

J. E. MUSTARD.
SAFETY SWITCH.

APPLICATION FILED AUG. 8, 1908.

925,589.

Patented June 22, 1909.

2 SHEETS—SHEET 1.

Fig. 8.

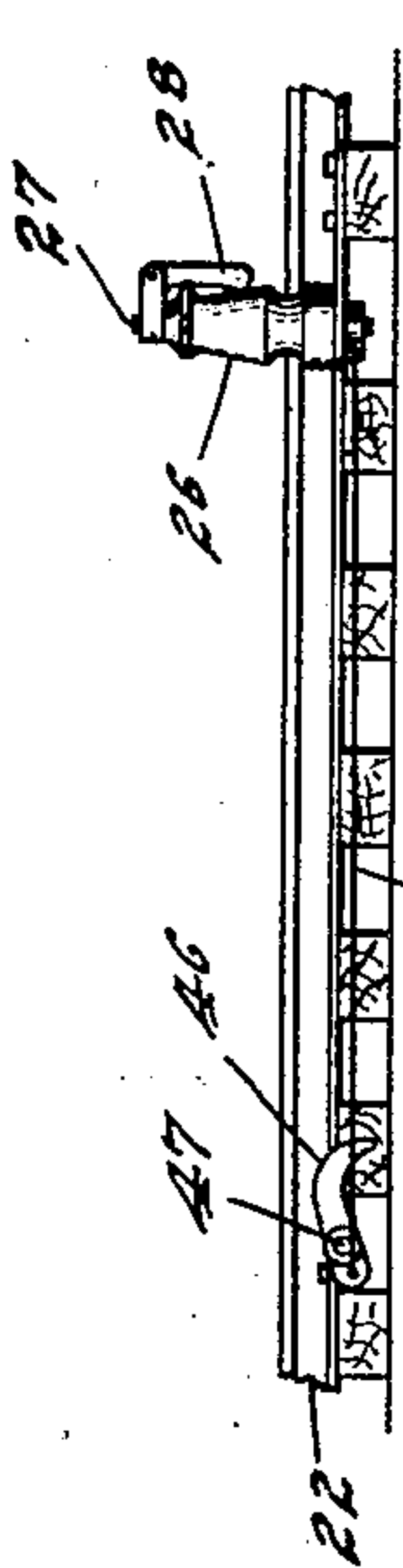


Fig. 1.

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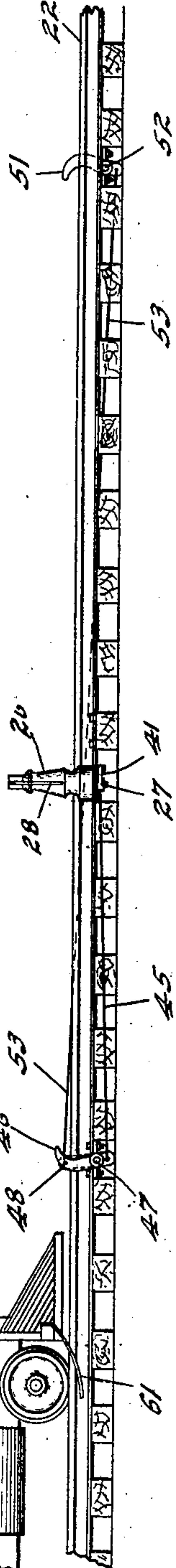
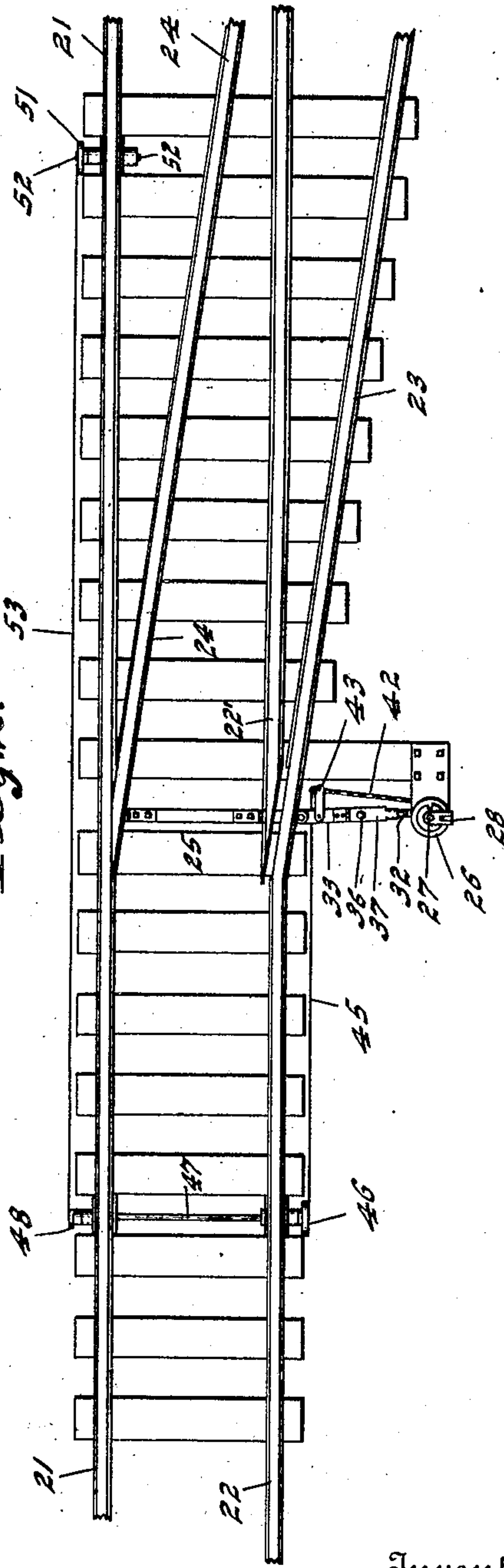


