

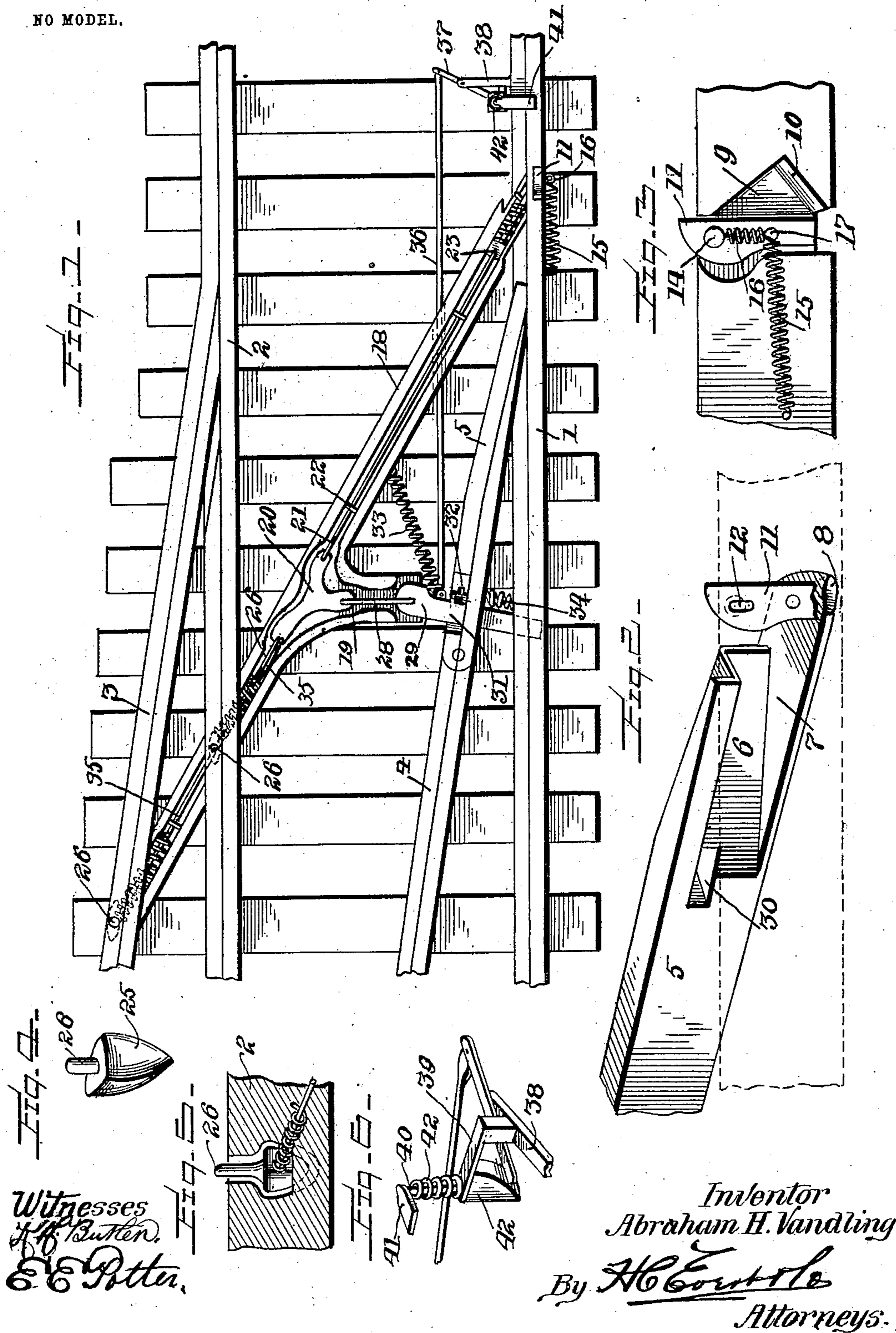
No. 728,635.

PATENTED MAY 19, 1903.

A. H. VANDLING.  
RAILROAD SWITCH.

APPLICATION FILED DEC. 18, 1901.

NO MODEL.



