J. GROHOWSKY.

ELECTRIC FUSE CARTRIDGE.

APPLICATION FILED AUG. 8, 1910.

988,873. Patented Apr. 4, 1911.

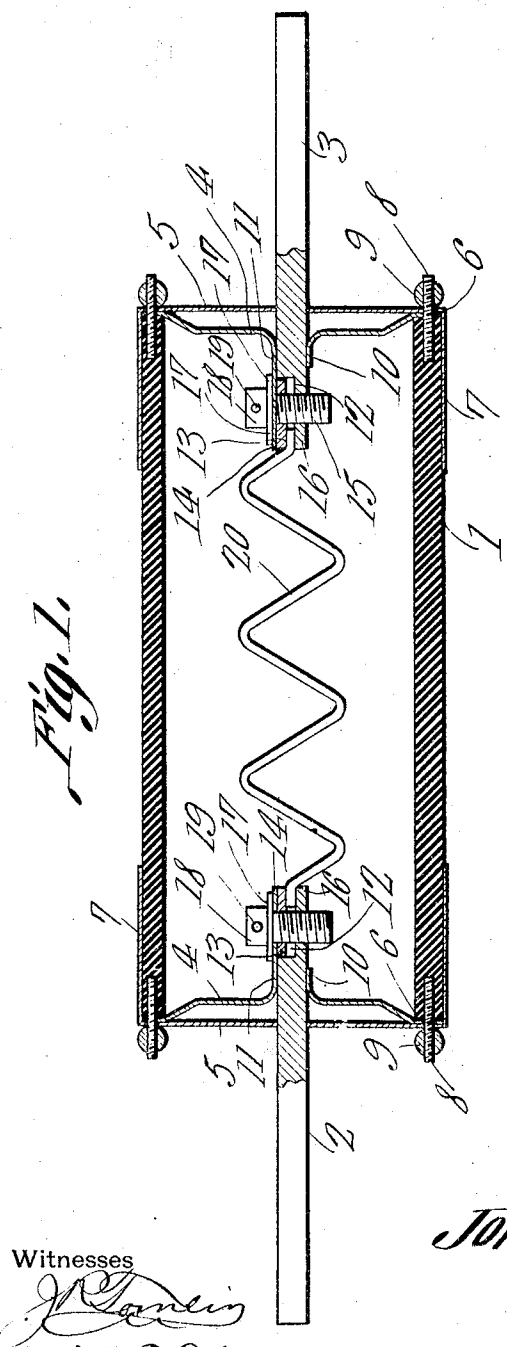

Fig. 1.

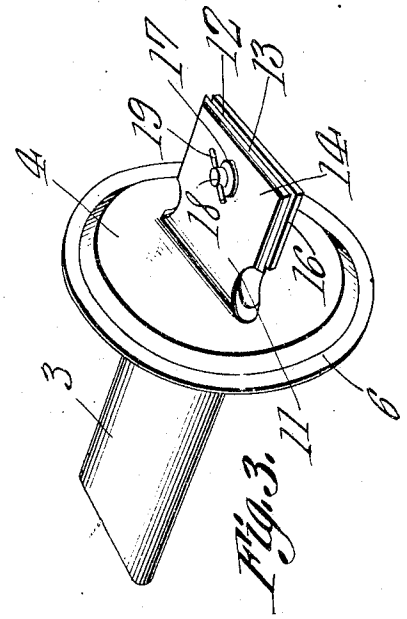

Fig. 3.

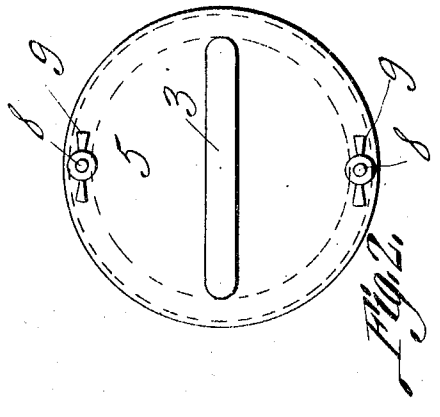

Fig. 2.

Witnesses

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UNITED STATES PATENT OFFICE.

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ELECTRIC-FUSE CARTRIDGE.

988,873. Specification of Letters Patent. Patented Apr. 4, 1911.

Application filed August 8, 1910. Serial No. 576,241.

To all whom it may concern:

Be it known that I, JOHN GROHOWSKY, a citizen of the United States, residing at Plymouth, in the county of Luzerne and State of Pennsylvania, have invented a new and useful Electric-Fuse Cartridge, of which the following is a specification.

This invention relates to electric fuse cartridges such as are intended to burn out under excessive current so as to protect the remainder of the circuit.

Fuse cartridges of the character indicated usually consist of a suitable casing formed of insulating material and provided at the ends thereof with terminals by means of which the cartridge may be arranged in the circuit, the fuse proper being arranged inside the cartridge casing and secured to the terminals. The defect in these cartridges as usually manufactured is that when the fuse burns out, the usefulness of the entire cartridge is destroyed and the whole device, including the casing of insulated material, and the copper terminals, is thrown away, and an entire new cartridge is secured.

