Oct. 17, 1939. S. R. FRY 2,176,793

SAFETY FUSED PLUG

Filed Aug. 10, 1936

Fig. 1

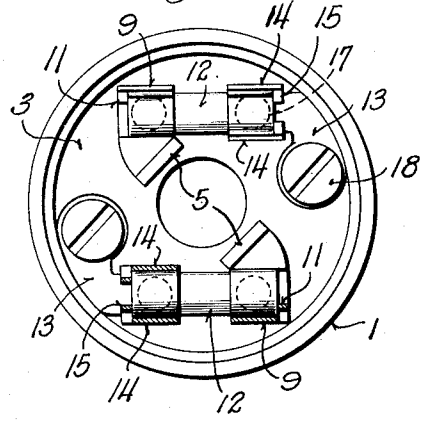



Fig. 2

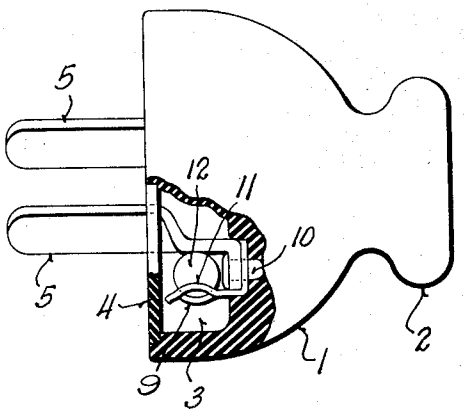



Fig. 3

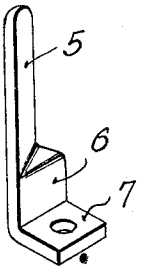



Fig. 4

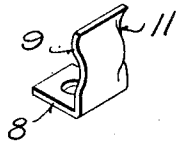



Fig. 5

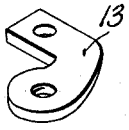



Fig. 6

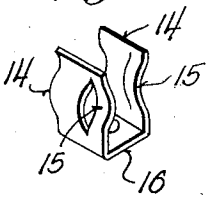



Fig. 8

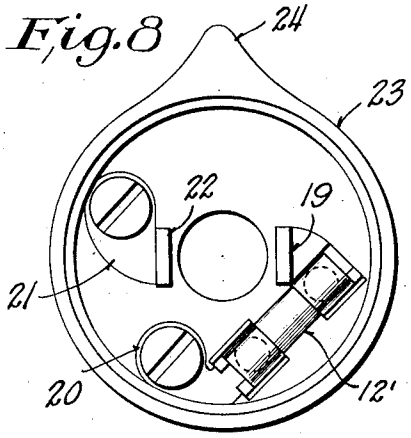
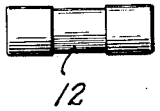



Fig. 7




INVENTOR.
SIDNEY R. FRY

BY
Arthur R. Woolfolk
ATTORNEY.

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## SAFETY FUSED PLUG

Sidney R. Fry, Necedah, Wis., assignor of one-third to Frank E. Dawes and Ina Dawes

Application August 10, 1936, Serial No. 95,135

3 Claims. (Cl. 200—115.5)

This invention relates to safety fused plugs.

In the customary house wiring there are main fuses and branch line fuses, but usually each branch line furnishes a number of outlets so that a number of different electrical appliances can be plugged in on one service line. Obviously, therefore, the fuses for the service lines are many times larger than the current carrying capacity of the individual devices that may be plugged into the line.

Objects of this invention are to provide a fused plug which is so constructed that an individual fuse or fuses are provided for each plug so that irrespective of the size of the fuse carried in the service line, nevertheless the plug connected to a particular electrical device may be fused for the protection of that individual device, irrespective of the load on the branch or service line, thereby providing an individual protection for each electrical appliance, the current carrying capacity of the fuses used in the fused plug being such as to protect the individual appliance adapted to be connected to the plug.

Various attempts have been made to meet this condition but they have not proven wholly satisfactory partly on account of the fact that they are expensive devices, difficult to construct, and have a relatively large number of easily damaged parts, and also partly due to the fact that it is necessary to remove a material portion of the apparatus before one or both of the fuses may be replaced, thereby in effect practically disassembling the entire device in order to refuse the plug.

This invention overcomes the defects noted above and further objects are to provide a fused safety plug which is so made that it does not have to be disassembled in order to refuse it, the fuses being carried in an easily accessible position without removing any portion of the plug whatsoever.

Further objects are to provide a fused safety plug in which a portion of the prong structure is utilized in holding the fuse cartridge in place, and in which simple and adequate means are provided for insuring the correct positioning of the fuse cartridge and preventing longitudinal shifting thereof.

Further objects are to provide a device which is very simple in its construction, which may be economically and practically made, and which is rugged and substantially fool-proof, and which may be refused by any one whether skilled or unskilled in the electrical art.

Embodiments of the invention are shown in the accompanying drawing, in which:

Figure 1 is a face view of one form of the fused plug with the insulating washer removed.

Figure 2 is a side elevation of the structure shown in Figure 1 with parts broken away.

Figure 3 is a detail showing one of the prongs.

Figure 4 is a detail showing the spring clip associated with the prong.

Figure 5 is a detail showing one of the terminal plates.

Figure 6 is a detail showing one of the spring clips which is associated with a terminal plate.

Figure 7 is a view of a fuse cartridge removed from the fused plug.

Figure 8 is a view corresponding to Figure 1 showing a modified form of the invention.

