

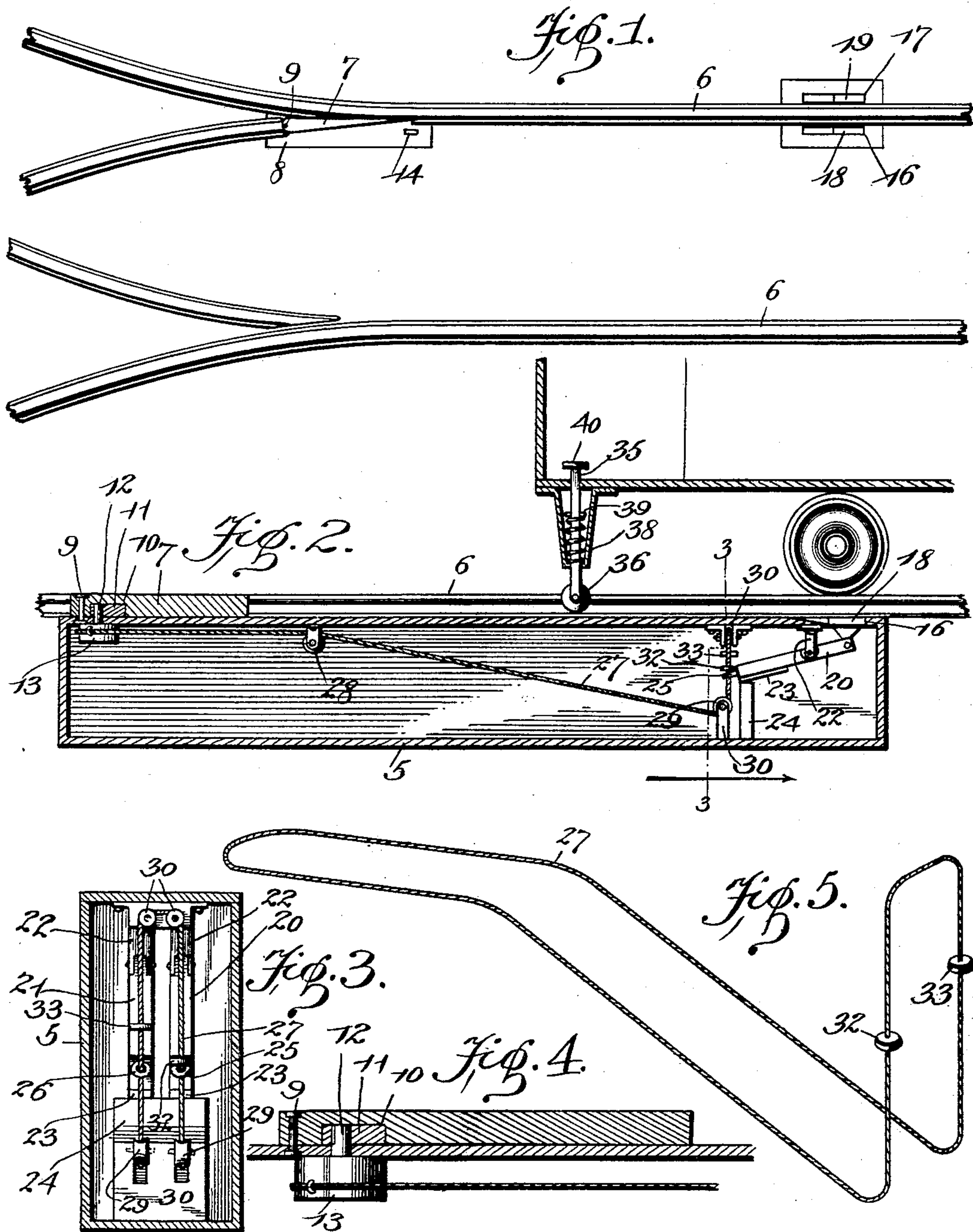
No. 632,622.

Patented Sept. 5, 1899.

E. F. BARTH.
RAILWAY SWITCH.

(Application filed June 24, 1899.)

(No Model.)



Witnesses

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UNITED STATES PATENT OFFICE.

ERNEST FREDERICK BARTH, OF NEW ALBANY, INDIANA.

RAILWAY-SWITCH.

SPECIFICATION forming part of Letters Patent No. 632,622, dated September 5, 1899.

Application filed June 24, 1899. Serial No. 721,755. (No model.)

To all whom it may concern:

Be it known that I, ERNEST FREDERICK BARTH, a citizen of the United States, residing at New Albany, in the county of Floyd and State of Indiana, have invented a new and useful Railway-Switch, of which the following is a specification.

This invention relates to railway-switches in general, and more particularly that class known as "car-operated" switches, and is intended for employment in connection with a street-car system and through the medium of which the switch may be thrown from the car.

In the drawings forming a portion of this specification, and in which like numerals of reference designate corresponding parts in the several views, Figure 1 is a plan view of a portion of a trackway comprising a switch the tongue of which is adapted to be operated with this mechanism. Fig. 2 is a longitudinal section of the switch mechanism and showing the position of a car and its mechanism with respect thereto. Fig. 3 is a section on line 3 3 of Fig. 2. Fig. 4 is a detail section of the switch-tongue, with its operating-drum in elevation. Fig. 5 is a perspective view of the operating-cord.

