

ELECTRIC SWITCH.

PATENTED IN UNITED STATES AND CANADA.

This Electric Switch, the joint invention of Messrs. B. Hughes and H. Young, Montreal, is fully covered by United States and Canadian patents. The design and development is in the hands of Albert E. Smail, Mechanical Engineer, Montreal, who is also associated with above in placing same on market.

It is essentially similar to a compass with electric contacts mounted on same center pieces as needle. The needle and contacts are magnetically held in the neutral position and the swinging to either side being controlled by two pole pieces at right angles to normal position.

The switch can be applied to any use requiring the control of electric currents without actual contact between operator and switch being required, such as a block system on railroads, or the operation of track switches on electric railways.

The switch as at present developed is arranged for the operation of track switches on electric railways, the operation being under the complete control of the motorman, and does not require the car to be slowed down or the motorman even to see the switch. It does not require any alteration to the road bed such as insulated rails, etc., and is entirely proof against all damage due to hard usage, climate, frost or wet, and is in every way thoroughly reliable.

In this application the electric switch is buried beneath the road-bed at a convenient distance away from the track switch, the outside or controlling pole pieces being carried up to the surface of the road. The leads from the switch are taken to two solenoid magnets which are in an oil filled case beside track switch.

On the car there is a pilot magnet attached to the truck in such a position that its poles will pass over the pole pieces of the electric switch buried beneath the road bed at the same time clearing them by at least four inches.

The operation is as follows:—On approaching the track switch the motorman sets the handle of a pilot switch in his cab, in the direction he wishes to go. This controls the polarity of the pilot magnet on truck which in turn magnetically affects the pole pieces in road-bed and thus causes the electric switch arm to swing over in the desired direction and close the circuit of the solenoid at track switch which in turn pulls switch tongue in proper direction.

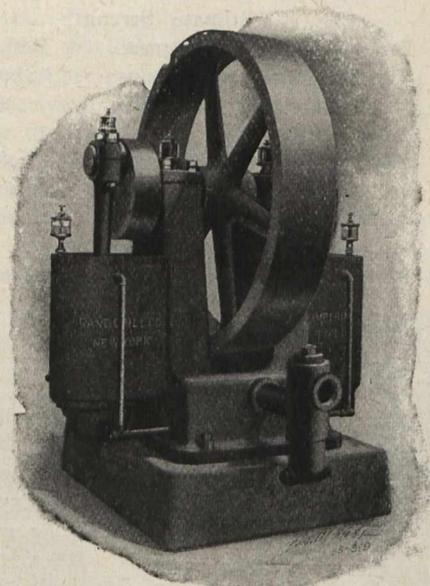
The attachment of the switch tongue is of such design that it requires very little alteration to the switch bed and leaves the tongue entirely free so that it can also be moved if desired with the ordinary switch iron.

There is also an alternative arrangement by which the switch will be brought into action by means of a locomotive or similar iron or steel mechanism passing over it. The arrangement will work equally well in all weathers.



Air Compressor for North Pole.

The Department of Marine and Fisheries through their consulting Engineers, the Standard Construction Co., of Montreal, have paid the Canadian Rand Drill Co. a distinct compliment in selecting one of their Imperial Type XI-IAir Compressors for the forthcoming expedition to "Greenland's icy mountains."



This machine is for the S. S. "Arctic," which is fitting out at Halifax, for its long and perilous journey in search of the North Pole.

The compressor is to be operated by a windmill, since it is impossible to obtain fuel for steam, and the air will be discharged into several receivers at a high pressure; the air, in turn being used in place of steam to generate electricity.