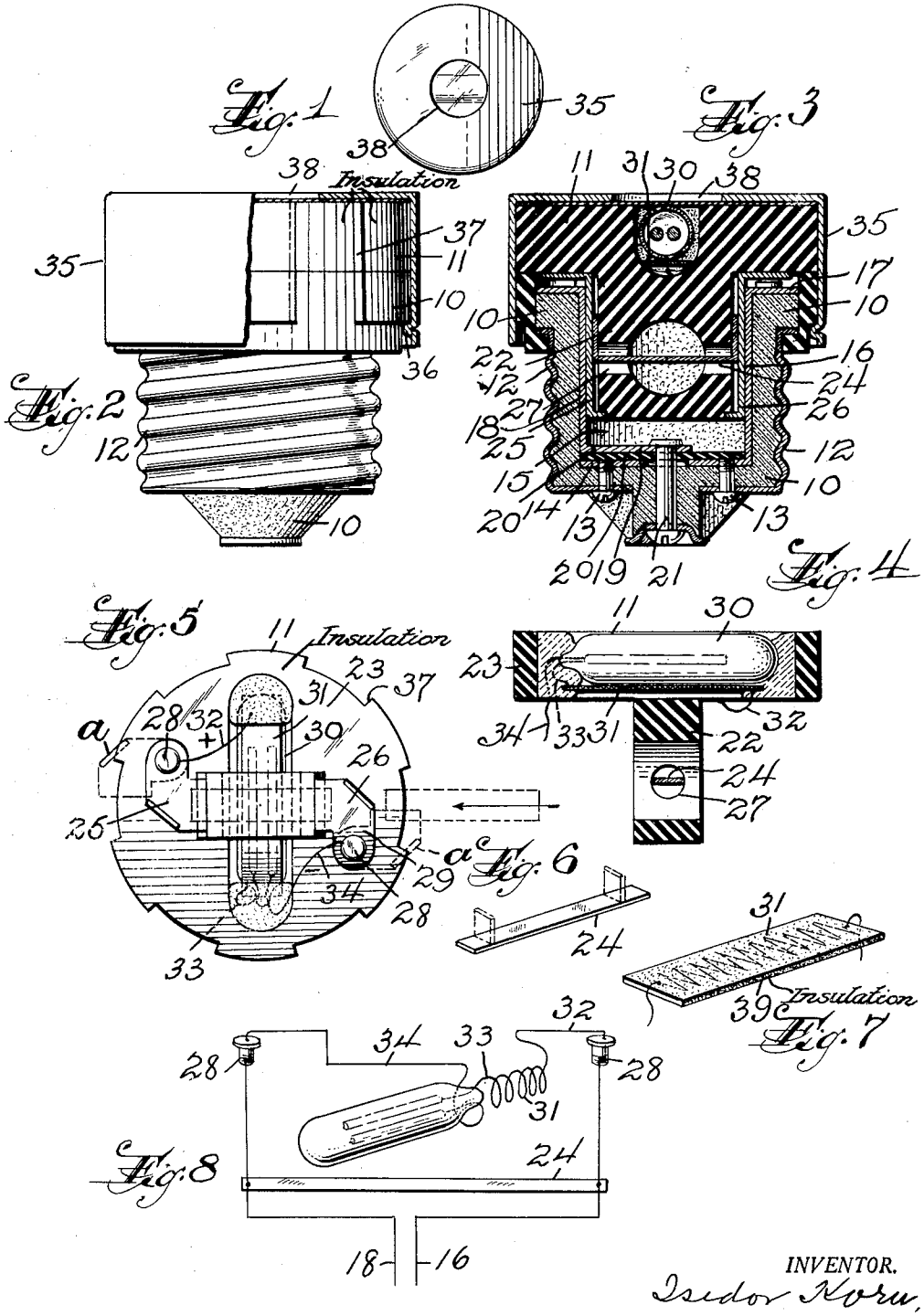
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FUSE

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FUSE

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This invention relates to an improved fuse which is adapted to be used repeatedly after being blown, the fuse having a plug part into which is a replaceable fusible strip.

The invention may also provide a visual signal to denote when the fusible strip is broken. This is particularly desirable in larger installations as in factories, hotels and apartments where large boards of the fuses are part of the electrical equipment.

The invention is designed to provide a two-piece fuse with the plug part to be screwed into the socket of the switch board or fuse board and a cap member carrying the fusible link, and also the indicator, if one is used, the cap member being readily and quickly removable from the plug member when it is necessary to replace a blown strip.

The invention is illustrated in the accompanying drawing in which Figure 1 is a top view of a fuse made according to my invention. Figure 2 is a side view of the fuse shown on an enlarged scale with the cover partly in section. Figure 3 is a central longitudinal section of the plug shown in Figure 2. Figure 4 is a section of the cap member at right angles to the section in Figure 3. Figure 5 is a bottom view of the cap member. Figure 6 is a view of one form of fusible link used in the fuse. Figure 7 is a perspective view of a leak resistance employed when a visual signal is included in the fuse. Figure 8 is a diagrammatic view of the relation of parts of the fuse.

