

No. 675,010.

Patented May 28, 1901.

C. F. LUTHER.
AUTOMATIC RAILWAY SWITCH.

(Application filed Sept. 6, 1900.)

(No Model.)

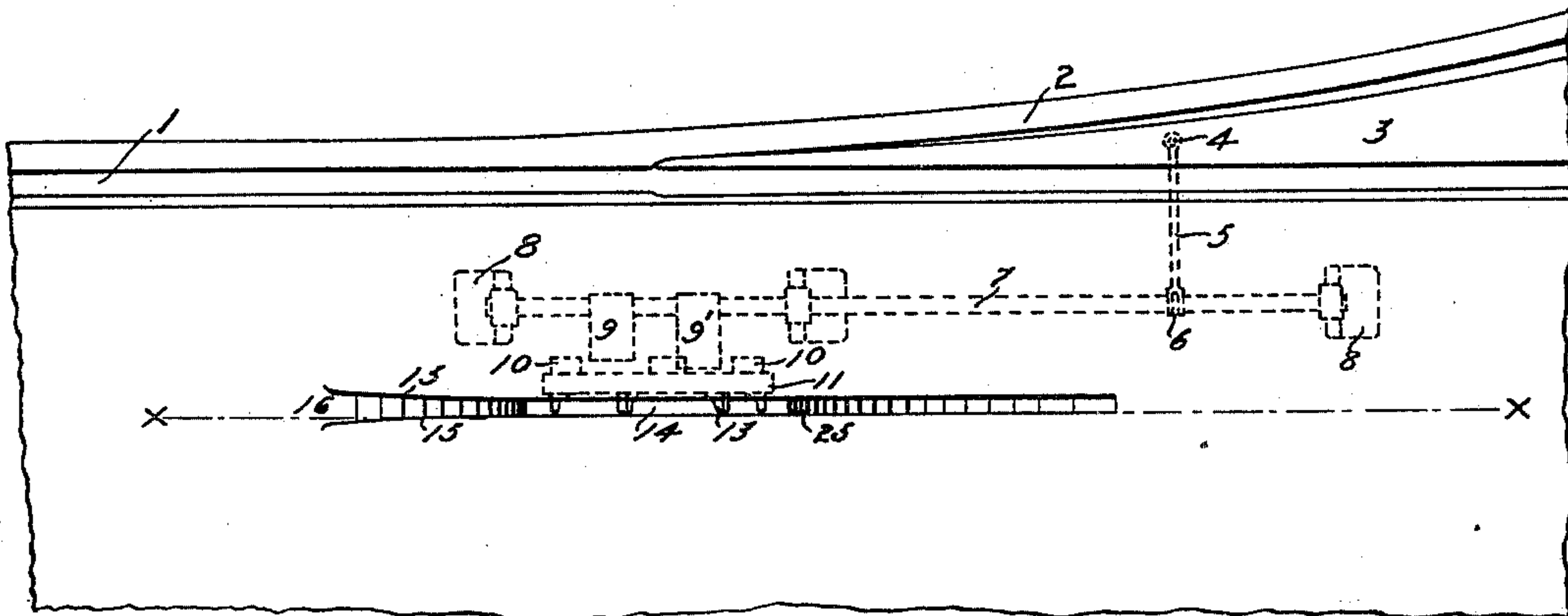


Fig. 1.

