

F. H. KAISER & J. G. CLEMENS.

REFILLABLE FUSE.

APPLICATION FILED MAR. 8, 1911.

1,004,657.

Patented Oct. 3, 1911.

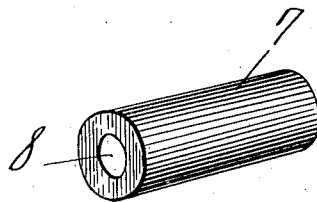
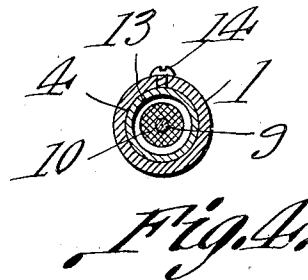
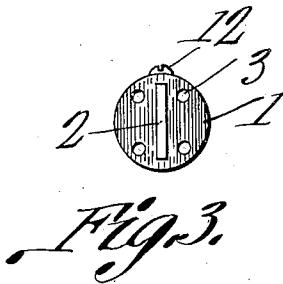
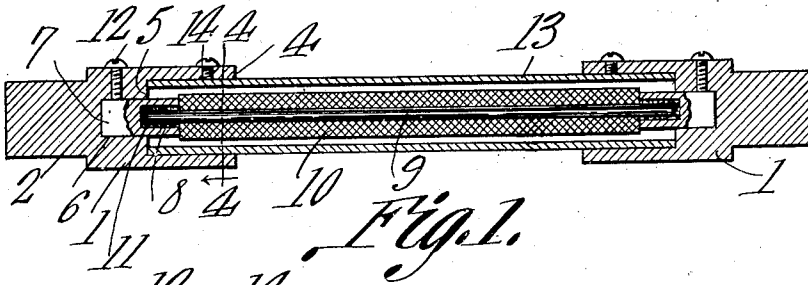


Fig. 5.

Frank H. Kaiser,
John G. Clemens,
Inventors.

Witnesses

J. P. Toner,
L. H. Wilcox.

by

C. A. Snow & Co.,
Attorneys

UNITED STATES PATENT OFFICE.

FRANK H. KAISER AND JOHN G. CLEMENS, OF BUFFALO, NEW YORK.

REFILLABLE FUSE.

1,004,657.

Specification of Letters Patent.

Patented Oct. 3, 1911.

Application filed March 8, 1911. Serial No. 613,199.

To all whom it may concern:

Be it known that we, FRANK H. KAISER and JOHN G. CLEMENS, citizens of the United States, residing at Buffalo, in the county of Erie, State of New York, have invented a new and useful Refillable Fuse, of which the following is a specification.

This invention relates to cut outs for electricity, and more especially to those in which the circuit is broken by the burning out of the fuse wire; and the object of the same is to produce a thermal fuse of this character wherein the fuse wire can be replaced with but very little work. This object is accomplished by a fuse whose construction is set forth in detail in the following specification, and shown in the drawings wherein—

Figure 1 is a central longitudinal sectional view of this fuse. Fig. 2 is a side elevation thereof. Fig. 3 is an end view. Fig. 4 is a cross section on the line 4—4 of Fig. 1, and Fig. 5 is a perspective detail of one of the plugs referred to hereinafter.

In the drawings the numerals 1 designate the heads of this device, of which there are two of like construction and a description of one will suffice for both. Each head has a hollow cylindrical body closed at its outer end and provided there with a knife edge terminal 2, the whole being formed of one piece of yellow brass as usual, and through the ends of the head at opposite sides of said terminal are preferably formed holes 3 for the escape of gases when the fuse burns out. The bore 4 of the head is rather large at its mouth and down to an annular shoulder 5 therein, and beyond said shoulder there is an axial socket 6 within which is slidably inserted a metal plug 7 whose outer portion is solid and whose inner end in turn has a socket 8 wherein is inserted the extremity of the fuse wire 9. Surrounding the wire for most of its length is a sleeve 10 of asbestos or the like which smothers the arc when the fuse is blown out. The fuse wire and its sleeve and the plugs on the extremities of the latter, is supplied in quantities to the user, and it will be obvious that when one is burned out another can be quickly substituted for it. If desired each extremity of this fuse wire 9 can be soldered into the socket 8 in the plug 7 as shown at 11; and the plug is removably held in the socket 6 of the head 1 by means of a set

screw 12 or otherwise taking through the side of the latter. Finally, a casing of fiber, 13, surrounds the fuse wire, its opposite end passing into the bore 4 of each head and being held therein by a set screw 14 or otherwise; and the purpose of this casing is obviously to protect the fuse from injury and protect surrounding things from injury when the fuse burns out.

The parts of the casing are of the materials usually employed in devices of this character, and their sizes and proportions are also those generally adopted and have no particular bearing on the gist of this invention. We consider it essential, however, that the fuse wire, the asbestos, and the plugs, shall be supplied to the user in numbers so that quick substitution may be made when a fuse burns out. The set screws 12 might be omitted entirely, or might be replaced by other means for holding the plugs in place in the sockets within the heads. If omitted, when the two heads are connected by inserting the ends of the casing into their bores and setting up the set screws 14, care should be taken that the two heads are drawn closely and firmly toward each other so that the two plugs will be well seated in the sockets in said heads. But under ordinary circumstances the use of the set screws 12 and of the solder 11 will remove the danger of having the fuse interrupt the free flow of electricity, which of course is quite undesirable whatever the use to which the current is to be put.

What is claimed is:

1. The herein described fuse comprising two heads, each having a tubular body with a socket in its inner end, a fuse wire having plugs at its extremities removably seated in said sockets; and a tubular fiber casing surrounding the filament and detachably connected at its extremities with said heads.

2. The herein described fuse comprising two tubular heads; the bore of each of which has an annular shoulder and an axial socket below said shoulder, a fuse wire, two plugs each having a solid body adapted to fit slidably in one of said sockets and a socket in its inner end receiving the extremity of said wire, and a set screw taking radially inward through the head against said solid portion; and a fiber casing connecting the inner ends of said heads.

3. The herein described fuse comprising

two tubular heads, the bore of each of which has an annular shoulder and an axial socket below said shoulder, a fuse wire, two plugs each having a solid body adapted to
5 fit slidably in one of said sockets and a socket in its inner end receiving the extremity of said wire, and a set screw taking radially through the head against said solid
10 portion; a tubular fiber casing whose extremities are seated within the bores of said heads against their shoulders, and set screws

taking radially inward through the walls of said heads and against the casing.

In testimony that we claim the foregoing as our own, we have hereto affixed our signatures in the presence of two witnesses.

FRANK H. KAISER.
JOHN G. CLEMENS.

Witnesses:

THOMAS F. MACNAUGHTON,
FRANK J. SWEENEY.