Witnesses  
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# UNITED STATES PATENT OFFICE.

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## RAILROAD-SWITCH.

SPECIFICATION forming part of Letters Patent No. 728,635, dated May 19, 1903.

Application filed December 18, 1901. Serial No. 86,354. (No model.)

*To all whom it may concern:*

Be it known that I, ABRAHAM H. VANDLING, a citizen of the United States of America, residing at Allegheny, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Railroad-Switches, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention relates to certain new and useful improvements in switches, the main object of the invention being to construct a switch that may be conveniently operated by a moving car or train; and to this end the invention resides in the novel construction, combination, and arrangement of parts, to be hereinafter more specifically described and then particularly pointed out in the claims.

20 In describing the invention in detail reference will be had to the accompanying drawings, forming a part of this specification, and wherein like numerals of reference will be employed for designating like parts throughout the several views, in which—

25 Figure 1 is a top plan view of my improved switch applied in position in the track. Fig. 2 is a detail perspective view of a part of the switch-rail, showing the trip pivoted to the main rail, the latter being shown in dotted lines and the trip being broken away to show the bevel edge on the end of the switch-rail. Fig. 3 is a side elevation of a part of one of the main rails, showing the actuating-trip carried thereby. Fig. 4 is a detail perspective view of the cam that is mounted in one of the side-track rails and in one of the main-track rails for returning the switch-rail to its normal position. Fig. 5 is a longitudinal sectional view of a part of the side-track rail or 35 main-track rail, showing the cam in position therein and a part of the connecting-rod. Fig. 6 is a detail perspective view of a part of the tripping mechanism for permitting the return of the switch-rail to its normal position 40 when the car is moving toward the right.

45 In the accompanying drawings, 1 2 indicate the rails of the main track, and 3 4 the rails of the side track, the switch tongue or rail 5 being pivoted to the side-track rail 4. This switch rail or tongue 5 is of especial construction, the free end thereof being cut away, as at 6, to receive the main rail 1 and the base

7 of the switch-tongue being extended underneath the base of the rail 1 and provided with a cam-face 8. The rail 1 is cut away in its 55 outer face adjacent to where the base of the switch-rail projects in under the rail 1, this cut-away portion 9 being the full depth of the rail 1 and of irregular contour, the wall 10 thereof being at an incline. Pivotaly mounted in this cut-away portion 9 of the rail 1 is a trip 11, which has a lateral as well as a vertical movement, this being permitted by reason of the oblong slot 12, that receives the pivot-pin 14. This trip is held normally 65 vertical by means of a spring 15, connected thereto and to the rail 1, and it is also held normally elevated in the position shown in Fig. 3 by a spring 16, attached to the pin 14 and to the pin 17 that the one end of 70 the spring 15 is connected to. Located in the bed of the track is a trough 18, extending across the track at an angle and joining with the rails 1, 2, and 3. This trough has a branch 19, projecting toward the switch-tongue 5 and located in the trough, and in this branch is a spider 20. Connected to one arm of this spider is a rod 21, which operates through keepers 22 in the trough and is connected to a spring-pressed latch 23, which is 80 adapted to engage with the trip 11 through an opening (not shown) in the inner face of the rail 1. Connected to the opposite arm of the spider 20 is a rod 24, this rod being connected at its outer end to a cam 25, which is mounted in a cut-away portion in the outer face of the rail 2. This cam 25 carries an upwardly-projecting stud 26, that projects above the rail 2 in position to be engaged by the wheels of the car, and a spring 27 is so connected to 85 said rod as to exert its pressure to normally hold the cam and stud elevated. The arm of the spider 20 that projects into the branch 19 is connected by a link 28 to a lock-lever 29, which extends through an opening 30 in 95 the switch-rail 5 and into the rail 1. This lock-lever 29 has a lug 31, which engages into a notch 32, provided therefor in the switch-rail 5. This lug is pulled into engagement with the notch by a spring 33, connected to 100 the lock-lever and to the trough 18. The switch-tongue is normally closed by a spring 34, connected thereto and to the rail 1. A rod 35 is arranged in that part of the trough

18 that is located between the rails 2 and 3, and, like the rod 24, it is connected to a cam 25 and has a spring for normally holding the cam elevated.

