Sept. 10, 1940. S. A. LEVEY 2,214,560

CONNECTION PLUG

Filed March 16, 1936 2 Sheets-Sheet 1

Fig. 1.

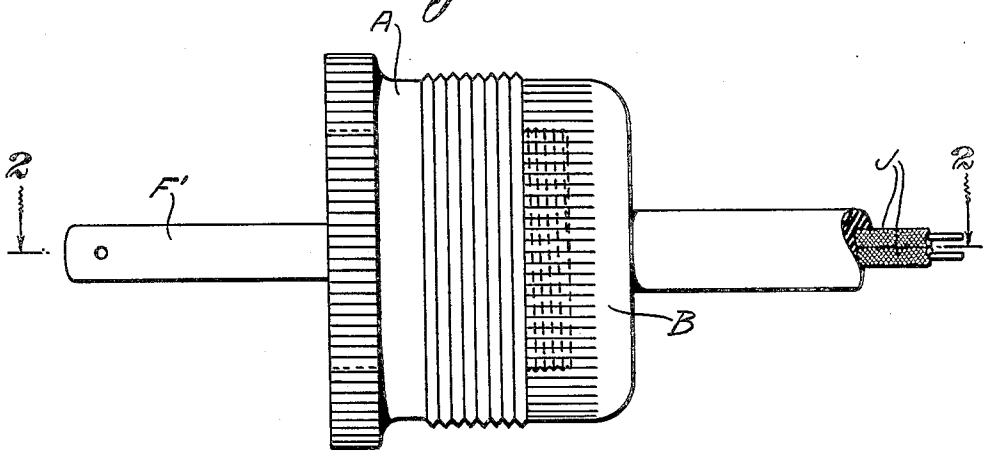


Fig. 2.

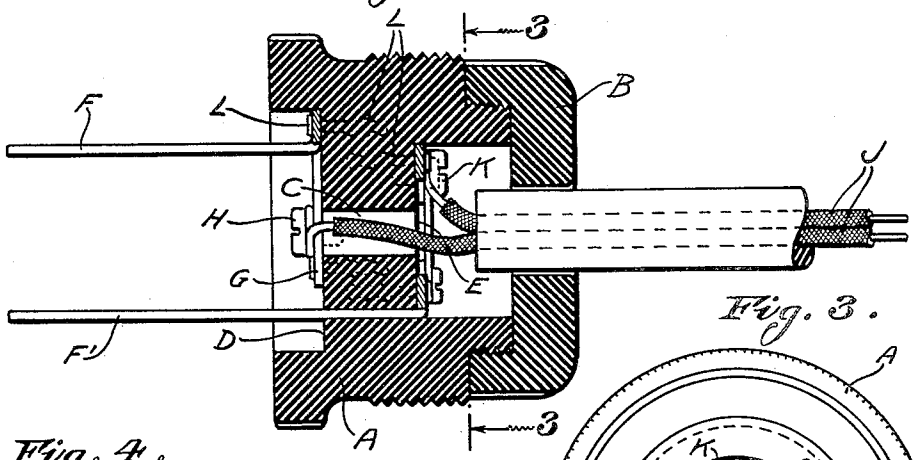


Fig. 3.

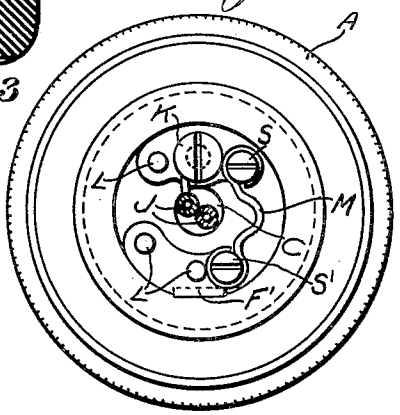
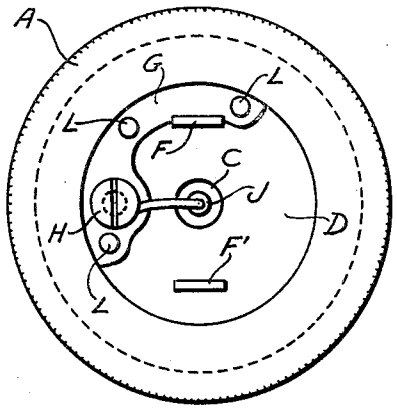


Fig. 4.



