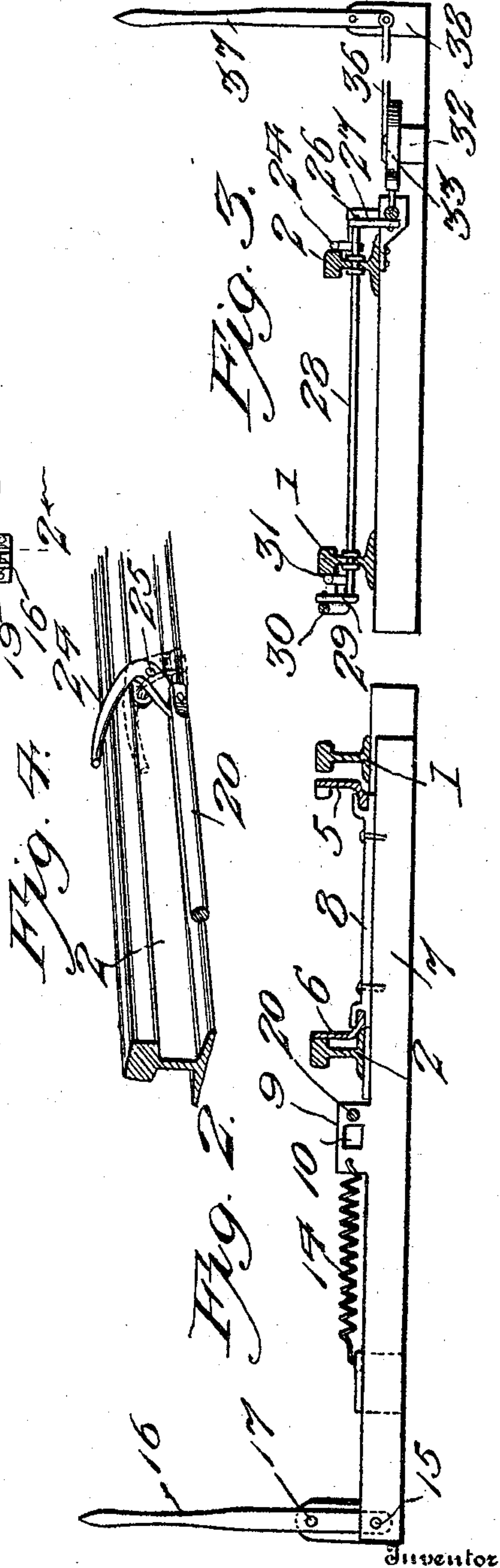
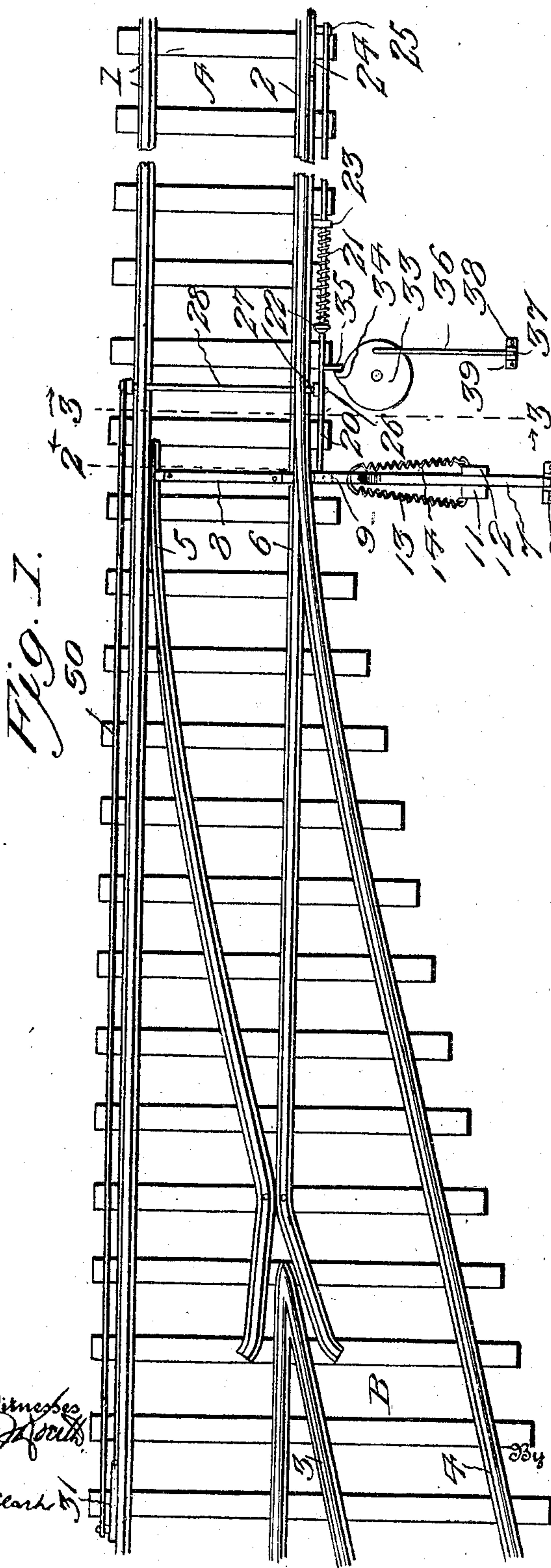


