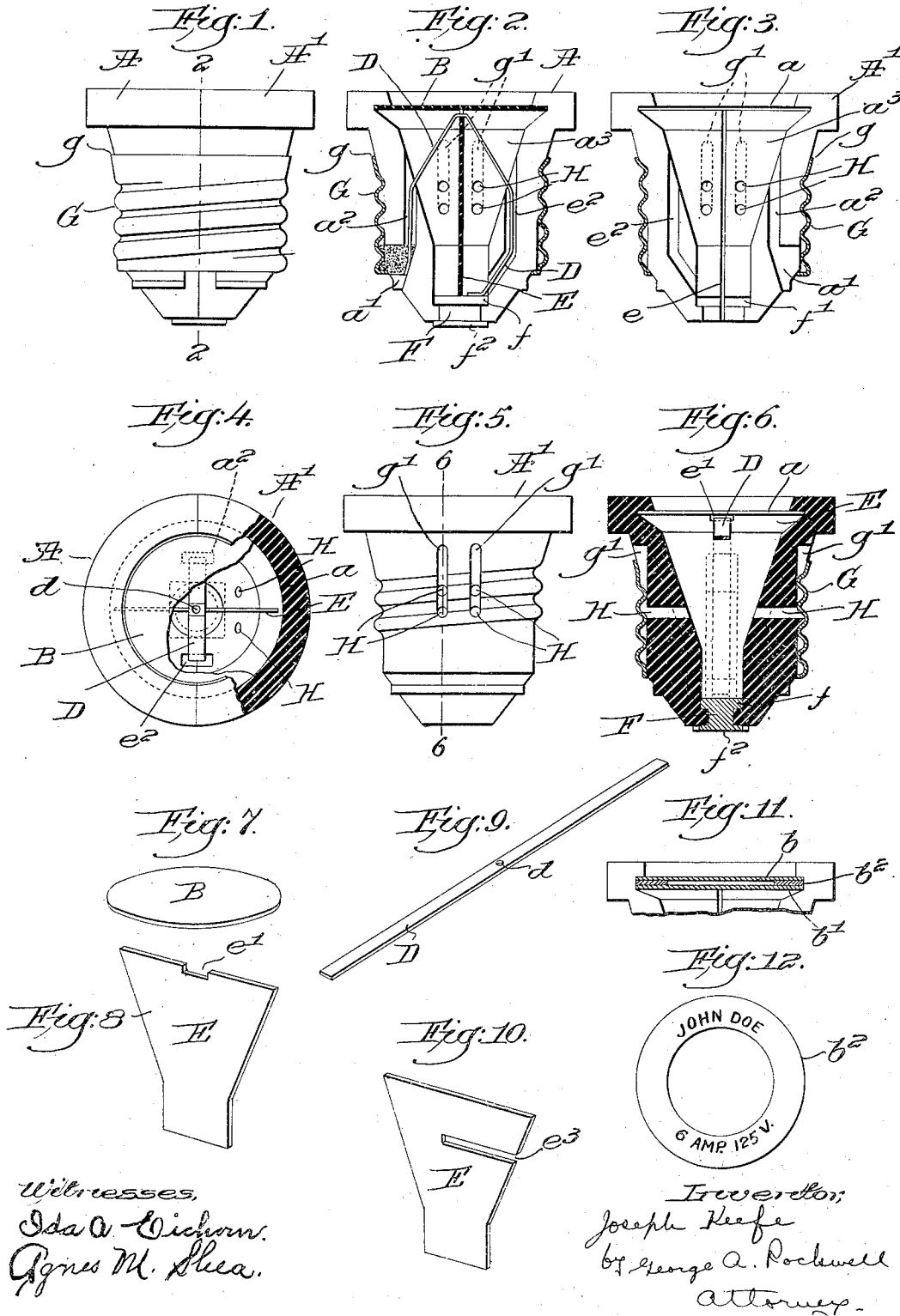


J. KEEFE.
FUSE.
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1,066,912.

Patented July 8, 1913.



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To all whom it may concern:

Be it known that I, JOSEPH KEEFE, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Fuse, of which the following is a specification.

