

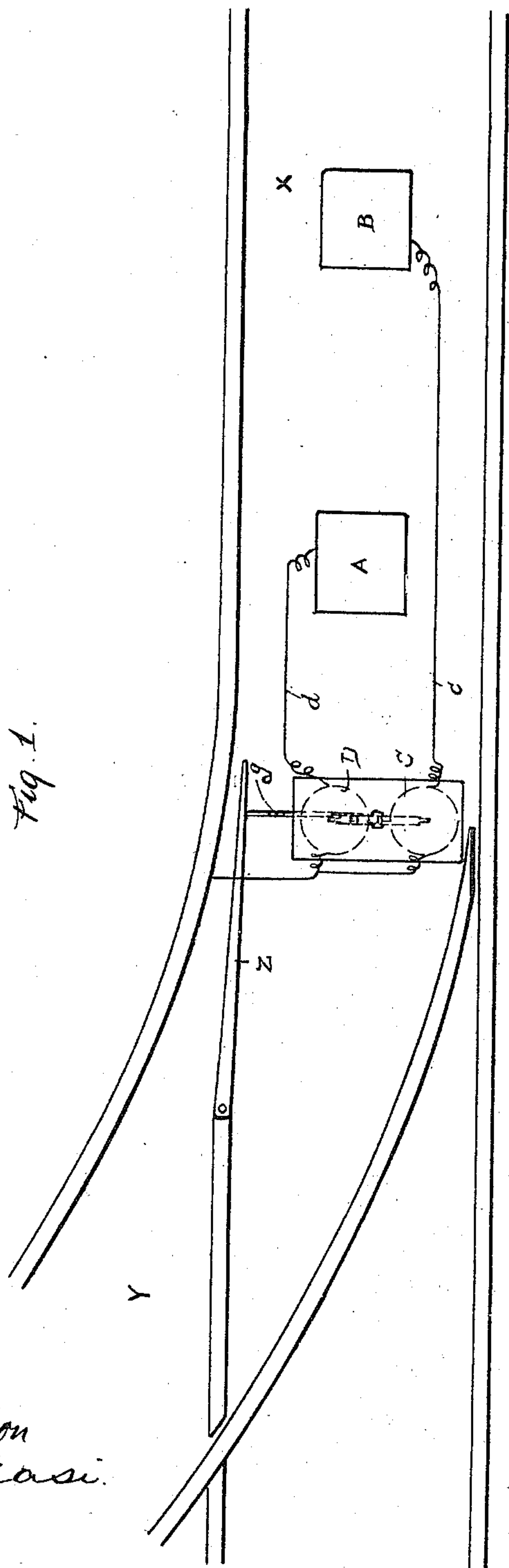
(No Model.)

2 Sheets—Sheet 1.

C. H. HABERER.  
ELECTRIC SWITCH.

No. 572,929.

Patented Dec. 8, 1896.



WITNESSES  
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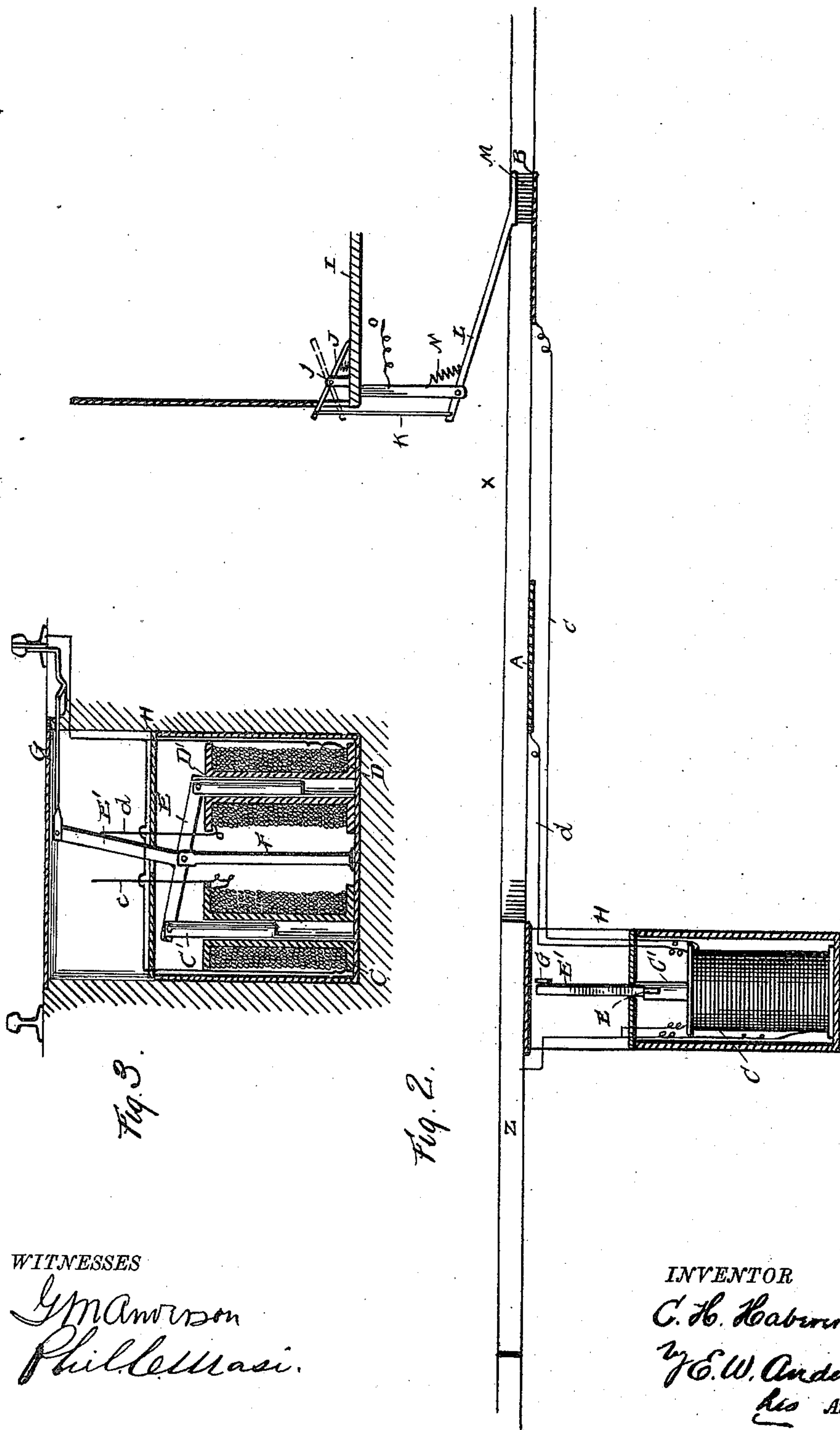
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# UNITED STATES PATENT OFFICE.

