

(No Model.)

G. A. FULFORD.  
SWITCH OPERATING DEVICE.

No. 525,892.

Patented Sept. 11, 1894.

Fig. 1.

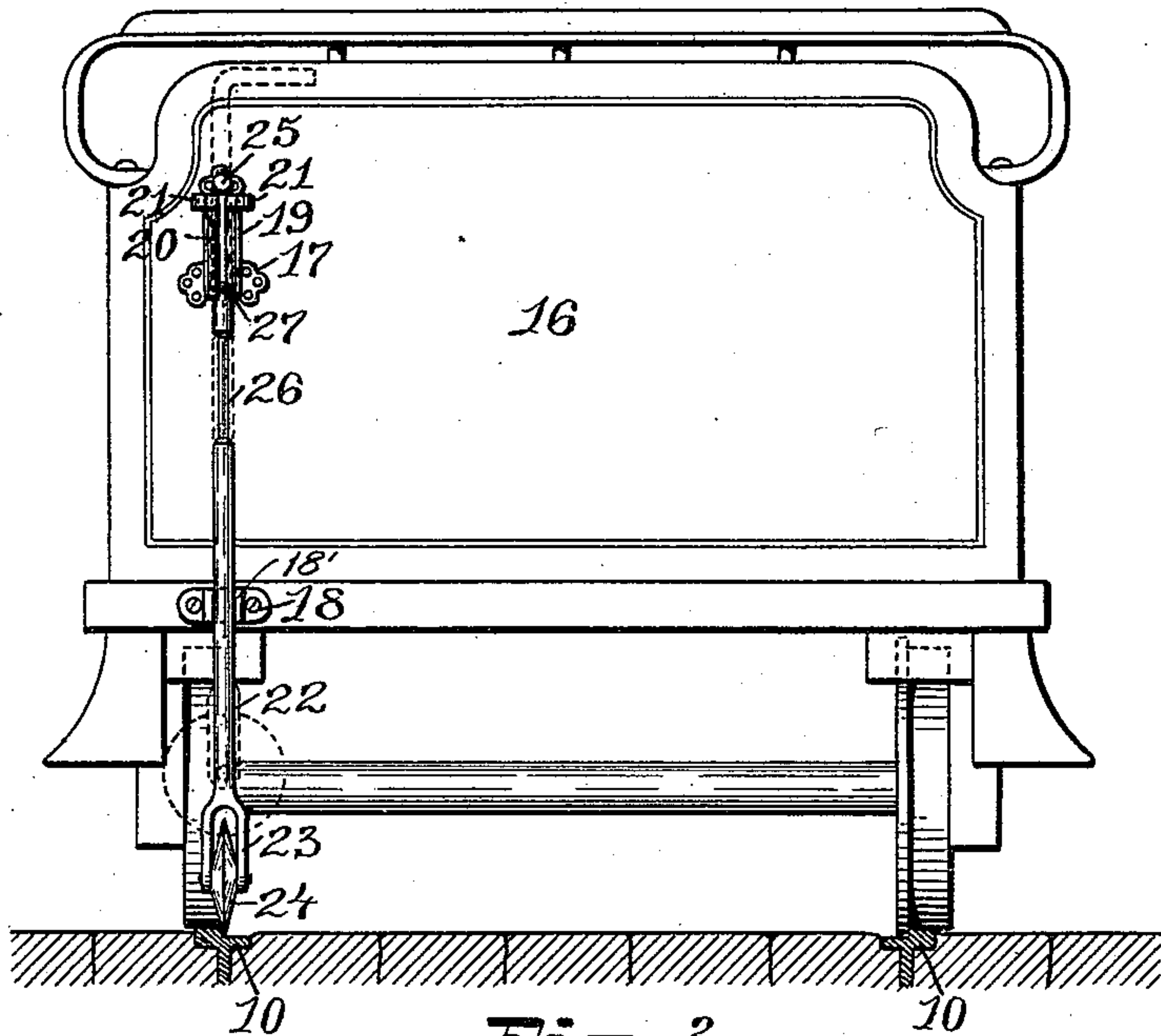


Fig. 2.

