C. N. STOUT.

REFILLABLE FUSE.

APPLICATION FILED JAN. 19, 1914.

1,107,861. Patented Aug. 18, 1914.

Fig. 1

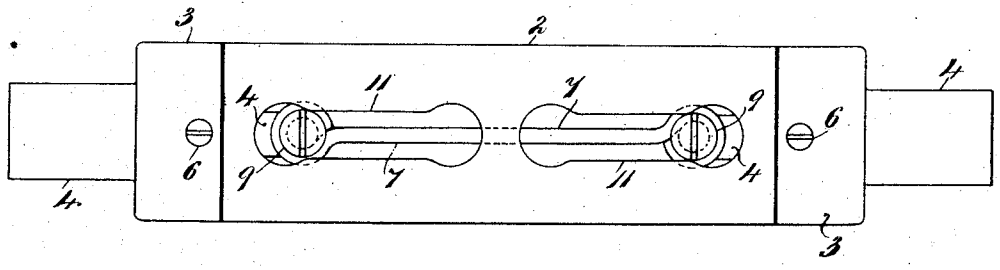
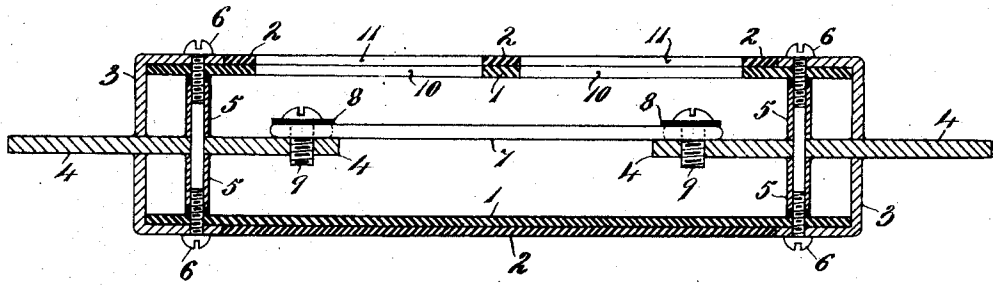


Fig. 2



Witnesses.

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CHARLES N. STOUT, OF HAMILTON, ONTARIO, CANADA, ASSIGNOR OF ONE-HALF TO GEORGE MORRIS, OF HAMILTON, CANADA.

REFILLABLE FUSE.

1,107,861. Specification of Letters Patent. Patented Aug. 18, 1914.

Application filed January 19, 1914. Serial No. 313,008.

To all whom it may concern:

Be it known that I, CHARLES NELSON STOUT, a citizen of the United States of America, residing at 40 Ruth street, in the city of Hamilton, in the county of Wentworth, in the Province of Ontario, Dominion of Canada, have invented certain new and useful Improvements in Refillable Fuses, of which the following is a specification.

This invention relates to refillable fuses and it has more particular reference to electrical cartridge fuses for use with currents of high or low power.

The main object of my invention is to provide a refillable cartridge fuse which can be recharged expeditiously and further may be used indefinitely no matter how many times the fuse blows out.

Another object of my invention is to provide a refillable fuse which permits the removal of the blown out fuse, and the insertion and fixture in proper position of a new one without disconnecting any part or parts of the fuse body.

Still another object of my invention is a fuse distinguished in that the material used for charging same can be quickly emptied out without fear of loss, and easily filled in again when the new fuse has been fixed in position.

With these and other objects in view, my invention consists essentially in the combined features set forth in the following specification, and shown in the accompanying drawings.

Referring to said drawings, Figure 1, is a longitudinal exterior view of a cartridge fuse embodying my improvements; and Fig. 2, is a longitudinal axial section taken at right angles to Fig. 1.

In the drawings and according to my invention the body portion or cartridge embodies an inner tube 1, and an outer concentric closely fitting tube 2, of less length for the purpose hereafter explained. These tubes 1, and 2, are preferably made of any suitable non-conducting material.

