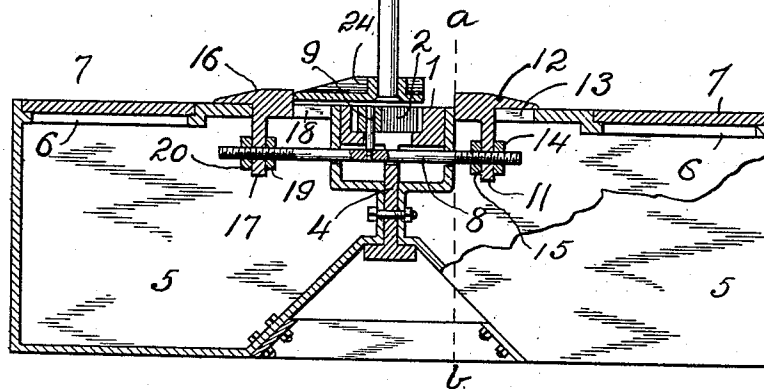
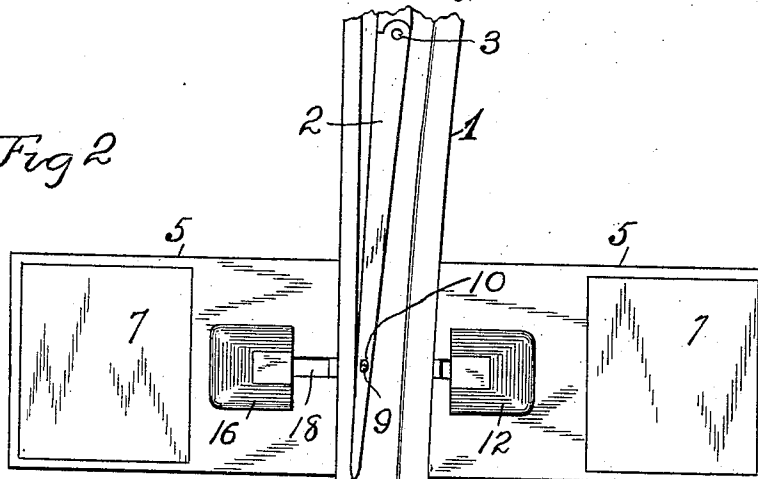


Fig 2



WITNESSES:

Re Hamilton.  
H. W. House.

INVENTOR,

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By Warren D. House  
His Attorney

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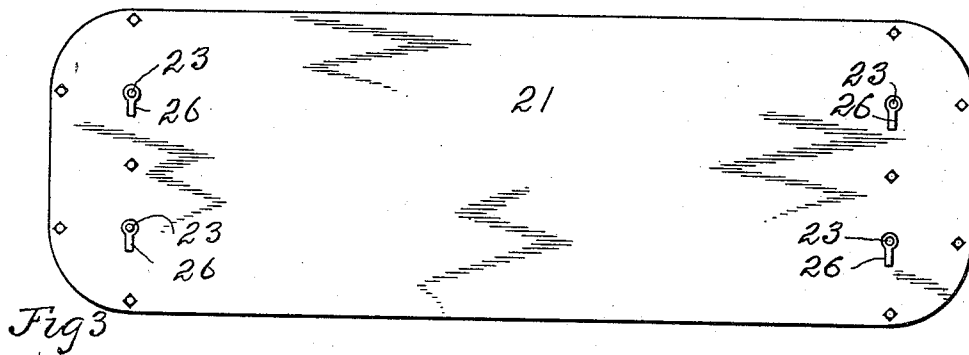


Fig 3

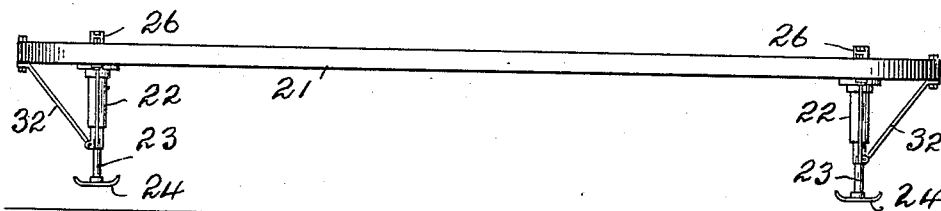


Fig 4

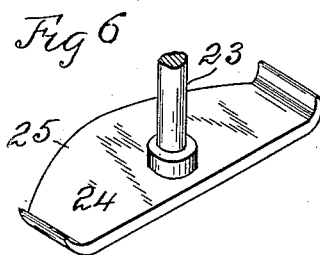


Fig 6

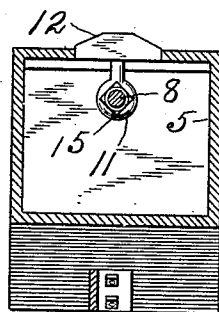


Fig 5

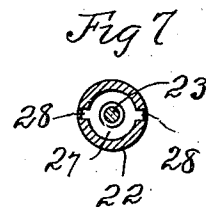


Fig 7

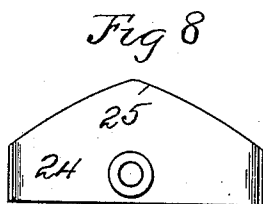


Fig 8

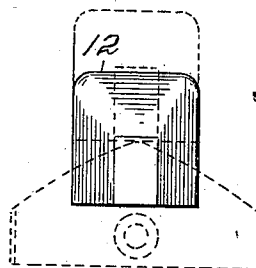


Fig 9

WITNESSES:

