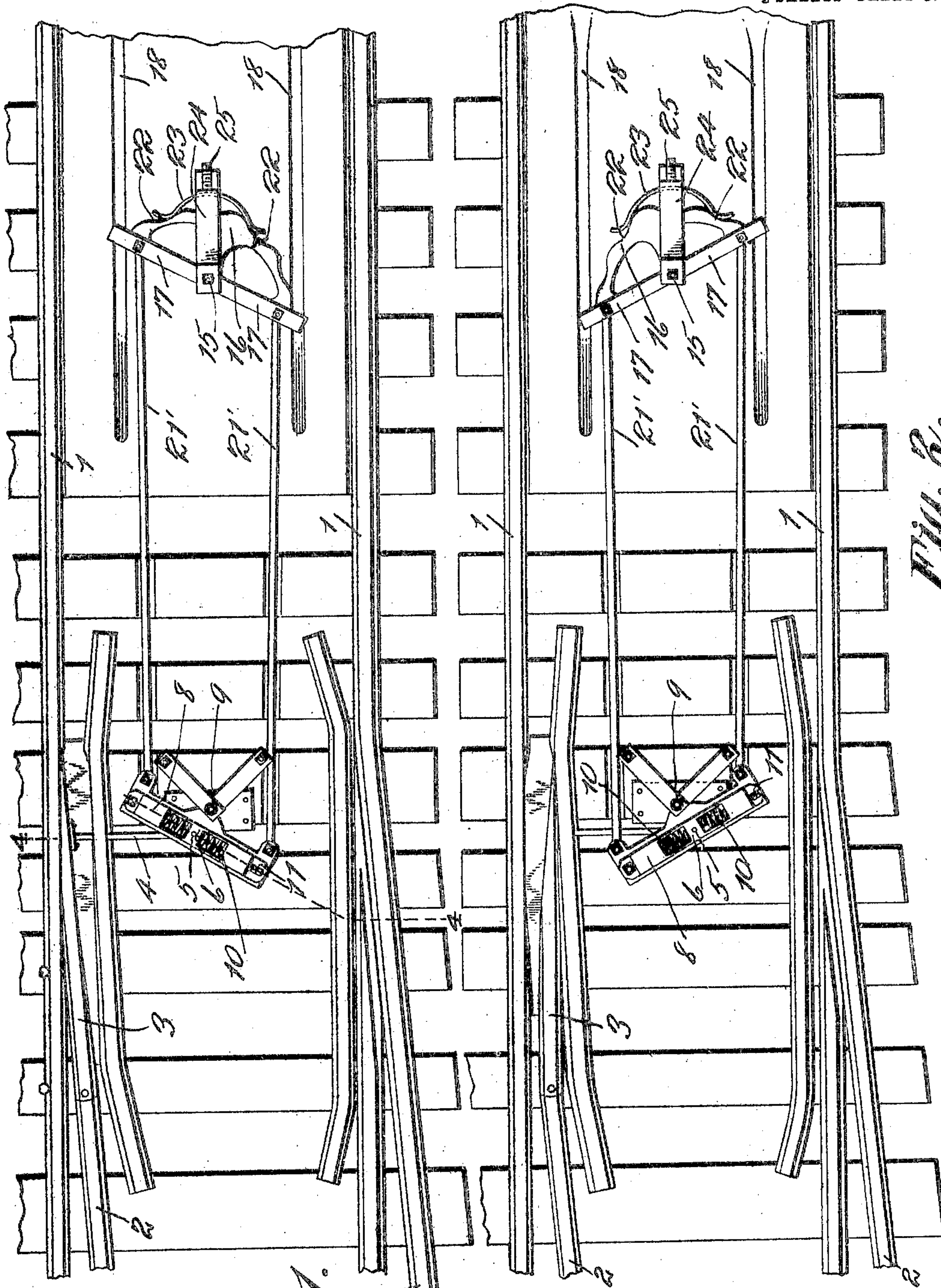


C. C. JOHNSON.  
SWITCH OPERATING DEVICE.  
APPLICATION FILED OCT. 18, 1904.

2 SHEETS—SHEET 1.



Witnesses  
*E. J. Elmer*  
*D. J. Elmer*

Fig. 1.

