Sept. 7, 1943. A. G. SCOTT 2,329,138

CONDUCTOR SUPPORT

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Fig. 1.

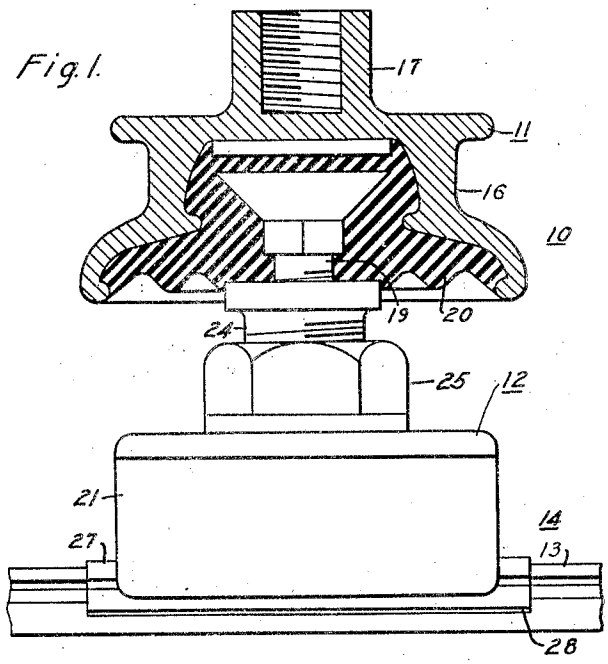
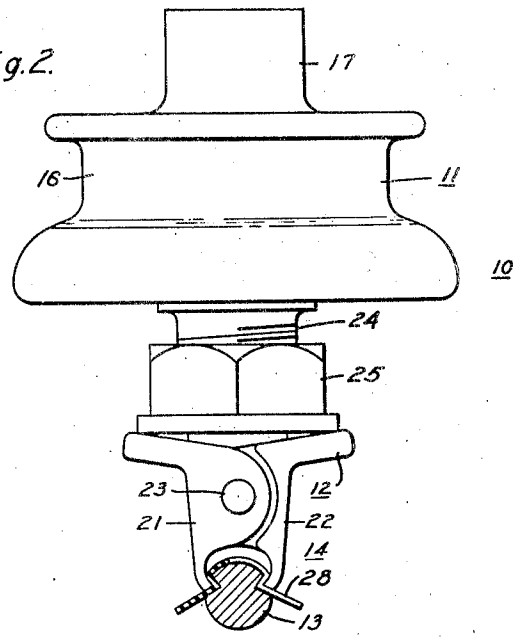


Fig. 2.



WITNESSES:

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CONDUCTOR SUPPORT

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3 Claims. (Cl. 191—42)

My invention relates generally to conductor supports and has reference in particular to insulated trolley conductor supports.

Generally stated, it is an object of my invention to provide a simple and effective insulated conductor support which is inexpensive to manufacture, easy to install and is reliable in service.

More specifically, it is an object of my invention to provide an insulated conductor support having a yielding skirt portion which is effective to prevent the accumulation of a conducting film or dust or the like thereon.

Another object of my invention is to provide an auxiliary insulator for trolley conductor supports having a flexible portion adapted to be agitated by a passing current collector to prevent the formation of a dust coating thereon.

Yet another object of my invention is to provide auxiliary insulation between a conductor and a conductor support having a flexible projecting portion which may be agitated to prevent the formation of a conducting film upon its surface.

Still another object of the invention is to provide additional protection for a main insulator support in a dust laden atmosphere by utilizing a relatively thin layer of auxiliary insulation interposed between the conductor and the main insulator support having flexible side portions projecting on either side of the conductor which are adapted to be flexed to remove dust deposits from the surface thereof.

Other objects will, in part, be obvious, and will, in part, be explained hereinafter.

In accordance with my invention, insulated trolley conductor supports situated in mines or other locations where the air is usually damp and full of dust particles from mining operations, rock dusting, or the like, may be provided with additional protection against breakdown through surface creepage. Auxiliary insulation may be interposed between the conductor and the conductor clamping portions of the support to insulate the conductor from the support and increase the creepage path between the conductor and ground. By utilizing insulation in the sheet form and providing it with laterally projecting flexible skirt portions, which may be agitated by engagement with a passing current collector, or by movement of the conductor itself, to remove therefrom any dust particles, the formation of a conductive surface film between the conductor and ground may be effectively prevented.