Referring now to the drawings, in equipping a railway-switch with this invention a casing 5 is arranged beneath that rail 6 of the railway with which the movable tongue 7 co-operates, and which tongue is pivoted to the cover 8 of the casing through the medium of a bolt 9. Intermediate the bolt 9 and the tip of the tongue 7 and adjacent to said bolt is a circular depression 10, in which is fitted rotatably a disk 11, fixed eccentrically upon a shaft 12, passed through the top of the casing and having upon its lower end, within the casing, a drum 13, adapted to be oscillated to correspondingly move the disk 11 and throw the switch-tongue from one limit to the other of its motion, a portion of the rail 6 acting as a stop at one side of the tongue and a projection 14 upon the cover 8 acting as a stop at the other side. In order to oscillate the drum 13, I form parallel openings 16 and 17 in the cover of the casing, in which openings are adapted to rise and fall treadles 18 and 19, having downwardly-extending stems pivotally connected with levers 20 and 21, fulcrumed in hangers 22, secured to the cover

of the casing. The levers 20 and 21 extend in the direction of the drum 13 and have at their outer ends weights 23, adapted to hold them normally in their lowered positions and resting upon a common stop 24, the levers when in this position acting to hold the treadles 18 and 19 flush with the upper surface of the cover of the casing. Secured to the extremities of the weighted ends of the levers are eyes 25 and 26, through which are passed the parallel portions of an endless cord 27, which is passed around the drum 13 and is extended horizontally therefrom through the depressions in guide-pulleys 28, thence downwardly and rearwardly through similar pulleys 29, supported in standards 30 upon the floor of the casing, thence upwardly and vertically through the eyes 25 and 26, and finally through depressions in guide-pulleys 30, supported from the cover of the casing, the complete cord when in its operative position having the general outline shown in Fig. 5 of the drawings. The cord 27 is prevented from movement with respect to the drum 13 by being stapled or otherwise secured thereto, as shown in Fig. 2.

The levers 20 and 21 move independently downwardly of the adjacent sections of the cord 27; but in their alternate upward movement they are adapted to successively engage stops 32 and 33, fixed to their respective cord-sections and in such positions that when one lever rises it will immediately engage its stop, and in moving the cord will move the opposite stop into engagement with the other lever or the eye thereof. This movement of the cord acts to oscillate the drum 13, and thereby to throw the switch-tongue 7 from one side to the other.

In order to depress the treadles 18, there are secured upon the platform of a car two depressible plungers 35, and so positioned as to pass directly over their respective treadles as the car moves along the trackway and either of which plungers when depressed will engage with its roller 36, journaled at the lower end thereof, its respective treadle, said plunger being returned to its normal position by means of a helical spring encircling the plunger and bearing at one end upon a supporting-hanger 38, secured to the under side of the car-platform, and at its upper end upon

a cross-pin 39, passed through the plunger. The downward movement of the plunger is limited by means of an enlarged head 40. As shown in Figs. 1 and 2 of the drawings, that
 5 end of each slot or opening 16 and 17 in the direction of approach of a car is vertical, while the other end is slanted upwardly, the object of this construction being to enable the positive depression of the pedal and to provide
 10 an inclined path, up which the roller 36 will pass instead of the roller striking against an abrupt end. It will of course be understood that the plunger depressed will depend upon whether the operator wishes to take one track
 15 or the other beyond the switch, the treadle, after being depressed, being caused to rise by the weight upon the end of its lever, the eye permitting the weighted end of the lever to pass freely downwardly to the common stop.
 20 It will be readily understood that the specific construction and arrangement shown may be varied, that any other flexible connection may be substituted for the cord 27, and that in various other ways the specific construction may be altered without departing
 25 from the spirit of the invention.

Having thus described the invention, what is claimed is—

1. A switch mechanism comprising a switch-tongue pivotally mounted and having a circular depression therein, a disk in said depression, a shaft for said disk connected eccentrically thereof, and means for oscillating the shaft to correspondingly move the disk
 35 and throw the switch-tongue.

2. In a switch mechanism, the combination with a tongue pivotally mounted, and having a circular depression therein, of a disk in said depression, a shaft for the disk connected eccentrically thereof, weighted levers having operating-treadles, connections between the shaft of the disk and the levers comprising a cord, and stops carried by the cord and adapted for engagement by the levers to move the
 45 cord and operate the switch-tongue.

3. In a switch mechanism, the combination with a tongue pivotally mounted, of weighted

levers having means for operating them, eyes carried by the levers, a flexible connection passed through said eyes and operatively connected with the switch-tongue, and stops upon
 50 said connection adapted for engagement by the levers to operate the tongue.

4. In a switch mechanism, the combination with a tongue pivotally mounted, and having
 55 a circular depression therein, of a disk within said depression and eccentrically pivoted, pivoted levers having means for operating them, a flexible connection between said levers and disk, and stops carried by the connection and adapted for alternate engagement
 60 by the levers to operate the connection and throw the switch-tongue.

5. In a switch mechanism, the combination with a tongue pivotally mounted, and having
 65 an annular depression therein, of a disk within said depression and pivoted eccentrically, a drum fixed centrally to said pivot, levers having means for operating them, a flexible connection between said levers and drum,
 70 fixed to the drum, and stops carried by the flexible connection and adapted for alternate engagement by the levers to oscillate the drum and throw the switch-tongue.

6. In a switch mechanism, the combination
 75 with a pivotally-mounted tongue of a casing adjacent thereto, slots in the casing, treadles operating in said slots, levers connected with the treadles and having a common stop, an annular depression in the under side of the
 80 switch-tongue, a disk in said depression eccentrically mounted upon and fixed to a pin, a drum fixed to and concentric with said pin, and a flexible connection between said drum and levers and having stops thereon adapted
 85 for alternate engagement of the levers to throw the switch-tongue.

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

ERNEST FREDERICK BARTH.

Witnesses:

JNO. J. HAGEL,
 JAS. R. COXALL.