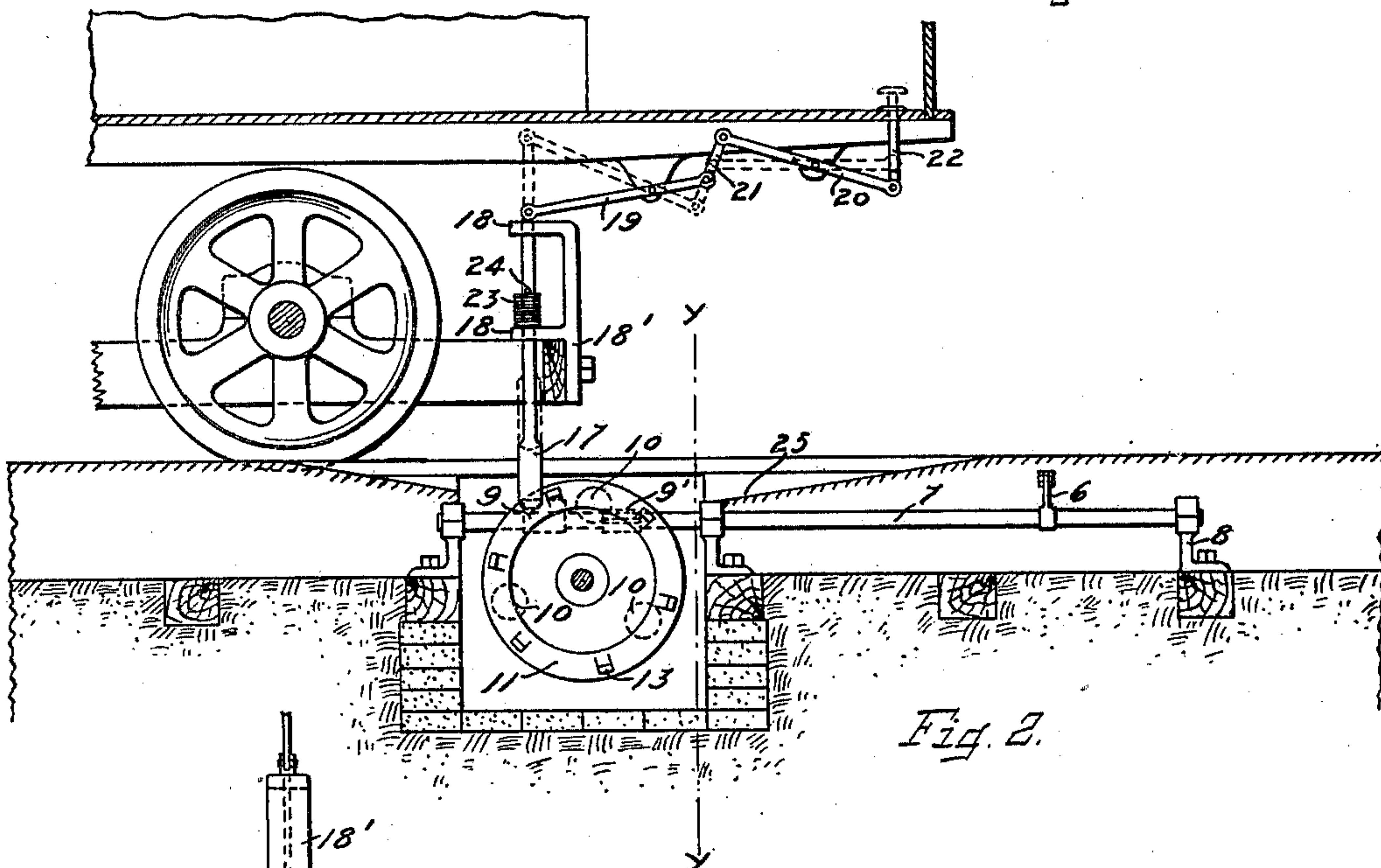


Fig. 2.