C. B. BRINKER.
RAILWAY SWITCH.
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RAILWAY-SWITCH.

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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.

A frequent cause of railway accidents is that a switchman opens a siding and neglects to close the same at the proper time, for which reason a train traversing the main line plunges into the siding and is wrecked or derailed.

The object of this invention is to prevent the occurrence of such accidents by equipping the siding-switch with mechanism whereby in the event that it be left open through neglect the approach of a train upon the main line will serve automatically to close said switch.

With the foregoing and other objects in view, which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed as a practical embodiment thereof.

In the accompanying drawings, forming part of this specification, Figure 1 is a plan view of a railway having a main track and a side track equipped with the improvements of the present invention. Fig. 2 is a transverse section thereof on the line 2 2 of Fig. 1. Fig. 3 is a similar section on the line 3 3 of Fig. 1. Fig. 4 is a perspective view showing one of the contact-shoes.

Like reference numerals and letters indicate corresponding parts in the different views.

The improvements of this invention are illustrated in connection with a main track A and a side track B, the main track comprising the rails 1 and 2 and the side track comprising the rails 3 and 4. The transfer of a train from the main track A to the side track B is effected through suitable switch-point levers 5 and 6, which are adapted to be operated simultaneously by means of a bar 7, arranged to slide transversely of the main track beneath the rails thereof, as indicated in Fig. 2, said switch-point levers 5 and 6 being connected with the sliding bar 7 by means of a suitable clamping-plate 8. The sliding bar 7 is provided, preferably on its upper surface, with a lug or offset 9, which is formed with a suitable perforation 10. Connected to a pair of guide-blocks 11 12, between which the sliding bar 7 is adapted to move, is a pair of retract-

ing-springs 13 and 14, which serve normally to hold the bar 7 in such retracted position that the switch-point lever 6 is closed, whereby the main line is opened for the passage of trains without danger of side-tracking and thus wrecking or derailling the same. Pivotaly connected with the rear end of the sliding bar 7, as shown at 15, is a hand-lever 16, which is fulcrumed at 17 between suitable uprights 18 19, arranged upon opposite sides of the sliding bar 7.

Arranged parallel with the track 2 of the main line is a rod 20, which abuts at its end against the lug or offset 9 adjacent to the perforation 10, as indicated in Figs. 1 and 2. The rod 20 is forced against the lug or offset 9 by means of a coil-spring 21, which surrounds said rod, said spring 21 bearing at one end against a collar 22 upon the rod 20 and at the other end against a bracket 23, which is secured to the rail 2 and through which the rod 20 extends. At the end thereof removed from the switch the rod 20 is pivotally connected with the lower end of a contact-shoe 24, which is pivotally connected intermediate its ends, as shown at 25, with the rail 2, as indicated in Fig. 4.

Pivotaly connected in any suitable manner with the rod 20, as shown at 26, is a crank 27, which is connected with a shaft 28, extending transversely of the main track A. At the end thereof opposite the crank 27 the shaft 28 is provided with a second crank 29, which extends in a direction opposite the crank 27 and has connected with the end thereof a rod 30, which extends parallel with the track 1. The rod 30 is connected at its end with a contact-shoe 31, which is similar in all respects to the contact-shoe 24. (Illustrated in Fig. 4.)

Rotatively mounted upon the upper end of a column 32, located adjacent to the track 2, is a disk 33, which is formed upon its periphery with a projection 34, adapted to contact with a laterally-extending arm 35 upon the spring-operated rod 20. The disk 33 is adapted to be rotated by means of a link 36, the end of which is bent down and inserted into a suitable socket in said disk. At the end thereof opposite the disk 33 the link 36 is pivotally connected with the lower end of a hand-lever 37, pivoted between suitable uprights 38 and 39.