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Sept. 10, 1940. S. A. LEVEY 2,214,560

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Filed March 16, 1936 2 Sheets-Sheet 2

Fig. 5.

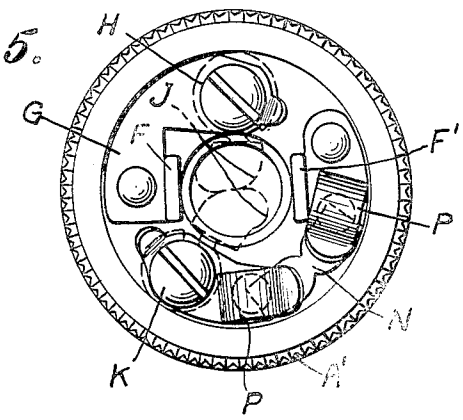


Fig. 6.

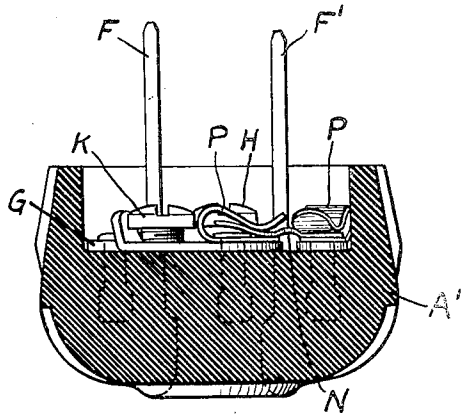
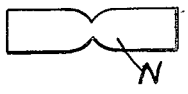


Fig. 7.



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UNITED STATES PATENT OFFICE

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CONNECTION PLUG

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Application March 16, 1936, Serial No. 69,174

2 Claims. (Cl. 200—115.5)

My invention relates to connection plugs and more particularly to connection plugs of the type commonly used on the lead wires of electrical appliances and adapted and arranged to engage an outlet socket whereby current is supplied to said appliance.

Usually a plurality of said outlet sockets are included in a circuit. In small buildings all of the outlets contained therein are included in a single circuit, but in larger buildings several circuits are sometimes used. At the points where the building circuits are connected to the outside commercial circuit, fuses or other circuit breakers are arranged so that if the current in the building circuit increases beyond a certain point because of short circuits or other accidents in either circuit damage to the building circuit and its included appliances and attachments will be prevented. However, ordinarily such circuit breakers must be made so that they will carry the greatest normal load of the building circuit without blowing out.

Heretofore, the connection plugs used commonly consisted only of parts adapted to engage the outlet socket to form an electrical connection therewith and terminals conductively connected to said parts for the lead wires of the appliance. If a short circuit occurred in the appliance the fuse for the entire building circuit would be blown and the circuit would be broken. It then was necessary to replace the blown fuse at the point where the commercial and house circuits were united and often such place was not readily accessible for the replacement.

Several attempts have been made to provide a plug of the type described including as a unitary part thereof a fuse or other circuit breaker so that if a short circuit developed in the appliance associated with the plug the circuit maintained between the outlet socket and the appliance would be broken without disturbing the circuit in which the outlet was included. Such devices which have been used for this purpose are either ineffectual, expensive to manufacture or so intricate in design and operation as to make a fuse contained therein inaccessible for replacement.

The objects of my invention are to provide a connection plug including a fusible element which will melt when a short circuit occurs in the appliance associated with the plug and to provide a plug of this type which will obviate the deficiencies of structure in the plugs heretofore used and which will be simple in operation and cheap to manufacture.

Several embodiments of my invention are fully shown in the accompanying drawings wherein similar characters are used to designate similar parts: Fig. 1 is an exterior view of one form of my device; Fig. 2 is a section along the line 2—2 in Fig. 1; Fig. 3 is a cross section along the line 3—3 in Fig. 2; Fig. 4 is an end view of the device; Figs. 5, 6 and 7 are views of a modified form of a connection plug made according to my invention.