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by *C. A. Snow & Co.*  
Attorneys.

Fig. 2.



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2 SHEETS—SHEET 2.

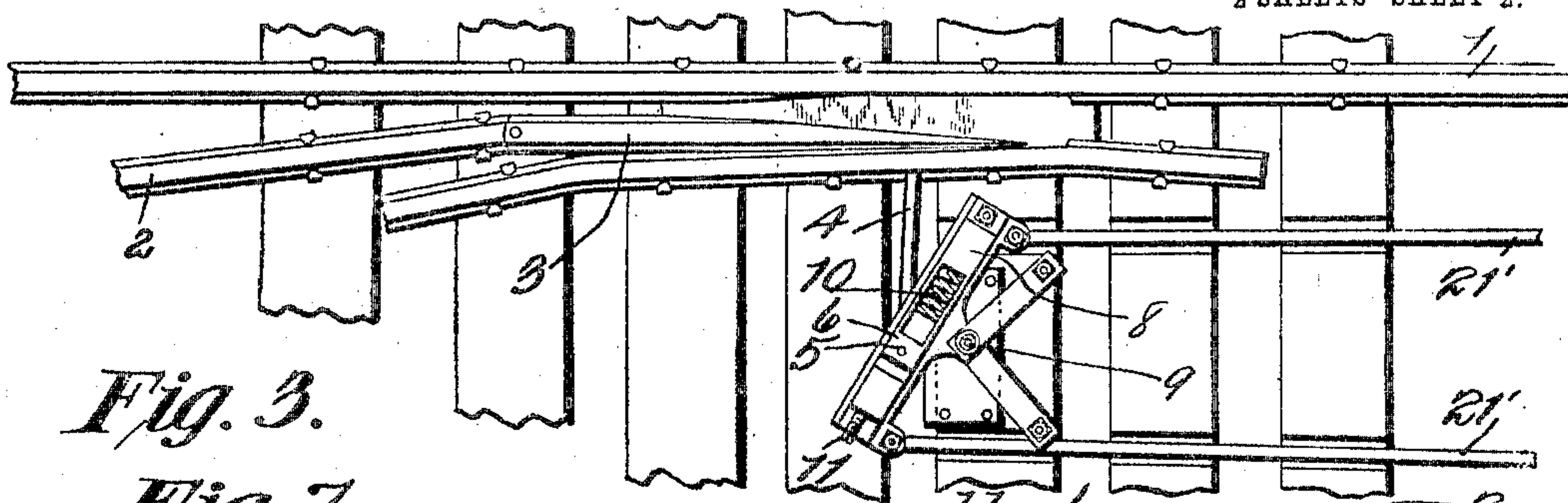


Fig. 3.

