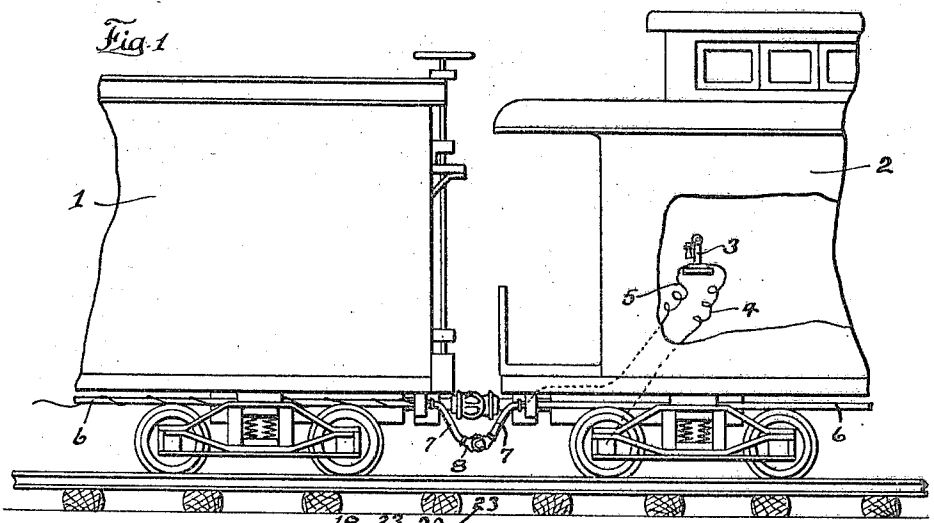
S. R. NAGINEY.

ELECTRIC SWITCH STRUCTURE.

APPLICATION FILED MAR. 17, 1916.

1,224,952. Patented May 8, 1917

Fig. 1



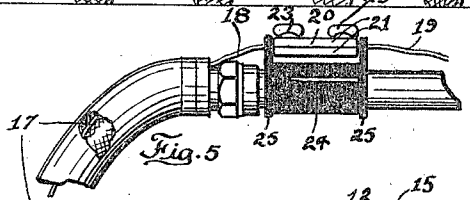


Fig. 5

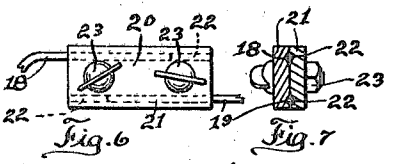


Fig. 6

Fig. 7

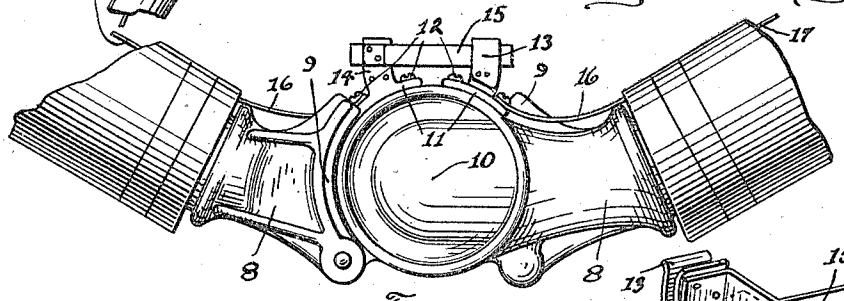


Fig. 2

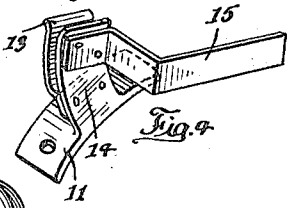


Fig. 4

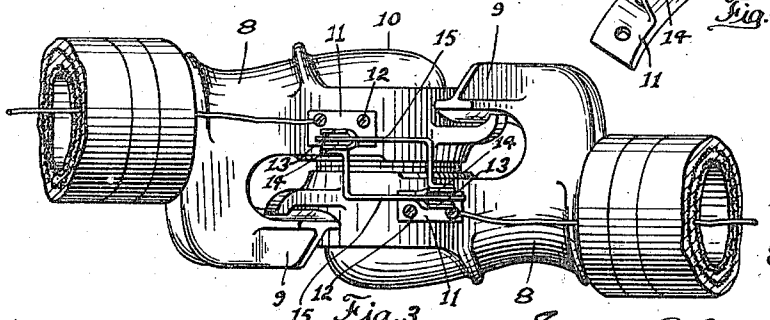


Fig. 3

Witnesses

R. M. McCormick,

A. L. Phelps

Inventor

Samuel R. Naginey

By

C. C. Shepherd Attorney

UNITED STATES PATENT OFFICE.

SAMUEL R. NAGINEY, OF BREMEN, OHIO, ASSIGNOR OF ONE-HALF TO CLARENCE E. MAXWELL, OF BREMEN, OHIO.

ELECTRIC-SWITCH STRUCTURE.

1,224,952. Specification of Letters Patent. Patented May 8, 1917.

Application filed March 17, 1916. Serial No. 84,993.

To all whom it may concern:

Be it known that I, SAMUEL R. NAGINEY, a citizen of the United States, residing at Bremen, in the county of Fairfield and State of Ohio, have invented certain new and useful Improvements in Electric-Switch Structures, of which the following is a specification.

