

O. C. JEFcoat.

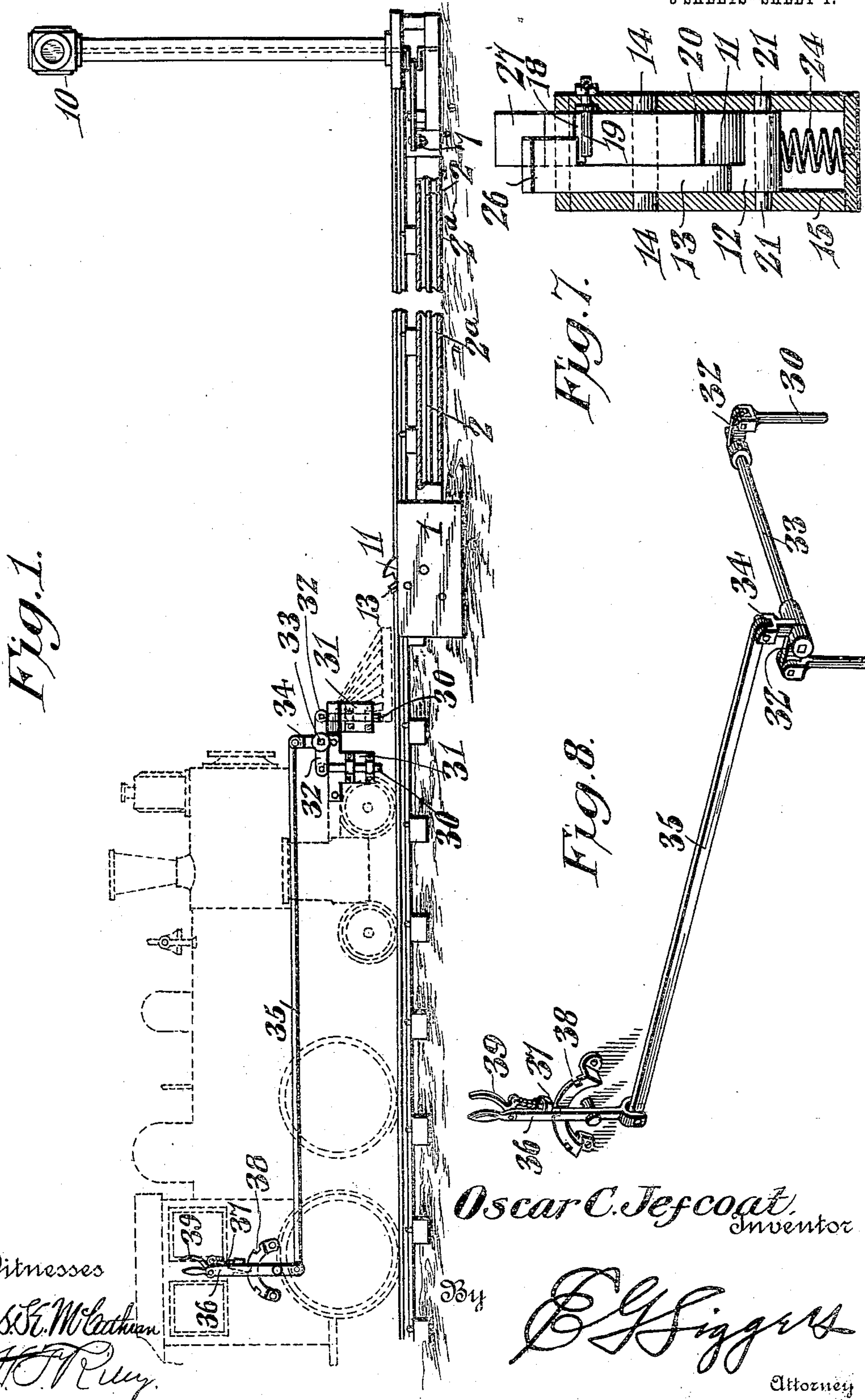
RAILWAY SWITCH.

APPLICATION FILED JUNE 3, 1909.

931,428.

Patented Aug. 17, 1909.

3 SHEETS—SHEET 1.



Witnesses
Jas. E. McArthur
H. T. Ruy.

