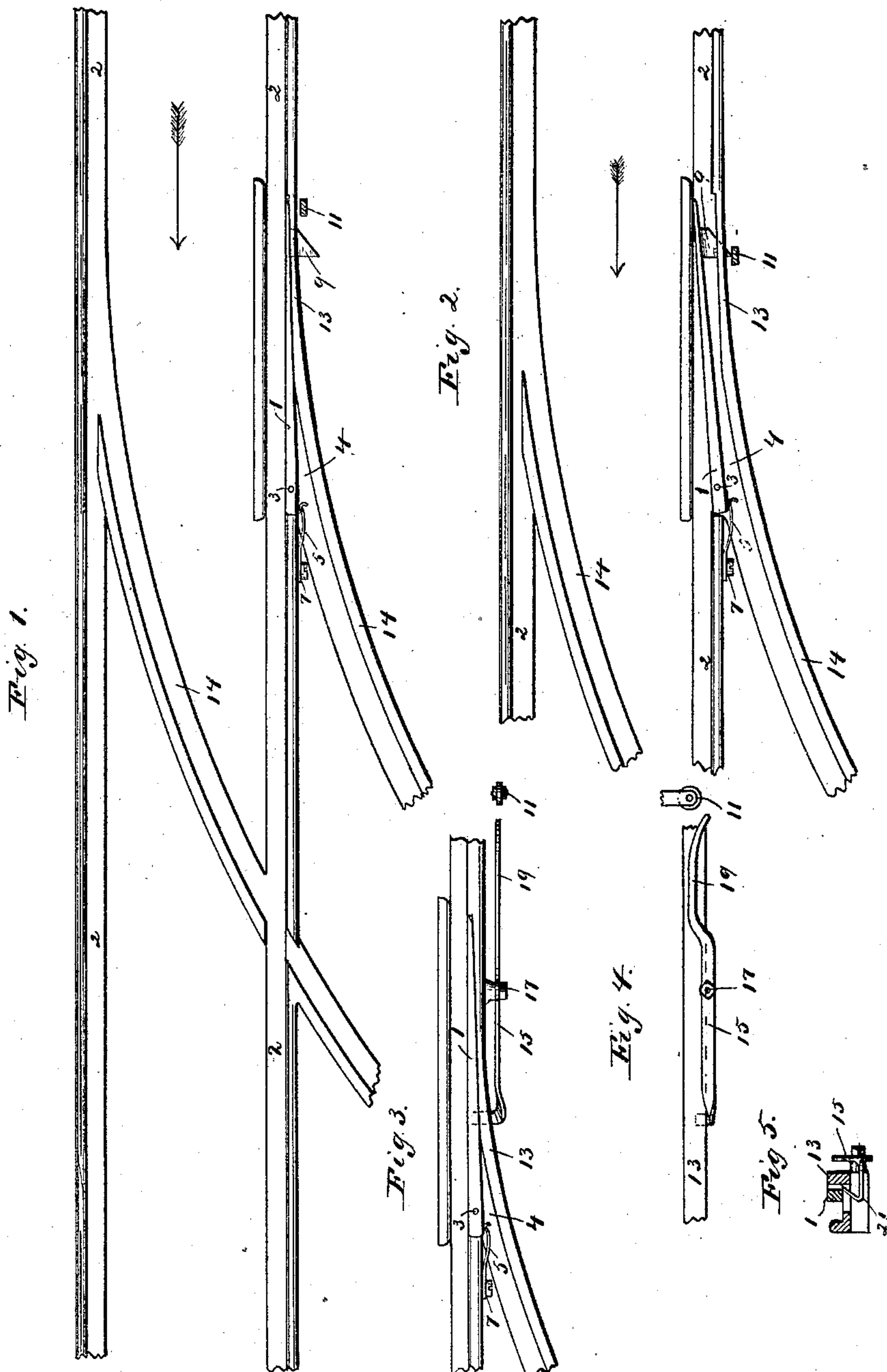


C. W. WALKER.  
RAILWAY SWITCH.

No. 396,629.

