Aug. 7, 1923. 1,463,852

B. G. C. STEPHENS

ELECTRIC LINE INSULATOR

Filed Oct. 27, 1922

Fig. 1

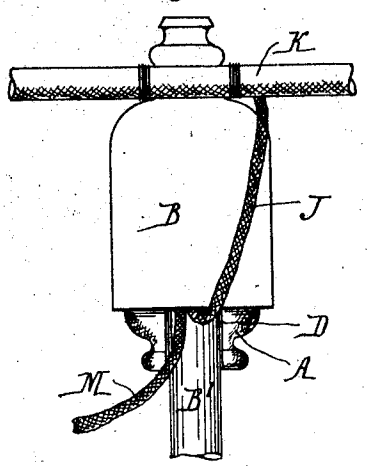


Fig. 2

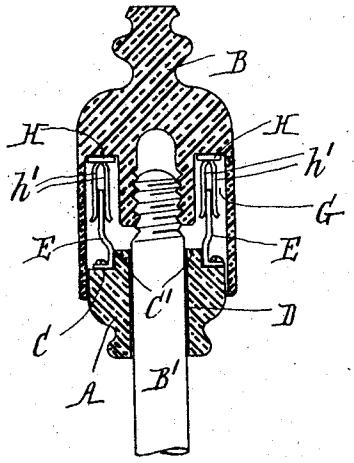


Fig. 3

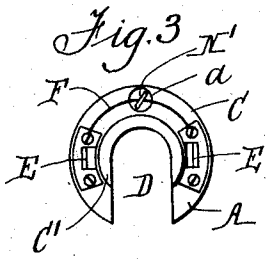


Fig. 4

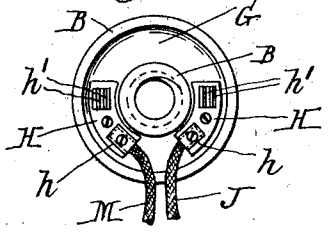
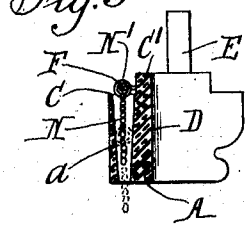


Fig. 5



INVENTOR

B. G. C. Stephens

Pennie Davis Marvin & Edmonds

ATTORNEYS

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UNITED STATES PATENT OFFICE.

BENJAMIN GEORGE CLAUDE STEPHENS, OF AUCKLAND, NEW ZEALAND.

ELECTRIC-LINE INSULATOR.

Application filed October 27, 1922. Serial No. 597,393.

To all whom it may concern:

Be it known that I, BENJAMIN GEORGE CLAUDE STEPHENS, subject of the King of Great Britain, residing at 23–25 Wellesley Street, Auckland, in the Dominion of New Zealand, have invented new and useful Improvements in Electric-Line Insulators, of which the following is a specification.

This invention has been devised with the object of providing an improved form of insulator for use in carrying electric lines of all kinds and embodying therein means whereby a safety fuse may be interposed in the electric connection to govern the flow of the current from a main to a service connection.

The invention is particularly adaptable for use as a main carrying insulator in connection with electric lighting or power systems, to provide for a safety fuse being interposed in the service branch from a main, in order that any overloading or short-circuiting in the service branch will result in the blowing out of the fuse and thus cut off the current from the whole of the branch service.

The invention may however be used in other analogous circumstances, as for instance, as providing for an automatic safety switch in electric circuits of different kinds.

The invention consists generally in an appliance, as for instance an insulator cup, made in two portions each of suitable non-conductor material, as procelain, vulcanite or the like, made to fit one on the other, and one of which members is provided with a pair of contact pins connected together by a fuse wire, and the other of which members is provided with a pair of spring contacts that are connected respectively to the main and the service branch. These spring contacts are so arranged and disposed relatively to the contact pins on the other member that when the two members are fitted together, each pin engages a spring contact so that electric connection is thereby established between the main and the service branch through the fuse wire and these contacts.

The invention is illustrated in the accompanying drawings in its application to an insulator cup.

In such drawings:—

Figure 1 is an elevation of the complete cup.

Figure 2 is a sectional elevation thereof.

