Aug. 31, 1948. E. J. FIX 2,448,022

FUSE

Filed Jan. 23, 1939

Fig_1_

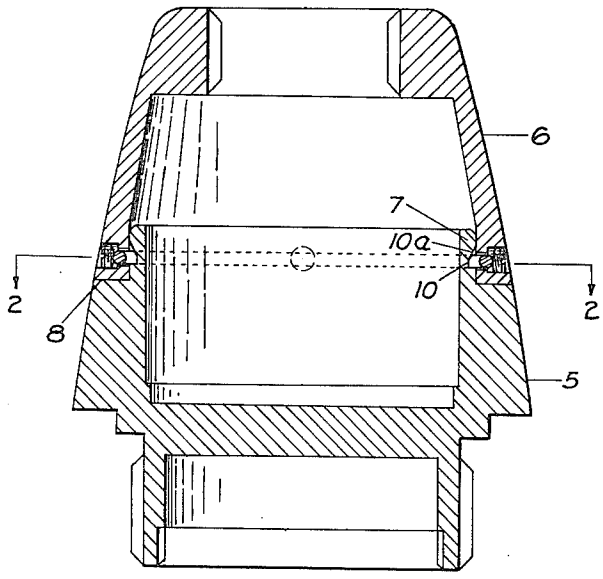


Fig_2_

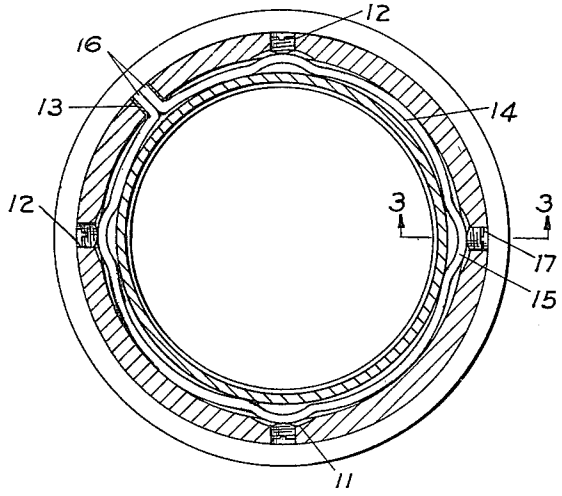
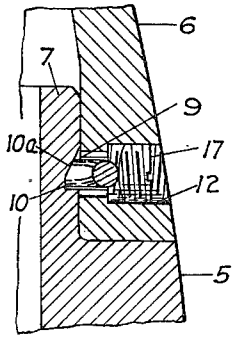


Fig_3_



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Patented Aug. 31, 1948 2,448,022

UNITED STATES PATENT OFFICE

2,448,022

FUSE

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Application January 23, 1939, Serial No. 252,415

3 Claims. (Cl. 102—70)

(Granted under the act of March 3, 1883, as amended April 30, 1928; 370 O. G. 757)

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The invention described herein may be manufactured and used by or for the Government for governmental purposes, without the payment to me of any royalty thereon.

This invention relates in general to a fuse and more particularly it has reference to means for holding the relatively rotatable elements of a fuse casing in position of adjustment.

The purpose of the invention is to provide a structure in which a simple and effective ring between a base and setting cap will permit relative movement of these members to set the timing mechanism of the fuse and will prevent their derangement under the influence of centrifugal force during flight. The locking connection is so arranged that the parts may be quickly connected and disconnected.

The specific nature of the invention as well as other objects and advantages thereof will clearly appear from a description of a preferred embodiment as shown in the accompanying drawings in which:

Fig. 1 is a longitudinal sectional view of a fuse casing whose units are held in adjusted position by the improved ring;

Fig. 2 is a sectional view on the line 2—2 of Fig. 1;

Fig. 3 is an enlarged sectional view on the line 3—3 of Fig. 2.

Referring to the drawings by characters of reference there is shown a fuse casing comprising a base 5 and a rotatable setting cap 6. The base is formed with a reduced upper part 7 for receiving the lower end of the cap which rests upon an annular seat 8 established in the base.

The lower end of the cap is provided internally with a circumferential groove 9 which, when the cap is resting on the seat, registers with a circumferential groove 10 provided externally on the reduced part 7 of the base and including a chamfered front wall 10a. The outer wall of the groove 9 is formed with equidistantly spaced recesses or depressions 11, preferably four in number and each recess is in line with a tapped opening 12 provided in the wall of the cap. The cap is also provided with an opening 13 in line with the groove 9 and positioned between two of the recesses.

A split wire coupling ring 14 prior to assembly, is housed completely within the groove 9 and formed with arched projections 15 adapted to seat in the recesses 11. The ends 16—16 of the ring are bent outwardly and disposed in the opening 13 which is then filled with a material such as solder.

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When the cap and the base are brought into assembled position set screws 17 are applied in the tapped openings 12 and act on the arched projections 15 of the ring to move the ring inwardly whereby portions of the ring adjacent the projections are forced to enter the groove 10. The amount of pressure applied to the ring through the screws regulates the frictional contact between the ring and the base and determines the resistance to rotation of the parts. An adjustment is made which will permit rotation of the cap to set the timing mechanism of the fuse but which will prevent relative movement of the parts under the influence of centrifugal force during flight.

In disconnecting the cap and base the screws are moved outwardly to relieve pressure on the ring and the ring will move back into the groove 9 due to its inherent resiliency, but if it should fail to move the inclined front wall 10a will cam it outwardly when the cap and base are separated.

It will be readily understood that the mating arrangement of the cap and base may be reversed and that more than one coupling ring may be employed.

I claim:

1. In a fuse casing, a pair of telescoped and relatively rotatable members having registering annular grooves, the base of the groove in the outer member having equidistantly spaced recesses, said outer member having a tapped opening in line with each recess and having an opening disposed between recesses, a split coupling ring normally disposed in the groove of the outer member and having arched projections seating in the recesses and bent ends disposed in the opening between recesses, screws in the tapped openings for applying pressure to the arched projections of the ring and displacing the unarched portions of the ring into the groove of the inner member.

2. In a fuse casing, a pair of telescoped and relatively rotatable members having registering annular grooves, the base of the groove in the outer member having equidistantly spaced recesses, said outer member having a tapped opening in line with each recess, a split coupling ring normally disposed in the groove of the outer member and having arched portions seating in the recesses, screws in the tapped openings for applying pressure to the arched projections of the ring and displacing the unarched portions of the ring into the groove of the inner member.

3. A fuse comprising a first part having a cylin-

drical outer surface, there being a first peripheral groove in said surface, a second part having an internal cylindrical bore adapted to fit smoothly about the cylindrical surface of said first part, there being a second peripheral groove in the surface of said bore, said grooves coacting to form a circular channel when said parts are in assembled relation, there being a plurality of circumferentially spaced recesses in the base of one said groove, there being a tapped hole opening into each respective recess, a set screw threaded into each said hole, a split ring lying within said one groove when said parts are in unassembled relation and having its ends anchored to the part containing said one groove, said ring having projections each extending into a respective recess, each set screw, when turned home, engaging a respective projection to force the adjacent ring portion into the groove of the other member to thereby fix said parts against relative axial translation while enabling adjustment of the friction resisting relative axial rotation of said parts.

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