Aug. 22, 1939. S. R. SMITH, JR 2,170,698

FUSE SUPPORT

Filed Jan. 11, 1939

Fig. 1.

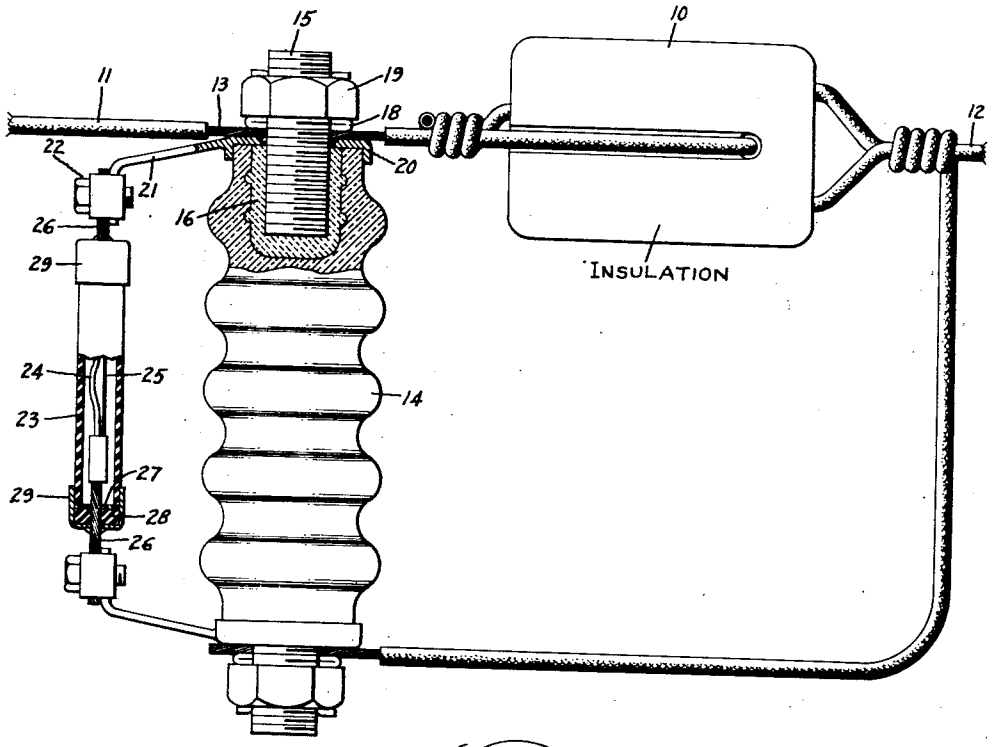
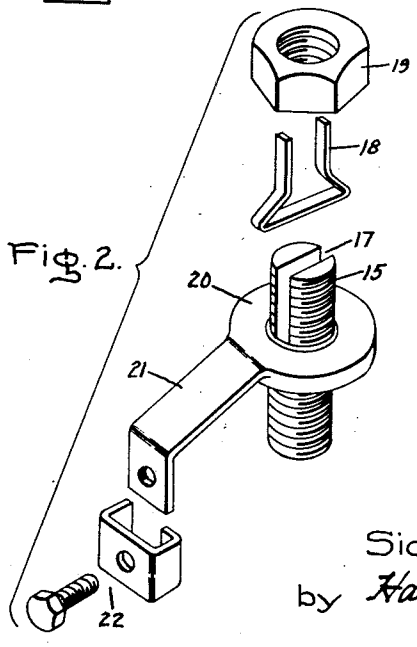



Fig. 2.




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# UNITED STATES PATENT OFFICE

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## FUSE SUPPORT

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3 Claims. (Cl. 200—133)

The present invention relates to supports for electric fuses and has for an object the provision of an insulating support particularly adapted for, but not necessarily limited to, the mounting of fuses such as are commonly employed for protection of transformers from secondary faults, isolation of service entrance faults, banking of transformer secondaries and similar purposes.

In cases where it is desired to install secondary fuses in the simplest and most economical manner, it is a practice frequently employed in the art to insert a secondary fuse directly between and in series with two line conductors or transformer leads without employing any mechanical support, other than the conductors or leads themselves, for the fuse. Usually this proves entirely satisfactory. However, in some installations it has been found that vibration of the supporting conductors or leads, due to various causes, may impose such strains on the fuse as to impair its efficiency and reliability of operation. Under such conditions it is desirable to provide for the fuse a separate support to relieve the fuse itself of objectionable strain, but such separate supports as heretofore proposed have not been entirely satisfactory due to complications in construction or installation or to undesirably large increase in cost of the fuse installation.

It is therefore one of the more specific objects of the present invention to provide an improved fuse support for mounting on a line conductor or other part of an overhead secondary construction, which support lends itself to quick and ready installation and is of extremely low cost, simple and rugged design.

