

UNITED STATES PATENT OFFICE.

IRA A. CALL, OF BANCROFT, IDAHO.

AUTOMATIC RAILWAY-SWITCH.

No. 886,941.

Specification of Letters Patent.

Patented May 5, 1908.

Application filed May 25, 1907. Serial No. 375,678

To all whom it may concern:

Be it known that I, IRA A. CALL, a citizen of the United States, and a resident of Bancroft, in the county of Bannock and State of Idaho, have made certain new and useful Improvements in Automatic Railway-Switches, of which the following is a specification.

This invention is an automatic railway switch adapted to be operated from the train or engine while in motion, and has for its object to provide a simple and effective switch of the stub rail type, which will not be apt to clog from snow, dirt or other cause, nor from contraction or expansion of the rails at the switch.

A further advantage of the construction is that the operating mechanism is located above ground or on a level with the track and not subject to the disadvantages incident to underground or sunken parts.

A further characteristic is certainty of operation by trains approaching from either direction.

Further advantages and improvements will be apparent from the following description and the accompanying drawings.

In the drawings—Figure 1 is a side elevation of the switch. Fig. 2 is a plan view thereof. Fig. 3 is a section on the line 3—3 of Fig. 2. Fig. 4 is a detail in vertical longitudinal section of the supporting plate and rail ends.

The main track rails approaching the switch from one side are indicated at A; those on the other or trailing side at C; the siding rails at D; and the movable stub switch rails at B; all supported on ties in the usual manner, except that the switch rails are mounted on plates P to be hereinafter described. The switch rails are connected by spacing rods O.

At E is indicated a side rail for throwing the switch from the main line to the siding. This is located on the right, beside the switch rails, and it is supported by pivoted links J on plates I fixed to the ties and to the plate P. It is tapered at the ends, and connected to a horizontal bell crank L' by a short rod K. This bell crank is pivoted to the plate P and connected by rod N to the switch rails B.

The side rail E is operated by a tripper or wheel (not shown) attached to the front truck of the engine and operated from the cab to press the rail E down when the train is to take the siding, and when so pressed down the connections including the bell

crank throw the switch rails from the main line to the siding and hold the same until the front wheels of the engine reach a side rail F', beside the siding rails D.

The side rail F' is located close beside the rails D and is operated by the train wheels. It is supported by links U pivoted to plates on the ties and connected at the end by a crank S' and rod M' to the bell crank L'. Consequently when the engine wheels strike and press down the side rail F' it holds the switch rails to the siding until the last car of the train has passed on to the siding from the main track, when the switch rails are returned to main line position by the spring Q. The length of the side rail F' is such that at no time during the passing of a train is it free from the weight of at least one pair of trucks and the load thereon.

In case of a train already on the siding and desirous of getting on to the main line, the side rail F' is pressed down by the wheels, which line the switch rails for the switch, and is retained in that position until the last car has passed onto the main line, when the switch is returned by the spring Q, as before.

In case of a main line train trailing the switch, a side rail F is provided, located beside the rails C and supported by links U and connected by crank S and rod M to a bell crank L on the side of the switch opposite the said crank L', and similarly connected to the switch rod O. Train wheels passing over the side rail F hold the switch absolutely in main line position until the last car has passed thereover. The top of the side rail F is flush with the tread of rails C, so that its chief function is that of a safety rail.

In any position or circumstances, the passage of a train locks or holds the switch rails in desired position and avoids the possibility of one truck taking the siding and another the main line, or vice versa. The switch is normally in position for main line trains, and the first wheels determine absolutely the course of the entire train.

The cranks S and S' are mounted in bearing plates T and T', and pointed guards R define the correct positions of the switch. An ordinary switch stand can be placed as indicated at G and connected to the switch by rod H. In case it is desired or necessary to operate the switch by hand, it will be necessary for the switchman to hold it in position until the wheels of the first car reach the side rail F', after which it will be held there-

by. The switch stand G may be locked in main line position, to prevent tampering by unauthorized persons, but it will not prevent the switch from being automatically operated, as the rod H is made free to slide back through a hole at h in the projecting arm of the stand.

A plate P underlies each of the switch rails B and also the ends of the rails A, C and D, as shown particularly in Fig. 4. This plate is of decided importance. The rails A, C and D are fastened thereto, and the plate is reduced thereunder, forming shoulders p against which the ends of the said rails abut, the rail B being of less height and mounted on the higher part of the plate. The shoulders prevent creeping or expansion of the rails A, C and D toward the switch rails and consequently prevent binding or tight working of the switch, which might prevent their invariable operation, and by fastening the ends of the said rails to the plate they cannot by contraction pull away from the switch rails and cause a low or pounded joint at the ends. The plates form a solid and immovable rest or chair for the ends of all the rails and insures stability and durability of the switch. All the parts are above the ties, and consequently require no excavation or special bed, and has the advantage over split switches that it will not clog by stones, coal, pieces of iron or the like between the points, and avoids the possibility of a wheel flange taking the wrong track. The plate P will always remain clean, in consequence of the movement of the switch rails, and any snow or other matter lodging on the switch may be as easily removed as from an ordinary track. A feature of the side rails is that they are beveled at the lower edge, as shown in Fig. 3

and consequently they will cut into snow or dirt accumulated beneath them.

I claim—

1. In an automatic switch, the combination of the main line and siding rails, and the switch-stub rails therebetween, of a plate having reduced ends and shoulders, the main line rails abutting against said shoulders, and the switch stub rails upon said plate between the ends of said rails, of bell cranks connected to the switch stub rails, a spaced side rail beside the main line rails on the approach side of the switch, side rails close beside the siding rails and the main rails on the trailing side of the switch, a connection between the spaced side rails and the bell cranks, whereby pressure upon said side rails will operate to close the switch, and connections between the other side rail and the bell cranks, whereby pressure upon the side rails will retain the switch stub rails in closed position.

2. In an automatic switch, the combination of the main line and siding rails, and the switch stub rails therebetween, of a plate having reduced ends and shoulders, the main line rails abutting against said shoulders, and the switch stub rails upon said plate between the ends of said rails, of bell cranks connected to the switch stub rails, side rails beside the main line rails on the approach side of the switch, and on the trailing side of the switch, side rails beside the siding rails, and connections between each of said side rails and the bell cranks, whereby depression of said side rails will close the switch.

IRA A. CALL.

Witnesses:

FRED G. CALDWELL,
A. D. BUTTERFIELD.