No. 853,944. PATENTED MAY 14, 1907.

W. R. JENNEY.

AUTOMATIC SAFETY SWITCH.

APPLICATION FILED JUNE 14, 1906.

2 SHEETS—SHEET 1.

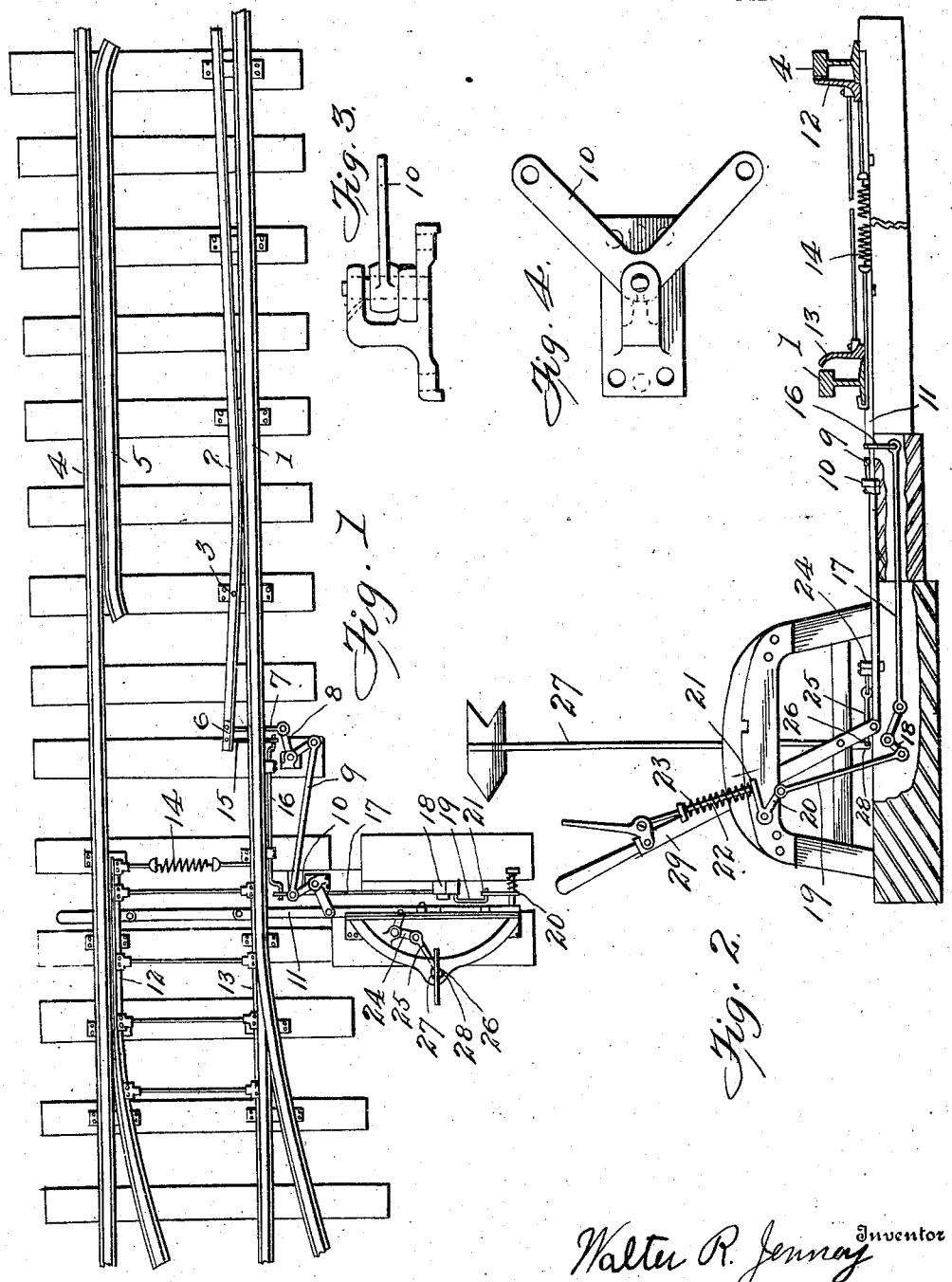

Fig. 1.

Fig. 2.

Fig. 3.

Fig. 4.

Witnesses

Chas. K. Davies.

