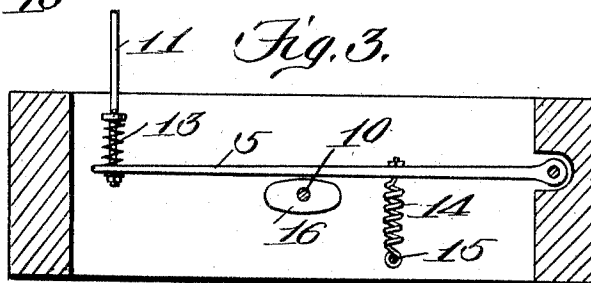
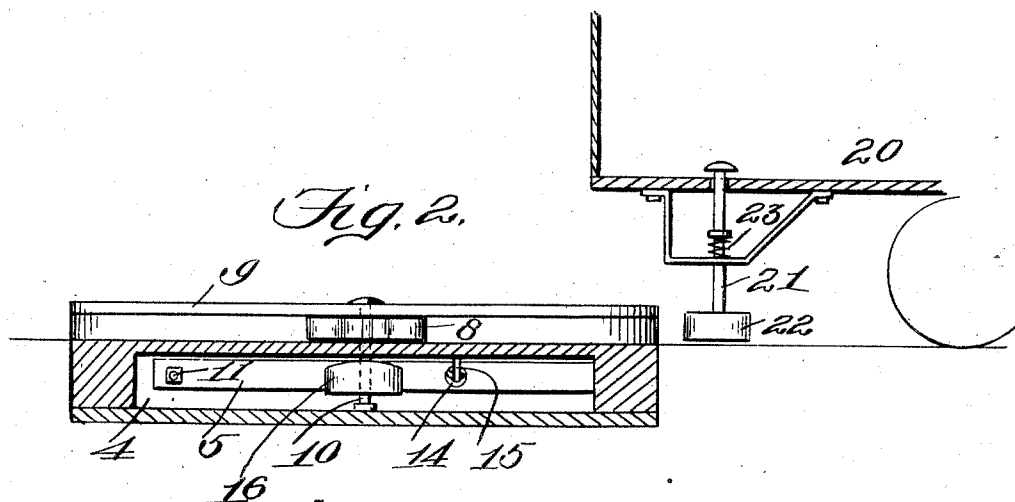
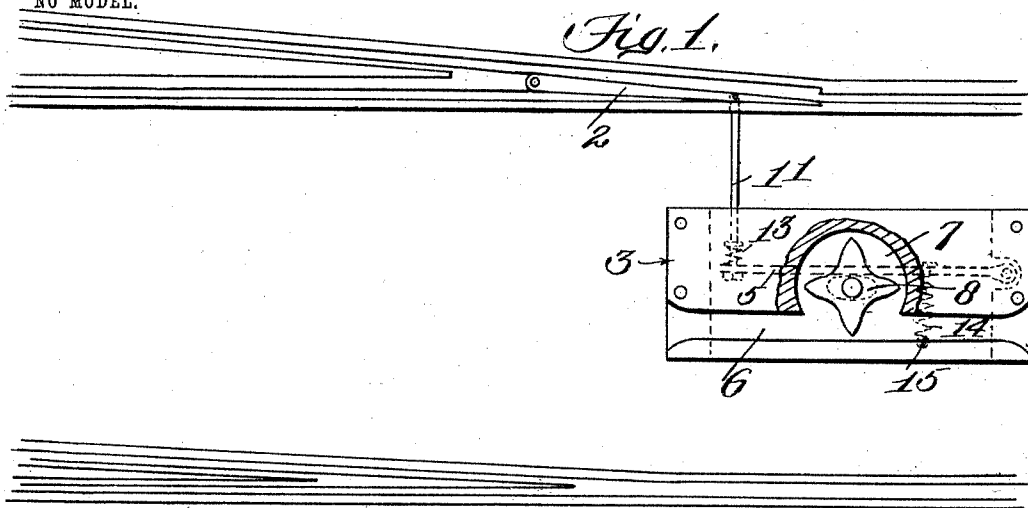


No. 759,747.