The main object of my invention is to increase the efficiency and safety of fuses and another object is to reduce the cost.

10 My invention consists mainly in providing a fuse strip which is much longer than any of those in use in similar fuses and consequently one of greater accuracy in fusing under excess stress especially in electric fuses 15 because the most easily fused part may be at a point farther from the terminals than heretofore, thereby avoiding as much as possible the cooling effect of the terminals.

20 A feature of my invention consists in holding the window in position by the porcelain alone.

Other features will be pointed out below.

25 In the drawings Figure 1 is an elevation of a fuse embodying my invention; Fig. 2 is a section on line 2—2 of Fig. 1 showing one-half of the base, the window and partition being shown; Fig. 3 is a section of the other half of the base, the window and partition being omitted; Fig. 4 is a plan of the 30 fuse, a portion of the window and a part of the base being broken away; Fig. 5 is an elevation without the shell; Fig. 6 is a vertical section on line 6—6 of Fig. 5; Fig. 7 is a perspective of the window; Fig. 8 is a perspective of the partition; Fig. 9 is a development of the fuse strip; Fig. 10 is a modified form of partition; Fig. 11 is a sectional fragment of a modified form of window; and Fig. 12 is a plan of the same.

40 The base of my fuse is preferably made of porcelain and consists of two parts A and A', these two parts being coöperative and each forming one half of the base. Each has a semi-circular recess *a* to receive the 45 transparent cover or window B. Each has an opening *a'* through which one end of the fuse strip extends to be soldered or otherwise electrically connected with the shell hereinafter described. The fuse strip D is 50 preferably of mica and extends from the opening *a'* through passage *a*² which insulates the strip and thence into the chamber *a*³ formed by the two portions of the base. This chamber is divided by partition E, 55 preferably of mica, the edges of which fit

into grooves *e* in each half of the base portion and are thus held against turning. The partition E rests upon terminal F, whose head *f* fits in recesses *f'* in each half of the base and whose shoulder *f*² engages the outer 60 edge of the base, the terminal thus being held in place when the two portions of the base are put side by side. The partition is prevented from moving upward by engaging the underside of the window B. The 65 fuse strip passes from one side of the chamber across the partition through opening *e'* into the other side of the chamber and down passage *e*² into engagement with terminal *f*, passage *e*² insulating the strip. Shell G is 70 threaded to engage similar external threads on the two portions of the base so that when the two portions are put side by side and the shell is screwed into engagement with the threads of the base, the two parts will be 75 firmly held together, the shell in the form shown being the holding means and to better accomplish this purpose I prefer to bevel the upper portion of the shell at *g* in order to increase the wedging effect of the shell and 80 thereby make a perfectly solid fuse.

About midway between the top and bottom of the base I provide eight holes H, four on each half of the base, four being 85 on one side of the partition and four on the other. These holes lead from the chamber to the outside of the base and provide outlets for the gases which then follow the threading of the base until they come opposite the recesses *g'*, where they may escape, 90 said recesses leading from the holes and extending above the top of the shell. I preferably provide a weakened portion *d* in the fuse strip and I preferably have this weakened portion immediately above the opening 95 *e'* so that when fusing occurs the two parts of the strip will be effectively separated by the partition.

In Fig. 10 I have shown a modified form of partition E' having a slot *e*³ through 100 which the fuse strip may pass in case it is not desired to pass it over the top of the partition.

In Figs. 11 and 12 I have shown a modified form of window consisting of two circular 105 portions of mica *b* and *b'* holding between them a paper ring *b*², the latter having the name of the maker such as John Smith and the capacity of the fuse such as 6 Amp. 125 V, this information being com- 110

monly required and heretofore having been stamped at great expense on the metal cap.

In assembling my fuse I place the window, partition, and terminal F having the fuse strip soldered thereto, in their respective recesses in one half of the base, the fuse strip extending on both sides of the partition. I then place the other half of the base in position so that its recesses *a*, *e* and *f* register respectively with the window, the partition and the terminal F. I then screw on the shell, the beveled portion *g* of which binds the base portions together tighter and tighter as the shell is screwed on.