Referring to the drawing, particularly Figures 1 to 6, it will be seen that the fused plug comprises a body portion 1 of insulating material which, if desired, may be provided with the usual handle portion 2 to facilitate its insertion or removal. The body portion is provided with a cavity 3 and with an insulating washer 4 which is removable and which fits within a shouldered portion of the body portion and is slotted to receive the prongs 5.

The prongs 5 are formed of relatively rigid metal and the prong faces themselves are offset or angularly positioned with reference to the upright portion 6 and the base 7, see particularly Figure 3. An L-shaped spring clip or contact clip, as shown in Figure 4, is provided with each prong and comprises a base portion 8 and an outwardly bowed upstanding or lip portion 9.

The base 7 of the prong 5 and the base 8 of the spring clip 9 are each apertured and receive the rivet or screw 10 which may be molded or screwed into the insulating body portion 1, as shown in Figure 2, thus securing both members in position. Preferably the body portion 1 is recessed to receive the base portions 7 and 8 and to prevent their turning.

It is to be noted that the spring lip 9 of the fuse clip associated with the prong is provided with an inwardly struck or bent portion 11 which forms an end stop for the fuse cartridge 12.

A terminal plate or member 13 is associated with each prong and is shown in detail in Figure 5. The terminal member 13 is provided with a spring clip, see Figure 6, which has a pair of outwardly bowed arms 14 to receive the end of the fuse cartridge. Each spring arm 14 is provided with an inwardly struck portion 15 which limits the longitudinal motion of the fuse cartridge and

thus insures the correct positioning thereof. The spring arms 14 are connected by a base portion 16 which is apertured and a rivet or screw 17, see Figure 1, is passed through these apertures and corresponds to the rivet or screw 10, such rivet or screw being either molded or screwed into the body portion 1. If desired, the terminal members may be slightly inset, as has been described in connection with the prongs. Each terminal member is provided with a terminal screw 18 by means of which the ends of the cord or cable are attached.

In the form shown in Figures 1 and 2, two fuses are employed. However, it is not necessary to employ two fuses under all conditions and it is obviously within the province of this invention to provide a fused plug in which one fuse cartridge, indicated at 12' in Figure 8, is employed.

The construction of prong 19 and terminal member 20 may be substantially the same as that previously described. However, the terminal member 21 is provided directly with the prong 22. It is preferable to form the body portion 23 unsymmetrical. For example, it may be provided with an indicating point 24 so that in plugging it into place, the point may project either directly upwardly or directly downwardly so that the unfused prong may always be connected to the grounded side of the line. Obviously an insulating washer corresponding to the washer 4 of Figure 2 is employed, though it is omitted from the drawing for the sake of clearness in Figure 8.

It will be seen that a very simple type of fused plug has been provided in which it is an easy matter to refuse the device. All that is necessary is to remove the insulating washer and extract the fuse cartridge. Thereafter a new fuse cartridge may be inserted by merely pressing it downwardly into place. Thus it is not necessary to disassemble the device in refusing and in addition to this, fuse cartridges may be used to thus afford additional protection in the event of overload or short circuit.

Although this invention has been described in considerable detail, it is to be understood that such description is intended as illustrative rather than limiting, as the invention may be variously embodied and is to be interpreted as claimed.

I claim:

1. A safety fused plug comprising an insulating body portion having a rearwardly opening recess provided with a marginal wall, contact prongs directly and permanently carried by the body portion within said recess and projecting therefrom, each of said prongs comprising a substantially L-shaped member including an apertured base, an integral and intermediate base portion and an integral prong non-parallel to said intermediate base portion, terminal members carried by said body portion and located within said recess, a fuse cartridge interposed between at least one terminal member and the base portion of one of said prongs, said last mentioned terminal member having a spring clip for the reception of one end of said fuse cartridge and said prong having a spring clip spaced therefrom and having an integral portion formed on said prong between which the other end of said fuse cartridge is gripped, said fuse cartridge being directly removable from said body portion without dismantling said body portion, and a covering washer carried by said marginal wall and through which said contact prongs project.

2. A safety fused plug comprising an insulating body portion having a rearwardly opening recess provided with a marginal wall, contact prongs directly and permanently carried by the body portion within said recess and projecting therefrom, each of said prongs comprising a substantially L-shaped member including an apertured base, an integral and intermediate base portion and an integral prong non-parallel to said intermediate base portion, terminal members carried by said body portion and located within said recess, said body portion having recessed parts for the reception of said prongs and said terminal members to prevent rotation of said members, a fuse cartridge interposed between each terminal member and the corresponding contact prong, said terminal members each having a spring clip for the reception of one end of the fuse cartridge and each of said prongs having a spring clip spaced therefrom and having an integral portion formed on said prong between which the other end of said fuse cartridge is gripped, said fuse cartridge being directly removable from said body portion without dismantling said body portion, and a covering washer carried by said marginal wall and through which said contact prongs project.

3. A safety fusible plug comprising an insulating base portion having a rearwardly opening recess, contact prongs carried by the body portion and projecting therefrom screw elements engaged in said body portion for holding said prongs respectively; each of said prongs comprising an apertured base, an integral base portion perpendicular to said apertured base and an integral outwardly projecting prong non-parallel to said base portion, terminal members carried by said body portion and located within said recess, one of said terminal members having a spring clip for the reception of one end of a fuse cartridge and the adjacent prong having a spring clip spaced therefrom and having an integral portion secured on said prong between which the other end of said fuse cartridge is gripped, said clips providing means permitting removal or insertion of a fuse cartridge in said body portion without dismantling said body portion.

SIDNEY R. FRY.