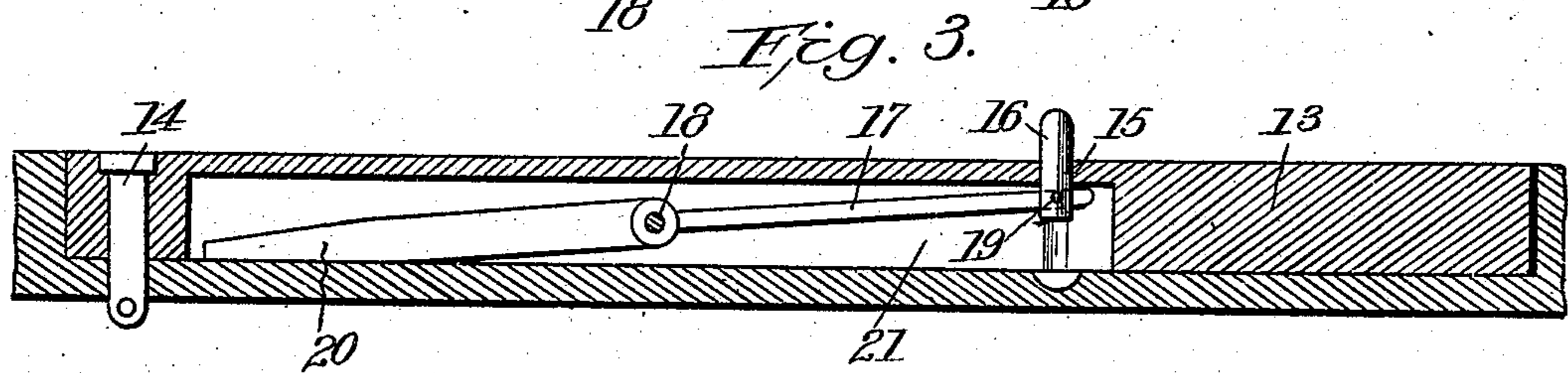
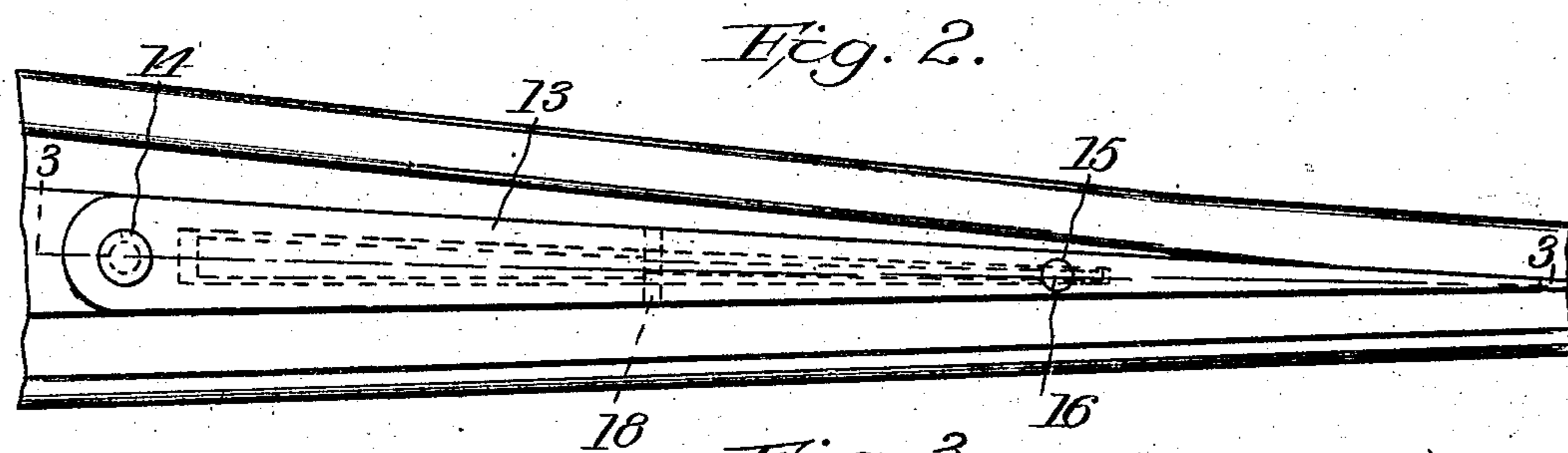