PATENTED MAY 10, 1904.

J. B. REIBEL.
RAILWAY SWITCH.
APPLICATION FILED OCT. 16, 1903.

NO MODEL.



Witnesses:
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UNITED STATES PATENT OFFICE.

JOHN B. REIBEL, OF SCRANTON, PENNSYLVANIA.

RAILWAY-SWITCH.

SPECIFICATION forming part of Letters Patent No. 759,747, dated May 10, 1904.

Application filed October 16, 1903. Serial No. 177,345. (No model.)

To all whom it may concern:

Be it known that I, JOHN B. REIBEL, a citizen of the United States, residing at Scranton, in the county of Lackawanna and State of Pennsylvania, have invented new and useful Improvements in Railway-Switches, of which the following is a specification.

This invention relates to railway-switches; and the object of the invention is to provide a simple, compact, and strong device of this character which can be used in connection with street, steam, or other railways, the construction being such that the switch can be readily and quickly thrown from a moving vehicle or train to transfer the same from a main line to a side or branch line or turnout, thereby avoiding the necessity of maintaining a switch attendant at the switch.

The invention is shown in one convenient adaptation thereof in the drawings accompanying and forming part of this specification, and in which—

Figure 1 is a plan view of a railway-switch disclosing the invention, part thereof being broken away to illustrate a certain element of the mechanism. Fig. 2 is a sectional side elevation. Fig. 3 is a horizontal sectional top plan view of part of the device.

Like characters refer to like parts throughout the several figures.

The switch involves in its organization a pivoted switch point or tongue 2, which is of the ordinary construction, and the same applies to the rails constituting the main and branch tracks in conjunction with which the improved switch mechanism operates. The switch-point of course controls the passage of a vehicle or train from the main line onto a siding, branch, or turnout, and is spring-actuated in one direction, it being operated in the other direction by mechanism under the control of an operator on the vehicle.

A block is shown at 3, and it may be in the form of a casting or made from any other material, size, or shape. This block is located adjacent to the switch-point 2 and carries a member, actuated by means of a suitable nature, on a vehicle, and which in turn through suitable connections actuates the switch-

point to effect the transfer of said vehicle from the main line to a siding or branch. The block 3 has a slot 4 in its under side, in which a lever 5 is mounted for swinging movement, said lever being fulcrumed at one end in a recess formed in one of the end walls of said slot. The lever therefore swings about a vertical axis. The block 3 has in the upper side thereof a channel or groove 6, extending the complete length of the same, and which approximately midway of its length intersects the chamber 7, in which a wheel 8 is located. A plate 9 extends along the top of the main portion of the block 3, covers the chamber 7, so as to protect as much as possible the wheel 8, and is suitably fastened to said block, the wheel 8 being shown as of the star or multi-armed type. Said wheel 8 is suitably fastened to a vertically-disposed shaft or arbor 10, stepped at its lower end in a bearing below the slot 4 and rotative at its upper end in a bearing in the plate 9. It will be seen that the under side of the plate is chamfered to receive the upper portion of the rotative star-wheel 8.

A rod is shown at 11, it being suitably united at one end to the switch point or tongue 2 near the tip thereof, the opposite end of said rod being yieldably connected with the lever 5, by reason of which the lever will transfer through the rod to the switch a yielding pressure, thereby not to derange any of the operating parts. In the present case one end of the rod 11 passes through a perforation in the lever 5, near the free end thereof, and beyond said lever, and terminates in a shoulder contiguous to one side face of the lever. The rod 11 on the opposite side of the lever is surrounded by a coiled spring 13, one end of which bears against the lever and the other end of which bears against a suitable stop or collar on the rod. The spring 14, in addition to assuring the transfer of a yielding pressure to the switch point or tongue, also augments a second spring, hereinafter described, the office of which is to operate the switch-point in opposition to a tappet or equivalent device hereinafter described.

It will be remembered that the switch-point 2 has been described as being spring-operated

in one direction, as will now be set forth. A coiled pull-spring is shown at 14, it being located within the slot 4. One end of said spring 14 is connected with the lever 5, while the opposite end thereof is connected to the stud or projection 15, depending from the top or upper wall of said slot 4.

