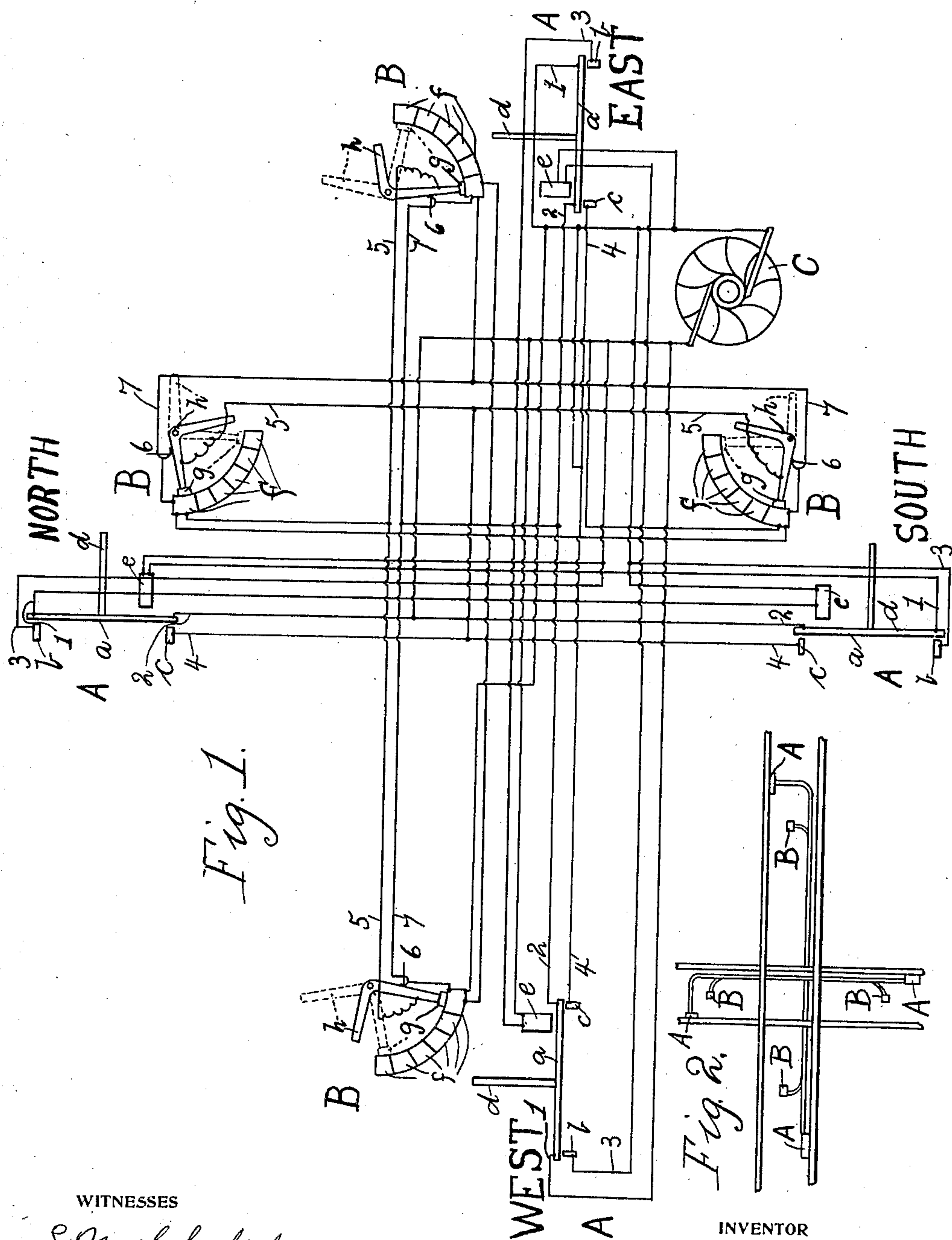


No. 872,141.

PATENTED NOV. 26, 1907.

V. MORRISON.  
AUTOMATIC STOP FOR RAILWAY TRAINS.  
APPLICATION FILED JUNE 26, 1907.



**WITNESSES**

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# UNITED STATES PATENT OFFICE.

VAUGHN MORRISON, OF WESSINGTON SPRINGS, SOUTH DAKOTA.

## AUTOMATIC STOP FOR RAILWAY-TRAINS.

No. 872,141.

Specification of Letters Patent.

Patented Nov. 26, 1907.

Application filed June 26, 1907. Serial No. 380,954.

*To all whom it may concern:*

Be it known that I, VAUGHN MORRISON, a citizen of the United States, residing at Wessington Springs, county of Jerauld, and State of South Dakota, have invented a certain new and useful Improvement in Automatic Stops for Railway-Trains, of which the following is a specification.