Patented Jan. 22, 1889.



Witnesses,

J. Jensen,  
C. L. Nachtrieb.

Inventor.

Charles W. Walker.

By Paul Sanford & Merwin attys

(No Model.)

2 Sheets—Sheet 2.

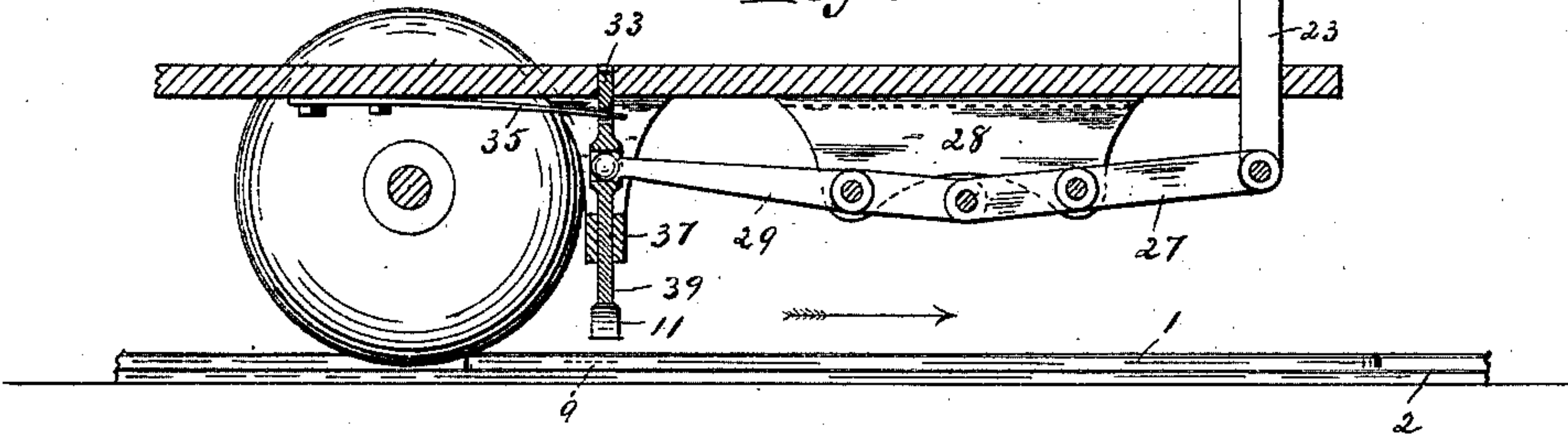
C. W. WALKER.