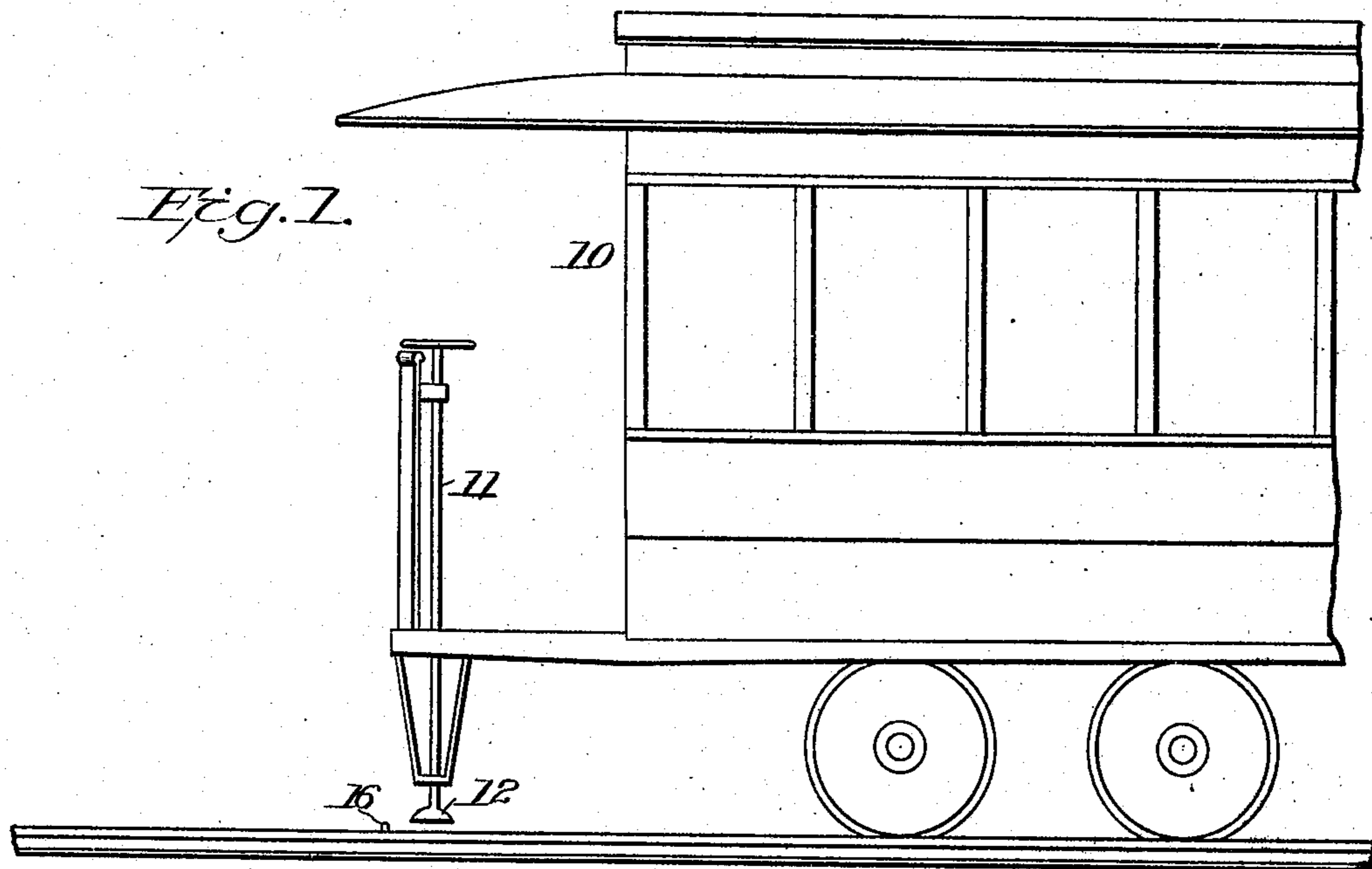


