No. 883,366. PATENTED MAR. 31, 1908.

A. L. WHITE.

ELECTRIC SWITCH.

APPLICATION FILED NOV. 21, 1907.

Fig. 1.

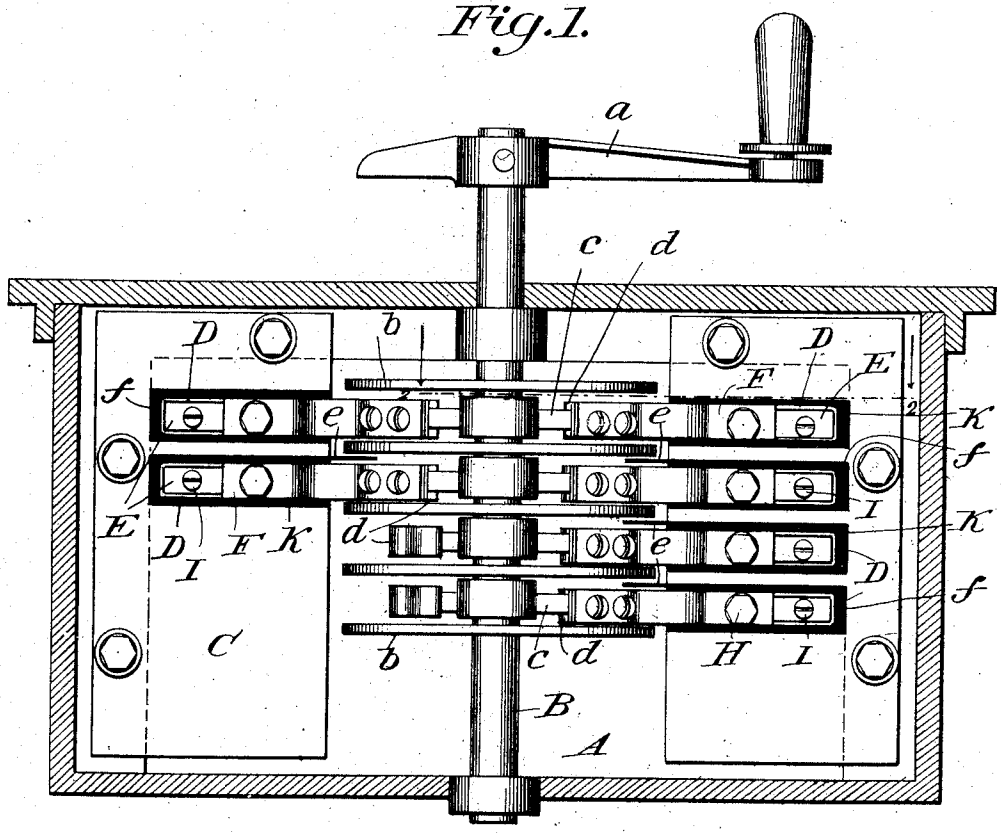


Fig. 3.

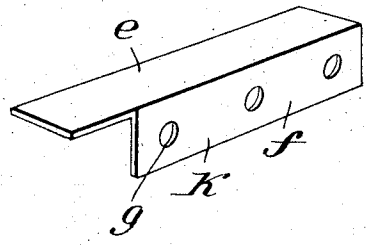
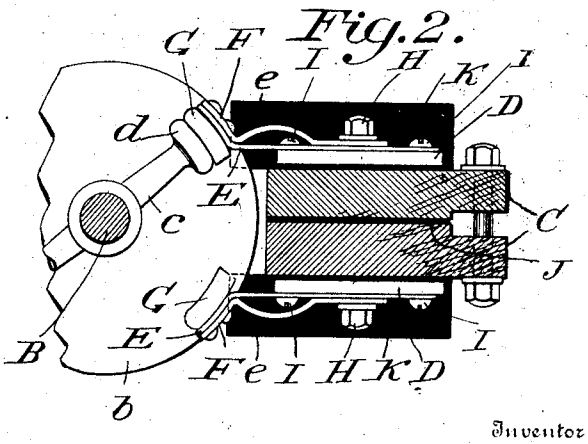


Fig. 2.



Witnesses

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ELECTRIC SWITCH.

No. 883,366. Specification of Letters Patent. Patented March 31, 1908.

Application filed November 21, 1907. Serial No. 403,161.

To all whom it may concern:

Be it known that I, ARTHUR L. WHITE, citizen of the United States, residing at Cresco, in the county of Howard and State of Iowa, have invented new and useful Improvements in Electric Switches, of which the following is a specification.

My invention pertains to electric switches for use in motor starters; and it has for its general object to provide an arrangement of insulators for such switches, which while simple and easily installed is calculated to effectually prevent arcing and burning out.