Oscar C. Jefcoat,
Inventor

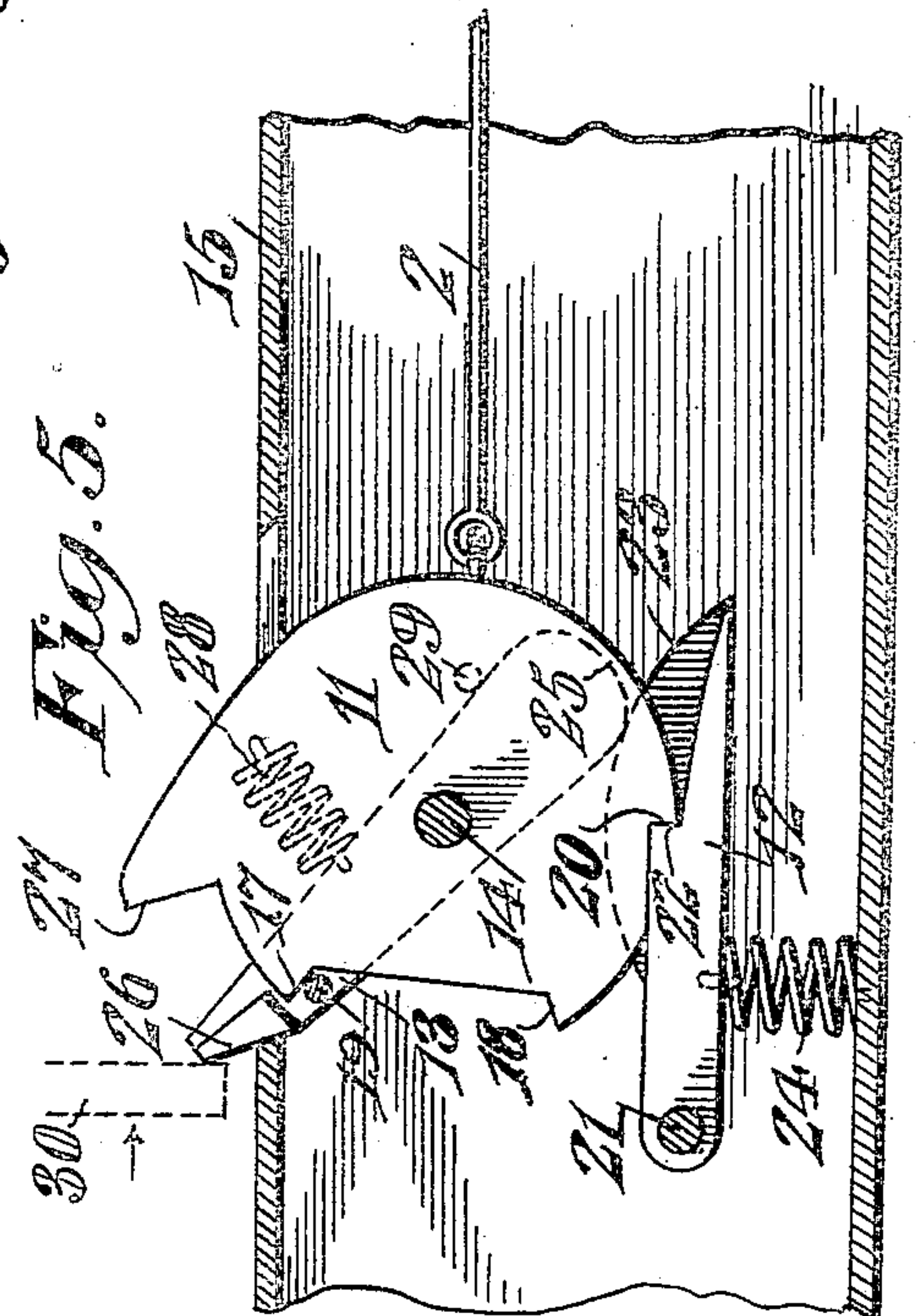