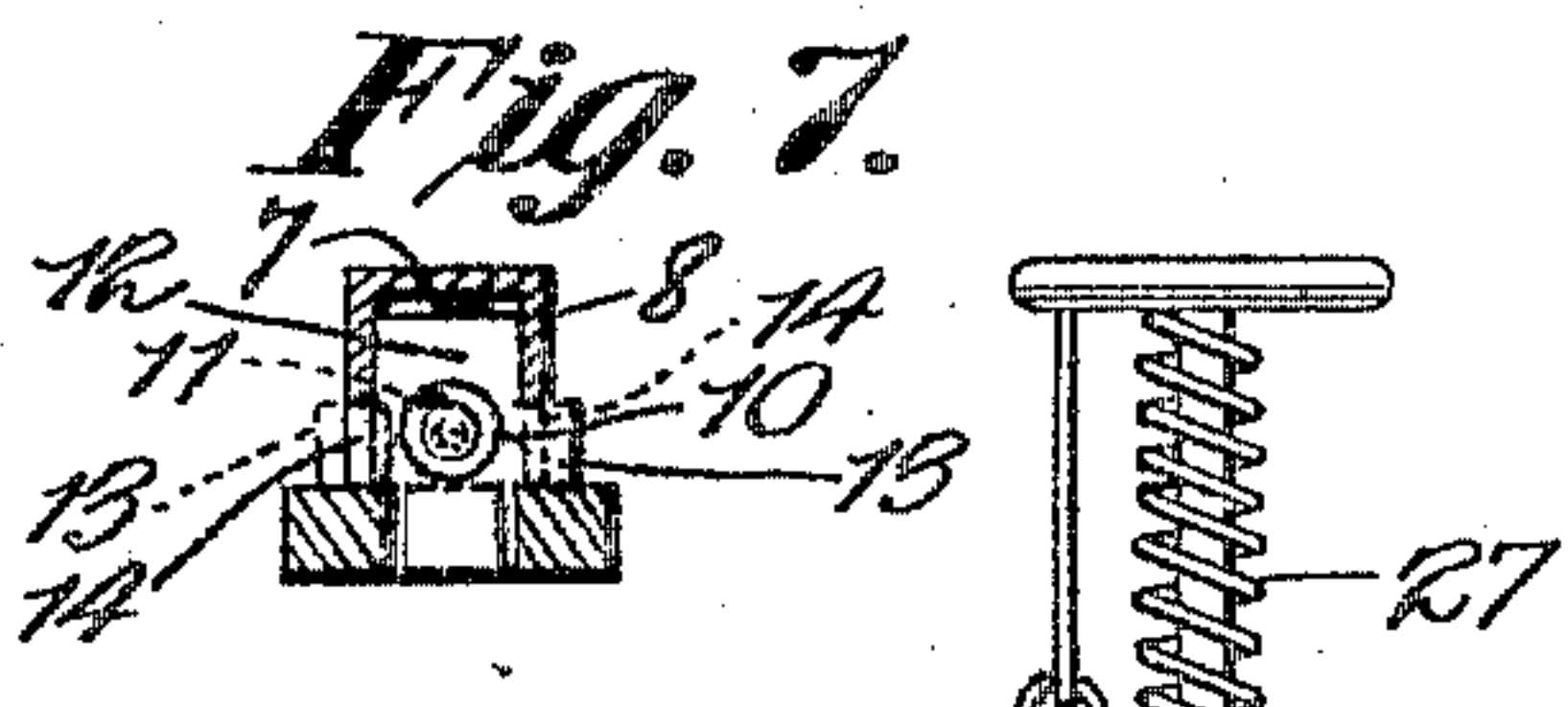


Fig. 7.

