July 18, 1939. R. F. KNEISLEY 2,166,254

COMBINATION ELECTRIC FUSE AND CIRCUIT EXTENSION CONNECTOR

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Fig. 1.

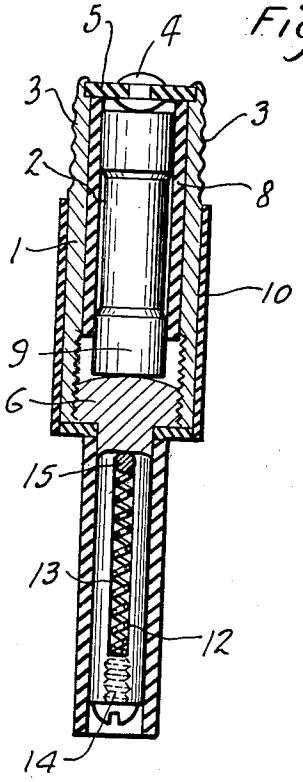
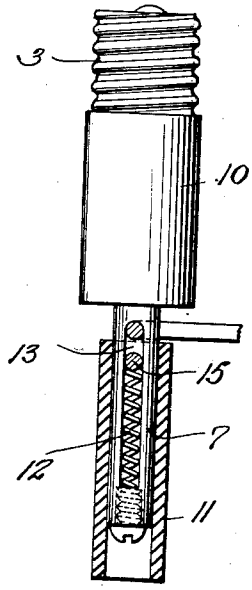


Fig. 2.



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COMBINATION ELECTRIC FUSE AND CIRCUIT EXTENSION CONNECTOR

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6 Claims. (Cl. 200—115.5)

This invention relates to fused electric circuits, and particularly to a combination fuse and multiple circuit take-off means therefor.

It is common practice in electric wiring to include a fuse box in the circuit at the point of entering a building and to provide therein a fuse plug in one or both lines of the circuit. It some times happens that the fuse plugs are removed from a fuse box and the ordinary circuit connecting plugs, with leads therefrom to an electric device to be operated, substituted therefor, thus defeating the purpose for which the fuses are intended and constituting an unauthorized violation of the requirements of underwriters and of electric supply companies with respect to wiring.

The object of the invention is the provision of a combination fuse and power take-off means for electric lines, which means is simple and efficient in its construction and enables a machine operating circuit to be plugged into the main supply line at the fuse box in place of the customary fuse plugs and to perform the function of such plugs in addition to supplying power to the supplemental lines. This is important from the standpoint of safe load for the building wiring, as it frequently happens that an electrically operated device which places an overload on the circuit is connected to the wiring. With my invention the electric device may be connected directly to the main electric circuit line without affecting the fused condition of the building circuit or placing an overload on the inside wiring.

The invention is fully described in the following specification, and one embodiment thereof illustrated in the accompanying drawing, in which—

Figure 1 is a central longitudinal section of a device embodying the invention, with parts in full, and Fig. 2 is an elevation with parts in section of the device shown in Fig. 1 with the parts moved to another position.

The combination fuse and connector comprising the invention is, in its present embodiment, of the type adapted for threading into an electric socket having a central bottom contact and a side contact, and which is of the type commonly used in electric wiring for receiving the usual electric fuse and circuit connector plugs.

In the drawing, 1 designates a hollow cylindrical shell of electrical conductive material to form the side contact member of the plug and having its inner end portion externally threaded at 3 to adapt it for threading into the usual current conducting side wall of a socket member. The usual center or end contact of the plug is designated 4 and is carried centrally by and projects through a disk 5 of insulating material which is fixedly secured in the externally threaded end of the shell 1. The disk 5 forms one end of the fuse chamber 2 and the contact 4 is exposed to such chamber.

The opposite or outer end of the shell 1 is closed by a contact plug 6 of electrical conductive material, which, in the present instance, is threaded into the shell and closes the adjacent end of the fuse chamber. The plug 6 has a post-like extension 7 at its outer end to form a terminal to which a circuit wire may be connected in any suitable manner.

The shell 1 is provided with a lining 8 of suitable insulating material, and fitted in the chamber 2 within this lining is a cartridge form of electric fuse 9 which has electrical contacts at each end in connection with the interior of the cartridge through a fusible electric conductor member, as well understood in the art. One end contact of the fuse is in engagement with the center contact 4, while the other end contact thereof is in engagement with the plug 6, so that the electrical connection between the main contact 4 and the side contact sleeve 1 and outer end contact member 6 is necessarily through the fuse. The fuse 9 may be replaced by a removal of the plug 6 from the shell end.