No. 847,931.

PATENTED MAR. 19, 1907.

O. S. GAGE.  
SWITCH.

APPLICATION FILED APR. 24, 1906. RENEWED FEB. 23, 1907.



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# UNITED STATES PATENT OFFICE.

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## SWITCH.

No. 847,931.

Specification of Letters Patent.

Patented March 19, 1907.

Application filed April 24, 1906. Renewed February 23, 1907. Serial No. 358,978.

*To all whom it may concern:*

Be it known that I, OSCAR STEAVEN GAGE, a citizen of the United States, residing at Tecumseh, in the county of Pottawatomie and Territory of Oklahoma, have invented new and useful Improvements in Switches, of which the following is a specification.

This invention relates to tramway-switches of that type in which a pivoted portion, commonly called a "switch-point," is fitted so as to be thrown laterally to direct a car from one track to another.

The object of my invention is to provide an improved construction of this type of switch which may be readily operated by the motorman of a car without requiring his stopping the movement of the car or the handling of any separate rod.

In devices of this character as heretofore employed it has usually been necessary for something to be inserted in the groove of the track at one side or the other of the switch-point so as to enable the switch-point to be thrown.

The especial object of my present invention is to provide means whereby a projection from the switch-point will be normally in position to be engaged by a shifting device carried by the car, but which projection may be readily displaced by the wheel of the car or any other vehicle passing over it, and will be automatically raised to its normal and proper position as soon as such wheel has passed.

To these ends my invention consists in the construction and combination of parts substantially as hereinafter described and claimed.

In the accompanying drawing, Figure 1 represents a side elevation of a portion of a car in the position which it would occupy on a track adjacent to a switch and provided with a suitable switch-operating device. Fig. 2 is a plan view, partly broken out, showing a switch-point provided with my improvement. Fig. 3 represents a section on line 3 3 of Fig. 2.

Similar reference characters indicate the same or similar parts in all of the views.

A portion of a car is represented at 10, the platform of said car being provided with a shaft or plunger 11, having a shoe 12 at its lower end, which plunger and shoe may be depressed by the motorman and turned into position so as to engage the projections of the switch-point on one side or the other thereof,

as hereinafter described, to shift said switch-point laterally.

The switch-point 13 is represented in Figs. 2 and 3 as pivotally supported at 14 and provided at a point somewhat back of the free end thereof with a vertical hole 15. A stud 16, of substantially equal diameter throughout its length, is fitted to slide in the hole or recess 15 and is adapted to normally project, as shown in Figs. 1 and 3, and to be depressed so that the upper end of the stud will not project above the upper surface of the switch. As a means for yieldingly holding said stud with its upper end projecting, as shown, I provide a lever 17, pivoted at 18 in a chamber or recess in the under side of the switch, said lever being pivotally connected at 19 with the lower end of the stud 16. The other end of the lever is considerably enlarged or otherwise weighted, as at 20, so that the said lever will normally rest in the position shown in Fig. 3, but may oscillate when the stud 16 is depressed by the wheel of a car or otherwise, and will then return the stud 16 to its normal position when free.

As indicated by dotted lines in Fig. 2, the portion of the chamber or recess in the switch adjacent the hole 15 is quite narrow—that is, it is only of a sufficient width to permit the narrow end of the lever to work freely vertically therein. The diameter of the hole 15 is greater than the width of the portion 21 of the recess, and therefore grooves are formed in the sides of said recess portion 21, which accommodate and guide the stud 16 and prevent the said stud from binding in its vertical movements, thereby causing the recess and hole to correspond in diameter at the point where the stud is located. This formation of the hole 15 and the guides is readily accomplished, it being necessary only to drill an opening entirely through the switch. By this construction that portion of the stud which is below the surface of the switch is not only guided throughout its entire length, but the presence of the stud (practically filling the hole and the recess at this point) forms substantially a solid switch-point at the place where owing to the formation of the guides the walls of the recess are of the least thickness. It will be obvious, therefore, that liability of a breaking out of the hole under lateral strain of that portion of the stud above the surface of the switch and the crushing of the sides of the switch at the normally weakened point

by the flange of the wheel during the passage of a car is practically eliminated.

It will now be understood that when a car equipped with a shifting-shoe, such as indicated at 12, approaches the switch and the shoe is depressed and turned by the motor-man so that it will engage one side or the other of the stud 16 the continued movement of the car will throw the switch before the wheels of the car have reached it, and when said wheels reach the stud 16 the latter will be instantly depressed and will then be returned to normally projecting position after the wheels pass.

Having now described my invention, I claim—

1. A pivoted switch having a vertical guideway, a stud fitted to slide in said guideway, said stud being of substantially equal diameter throughout its length, and means for yieldingly holding said stud with its upper end projecting above the upper surface of the switch.

2. A pivoted switch having a recess or chamber in its under side and formed with a vertical hole at a point between its pivot and its free end, a stud movable in said hole and extending into said recess, said stud being of

substantially equal diameter throughout its length and adapted to normally project above the surface of the switch, the recess in the switch being enlarged to correspond with the diameter of the hole and form a continuation thereof, and means located in the recess of the switch and connected with said stud to yieldingly hold the same raised.

3. A pivoted switch having a recess or chamber in its under side and formed with a vertical hole at a point between its pivot and free end, said hole leading into said recess, the latter having its walls formed to provide a continuation of the hole from the top to the bottom of the switch, a stud fitted to slide in said hole, and a weighted lever pivotally supported in the recess of the switch and pivotally connected with the lower end of said stud, the weight of said lever being adapted to normally hold the stud raised.

In testimony whereof I have affixed my signature in presence of two subscribing witnesses.

OSCAR S. GAGE.

Witnesses:

H. ARRINGTON,  
JOHN W. ARRINGTON.