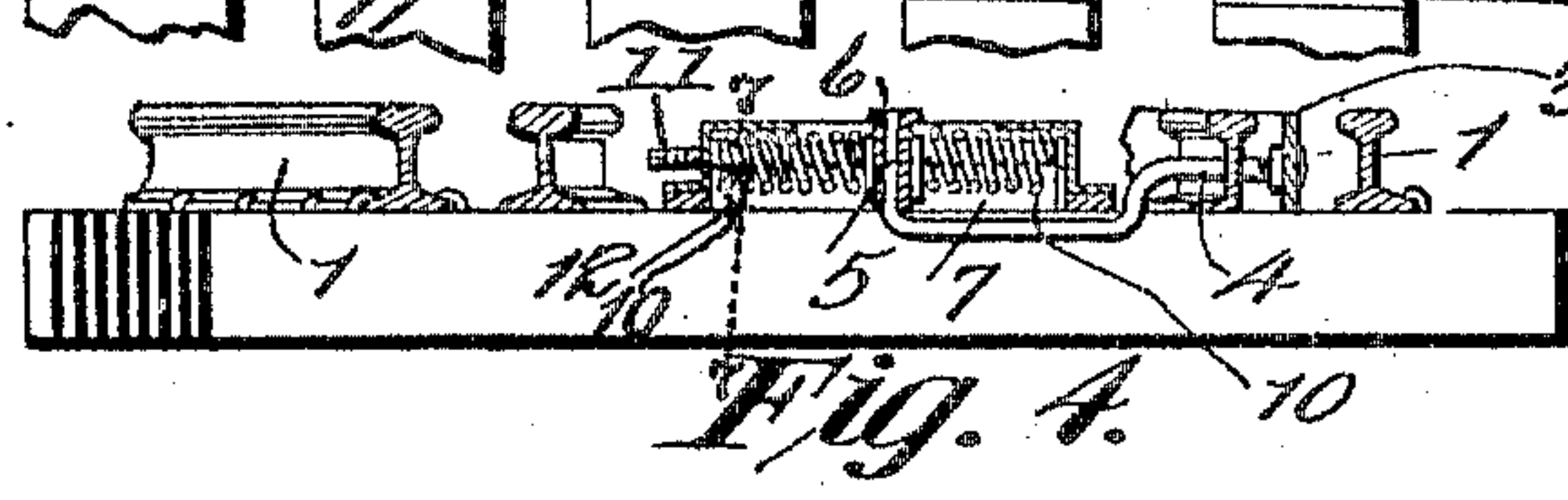


Fig. 4.

