

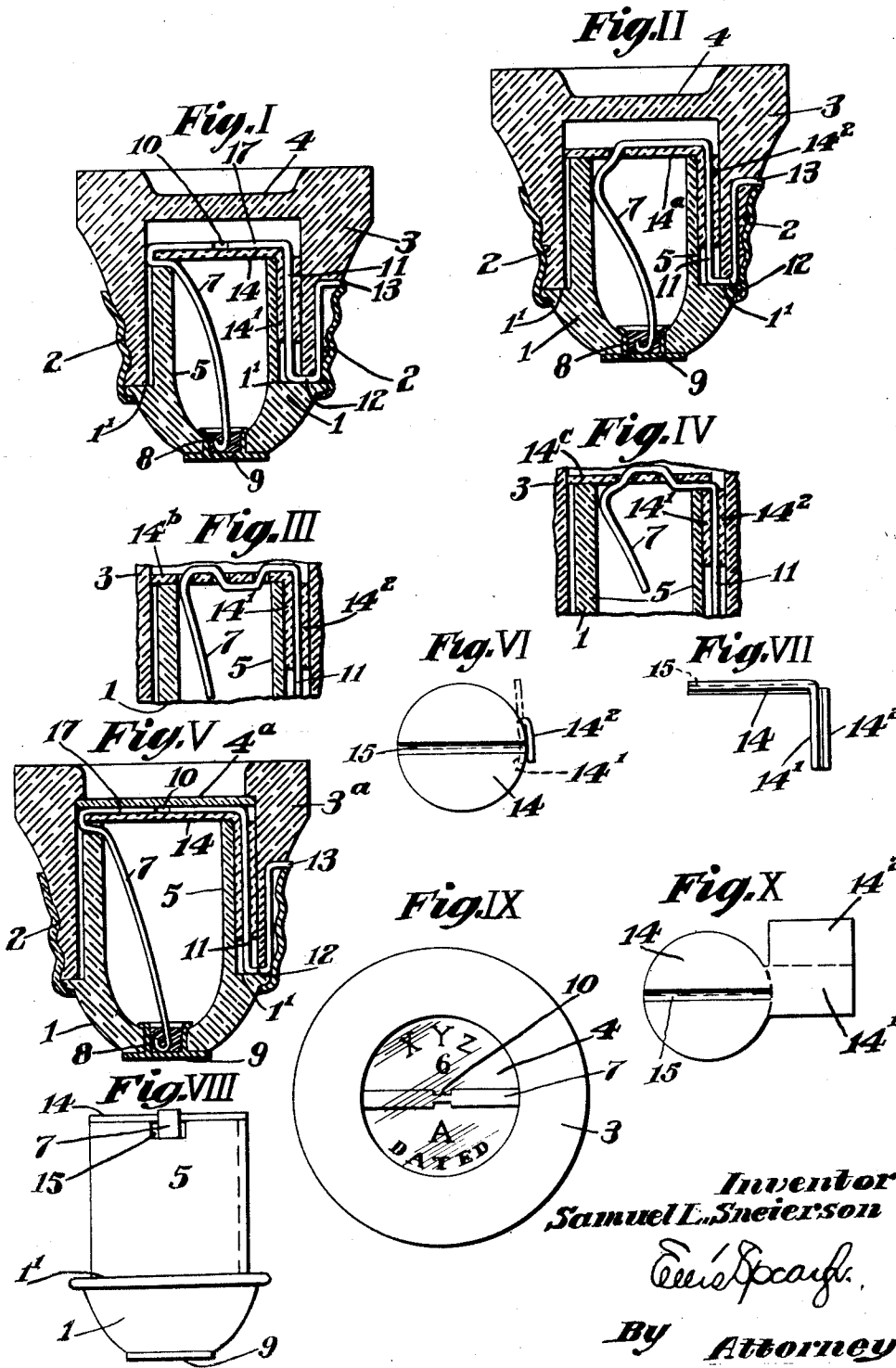
May 23, 1933.

S. L. SNEIERSON

1,911,095

FUSE PLUG

Filed July 25, 1932



Inventor
Samuel L. Sneierson
Samuel L. Sneierson
By Attorney

UNITED STATES PATENT OFFICE

SAMUEL L. SNEIERSON, OF ROXBURY, MASSACHUSETTS, ASSIGNOR TO ROYAL ELECTRIC COMPANY, INCORPORATED, OF AVON, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS

FUSE PLUG

Application filed July 25, 1932. Serial No. 624,408.