# RAILWAY SWITCH.

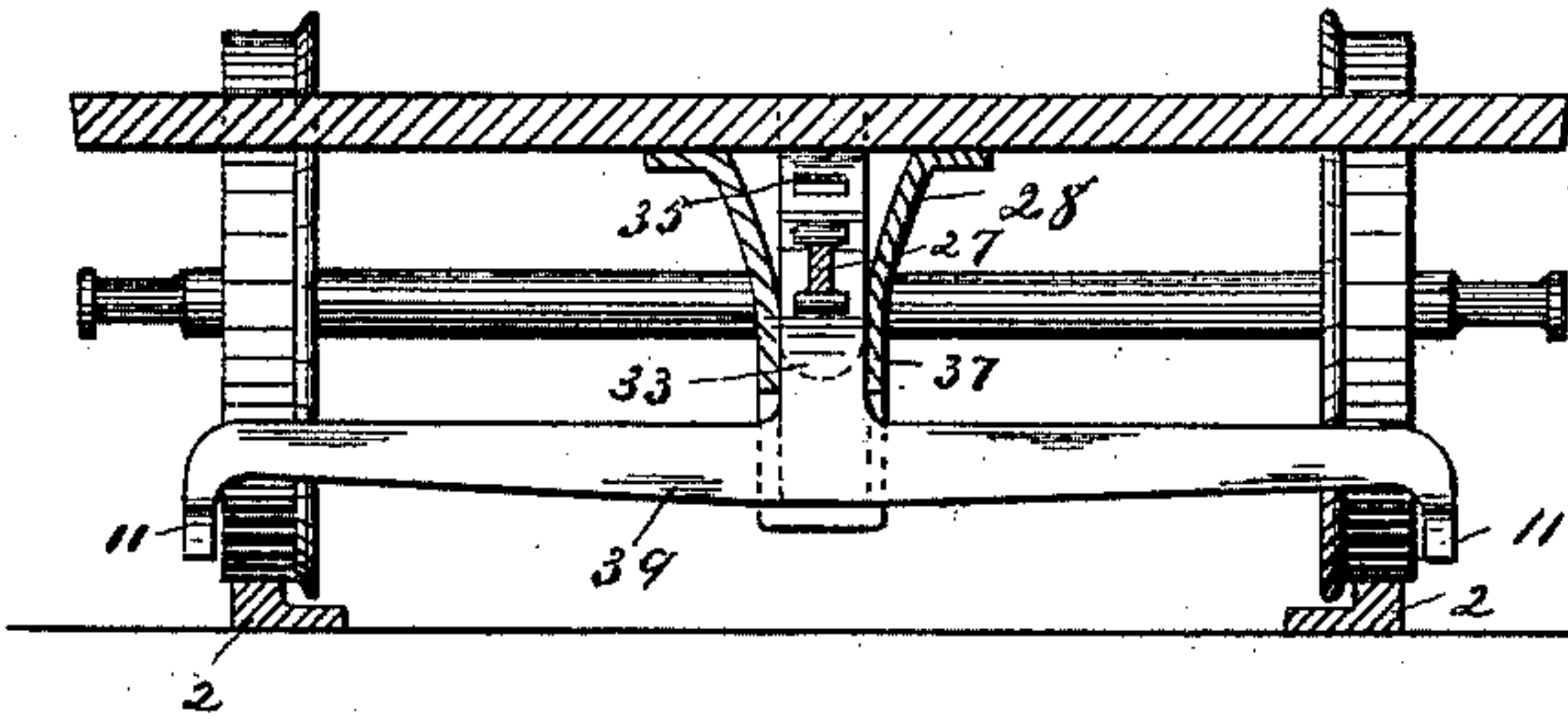
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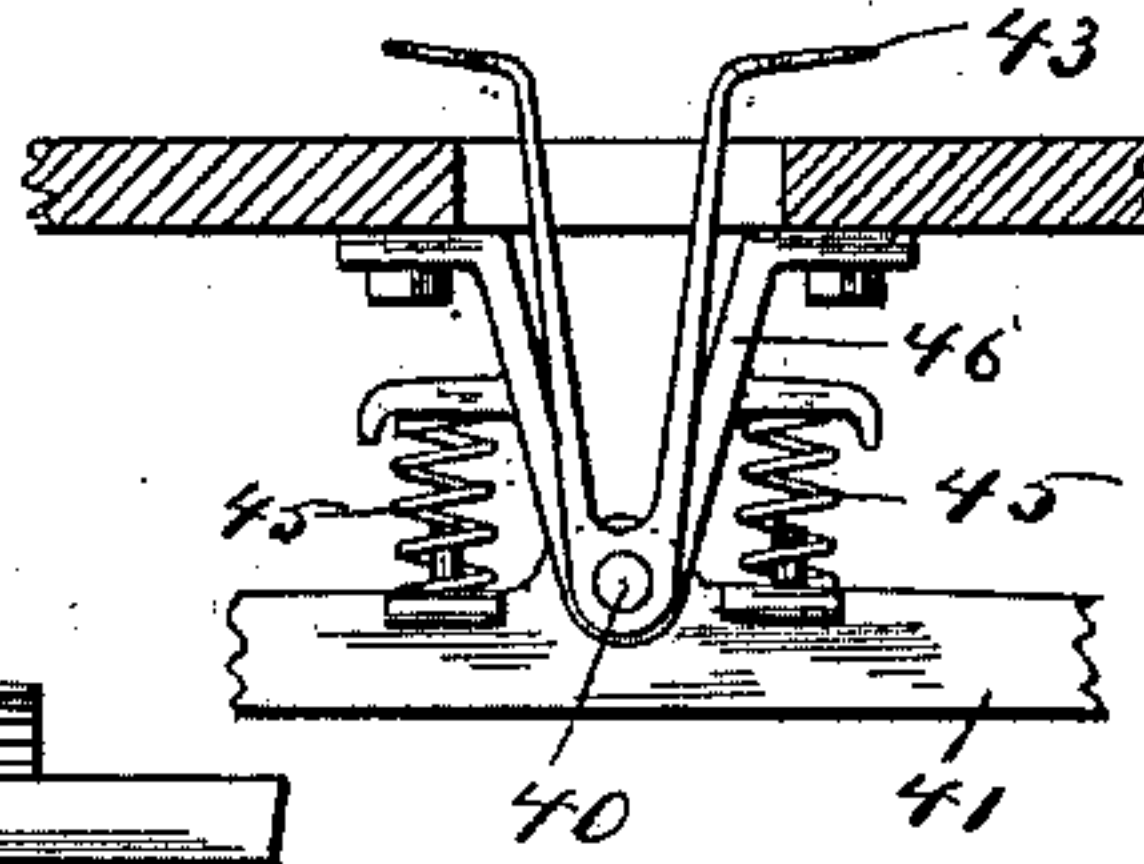
Fig. 8.