*R. C. Hamilton.*  
*R. C. House*

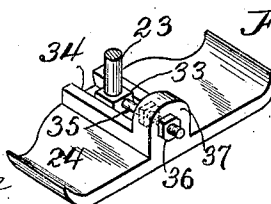


Fig 10

INVENTOR,  
*Taylor Jackson*  
By *Warren L. House,*  
*His Attorney,*

# UNITED STATES PATENT OFFICE.

TAYLOR JACKSON, OF KANSAS CITY, KANSAS.

## RAILWAY-SWITCH MECHANISM.

No. 835,532.

Specification of Letters Patent.

Patented Nov. 13, 1906.

Application filed September 26, 1904. Serial No. 225,989.

*To all whom it may concern:*

Be it known that I, TAYLOR JACKSON, a citizen of the United States, residing at Kansas City, in the county of Wyandotte and State of Kansas, have invented a new and useful Improvement in Railway-Switch Mechanisms, of which the following is a specification, reference being had therein to the accompanying drawings, forming a part thereof.

My invention relates to improvements in railway-switches.

It relates particularly to street-railway switches.

The object of my invention is to provide a mechanism by which the operator of a car may throw a switch without stopping the car or descending therefrom for the purpose.

My invention is particularly applicable to use in connection with switches of the type in which a pivoted switch-tongue is employed.

My invention consists in a shifting mechanism for swinging the switch-tongue to and fro, a controlling or actuating device being provided on the car and adapted when properly positioned thereon to actuate the shifting mechanism so as to swing the switch-tongue to the right or left, as may be desired.

My invention provides, further, means by which the switch-controlling mechanism may normally be held out of engagement with the shifting mechanism.

My invention provides, further, a plurality of switch-controlling devices disposed one adjacent each end of the car, whereby the switch may be operated with the car running in either direction upon the track.

My invention also provides for four switch-controlling devices disposed two adjacent each end of the car, two being located over each rail, one at each end of the car, whereby the pivoted switch-tongue, whether located on one side of the track or the other, may be operated when the car is moving in either direction.

Other novel features are hereinafter fully described and claimed.

In the accompanying drawings, illustrating my invention, Figure 1 is a vertical sectional view taken transversely of the track, showing one of the controlling devices carried by the car in the depressed position and in engagement with one of the shifting shoes. Fig. 2 is a top view of the shifting mechanism, the pivoted switch-tongue, and a part of the frog.

Fig. 3 is a plan view of the floor of a car equipped with the mechanism for controlling the shifting of the tongue. Fig. 4 is a side elevation view of what is shown in Fig. 3. Fig. 5 is a vertical sectional view taken on the dotted line *a b* of Fig. 1. Fig. 6 is a perspective view of one of the cam-shoes. Fig. 7 is a cross-section taken on the dotted line *c d* of Fig. 1. Fig. 8 is a top view of one of the cam-shoes. Fig. 9 is a top view of one of the shifting shoes. In dotted lines the shifting shoe is shown engaged with the cam-shoe. Fig. 10 is a perspective view of a modified form of cam-shoe which is laterally adjustable on the carrying-bar.

Similar characters of reference denote similar parts.

1 denotes a portion of an ordinary frog provided with a switch-tongue 2, pivoted to the body of the frog by means of a vertical pin 3, mounted in suitable holes provided in the body and tongue.

4 is a longitudinal vertical flange provided on the under side of the frog 1. Secured at each side of the frog 1 to the flange 4 is a rectangular box 5, provided in its upper end with a rectangular opening 6, having a removable cover 7. A transverse horizontal rod 8 is slidably mounted in horizontal holes provided in the flange 4 and the adjacent sides of the boxes 5. A vertical pin 9 is rigidly secured at its lower end to the bar 8, the upper end being pivotally mounted in a vertical slot 10, provided adjacent the free end of the switch-tongue 2. Each end of the bar 8 is screw-threaded. The right end of the bar as viewed in Figs. 1 and 2 extends through a vertical projection 11, provided on the lower side of a shifting shoe 12, disposed at one side of the frog 1 and resting upon the upper side of the adjacent box 5. The projection 11 extends through a slot 13, disposed at right angles to the track in the top of the box. The shoe 12 is rigidly secured to the bar 8 by means of two nuts 14 and 15, mounted on the bar 8 at each side of the projection 11. A shifting shoe 16 is similarly mounted upon the top of the left box 5 at the left side of the frog 1. The shoe 16 is provided with a downwardly-extending projection 17, slidable lengthwise in a slot 18, which is provided in the top of the box 5, parallel with the bar 8. The bar 8 extends through a transverse hole provided in the projection 17 and has mounted on its left

end the nuts 19 and 20, clamping each side of the projection 17.