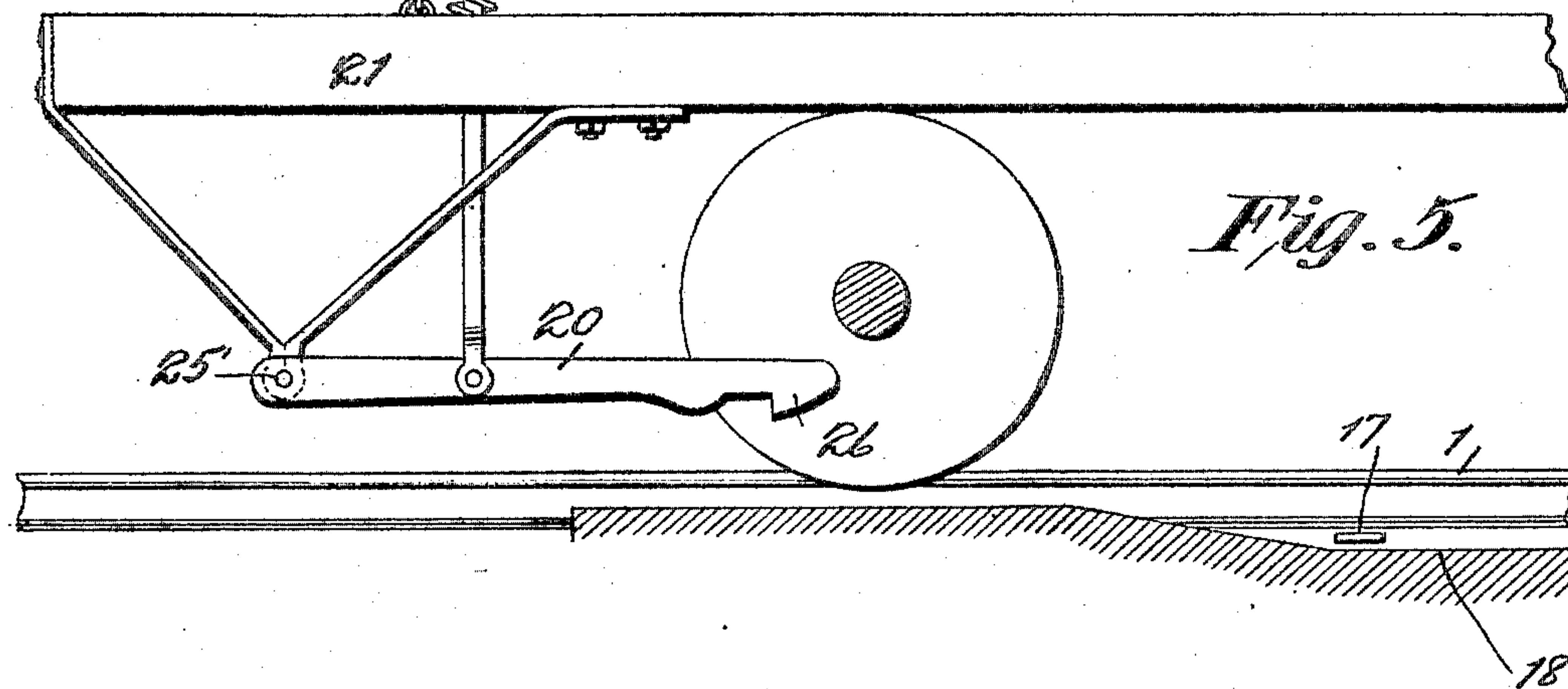


Fig. 5.