It will be clear that fusing will take place at the weakened portion *d* of the fuse strip and that only a small arc can be formed because the opening *e'* or *e''* is so small that combustion can only continue a very small distance at either side of the partition owing to the fact that it is difficult for the arc to travel through the small opening in the partition. It will also be clear that by having the outlets H lead beneath the shell I provide a very long path of escape for the gases which must pass through the outlets and along under the shell and out through the recesses.

Among the advantages of my fuse I may point out that I provide a very large fuse chamber but at the same time provide a large amount of insulation for the fuse strip and an exceptionally long fuse strip for a given size of fuse. I also do away with the metal cap commonly used to hold the window in place and do away also with the labor of attaching said cap and do away with the possibility of electric connection with said cap in case my fuse is used for electrical purposes.

What I claim is:

1. A fuse comprising a base in a plurality of parts with a chamber between them, each part having a wall adjacent to a wall on an adjacent part; a fuse member in said chamber; and a shell to hold said plurality of parts together, said walls extending lengthwise of the shell.

2. A fuse comprising a porcelain base in two parts; a window held in position by said two parts; and means to hold said two parts together.

3. A fuse comprising a porcelain base in two parts with a chamber between them; a window held in position by said two parts; a partition in said chamber held in position by said two parts and by said window; and means to hold said two parts together.

4. A fuse comprising a base in two parts; a terminal held in position by said two parts; and means to hold said two parts together.

5. A fuse comprising a base with a chamber and an outlet for gases leading from the chamber to the outside of the base; and

a shell mounted on said base and covering the outer end of said outlet.

6. A fuse comprising an externally threaded base having a chamber and an outlet for gases leading from the chamber to the threaded portion; and an internally threaded shell to engage the base and covering the outer end of said outlet.

7. A fuse comprising a base with a chamber and an outlet leading from the chamber to the outside of the base, the latter having a recess on the outside extending upwardly from the outer end of said outlet; and a shell mounted on said base and covering the outer end of said outlet and partly covering said recess.

8. A fuse comprising a base in two parts said two parts having a portion of their outer surfaces beveled; and a shell having a beveled portion to engage the beveled portion of the base parts to press said parts together.

9. A fuse comprising a base; two transparent disks; an indicating ring between the disks; and means to attach the disks and ring to the base.

10. A fuse comprising a porcelain base in two parts; two transparent disks and an indicating ring between them, said disks and ring being held in position by said two parts; and means to hold said two parts together.

11. A fuse comprising a base in two parts with a chamber between them; a cover for said chamber held in position by said two parts; and means to hold said two parts together.

12. A fuse comprising a base in two parts with a chamber between them; a transparent cover for said chamber held in position by said two parts; and means to hold said two parts together.

13. A fuse comprising a base with a chamber, a cover for said chamber secured to the base and extending clear across the base but having a transparent portion; a fuse member; and a ring secured inside of said cover and being visible through the transparent portion of the cover, said fuse member being visible through the center of the ring.

14. A fuse comprising a base in two parts with a chamber between them; a window held in position by said two parts; a partition in said chamber held in position by said two parts; and means to hold said two parts together.

15. A fuse comprising a base in two parts with a chamber between them; a partition in said chamber held in position by said two parts; and means to hold said two parts together.

16. A fuse comprising a base in two parts with a chamber between them; a window held in position by said two parts; a parti-

tion in said chamber held in position by said two parts and by said window; and means to hold said two parts together.

5 17. A fuse comprising a base made in two parts; and a shell to hold said two parts together, said two parts extending above the top of the shell.

10 18. A fuse comprising a base in two parts with a chamber between them, each part having a wall adjacent to a wall on the other part; a fuse member in said chamber; and a shell to hold said two parts together, said walls extending lengthwise of the shell.

19. A fuse comprising a base with a chamber; a cover for said chamber secured 15 to the base and extending clear across the base but having a transparent portion; a fuse member; and a ring secured within said chamber and being visible through the transparent portion of the cover, said fuse 20 member being visible through the center of the ring.

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