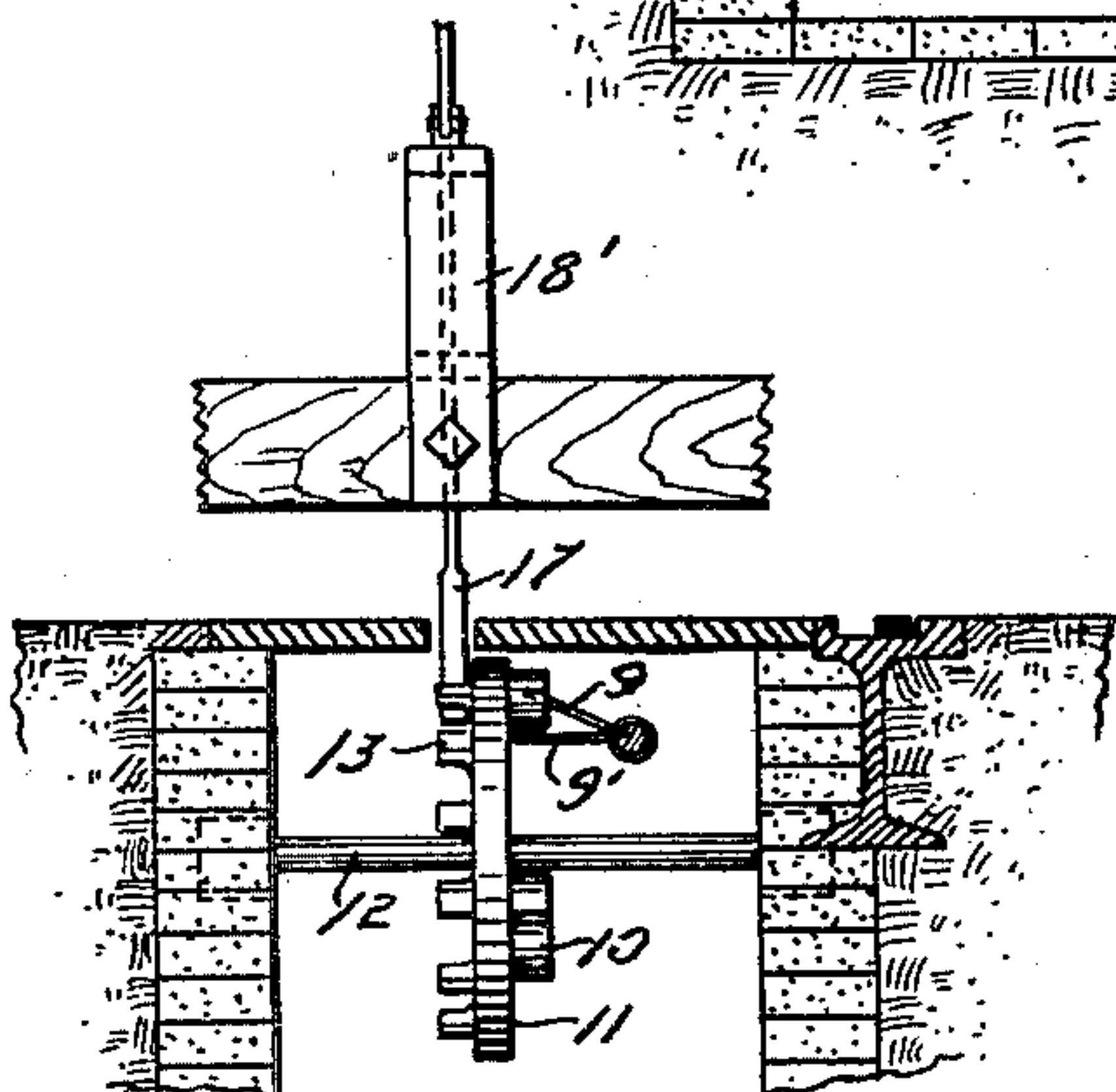


Fig. 3.

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CHARLES F. LUTHER, OF PAWTUCKET, RHODE ISLAND.

AUTOMATIC RAILWAY-SWITCH.

SPECIFICATION forming part of Letters Patent No. 675,010, dated May 28, 1901.

Application filed September 6, 1900. Serial No. 29,157. (No model.)

To all whom it may concern:

Be it known that I, CHARLES F. LUTHER, a citizen of the United States, residing in the city of Pawtucket, county of Providence, and State of Rhode Island, have invented certain new and useful Improvements in Automatic Railway-Switches; and I do hereby declare the following specification, taken in connection with the accompanying drawings, forming a part of the same, to be a full, clear, and exact description thereof.

My invention relates to means for automatically throwing a railway-switch designed to be operated from the car.

The device is especially adapted for use on electric street-railways to be operated by the motorman at his will, and the construction of my improvement is such that it may be operated at any desired distance in advance of the switch. The mechanism I use to accomplish this is simple, strong, and durable, not easily gotten out of order, and certain in its operation.

In describing my invention in detail reference will be made to the accompanying drawings, in which—

Figure 1 is a plan view of a railway-switch, showing my improvement applied thereto. Fig. 2 is a vertical sectional view on line *xx*, Fig. 1, showing a portion of a car with operating mechanism attached thereto; and Fig. 3 is a vertical sectional view on line *yy*, Fig. 2.

As shown in the drawings, 1 represents the main line of track, and 2 a track diverging from the main line. At the junction of these two lines is an ordinary pivoted switch-tongue 3, such as is commonly used on street-railways. From the under side of the switch-tongue 3 projects a pin 4, to which is connected one end of a connecting-rod 5. The other end of this connecting-rod 5 is connected to a rock-arm 6 on the rock-shaft 7, located between the rails and extending substantially parallel therewith, said rock-shaft being mounted in bearings 8, secured to the ties, as shown in Fig. 2. Secured to the rock-shaft 7 near its other end are the tappets 9 9', which are engaged by studs or rollers 10, projecting from one side of a rotary wheel or disk 11. The faces of the tappets 9

9' are so shaped or inclined that the rollers 10 pass under the tappet 9 and over the tappet 9', as shown in Fig. 3. On the other side of the disk 11, which is mounted on a shaft 12 so as to turn in a vertical plane adjacent to and parallel with the rock-shaft 7, are formed at equal distances around the circumference near its periphery the projections or bosses 13, extending at right angles to the side of said disk. The disk 11 is so mounted that the projections 13 will be directly beneath a slot 14 in the road-bed. Preferably the walls 15 of the slot 14 diverge somewhat at the entrance end 16 of the slot, as shown in Fig. 1, so as to afford a guide for the push-bar in entering the slot.

