June 14, 1932. L. SCHMIDT, JR 1,863,383

FUSE PLUG AND SOCKET

Filed Jan. 4, 1929 2 Sheets-Sheet 1

Fig. 1.

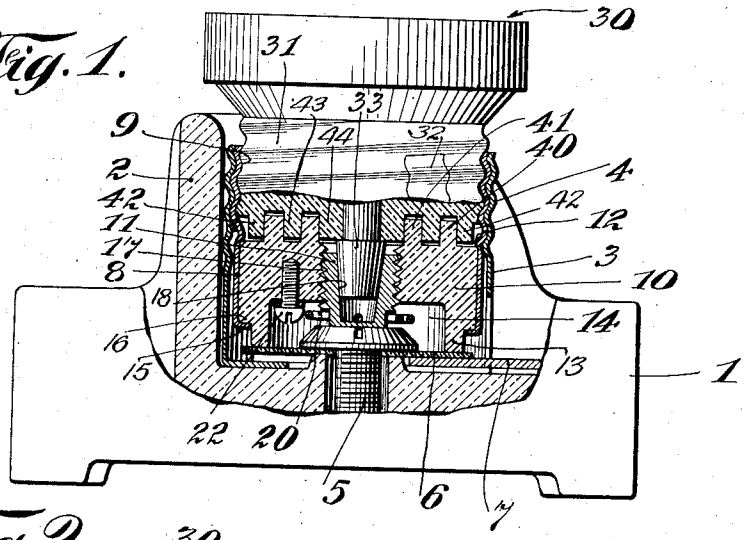


Fig. 2.

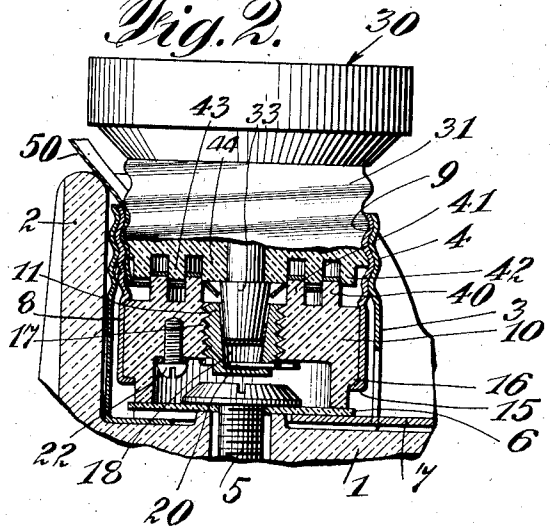


Fig. 3.

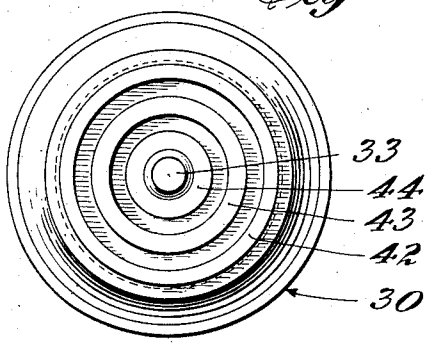


Fig. 4.

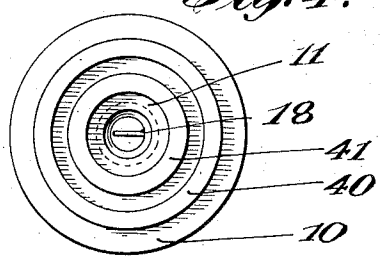
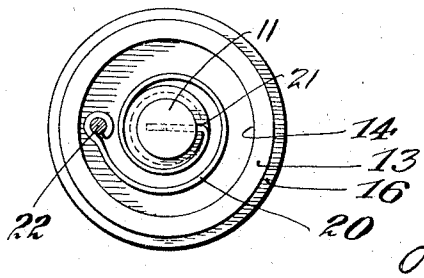


Fig. 5.



Lambert Schmidt
INVENTOR
BY
Frank J. Kent
ATTORNEY

June 14, 1932. L. SCHMIDT, JR 1,863,383

FUSE PLUG AND SOCKET

Filed Jan. 4, 1929 2 Sheets-Sheet 2

Fig. 9.

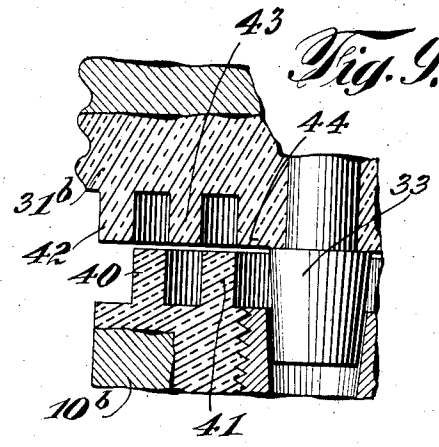


Fig. 6.