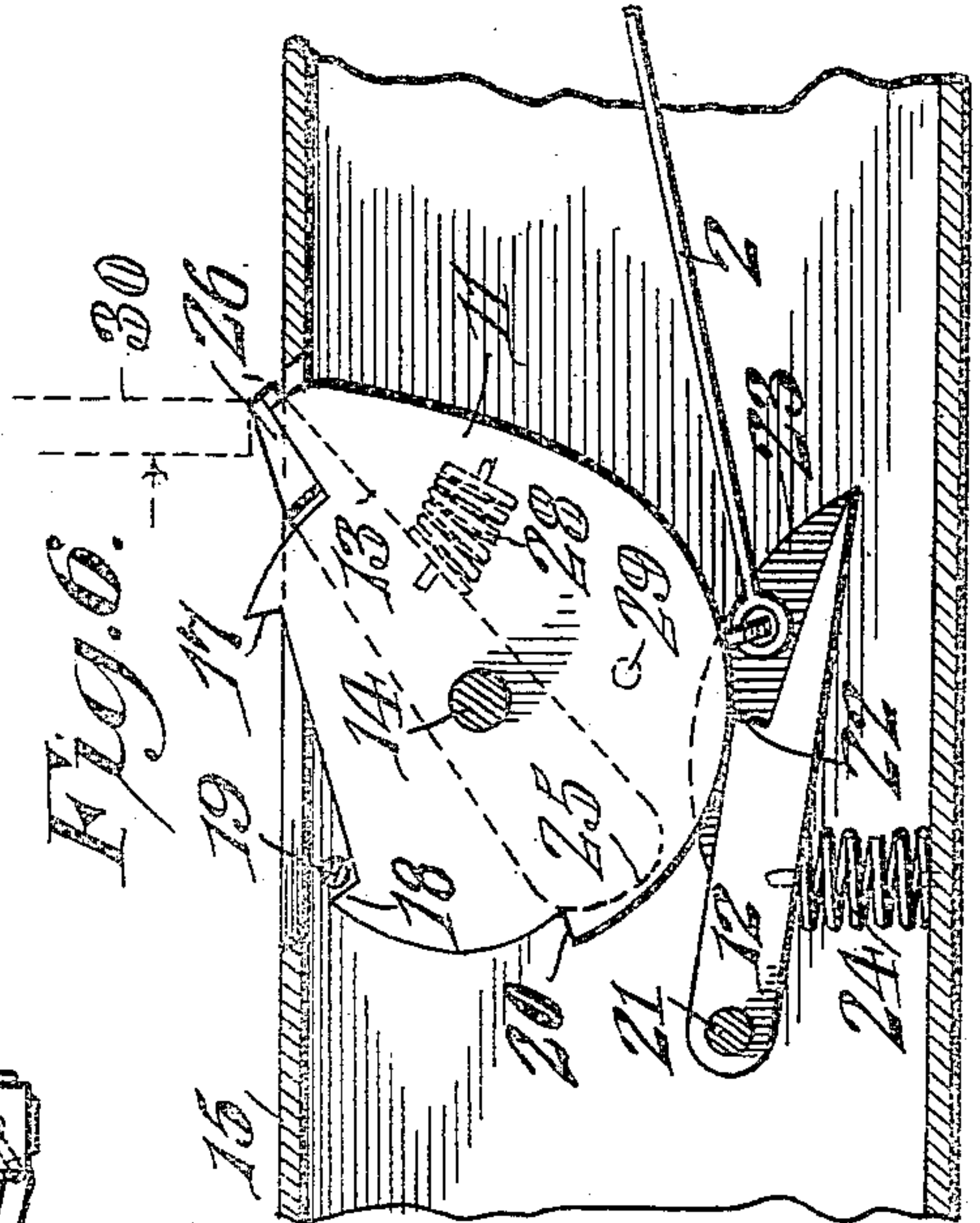
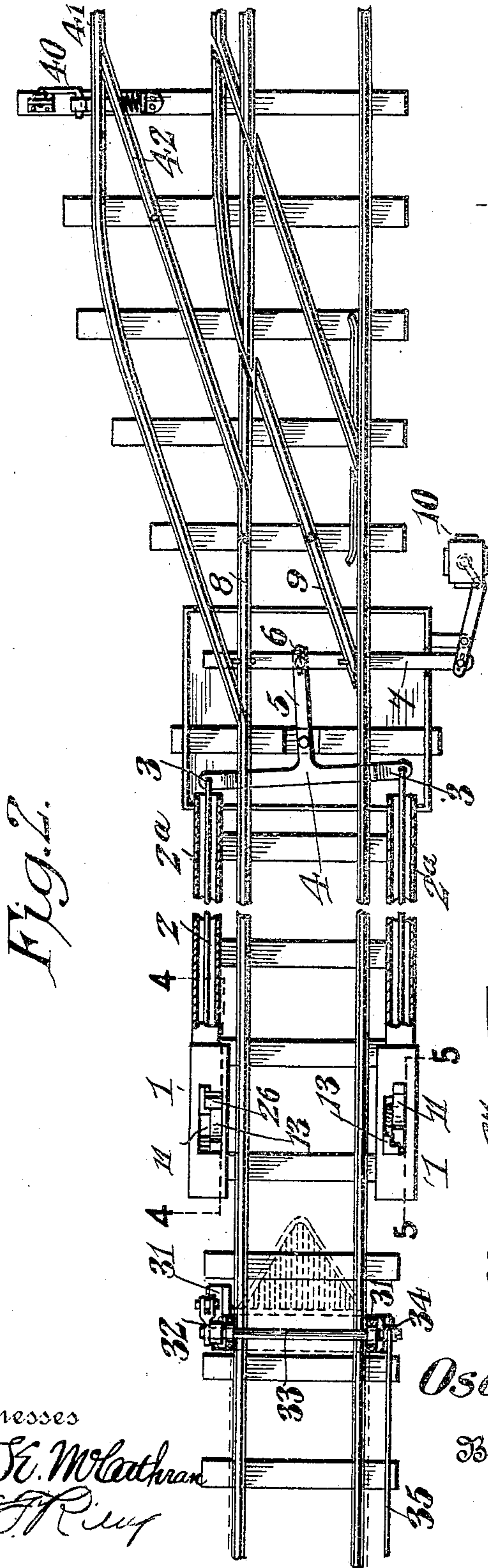
E. G. Siggers
Attorney