*Fig. 9.*



*Fig. 10.*



*Fig. 6*

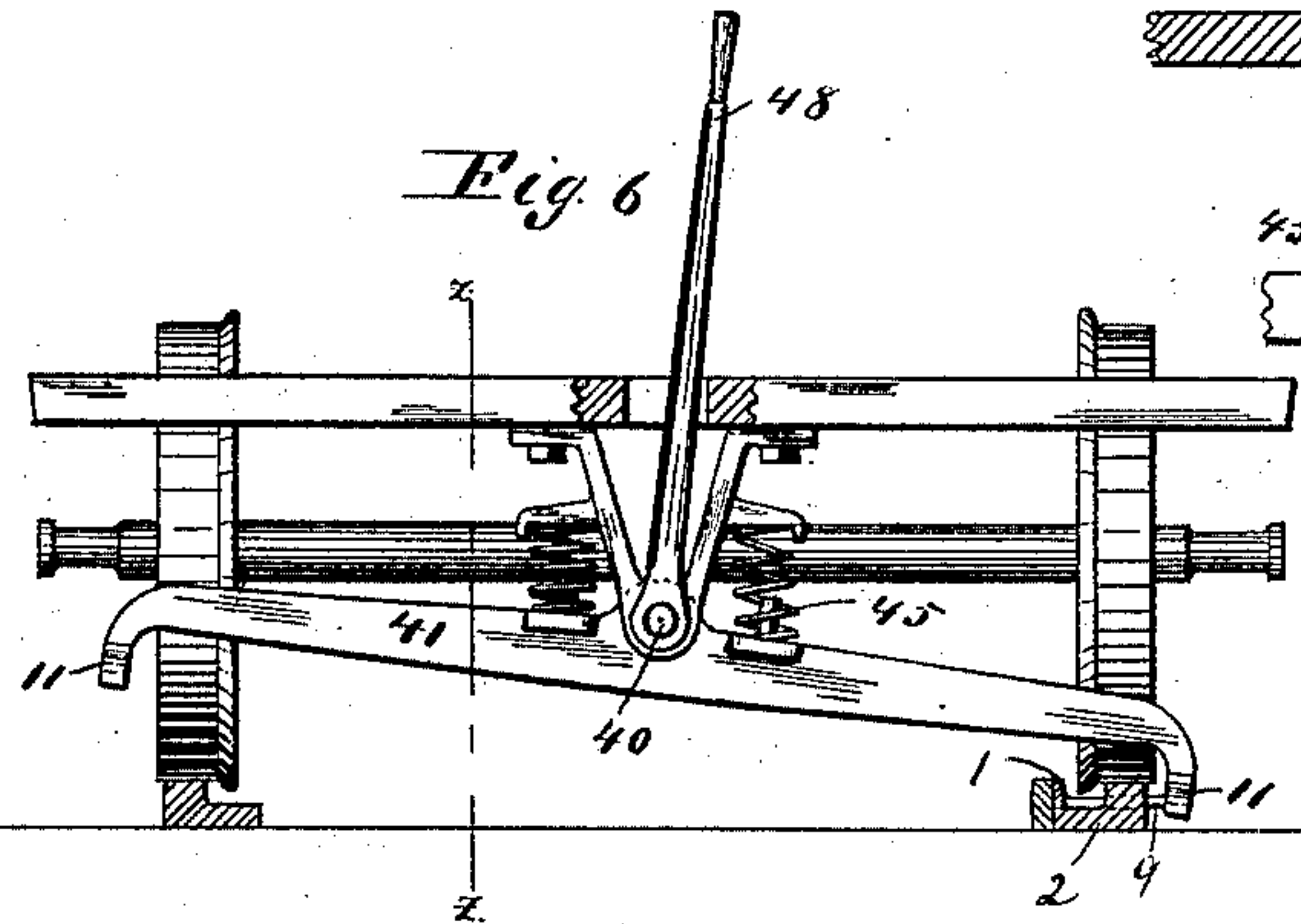
