

(No Model.)

2 Sheets—Sheet 1.

I. COOK.
SWITCH.

No. 485,786.

Patented Nov. 8, 1892.

Fig. 1.

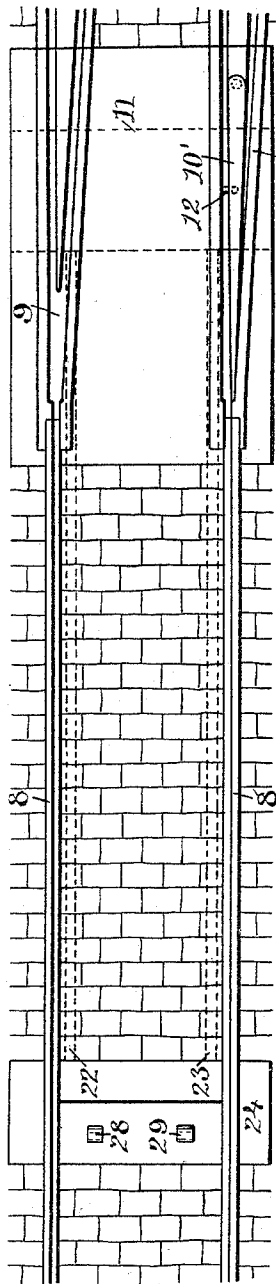


Fig. 2.

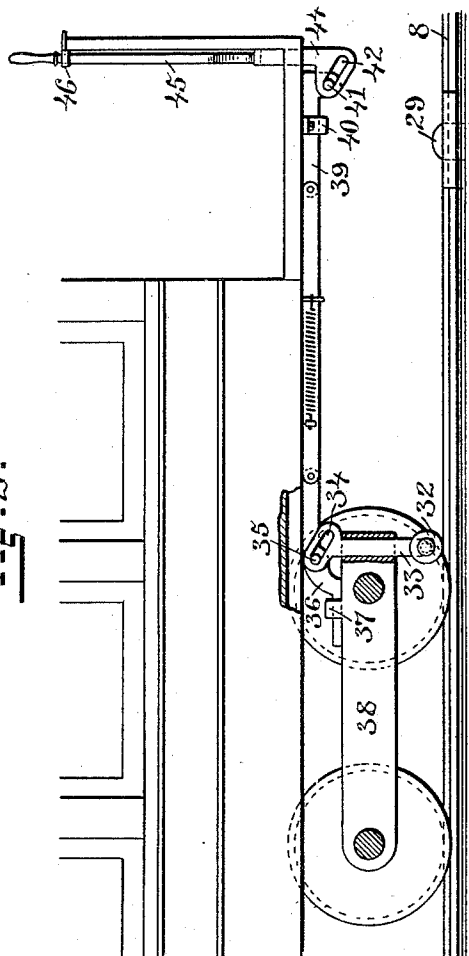
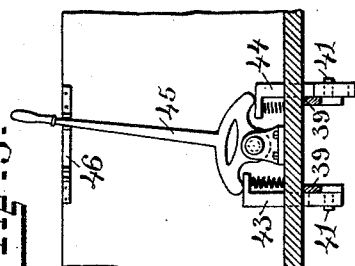


Fig. 3.



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Fig. 4.

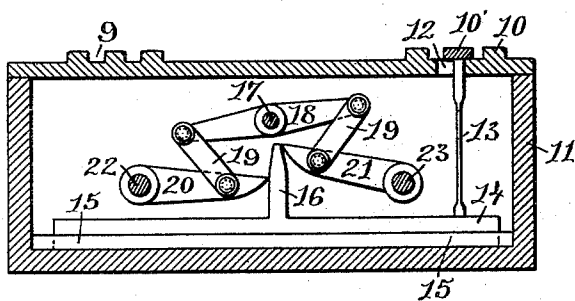
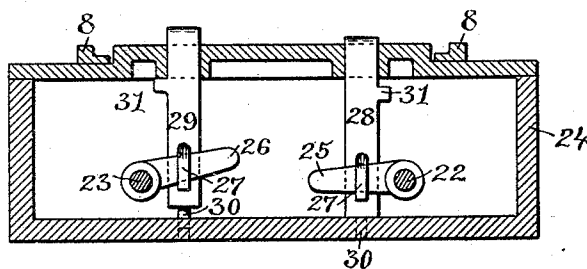


Fig. 5.



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UNITED STATES PATENT OFFICE.

IRVING COOK, OF FALL RIVER, MASSACHUSETTS.

SWITCH.

SPECIFICATION forming part of Letters Patent No. 485,786, dated November 8, 1892.

Application filed April 13, 1892. Serial No. 428 936. (No model.)

To all whom it may concern:

Be it known that I, IRVING COOK, of the city of Fall River, in the county of Bristol and State of Massachusetts, have invented certain new and useful Improvements in Switches; and I hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification.

This invention has reference to improvements in automatic railway-switches.

The object of the invention is to produce a railway-switch which may be operated by mechanism carried by an approaching car, whether drawn by horses or driven by any motive power.

The invention consists in the peculiar construction and arrangement of the automatic switching device and the combination therewith of the novel actuating-plungers located at a distance therefrom and connected therewith by suitable shafts for operating said switch, as will hereinafter be more fully described, and pointed out in the claims.

Figure 1 represents a portion of a road-bed provided with rails and a switch operated by my improved device. Fig. 2 represents a portion of a car, partly in section, showing means by which the switch-actuating plungers may be depressed carried on the truck of said car and operated from the platform. Fig. 3 represents a cross-sectional view of a car-platform and a lever pivoted thereto for depressing the cams by which the connecting-rods are operated. Fig. 4 represents a cross-sectional view of the track and switch and the chamber located below the same for operating the switch. Fig. 5 represents a cross-sectional view showing the plungers and the shafts by which the switching mechanism is operated.

