(No Model.)

N. NEWMAN.

SWITCH OPERATING DEVICE.

No. 463,580. Patented Nov. 17, 1891.

Fig. 1

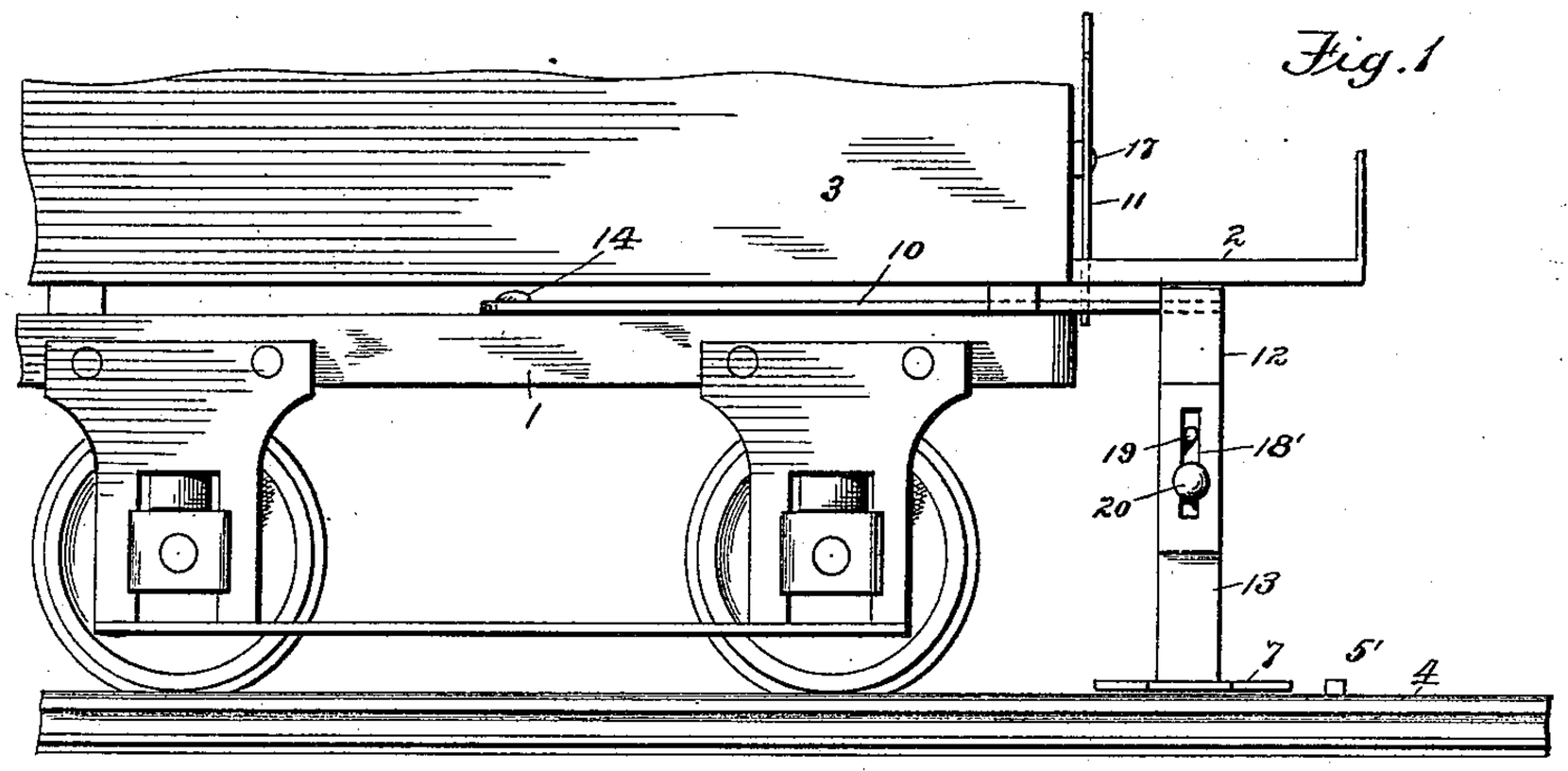


Fig. 2.

