

R. P. KIBLINGER.
RAILWAY SWITCH.
APPLICATION FILED APR. 12, 1909.

935,157.

Patented Sept. 28, 1909.
2 SHEETS—SHEET 1.

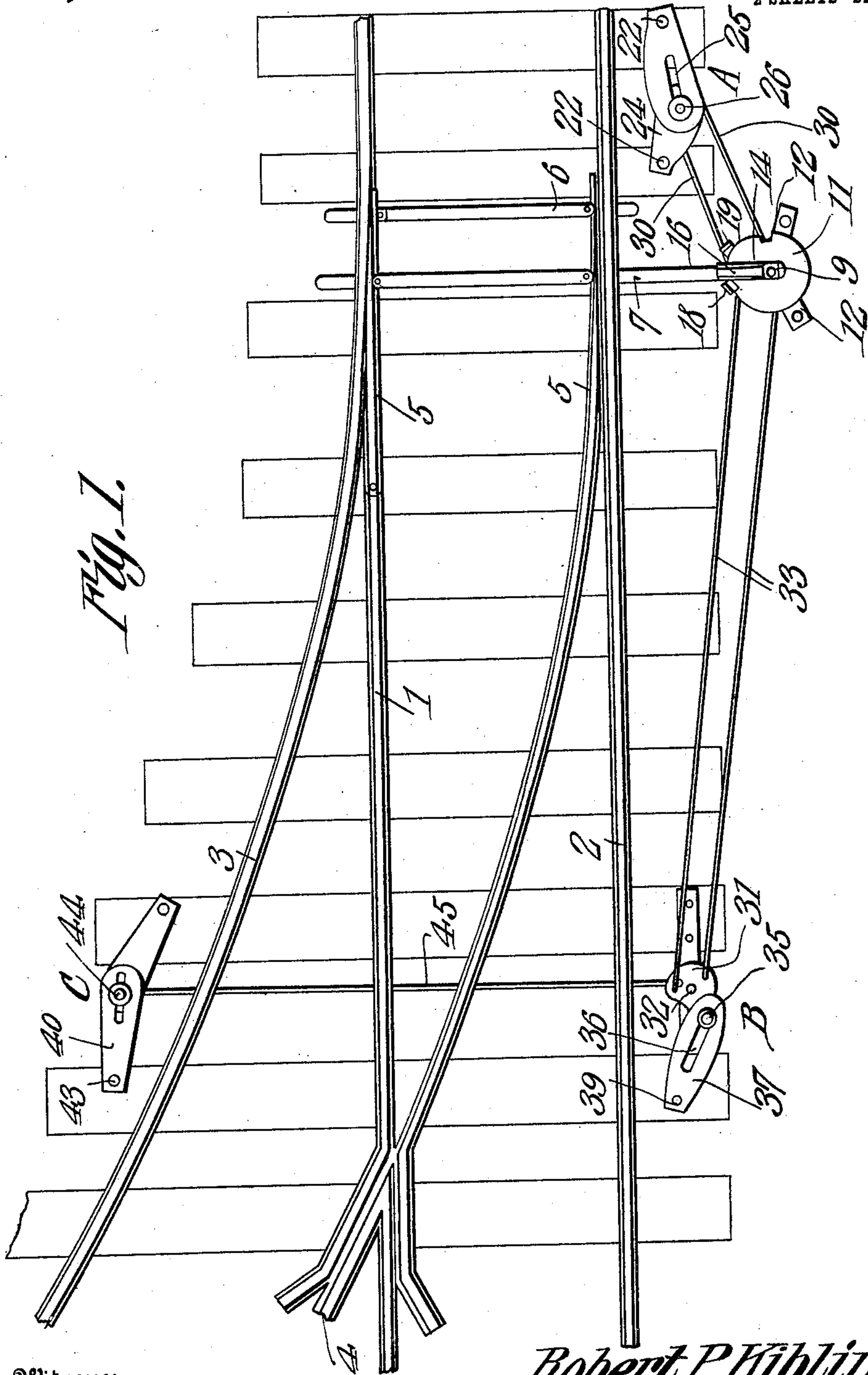


Fig. 1.