The fuse is of the type that screws into a socket and comprises a plug member 10 and a cap member 11. Both are made of insulating material. It is usual to make the plug member 10 of porcelain and the cap member 11 of "bakelite" porcelain or fiber. The plug member is provided with connections for transmitting the electrical current. The outside surface of the member 10 is provided with a sheet metal cover 12 of conducting material which is shown provided with a screw thread and fastened by screws 13 to the member. The screws are screwed into the strip 14 of metal which is at the bottom of a recess or chamber 15 in the plug member. The screws act as electrical connections and the strip 14 is bent upwardly along one wall of the recess to form a terminal 16 which is bent over at the top as at 17. The opposite terminal 18 is bent over at the bottom forming a strip 19 separated from the strip 14 by suitable insulation 20. The strip 19 is fastened in place by a rivet or screw 21 which also acts as a contact with the centre contact of the socket in which the device is screwed. The two terminals 16 and 18 have a resiliency and are normally slightly sprung toward each other and are spread apart slightly when the cap member 11 is inserted thus insuring a good electrical contact.

The cap member 11 is readily removable and insertible in the plug member 10 and I show it constructed to include a stud 22 which projects from the disc-like upper part 23 and can be slid into the recess 45. The cap member 11 carries the fusible strip 24 electrically connected at its ends to the terminals 25 and 26. The terminals 25 and 26 are made to bear on the ends of the fusible strip. The fusible strip 24 is placed in a hole 27 in the stud 22 and then the ends are bent over. The contacts 25 and 26 are then pressed against these bent ends as clearly shown in Figures 3 and 5. The contacts 25 and 26 are flat and rest against the terminals 16 and 18, when the plug is assembled. The resiliency of the contacts and terminals and the friction between the parts holds the two members of the plug together but they can be separated by a tug on the cap member. The contacts 25 and 26 can be dispensed with and the ends of the fusible strip 24 can be placed directly into contact with the terminals 16 and 18 but the contacts are more reliable in insuring the withdrawal of a fused element 24 with the cap member when the cap member is pulled out.

The form of contacts shown are hinged at 28. These hinges or pivots 28 are to one side of the line of the opening 27 and as the contacts have laterally extending lips 29 they can be swung out of line of the opening 27 as shown in dotted lines at *a* in Figure 5. The fusible strips 24 are narrow enough to be readily inserted into the opening 27 and the ends bent over to rest against the sides of the stud 22.

If desired the cap member also carries a visual indicator such as the bulb 30 which is connected in series with a leak resistance 31 and connected parallel with the strip 24 from the contacts 25 and 26. The bulb 30 is placed in a recess 31 in the top of the cap member and held therein, along with the resistance 31 by sealing wax or by any other form of fastening. The wire 32 connects a screw or pivot 28 with one end of the resistance 31 and a wire 33 connects the other end of the resistance to the lamp or bulb 30 and a wire 34 connects the lamp with the other screw 28.

A cover 35 may be used to cover the outer end of the fuse and to hold the cap member against accidental removal. The cover 35 is shown provided with the inwardly extending projection 36

which, with the slot 37 forms a bayonet lock. The cover has an opening 38 through which the lamp 10 can be seen.

A leak resistance 31 of thin form is desirable as it can be easily accommodated in a fuse of the ordinary commercial size.

I soak a strip of cardboard 39 in alcohol after roughening the surface of the cardboard. Then I impregnate the alcohol treated board with graphite and then allow it to dry. This provides a satisfactory form of resistance.

In using the fuse its parts are assembled as above described. When a fuse blows out the indicator 30 is lighted and then it is necessary to renew the link or strip 24. The cover 35 is removed and then the cap member withdrawn by a tug. The contacts 25 and 26 are swung back and the useless strip 24 taken out. A new strip 24 is inserted, the ends bent over, the latches or contacts 25 and 26 are again swung back against the bent over ends of the strip and the cap member again plugged in. The fuse is now ready for use. The strips 24 can be available in a box or holder alongside the fuses and the same fuse used over and over again by simply renewing the strips.

Various changes can be made in the shape and proportion of the parts without departing from the scope of my invention.

I claim:

1. A fuse comprising a plug member having a recess therein, opposed terminals in the walls of the recess, a cap member having a disc-like upper part and a projecting plug, the plug having a laterally arranged hole, contacts pivoted to the under face of the disk-like upper part, and having projecting flat faces for engaging the face of the plug, thus acting to hold the ends of a fusible strip in the hole and disposed to engage the terminals when the cap member and plug member are assembled.

2. A fuse comprising a plug member and a cap member, the cap member having a disk-like top portion and a plug which fits into the plug member, the plug having a transverse hole through it, and contacts pivoted to the bottom face of the disk-like portion to one side of the hole and having laterally extending lips which can be swung to the face of the plug at the hole to clamp a fusible strip on to one side of the hole to open the hole for the insertion of a strip, said lips acting as terminals, and terminals in the plug member and arranged to engage the lips when the two members are assembled.

3. A fuse comprising a plug member having a recess therein, opposed terminals in the walls of the recess, a cap member having a disk-like upper part and a projecting plug, the plug having a laterally arranged hole, contacts pivoted to the under face of the disk-like upper part, and having projecting flat faces for engaging the face of the plug, thus acting to hold the ends of a fusible strip in the hole and disposed to engage the terminals when the cap member and plug member are assembled, and a visual signal in the disk-like member and wires connecting the signal with the pivots of the contacts.

4. A fuse comprising a plug member having a recess, contacts in the recess, a cap member having a plug to enter the recess and having a pair of contacts pivoted in position to clamp a fusible strip to the plug member and to lie between the contacts and be entirely concealed when the members are assembled, and a visual signal in the top of the cap member and electrically connected to the pivots of the contacts.

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