The principal object of the present invention is to provide a strong, simple, durable and comparatively inexpensive form of electric fuse cartridge having a casing of insulating material and suitable terminals connected by a fusible conductor, the device being so arranged that when the fusible conductor burns out, the cartridge can be readily disassembled for the purpose of substituting a new fusible conductor, whereby the insulating casing and terminals can be used over and over again with different fuses, and thereby avoid the expense of securing a new casing and terminals every time the fuse burns out.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of invention herein disclosed can be made within the scope of the claims without departing from the spirit of the invention.

In the accompanying drawings forming part of this specification:—Figure 1 is a longitudinal section, partly in elevation, through a fuse cartridge constructed in accordance with the present invention. Fig. 2 is an end elevation. Fig. 3 is a perspective view of one of the terminals of the fuse cartridge, showing the dished plate by means of which said terminal is held securely in position in the end of the insulated casing, and showing also the clamp by means of which the fusible conductor is secured to the terminal.

Like reference numerals indicate corresponding parts in the different figures of the drawings.

The reference numeral 1 indicates the cartridge casing which is formed preferably of hard rubber or other suitable insulating material. The casing 1 preferably is in the form of an open ended tube.

The reference numerals 2 and 3 indicate the terminals by means of which the cartridge may be arranged in an electrical circuit in any suitable manner. Each of the terminals 2 and 3 has rigidly secured thereto a dished disk 4, the periphery of which bears against the end of the tubular casing 1 and is securely held in position by means of a cap 5 which covers the flat periphery 6 of the disk 4 and is provided with an annular extension or sleeve 7 which fits around the end of the tubular casing 1. The means for securing the cap 5 and spaced disks 4 to the end of the casing 1 preferably consists of a plurality of threaded rods 8 which are mounted in the end of the casing 1 and are adapted to receive threaded wing nuts or the like 9. The bolts 8 extend through suitable openings in the disk 4 and cap 5. The cap 5 serves to hold the disk 4 in position and the disk 4 serves to hold the terminal 3 in position. Adjacent its central portion, the disk 4, as shown clearly in Fig. 2, is provided with an elongated slot through which the terminal extends, the portions of said disk adjacent said slot being extended longitudinally along the terminal to form the flanges 10 and 11 which are integral with the disk 4, the flange 11 being very much longer than the flange 10.

The flange 10 and a portion of the flange 11 is soldered or otherwise rigidly secured to the terminal. Adjacent the flange 11 the terminal is cut-away or rabbeted as indicated at 12 and a portion of the cut-away material, indicated by the numeral 13 is soldered or otherwise secured to the resilient end 14 of the flange 11. A set screw 15 is extended through the terminal 16 and through the block 13 of copper or other material and is provided with a washer 17 and

a head 18 having therethrough a cross rod 19 by means of which the set screw 15 may be rotated so as to adjust the block 13 toward and from the portion 16 of the terminal so as to clamp the fusible conductor therebetween. The fusible conductor in this case is indicated by the reference numeral 20 and has its respective ends secured to the terminals 2 and 3 in the manner described. The fusible conductor 20, in the embodiment of invention illustrated, is formed of coiled wire so as to be capable of extension and contraction.

Constructed as described the mode of using the improved device is as follows. When the terminals 2 and 3 are suitably connected in the circuit, and the fusible conductor 20 connecting said terminals 2 and 3 burns out from any cause, it is only necessary to remove the cartridge from the circuit and detach the terminals 2 and 3, or either of them from the casing 1 by removing the wing nuts 9. A new fusible conductor 20 is then clamped between the end portions 16 and the block 13 of one of the terminals, by means of the set screw 15, and said fusible conductor is passed through the casing 1 and extends or is stretched sufficiently to permit it to be clamped at its outer end in engagement with the other terminal. After the fusible conductor has been properly secured in place, the end disk 4 and cap 5 are secured in position upon the ends of the casing 1 and the fuse cartridge is ready to be reinserted into the circuit from which it was removed when the fusible conductor burnt out.

The fuse cartridge of the present invention is exceptionally strong, simple, durable and inexpensive in construction as well as thoroughly practical and efficient in operation, as well as capable of such repair as to avoid the necessity of throwing away the cartridge casing and terminal when the fuse burns out.

What is claimed as new is:—

1. An electric fuse cartridge comprising a tubular casing formed of insulating material, a disk at each end of said casing, a terminal secured to each of said disks, each disk having a flexible flange provided with a contact member adapted to coöperate with said terminal and a fusible conductor secured at its ends to said terminals.

2. An electric fuse cartridge comprising a tubular casing formed of insulating material, a removable disk at each end of said casing, a terminal secured to each of said disks, each disk having a flexible flange, and each terminal having a portion thereof cut-away and secured to said flange, whereby to provide means for securing the end of a fusible conductor, a cap at the end of said casing for holding said disks in position thereon, and a fusible and extensible conductor detachably secured at its ends to said terminals.

3. An electric fuse cartridge comprising a tubular open ended casing formed of insulating material, threaded rods secured to the ends of said casing, a disk fitted against each end of said casing and having perforations to receive said threaded rods, each of said disks being dished, and formed with an elongated slot, each disk being provided with a long and a short flange adjacent the slot, a terminal extending through said slot and having said long and short flanges secured thereto, the extreme end of the long flange being flexible, a contact member secured to the flexible end of said flange, a set screw extending through said contact member and said terminal, and a cap fitted over each end of said tubular casing and having openings to receive said threaded rods, there being wing nuts on said threaded rods for securing said caps in position upon said casing.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

JOHN GROHOWSKY.

Witnesses:

F. B. Ochsenreiter,

William Crichton Clarke.