Fig. 2.



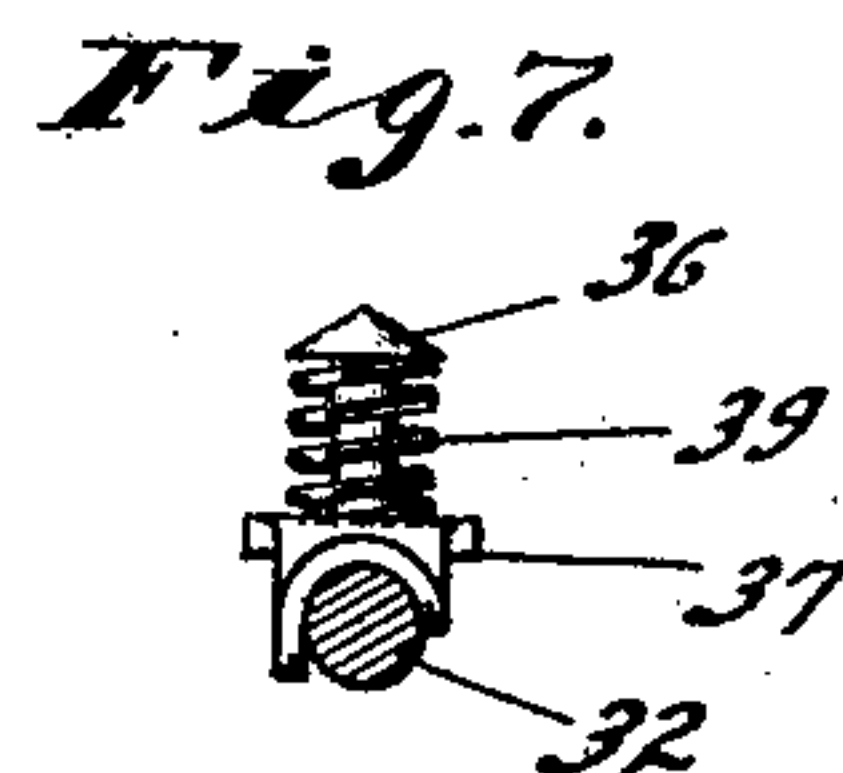
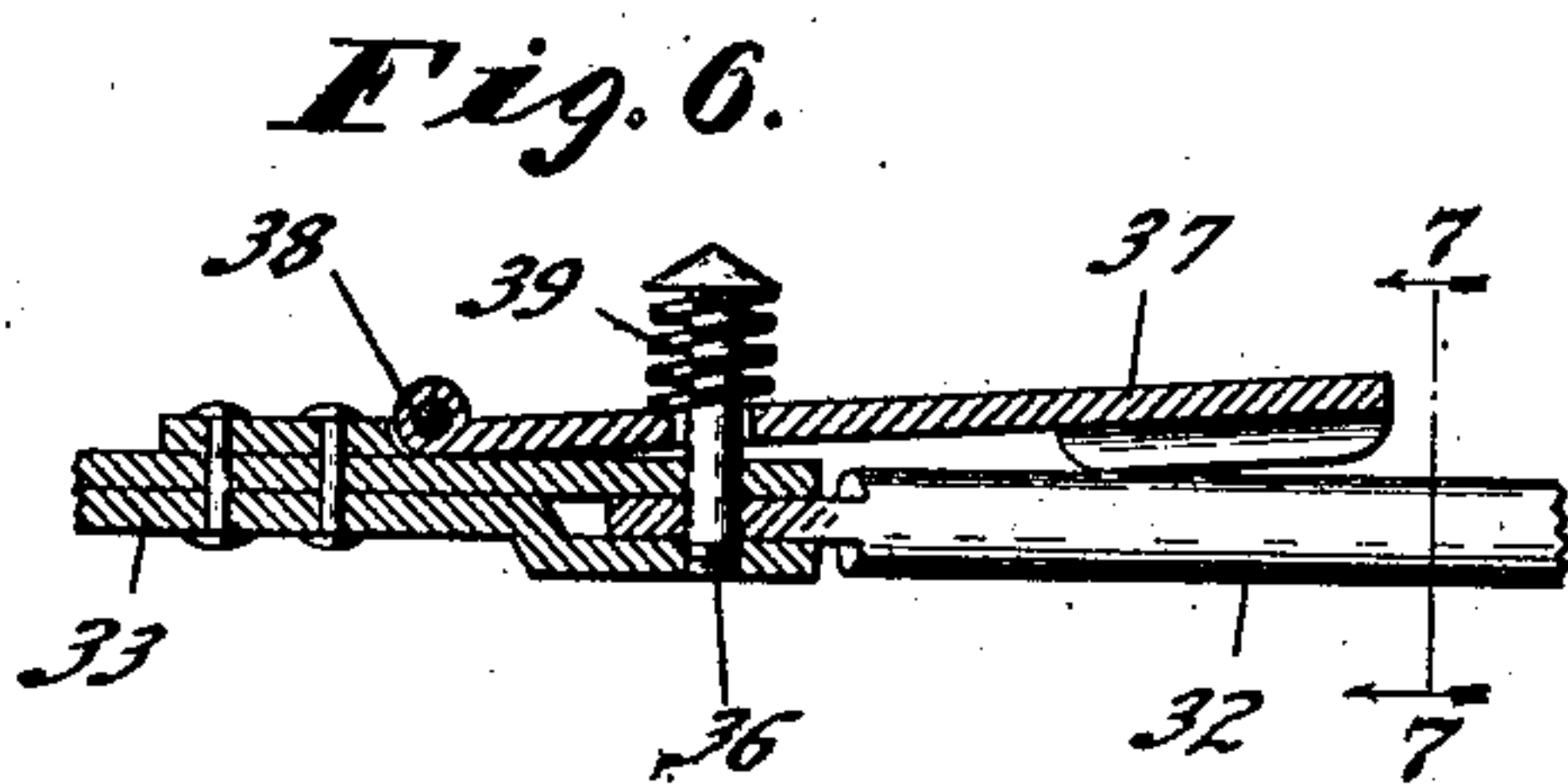