Referring to the Figures 1 to 4, inclusive, the connection plug shown therein as embodying my invention has a base member A which may include a cap B threaded or otherwise detachably secured in predetermined position for the purposes more fully outlined below. The member A for best results is formed of a non-conductive material and is centrally drilled as at C. The member has a pair of faces D and E which may be arranged in any manner, but which, preferably, are opposed, as shown, or are otherwise arranged so as to be separated by the body of the plug. Extending forwardly from the face D is a pair of prongs F and F′ adapted and arranged to engage the openings in an outlet socket, not shown. While, I have shown a plug of the prong type, I do not intend to limit myself to this construction because parts providing a threaded engagement with the outlet socket or other parts to provide other engagements therewith may be used with equal facility.

The prong F is secured to the member A on the face D and may comprise an integral connector G leading to a terminal H for one of the lead wires J to the electrical appliance, not shown, with which the plug is associated. This lead wire extends through the drilled opening C.

The prong F′, in this embodiment, extends through the body of the member A and is secured on the opposite face E, as shown in Fig. 2. Similarly, the other lead wire J to the appliance is connected to a terminal K. The terminals and prongs, preferably, are attached to the member A by screws L or any other suitable expedient. The terminal K is removed from the inner end of the prong F′ and between the terminal and the prong is arranged a fusible element M which may be a short fuse wire, as shown, particularly in Fig. 3, or may be a fuse of any other type. Preferably, the fusible element is arranged to extend along the face E, and the plug is provided with a suitable holder to secure the fusible element in the plug so that the fusible element, when no longer operative, may be replaced independently of replacement of other elements of the plug. In one embodiment shown

this holder consists of the screws S and S' carried by the terminal K and the prong F', respectively. The cap B which is slipped over the lead wires J before they are attached to the plug may be screwed into place after such an attachment so that the fusible element M will be protected.

When the plug is in use and a short circuit occurs in the appliance with which it is associated the fusible element M will melt and the circuit from the outlet socket to the appliance will be broken. Preferably, the fusible element M is arranged so that it will blow with a smaller load than that which the fuse for the building circuit is designed to carry. Therefore, the element M will melt before the building circuit is broken. After the circuit has been broken and the appliance has been repaired the cap B is removed and a new element M is inserted in place. This replacement may be accomplished quickly and easily because the various parts are readily accessible.

In the Figures 5 to 7, inclusive, I have shown a modified form of my invention wherein the base member A', the prongs F and F', the connector G, the terminal H for the lead wires J and the terminal K are similar to those shown in Figs. 1 to 4, inclusive. However, the fusible element N shown in the embodiment of Figs. 5 to 7, inclusive, consists of a flat piece of thin metal or foil extending between the terminal K and the inner end of the prong F'. Any suitable means for holding this element N in place may be used, but in the figures, I have shown spring clips P which will hold the element firmly in place and which will allow easy removal of a burnt out element and replacement with a new part.

While I have shown, as stated above, two embodiments only of my invention in the accompanying drawings I do not intend to limit myself to the arrangement of the parts shown because the size, shape and arrangement of parts comprising a device embodying my invention may be varied within wide limits without deviating from the spirit of my invention as included in the appended claims.

What I claim as new and desire to secure by Letters Patent, is:

1. A plug of the type described comprising parts adapted and arranged to engage an outlet socket to make an electrical connection therewith, a base member having faces separated by the body of said member and each face carrying thereon a terminal to receive one of the lead wires to an electrical appliance, a conductive connection between said terminal and said part, said conductive connection for one of said parts comprising a straight portion extending through said base member, and one of said conductive connections including fusible element arranged on the face of said base member removed from the socket engaging end of said plug.

2. A plug of the type described comprising parts adapted and arranged to engage an outlet socket to make an electrical connection therewith, a base member having opposed faces separated by the body of said member and each having a terminal to receive one of the lead wires to an electrical appliance, a conductive connection between each of said terminals and one of said parts, and one of said conductive connections comprising a straight portion extending through said base member between said opposed faces and including in addition to said straight member a fusible element arranged on the face of said base member removed from the socket engaging part and a cover attachably secured to said base member over said face on which said fusible element extends.

SIMON A. LEVEY.