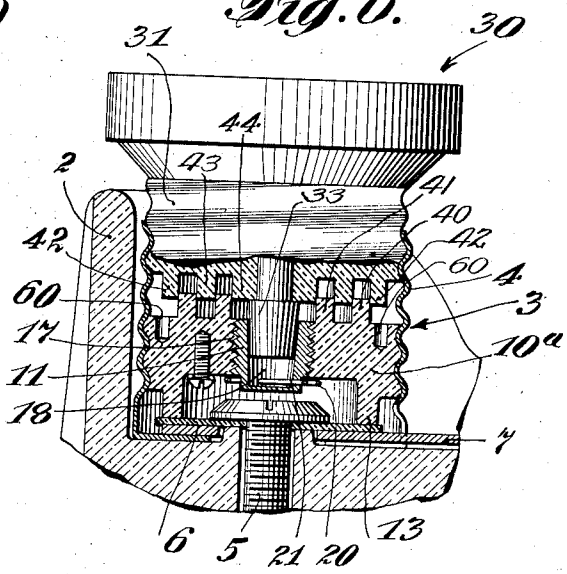


Fig. 10.

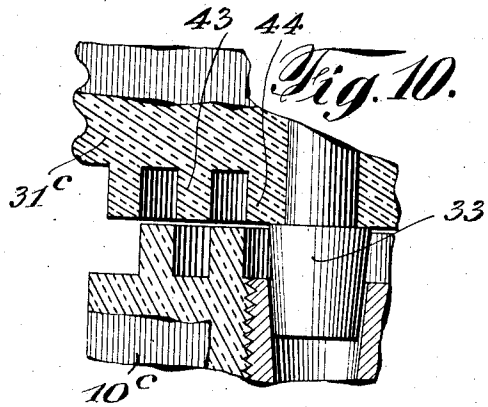


Fig. 7.

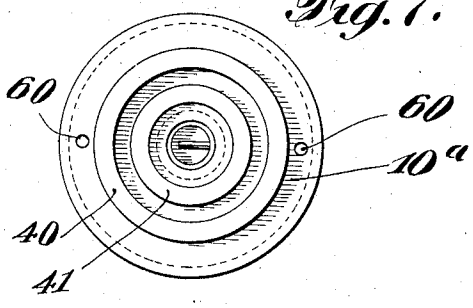


Fig. 11.

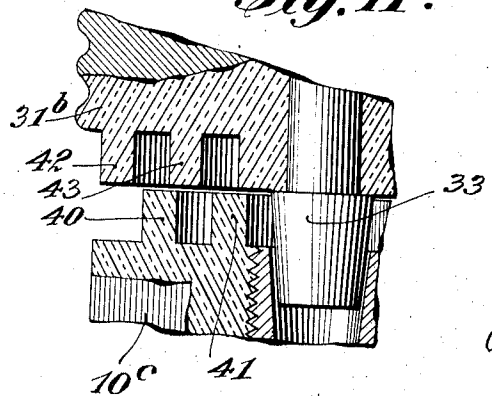
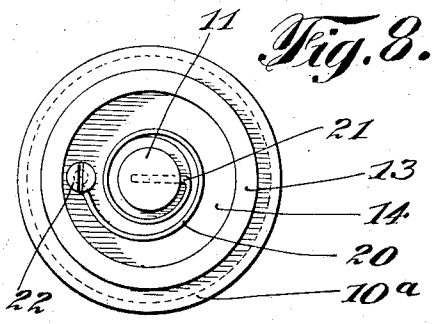


Fig. 8.



Lambert Schmidt Jr.
INVENTOR
BY
Frank A. Lent
ATTORNEY

Patented June 14, 1932 1,863,383

UNITED STATES PATENT OFFICE

LAMBERT SCHMIDT, JR., OF BROOKLYN, NEW YORK, ASSIGNOR TO HIMSELF AND LOUIS FREUND, OF NEW YORK, N. Y.

FUSE PLUG AND SOCKET

Application filed January 4, 1929. Serial No. 330,380.

My invention relates to safety sockets designed to receive fuses of the plug type, and to fuse plugs designed to cooperate with such sockets.

The principal object is to provide socket and plug structures or arrangements of such character that it is exceedingly difficult or practically impossible for unskilled or unauthorized persons to misuse them by inserting metal objects, tin foil, etc., in an attempt to close the circuit through the socket when the proper fuse plug has been blown out, or in absence of a plug.

Another important object is to provide cooperating plugs and sockets so arranged or designed that it is impossible to insert a plug of other than a certain predetermined character or amperage in the socket.

In carrying out the first stated general object I provide a socket or socket-adapted having a movable contact member which moves to open circuit position, out of contact with the center contact of the socket, whenever the plug is absent from the socket or adapter, and further so construct this movable or circuit-breaking contact that it cannot easily be moved to closed circuit position, or placed in such position by other than rotary movement; I also construct or arrange the plug and especially the center contact of the plug for proper cooperation with the movable contact member just mentioned; and I further provide cooperating formations analogous to ribs on engaging faces of the socket, adapter or a member located therein, and the plug, which render it difficult or impossible to insert a metal object, wire or the like in the socket in circuit-closing position and especially prevent closing the circuit through the socket by inserting a piece of metal foil and reinserting the plug.

