F. J. FISHER.

RENEWABLE CARTRIDGE FUSE.

APPLICATION FILED JULY 12, 1919.

1,387,000. Patented Aug. 9, 1921.

Fig. 1

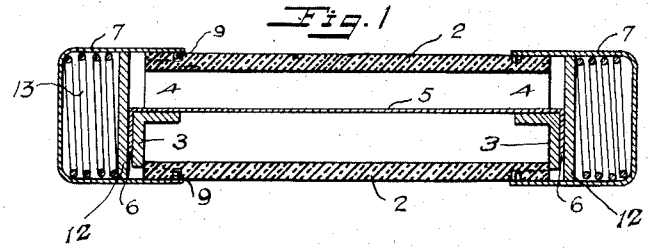


Fig. 2

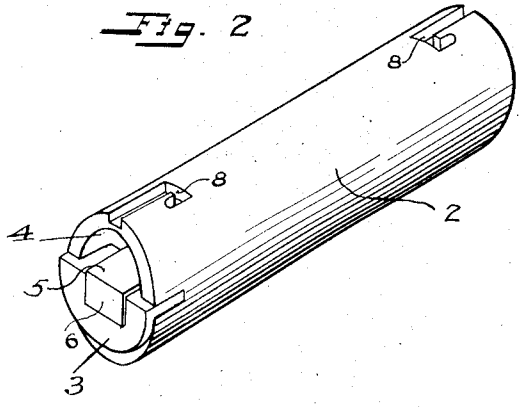


Fig. 3

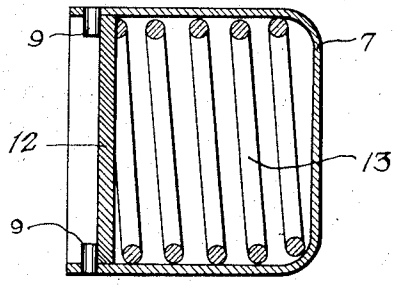
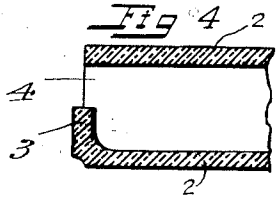


Fig 4



WITNESS

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INVENTOR

FREDERICK J. FISHER.

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HIS ATTORNEYS

UNITED STATES PATENT OFFICE.

FREDERICK J. FISHER, OF SAN FRANCISCO, CALIFORNIA.

RENEWABLE CARTRIDGE-FUSE.

1,387,000. Specification of Letters Patent. Patented Aug. 9, 1921.

Application filed July 12, 1919. Serial No. 310,394.

To all whom it may concern:

Be it known that I, FREDERICK J. FISHER, a citizen of the United States, and a resident of the city and county of San Francisco, and State of California, have invented a certain new and useful Renewable Cartridge-Fuse, of which the following is a specification.

The invention relates to renewable fuses and particularly to a renewable cartridge fuse having contact ferrules on its ends.

An object of the invention is to provide a cheap and simple cartridge fuse in which the fusible element may be readily replaced when destroyed.

Another object of the invention is to provide a renewable cartridge fuse in which a tight electrical contact is always made between the contact ferrules and the fusible element.

The invention possesses other advantageous features, some of which, with the foregoing, will be set forth at length in the following description where I shall outline in full, that form of the invention which I have selected for illustration in the drawings accompanying and forming part of the present specification. In said drawings, I have shown one specific form of the fuse of my invention, but it is to be understood that I do not limit myself to such form, since the invention, as expressed in the claims, may be embodied in a plurality of forms.

Referring to said drawings:

Figure 1 is a longitudinal section of the fuse cartridge.

Fig. 2 is a perspective view of the fuse cartridge with the contact ferrules removed.

Fig. 3 is an enlarged longitudinal section of the contact ferrule removed from the casing.

Fig. 4 is a longitudinal section of a portion of a modified form of casing.

The fuse of my invention is of the inclosed type and comprises a casing 2 of any suitable material, such as fiber, vitralite, pressed paper, earthenware, or other insulating material. The casing is preferably cylindrical in form and is provided at each end with an abutment or backing plate 3, of less area than the end of the casing, so that an aperture 4 is provided at each end of the casing. In the drawings I have shown the backing plate 3 as formed of metal and seated in the walls of the casing, but the backing plate need not be metal and may be formed integral with the casing, as shown in Fig. 4. The backing plate preferably projects slightly from the end of the casing.

The fusible element, which comprises preferably a thin strip 5 of fusible metal, extends through the casing and the apertures 4, and is bent down at its ends 6 to lie against the backing plates 3. Means are provided for firmly clamping the ends 6 of the fusible strip against the backing plate and at the same time forming a tight electrical connection between the ends of the strip and the contact ferrules. The cup-shaped contact ferrules 7 are removably secured to the casing in any suitable manner, the casing shown in the drawings being provided with a bayonet clutch slot 8 in which the pins 9 on the inside of the ferrule engage.

Disposed within the ferrule and in electrical contact therewith, is a contact plate 12 which is pressed forward toward the open end of the ferrule by the spring 13. The contact plate is held in the ferrule by the pins 9. When the ferrule is placed on the casing, the spring 13 is compressed and the end 6 of the fusible metal strip is tightly clamped between the contact plate and the backing plate, forming a tight electrical contact with the ferrule.

When the fusible metal strip is destroyed, the ferrules are removed from the casing, a new fusible metal strip inserted and bent down at its ends and the ferrules replaced.

I claim:

1. A renewable fuse comprising a casing, a backing plate at each end of the casing partly closing the ends of the casing, a fusible metal strip disposed within the casing and having its ends lying adjacent the backing plates, metallic ferrules closing the ends of the casing, spring-pressed contact plates arranged within the ferrules and in pressing engagement with the ends of the strip, and means for retaining the contact plates in the ferrules and for interlocking with the casing.

2. A renewable fuse comprising a casing, a backing plate arranged at each end of the casing, a fusible metal strip arranged in the casing and having its ends bent to lie in front of said plate, metallic ferrules removably secured to the ends of the casing, contact plates in said ferrules, springs in said

ferrules pressing said contact plates against the ends of said fusible strip, and pins in the ferrules to prevent displacement of the contact plates when the ferrules are removed from the casing.

3. A self-contained contact device for renewable electric fuses, comprising a cup-like ferrule with inwardly extending projections, and yieldable contact means retained by said projections in said ferrule.

In testimony whereof I have hereunto set my hand at San Francisco. California, this 28th day of April. 1919.

FREDERICK J. FISHER.

In presence of—

H. G. PROST.