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Inventor

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Attorney

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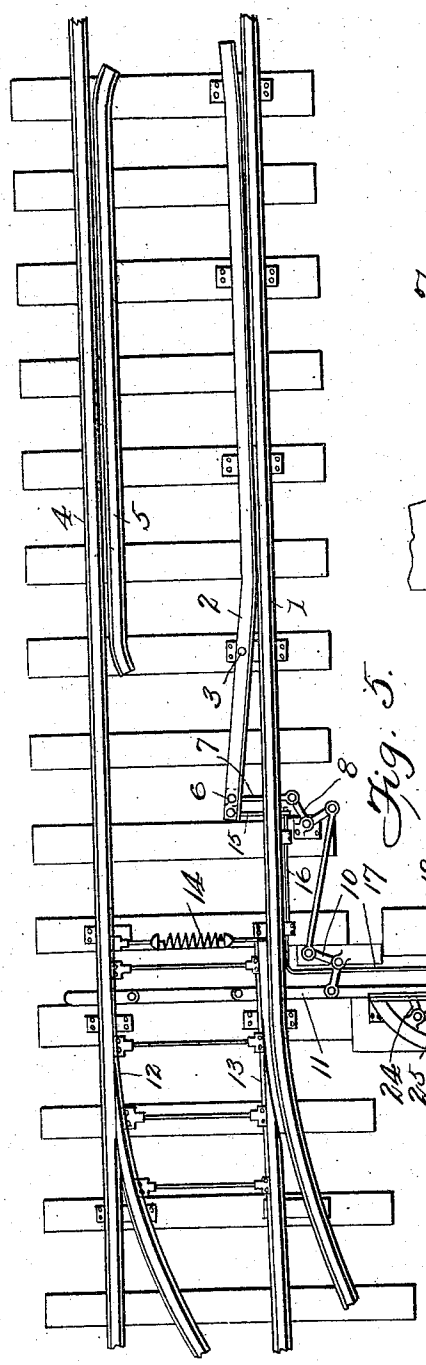

Fig. 5.

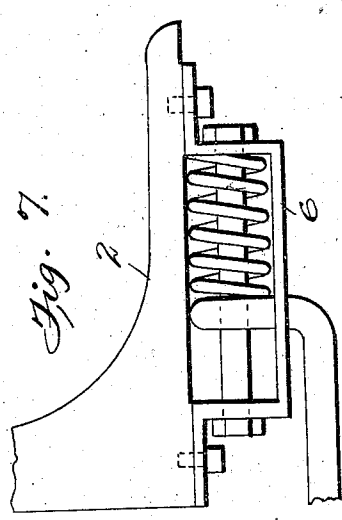

Fig. 7.

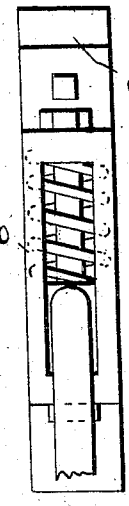

Fig. 8.

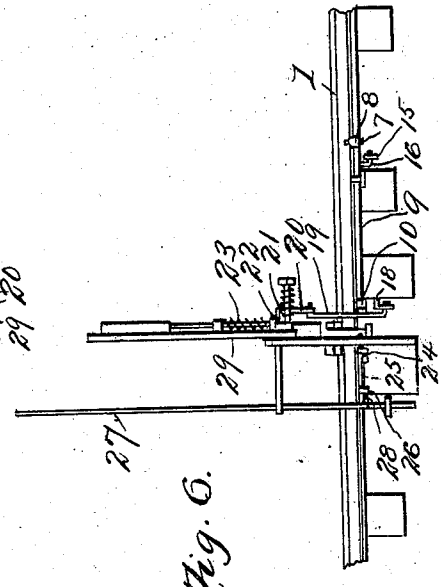

Fig. 6.

Witnesses

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# UNITED STATES PATENT OFFICE.

WALTER R. JENNEY, OF WESTFIELD, MASSACHUSETTS, ASSIGNOR OF ONE-HALF TO CHARLES H. BEALS, OF WESTFIELD, MASSACHUSETTS.

## AUTOMATIC SAFETY-SWITCH.

No. 853,944. Specification of Letters Patent. Patented May 14, 1907.

Application filed June 14, 1906. Serial No. 321,700.

*To all whom it may concern:*

Be it known that I, WALTER R. JENNEY, a citizen of the United States of America, residing at Westfield, in the county of Hampden and Commonwealth of Massachusetts, have invented a new and useful Automatic Safety-Switch, of which the following is a specification.

My invention relates to improvements in automatic safety switches, and comprises an ordinary switch, an angle-iron, levers and sprockets, all as hereinafter set forth, and the objects of my invention are:—First, to provide an automatic switch; second, to provide suitable means by which said switch may be closed by the action of the wheel flanges of locomotive or cars, and third, to provide a simple, practical and convenient means by which open switches may be closed and thereby avert the derailing of trains. I attain these objects by means illustrated in the accompanying drawings, in which—

Figure 1 is a plan view with the switch closed; Fig. 2 is a sectional view of the switch open and of the switch lock; Fig. 3 is a side view of one of the various bell crank levers; Fig. 4 is a plan view of one of the bell crank levers; Fig. 5 is a plan view with the switch open; Fig. 6 is a side elevation of the switch lock; Fig. 7 is a side detail view of the spring seat; Fig. 8 is an inverted plan view of the spring seat.

