Nov. 3, 1936. G. J. MEYERS, JR 2,059,890

FILM CUT-OUT

Filed May 1, 1936

Fig. 1.

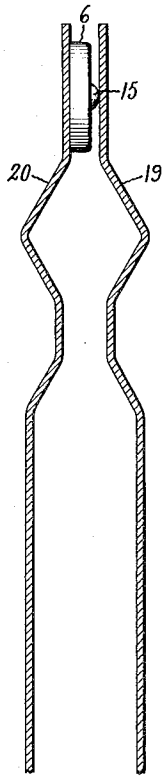
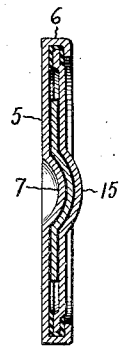


Fig. 2.



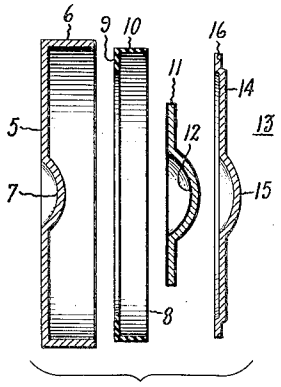


Fig. 3.

Inventor:
George J. Meyers, Jr.,
by Harry E. Dunham
His Attorney.

Patented Nov. 3, 1936 2,059,890

UNITED STATES PATENT OFFICE

2,059,890

FILM CUT-OUT

George J. Meyers, Jr., Lynn, Mass., assignor to General Electric Company, a corporation of New York

Application May 1, 1936, Serial No. 77,356

5 Claims. (Cl. 200—118)

The present invention relates to film cut-outs and more particularly to oxide film cutouts which are used in series circuits, especially lighting circuits, to establish a shunt circuit around burnt-out lamps.

This type of cutout is subject to rough handling and also to all sorts of weather conditions which tend to change the resistance and breakdown characteristics of the insulating film.

One of the difficulties with copper oxide cutouts is that if moisture creeps into the enclosure of the cutout even though it is not sufficient at any one time to cause an immediate breakdown of the oxide film, it lowers the breakdown strength of the film. After each drying out the film is left in a weaker condition. The effect of repeated moistening and drying actions is cumulative and the life of the cutout is considerably shortened.

It is an object of my invention to provide an improved moisture-proof casing for an oxide film cutout.

For a better understanding of my invention, together with other and further objects thereof, reference is had to the following description, taken in connection with the accompanying drawing, and its scope will be pointed out in the appended claims.

In the accompanying drawing, Fig. 1 illustrates a cutout made in accordance with my invention mounted for use between the contacts of a series lamp socket; Fig. 2 is a sectional view thereof, and Fig. 3 is an exploded view also in section of the same cutout.

Referring to the drawing in detail, Fig. 3 illustrates the elements of the cutout including a metal disk 5, preferably circular, provided with a peripheral flange 6 arranged at right angles to the disk and a raised portion 7 at its center. A gasket 8 of an insulating material, such as waterproofed fabric for example, comprises a circular ring 9 and a peripheral flange 10 at right angles thereto. The outside diameter of the flange 10 is somewhat smaller than the inside diameter of the flange 6, so that this gasket 8 fits into the cup-shaped member consisting of the disk 5 and its flange 6. The cutout element 11 comprises an oxide coated metal disk 11 having a smaller diameter than the disk 5 and being provided with a raised portion 12. This cutout element is designed to lie contiguous to the disk 5 and its raised portion to fit over the raised portion 7 on the disk 5. A cover 13, comprising a metal disk 14, provided with a concentric raised portion 15 and an offset peripheral flange 16, is used as a cover for the casing comprising the disk 5 and the flange 6. The flange 16 on the disk cover 14 is offset merely enough to provide room for the cutout element 11 when the disks are assembled. The width of the flange 16 is made substantially equal to the width of the gasket ring 9, so that when the elements of the cutout are assembled broad moisture-tight joint is made extending inward from the periphery for a substantial distance which is several times the thickness of the insulation.

In assembling the cutout the gasket is placed inside of the flange 6 so that the ring 9 is contiguous to the disk 5 and the flange 10 is contiguous to the flange 6. The cutout element is placed contiguous to the disk 5 and the cover 13 is placed inside of the flange 6 and contiguous to the other side of the cutout element 11. When these elements are thus assembled, the flange 6 is rolled over as illustrated in Fig. 2. When this is done the insulating material of the gasket including ring 9 and the flange 10 overlies the periphery and both surfaces of the flange 16 on the edge of the disk 13 and thereby insulates this disk from the disk 5. It will be noted that the path for any moisture to creep into the enclosure and reach the cutout 11 is along the entire surface of the gasket 8 including the flange 10 and the ring 9 and the adjacent surfaces of the flanges 6 and 16. This path is given a length many times greater than the thickness of the insulating material and by applying a reasonable pressure during the rolling process the material of the gasket adheres to the surfaces of the disks and the flanges so that the casing thus formed becomes moisture-proof. Furthermore, only the outer edge of this insulation is exposed to the atmosphere and the remainder of this insulation is protected by the metal of the casing against physical damage and deterioration due to atmospheric actions. It is, therefore, able to withstand the entrance of moisture into the casing for a long period of time. Simultaneously a full thickness of the insulation of the disk 9 and flange 10 is retained at all points between the two members of the cutout casing and the necessary electrical insulation between the parts of the casing is maintained. This insulation is, of course, higher than the breakdown strength of the film within the casing and which is protected thereby. In Fig. 1 I have illustrated the cutout placed between the prongs 19 and 20 of a series socket, the prong 20 being in contact with the disk 5 and the prong 19 being in contact with the raised portion 15 on the cover element 13.

What I claim as new and desire to secure by Letters Patent of the United States is:

1. In a film cutout, the combination of an insulating film covered member, a casing therefor comprising a pair of metal disks contiguous to the two sides of said film, and an insulating member for separating said disks along their edges, the width of said insulating member being greater than its thickness whereby the creepage of moisture into the casing is prevented and a minimum of insulation is exposed to atmosphere.

2. In an oxide film cutout, the combination of a casing comprising a disk provided with a flange, a second disk comprising a cover therefor, an oxide film covered element between adjacent surfaces of said disks and an insulating gasket between said disks and said flange, said gasket comprising a ring between the said disks and a flange arranged between the edge of one disk and the flange on the other disk, said flange being rolled over the edge of said second disk and said insulating gasket extending beyond the edge of said rolled-over flange.

3. A film cutout comprising a pair of metal disks, an insulating film having a predetermined breakdown strength between said disks, an insulating gasket overlying the edge of one of said disks, and a flange on the other of said disks overlying said insulating gasket and holding said elements in assembled relation.

4. A film cutout comprising a pair of metal disks, an insulating film covered member having a smaller diameter than said disks arranged contiguous to adjacent sides of said disks, an insulating gasket arranged to cover the peripheral edge of one of said disks and both sides of said disk for a substantial distance from said edge, and a flange integral with the other disk arranged to substantially cover said insulation on the outer side of said one disk.

5. A film cutout comprising a pair of metal disks, an insulating film having a predetermined breakdown strength arranged contiguous to adjacent sides of said disks, an insulating member overlying the edge of one of said disks, and means engaging the exposed portion of said insulating member and the edge of the other of said disks for holding said members in assembled relation.

GEORGE J. MEYERS, JR.