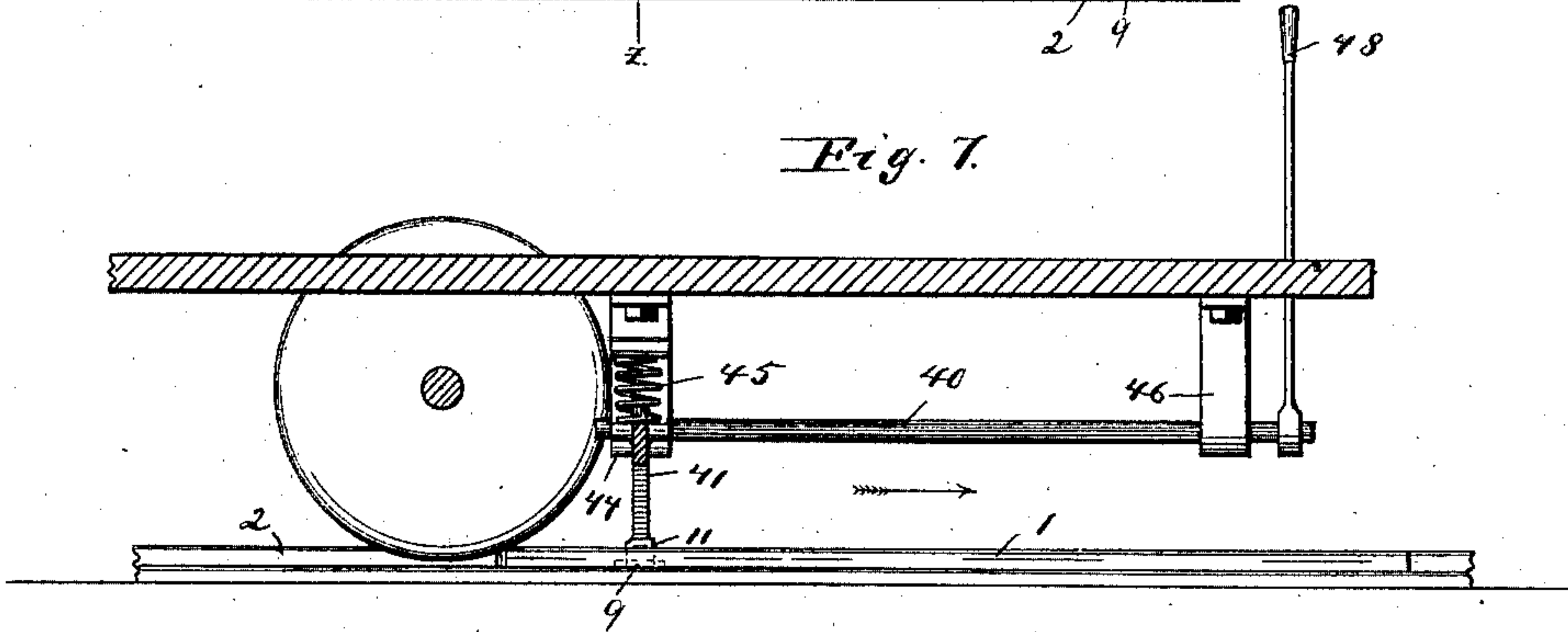