5 With the car moving toward the left if it is desired to continue on the straight track the wheel of the car will depress trip 11, causing the lower end thereof to engage the cam-face 8 of the rail 5, thus shifting this rail  
10 away from the main rail 1, bringing notch 32 opposite to lug 31, which lug is drawn into the notch by the action of the spring 33, and locking the rail 5 in the open position. The trip 11 and the cam 25 are in practice located  
15 a sufficient distance apart in the length of the track so that the switch-rail 5 will remain in this open position until the rear wheels of the car have passed the free end of the switch-rail previous to the engagement  
20 of the front wheel of the car with the stud 26 of cam 25 in the rail 2. When this stud is engaged by the front wheel of the car and the cam 25 depressed, the rod 24 acts to move the spider within the trough, so as to actuate  
25 lock-lever 29 sufficiently to draw lug 31 out of notch 32 and allow the spring 34 to return switch-rail 5 to the closed position. The spring 16, connected to trip, being of greater tension than spring 15, this trip is also re-  
30 turned to its elevated position. In event, however, that it was desired to pass onto the side track and the switch-tongue is in the position shown (which is that for conducting the car to the side track) the operator lowers  
35 from the car a suitable shoe (not shown) to engage with the trip 11 and move the same so as to cause it to lie within the recess 9, with its lower end against the inclined wall 10. The trip when in this position cannot be de-  
40 pressed, and there will be but a slight portion, if any, of its upper end projecting above the rail 1, so that the wheels will readily pass over the same. The car will then pass onto the side track. With the movement of the  
45 trip into the inclined position in the recess 9 the latch 23 engages with a notch (not shown) on the inner face of the trip, and this trip is locked in this inclined position until such time as the front wheel of the car comes in  
50 contact with the stud 26 of cam 25, located in rail 3, at which time the rear wheels of the car will have passed onto the side rail 5, and the actuating of the rod withdraws latch and allows the springs 15 16 to return trip to ver-  
55 tical and elevated position.

With a car moving toward the right, where the switch-rail 5 will be forced to the open

position by the action of the wheel-flange passing between switch-rail and the rail 1, this switch-rail will be locked in this open po- 60  
sition by the spring 33 actuating lock-lever 29, so as to engage lug 31 into notch 32, as  
aforescribed, leaving the trip 11 free to be depressed by the wheels. In order, there- 65  
fore, to disengage the lock-lever from switch-rail and allow spring 34 to return the switch-  
rail to the closed position, I connect a rod 36 to the lock-lever, the other end of this rod  
being pivoted to a lever 37, the latter being pivoted intermediate its ends to a bracket 38, 70  
projecting from the rail 1. This bracket carries an arm 39, in the outer end of which is  
arranged a rod 40, having its upper end 41 flattened and turned to lie over the rail 1.  
The lower end of this rod carries a cam 42, 75  
which when the rod is depressed engages with the lever 37, actuates the same so as to move  
rod 37 rearwardly, and cause this rod to move lock-lever 29 to disengage lug 31 from notch  
32 and allow spring 34 to return switch-rail 80  
to its normal position. A spring 43 holds the rod 40 normally elevated, and in the passing  
of a car toward the left the operating of this mechanism will not act in any manner to op-  
erate the switch-rail. 85

It will be noted that various changes may be made in the details of construction without departing from the general spirit of my invention.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is— 90

1. In a switch, the combination with a pivoted switch-rail, of a trip for engagement with the free end of said rail and actuate the same, 95  
means for locking the switch-rail in the open position, means for releasing the locking means, and a spring for returning the switch-rail to the closed position.

2. In a switch, the combination with a piv- 100  
oted switch-rail, of a trip for engagement with the free end of said rail to actuate the same and open the switch, a lock-lever for holding the switch in the open position, and means adapted to be actuated by the car-wheel for 105  
releasing the lock-lever to permit the switch-rail to return to the closed position.

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

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Witnesses:

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