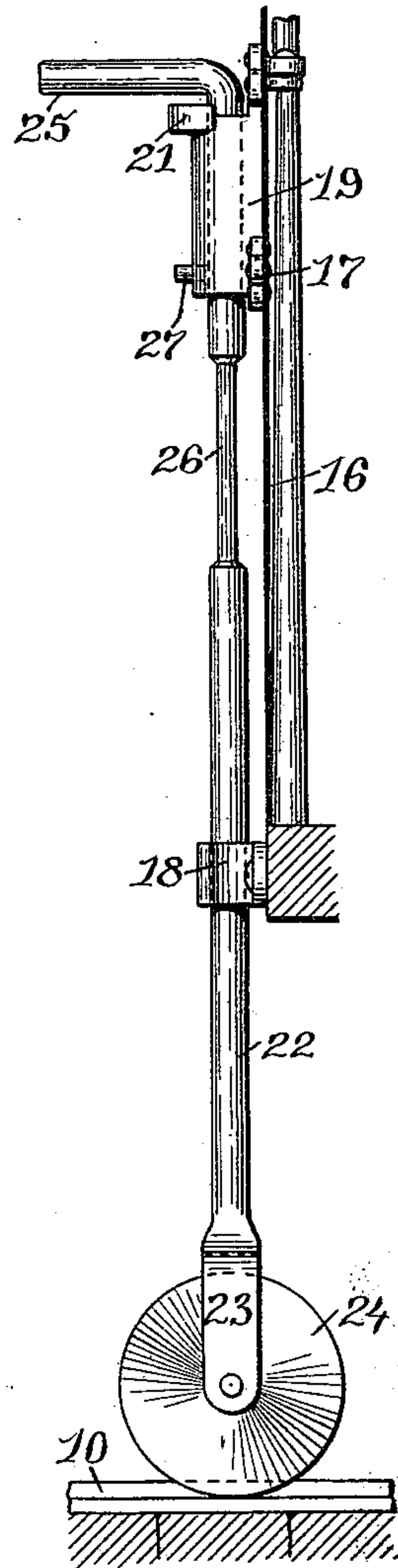


Fig. 3.

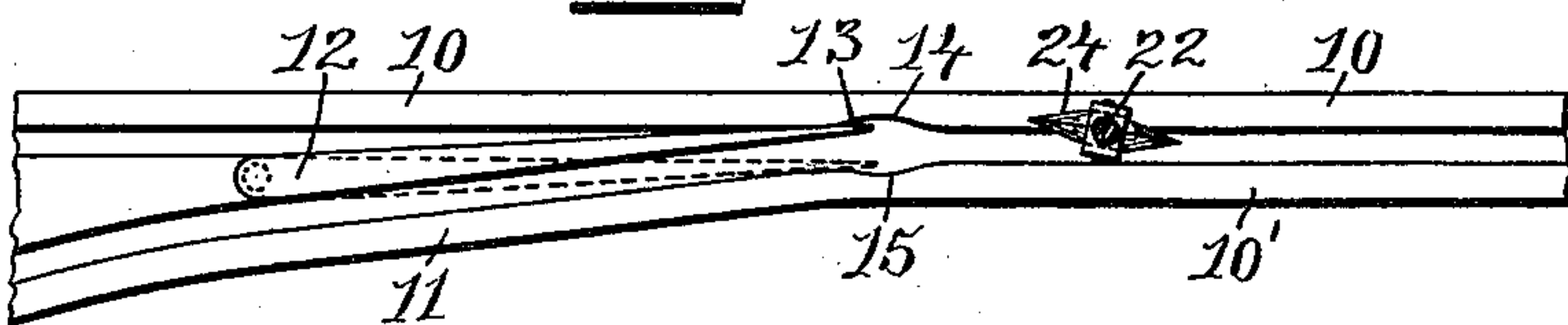


Fig. 4.

