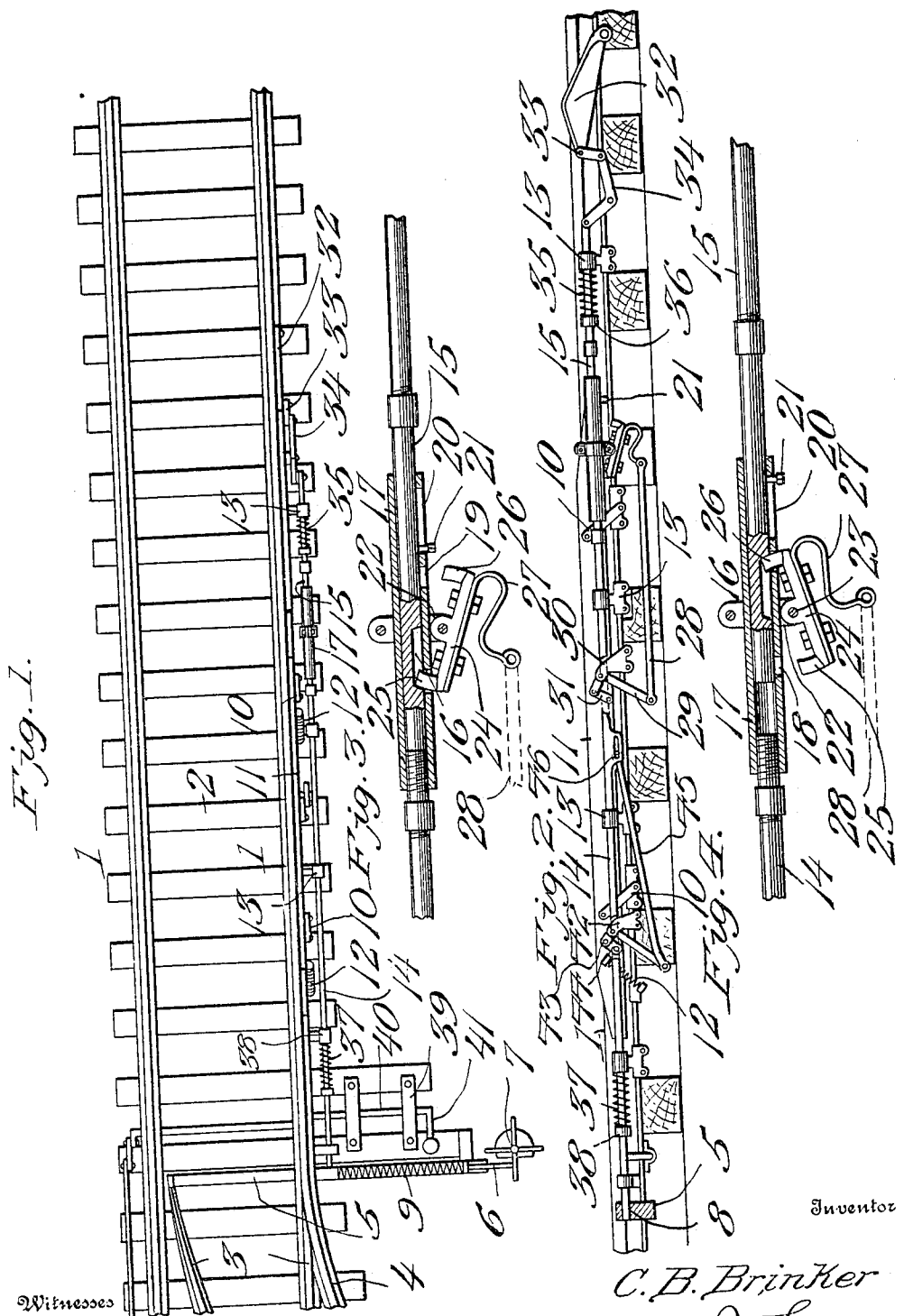


No. 818,866.

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C. B. BRINKER.
RAILWAY SWITCH.
APPLICATION FILED JAN. 5, 1906.



Witnesses

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RAILWAY-SWITCH.

No. 818,866.

Specification of Letters Patent.

Patented April 24, 1906.

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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 of the type disclosed in my prior application, filed September 30, 1905, Serial No. 280,782, in which the switch-points are normally maintained in position for presenting an open main line, there being embodied in the switch-operating mechanism a longitudinally-movable locking-rod adapted for locking the switch-points in position with the siding open and having a rear independently-movable section adapted to be coupled to or uncoupled from the locking-bar at predetermined intervals, as and for a purpose fully disclosed in said application.

The present invention has for its objects to provide an improved and simplified form of coupling member for connecting the sections of the locking-rod—one wherein the member will move readily and accurately in the operation of coupling and uncoupling the rod-sections and one in which the movements of the coupling member will be wholly automatic and the rear section of the rod be locked in uncoupled condition, thus to obviate its complete disconnection from the rod proper. 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 a 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 detail view, partly in section, of a portion of the locking-rod, showing the coupling member in uncoupled position. Fig. 4 is a similar view showing the member in uncoupled position.