For a more complete understanding of the nature and objects of my invention, reference may be had to the accompanying drawing in which:

Figure 1 is a partly sectioned side elevational view of a conductor support embodying the principal features of the invention; and

Fig. 2 is an end elevational view of the conductor support of Fig. 1.

Referring to Figs. 1 and 2 of the drawing, the reference numeral **10** may denote generally an insulated trolley conductor support comprising, a main insulator member **11** having clamp means **12** attached thereto for securing a trolley conductor **13**, and having an auxiliary insulating member **14** interposed between the clamping means and the trolley conductor.

The main insulating member may be of any suitable design comprising, for example, a cup-shaped metallic shell **16** having a threaded boss **17** on the upper side thereof for receiving a support means for supporting the insulator member. A threaded stud **19** may be positioned within the shell **16** and secured therein in spaced and insulated relation to the shell by means of suitable insulating material **20** which may be molded in the shell under heat and pressure.

The clamping means **12** may be of any suitable construction well known in the art comprising, for example, a pair of jaws **21** and **22** which may be pivotally mounted by means of a pin **23** on a support member **24** mounted on the stud **19** of the main insulating member. A rotatable nut member **25** may be provided for adjusting the clamping relations of the jaws **21** and **22** for securing the trolley conductor **13** therebetween.

Since it has been found that the conventional type of insulated conductor support has proved unsatisfactory where used in certain mines and other locations where the air is exceedingly damp and contains a relatively large amount of dust of different kinds, such as, for example, "rock dust" which is used to prevent explosions in mines, an additional or auxiliary insulating member **14** may be interposed between jaws **21** and **22** and the conductor **13**. By utilizing an insulating member **14** having its central portion **27** interposed between the conductor and the jaws of the clamping means, and having relatively flexible skirt portions **28** projecting along each side of the conductor, the performance of insulated conductor supports in these moist and dust laden atmospheres is greatly improved. The auxiliary insulating member may be composed entirely of a relatively flexible insulating material such as mica, fishpaper, treated fabric or molded insulating sheet material, or may com-

prise a relatively stiff central portion having a relatively flexible skirt portion along the edges thereof. By providing the auxiliary insulating member with flexible skirt portions so positioned as to be engaged by passing current collectors, or agitated by vibration of the conductor itself, or by surrounding air currents, the auxiliary insulating member may be kept clean and relatively free from rock dust or other harmful precipitates which might otherwise form a relatively low resistance leakage path between the trolley conductor and ground, causing chemical actions which destroy the insulating value of the main insulator, and increase the power losses of the trolley system.

From the above description and the accompanying drawing, it will be apparent that I have provided in a simple and effective manner for protecting insulated conductor supports which are located in dirt or dust laden atmospheres. According to my invention, the conventional type of insulated conductor support may be readily adapted for operation under such conditions with a minimum of expense. By providing the additional protection afforded by my invention, the life of insulated conductor supports may be greatly extended and the power losses incurred through surface leakage heretofore may be greatly reduced.

Since certain changes may be made in the above description and different embodiments of the invention may be made without departing from the spirit thereof, it is intended that everything contained in the above description and shown in the accompanying drawing shall be considered as illustrative and not in a limiting sense.

I claim as my invention:

1. The combination with a grooved current conductor having upper and lower lobes defined by longitudinal grooves and support means for supporting the conductor, of an insulating member interposed between the conductor and the support means having flexible laterally projecting side portions substantially opposite lower lobe adapted to be agitated by the flanges of a grooved current collector passing along the conductor to remove surface deposits therefrom.

2. The combination with a trolley conductor support having a main insulator member and clamp means for securing a trolley conductor thereto, of an auxiliary insulator member comprising a relatively thin sheet of insulating material interposed between the conductor and said clamp means having laterally projecting skirt portions disposed in the plane of the conductor and adapted to be impacted and agitated by a passing current collector to remove surface deposits therefrom.

3. The combination with an insulated trolley conductor support for use in mines having clamp means for engaging a trolley conductor, of an auxiliary insulator member comprising a relatively thin sheath of insulating material interposed between the conductor and the clamp means and provided with flexible laterally projecting skirt portions along the sides engageable by the flanges of a grooved current collector passing along said conductor to remove surface deposits therefrom.

ANGUS G. SCOTT.