

No. 768,973.

PATENTED AUG. 30, 1904.

M. BARNES.  
RAILWAY SWITCH.  
APPLICATION FILED NOV. 18, 1903.

NO MODEL.

3 SHEETS—SHEET 1.

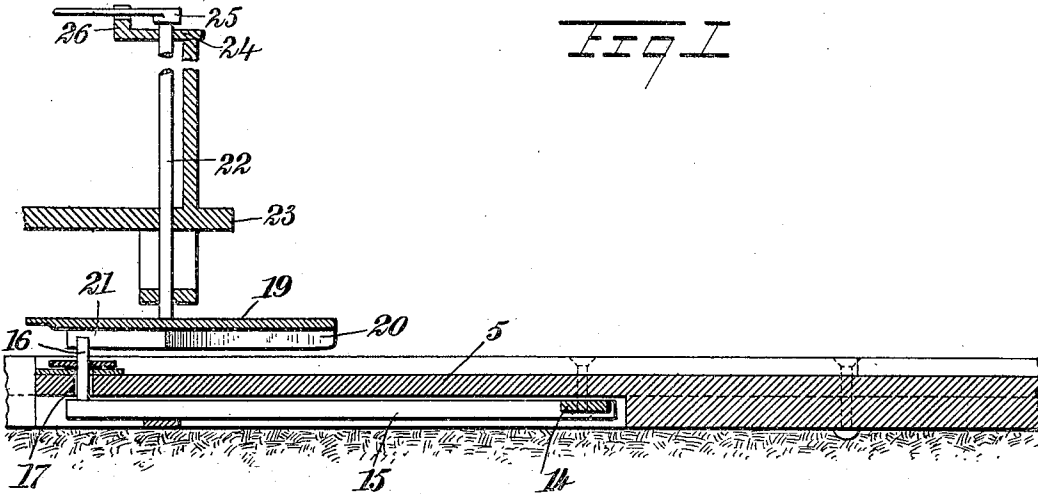


Fig 1

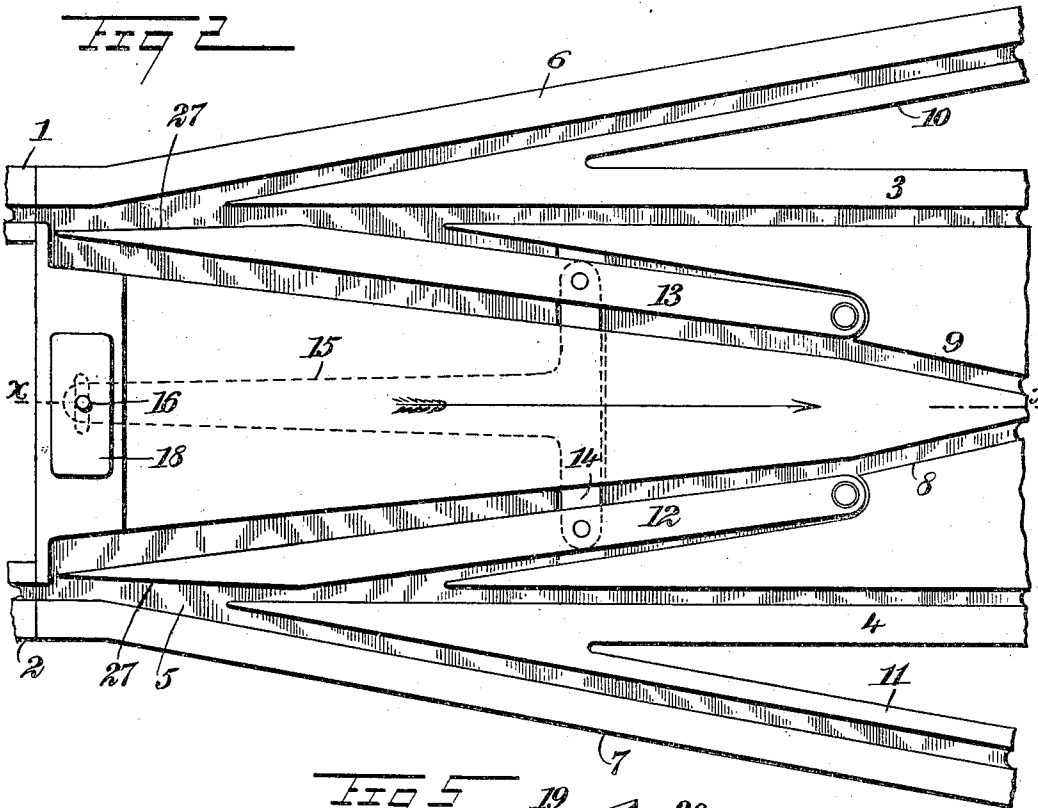
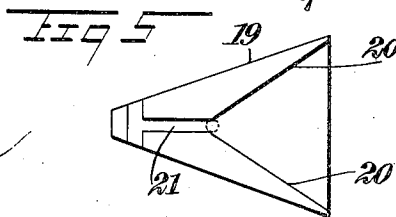


Fig 2



WITNESSES:  
*W. Walker*  
*C. R. Ferguson*

INVENTOR  
*Milo Barnes*  
 BY *Munn & Co.*  
 ATTORNEYS

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2 SHEETS—SHEET 2.