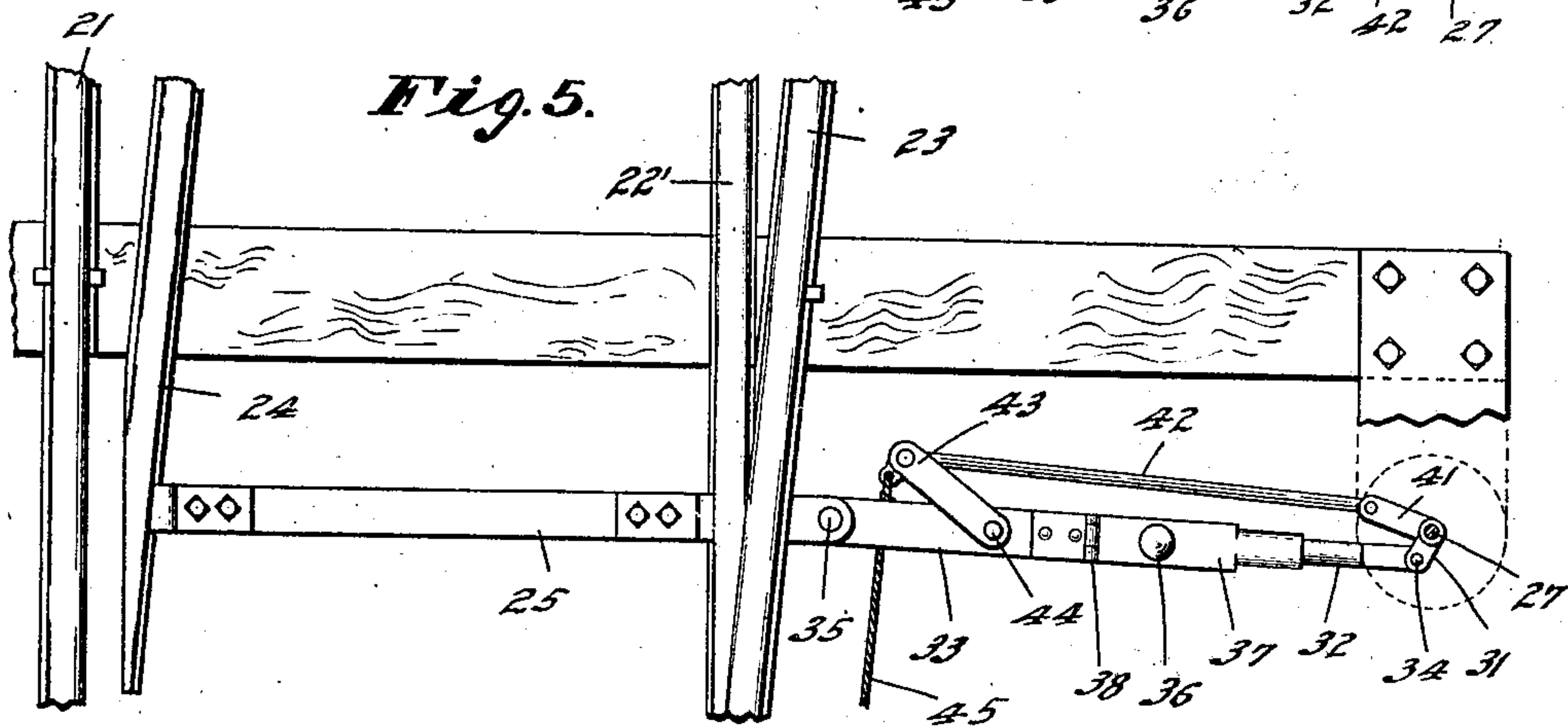