My present invention relates to plug fuses and particularly to that class of fuses in which there is a transparent viewing portion or window through which the fuse strip or other part of the interior may be inspected.

Such transparent portions were originally provided as with the old mica disc so that the condition of the fuse strip could be ascertained and so that when a fuse was burned out its condition would be readily apparent.

My invention contemplates a novel plug fuse providing for such a viewing portion and also providing certain other features of great convenience and advantage.

One of the difficulties frequently experienced with these plugs has been that of the identity of plugs of different fusing capacities. It is, of course, convenient in manufacture and in use that the plugs and plug parts be interchangeable. It is also of great importance that plugs of different capacities be distinguishable one from another so that the plug of proper capacity can be picked out for use.

As illustrative of my general concept and as indicating specific examples of importance, I have shown characteristic types in the accompanying drawing. In the drawing in which like reference characters are applied as used in the specification

Fig. I is a central vertical section of a plug in accordance with my invention.

Fig. II is a similar view showing a modified relation of strip to disc.

Fig. III and Fig. IV are fragmentary views of variant forms.

Fig. V is a section similar to Fig. I showing a mica or like window installation.

Fig. VI is a plan indication of a characteristic disc.

Fig. VII is an edge view of the same.

Fig. VIII is an elevation of the plug with top member removed.

Fig. IX a characteristic end view of a plug showing the viewing window, and

Fig. X a plan view of the disc.

In the illustration and description I have deliberately utilized as illustrative common types of structure as these are most easily

understood and most immediately available for the benefit of the public as familiar and generally accepted.

Such plugs generally consist of a base portion 1 (see Fig. I) of porcelain, glass or the like and are molded or otherwise adapted to be seated in a plug socket. Such plug portions usually have a formed or spun shell of metal having threaded or like engaging means as indicated at 2 which protects and takes the wear from the vitreous or other non-conductive material of the base member 1, and clamps the parts together.

The top or upper member 3 (as shown in Fig. II) may be variously constructed. As shown in Fig. I, it is an integral and usually vitreous element having a viewing portion window or pane 4. Through this the interior of the plug may be inspected or checked.

The base 1 has a cylindrical or tubular portion 5. This extends from a base shoulder 1' upwards, in assembly, towards the top window or viewing portion such as is indicated at 4 (Fig. I). It is notched as at 15 to receive the fuse strip and acts as a vent.

The fusible strip consists of a shank 7 suitably connected as at 8 in a contact point 9. Its fusible portion includes, as shown, the usual notches 10. This portion which continues as at 11, and is rebent at 12 is finally anchored and made a terminal as at 13, where it is clamped by the shell 2.

The internal support and fuse backing consists of a disc 14 of fibre or like insulating material. This is preferably at least modifiable by heat so that any change can be observed if the plug is blown out and may have an impregnation decomposable or modifiable by heat so that the condition of the fusion will be apparent.

The tubular extension 5 of the base 1 affords an internal chamber for expansion and insulation. At its upper end at the terminal edge it supports the disc 14 which bridges the internal chamber in substantially parallel relation to the window portion of the top member 3. The disc 14 in turn supports and combines with the fusible strip 7 to form a unit. The assembly is disposed

in such a combination directly below the viewing portion or window of the top member 3 as indicated at 4, in Fig. I, so as to be easily seen through it.

5 As shown in Fig. I, the strip 7 is bent directly across the disc 14 as at 17 then bent downwardly as at 11 as before described. As indicated in Fig. II, the strip 7 may penetrate such a disc as 14a to be brought
10 across and down as before described.

In Fig. III, I have shown the strip 7 as making a double penetration of a disc 14b while in Fig. IV a reverse bend and penetration of a disc 14c is shown.

15 The viewing portion may be variously constructed. Heretofore transparent or semi-transparent windows of mica or the like have been used so that it could be seen if the plug had been blown, but plugs in accordance with my concept offer many additional
20 advantages.

As shown in Fig. V the top member 3a is of the same general construction as in Fig. I, but instead of having an integral
25 window it is shouldered to clamp an independent disc 4a of mica or material of like properties to overlie the disc 14 as described, which will be visible therethrough.