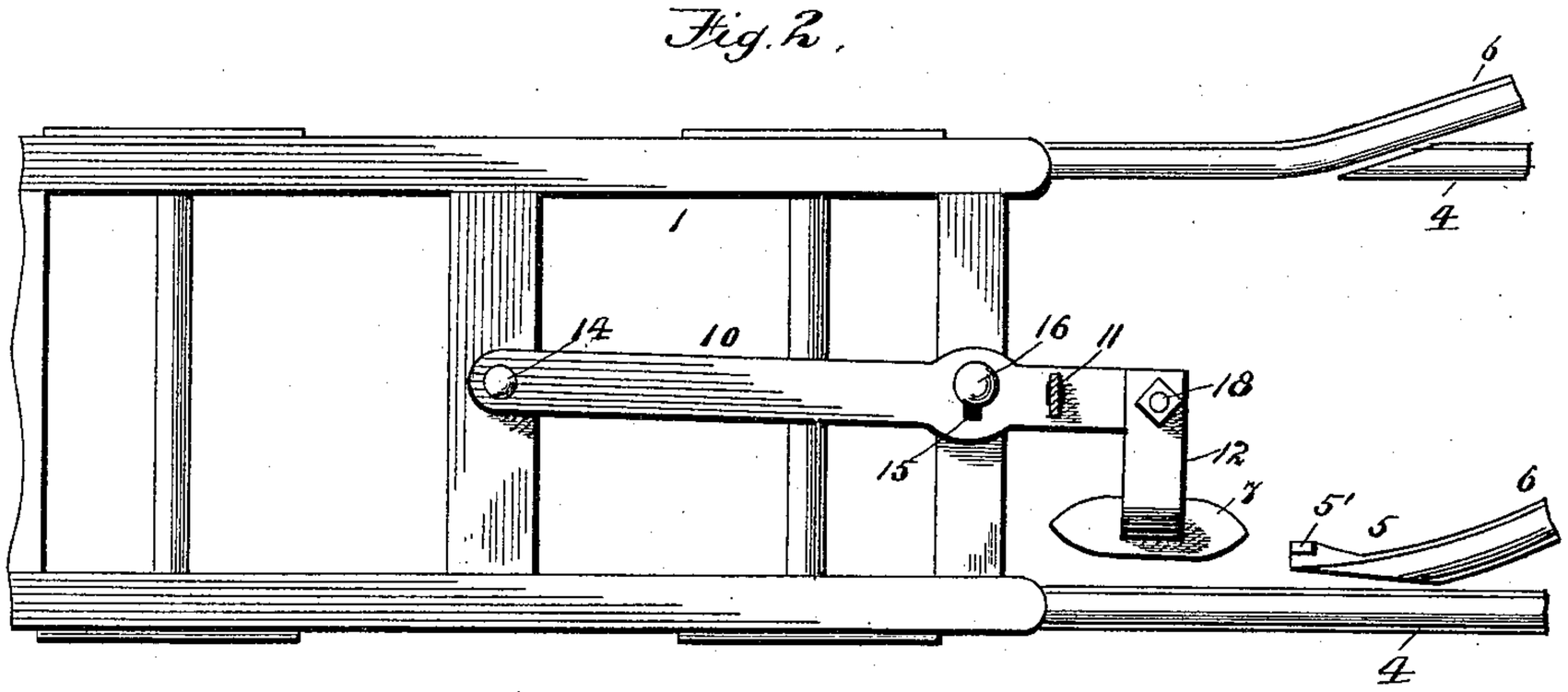


Fig. 3.

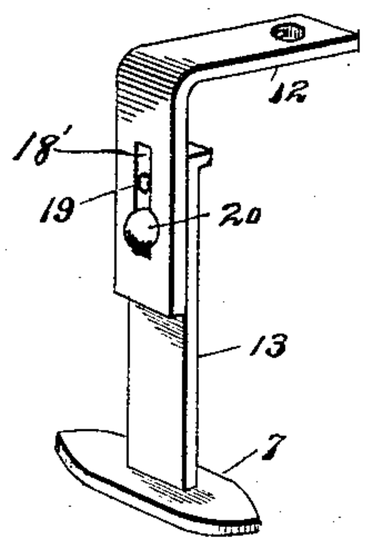
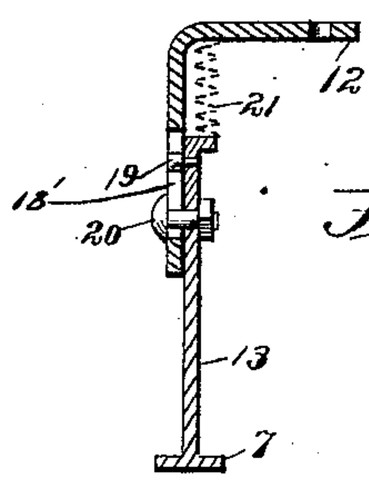