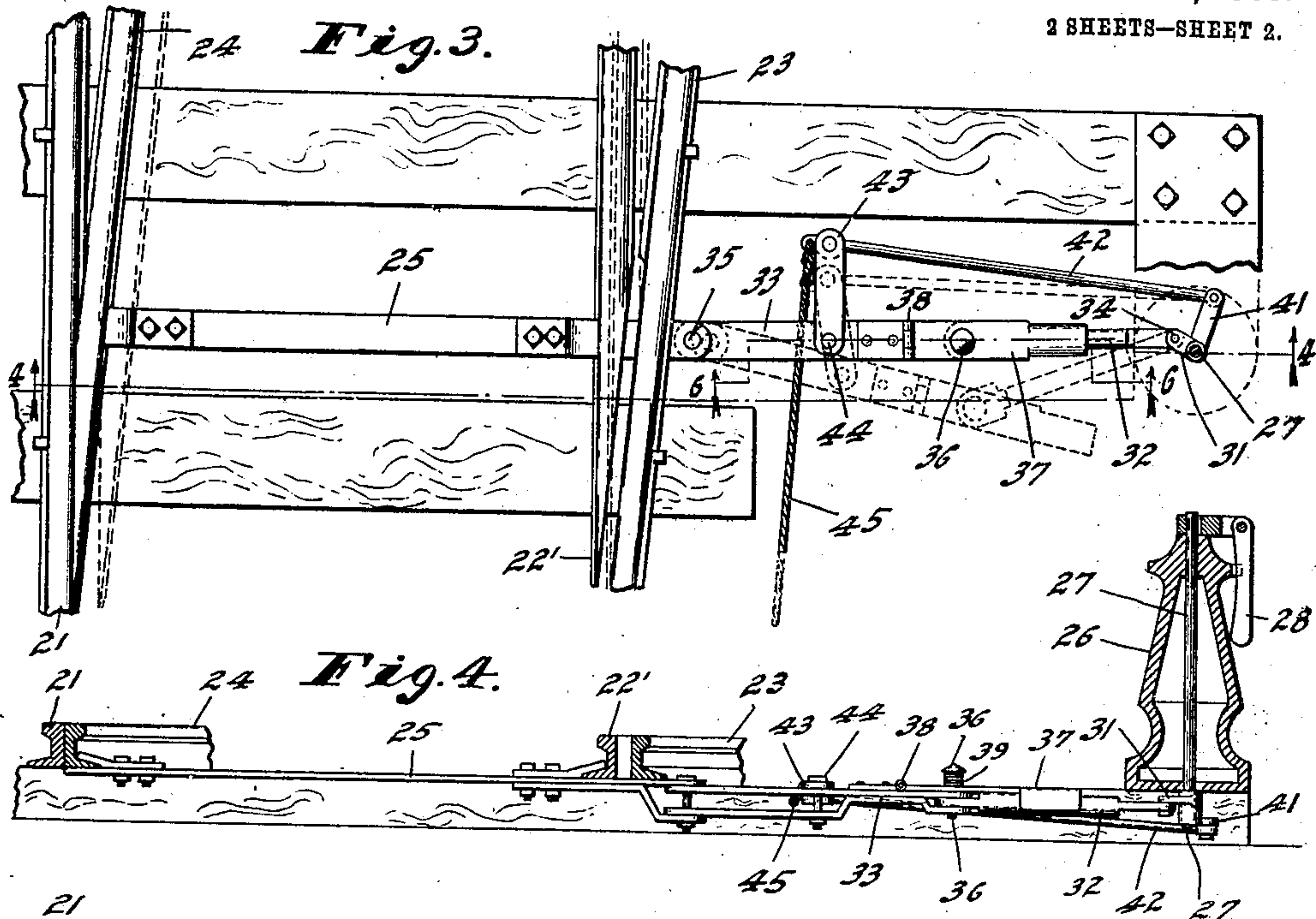
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