Referring to the drawings, 1 1 designates 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, 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 13, attached to the rail 1, is a longitudinally-movable locking member or rod 14, which includes a rear independently-movable section 15, provided adjacent its forward end with a longitudinally-extending elongated opening or seat 16, while attached to the rear end of the rod 14 and having the forward portion of section 15 slidably arranged therein is a tubular connecting portion or section 17, provided with a pair of longitudinally-spaced transverse openings 18 19, with either of which the seat 16 may be brought into register, and having a longitudinal guide opening or slot 20, adapted to receive a connecting member or screw 21, tapped into the section 15 for connecting the same with the tubular portion 17. Pivoted between bearing-ears 22, provided on the tubular section 17, and by means of a vertical pintle or bolt 23 is a coupling member or piece 24, having terminal intumed engaging portions or fingers 25 26, designed to register with and enter, respectively, through the openings 18 19 for a purpose which will hereinafter appear, there being bolted or otherwise secured to the coupling-piece 24 a spring connecting element or arm 27, having its outer end pivotally engaged with one end of a connecting-link 28, the other end of which is in turn pivoted to one arm of a bell-crank lever 29, fulcrumed at its elbow in a bearing 30 and having its other arm connected by a link 31 with the detector-bar 11.

Pivoted to the side of the rail in rear of the locking-rod 14 is a depressible track-lever 32, connected at its forward end, by means of a link 33, with one arm of a bell-crank lever 34, in turn pivoted to the rail and having its other arm pivotally connected with the rear end of the section 15, on which is arranged an expansible spring 35, having bearing at one end against the adjacent bearing member 13 and at its other arm against a fixed collar 36 on the rod-section, said spring tending to move the section forwardly, while arranged on the locking-rod 14 at a point adjacent its forward end is an expansible spring 37, disposed between the adjacent bearing 13 and a fixed collar 38 on the rod and tending to move the latter to locking position.

Journalled in suitable bearings 39 and at a point adjacent the forward end of rod 14 is a rock-shaft 40, provided at its outer end with a right-angularly-disposed weighted arm 41 and having its inner end operatively connected with the locking-rod 17, said shaft being adapted for manual operation to move the rod 14 to unlocking position and to be held in shifted condition through the medium of the weighted arm 41.

In practice when the switch-points are in normal position and the main line open the socket or keeper 8 is in non-alinement with the end of the rod 14, under which conditions the track-lever 32 and detector-bar 11 are positively maintained in depressed condition, whereby trains may pass freely 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 14 moved into locking engagement with the keeper 8 under the action of spring 37, 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 throw the lever 40 for moving the bar 14 to releasing position and permitting the switch-points to be returned automatically to normal position under the action of spring 9. Should, however, the switch be left in condition with the siding open, a train approaching on the main line will depress the lever 32, which acts, through the medium of the intermediate connections, for imparting rearward movement to the locking-rod, thus releasing the bridle-bar and permitting the spring 9 to move the switch-points to normal position. After the lever 32 has been operated the front wheels of the train pass onto and depress the detector-bar 11, which in its movement rocks the bell-crank lever 29 and acts, through the intermediate connection, for swinging the coupling-piece 24 on its pivot, thus moving the engaging

portion 24 out of engagement with and releasing rod-section 15, whereby when the lever 32 is again struck by a wheel the section 15 will be moved rearwardly independent of the rod 14 to the position shown in Fig. 4, with the spring 35 compressed, the parts being locked in this position through the engagement of finger 26 with the recess 16, thus maintaining the lever in depressed condition and obviating contact of the wheels of the remaining cars therewith to avoid pounding of the lever by the wheels. When the detector-bar is again released, it will be moved upward by the springs 12 and in so moving will act, through the medium of lever 29 and link 28, for returning the coupling-piece 24 to the position seen in Fig. 3, it being apparent that immediately upon the finger 26 moving out of engagement with section 15 the latter will be returned to normal position, together with the lever 32, under the expansive action of spring 35. It will be observed that owing to the seat or recess 16 being elongated the rod 14 may move forwardly to locking position under the influence of spring 37 independently of the rod-section 15 and, further, that by the provision of spring-arm 27 the lever 29 and link 28 may complete their movement under the action of the detector-rail 11 prior to the finger 26 springing into engagement with the recess 16. When the switches are locked in position with the main line closed, a train passing out of the siding acts, through the medium of rail 11 and the intermediate connections, to operate the coupling member 24 for releasing rod-section 16, whereby when the lever 32 is reached and operated said section 15 may move rearward independently of and without operating the rod 14, thus to insure the latter remaining in proper locking engagement with the bridle-bar.

Pivoted in a bearing 42 is a bell-crank lever 43, having one of its arms connected by a link 44 with the detector-rail 11 and its other arm pivoted to a connecting element or rod 45, in turn having a pin-and-slot connection with the locking-rod 14, it being noted that the pin lies at the forward end of the slot when the parts are in normal condition and the detector-rail elevated. In the operation of the device when the track-lever 32 is depressed for moving the locking-rod rearwardly said rod will, owing to its connection with the link 44, rock the bell-crank lever 43 and positively depress the detector-rail. When, however, the rail is depressed by a train coming out of the siding, such movement of the rail will be independent of the locking-rod, owing to the pin-and-slot connection 46, whereby the rod will remain passive and in its proper locking position.

Having thus described my invention, what I claim 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 po-
sition and having a tubular portion provided
with an opening, said member including a
5 relatively movable section slidably disposed
in the tubular portion and having a seat
adapted to register with said opening, a track
device connected with said section, a coup-
ling member having an engaging portion
10 adapted to enter through said opening into
the seat, and means for automatically mov-
ing the coupling member to release the sec-
tion at determined intervals.

2. In a device of the class described, a
15 movable switch, means for shifting the same,
a member for locking the switch in shifted

position, said member including a relatively
movable section having slidable telescopic
engagement therewith and provided with a
seat, a track device connected with the sec- 20
tion, a movable coupling-piece having an en-
gaging portion designed for interlocking en-
gagement with said seat, and means for auto-
matically operating the coupling member at
determined intervals to release the section. 25

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

CHARLES B. BRINKER.

Witnesses:

JOHN L. FLETCHER,
KATHARINE ALLEN.