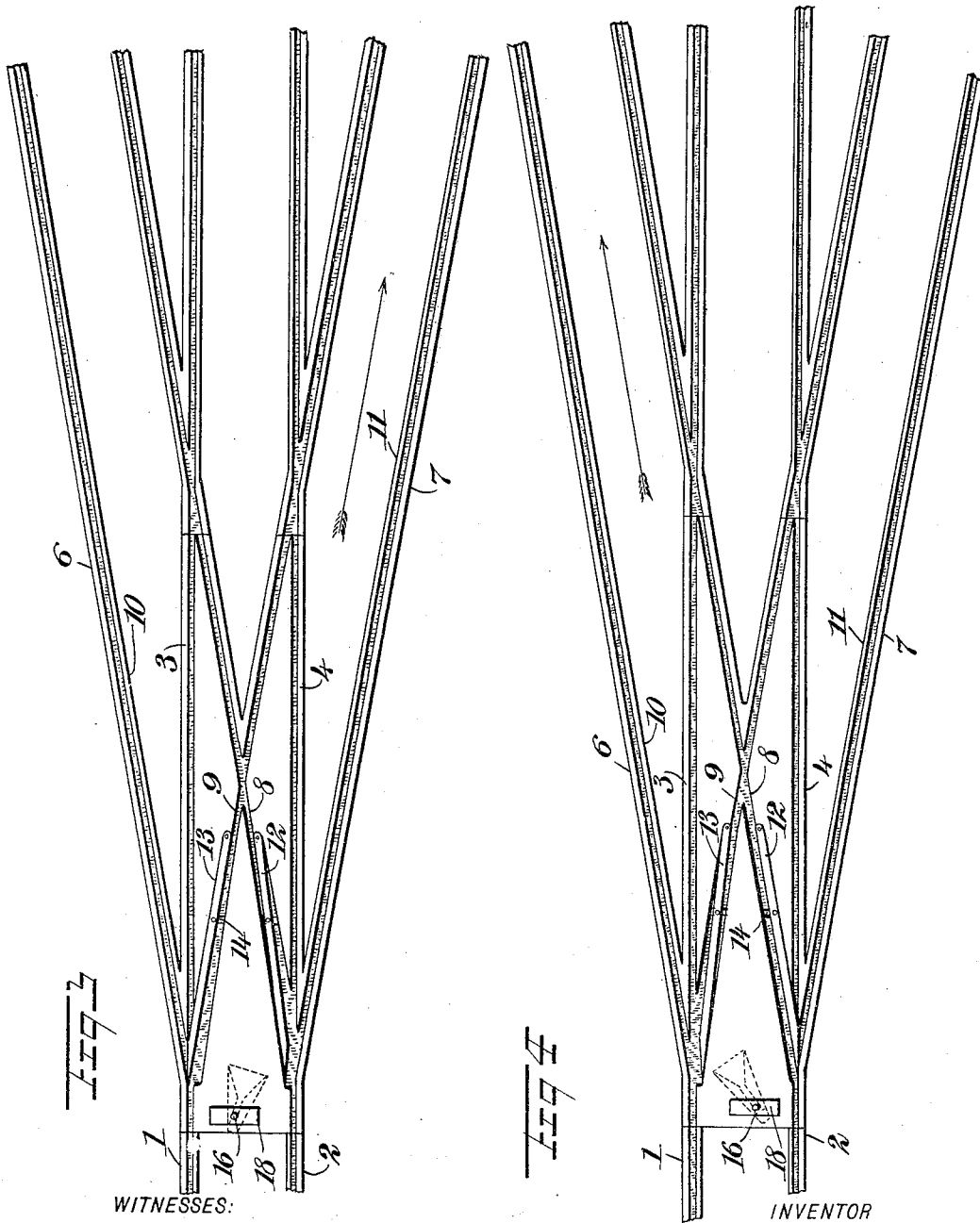


FIG 1

FIG 2

WITNESSES:

*H. Walker*  
*C. R. Ingouss*

INVENTOR

*Milo Barnes*

BY

*Mumford*

ATTORNEYS

# UNITED STATES PATENT OFFICE.

MILO BARNES, OF SYRACUSE, NEW YORK.

## RAILWAY-SWITCH.

SPECIFICATION forming part of Letters Patent No. 768,973, dated August 30, 1904.

Application filed November 18, 1903. Serial No. 181,609. (No model.)

*To all whom it may concern:*

Be it known that I, MILO BARNES, a citizen of the United States, and a resident of Syracuse, in the county of Onondaga and State of New York, have invented a new and Improved Railway-Switch, of which the following is a full, clear, and exact description.

