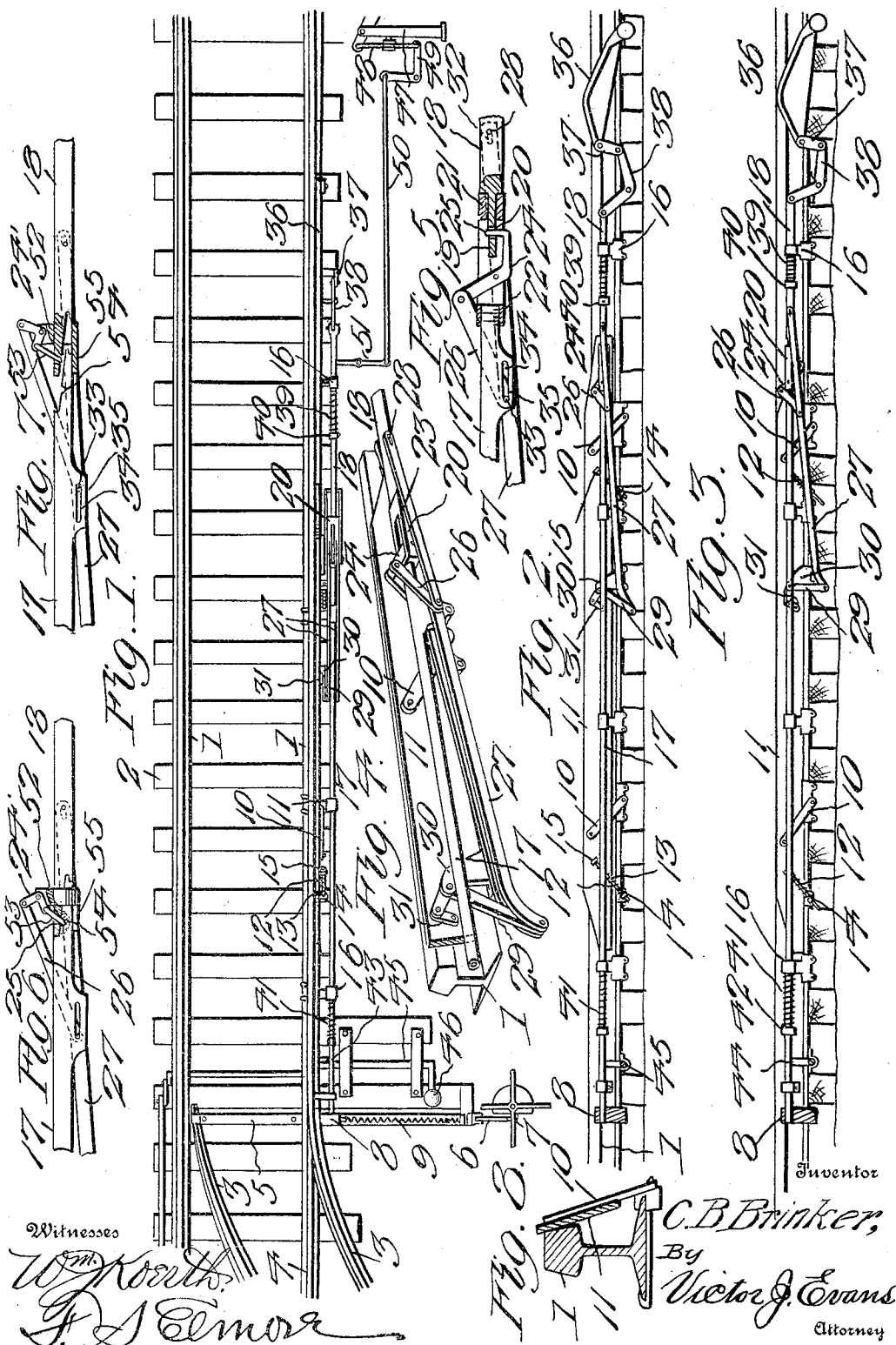


No. 810,906

PATENTED JAN. 30, 1906.

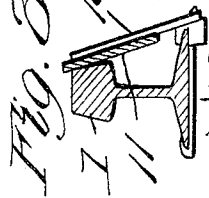
C. B. BRINKER.
RAILWAY SWITCH.

APPLICATION FILED SEPT. 30, 1905.



Witnesses

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RAILWAY-SWITCH.

No. 810,906.

Specification of Letters Patent.

Patented Jan. 30, 1906.

Application filed September 30, 1905. Serial No. 280,782.

To all whom it may concern:

Be it known that I, CHARLES B. BRINKER, a citizen of the United States, residing at West Lebanon, in the county of Warren and State of Indiana, have invented new and useful Improvements in Railway-Switches, of which the following is a specification.

This invention relates to railway-switches, being especially directed to the switch operating and locking mechanism, and has for its objects to produce a comparatively simple inexpensive device of this character wherein the switch will be normally maintained in position for keeping the main line open, one in which the switch is manually operated for closing the main line and opening the siding, and one wherein in the event of the switch being left in the latter position it will be automatically released and shifted to normal position through the medium of mechanism actuated by an approaching train.