CHARLES H. HABERER, OF LOUISVILLE, KENTUCKY, ASSIGNOR OF ONE-HALF TO WILLIS W. BARNES, OF SAME PLACE.

## ELECTRIC SWITCH.

SPECIFICATION forming part of Letters Patent No. 572,929, dated December 8, 1896.

Application filed February 27, 1896. Serial No. 580,948. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES H. HABERER, a citizen of the United States, and a resident of Louisville, in the county of Jefferson and State of Kentucky, have invented certain new and useful Improvements in Electric Switches; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

Figure 1 of the drawings is a plan view of portion of railroad-track and showing the application of the invention thereto. Fig. 2 is a sectional view of track, showing the invention as in application. Fig. 3 is a cross-section of track through box containing helices.

This invention has relation to electric-switch mechanism, and has for its object the provision of means of simple and reliable character whereby a switch can be controlled and operated by the driver, motorman, gripman, engineer, or other operator of a moving car or train, without stopping the car or train and without alighting therefrom.

With this object in view the invention consists in the novel construction and combination of parts, all as hereinafter described, and pointed out in the appended claims.

Referring to the accompanying drawings, the letter X designates a section of a main track or tramway, Y a section of a turnout or branch thereof, and Z the movable or point rail of the switch.

A and B designate two surface plates, of conductive material, which are located between the rails of the main track, one a short distance in front of the other and at any desirable distance from the switch.

C and D designate two hollow helices, each of which is connected by wire *c* or *d* with the respective surface plates A and B and also with one of the track-rails, as indicated at *c'*, the latter constituting the return connections.

C' D' designate vertically-movable cores of the respective helices C and D, and which at their upper end portions are loosely connected to opposite arms of a lever E, which is ful-

crumed centrally to post F. To receive this lever, the upper end portions of the cores and the post are usually slotted, as indicated. Said lever, which is of inverted-T form, has a third arm E', to the upper end portion of which is connected the link or switch bar G, which at its opposite end is connected with movable switch or point rail Z.

The apparatus just described is preferably inclosed in water-tight box H, set in an excavation between the main-track rails adjacent to the switch, but it may be placed to one side or wherever an operative connection can be made with the switch or point rail. The top of the box G is slotted to permit the necessary play of the arm E' of the lever E, and the link or switch bar is formed with a crook or bend *g* for the purpose of preventing water running along it and down into the box.

I, Fig. 2, designates a section of a car or car-platform which is provided with a foot-lever or pedal J, fulcrumed at *j* and connected by a rod or bar K, with a lever L beneath the platform, and which carries a brush or contact M.

N is a spring for retracting the lever L after operation, and O indicates an electrical connection from said brush or contact to the trolley of the car. If the car is not propelled by electricity, it may carry a primary or storage battery, to which the brush may be connected. The invention is, however, more especially designed for use in connection with the so-called "electric" cars, with either overhead or underground systems.

Referring again to Fig. 2 of the drawings, it will be seen that when the foot-lever or pedal J is depressed the outer arm of the lever L will be raised and its brush-arm will be depressed, bringing the brush in contact with one of the plates A or B, (if it is over one of the said plates at the time of operation,) and thereby complete the circuit through one of the helices C or D. This helix being energized by the current attracts its core C' or D', and thereby works the lever E on its fulcrum. This movement through the arm E' and the link-bar F throws the switch. If the contact is made with the plate A, the helix C is energized and the switch is thrown or held



in proper position to cause the car to keep straight along the main track. If the contact is made with plate B, the helix D is energized and the switch is set to turn the car into the  
5 branch track or turnout.

By locating the plates A and B one in advance of the other but one brush or contact is necessary. It is obvious, however, that such plates might be located side by side and  
10 the car be provided with two brushes or contacts. It is also obvious that in place of the foot-lever or pedal shown and described other suitable means may be employed for operating the brush-lever.

15 The switch can be operated from any distance, according to the position of the plates A and B.

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

The combination with a switch movable in both directions, of a pair of hollow helices

having each a movable core, a lever to opposite arms of which the said cores are connected, said lever having a third arm, a bent  
25 link-bar connecting this third arm to the switch, a pair of stationary track contact-plates located one in advance of the other at the proper distance from the switch and electrically connected each with one of the said  
30 helices, a movable contact carried by the car, a source or supply of electricity, and proper connections for completing the circuit through either of the said helices when the contact on  
35 the car is brought into engagement with the track contact which is connected with that helix, substantially as specified.

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

CHARLES H. HABERER.

Witnesses:

D. MOXLEY,  
W. W. BARNES.