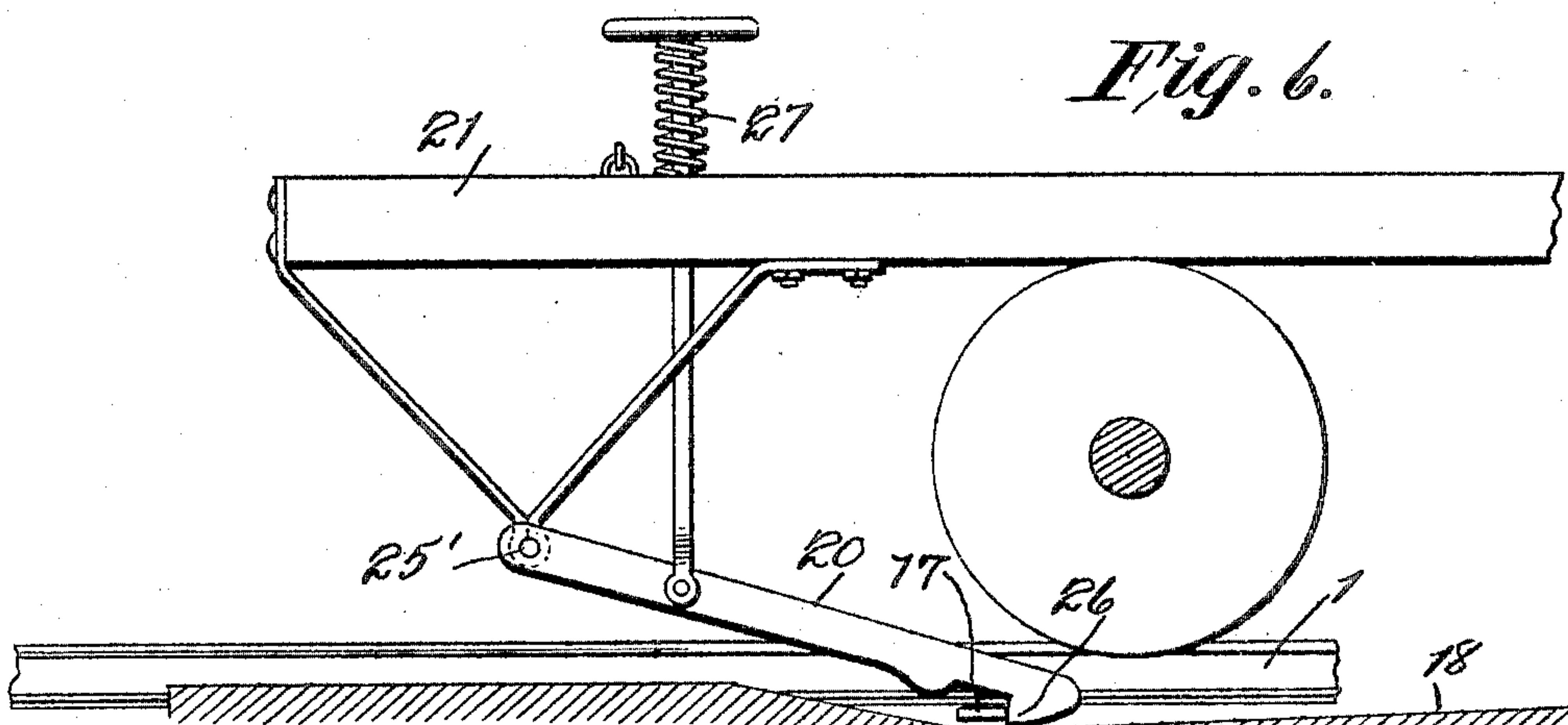


Fig. 6.

Witnesses

*E. J. Stewart*  
*J. J. Bismore*

*Cyrus C. Johnson,* Inventor  
by *C. A. Snow & Co.* Attorneys.



# UNITED STATES PATENT OFFICE.

CYRUS C. JOHNSON, OF MOUNT VERNON, ILLINOIS.

## SWITCH-OPERATING DEVICE.

No. 797,582.

Specification of Letters Patent.

Patented Aug. 22, 1905.

Application filed October 18, 1904. Serial No. 228,970.

*To all whom it may concern:*

Be it known that I, CYRUS C. JOHNSON, a citizen of the United States, residing at Mount Vernon, in the county of Jefferson and State of Illinois, have invented a new and useful Switch-Operating Device, of which the following is a specification.

This invention relates to railway-switches, and especially to an operating mechanism therefor, and has for its objects to produce a comparatively simple inexpensive device of this character whereby the switch will be automatically thrown by an approaching vehicle, one in which the switch will be locked in its shifted position, and one wherein the switch may, when acted upon by the flange of the vehicle-wheel, be temporarily shifted irrespective of the operating mechanism.

With these and other objects in view the invention comprises the novel features of construction and combination of parts more fully hereinafter described.

In the accompanying drawings, Figure 1 is a plan view of the switch embodying the invention, showing the parts in one position. Fig. 2 is a similar view showing another position of the parts. Fig. 3 is a detail view illustrating the operating mechanism in the position shown in Fig. 1 and the switch moved independently thereof. Fig. 4 is a section taken on the line 4 4 of Fig. 1. Figs. 5 and 6 are views illustrating the operating member carried by the car in its active and inactive positions, respectively. Fig. 7 is a transverse sectional view taken on the line 7 7, Fig. 4.

Referring to the drawings, 1 designates the main-line rails, 2 the branch rails leading therefrom, and 3 a switch arranged between one of the main and branch rails and operable for shifting a car or other vehicle from the main track to the branch track, these parts being of the usual or any appropriate construction and material, inasmuch as they constitute no part of my invention. The switch 3, which is pivoted, as usual, at one end, has its free end engaged with a bridle-bar 4, adapted for longitudinal movement and terminating at its inner end in a vertical axle or pintle 5, seated and designed for rotation in a bearing-opening provided in a head-block 6, which in turn is adapted for reciprocation within a longitudinally-disposed slot or way 7, formed in a shell or casing 8, pivoted, as at 9, centrally between the rails 1. The member or shell 8, which is preferably of the form shown, is

adapted to rock upon its pivot 9 and contains a pair of normally expanded springs 10, arranged, respectively, on opposite sides of the block 6 for maintaining the latter in its normal position adjacent to the longitudinal center of the way 7, attention being directed to the fact that under these conditions the pivotal axis of the bar 4 is eccentric to the pivot 9, whereby when the member 8 is rocked the bar 4 will be actuated for shifting the switch. At this point it is to be observed that owing to the head-block 6 having movement within the way 7 the switch may move in either direction independently of the movement of the member 8 and that when the switch is so moved one or other of the springs 10 will be compressed for automatically returning the switch to its former position.