JAMES E. MUSTARD, OF OROVILLE, CALIFORNIA, ASSIGNOR OF ONE-HALF TO THOMAS M. ANDREW, OF LA FAYETTE, INDIANA.

SAFETY-SWITCH.

No. 925,389.

Specification of Letters Patent.

Patented June 22, 1909.

Application filed August 8, 1908. Serial No. 447,565.

To all whom it may concern:

Be it known that I, JAMES E. MUSTARD, a citizen of the United States, residing at Oroville, in the county of Butte and State of California, have invented certain new and useful Improvements in Safety-Switches, of which the following is a specification.

My present invention consists of certain improvements upon that shown and described in my Letters Patent No. 508,232, dated November 7, 1893, whereby the construction and operation are simplified, as will be hereinafter more particularly described and claimed.

Referring to the accompanying drawings, which are made a part hereof, and on which similar reference characters indicate similar parts, Figure 1 is a side elevation of a portion of a railway track embodying a switch containing my present improvements, and showing a fragment of a locomotive approaching and about to operate said switch, the parts being in the position they occupy when the switch is open; Fig. 2 is a top or plan view of the portion of track and switch; Fig. 3 a detail plan view of the switch and immediately adjacent parts, on an enlarged scale; Fig. 4 a transverse sectional view thereof, as seen from the dotted line 4—4 in Fig. 3; Fig. 5 a view similar to Fig. 3, but with the switch in its opposite or shifted position; Fig. 6 a detail sectional view, on a still further enlarged scale, as seen when looking in the direction indicated by the arrows from the dotted line 6—6 in Fig. 3; Fig. 7 a transverse sectional view as seen when looking in the direction indicated by the arrows from the dotted lines 7—7 in Fig. 6, and Fig. 8 a view similar to Fig. 1, but with the parts in the positions they occupy when the switch is closed.

The main track rails 21 and 22 and switch rails 23 and 24 are of an ordinary construction and arrangement. The portion 22' and the corresponding end of rail 24 are movable, as is common, and are united by a switch bar 25. In an ordinary switch stand 26 is mounted an ordinary vertically disposed shaft 27, upon the upper end of which is the operating handle 28 and which is provided at the lower end with an arm 31, which is connected by means of a jointed link (forming a continuation of the switch bar) composed of two parts 32 and 33 with the adjacent end of the switch bar 25, the connection

being made by means of pivots 34 and 35. The two parts 32 and 33 of the links are connected by a hinge formation, the stud 36 serving as the hinge pintle. A latch 37 is secured to the member 33 by a hinge connection 38, and engages with member 32 as shown. The stud 36 extends up far enough to enable the spring 39 to be placed between its head and the upper surface of latch 37, and serves to hold said latch into engagement. So far, the construction is very similar to that shown and described in my Patent 508,232, above referred to.