My invention relates to an electric switch structure designed for use in connection with electric or steam trains. My invention may be used as a means of telephoning from the rear to the front of a train, or it may be used for completing any type of electric circuit necessary.

The main object of my invention resides in a peculiar structure designed to be used in connection with the jointed air line located between cars of a train. The structure is so arranged that the movements necessary for breaking this air line will, of their own accord, break the electric circuit.

The preferred embodiment of my invention is shown in the accompanying sheet of drawings, in which similar characters of reference designate corresponding parts, and in which:

Figure 1 is a view in side elevation of the rear portion of a freight train showing my invention in use thereon,

Fig. 2 is an enlarged view in side elevation of the jointed portion of the air line located between cars,

Fig. 3 is a top plan view of the structure shown in Fig. 2,

Fig. 4 is a view in perspective of the switch section, the two sections forming the switch being interchangeable,

Fig. 5 is a view in side elevation showing the manner in which the conducting wire is joined to the air hose,

Fig. 6 is a top plan view of the electric coupler used by me, and,

Fig. 7 is a cross section of the structure shown in Fig. 6.

It will be understood that my invention is not limited to use in connection with freight trains or steam trains, but also includes electric trains. Also, the particular use to which my invention may be put is not essential, since it is applicable to all types of electric circuits. In Fig. 1, I have illustrated the rear end of a freight train wherein the box car is designated by the reference numeral 1, while the caboose is designated by the reference numeral 2. At 3, I have shown a telephone, the wires 4 and 5 of which carry currents communicating with a similar instrument in the forward part of the train. One of these wires is connected with the truck of the caboose in order to form a ground connection, while the opposite wire is intended to be insulated up to the forward instrument. It is in connection with this wire that my invention may be resorted to. This wire is strung along beneath the car in any desired manner as by being attached to or coiled about the air pipe 6. These various air pipes 6 are connected to each other by means of the hose sections 7 and the twin coupler members 8. This air line connection is of the conventional type, the coupler members 8 being provided with shouldered portions 9, whose meeting faces are inclined to present wedge surfaces so that when the sections are united and dropped to the position shown in Fig. 1, the two coupler sections 8 will be wedged toward each other by their mutual action, which makes the pivot center of this connection at 10. Mounted upon each of these coupler members is a switch section of the type shown in perspective in Fig. 4. The various switch sections are interchangeable with each other and each comprises a base portion 11 which base may be attached to the coupler sections by means of the screws shown at 12. Each base section further carries an upstanding socket portion formed by the straps 13 and 14 and the latter is also provided with a longitudinally extending knife 15. The socket and knife are offset laterally a slight extent and are so arranged that the knife 15 on one member fits into the socket on the other member. To each of these switch sections there is attached a conducting wire 16 leading through the body of each hose section, as is shown at 17. I have resorted to this type of construction in order to reduce the wear on the wire itself, for were it exposed there would be added danger of the insulating covering becoming broken or entirely removed and thereby cause a short circuit. The portion 18 of this wire leading out of the upper end of each hose section is joined to the wire 19 located beneath each of the cars by means of the coupler member shown at 20, which coupler may be of any preferred construction and which is shown in the present em-

bodiment as comprising coöperating plate sections 21, each provided with a pair of grooves 22 and these plates pressed toward each other by means of the bolt and nut structure shown at 23. In order to insulate these couplers from the air pipes 6, I have provided each of the latter with a sleeve of insulation designated 24. The wires leading to the coupler 20 are caused to pass through the flanges 25 forming a portion of the sleeve and in this manner the coupler is held in its correct position as well as being insulated from the metal piping 6.

I have resorted to the use of the switch construction principally for the reason that the metal coupler sections 8 frequently become corroded or covered with non-conducting material in such manner that a perfect electric circuit through them is questionable. The switches are so arranged that when the hose sections are uncoupled, the switch itself will be automatically uncoupled. Because of the structure of coupler connections 8, it is necessary when the hose sections are in their place on the car ends to raise the coupler portion and this action causes a relative rotation between sections about the pivot 10 until the wedge surfaces come out of contact with each other. This action causes the knife 15 of one switch section to disengage the socket on the opposite section. It will further be noted that making the switch sections interchangeable, provides each connection with two knife arms 15 and also two sockets. Therefore, there is extremely little likelihood of an imperfect connection.

What I claim, is:

1. The combination with the jointed air line between cars comprising a pair of hose sections, pivotally connected coupling members carried by said hose sections, of a switch socket member and a switch knife member, one carried on the top side of each of said coupler members so that when the coupler members are given a pivotal uncoupling movement, said switch sections will be disconnected.

2. The combination with the jointed air line between cars comprising a pair of hose sections and pivotally connected coupler members carried by said hose sections, of a switch socket member and a switch knife member, both carried by each of said coupler members, so that when the coupler members are given a pivotal uncoupling movement the switch sections will be disconnected.

3. The combination with the jointed air line between cars comprising a pair of hose sections and pivotally connected coupler members carried by said hose sections, of interchangeable switch sections, one carried by each of said coupler members, each section comprising a knife portion and a laterally disposed socket portion for receiving the knife on the other section.

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

SAMUEL R. NAGINEY.

Witnesses:
A. D. HUFFORD,
L. H. KENNEDY.