Other objects and the details of that which I consider to be novel and my invention will become apparent from the following description and the claims appended thereto taken in conjunction with the accompanying drawing in which Fig. 1 illustrates an exemplary fuse installation embodying a support constructed in accordance with my invention, and Fig. 2 is an exploded view showing the construction and arrangement of certain of the parts of the support of Fig. 1.

In the exemplary installation shown on the drawing, the fuse support is employed in conjunction with a common type of strain insulator, designated 10, which serves mechanically to join, in a well known manner, two line conductors 11 and 12. Conductor 11 is bared at 13 for attachment of the fuse support thereto, while conductor 12 is attached to insulator 10 in such manner as to leave an end free for connection purposes.

The body of the fuse support comprises a porcelain insulator 14 suitably formed to prevent electric creepage thereacross. Mounted respectively on opposite ends of this insulator are terminal elements of simple and identical construction, which is of advantage from the standpoint of manufacturing cost. Each of these terminal elements includes a screw-threaded split connector stud 15 which is secured to the corresponding end of insulator 14 in any suitable manner, as for example, by cementing the inner end of the stud in a recess in the end of the insulator as indicated at 16. The outer end of the stud has a transverse slot 17, as best shown in Fig. 2, for reception of a conductor, and is provided with a contact clip 18 and nut 19 for clamping a conductor in the slot. The split connector stud at one end of insulator 14 is clamped to the bared portion 13 of line conductor 11 for suspension mounting of the fuse support, and the free end of line conductor 12 is joined to the split connector stud at the other end of insulator 14.

Each of the terminals includes also a metallic cap 20 secured by welding or other suitable means to stud 15 and arranged to fit over the corresponding end of insulator 14. Each of these caps has an arm 21 formed integrally therewith and arranged to project laterally to one side of insulator 14. The free ends of these arms are disposed in spaced relationship and provided with quick detachable screw clamps 22 for connection with opposite ends of a fuse device supported and electrically connected between the arms.

The fuse support of my present invention is suitable for the mounting of several forms of fuse devices. However, for purposes of example, I have illustrated a fuse of a form disclosed in my previous application Serial No. 173,761, filed November 10, 1937, and assigned to the assignee of the present invention. This fuse comprises an insulating fuse tube 23 having therein a fuse link, including a fusible element 24 and a strain wire 25, with flexible cable extensions 26 of the fuse link extending respectively from opposite ends of the tube 23 through sealing washers 27 and 28 and closure caps 29. The illustrated fuse, or any other suitable form of fuse employed, may be readily connected between arms 21 by attachment of the fuse link cable extensions or other fuse terminal means to the screw clamps 22. If desired, the arms 21 may be fixed so as

normally to impose tension on the fuse link. The replacement of a blown fuse between arms 21 may be effected easily when the fuse support is mounted on a line conductor in the manner shown; or, for greater convenience and safety, the insulating support may be quickly detached from both the line conductors for refusing.

From the foregoing it will be seen that I have provided an improved fuse support which may be employed practically and economically for suspension mounting of a fuse device on a line conductor or the like and which entirely relieves such fuse device from any strains resulting from vibration of the supporting conductors or any other cause. It is contemplated that modifications in the form and dimensions of the fuse support illustrated may be required to accommodate it for various installations and various sizes and ratings of fuses to be supported thereby. It is intended however that such modifications as do not depart from the true spirit of the present invention shall come within the scope of the appended claims.

What I claim as new and desire to secure by Letters Patent of the United States is:

1. A fuse support adapted for suspension mounting on a line conductor or like supporting means, comprising an elongated insulator, a terminal element affixed to one end of said insulator and having means for quick detachable clamping attachment to a supporting conductor, a second terminal element affixed to the other end of the insulator and having means for quick detachable clamping attachment to a second conductor, a pair of conducting arms conductively associated respectively with said terminal elements and projecting laterally from said insulator in spaced relationship, and clamps carried by the free ends of said arms for quick detachable connection respectively with terminals of a fuse device to support such fuse device between said arms.

2. A fuse support adapted for suspension mounting on a line conductor or like supporting means, comprising an elongated insulator, a pair of threaded connector studs respectively affixed to and projecting axially from the opposite ends of said insulator, each of said studs having a transverse slot for reception of a conductor and cooperative means for clamping a conductor in said slot, a pair of arms mechanically and conductively associated respectively with said studs and projecting laterally from said insulator in spaced relationship, and clamps carried respectively by the free ends of said arms for quick detachable connection respectively with terminals of a fuse to support such fuse between said arms.

3. A fuse support comprising an elongated insulator, a pair of threaded connector studs respectively affixed to and projecting axially from the opposite ends of said insulator, each of said studs having a transverse conductor receiving slot and a cooperating clamping nut for clamping a conductor in the slot, a pair of metal caps mechanically and electrically associated respectively with said studs and fitting respectively over the ends of said insulator, each of said caps having an integrally formed arm projecting laterally to one side of the insulator in such manner that the arms are in spaced relationship, and clamps carried by said arms for quick detachable connection respectively with terminals of a fuse to support such fuse between said arms.

SIDNEY R. SMITH, JR.