Similar numbers of reference designate corresponding parts throughout.

In the drawings, 8 8 indicate the rails of a street or other railway, 9 being a frog, and 10 a switch connecting the main line with a branch line. These are of the usual construction and, if desirable, a switch similar to 10 may be substituted for the frog 9 when it is necessary to connect the main line of rails with two lines branching from the same point.

Located below the surface of the roadway

is a case or chamber 11, which is provided with a cover forming part of the roadway. This cover is provided with a slot 12, through which the rod 13 extends, and is secured to the pivoted tongue 10' of the switch to throw the same. When a double switch is used, it becomes necessary to provide two slots, similar to 12, at opposite sides of the cover, and two rods 13, the lower ends of which are secured in the reciprocating bar 14. The reciprocating bar 14 is supported in the guide 15 and is provided with a central upwardly-extending member 16, the upper end of which is tapered. The shaft 17 is secured in the ends of the chamber 11 and extends in a direction parallel to the road-bed, and on this shaft is journaled the cross-arm 18, the ends of which are pivotally connected by the links 19 with the inner portions of the thrust-arms 20 and 21, having their lower surfaces curved upwardly at the ends and clamped to the shafts 22 and 23. These shafts are journaled in the ends of the chamber 11 and extend parallel to the track, their rear ends being journaled in the plunger-chamber 24, those portions of these shafts between the two chambers being contained within suitable casings. To the shafts 22 and 23, inside the plunger-chamber 24, are secured the levers 25 and 26, and engaging with these levers are bent shoulders 27, formed on or secured to the plungers 28 and 29, the upper ends of which extend through guide-slots in the cover of this chamber a short distance above the surface thereof, the lower ends of the plunger being provided with pins 30, vertically movable in perforations in the bottom of the chamber, and the removal of the plunger from the chamber being prevented by the stops 31, formed on said plungers. The cover of the chamber may, however, be taken off and the plunger examined or removed at will. By the depression of the plunger 28 the shaft 22 will be partially rotated by the engagement of the shoulder 27 with the lever 25, and the curved surface of the thrust-arm 20 will ride against the tapering surface of the member 16 to thrust that member and the bar 14, carrying the rod 13, to the left, and the upper end of this rod is secured to the switch-tongue 10', which will be thrown in the same direction.

The depression of the plungers 28 and 29

may be accomplished by any means, and by the construction shown the plungers may be located some distance from the switch and the switch operated some time before the car reaches the same.

To more clearly indicate the means for operating my improved switch, I have shown a portion of a car carrying a device for depressing the plungers 28 and 29, consisting of rollers 32, which are horizontally journaled on shafts carried by the lower ends of bars 33, two of which are carried in guides at the forward end of a car-truck and are vertically movable therein. The upper ends of these bars are enlarged, and these enlargements have diagonal slots 34, which are engaged by the pins 35 on the reciprocating arms 36, the rear end of each of which is bent downward and is movably held in a strap 37, secured to the upper portion of the truck-frame 38. The forward ends of the arms 36 are pivotally connected by spring-operated connecting-rods with arms 39, longitudinally movable in and supported by straps 40, which are secured to the bottom of the car-platform. These arms 39 have transverse pins 41 in the forward ends thereof, which engage in diagonal slots 42, provided in the lower ends of the spring-lifted plungers 43 and 44, which may be depressed by foot-pressure or by a lever 45, pivoted to the car-platform and having suitable extensions adapted to bear on either of said plungers. A rack 46 may also be provided for securing the lever in any position. The depression of either plunger 43 or 44 will move either of the slots 42 over the pins 41 and will force the arms 39 backward and move the pins 35 to the rear and upper ends of the slots 34, thus depressing the bars 33 to a position where either of the rolls 32 will press against the exposed end of the plunger 28 or 29, located on the corresponding side of the track, which will be depressed thereby and operate the proper shaft 22 or 23 to throw the switch to right or left.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In an automatic railway-switch, the combination, with a track and a switch connected therewith, having a pivoted switch-tongue, of a casing 11, located below said switch and provided with a cover, a central longitudinal shaft secured in said casing, a cross-arm journaled on said shaft, thrust-arms pivotally connected with the ends of said cross-arms, rotatable shafts journaled in said casing, extending beyond the same and carrying the thrust-blocks, a reciprocating bar movable in guides, a vertical rod secured to said bar and to the switch-tongue, a vertical member on said bar against which the thrust-arms may bear, and means for partially rotating said last-mentioned shaft, as described.

2. In a switch for a railway having a main line, a branch line, and a switch connecting the two, the combination, with the casing 11, the reciprocating bar 14, movable in the guide 15 and having the member 16, a rod 13, secured to the bar 14, extending through a slot in the cover of the case and secured to the switch-tongue, the shafts 22 and 23, journaled in the ends of said casing, the thrust-arms 20 and 21, secured to said shafts and adapted to bear against the member 16, a cross-arm 18, journaled on the shaft 17, and links connecting the ends of the cross-arm with the thrust-arms, of a casing 24, into which the shafts 22 and 23 extend, the levers 25 and 26, secured to said shafts, the plungers 28 and 29, vertically movable in said casing and extending through slots in the cover, and the bent shoulders 27, secured to said plungers and adapted to engage said levers 25 and 26, as described.

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Witnesses:

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