Constructed as hereinbefore described, the operation of the improved switch mechanism is as follows: When it is desired to open the

switch so as to permit a train to enter the side track, the switchman operates the hand-lever 16 in such manner as to move the sliding bar 7 toward the right against the tension of the retracting-springs 13 and 14, thus moving the switch-point 5 against the rail 1 and moving the switch-point 6 away from the rail 2. As soon as the perforation 10 in the lug or offset 9 of the sliding bar 7 is disposed across the end of the rod 20 the spring 21 acts to force said rod forward until it enters said perforation 10, thus locking the switch in opened position against the tension of the retracting-springs 13 and 14, the action of which is to withdraw the sliding bar 7, and thus close the switch. As soon as the bar 20 slides forward to enter the perforation 10 and lock the switch in opened position the contact-shoe 24, which normally is disposed in a position below the tread-surface of the rail 2, is raised above said rail into position to be struck and depressed by a train approaching the switch. In like manner the contact-shoe 31, through the crank-shaft 28 and rod 30, is elevated above the track as soon as the rod 20 slides forward into the perforation 10. By reason of this arrangement of the contact-shoes 24 and 31, in the event that the switchman should open the switch and neglect to close the same at the proper time a train approaching the switch along the main line A from either direction will strike and depress one or the other of the contact-shoes, thus serving to withdraw the spring-operated rod 20 from the perforation 10 and permit the springs 13 and 14 to exert their force in retracting the sliding bar 7, and thus closing the switch, whereby any liability that a train on the main line will accidentally enter the side track and be derailed or wrecked is automatically prevented.

In order that the switchman may be able voluntarily to close the switch without the necessity of walking along the track until he shall be able to operate one or the other of the contact-shoes 24 and 31, the hand-lever 37 is provided. By operating this hand-lever 37 to rotate the disk 33 the spring-operated rod 20 is manually withdrawn from the perforation 10, thus permitting the retracting-springs 13 and 14 to close the switch. It will be understood that when the rod 20 is withdrawn from the perforation 10 either by means of the hand-lever 37 or of one or the other of the contact-shoes 24 and 31 both of said contact-shoes will be automatically depressed, so as to be disposed in a position below the tread-surface of the adjacent rail.

It will be understood that for the purpose of this invention the train is provided with a suitable device for contacting with the shoes 24 and 31. The construction of such device is such that it may be raised away from the railway-track when it is desired that the con-

tact-shoes 24 and 31 shall not be operated; otherwise during the switching operation the switch might be accidentally closed at the wrong time. As any suitable mechanism may be employed upon the locomotive for striking and depressing the contact-shoes and as such mechanism forms no part of the present invention, it is deemed unnecessary to illustrate the construction thereof in this application.

Changes in the precise embodiment of invention illustrated and described may be made within the scope of the following claims without departing from the spirit of the invention or sacrificing any of its advantages.

Having thus described the invention, what is claimed is—

1. The combination with a railway-track having switch-point levers, of a bar arranged transversely across the track and connected with said switch-point levers, spring means connected with said bar for retracting the same, a spring-pressed rod bearing against the bar and adapted to lock the same in advanced position against the tension of the spring means, a contacting shoe connected with said spring-operated rod, a crank-shaft pivotally connected with said spring-operated rod and extending transversely across the track, a second contacting shoe connected with said crank-shaft, and manually-operable means adapted to act upon the spring-pressed rod for retracting the same.

2. The combination with a railway-track having switch-point levers, of a bar arranged transversely across the track and connected directly with said switch-point levers, spring means connected directly with said bar for retracting the same, a hand-lever connected directly with said bar, a perforated lug on said bar, a spring-operated rod bearing against said lug adjacent to the perforation therein, a contact-shoe connected directly with said spring-operated rod and pivotally mounted adjacent to the railway-track, a crank-shaft pivotally connected with said spring-operated rod and extending transversely across the track, a second contact-shoe, a rod connecting said crank-shaft with said second contact-shoe, a rotary disk having a projection thereon, a lateral arm on said spring-operated rod adapted to be engaged by the projection on said disk, a link connected to said disk for rotating the same, and a lever connected to said link.

3. The combination with main and branch line rails, of movable switch-points, an element movable with said points and provided with a keeper, a longitudinally-movable locking member adapted for engagement with the keeper, a track-lever connected with the locking member and normally lying beneath the tread of one of the rails, means for shifting the switch-points to open the branch line, a spring acting directly upon and for automat-

ically moving the locking member to engaging position and simultaneously setting the track-lever, the latter being operable by a vehicle traveling on the rails to retract the locking member, and means for automatically returning the switch-points to normal position for maintaining the main line open.

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

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Witnesses:

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