For regulating the tension of the springs 10 I provide members or bolts 11, tapped longitudinally to the end walls of the casing 8 and bearing at their inner ends upon pressure members or plates 12, which in turn bear upon the outer ends of the spring, the plates being provided with ears or projections 13, working in slots or ways 14, formed in the casing. It is apparent under this arrangement that by varying the tension of the springs the force necessary for shifting the switch independently of the rocking member may be readily regulated and controlled.

Centrally pivoted, as at 15, between the rails 1 and suitably remote from the member 8 is a second rotary or oscillatory operating member 16, preferably of semicircular form, as shown, and having a pair of oppositely-extending arms 17, designed to project, respectively, into longitudinally-extending grooves or recesses 18, arranged adjacent to the rails 1, the arms having slot-and-bolt connection, as shown, with the member 16, whereby as their active ends become worn they may be advanced longitudinally for proper projection into the recesses. The member 16, which is adapted to be rocked on its pivot through the engagement of actuating members or levers 20, carried by the car or vehicle 21, with the ends of the arms 17, is operatively connected with the member 8 through the medium of rods or other rigid elements 21', the ends of which are pivotally connected, respectively, with the adjacent members, whereby the latter will have a simultaneous and uniform movement, while upon the outer marginal edge of the semicircular portion of the member 16 there is formed notches or recesses 22,



adapted to be engaged by the ends of a bowed spring 23 for yieldably locking the member against movement. The spring is inserted through a fixed bearing member or strap 24, into which is tapped a pressure-screw 25, operable for regulating the tension of the spring to correspondingly vary the firmness of its engagement with the member.

The actuating members 20 are preferably in the form of bars pivoted, as at 25', to hangers depending from the car-platform and operatively engaged with vertical reciprocatory operating-rods, which when depressed will swing the levers 20 downward into the recesses 18, whereby engaging portions or hooks 26, provided on the levers, may engage the ends of the arms 17 for operating the member 16, the levers 20 being normally maintained in inactive position by means of springs 27, which encircle the lever-operating rods.

In practice as the car approaches the switch one or other of the members 20 is moved to position for engagement with the corresponding arm 17, thereby rocking the member 16 and through the medium of the connecting-rods 21 causing a simultaneous and similar movement of the member 8, thereby shifting the switch, as above explained. With the switch in the position shown in Fig. 1 if a car is backed upon the main tracks the wheel-flange will act upon the switch for temporarily shifting the latter to the position shown in Fig. 3 and in the manner heretofore explained, or if the switch be in the position shown in Fig. 2 a car backing from the branch rails 2 onto the main rails will in like manner temporarily shift the switch.

From the foregoing it is apparent that I produce a comparatively simple inexpensive mechanism admirably adapted for the attainment of the ends in view, it being understood that minor changes in the details herein set

forth may be resorted to without departing from the spirit of the invention.

Having thus described the invention, what is claimed is—

1. The combination with a switch-point, of a pivoted casing, a head carried thereby, springs mounted within the casing and bearing on opposite sides of the head, and a connection between the switch-point and the head.

2. The combination with a switch-point, of a pivoted casing, a spring-pressed head carried thereby and disposed eccentric to its pivotal point, a connection between the head and the switch-point, a rocking member operatively connected with the casing and provided with depressions, and a yielding locking device adapted to engage the depressions.

3. The combination with a switch-point, of a pivoted casing, a spring-pressed head carried thereby and disposed eccentric to its pivotal point, a connection between the head and the switch-point, a rocking member operatively connected with the casing and provided with depressions, and an adjustable yielding locking device adapted to engage the depressions.

4. In a device of the class described, a movable switch, a movable operating member therefor, a bridle-bar connecting the switch and member, and a yieldable connection between the bar and one of the parts, said connection comprising a casing, a head-block slidably disposed therein and engaged with the bar, and a pair of springs arranged on opposite sides of the head-block.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

CYRUS C. JOHNSON.

Witnesses:

A. D. WEBB,  
THOS. NEAL.