Figure 3 is a plan of the lower portion of the cup.

Figure 4 is an underneath plan of the upper portion of the cup.

Figure 5 is a sectional elevation of the lower portion of the cup, the section being drawn on a line at right angles to the section shown in Figure 2.

In carrying out the invention in the form shown, the appliance is formed by a lower member A, and an upper member B made to fit over the lower member with a close fit, which in the case of an insulator cup will have the anchor bolt B′ screwed up into its bottom in the well known manner. This upper member will also in the case of an insulator cup, be constructed in the form usually employed in these cups and having a groove or grooves to receive the main line, as in Figure 1. These members A and B are constructed of any of the usual insulating materials.

The lower member A is shaped with a flat top surface C around a flange C′ surrounding a central opening D, that extends down and out through one side as shown in Figures 1 and 5. Upon the surface C, at points diametrically opposite one another, metallic contact pins E, of flat section, are fastened so that they project upwards for an approved height. These pins are then electrically connected together by means of the fuse wire F extending between them, around the outside of the flange C′.

The upper member B is constructed with an annular recess G extending up within it for a suitable height. Within the top of the recess are fixed two contact pieces H arranged at positions diametrically opposite one another. Each of these pieces is formed with a wire receiving socket *h* at one end and with two parallel spring fingers *h′* projecting downward from the other end and disposed to bear inwards towards one another. These fingers are adapted, when the member A is placed in position beneath the member B, by slipping it sideways on to the anchor bolt stem and lifting it up beneath the member B, to slip over one of the contact pins E and to grip it between them. The respective contacts H may thus be caused to make connection with the respective contacts E and thereby to establish communication between one contact H and the other, through the fuse wire F.

The lead J from the main K is connected

to one contact H and the service branch M is connected to the other contact H, these wires being connected before the member B is placed in position. They are then accommodated in the opening D when the member A is placed in beneath the member B in the assembly of the parts. Thus connection is established between the main and the branch through the fuse wire F, in the manner required.

The member A is held in position by its fitting in to the member B and also by the engaging grip of one set of contacts with the other. If desired, however, auxiliary means for fastening, of any approved nature, may be employed. The relative positions of the contacts on the two members, may be changed without affecting the general features of construction and operation.

The appliance may have provision for giving a visual indication of the blowing of a fuse wire, thus providing for a fault being located without the necessity of removing the lower member A from its place. Means for effecting this object are shown in the drawings. The lower member A at a point about half way in the length of the fuse wire F, is made with an aperture *a* extending down through it and opening through its bottom. This is made to decrease in its diameter at its lower end. A length N, of light chain or the like, is provided and the wire F is passed through an enlarged link N′ to which such chain length is attached so that the chain thus hangs down within the aperture *a*. The link N′ is made of a size such that it may pass down for a portion of the length of the aperture, but may not pass through its bottom end. On the fuse wire F breaking or blowing out, the chain will therefore be freed so that it may drop until the link catches. The chain is made of a length such that when held up by the wire, it will be within the aperture and when allowed to drop, its end will hang loosely from the bottom end of such aperture, thus giving the required visual indication that the wire has blown or broken.

I claim:—

1. An electric line carrying insulator adapted to be screwed onto a supporting member and formed of two parts made of non-conductor material, coacting contacts on said parts, and a fuse wire connecting the contacts of one of said parts.

2. An electric line carrying insulator having a recess adapted to receive an insulator supporting pin and formed of two parts made of non-conductor material, coacting contacts on said parts, and a fuse wire connecting the contacts of one of the parts.

3. An insulator comprising an electric line carrying member provided with contacts, means for securing said member to an insulator supporting member, a second member provided with contacts coacting with the contacts on the aforementioned member, said second member being recessed for the reception of an insulator supporting member, and a fuse wire connecting the contacts of one of the members.

4. An insulator comprising an electric line carrying member provided with contacts, means for securing said member to an insulator supporting member, and a second member having an opening for the reception of the supporting member and provided with contacts coacting with the contacts of the aforementioned member.

In testimony whereof, I affix my signature.

BENJAMIN GEORGE CLAUDE STEPHENS.

Witnesses:
DAVID BROWN HATTON,
KATHERINE ALLISON BROADLEY.