I will now describe the construction of the switch-controlling device carried by the car.

21 denotes the floor of the car, to the under side of which is secured the upper end of a vertical tubular housing 22, in which is rotatively mounted a vertically-movable bar 23, to the lower end of which is secured a cam-shoe 24, provided on one edge with a convex cam-face 25, adapted to engage with one or the other of the shifting shoes 12 and 16 for the purpose of shifting said shoes laterally and swinging the switch-tongue 2 to the right or left. For the purpose of rotating the bar 23 it has secured to its upper end above the floor 21 of the car a crank-arm 26. To prevent rotation of the bar 23 while it is being used to throw the switch, it has secured to it a collar 27, provided at each side with horizontal projections 28, which are mounted and vertically slidable in two vertical slots 29, respectively disposed in diametrically opposite sides of the housing 22 and extending downward from the upper end thereof. A compression-spring 30, encircling the bar 23, has its lower end resting upon a shoulder 31 in the housing, the upper end bearing upon the under side of the collar 27. The compression-spring 30 by its tension normally forces the bar 23 upwardly, thus raising the cam-shoe 24 clear of the track and from engagement with the shifting shoes. The upper end of the housing 22 is enlarged at a point above the slots 29, so as to permit rotation of the bar 23, when said bar has been elevated to a position in which the projections 28 of the collar 27 are freed from the slots 29.

32 denotes braces the lower ends of which are secured to the lower end of the housing 22, the upper ends of said braces being secured to the under side of the car-floor 21.

In operating my invention before the wheels have reached the switch-tongue 2 the operator on the car, if desiring to throw the switch-tongue 2 to the right as viewed in Fig. 2 and the cam-shoe 24 is in the position shown in Fig. 1, seizes the crank-arm 26 and slides the bar 23 upwardly until the projections 28 pass out of the slots 29, at which time the bar 23 is rotated a distance of one hundred and eighty degrees, when the bar 23 is dropped with the cam-face 25 of the cam-shoe 24 disposed at the right hand in position to engage the shoe 12. The operator retains his foot upon the crank 26, compressing the spring 30 and keeping the shoe 24 in position to strike and force to the right the shifting shoe 12. The car is then permitted to move ahead, thus swinging the switch-tongue 2 to the right through the intermediacy of the shoe 12, bar 8, and pin 9, after which the operator can proceed with the car on the proper track toward his des-

tinuation. After the switch has been thrown pressure on the crank-arm 26 is removed, permitting the spring 30 to sufficiently elevate the bar 23 and shoe 24 to avoid obstructions which otherwise might strike them in the depressed position.

It will be understood that the bar 23 to be rotated and depressed will always be the one at the forward end of the car and which is located over the rail provided with the switch-tongue which is to be thrown.

As the tongue may be located in either rail and as either end of the car may be the forward end, four controlling devices are usually required upon each car.

The openings 6, normally covered by the lids or covers 7, are provided for access to the interior of the boxes 5, so that dirt may be removed or to permit the repairing or replacing of the parts inclosed by the boxes.

In Fig. 10 I have illustrated a laterally-adjustable cam-shoe. Adjustment of this kind may be required, so that the shoe carried by the car may be properly positioned to engage the shifting shoes 12 and 16. In this form the supporting-bar 23 is secured rigidly at its lower end to a block 33, fitted to move lengthwise in a transverse dovetail groove 34, provided in the upper side of the cam-shoe 24. At the side of the cam-shoe opposite the cam-face is provided at one end of the groove 34 a vertical projection 37, provided with a transverse hole in which is slidably mounted a horizontal bar 35, one end of which is secured to the block 33 and the other end being screw-threaded. On said threaded portion at each side of the projection 37 is mounted a nut 36, adapted to bear against the projection 37. By properly positioning the nuts 36 on the bar 35 the cam-shoe 24 may be moved to any desired position on the block 33, after which the nuts 36 are tightened against the sides of the projection 37, thus securely holding the shoe in place on the block 33.

Other modifications may be resorted to without departing from the spirit of my invention.

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

1. The combination with the switch-tongue, of a shifting means for swinging the bar laterally from side to side, a bar rotatively mounted on the car and vertically movable thereon, a releasable locking device for preventing rotation of the bar, a spring normally forcing said bar upwardly, and a device laterally adjustable on the bar and adapted to engage and actuate said shifting mechanism when the bar is depressed.

2. The combination with a switch-tongue, of means for shifting laterally said tongue, a bar rotatively and vertically adjustable on the car, and a shoe carried by and laterally

adjustable on said bar and adapted to engage and actuate the shifting means when the bar is properly positioned.

3. The combination with a pivoted switch-tongue, of two transversely-movable shoes, means by which when said shoes are moved, the tongue will be laterally swung, a bar rotatively mounted on the car, a device carried by and laterally adjustable on said bar and adapted when the bar is rotated to one position to engage one shoe, and when the bar is

disposed in another position to engage the other shoe and move the same, for the purpose of shifting said tongue in opposite directions.

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

TAYLOR JACKSON.

Witnesses:

WARREN D. HOUSE,  
HENRY F. ROSE.