This invention relates to improvements in switches, particularly for use on street-railways, an object being to provide a simple switch than can be moved by a motorman without stopping the car to direct the car in any one of three directions.

I will describe a railway-switch embodying my invention and then point out the novel features in the appended claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a section on the line *xx* of Fig. 2 of a switch mechanism embodying my invention, showing the device carried by a car for operating the switch. Fig. 2 is a plan view of the switch. Figs. 3 and 4 are also plan views showing the switch turned in different directions, and Fig. 5 is a bottom view of the shifting device.

Referring to the drawings, 1 2 designate the main-track rails, and 3 4 the continuations thereof on the switch-plate 5. A switch-rail 6 on the plate extends from the rail 1, and from the rail 2 a switch-rail 7 extends, these rails 6 7 being divergent, so as to direct a car in opposite directions. A rail 8 on the plate is in parallelism with the rail 6 and forms a companion therefor, and a similar rail 9 on the plate is a companion for the rail 7. The outer edges of these rails 8 and 9 are arranged close to the rails 3 4, and these edges form guards for the car-wheels, and guards 10 11 are provided for the rails 6 7.

Extended from the rails 8 9 toward the main rails 1 2 are switch-tongues 12 13. These switch-tongues are mounted to swing on the plate 5, and they are connected one with the other by a cross-head 14, arranged underneath the plate and attached or formed integral with an operating-lever 15. This cross-head 14, it will be noted, is pivotally

connected to the switch-rails. From the end of the lever 15 a pin 16 extends upward through an opening 17 in the switch-plate and is designed to engage with a device carried by the car for shifting the switch-tongues. The opening 17 is in the form of a slot to permit the free movement of the pin, and to prevent the entrance of snow, dirt, and the like a plate 18 is connected to the pin and arranged to slide on the top of the plate 5 to cover the slot.

The shifting device carried by a car consists of a shoe 19, having on its under side divergent walls 20, which terminate between the front and rear ends of the shoe, and these walls communicate with the parallel walls of a slot 21, the width of which is just sufficient to permit the free entry of the pin 16. The shifting device may be connected to the car in any desired manner, so as to be operated by the motorman's foot or otherwise—that is, operated to raise it and lower it. As here shown, it is connected to a rod 22, which extends upward through an opening in the car-platform 23 and also through a bracket 24, and this rod not only has rotary movement, but may be raised and lowered. On the upper end of the rod above the bracket 24 is an operating-handle 25, which may engage in any one of a series of notches formed in a rack 26, the said rack being on the bracket 24.

In the operation it will be noted that in Fig. 2 the main line is open—that is, a car will pass off the rails 1 2 and continue on the rails 3 4, and the switch-tongues, which are divergent from their pivoted ends at this time, will lie in central position, and the beveled ends 27 of said switch-tongues will form guards for the wheel-flanges. Should the switch-tongues be in this position and it is desired to run the car on the switch comprising the rails 7 and 9, the motorman will lower the shoe, at the same time turning it with the front end extended toward the right, so that the slot 21 will be at an angle, as indicated in Fig. 3. As the car approaches the divergent walls 20 of the shoe will engage the pin, it being understood that the rod 22 is lowered at this time by the lever 25 being in the proper notch, and when the pin passes

into the slot 21 the switch-tongues will be shifted into the position indicated in Fig. 3. Then the car will pass from the main rails 1 2 along the switch-tongue 13 and the rails 7 5 and 9. For passing over the other switch-rails obviously the shoe must be turned in an opposite direction to that above described and as indicated in Fig. 4. The car will then pass over the switch-tongue 12 and the rails 10 6 and 8.

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

1. The combination with three-way tracks of a railway-switch comprising two switch-points divergent from their pivotal points, a bar pivotally connected to the two switch-points, and a lever extended from said bar and adapted to be moved by a device carried by a car for shifting the points.

2. A railway-switch comprising two swinging switch-points divergent from their pivotal ends, a shifting-lever, a cross-head rigidly connected to said shifting-lever and having pivotal connection with the switch-points, rails extended from the pivoted ends of the switch-points, main-rail continuations near said first-named rails, and divergent outer switch-rails.

3. A railway-switch comprising a switch-plate, two switch-tongues pivoted thereon and divergent from their pivoted ends, three-way tracks comprised in the switch, a lever, a cross-head on said lever having pivotal connection with the switch-points, the said lever being underneath the switch-plate, the said plate having an opening, a pin extended upward from the lever through said opening, a plate carried with said pin over the opening, and a device carried by a car for engaging with said pin.

4. In a switch mechanism, pivoted switch-tongues, an operating-lever having pivotal connection with both of said tongues, a pin extended upward from said lever, a shifting device carried by a car, the shifting device comprising a shoe having divergent walls on its under side connecting with the parallel walls of a slot formed in the shoe, and means for moving said shoe in a rotary direction.

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

MILO BARNES.

Witnesses:

CLARENCE HUBERT SWEET,  
FRANK ELWOOD AVERY.