O. C. JEFcoat.
RAILWAY SWITCH.
APPLICATION FILED JUNE 3, 1909.

931,428.

Patented Aug. 17, 1909.

3 SHEETS—SHEET 2.



Witnesses
Jas. E. McLaughlin
H. P. Ring

Oscar C. Jefcoat, Inventor

By

E. G. Singer

Attorney

APPLICATION FILED JUNE 3, 1909.

3 SHEETS—SHEET 3.



Attorney

UNITED STATES PATENT OFFICE.

OSCAR C. JEFcoat, OF NEW BROOKLAND, SOUTH CAROLINA, ASSIGNOR OF ONE-HALF TO
LAURIE S. TROTTI, OF NEW BROOKLAND, SOUTH CAROLINA.

RAILWAY-SWITCH.

No. 931,428.

Specification of Letters Patent.

Patented Aug. 17, 1909.

Application filed June 3, 1909. Serial No. 499,973.

To all whom it may concern:

Be it known that I, OSCAR C. JEFcoat, a citizen of the United States, residing at New Brookland, in the county of Lexington and State of South Carolina, have invented a new and useful Railway-Switch, of which the following is a specification.

The invention relates to improvements in railway switches.

The object of the present invention is to simplify and improve the construction of railway switches, equipped with track devices operated by mechanism carried by a locomotive and controlled from the cab to throw the switch in either direction for causing the train to take either the main track or the siding, as desired.

A further object of the invention is to provide a switch of this character having track devices, adapted to insure a positive movement of the switch rails in the desired direction, and capable of securely locking the same in each position.

With these and other objects in view, the invention consists in the construction and novel combination of parts hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the claims hereto appended; it being understood that various changes in the form, proportion, size and minor details of construction, within the scope of the claims, may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings:—Figure 1 is a side elevation, partly in section, showing a railway switch and operating mechanism, constructed in accordance with this invention. Fig. 2 is a plan view of the same, partly in section. Fig. 3 is an enlarged horizontal sectional view. Fig. 4 is a longitudinal sectional view of one of the track devices. Figs. 5 and 6 are similar views, illustrating the two positions of the track devices. Fig. 7 is a transverse sectional view of one of the track devices. Fig. 8 is a perspective view of the operating mechanism.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

The railway switch comprises in its construction opposite track devices 1, connected by rods 2 with laterally extending arms 3 of a T-shaped lever 4. The other arm 5 of the

T-shaped lever is connected by a slot and pin connection 6 with a transversely movable bar 7, extending beneath and secured to switch rails 8 and 9 and also connected by suitable means with a visual signal 10, adapted to indicate the position of the switch rails. The track devices are reversely movable to oscillate the T-shaped lever for moving the switch rails and for changing the signal, which is preferably equipped with a light and with target wings.