A further object of the invention is to provide a switch-operating mechanism of this character including a sectional locking member or bar for locking the switch in normal position, one wherein the sections of the latter will be automatically uncoupled when circumstances require, and as more fully hereinafter explained.

With these and other objects in view the invention comprises the novel features of construction and combination of parts more fully hereinafter described.

In the accompanying drawings, Figure 1 is a top plan view of a portion of the railway-track having my invention applied thereto and showing the parts in normal position. Fig. 2 is a side elevation of the same. Fig. 3 is a similar view showing the sections of the locking-bar uncoupled. Fig. 4 is a detail perspective view of a portion of the switch-operating mechanism. Fig. 5 is a detail view, partly in section, of the locking-bar and illustrating the connection between the bar-sections. Fig. 6 is a view similar to Fig. 5, showing a slightly-modified form of coupling and with the parts in normal position. Fig. 7 is a similar view showing the bar-sections uncoupled. Fig. 8 is a vertical transverse section through one of the rails and detector-bar, showing the manner of mounting the latter upon the rail.

Referring to the drawings, 1 1 designate the main-line rails, sustained by cross-ties 2 and equipped with movable switch-points 3,

controlling the passage of a train from the main line to a siding 4, the points 3 being connected by a bridle-bar 5, which projects beyond the inner main-line rail 1 and has its outer end connected through the medium of a link 6 with a manual switch-operating member or stand 7, by means of which the switches may be manually thrown to close the main line and open the siding. The bridle-bar 5, which is provided at a point adjacent the rail 1 with a socket 8, constituting a keeper, is acted upon by a normally contracted spring 9 to maintain the switches in position with the main line open and siding closed.

Sustained at the outer face of the rail 1 by means of links 10 is a depressible detector member or bar 11, adapted to be maintained in normal position with its upper edge projecting slightly above the tread of the rail by means of springs 12, coiled upon guide-rods 13, fixed at their lower ends to suitable bearing-lugs 14, provided on the rail and arranged to slide at their upper ends through perforated lugs 15, formed on the bar 11, it being noted in this connection that when the bar is depressed it moves forwardly and downwardly against the action of the springs 12.

Sustained at the outer face of the bar 11 in suitable bearings 16, attached to the rail 1, is a longitudinally-movable locking member or rod 17, which included a rear independently-movable section 18, provided at its forward end with a reduced portion or tongue 19, in turn provided with an opening or keeper 20, and adapted to normally project through a slot 21 into a coupling member or box 22, fixed upon the rear end of the locking-rod 17 and having a longitudinal opening or slot 23. Pivotaly mounted in the box 22 and within the slot 23 is a locking member or lever 24, of substantially L shape, provided at its free end with an engaging portion or finger 25, designed to engage through the opening 20, said lever being connected by means of a link 26 with a longitudinally-movable actuating member or lever 27, in turn pivoted at its rear end, as at 28, to the rod-section 18 and at its forward end to a bell-crank lever 29, pivoted at its elbow in a suitable bearing 30, fixed to the rail, and having its other arm connected by means of a link 31 with the detector-bar 11. The pivoting member or pintle 28, which extends transversely through the rod-section 18, is arranged to work in a slot 32, formed in the actuating-lever 27, while the pintle 33, which

connects the link 26 with the actuating-lever 27, is arranged to work in a slot 34, formed in a projection 35 on the locking-rod 17.

Pivoted at the side of the rail 1 in rear of the locking-rod 17 is a depressible track-lever 36, connected at its forward end by means of link 37 with one arm of a bell-crank lever 38, in turn pivoted to one of the ties and having its other arm pivotally connected with the rear end of the locking-rod section 18, on which is arranged an expansible spring 39, having bearing at one end against the adjacent bearing member 16 and at its other end against a fixed collar 40 on said section, said spring tending to move the section forwardly, while arranged on the locking-rod 17 at a point adjacent its forward end is an expansible spring 41 disposed between the adjacent bearing 16 and a fixed collar 42 on the rod and tending to move the latter to locking position.

Fixed to the rod 17 at a point adjacent its forward end is a lug or projection 43, adapted for engagement by the arm 44 of a lever 45, adapted for operation to move the rod 17 manually to unlocking position, the lever 45 being provided with a weight 46, by which it is maintained in normal position.