Witnesses

Herbert A. Lawson

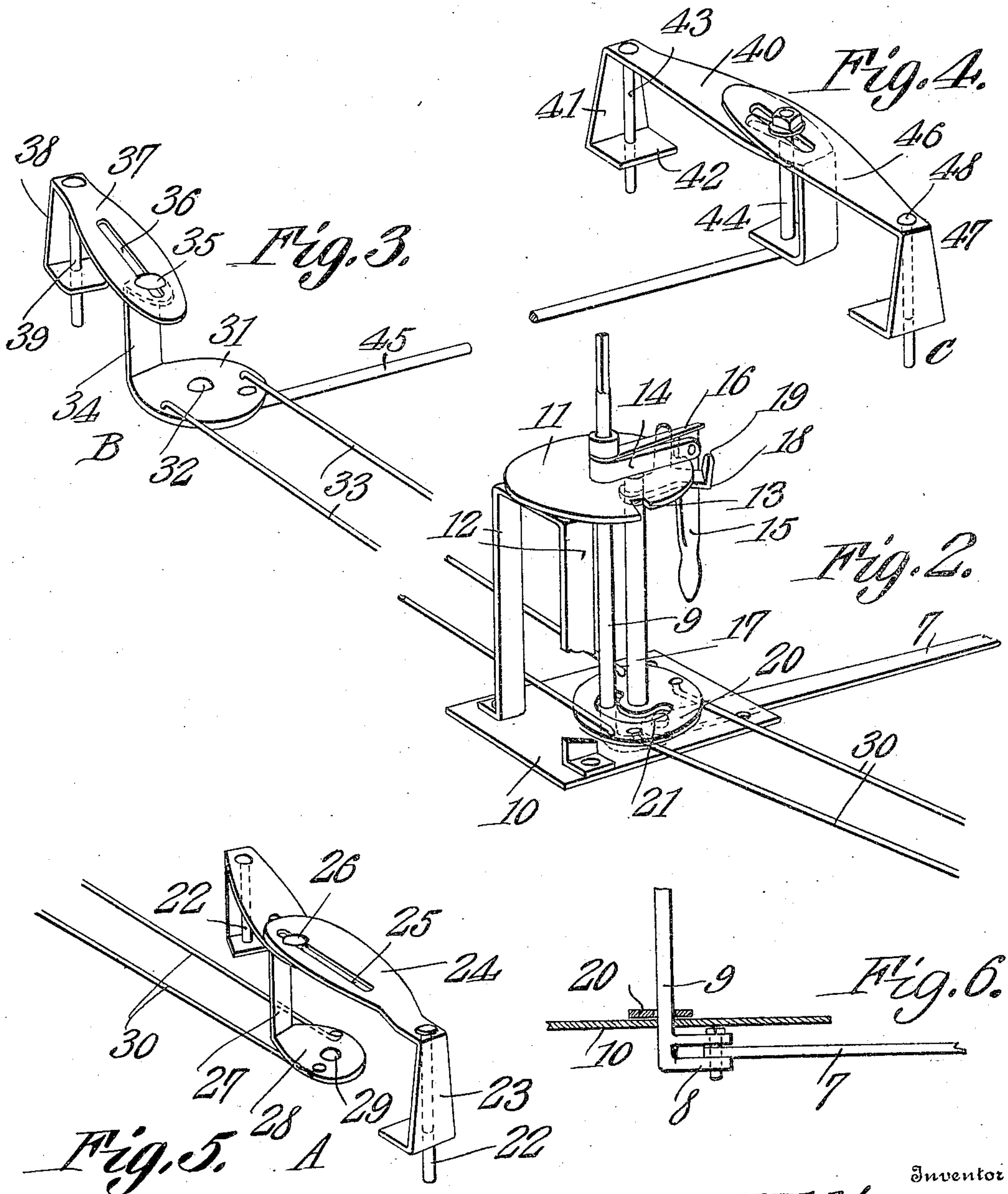
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UNITED STATES PATENT OFFICE.