The shaft 27 has upon its lower end a second arm 41, which is connected, by means of a link 42, with a swinging arm 43, and said swinging arm is connected by pivot 44 with member 33. A connection 45 extends back from swinging arm 43 to an operating lever 46, which lever is arranged alongside the railway track, and is carried by rock shaft 47. On the opposite end of rock shaft 47 is an arm 48. At the opposite side of the switch, alongside track rail 21, is a second operating or switch lever 51, similar to operating lever 46. This is pivoted and mounted on a suitable shaft 52, and is connected by means of a suitable connection 53 with the lower end of arm 48 on rock shaft 47.

When the two members 32 and 33 are in line with each other and held to position by latch 37, the switch is operated from the switch stand by means of handle 28, in the ordinary and well known manner. The switch stand is provided with notches adjacent to said handle with which said handle will engage and by means of which the switch is locked to either of the two ordinary positions, all as will be readily understood.

The operation of my invention is as follows: Assuming now that the switch is in its "open" position, as shown in all the drawings except Figs. 5 and 8, and assuming that a train is approaching which would pass on the main track, a strike, as 61, secured to the locomotive will come in contact with the lever 46 when the train is moving in one direction, and with the lever 51 when the train is moving in the other direction, and, through the various connections, will close the switch, as will be readily understood. The force imparted to lever 46 will, through connection 45 and swinging arm 43, overcome the engaging force of latch 37, and swing the parts from the position indicated by the full lines in Fig. 110

3 to the position indicated by the dotted lines therein, without moving the switch shaft 27 or its handle 28. The switch is, therefore, by this simple device, rendered entirely safe, and all accidents due to a careless leaving of the switch open are entirely precluded. The strike 61, and the lever with which it comes in contact, being always upon the right hand side, are only operated when a train is advancing. The operation of backing into the switch will not therefore be interfered with. When the switch is closed, and the parts thus thrown to the position indicated in Figs. 5 and 8, there will be no contact whatever, as the connection 45 will be slackened enough to permit the levers 46 and 51 to lie down alongside the track, the rock-shaft 47 rocking to that extent. As will be observed by a comparison of Figs. 3 and 5, the arm 43 when the switching levers are in operative position is substantially at right angles with the part to which it is attached; while, when the switch is closed, said part 43 is swung around to an acute angle with the part to which it is attached.

By my present invention I dispense with the pulleys and necessary accompanying devices, and also with the duplication of strikes on the locomotive and with the necessary multiplication of parts necessary to my former invention, and secure a greater certainty of operation.

Having thus fully described my said invention, what I claim as new, and desire to secure by Letters Patent, is:—

1. The combination, in a railway switch, with the switch points, of a switch bar composed of three parts jointed together, a yielding latch whereby two of said parts are normally held in line, an arm pivotally mounted on said switch bar, a lever located alongside the track and connected to said arm on said switch-bar, a link connecting said pivoted arm and an arm on the switch shaft, and a strike or contact device on a mov-

ing train attached to come in contact with said lever alongside the track, whereby the jointed switch-bar is forced from its straight position and the switch opened without shifting the position of the switch-shaft, said switch-shaft being enabled by means of its link connection with the pivotally-mounted arm to release said switch-lever from operative position.

2. The combination, in a railway switch, with the switch points, of a switch bar composed of three parts jointed together, a switch stand, a switch shaft therein having the ordinary operating handle upon its upper end, and means for locking the same in its operated positions, two arms at its lower end, one of which is connected to said switch bar, an arm pivotally mounted on said switch bar, a link connecting the other of the arms on the switch shaft with said pivotally-mounted arm, and means operable from the moving train for actuating the switch through the last mentioned arms and link.

3. The combination, in a railway switch, with the switch points, of a switch bar composed of three parts jointed together, a yielding latch whereby said parts are normally held in line, means operable from the moving train for overcoming the latch and closing the switch when thrown to open position by the ordinary means, said means including a swinging arm carried by said switch bar and a connection from said swinging arm to the switch shaft whereby when the switch is closed the means for operating the switch by the moving train will be rendered inoperative.

In witness whereof, I, have hereunto set my hand and seal at La Fayette, Indiana, this 3d day of August, A. D. one thousand nine hundred and eight.

JAMES E. MUSTARD. [L. s.]

Witnesses:

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