Fig. 4.



Witnesses

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UNITED STATES PATENT OFFICE.

NELSON NEWMAN, OF SPRINGFIELD, ILLINOIS, ASSIGNOR OF TWO-THIRDS TO GEO. A. SANDERS AND SAMUEL J. WILLETT, BOTH OF SAME PLACE.

SWITCH-OPERATING DEVICE.

SPECIFICATION forming part of Letters Patent No. 463,580, dated November 17, 1891.

Application filed July 22, 1891. Serial No. 400,359. (No model.)

To all whom it may concern:

Be it known that I, NELSON NEWMAN, a citizen of the United States, residing at Springfield, in the county of Sangamon and State of Illinois, have invented certain new and useful Improvements in Switch-Operating Devices; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My present invention relates to improvements in switch-operating devices for cars, and the objects are to enable the driver or attendant to readily control the position of the shoe for the purpose of opening or closing a switch, to enable the shoe to automatically clear obstructions in its path and thus avoid the liability of breakage or injury to the operating devices, and to adapt the operating device for use on either side of the car.

With these and other objects in view the invention consists in the novel combination of devices and the peculiar construction and arrangement of parts, which will be hereinafter fully described, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a side elevation showing a portion of a car with my improved switching device in position for opening the movable point-rail of a switch. Fig. 2 is a plan view, with portions of the car omitted to more clearly illustrate the switch-operating device; and Fig. 3 is a detail detached view of the angle-supporting plate and the vertically-adjustable shoe-standard. Fig. 4 is a detail section.

Like numerals of reference denote corresponding parts in all the figures of the drawings, referring to which—

1 designates a portion of a car-truck, 2 the platform, and 3 the car-body. 4 designates the rails of an ordinary track, and 6 are the side-track rails. All of these parts are of the ordinary or any preferred construction, my improved operating device being applicable to any forms of cars or tracks.

In this my present improvement I provide the movable point-rail 5 of the switch with an upwardly-projecting lug or stud 5′ for the purpose of insuring an effective contact between the movable point-rail and the shifting-shoe 7 of the operating device, although this stud is not an essential element of my invention, as the shoe and point rail can be otherwise constructed with a view to securing their effective engagement.

The operating device consists, essentially, of an adjusting-bar 10, a shifting-lever 11, an angular adjustable supporting plate or elbow 12, and a vertically-adjustable standard 13, carried by the elbow or angular plate and adapted to sustain the shifting-shoe 7. The adjusting-bar 10 is supported in a horizontal position at or near the middle of the car-truck and beneath the platform. The inner end of this horizontal bar is suitably pivoted or fulcrumed to the car truck or platform or to a special support provided therefor, the pivot being indicated at 14, and at an intermediate point of its length this bar is provided with a segmental transverse slot 15, in which works a fixed stud or pin 16, which operates to guide the bar and retain it in the proper position. This bar is moved or adjusted the desired distance by means of an upright lever 11, which is placed in a vertical position immediately over this bar. This lever passes through a slot in the platform of the car, and it is fulcrumed at an intermediate point of its length at 17 on the car-body or a suitable support. The lower end of the lever is connected to the adjusting-bar at a point one side of the slot and guide-pin, the latter being between the point of connection of the lever and the fulcrum of the bar. The lever is preferably connected to the horizontal bar by fitting the lower end thereof in a slot or opening in the bar, although this particular connection can be varied and changed within wide limits.