The vertically-rotative shaft 10, which, it will be remembered, fixedly carries the star-wheel 8, has fastened to it in the slot 4 the tappet 16, consisting of a cam having two flat sides, one of which normally engages the side face of the lever 5, and rounded ends which constitute the working portion of said tappet or cam. The function of the tappet or cam 16 is to positively shift the switch point or tongue 2 in opposition to the spring 14. Normally one of the flat side faces of the tappet 16 is in contact or substantially in contact with the side face of the lever 5, which relation is maintained by the spring 14, assisted by the spring 13.

In operating the switch from a vehicle, as 20, (shown only in Fig. 2,) I provide the vehicle with a suitable actuating device for the star-wheel 8. Said actuating device may consist of a spring-actuated vertically-movable bar 21, having a foot-piece at its upper end to be engaged by the foot of a motorman, and a shoe 22 at its lower end, which when the bar 21 is thrust downward by the motorman will be brought into position to engage said star-wheel. It will be understood that normally the shoe 22 of the actuating device is above the plane of the upper face of the star-wheel, in which position it is held by the coiled spring 23. When, however, it is desired to operate the switch-point 2, the actuating device is lowered by a motorman or other attendant into position to engage one of the arms of the star-wheel 8, which arm projects across the channel 6. On the continued movement of the vehicle which carries said actuating device the latter by engaging the arm mentioned will impart a quarter-turn to the star-wheel or until said arm is out of the path of said actuating device. As the said star-wheel moves through a quadrant a second arm thereof is brought across the groove or channel 6 into the-path of an actuating device on a second vehicle. As the star-wheel turns a corresponding motion will of course be applied to the tappet or cam 16 through the shaft 10, which carries them both, the rounded end of said tappet or cam as it rotates being caused to engage the lever 5 to swing the same, and when the tappet or cam occupies a position at right angles to the lever the latter will have made its complete working stroke, so as to move the switch-point 2 into position to effect the transfer of a car from the main line onto a siding. The operation of the star-wheel, as stated, by an actuating device on the car brings a second arm of the star-wheel into position for subsequent

operation by a second actuating device. When the second actuating device is moved into its operative position, it will strike the second arm of the star-wheel, thereby turning the latter and the cam or tappet 16, so as to move the rounded working end of the cam or tappet out of engagement with the lever, and as said rounded working end passes free of the lever the spring 14 will automatically act to return the switch-point to its initial position, the spring 13 assisting the spring 14 to secure such motion.

The opposite ends of the channel 6 are widened or diverge slightly outward on beveled lines, so as to properly guide an actuating device for the star-wheel 8 into or from said channel.

The invention is not limited to the exact structure hereinbefore described nor to the mode of operation specified, for variations as to these features may be adopted within the scope of my claims.

Having thus described the invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination of a switch-point, a lever spring-actuated in one direction, operatively connected with said switch-point, a cam for shifting the lever in opposition to the spring, and a rotary element for operating the cam.

2. The combination of a switch-point, a lever, a connection between the lever and switch-point, a spring connected with the lever for operating the same and thereby the switch-point in one direction, a cam for engaging and operating the lever in opposition to the spring, and a wheel having a plurality of arms, for actuating said cam.

3. The combination of a switch-point, a lever, a spring for operating the lever in one direction, a cam for operating the lever in opposition to said spring, a rod, and a spring yieldingly connecting said lever and switch-point, a shaft carrying said cam, and a wheel having a plurality of arms, also carried by said shaft.

4. The combination of a switch-point, a block having a slot in its under side, and a channel and a chamber in its upper side, the channel intersecting the chamber, a lever in said slot operatively connected with the switch-point and spring-actuated in one direction, a cam in said slot for actuating the lever in opposition to the spring, and a wheel in said chamber having a plurality of arms one of which is adapted to extend across said channel, operatively connected with said cam.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JOHN B. REIBEL.

Witnesses:

W. O. JENKINS,

JOHN F. DURKAN.