Fig. 7.



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# UNITED STATES PATENT OFFICE.

CHARLES W. WALKER, OF ST. PAUL, MINNESOTA.

## RAILWAY-SWITCH.

SPECIFICATION forming part of Letters Patent No. 396,629, dated January 22, 1889.

Application filed July 17, 1888. Serial No. 280,174. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES W. WALKER, a citizen of the United States, residing at St. Paul, in the county of Ramsey and State of Minnesota, have invented certain Improvements in Railway-Switches, of which the following is a specification.

My invention relates to the switches of railway-tracks, especially horse-railways; and it consists of appliances by means of which the driver on a moving car can readily switch the car from one track to another without stopping the car.

In the drawings forming part of the specification, Figure 1 shows a main line of track and a switch-track diverging therefrom fitted with my improved switch, the switch being shown closed, so that a car would pass along the main line. Fig. 2 shows the switch open, so as to switch a car passing in the direction of the arrow from the main line to the switch-track. Fig. 3 is a plan view of a modification of the switch-operating mechanism. Fig. 4 is a side elevation of the same, and Fig. 5 is an end elevation of the same. Fig. 6 is a front elevation of my device attached to a car for operating my improved switch, the car-platform being broken away to show the mode of attachment to the car. Fig. 7 is a longitudinal vertical section of the same through the line *z z* of Fig. 6. Figs. 8 and 9 are respectively longitudinal and transverse sections of a modification of the same. Fig. 10 is a detail.

In the drawings, 40 is a rock-shaft supported in proper bearings, 44 and 46, longitudinally underneath the body of the car. The double treadle 43 is rigidly fastened to the rock-shaft, and extends upward through the floor of the car-platform in convenient position for being operated by the car-driver. In addition to or instead of said treadle, a handle, 48, may be used, rigidly fastened to said rock-shaft and extending upward, so as to be operated by the driver.

41 is a cross-bar fastened rigidly to the rock-shaft 40, and extending over and beyond the railway-track on either side. The ends of this cross-bar are bent downward and form the toes 11, which are adapted to engage the switch-operating mechanism of the railway-track, hereinafter described. These toes are

preferably fitted with anti-friction rolls at their point of contact with the switch-operating mechanism. If the pivoted lever 15, hereinafter described, is used for throwing the switch, I prefer to use in place of the toe 11 a sheave or wheel journaled upon the end of the cross-bar and adapted to engage and roll along the arm of the lever.

By the use of the treadle 43 or the handle 48 the car-driver can depress either arm of the cross-bar 41, so as to operate the switch mechanism upon that side of the track.

In the modified form of the car mechanism shown in Figs. 8 and 9, 23 is the treadle or post, to be operated by the foot of the driver, which is pivoted at its lower end to the forward end of the compound lever 27 29, which is pivotally fastened to the support 28 underneath the car-body and its rear end properly connected to the plunger 33. This plunger is adapted to move vertically in the guides 37, supported underneath the car-body, and is rigidly fastened to the cross-bar 39, which corresponds in form and in function to the cross-bar 41, above described. A spring, 35, underneath the car-body supports the plunger 33 in its raised or normal position, so that the toes of the cross-bar will not strike the track or other obstructions.