ROBERT PETER KIBLINGER, OF MINERAL, VIRGINIA.

RAILWAY-SWITCH.

935,157.

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To all whom it may concern:

Be it known that I, ROBERT PETER KIBLINGER, a citizen of the United States, residing at Mineral, in the county of Louisa and State of Virginia, have invented a new and useful Railway-Switch, of which the following is a specification.

This invention relates to railway switches and more particularly to means whereby the switch may be thrown automatically by mechanism carried by a car approaching the switch.

One of the objects of the invention is to provide a switch of this kind of novel construction having means for locking it when the switch is in open or closed position, car operated means being employed for successively unlocking the switch mechanism from the stand and shifting the mechanism so as to throw the switch.

A further object is to provide a simple means located adjacent to the rails and designed to be actuated by devices carried by cars, said means being novel in construction and easy to operate.

A further object is to provide switch throwing mechanism, designed to be actuated to throw the switch in one direction when a car or train approaches the switch and to shift the switch in the opposite direction as the car or train leaves the switch, there being separate actuating devices located at the two ends of the car or train.

With these and other objects in view the invention consists in certain novel details of construction and the combinations of parts hereinafter more fully described and pointed out in the claims.

In the accompanying drawings the preferred form of the invention has been shown.

In said drawings: Figure 1 is a plan view of a switch embodying the present invention, the switch tongues being shown locked in closed position. Fig. 2 is a perspective view of the switch stand and the adjoining parts of the rods connected thereto, one of the standards of the stand being broken away. Figs. 3, 4, and 5, are perspective views of different switch throwing devices embodied in the mechanism. Fig. 6 is a view partly in elevation and partly in section through a portion of the lower part of the switch stand and showing the connections between the switch bar and the operating shaft.

Referring to the figures by characters of reference, 1 and 2 designate the rails of the

main track and 3 and 4 designate the rails of the siding, there being movably mounted switch tongues 5 arranged to direct cars from the main line and onto the siding or past the said siding. These tongues are provided with a connecting bar 6 such as ordinarily used and an operating bar 7 is attached to the tongues and extends beyond the main track rails 2, the same being pivotally attached to the crank arm 8 located at the lower end of an actuating shaft 9. The shaft is journaled within the base 10 and the head 11 of a switch stand, the head being supported above the base upon standards 12 and being provided in its edge with notches 13 disposed preferably at 90° apart. An arm 14 is secured to the upper portion of the standard 9 and has a locking handle 15 pivotally connected to it and designed to hang within either of the notches 13 and thus lock the shaft 9 against movement. A spring 16 is carried by the arm 14 and bears against the adjoining end of the handle 15, this spring serving to hold the handle normally inserted into one of the notches 13.

Journaled within the head 11 and base 10 at points removed from the shaft 9 is a spindle 17 the upper portion of which has a Y-shaped deflecting arm 18 extending therefrom and provided with upstanding terminal ears 19 located beyond the edge of the head 11, the handle 15 being supported at all times within the fork of this Y-shaped arm. A disk 20 is secured to and moves with the lower portion of the spindle 17 and has an arcuate slot 21 through which the shaft 9 extends.

It is necessary to use in connection with the switch stand, three actuating devices, one of said devices being located adjacent the rail 3 of the siding, while the other two devices are located adjacent the rail 2 of the main track and at opposite ends of the switch. The actuating device A— which is located adjacent the rail 2 and in advance of the switch consists of spaced upstanding pivot devices 22, each of which has a substantially U shaped member 23 pivotally mounted thereon, the upper ends of the members being formed with elongated arms 24 which are provided with longitudinal slots 25. These arms lap at their free ends and have their edges curved, the lapping portions of the slots 25 serving to receive a stud 26, upstanding from an arm 27 which is arranged upon the peripheral portion of

a disk 28. This disk is pivotally mounted as shown at 29 and has rods 30 pivotally connected thereto at diametrically opposed points, said rods 30 being likewise pivotally connected to the disk 20 at opposite portions thereof.