In practice when the switch-points are in normal position and the main line opened the socket or keeper 8 is in non-alinement with the end of the rod 17, under which conditions the track-lever 36 and detector-bar 11 are positively maintained in depressed condition, whereby trains may pass over the rails without contacting with said parts, thus relieving the latter and the mechanism of unnecessary wear. When it is desired to open the siding 4, the switch-points 3 are thrown manually through the medium of the operating member 7, the spring 9 being at the same time expanded and the rod 17 moved into locking engagement with the keeper 8, through the medium of the spring 41, the forward movement of the rod under the action of the spring serving to elevate the track-lever 36 above the rail. After the train has passed into the siding it is the duty of the operator to operate the lever 45 for moving the bar 17 to releasing position and permitting the switch-points to be returned to normal position by the action of spring 9. Should, however, the parts be left in condition with the siding open, a train approaching on the main line depresses the lever 36, which in turn acts through the medium of the bell-crank 38 for imparting rearward movement to the locking member 17, thus to release the bridle-bar 5 and permit the spring 9 to move the switch-points to normal position with the main line open. As soon as the lever 36 has been operated to move the locking-bar the wheels of the first car or engine pass onto and depress the detector-bar 11, which in its movement rocks the bell-crank lever 29 and imparts a rearward movement to the ac-

tuating member or lever 27. The lever 27 in turn acts upon the link 26 for moving the locking-lever 24 out of engagement with the tongue 19 to uncouple the section 18 from the locking-rod, whereupon a continued movement of the actuating member 27 under the action of the detector-bar 11 moves the section 18 rearward and depresses the lever 36, at the same time compressing spring 39, it being noted that the lever 36 will be maintained in depressed condition, thus obviating contact with the wheels of the remaining cars of the train and obviating pounding of the lever by the wheels. As soon as the train has passed from over the detector-bar 11 the latter is returned to normal position through the medium of springs 12, and thus operates the actuating member 27 and its adjacent mechanism for returning the section 18 to normal position and moving the locking-lever 24 into coupling engagement with the section. It is to be observed that owing to the provision of the slots 32 and 34 the actuating-lever 27 will have an initial movement sufficient to operate the locking member 24 prior to movement of the section 18 for depressing the lever 36.

Disposed at a point in rear of the track-lever 36 is a semaphore 47, operatively connected by a link 48 with a bell-crank lever 49, in turn connected by a rod 50 with a lever 51, engaged with the rod-section 18, the arrangement of the parts being such that when the rod 17 is moved forwardly into locking engagement with the bridle-bar 5 for holding the switches in shifted condition with the siding 3 open the semaphore will be turned in danger position, it being understood that when the parts are in normal condition with the main line open the semaphore stands in non-danger position.

In Figs. 6 and 7 there is illustrated a slight modification in which the rod 17 and its movable section 18 have their meeting terminals correspondingly beveled and adapted to overlap, there being carried by the locking member 24', which is in the form of a bell-crank lever pivoted in a collar 52, fixed on the section 18, a relatively movable engaging portion or link 53, designed to project through an opening 25, formed in the tongue of the section 18, and engage a notch or recess 54, provided in the tongue of the locking-rod 17, while formed on the collar 52, which normally embraces the overlapping portions of the rod and section 18, is a forward extension 55, designed to bear at a point beneath the link 53 when the parts are in normal coupled position. In other respects the construction and operation of the mechanism is identical with that above described.

From the foregoing it is apparent that I produce a simple device admirably adapted for the attainment of the ends in view, it being understood that in attaining these ends

minor changes in the details herein set forth may be resorted to without departing from the spirit of the invention.

Having thus fully described my invention, what I claim as new is—

1. In a device of the class described, a movable switch, means for shifting the same, a member for locking the switch in shifted position, said member including a relatively movable section, means for coupling said section to the locking member, a track device connected with the section, and automatically-operable means for uncoupling the member and section at determined intervals.

2. In a device of the class described, a movable switch, means for shifting the same, a locking member for maintaining the switch in shifted position, said member including a relatively movable section, a track-lever operatively connected with said section, a pivoted member for coupling the locking member and section, and means for operating the coupling member to couple and uncouple said parts at determined intervals.

3. In a device of the class described, a movable switch, means for shifting the same, a longitudinally-movable locking-rod for maintaining the switch in shifted position, said rod including a relatively movable section, a pivoted locking member for coupling the rod and section, a track device connected with the section, and means for operating the pivoted locking member to uncouple the section and rod at determined intervals.

4. In a device of the class described, a movable switch, means for shifting the same, a longitudinally-movable locking-rod for maintaining the switch in shifted position, said rod including a relatively movable section, a pivoted locking member designed for coupling the rod and section, a track device connected with the section and operable for actuating the rod, and means for operating the pivoted locking member to uncouple the rod and section at determined intervals.

5. In a device of the class described, a movable switch, means for shifting the same, a longitudinally-movable locking-rod for maintaining the switch in shifted position, said rod including a relatively movable section, a pivoted locking member designed for coupling the rod and section, a track device connected with the section and operable for actuating the rod, a depressible detector-bar, and an actuating-lever connected with the bar and having connection with the pivoted locking member and section, said actuating member being adapted when the bar is depressed to operate the pivoted locking member for uncoupling the section and for moving the latter rearwardly to depress the track device.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES B. BRINKER.

Witnesses:

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IRVING J. KING.