Similar letters refer to similar parts throughout the several views.

1 is a stock rail of the standard type. 2 is an angle-iron placed just inside said stock rail 1 and pivoted at 3 to a carriage or one of the ties. The angle-iron 2 is bent at one end in such a way as to allow the flanges of a wheel to enter between said angle-iron and stock rail 1. At the other end it is bent inwardly so as to allow sufficient movement to operate the connections. Opposite the angle-iron 2 and just inside the other stock rail 4 is placed a guard rail 5 of the standard type. At the end of the angle-iron 2 nearest the switch and on the under side is placed a spring seat 6 to which is connected the end of a rod 7. The other end of rod 7 is pivoted to one arm of the bell crank lever 8. The other arm of the bell crank lever is pivoted to a rod 9, which rod in turn is pivoted to one arm of the bell crank lever 10. The other arm of the bell crank lever 10 is pivoted to the rod 11, which is attached to the switch rails 12 and 13. From this it may be seen that when the flanges of a wheel strike the forward end of the angle-iron 2 said end of the angle-iron 2 will be forced away from the stock rail 1 and the other end will be forced toward it, thereby throwing the bell crank levers 8 and 10 around and forcing the rail 13 against the stock rail 1 and the rail 12 away from the stock rail 4. To the rail 1 is attached a spiral spring 14. The other end of said spring being attached to the rail 12, said spring having a tendency to draw the rail 12 away from the rail 4, thereby assisting the aforesaid mechanism to close the switch. To the back end of the angle-iron 2 is also permanently attached a rod 15, which in turn is attached to a rod 16, said rod 16 being bent at each end in the shape of a crank. The other end of the rod 16 is attached to a rod 17, said rod being attached to one arm of a bell crank lever 18. The other arm of the bell crank lever 18 is attached to a rod 19, which in turn is attached to a bell crank lever 20. The upper end 21 of the bell crank lever 20 sets immediately underneath and against a nose 22 of the spring latch 23, said bell crank lever being held in place by a weak spring.

It will be readily seen when the angle-iron 2 is worked as aforesaid the rod 15 will turn the rod 16, which in turn throws the rod 17 and works the bell crank lever 18 and 20, forcing the end 21 of the bell crank lever 20 upward and thereby releasing the spring latch 23. To the rod 11 is pivoted the bell crank lever 24. The other end of the bell crank lever 24 is pivoted to a rod 25, which in turn is pivoted to a short rod 26 which is permanently attached to the signal rod 27 at 28. Thus it may be seen that when the rod 11 is moved and the switch closed the crank 24 will be forced around and the rod 25 will turn the signal rod 27 into the proper position.

From the foregoing description it might be said that a train could never take the siding, but this has been provided for by means of the before mentioned spring seat at the end of the angle iron. When it is desired to have a train take the siding it approaches until the wheels rest between the stock rail 1 and the angle-iron 2. The switchman then throws and locks the switch by means of the switch-bar, there being play enough in the spring seat 6 to allow this. The arm 21 of the bell

crank lever 20 will then rest on top of the nose 22 of the spring latch 23. The angle-iron 2 is long enough to rest against two trucks at the same time and therefore will be held away from the rail until the train passes. When the wheels leave the angle-iron the spring in the spring seat 6 will force the angle-iron against the rail and the direct connection from the back end of the angle-iron will draw the end 21 of the crank 20 down over the nose 22 of the spring latch 23 into its normal position.

What I claim as my invention and desire to secure by Letters Patent are,

1. The combination with a railway switch of means for closing said switch when open by the movement of a train on the main track in the direction of the switch and means for temporarily locking said switch open for the purpose of placing a train on the siding, substantially as specified.

2. The combination with a railway switch of a rail located on the main track having an angle at each end, a pivot, a spring seat, a rod connecting the spring seat with a bell crank lever, a rod connecting the bell crank lever to a lever attached to a rod connected with the point of the switch, substantially as specified.

3. The combination with an automatic railway switch having a lever which operates in connection with the flange of a car wheel to close a switch, of a crank lever attached thereto which operates to release a spring latch, substantially as specified.

4. In an automatic railway switch the combination of a pivoted rail resting on carriages, a spring seat, a rod attached to the end of the rail containing the spring seat and to a lever, the lever being attached by means of a rod to a lever attached to a rod connected with the point of the switch, of a crank operating to release a spring latch, of a spiral spring having a tendency to close the switch, all substantially as specified.

5. In an automatic railway switch the combination of a pivoted rail resting on carriages, a spring seat, a rod attached to the end of the rail containing the spring seat and to a lever, the lever being attached by means of a rod to a lever attached to a rod connected with the point of the switch, of a crank operating to release a spring latch, of a spring operating to hold in place the part of said device releasing the spring latch, of a spiral spring having a tendency to close the switch, all substantially as specified.

WALTER R. JENNEY.

Witnesses:
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