The actuating device B is located adjacent the rail 2 of the main track in rear of the switch and consists of a disk 31 pivotally mounted at its center as indicated at 32 and attached to opposed portions of the disk 20 by means of substantially parallel rods 33. An arm 34 extends upwardly from the edge of the disk 31 and is provided with a stud 35 which works within a longitudinal slot 36 formed within an arm 37. This arm extends from a member 38 which is mounted on a pivot device 39, said member being substantially U shaped or yoke like and the arm 37 being provided with round edges so as to operate at the cam in the manner hereinafter set forth.

The third operating device has been indicated at C and is located adjacent the rail 3 of the siding, said device consisting of an arm 40 having its end extending downwardly at angles thereto as indicated at 41 and provided with an inwardly directed terminal 42, there being a pivot device 43 extending through one end of the arm and its terminal 42 while the other ends of said arm and the terminal engage the upstanding end portion 44 of a rod 45 which extends under the rail and is pivotally connected to the disk 31. This upstanding end portion 44 of the rod 45 is also engaged by the longitudinally slotted portion of an arm 46 having a downwardly extending L shaped portion 47 at one end and which is engaged by a pivot device 48. The arms 46 and 40 are rounded so as to operate as cams in the manner hereinafter set forth.

In order to operate the mechanism herein described it is necessary to mount upon a car a suitable form of tripping device capable of being shifted upon the car so as to ride against either longitudinal edge of each of the arms 24, 37 and 40. Any preferred form of such a device may be utilized and in-as-much as it constitutes no part of the present invention it has been deemed unnecessary to illustrate it.

When the switch is closed as shown in Fig. 1, the handle 15 on arm 14 rests within one of the notches 13 and thus locks the parts against movement. Should it be desired to open the switch the tripping device upon the car approaching the same is shifted so as to strike the outer edge of the upper arm 24. Said arm will therefore be shifted laterally in the direction of the rail 2 and the lapping ends of the two arms will shift the stud 26 and arm 27 so as to partly rotate the disk 28 and move the two rods 30 in opposite directions simultaneously, these rods thus serving

to partly rotate the disk 20. The Y shaped deflecting arm 18 will thus strike against the handle 15 and shift it out of the notch in which it is seated, and will pull said handle and the arm 14 around the head 11 until the handle is in position to drop into the other notch 13. This movement of the arm 14 produces a corresponding movement of the shaft 9 and the rod 7 thus shifting the switch tongues to open position. At the same time the disk 20, which rotates in the manner heretofore stated, transmits motion through the rod 33 to the disk 31. The arm 34 will therefore shift the arm 37 laterally out of its initial position and at the same time the rod 45 will pull upon the two arms 40 and 46 and shift them toward the rail 3. The switch tongues having thus been shifted, the car will pass on to the siding 3 and as it leaves the switch the tripping device upon the car will pass between the arms 40 and 46 upon the rail 3 and push them laterally away from said rail so as to return all of the mechanism, including the switch tongues, to its initial position.

When a car is approaching the switch from the siding or along the main track in a direction opposite to that heretofore described, the tripping device thereon will act upon the arm 40 or the arm 37 as the case may be so as to actuate the switch mechanism in the same manner as heretofore described, thus causing the switch tongues to move out of the path of the wheels approaching the switch.

It is to be understood of course that separate tripping devices are to be used for actuating the mechanism to open the switch and to close it and where a train of cars is designed to travel over the switch one of the tripping devices is preferably arranged upon the locomotive while the other is placed upon the rear car of the train. This arrangement of course secures the actuation of the switch immediately prior to the arrival of the train thereon and immediately subsequent to the passage of the last car therefrom.

It is to of course be understood that various changes may be made in the construction and arrangement of parts without departing from the spirit or sacrificing the advantages of the invention.