With the foregoing in mind, the invention will be fully understood from the following description and claims when the same are read in connection with the drawings, accompanying and forming part of this specification, in which:

Figure 1 is a view, partly in elevation and partly in section, of so much of an oil switch of the "auto type" as is necessary to illustrate the arrangement of insulation constituting the preferred embodiment of my invention. Fig. 2 is a section taken in the plane indicated by the line 2—2 of Fig. 1, looking in the direction of the arrows. Fig. 3 is a perspective view of one of the insulating angle sections comprised in my improvements.

Similar letters designate corresponding parts in all of the views of the drawings, referring to which:

A is the case of the switch, and B is a shaft journaled in the case and equipped with the usual crank *a*, insulating disks *b*, and arms *c* bearing shoes *d*.

In the case A, at opposite sides of the shaft B, are arranged pairs of supporting sections C, preferably of wood, the sections of each pair being bolted or otherwise connected together; and on the outer sides of the sections are arranged the usual cast-iron blocks D, spring-brass leaves E and F carrying contact brushes G, and binding screws H. The blocks D and leaves E are preferably connected to the supporting sections C by screws I, while the binding screws H serve the additional purpose of connecting the leaves F to the blocks D.

My invention consists in the interposition of a strip of insulating material J, preferably of "micanite", between the supporting sections C of each pair, and in the use of the several angle sections K of similar or other suitable insulating material.

The interposition of the strip of "micanite" or other insulating and non-carbonizing material between the wood supporting sections C is materially advantageous because it effectually prevents arcing between the metallic parts and carbonizing of the wood sections. In this connection I would say that experience has demonstrated that when the strip J is omitted the wood carbonizes around the screws I after a short period of use and in that way loses its non-conducting quality.

The arrangement of the angle sections K of insulating and non-carbonizing material between the wood supports C and the metallic blocks D is advantageous since the said sections K effectually prevent carbonizing of the wood under, between and around the metallic blocks D.

As will be seen by reference to Fig. 3, the angle sections K respectively comprise a long side *e* and a short side *f;* the latter being provided with three apertures *g* for the passage of the shanks of screws H and I which serve to retain the angle sections in position. The short sides *f* of the angle sections K are interposed between cast-iron blocks D and the opposed faces of the supporting sections C, while the long sides *e* are arranged above the cast-iron blocks D, the springs E and F, the brushes G, the shoes *d* and the disks *b*. This is true of all but the uppermost angle sections in which the sides *e* may be of the same length as the sides *f*.

By virtue of the angle sections K being arranged as shown and described, it will be evident that said sections not only completely insulate the iron blocks D from the supporting sections C, but they also insulate the springs, brushes, screw heads and all connections and in that way preclude arcing and burning out of the switch.

The construction herein shown and described constitutes the best embodiment of my invention of which I am cognizant, but it is obvious that in the future practice of the invention such changes or modifications may be made as fairly fall within the scope of my invention as defined in the claims appended.

Having described my invention, what I claim and desire to secure by Letters-Patent, is:

1. In an electric switch, the combination of a support, a metallic device connected to the support and carrying a brush, and an insulating and non-carbonizing section having

a portion interposed between the metallic device and the support and also having a portion disposed at an angle to the first mentioned portion and arranged adjacent to the metallic device.

2. In an electric switch, the combination of a support, a metallic device connected to the support and carrying a brush, and an insulating and non-carbonizing section, of right angle form in cross-section, having one of its sides interposed between the metallic device and the support and its other side arranged in close proximity to the metallic device.

3. In an electric switch, the combination of a support, a metallic device connected to and extending beyond the support and carrying a brush, and an insulating section, of right angle form in cross-section, having a short side interposed between the metallic device and the support and also having a comparatively long side extending beyond the support and the first mentioned side and disposed in close proximity to the metallic device.

4. In an electric switch, the combination of a support comprising sections of wood, a section of insulating material secured between said wood sections, a plurality of metallic devices connected to one side of and extending beyond the support and carrying brushes, and angle sections, of insulating material, having short sides interposed between the metallic devices and the support and also having long sides disposed at an angle to and extending beyond the support and arranged between the metallic devices.

5. In an electric switch, the combination of a support, a plurality of metallic devices connected to and extending beyond the support and carrying brushes, and insulating sections, of right angle form in cross-section, having short sides interposed between the metallic devices and the support and also having comparatively long sides extending beyond the support and the first mentioned sides and disposed between the metallic devices.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

ARTHUR L. WHITE.

Witnesses:
C. A. MARSHALL,
F. E. WHITE.