The member 14 is as shown preferably a
30 circular disc but may be of any shape, material or color. As shown, it has a tab consisting of a tail 14¹ and an overfold 14². The tail 14¹ and overfold 14² enclose and hold the downwardly bent portion 11 of the fuse
35 strip. This insulates and cushions it when it is clamped in the plug and in turn holds the disc 14 and the fuse strip in proper diametric position and in proper relation to the window or viewing area of the plug.

40 One of the primary advantages of the disc 14 is that it provides a mount for the fuse strip. This is of convenience in assembly and important in use. This simple means affords a medium of information as to the
45 number of the plug for selection in use, but also the condition of the plug. The discs carry suitable data as to size, fusion point or other visible identification data or color which can be plainly seen through the win-
50 dows or viewing portion and as such identification can be made as large or conspicuous as desired, no magnification and not even perfect transparency is necessary. If desired the disk may have a transverse cor-
55 rugation or channel therein as shown at 15 in Figures VI, VII and X within which the fuse strip may lie.

The tab is preferably formed on the disc 14 but may be a separate or independent insulating or cushioning member with or without the disc which takes up the heat expansion and shock of fusion and protects the
60 glass against shattering.

What I therefore claim and desire to se-
65 cure by Letters Patent is:—

1. A plug fuse having a top member provided with a window portion, a fusible strip beneath said window, a fibre disc underlying said fuse, the fuse being in viewable position
70 relative to said window, said disc having a marginal tab overfolded on the fuse end at the side of the fuse member and held thereby against dislodgement.

2. A plug fuse having a top member of
75 transparent material provided with a substantially clear window portion, a fusible strip beneath said window portion, a fibre disc underlying said fuse and presenting visible identification when the fuse is viewed
80 through said window, said disc having a marginal tab overfolded on the fuse end at the side of the fuse member and held thereby against dislodgement.

3. A plug fuse comprising a top member provided with a window portion, and a base member interengaged therewith, a fuse strip having a fusing point transversely of and visible through said window portion and a longitudinal portion between the interengaged top and base members, and a shield
85 strip embracing the longitudinal portion of the fuse strip between the two plug members whereby the fuse strip is protectively interlocked in the plug assembly.

4. A plug fuse comprising a top member
95 provided with a window portion, and a base interengaged therewith, a fuse strip having a fuse point transversely of and visible through said window portion and a longitudinal portion between the interengaged
100 top and base members, and a compressible insulation piece embracing the longitudinal portion of the fuse strip between the two plug members whereby the fuse strip is yieldably interlocked in the plug assembly.

5. A plug fuse comprising a top member provided with a window portion and a base member interengaged therewith, a fuse strip visible through said window portion and extending between said top and base members,
110 and sheet insulating material wrapped about and enclosing said strip where it extends between said top and base members.

6. A fuse having a body member provided with a window portion, a fuse strip within
115 said body member, a sheet material piece within said body member back of said window portion apertured for said strip to be passed therethrough, said strip having a portion intermediate its ends visible through
120 said window portion and its ends extended through said piece to the opposite side thereof.

7. A fuse comprising a top member provided with a window portion and a base engaged with said top member to define there-
125 with an internal chamber, said base having a central terminal extending therethrough, a threaded metallic shell uniting said members, a fuse strip within said chamber united
130

at opposite ends to said terminal and shell respectively, and a sheet material piece within said chamber and back of said window portion apertured for said strip to be passed therethrough, a portion of said strip intermediate its ends being positioned visible through said window portion and the remainder of said strip lying back of said piece.

10 8. A fuse having a body member provided with a window portion, a sheet material piece back of said window portion and having a pair of spaced perforations there-
15 through, and a fuse strip extending through said perforations and presenting a portion intermediate its length between said per-
forations extending across said piece and visible through said window portion.

20 9. A fuse having a body member provided with a window portion, a sheet material piece back of said window portion within said body member and having a channel therein, and a fuse strip lying in said channel and extending transversely of said window por-
25 tion.

10. A fuse comprising a top member provided with a window portion and a base engaged with said top member to define therewith an internal chamber, a sheet ma-
30 terial piece in said chamber substantially parallel to said window portion and having a pair of spaced perforations therethrough, and a fuse strip within said chamber extend-
35 ing through said perforations and present- ing a portion intermediate its length be-
tween said perforations and visible through said window portion.

In testimony whereof I affix my signature.
SAMUEL L. SNEIERSON.

40

45

50

55

60

65