Each track device consists of an oscillatory member 11, a latch lever 12 for locking the said member in one position and a trip or releasing lever 13, adapted to disengage the latch from the oscillatory member to permit the same to be moved in the direction of the switch rails for actuating the same. The oscillatory member 11, which is mounted on a transverse pin or pivot 14, is housed within a suitable box or casing 15, and it extends upward through an opening 16 in the top thereof. It consists of a plate rounded at the bottom to present a lower curved edge to the latch lever 12, and it is provided at its front edge with upper and lower shoulders 17 and 18, arranged to cooperate with a fixed pin or stop 19 to limit the oscillatory movement of the member in each direction. The stop pin 19 is located within the box or casing, which is suitably mounted on the cross ties, as clearly illustrated in Fig. 3 of the drawings. The oscillatory member is recessed at the bottom to provide a shoulder 20, and the latch lever, which extends longitudinally of the casing, is pivoted at its outer end to the same by a transverse pin 21, and it is provided at an intermediate point with a shoulder 22, adapted to engage with the shoulder 20 of the oscillatory member to lock the latter when the upper portion of the oscillatory member is at the limit of its outward or backward movement. The latch lever is recessed in front of the shoulder 22, and it is provided at one side of the same with an upwardly extending longitudinally disposed segmental flange 23, presenting a curved upper edge to the lever 13, which is mounted on the horizontal pin or pivot 14. The latch is maintained in contact with the lower edge of the oscillatory member by means of a coiled spring 24, interposed between the latch lever and the bottom of the box or casing 15 and yieldably supporting the former. The re-

leasing or tripping lever 13 is pivoted at an intermediate point, and its lower arm is rounded at the lower end 25 to engage the segmental flange for moving the shoulder 22 downward out of engagement with the oscillatory member 11. The upper end of the latch lever is provided with a laterally extending head 26, which projects over the upper portion of the oscillatory member. The oscillatory member is recessed to receive the laterally projecting head 26 and to provide an upright shoulder 27, which is arranged in the path of the head 26. The head 26 is normally maintained in spaced relation with the shoulder 27 by a coiled spring 28, mounted on the oscillatory member and engaging the front edge of the releasing or tripping lever 13, and the rearward movement of the upper arm of the lever 13 is limited by a stop 29, consisting of a pin projecting laterally from the oscillatory member and located in advance of the lower arm of the lever 13. The rods 2, which extend through suitable housings 2^a, are connected with the oscillatory member at the curved bottom edge thereof, and when one of the oscillatory members is moved forward to the position illustrated in Fig. 6, the oscillatory member at the other side of the track is moved backward or rearward to its initial position. In this position, viz., the position illustrated in Fig. 5, the upper end of the releasing or tripping lever is arranged in spaced relation with the vertical shoulder 27 of the oscillatory member, and when it is engaged by one of the actuating rods 30, its upper arm is moved forward independently of the oscillatory member until it engages the shoulder 27 thereof. This independent movement is sufficient to operate the latch, which is depressed by the lower arm of the latch lever. The continued forward movement of the rod 30 oscillates the member 11 and carries the same to the forward limit of its movement, which position is illustrated in Fig. 6 of the drawings. This movement of the oscillatory member pulls upon the connecting rod to which it is attached and oscillates the T-shaped lever, moving the longitudinal arm toward the side of the track at which the engaged member 11 is located. The said movement returns the other track device to its initial position and, causes the same to lock the switch rails in the position to which they have been moved.

The actuating rods 30, which are designed to be located at opposite sides of a locomotive at the front portion thereof, are mounted in suitable guides 31, and are connected with forwardly and rearwardly extending arms 32 of a transverse rock shaft 33, journaled in suitable bearings of a locomotive and extending across the front of the same. The rock shaft is also provided with an

upwardly extending arm 34, which is connected by a rod 35 with the lower end of an operating lever 36. The operating lever, which is designed to be located within the cab of the locomotive adjacent to the reversing lever in order to be within easy reach of the engineer, is fulcrumed between its ends and is equipped with a spring actuated detent 37, arranged to engage a toothed segment 38 and operated by a latch lever 39. The latch lever is mounted on the operating lever adjacent to the handle thereof and is adapted to be grasped and operated simultaneously with the same. When the lever is moved in one direction, one of the actuating rods or elements 30 will be moved downward into position for operating the track device at that side of the track, and the other will be raised clear of the other track device.

If a train should have the right of way and continue on the main line, the operating mechanism may be set to lower the actuating member at the side for moving the switch rails to close the switch, and if the switch should already occupy such position, the actuating rod or element will pass over the track device without injuring the same. The actuating rod or element will close any switch that may be open and the train will continue on the main line. A reverse movement of the operating lever will depress the other actuating rod or element and arrange the same for opening the switch. The operating lever is also adapted, as illustrated in Fig. 8 of the drawings to be arranged at an intermediate position in which the forwardly and rearwardly extending arms 32 will be horizontal and the actuating rods or elements 30 will be supported clear of the track devices.

