G. C. CALENTINE.

FUSE PLUG.

APPLICATION FILED JULY 10, 1916.

**1,330,516.** Patented Feb. 10, 1920.

*Fig. 1.*

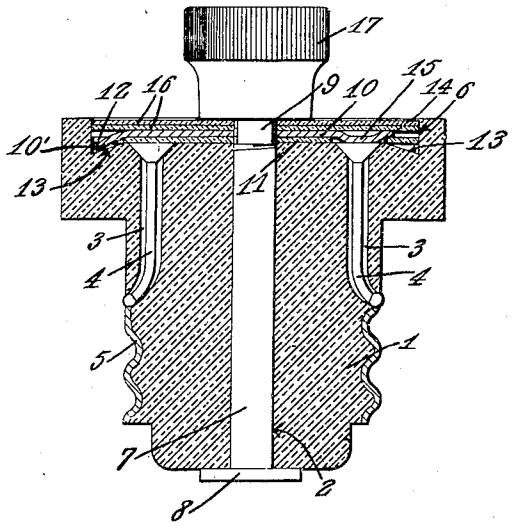
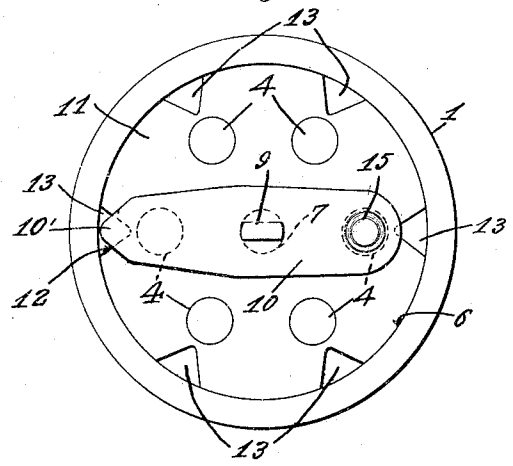



*Fig. 2.*




*C. C. Calentine*, Inventor

Witness

By C. A. Snow & Co.

Attorneys

# UNITED STATES PATENT OFFICE.

GEORGE C. CALENTINE, OF EVERETT, WASHINGTON, ASSIGNOR OF ONE-HALF TO H. S. GROGER AND R. H. GROGER, BOTH OF EVERETT, WASHINGTON.

## FUSE-PLUG.

1,330,516. Specification of Letters Patent. Patented Feb. 10, 1920.

Application filed July 10, 1918. Serial No. 244,225.

*To all whom it may concern:*

Be it known that I, GEORGE C. CALENTINE, a citizen of the United States, residing at Everett, in the county of Snohomish and State of Washington, have invented a new and useful Fuse-Plug, of which the following is a specification.

The subject of this invention is a fuse plug intended to protect electric circuits against overload, and against excessive current.

The main object of the invention is the provision of a fuse plug containing a number of fuses so that when one fuse is burned out, another fuse may be used without changing the plug.

Another object of the invention is the provision of means for throwing the fuses into circuit.

Another object of the invention is the provision of means for switching in the fuses and means for locking the switch at the fuse.

The invention also contemplates generally improving the construction and enhancing the utility of fuse plugs.

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 the invention herein disclosed can be made within the scope of what is claimed without departing from the spirit of the invention.

A practical embodiment of the invention is shown in the accompanying drawing, wherein:—

Figure 1 is a central longitudinal section of a fuse plug constructed in accordance with the invention;

Fig. 2 is a front end elevation of the same, the screw button removed.

Referring to the drawing by numerals of reference:—

In carrying out the invention there is provided the usual substantially cylindrical body 1, which is made of porcelain or other insulating material, and which is provided with a central longitudinal core 2. Longitudinally disposed ducts 3 are also formed in the body 1 in which they are spaced, and these ducts open at the outer end of the body and at points spaced circumferentially of the body.