What is claimed is:—

1. The combination with a switch stand, a switch tongue actuating shaft journaled therein and a locking member movable with said shaft and normally engaging the stand, of revoluble car operated means movable in either direction for successively disengaging the locking member from the stand and actuating the shaft to shift the tongue.

2. The combination with a switch stand, a switch tongue actuating shaft journaled therein, and a locking member movable with

the shaft and normally engaging the stand, of an element mounted for partial rotation within the stand, means movable thereby for disengaging the locking member upon the stand when said element is rotated in either direction and car operated means for actuating the element.

3. The combination with a switch stand, a switch actuating shaft journaled therein and a locking member movable with the shaft and normally engaging the stand, of an element mounted for rotation within the stand, means movable therewith for successively disengaging the locking device from the stand and actuating the shaft during the movement of said element in either direction and car operated means for actuating said element.

4. A device of the class described comprising a switch stand, a switch tongue actuating shaft journaled therein, and a locking device movable with said shaft, and normally engaging the stand, an element mounted for partial rotation in either direction within the stand, means carried thereby for successively disengaging said locking device from the stand and for shifting the device to partly rotate the shaft during the movement of said element in either direction and separate car operated means for actuating said element.

5. An apparatus of the class described comprising a switch tongue, a switch stand, a tongue operating shaft journaled within the stand, an arm extending therefrom and movable therewith, a locking handle movably connected to the arm and normally in engagement with the stand, a handle deflecting device movably mounted within the stand, and car actuated means for shifting said device in either direction to move the handle out of engagement with the stand and to actuate the shaft.

6. An apparatus of the class described comprising a switch stand, a shaft mounted for partial rotation therein, a switch tongue, connections between the shaft and tongue, an arm movable with and extending from the shaft, spring controlled means upon the arm for engaging the stand to hold the shaft against movement, an element mounted for partial rotation within the stand and shiftable in either direction to disengage the spring controlled member from the stand and to shift said member and the shaft to move the switch, and car operated means for actuating said element.

7. Apparatus of the class described comprising a switch stand, a shaft mounted for partial rotation therein, a spring controlled locking member movable with the shaft and normally engaging the stand, a spindle journaled within the shaft, means carried there-

by for disengaging said member from the stand and for actuating the member to move the shaft, a switch tongue, means for transmitting motion to the tongue from the shaft, and separate car operated means for actuating the spindle.

8. Mechanism of the class described comprising a switch stand, a switch tongue operating shaft journaled therein, a locking member movable with said shaft, means within the stand for unlocking said member and actuating the shaft, and separate car operated means for actuating said first mentioned means, each of said car operating means comprising an arm mounted for swinging movement and a movable device actuated by the arm, and means for transmitting motion between said movable devices.

9. Mechanism of the class described comprising a switch stand, a switch tongue actuating shaft journaled therein, a locking member carried thereby, means for successively unlocking said member and actuating the same to partly rotate the shaft separate car operated devices for actuating said means, each of said devices comprising a laterally movable pivoted arm, and a movable device actuated thereby, and rods extending from one to the other of said movable devices.

10. In apparatus of the class described a switch stand, a tongue actuating shaft journaled therein, a locking member carried by the shaft, a spindle, means movable with the spindle for unlocking said member and actuating the shaft, oppositely disposed laterally movable arms, a partially revoluble element actuated thereby, and means for transmitting motion from said element to the unlocking means.

11. In apparatus of the class described a switch stand, a shaft mounted for partial rotation therein, a switch tongue actuated by the shaft, a locking member carried by the shaft, partly revoluble means within the stand for successively unlocking said member and actuating the shaft, and a car operated device for actuating said means, said device comprising a pivoted laterally movable arm, a disk, an arm upstanding from the disk and removably engaging the first mentioned arm, a disk revoluble with the unlocking means and rods pivotally connected to the disk.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

ROBERT PETER KIBLINGER.

Witnesses:

GEO. E. KIBLINGER,
M. V. DAVIDSON.