The automatic switch is designed to be used in connection with a hand operated switch 40 to permit a train locked in the siding 41 to run back onto the main line without attempting to force itself past the automatic switch. The switch rail 42 of the hand operated switch is designed to be yieldably connected with the operating mechanism, so that a train entering the siding may run past the hand switch without opening the same. Any other form of supplemental switch, however, may be employed for returning a train from the siding to the main track after it has been locked in the siding by the subsequent passage of a train along the main track.

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

1. In a railway switch, the combination with switch rails, of a track device including an oscillatory member connected with the switch rails, a latch for locking the oscillatory member, and a tripping lever arranged to release the oscillatory member, and means

for actuating the tripping lever and the oscillatory member.

2. In a railway switch, the combination with switch rails, of track devices designed to be located at opposite sides of the track and including oscillatory members connected with the switch rails and movable in opposite directions to actuate the switch rails, latches for locking the oscillatory members, and tripping levers for moving the latches out of engagement with the oscillatory members, and means for actuating the tripping levers and the oscillatory members.

3. In a railway switch, the combination with switch rails, of track devices designed to be located at opposite sides of the track and including oscillatory members connected with the switch rails and movable in opposite directions to actuate the switch rails, latches for locking the oscillatory members, and tripping levers for moving the latches out of engagement with the oscillatory members, and operating mechanism comprising guides, vertically movable actuating rods arranged in the guides, a rock shaft having arms connected with the rods, and an operating lever for rotating the rock shaft.

4. In a railway switch, the combination with switch rails, of an appropriately T-shaped lever having laterally extending arms and provided with a central longitudinal arm connected with the switch rails, track devices including oscillatory members connected with the laterally extending arms and the lever, latches for locking the members, tripping levers arranged to move the latches out of engagement with the oscillatory members, and operating mechanism for actuating the tripping levers and the oscillatory members.

5. In a railway switch, a track device including an oscillatory member designed to be connected with a switch rail, a spring actuated lever arranged beneath and adapted to engage and lock the oscillatory member, and an upright tripping lever pivoted at an intermediate point and having upper and lower arms, the upper arm being arranged to be engaged by switch operating means and the lower arm being arranged to move the latch lever out of engagement with the oscillatory member.

6. In a railway switch, a track device including an oscillatory member rounded at the bottom and provided thereat with a shoulder, a spring actuated latch lever located beneath the oscillatory member and having a shoulder arranged to engage with that of the member, said latch lever being also provided with an upwardly extending cam edge, and a tripping lever arranged to engage the cam edge to move the latch lever away from the oscillatory member to release the latter.

7. In a railway switch, a track device including an oscillatory member designed to be connected with a switch rail and provided with spaced shoulders, a fixed stop located between and operating with the said shoulders to limit the movement of the oscillatory member, a latch arranged to engage the oscillatory member to lock the switch, and a tripping lever fulcrumed at an intermediate point and having one of its arms arranged to move the latch lever away from the oscillatory member to release the latter.

8. In a railway switch, a track device including an oscillatory member designed to be connected with a switch rail, a latch arranged to engage the oscillatory member to lock the switch, a tripping lever pivoted at an intermediate point and having one of its arms arranged to move the latch away from the oscillatory member, and a spring for normally maintaining the other arm of the tripping lever in spaced relation with a portion of the oscillatory member.

9. In a railway switch, a track device including an oscillatory member designed to be connected with a switch rail, a latch arranged to engage the oscillatory member to lock the switch, an upright tripping lever pivoted at an intermediate point and having its lower arm arranged to move the latch away from the oscillatory member, a spring connected with the upper arm of the latch lever for maintaining the same in spaced relation with a portion of the oscillatory member, and a stop carried by the oscillatory member and arranged in the path of the lower arm of the tripping lever to limit the movement of the same in one direction.

10. In a railway switch, a track device including an oscillatory member designed to be connected with a switch rail and provided at its upper portion with a recess forming a shoulder, a latch arranged to engage the lower portion of the said member, and an upright tripping lever pivoted at an intermediate point and having its lower arm arranged to move the latch out of engagement with the oscillatory member, the upper arm of the tripping lever being provided with a laterally projecting head or portion extending into the said recess and arranged to engage the shoulder of the oscillatory member, and means for normally maintaining the head of the tripping lever in spaced relation with the shoulder of the oscillatory member.

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

OSCAR C. JEFcoat.

Witnesses:

H. M. LUCAS,
W. R. LOWE.