Fuses 4 are provided in the ducts 3 and extend through the ducts from the outer end of the body 1 to the sides thereof where they are soldered or otherwise attached to the threaded metallic sleeve 5 which surrounds the body 1 in the usual manner.

The front end of the plug or body 1 is depressed to form the circular basin 6 concentric with the core 2, and a stem or bolt 7 extends through the core 2 and is formed with a head or contact button 8 on its inner end. The forward end of the stem 7 extends into the depression 6 and is cut-away to provide the reduced end 9 which has parallel faces and is of substantially rectangular cross section.

A contact arm or switch arm 10 is centrally slotted to receive the reduced end 9 of the stem, with which it turns, and a mica disk 11 is interposed between the arm 10 and the outer end of the plug 1, the disk being of a diameter to fit snugly within the depression 6. The disk 11 is provided, at one portion of its circumference, with a notch 12 which is adapted to selectively register with notches 13 which are formed in the bottom and spaced circumferentially of the depression 6. The end 10′ of the arm 10 is bent to extend through the notch 12 and enter the notches 13. The disk 11 is also formed with an aperture 14 which is in position to selectively aline with the ends of the fuses 4 when the end 10′ of the arm 10 is in position in one of the notches 13. A boss 15 is formed on the arm 10, by punching the arm or in other manner, and is in position to project through the aperture 14 and selectively contact the outer ends of the fuses 4.

The depression 6 of the plug is closed by a pair or superposed disks 16, which are formed of mica or other insulating material, and the disks 16, arm 10, and disk 11 are held in place by the thumb nut 17 which is threaded on the reduced end 9 of the stem 7.

The plug is used after the manner of the ordinary plug, current passing through the sleeve 5 and that fuse 4 with which the boss 15 of the arm 10 is in contact, to the arm 10, from which it passes to the stem 7 and contact head 8.

When a fuse burns out, the plug is removed from its socket, the thumb nut 17 slightly loosened, and the stem 7 turned by means of the head 8 to swing the arm 10 and move its end 10′ from the notch 13 in which it has been resting to the next notch

13. This will bring the boss 15 into contact with the next fuse 4. The thumb nut is again threaded into place to clamp the arm 10 tightly and the plug replaced in its socket.

The number of fuses in a plug is immaterial, it being understood that any convenient number may be employed.

Having thus described the invention, what is claimed as new and sought by Letters Patent, is:—

1. A fuse plug including a body having a central longitudinal opening and spaced longitudinal ducts extending from one end of the body to the side thereof, a sleeve upon the body, fuses within the ducts and connected to the sleeve, said fuses having contact ends seated in one end of the body, a stem mounted for rotation in the central opening in the body, a head at one end of the stem, a disk of non-conducting material seated in one end of the body and apertured to expose the contact end of one of the fuses, a switch arm mounted for rotation with the stem and upon said disk, there being registering notches in the disk and body, one end of the switch arm being offset for yielding engagement with the notches during the rotation of the stem and arm, a disk of non-conducting material mounted within the body and extending over the switch arm, and means adjustably mounted on one end of the stem for binding the disk, arm and body together, and binding the head against the body to hold said parts against relative movement.

2. A fuse plug including a body having a central opening and ducts extending from one end of the body through the side thereof, a sleeve upon the body, fuses within the ducts and connected to the sleeve, said fuses having contact ends at one end of the body, a disk of non-conducting material mounted on said end of the body and having an aperture, a switch arm mounted for rotation with the stem and movable successively into contact with the ends of the fuses, said arm having an offset terminal, there being notches in the body adapted to be successively engaged by the terminal to hold the arm in contact with the respective fuses, a disk of insulating material mounted on the end of the body and extending over the switch arm, and means adjustably engaging the stem for binding the head of the stem upon the body and for binding the insulating disk, the switch arm and body together to hold them against relative movement.

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

GEORGE C. CALENTINE.

Witnesses:

P. M. GAVELSTAD,

R. H. GROGER,

W. C. LOGAN.