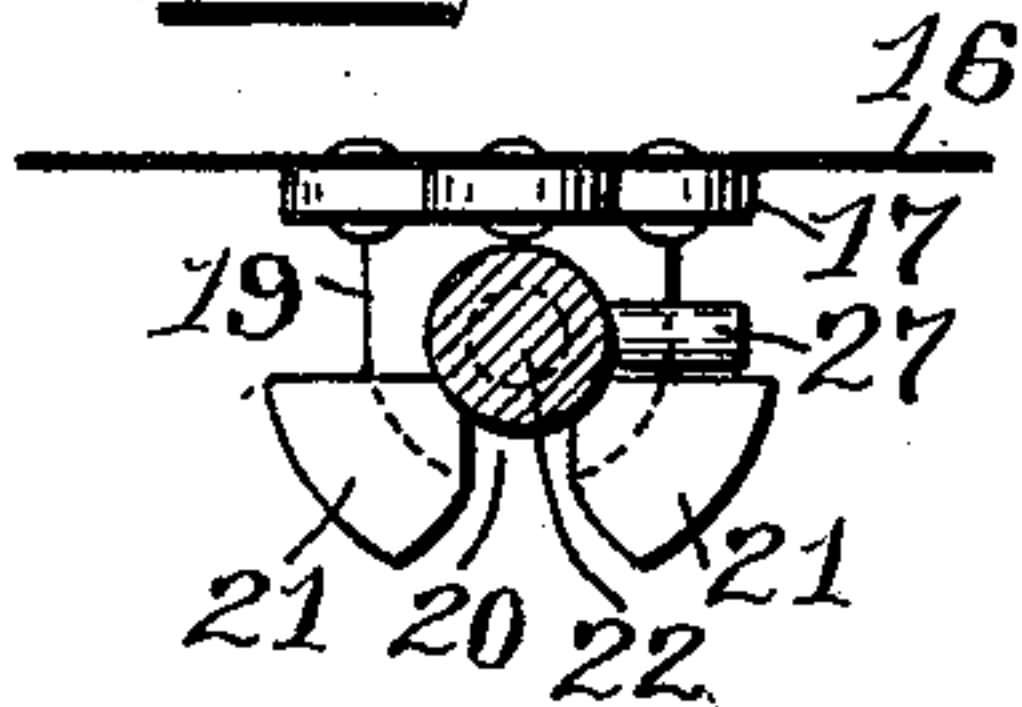
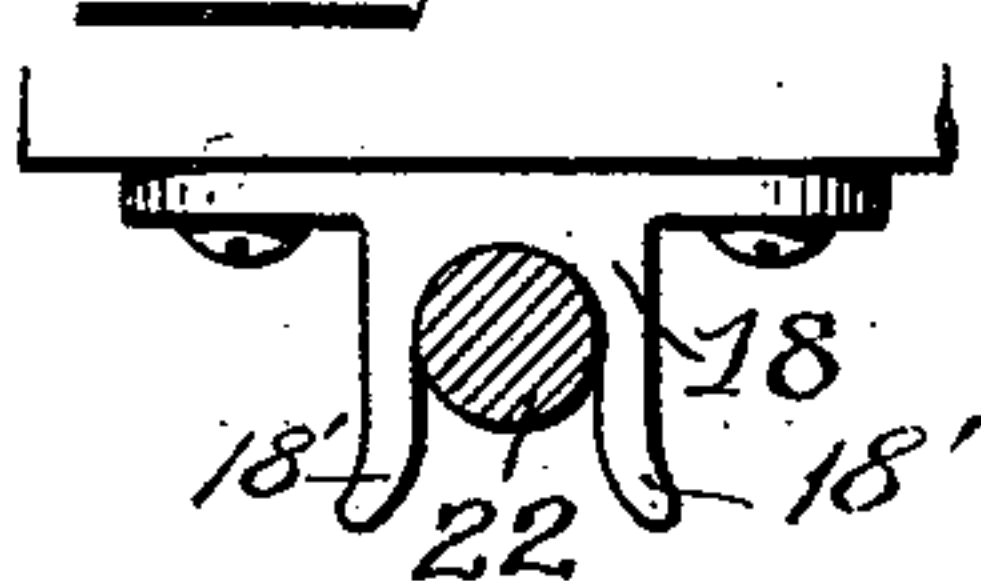


Fig. 5.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

GEORGE A. FULFORD, OF PROVIDENCE, RHODE ISLAND, ASSIGNOR OF ONE-HALF TO STEPHEN C. HOWARD, OF SAME PLACE.

## SWITCH-OPERATING DEVICE.

SPECIFICATION forming part of Letters Patent No. 525,892, dated September 11, 1894,

Application filed January 10, 1894. Serial No. 496,343. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE A. FULFORD, of Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Switch-Operating Devices; and I hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification.

This invention has reference to improvements in devices by means of which railway switches may be operated from a car moving on the track.

The object of the invention is to so construct a switch-operating device that it may be readily actuated from the car on which it is carried while being readily removable therefrom.

The further object of the invention is to simplify the construction and to increase the effectiveness of the switch-operating mechanism and its supporting-devices.

The invention consists in the peculiar construction of the device for operating the switch.

The invention also consists in the novel construction of the brackets in which the switch-operating mechanism is mounted.

The invention still further consists in such other novel features of construction and combination of parts as may hereinafter be more fully described, and pointed out in the claims.

Figure 1 represents an end view of a car-dasher provided with the improved switch-operating device. Fig. 2 represents an enlarged side view of the same. Fig. 3 represents a plan view of a track furnished with a switch which is particularly adapted for use with the operating-device, also showing the position of the actuating-wheel when approaching the switch. Fig. 4 represents a top view of the upper bracket and a cross-sectional view of the actuating-rod. Fig. 5 represents a similar view of the lower bracket.

Similar numbers of reference designate corresponding parts throughout.