A push-bar 17 is carried by the car and operated from the platform. The push-bar 17 is preferably supported in the truck-frame, so as not to be affected by the rocking of the car, and is shown as mounted to slide in guide-arms 18, projecting from a bracket 18', bolted to the truck-frame of the car. The upper end of the push-bar is connected by the levers 19 and 20 and the connecting-link 21 to the lower end of the push-pin 22, projecting through the platform of the car within convenient reach of the motorman or other operator. A spiral spring 23, one end of which bears against a pin 24 on the push-bar and the other end against the guide-arm 18, acts to hold the push-bar in its raised position and to return it to such position when the pressure on the push-pin 22 is released.

The mode of operation is as follows: When the operator desires to move the switch-tongue, he presses the push-pin 22 with his foot. This forces the push-bar downward into the slot 14 and into a position where it will engage with one of the projections 13 on the disk 11. The forward movement of the car will thus turn the disk 11 and cause one of the rollers 10 to engage one of the tappets 9 or 9', thereby causing a partial rotation of the rock-shaft 7, which operates to move the switch-tongue, as hereinbefore described. As shown in the drawings, there are twice as many projections 13 as there are studs 10, there being six projections and three studs. With this arrangement the engagement of the push-bar 17 with one of the projections 13

will cause one of the studs 10 to actuate the tappet 9 to move the switch in one direction and will leave said stud in position to engage the other tappet 9' at the next movement of the disk 11, which said movement of the disk will be effected by the engagement of the push-bar with the next succeeding projection 13, which will result in moving the switch in the opposite direction. This last movement of the disk will bring the next succeeding stud into position to engage the tappet 9 when the disk is next moved. Thus the switch is moved in either direction by the forward movement of the disk, and the parts are always in position to move the switch from whichever position it may be in.

Should the spring 23 become inoperative or the motorman neglect to remove his foot from the foot-pin 22, the push-bar will engage the inclined guideway 25 and be forced up into its normal position.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination with a switch-tongue, of a rock-shaft connected therewith, said rock-shaft being provided with a tappet, a disk provided with a stud adapted to engage said tappet and rock said shaft, said disk being arranged to be operated by a bar projecting from a passing car.

2. The combination with a switch-tongue, of a rock-shaft connected therewith and provided with tappets, and a disk provided with studs to engage said tappets and thereby rock said shaft to operate the switch, said disk being arranged to be operated by a bar projecting from a passing car.

3. The combination with a switch-tongue, of a rock-shaft connected therewith and provided with tappets, a disk provided on one side with studs, and on the other side with

projections adapted to be engaged by a bar projecting from a passing car.

4. The combination with a switch-tongue, of a rock-shaft connected therewith, said rock-shaft being provided with two tappets, a disk provided with studs to engage said tappets, said tappets being so arranged that in one position of the switch one of said tappets will be engaged, and in the other position of the switch the other tappet will be engaged, whereby the rock-shaft will by the forward rotation of the disk be rocked and the switch moved in one direction or the other as may be desired, said disk being arranged to be operated by a bar projecting from a passing car.

5. The combination of a depending bar supported by the car, mechanism to operate said bar, a vertical disk provided on one side with projections to be engaged by said bar and on the other side with studs, a rock-shaft arranged parallel with the track and provided with two tappets, a switch-tongue, and a connection between said rock-shaft and switch-tongue.

6. The combination of a depending bar supported by the car, a vertical rotary disk provided on one side with projections adapted to be engaged by said bar, and on the other side with studs, adapted to actuate switch-operating mechanism.

7. The combination of a depending rod, supported by the car, a vertical rotary disk provided on one side with projections adapted to be engaged by said bar, and provided on the opposite side with studs, and a rock-shaft provided with tappets, arranged to be engaged by said studs.

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Witnesses:

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