3, 3, are end cap-pieces which fit tightly over the ends of the inner tube 1, and they are of a length to abut snugly against the ends of the outer tube 2, as will be apparent on an inspection of the drawings.

4, 4, are the so-called knife blades or contact members and they are fixed to the cap-pieces 3, 3, by being passed through slots therein and then securely brazed; or, they may be formed integral therewith. Longitudinally and centrally at right angles thereto of the blades 4, 4,—and axially in line with one another—I form or attach by soldering, brazing or otherwise internally threaded bosses or tubular offsets 5, 5, which extend diametrically across the inner ends of the tube 1. These offsets serve to receive set-screws 6, 6, which firmly and rigidly secure the blades 4, 4, cap-pieces 3, 3, and inner tube 1, in firm connection as well as retaining the said blades 4, 4, in longitudinally centered position. Thus it will be seen that the blades 4, 4, cannot possibly get out of line and that they are rigidly held on the same plane as the removable fuse element 7, that is made of any appropriate alloy in the well known way.

8, 8, are ordinary washers, and 9, 9, the usual clamping or terminal screws for holding the removable fuse 7, firmly in position.

10, 10, 11, 11, are longitudinal slots or openings in both the inner and outer tubes 1, 2, respectively, said slots being slightly enlarged at their ends, as clearly shown in Fig. 1.

It is to be particularly remarked that the outer tube 2, is adapted to be rotated on the inner tube 1, to bring the slots 10, 10, 11, 11, into register as shown clearly in Fig. 1. Further it will be seen that by rotating said outer tube 2, in either direction on the inner tube 1, the aforesaid slots can easily be moved out of register and constitute a closed cartridge.

In use and assuming the removable fuse 7, blows out, all that is necessary is to disconnect the fuse from its housing grasp the outer tube 2, firmly in one hand, then turn one of the cap pieces 3, with the other hand until the holes 10, 10, 11, 11, are brought into register. The filling is then easily emptied out by turning the cartridge over and shaking it. The terminal screws 9, 9, and washers 8, 8, are removed and the blown out fuse 7, taken out. A new fuse 7, is passed through the slots 10, 10, at one end of the cartridge, held in position and secured firmly in place by the replacement of the washers 8, 8, and terminal screws 9, 9. The filling is returned and the slots 10, 11, turned out of register, when the cartridge is ready for use again.

From the foregoing it will be easily seen

that by my invention I produce a fuse the removable fusible element whereof can—when blown out—be removed by the simplest and most expeditious of operations necessitating only the removal and replacement of two screws and two washers. Further the filling is in no way wasted or damaged.

I wish it clearly understood that I do not limit myself to the exact shape or details shown and described, alterations and changes therein being possible without in any way departing from the essence of the invention and as may reasonably be construed as falling within the ambit of the claim appended hereto.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is:

In combination in a refillable fuse, an inner tube of insulating material having longitudinally alining slots provided with enlarged end portions, an outer similarly slotted cartridge of shorter length fitting and rotatable on said inner cartridge, cylindrical cup-shaped pieces fitting on the end of the inner tube, the inner ends of which bear against the ends of the outer tube, a diametrically arranged blade fitted through each said cup-shaped piece and disposed in a plane axially longitudinally of the cartridges, internally threaded projections on the inner ends of said blades axially in line and at right angles diametrically across the inner tube adjacent its ends, means for rigidly clamping said threaded projections to the inner tube and end pieces, a fusible element and screws for securing said fusible element to the inner ends of the aforesaid blades, the heads of said screws underlying the enlarged end portions of the slots.

Signed at Hamilton, county of Wentworth, Province of Ontario, Canada, this 10th day of January, A. D. 1914.

CHARLES N. STOUT.

In the presence of—

ALFRED Y. BRATTON,

GERTIE NICHOLSON.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."