My invention relates to a new and useful improvement in automatic stops for railway trains, and has for its object to provide an exceedingly simple and effective system by which the steam will be shut off and the air brake set on a train if attempting to enter a blocked section, said section having been blocked by the previous passage of another train.

With these ends in view, this invention consists in the details of construction and combination of elements hereinafter set forth and then specifically designated by the claims.

In order that those skilled in the art to which this invention appertains may understand how to make and use the same, I will describe its construction in detail, referring by letter to the accompanying drawing forming a part of this specification, in which—

Figure 1 shows the system when installed where two railways cross each other, the wiring and mechanism being shown in diagram. Fig. 2, a diagrammatical view showing the relative location of the cables carrying the wires shown in Fig. 1 and also the location of the switch box and trip box.

In carrying out my invention as here embodied, A represents four switch boxes of any suitable size or shape, which are bolted to the rails at suitable points, say a quarter of a mile from the crossing so as to give a train ample time to slow down and stop before reaching the crossing, and B are four water tight trip boxes also of any size or shape secured at suitable points along the track; and C is a dynamo or other source of electric energy for supplying current to the system. Within each of the switch boxes is pivoted a lever *a*, the ends of which are adapted to contact with the terminal *b* or the terminal *c* as the case may be, and the wires 1 and 2 are connected to this lever, while the wires 3 and 4 are connected to the terminal posts *b* and *c*.

The arm *d* projects outside of the switch box, and is so located as to be in the path

of travel of a suitable striker located upon the locomotive, so that when this arm is struck it will close the circuit through the terminal post *c* and lever *a*.

*e* is an electro magnet so located so as to attract one end of the lever *a* when said magnet is vitalized, and thus open this lever and the terminal post *c* while closing the circuit through said lever and the terminal post *b*.

Within the trip box is located a series of coils *f* within the field of which is the armature *g* carried by the bell crank lever *h*, the outer end of which projects outside of the trip box and in the path of travel of suitable devices located upon the locomotive so that when the outer end of this bell crank lever is in the position shown in dotted lines it will operate this device to shut off the steam and apply the air brake to the train, thus bringing it to a stop before it has reached the danger point.

The wire 5 is connected to the bell crank lever *h*, and this lever also contacts with the spring terminal 6 of the wire 7 when said lever is in its lowered position, for the purpose hereinafter set forth.

From this description the operation of my improved system will obviously be as follows:—An east bound train will push the lever *d* on the west side to the right, indicated at R and bring the switch lever *a* in contact with the terminal post *c*, thus sending a current through the coils *f* on the north and south of the crossing, which will raise the outer end of the bell crank lever *h*. Should a train be coming at right angles on the cross line the trip device on the locomotive thereof would come in contact with the upright bell crank lever, thus cutting off the steam and applying the brake, which would stop the train regardless of the attention of the engineer. After the east bound train has passed the crossing it will push the arm *d* on the east side to the left and close the switch lever *a* against the post *b* thus sending a current through the coil *e* which will open the circuit between the terminal *c* and lever *a* on the west side, thus devitalizing the coils *f* on the north and south, which will permit the bell crank levers *h* to return to their normal position out of the line of travel of the tripping devices on the locomotive, thereby opening the track for the further passage of trains.



Having thus fully described my invention what I claim as new and useful, is—

1. In a system of the character described, a series of switch boxes located at suitable  
5 points along the track, each box containing a switch lever and contact points for opening and closing the circuits, an electro magnet adapted to actuate said switch lever in one  
10 direction, an arm adapted to operate said lever in the opposite direction, a source of electric energy, a series of trip boxes each containing a series of magnetic coils, an armature adapted to travel in the field of said  
15 coils, a bell crank lever to which said armature is secured, a switch with which said bell crank lever is adapted to contact to make and break a circuit, one end of said bell crank lever adapted to operate suitable trip  
20 mechanisms upon the locomotive and a series of wires connecting the switch and trip boxes and source of electric energy, as and for the purpose set forth.

2. In a system of the character described, a series of switch boxes each containing a

pivoted switch lever *a*, contact posts *b* and *c*, 25  
an electro magnet *e* for operating said switch in one direction, an arm *b* projecting from the switch box and adapted to operate the switch lever in the opposite direction, a series  
30 of trip boxes each containing a series of magnetic coils *f*, an armature *g* adapted to travel in the field of said coils, a bell crank lever to which said armature is attached, one end of said bell crank lever projecting into the field  
35 of travel of suitable trip mechanisms carried by the locomotive, a series of wires connecting the switch and trip boxes and a source of electricity for vitalizing said electro magnets and magnetic coils, as and for the purpose  
40 set forth.

In testimony whereof, I have hereunto affixed my signature in the presence of two subscribing witnesses.

VAUGHN MORRISON.

Witnesses:

R. S. VESSEY,  
A. F. WHITNEY.