By depressing the treadle 23 the compound lever 27 29 operates to depress the plunger 33, and with it the cross-bar 39, so as to operate the switching device on either side of the track.

1 is a tongue pivoted at 3 upon the railway-track 4 and held in its normal or closed position, as shown in Fig. 1, by the spring 5, which is fastened rigidly to the track at 7 and bears against the side of the tongue.

9 is a cam-shaped spur or attachment of the tongue 1, adapted to move horizontally underneath the rail 13, and while the tongue is in its normal or closed position projects outward beyond the rail, so as to be engaged by the above-described mechanism of the car. This mechanism is supported at a sufficient height, so as to pass over the spur 9 while in its normal position, and, the tongue 1 being held in its normal or closed position by its spring, the car will pass the switch along the main track; but if the treadle is depressed by the foot of the driver the toe 11 engages



the inclined surface of the spur, moving it and the tongue laterally against the tension of the spring 5 and opening the switch.

15 is a lever pivoted to the track at 17 and so adapted that when the arm of the cross-bar 41 is depressed in the manner above described its toe or sheave will strike the arm 19 of the lever, depressing it and throwing up the other end of the lever, which carries the cam-shaped spur 21. The arm of the lever carrying this spur is bent substantially at a right angle, so that the spur lies in a slot underneath the rail 13 in such a position that when elevated its inclined face will strike the outer surface of the tongue 1 and throw it back, and thus open the switch. When the lever is released from engagement with the car mechanism, it will drop back of its own weight to its normal position and release the tongue, and the tongue is returned to its normal position by its spring 5.

I do not confine myself to the use of the spring 5 to hold the tongue 1 in its normal position; but any equivalent device—such as a weighted crank-arm—may be used for that purpose. Neither do I limit myself to the devices shown in Figs. 6, 7, 8, and 9 to be attached to the car; but any device may be used on the car which will operate the switch mechanism herein described.

The mode of operation is as follows: As a car approaches the switch along the main track 2 in the direction indicated by the arrow, the car-driver presses upon the left-hand treadle 43, thereby depressing the left-hand arm of the cross-bar 41, thus causing it to engage the cam-spur 9 or the lever 15, as above described. The tongue 1 is moved laterally against the tension of its spring 5, thereby directing the wheel of the car from the main track to the switch-track 14. The treadle being released from pressure, the springs 45 cause the cross-bar 41 to resume its normal horizontal position, and the car having passed the switch the tongue 1 is returned to its nor-

mal position by its spring. If the switch be on the opposite or right-hand side of the main track, the right-hand treadle is depressed to operate the right-hand arm of the cross-bar 41 to throw the switch in the manner above described.

If the modified form of mechanism, as shown in Figs. 8 and 9, is used upon the car, its operation will throw the switch on either side of the main track, as above described.

I claim as my invention—

1. The combination, with the main track, of the pivoted switch-tongue 1, normally forming a part of the main rail and adapted to be thrown open to switch a car, a spring bearing at one end against the tail end of said tongue and at the other against the main stationary rail, a car adapted to run over the track and provided with a device to be depressed to move the tongue against the tension of said spring and adapted to be operated from the car-platform, and means between the device on the car and the tongue to transmit motion from the car to said tongue, said means comprising a lateral projection bearing against the tongue, and extending beyond the side of the rail and adapted to be moved for shifting the tongue, substantially as and for the purposes set forth.

2. The combination, with the main track, a pivoted switch-tongue, and means for automatically returning the tongue to its normal position, of a car provided, essentially, with a rock-shaft, 40, a lever for oscillating the same, and an oscillating cross-bar, 41, located beneath the car and operated from said lever to bring one of its ends against a part connecting with said tongue to move the latter, substantially as and for the purposes set forth.

In witness whereof I have hereunto set my hand this 5th day of July, 1888.

CHARLES W. WALKER.

Witnesses:

C. M. WHITE,  
T. D. MERWIN.