The switch-operating device herein described is particularly adapted for use on electric cars but may be used on cars of any

description, the design being to produce a device of this nature which, when not in use, can be compactly held against the dash-board of a car but which may be operated from the car while in motion to act on the switch. In carrying my invention into practice I have found that a device of this character should be simple in construction and operation and that it should be securely mounted in such a manner as to be readily moved from one end of the car to the other.

In the drawings 10—10 represent the tracks of the main line of a railway and 11 a branch rail connected with the main line by the pivoted-tongue 12 the free end 13 of which swings between the recesses 14 and 15 cut in the inner surfaces of the rail 10 and its guard-flange 10'.

The car may be of any ordinary construction being provided with wheels which are movable on the track. To the dasher 16 of the car, or to any other suitable portion thereof, are secured the brackets 17 and 18 in a line with each other and directly above the rail 10, it being obvious that one or more of these devices may be attached to each end of the car. The bracket 17 is secured to the upper portion of the dasher 16, generally, by means of securing-plates and rivets, or small bolts. The body 19 of this bracket has a vertical guide-slot of a cross-sectional shape similar to that of the actuating-rod. Through the front wall of the body is formed a vertical entrance-slot 20, and to the upper end of the body 19 at the sides of the entrance-slot 20 are located the guide-plates 21 the inner corners of which are cut away to more readily direct the movement of the actuating-rod into the guide-slot 20. These guide-plates 21 extend above the body 19 and serve as stops to engage a pin on the actuating-rod when the rod is to be held in the elevated position and to prevent the actuating-rod from turning. The bracket 18 is secured to the cross-beam of the car-platform below the bracket 17 and is furnished with the arms 18' curving outward at their ends to readily receive the lower portion of the actuating-rod.

The actuating-rod 22 is generally of a circular cross-section having at the lower end a



fork 23 between the arms of which the wheel 24, having a thin edge and a thickened central portion, is journaled. At the upper end of the rod 22 is the handle 25 extending at an angle from the rod and below this handle a distance somewhat greater than the length of the bracket 17 the diameter of the rod is contracted to form the shank 26 the length of which is also slightly greater than the length of the bracket 17, and above this shank is secured to the rod the guide and stop-pin 27 which extends in the vertical plane of the handle 25.

When it becomes necessary to place the actuating-device in position in the brackets, the shank 26 is brought opposite the entrance-slot 20 and entered through the same into the guide-slot of the bracket 17. The actuating-rod is then turned to bring the handle 25 against the dasher and the pin 27 in the position shown in Fig. 4, the actuating-rod being then allowed to move downward in the guide-slot of the bracket 17. The pin 27 rests on the top of the body 19 and supports the rod, and at the same time the lower portion of the actuating rod swings between the arms 18' of the bracket 18 which prevents the lateral swinging of this portion of the rod.

As the car approaches a switch, the actuating-rod is first lifted by the handle and turned until the guide-pin is directly above the entrance-slot. The actuating-rod is then allowed to move downward through the bracket 17 until the wheel 24 rests on the tracks. When in this position the handle 25 is turned until the pin 27 is brought to the limit of the slot 20 and bears against the edge thereof, thus bringing the thin edge of the wheel 24 against the raised portion of the track, as is shown in Fig. 5, so that when the free end of the switch-tongue is reached the thin edge of the wheel 26 enters between the same and the raised portion of the track and throws the switch-tongue to the opposite side, thus opening the switch, the entrance of the wheel behind the

tongue being facilitated by the recesses 14 and 15 in the rail.

The usual objection to the use of the switch-operating mechanisms is overcome in my device, as only one actuating-device is necessary on each car, this being changed from one set of brackets to another when reversing the direction in which the car is to run or when the switches are located at different sides of the track.

As the width of the slot 20 limits the rotation of the actuating-rod, when the wheel is resting on the track, by bearing against the pin 27 when the actuating-rod has been rotated sufficiently to bring the wheel 24 to a position to operate the switch, it is evident that no particular skill or care need be used in manipulating the device.

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

1. In a switch-operating device, the combination with brackets secured to the car, of an actuating-rod removably supported in said brackets and having a handle, and a wheel furnished with a thin edge rotatably mounted at the lower portion of the rod.

2. The combination with a car, the bracket 17 secured to the car and having a vertical guide-slot, the entrance slot 20 and the guide-plates 21 forming stops, and the bracket 18 having arms 18' and secured to the car below the bracket 17, of the actuating-rod 22 having the fork 23, the contracted shank 26 and the handle 25, the pin 27 secured to the rod above the shank, and the wheel 24 journaled between the arms of the fork 23, as and for the purpose described.

In witness whereof I have hereunto set my hand.

GEORGE A. FULFORD.

Witnesses:

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M. F. BLIGH.