The shell 1, beyond its threaded contact portion 3 and over its outer end and the exposed end of the plug or contact member 6 at the base of the post 7, is enclosed by a protecting shell or casing 10 of electrical insulating material. The post 7 is also preferably enclosed and protected by an insulating tube 11, which, as shown in Fig. 2, may be moved outwardly on the post to expose its inner end portion sufficiently to enable a circuit wire to be attached thereto, as through the medium of a terminal clamp. The protecting shell 11 is normally held at the inner end of its movement on the post 7 by an expansion spring 12, which is disposed lengthwise within a longitudinally extending cross slot 13 in the post being held therein at its outer end by a screw 14 threaded into the post and having its inner end in thrust engagement with a cross pin 15 which is fixed to the shell and projects through said slot.

It is apparent that with the present fused connector, an electric circuit may be taken directly from the main lead-in wires of a building wiring

circuit by simply removing the customary fuse plugs from the main circuit wires and substituting therefor the present connector plugs, which effects not only a fusing of the circuit line in the same manner as the displaced fuse plugs, but also enables a supplemental circuit to be taken from the lead-in wires before other building circuits are taken therefrom. In this manner an electric machine which requires too much current for the customary building branch wiring circuits may be connected directly to the main circuit wires. It will thus be seen that the connector plug embodying the invention not only effects a fusing of the usual branch wiring circuit of the building, but also enables at least one other fused supplemental circuit to be taken therefrom. It will, of course, be understood that while this fused connector is particularly intended for use in connection with a fuse box socket in lieu of the usual circuit fuse, it may be used in connection with other electric circuit sockets, if desired.

I wish it understood that my invention is not limited to any specific construction, arrangement or form of the parts, as it is capable of numerous modifications and changes without departing from the spirit of the claims.

Having thus described my invention, what I claim as new, and desire to secure by United States Letters Patent, is:

1. A plug type electrical connector member having an internal chamber, a main center end contact and a side contact insulatingly spaced from each other and adapted for engagement respectively with the center and side contacts of an electric fuse socket, an electric connector contact at the outer end of the chamber, and an electric fuse cartridge in said chamber and establishing electrical connection between said center and both said side and outer end contacts.

2. An electric connector for plugging into an electric fuse socket having separate center and side contacts the center of which is a line contact and the side of which is a branch circuit contact, said connector including a hollow cylindrical shell with insulatingly spaced center and side contacts for engagement with the respective center and side contacts of a fuse socket and a separate circuit connector contact, and an electric fuse in said shell establishing fused electrical connection between said line contact and both said branch and circuit connector contacts.

3. An electric connector for plugging into an electric fuse socket having separate center and side contacts, said connector including a hollow shell of electrical conductor material adapted to be threaded at one end into an electric fuse socket, a center contact insulatingly carried by the threaded end of said shell, a supplemental electrical contact carried by the opposite end portion of the shell in electrical connection therewith and adapted to have a take-off circuit wire connected thereto, and an electric fuse mounted in the shell and establishing fused electrical connection between said first contact and both said other two contacts.

4. An electric connector for plugging into an electric fuse socket having separate center and side contacts, said connector including a cylindrical shell of electrical conductive material for threading into a socket, a supplemental circuit terminal post projecting from an end of said shell, a main electrical contact carried by the opposite end of the shell and insulatingly spaced from said shell and post and adapted to engage the center contact of a fuse socket, and an electrical fuse mounted in said shell and establishing electrical connection between said main contact and both said shell contact and post.

5. A plug type electrical connector having a main contact at its inner end, a side contact and an opposite end contact both insulatingly spaced from the main contact, an electrical fuse establishing electrical connection between said main and said side and end contacts, said end contact having a connector post extending therefrom, and an insulating shield around a portion of said side contact and said end contact and having a part movable to uncover the end contact to permit an electrical circuit connection to be made therewith.

6. A plug type electrical connector having a main electrical contact at one end, a contact with extension post at the opposite end and a side contact, the last two contacts being insulatingly spaced from the first, an electrical fuse connecting said main and said side and end contacts, a protecting sleeve of insulating material slidingly mounted on said extension post, and means yieldingly retaining said sleeve in complete protecting relation to said post and permitting the movement thereof to uncover a portion of the post to permit electrical connection to be made therewith.

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