The supporting plate or elbow 12 has its horizontal arm connected to the outer end of the horizontal bar by means of a vertical pivot or pin 18, which passes through said arm of the elbow-plate and the horizontal bar, and which permits the elbow-plate to be turned or swung around to bring the shoe 7 into proper position for engagement with a

movable point rail on the either side of the track. In the vertical depending arm of the elbow-plate 12 I form a longitudinal slot 18′, and against this slotted arm of the elbow-plate is fitted the upper end of the vertical standard 13. The standard is provided with a vertical guide-pin 19, which fits in the longitudinal slot of the elbow-plate, and the standard and plate are connected together by a transverse through-bolt 20 in a manner which admits of a limited vertical movement to the standard and its attached shoe. The bolt 20 passes through the slot in the depending arm of the elbow-plate and through the upper end of the standard, but below the guide-pin, and by this connection of the standard to the supporting-plate by the guide-pin and the through-bolt the standard is capable of a limited vertical play, which is sufficient to enable the shoe to clear obstructions in its path, and at the same time the connection is such that the shoe will be held or maintained in its proper operative position. The shoe may be held in place by the weight of the parts and gravity; but, if desired, a pressure-spring, as 21, may be used between the elbow-supporting plate and the upper end of the standard in order to normally depress the standard and the shoe carried thereby. The shoe preferably consists of a flat piece of metal rigidly and securely attached to the lower end of the standard, and the shoe is beveled at each end and side to provide the double point, which enables the device to operate when the car is running both backward and forward.

This being the construction of my improved switch-operating device, the operation thereof may be briefly described as follows: Assuming the switch to be set for a clear main line, as indicated by full lines in the drawings, and the car to be moving toward the movable point-rail in the direction indicated by the arrow, the attendant shifts the lever so that the bar moves the standard and shoe into position for the shoe to ride and impinge against the lug on the movable point-rail, thereby turning the said rail on its pivot and opening the switch, permitting the car to move upon the rails of the siding. When the car moves in the opposite direction, the flange on the wheel operates to shift the movable point-rail. In case the switch is on the side of the track opposite to that shown in the drawings the angular supporting-plate can be turned half way round on its pivotal connection with the horizontal adjusting-bar, so as to bring the shoe near the opposite rail, after which the lever can be adjusted to bring the shoe into accurate position for operation on the lug or stud of the movable point-rail. The attendant is enabled to control and adjust the shoe relatively to the movable rail to open or close the switch, and the shoe may also be adjusted by the lever outward over the switch-rail, so that the shoe will shift the switch and permit the car to run on the main track. When the device is once adjusted to run on a given track, the car can run on the same route unmolested and without further adjustment of the operating device.

I am aware that changes in the form and proportion of parts and details of construction of the mechanism herein shown and described as an embodiment of my invention can be made without departing from the spirit or sacrificing the advantages of my invention, and I therefore reserve the right to make such modifications as fairly fall within the scope of my invention.

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

1. In a switch-operating device, the combination of a pivoted adjusting-bar, a lever for moving the same, a vertically-adjustable standard carried by said adjusting-bar, and a shoe on the standard, substantially as described.

2. In a switch-operating device, the combination of a horizontal bar, a reversible angular support thereon, a standard on the support, and a shoe on the standard, substantially as and for the purpose described.

3. In a switch-operating device, the combination of a horizontal bar, an angular support pivoted thereto, a vertically-adjustable standard connected to the angular support, and a shoe on the standard, substantially as and for the purpose set forth.

4. In a switch-operating device, the combination of a horizontal central bar, a pivoted angular support thereon, the depending standard having a slotted connection with said support and adjustable vertically thereon, and a shoe, substantially as and for the purpose described.

5. In a switch-operating device, the combination of a horizontal adjusting-bar, a lever therefor, the angular support on said adjusting-bar, the vertically-adjustable standard carried by said angular support, a spring for the standard, and a shoe, substantially as and for the purpose described.

6. In a switch-operating device, the combination of a pivoted horizontal bar having the fixed stud working in its slot, the lever connected to said bar for adjusting the same, the angular support on the free end of the bar and having the slotted depending arm, the standard bolted to said slotted arm and having the pin working in the slot, and the shoe rigid with the standard, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

NELSON NEWMAN.

Witnesses:
WM. R. BOWERS,
O. B. SANDERS.