The second general object above mentioned is accomplished by the provision of a socket or socket-adapter, and cooperating plug, having interfitting rib or flange formations of a certain character, and another socket or socket adapter and plug having cooperating rib or flange formations of other dimension or character, so that each plug can be properly inserted only in the socket or adapter for which it is designed and not in the other; and as a further convenience in the use of such plugs and sockets, I provide convenient identifying means such as a similar coloration of a plug and its proper corresponding socket, and another similar coloration of a plug of another type or current value and its corresponding socket, whereby the proper plug may easily be selected for insertion into any particular socket.

The characteristics and advantages of the invention are further sufficiently explained in connection with the following detail description of the accompanying drawings, which show representative embodiments. After considering these examples, skilled persons will understand that many variations may be made without departing from the principles disclosed, and I contemplate the employment of any structures that are properly within the scope of the appended claims.

Fig. 1 is a vertical section of a socket, adapter and plug, embodying the invention in one form.

Fig. 2 is a similar view showing the action of the plug and socket in case of attempted short-circuiting of the socket by insertion of a piece of tin foil.

Fig. 3 is a bottom plan view of the plug of Fig. 1.

Fig. 4 is a top plan view of the socket adapter of Fig. 1.

Fig. 5 is a bottom plan view of the adapter.

Fig. 6 is a view similar to Fig. 1 of a modification in which the circuit-breaking contact is located directly in the socket shell, without an adapter.

Fig. 7 is a top plan of the insulating base and movable contact of Fig. 6.

Fig. 8 is a bottom plan of the same.

Figs. 9 and 10 are enlarged fragmentary detail sections of cooperating plug and socket formations of two types.

Fig. 11 is a view similar to Figs. 9 and 10 demonstrating the non-cooperation with a socket or socket member, of a plug other than one designed for such socket.

Fig. 1 shows an ordinary "screw-socket," as an example of any known or suitable fuse receptacle designed to receive a fuse of the

plug type. As shown, the socket structure includes the base or body 1 of insulating material having a sleeve formation 2, a metal shell 3, threaded in its upper portion at 4, a center contact consisting of the head of a screw 5 secured as usual in the base, an insulating disc or washer 6 held under the screw head, and a conducting strip 7 leading to one of the socket terminals or binding posts. There is also provided (as usual, but not shown) another contact strip or terminal, or binding post in electrical connection with the center contact 5.

An adapter consisting of a metal shell 8 having a threaded upper portion 9 cooperating with the thread 4 of shell 3, is screwed into the socket shell. In the lower part of the adapter is a generally-circular insulating block or body 10 serving principally as a support for a movable central contact member 11. The insulating body may be secured in the adapter shell by inpressing portions of the shell above the upper edge of the insulator as at 12, or in any other suitable way. The under side of the insulator 10 is provided with a dependent flange 13 surrounding a central recess 14 to accommodate the head of contact screw 5 and the lower portion of the movable contact 11 and other parts as hereafter referred to. This flange 13 engages insulating disc 6 and determines the position of the adapter when properly screwed into the socket. The lower end of the adapter shell is formed with an inturned flange 15 engaging under a shoulder 16 of the insulator, surrounding flange 13.

The movable contact or circuit-breaker 11 is in the form of a screw or threaded plug engaging in a threaded central hole 17 in the insulating body 10. The screw-thread of the contact 11 has the same "lead" as that of the socket shell or adapter; thus it may be a triple thread, to enable the contact to move axially at the same rate as the fuse plug, when actuated thereby, as later explained. Contact 11 is formed with a tapered socket 18 extending from its upper end nearly to its lower end. Cooperating with the movable contact is an actuating spring conveniently in the form of a wire spring 20, as shown, which is located in the recess 14 and coiled one or more times about the lower end of the plug. One end of the spring is bent as at 21 and inserted in a hole bored laterally into the lower end of the contact 11. The other end of the spring may be anchored on a pin or screw 22 inserted in the under part of the insulating body and within the recess 14. Any suitable detent device, such for example, as that shown in my application, Serial No. 317,227, filed November 5, 1928, may be provided, to prevent removal of the adapter or body 10 or 10^a from the socket by unauthorized persons. Normally the spring rotates the contact member 11 clockwise, as viewed in Fig. 5, or in such direction that, having a right-hand thread, the screw contact rotates in such direction that it moves upward in relation to its supporting body 10 to circuit-breaking position, as shown in Fig. 2, with its lower end substantially separated from the head of the socket contact screw 5.

The fuse plug 30 may be as usual except for special features provided for the purposes of the present invention including the following: The threaded portion 31 is of a suitable insulating material and has inserted in it a metal piece 32 to form the outside contact of the plug to cooperate with the socket shell, or in the case of Figs. 1 and 2, the adapter shell. The center contact 33 is formed as a tapered plug or pin to cooperate with the socket formation in the movable contact screw 11.

As so far described, when the plug is inserted in the adapter and screwed down past the position of Fig. 2, plug 33 establishes frictional engagement with the socket formation in contact screw 11, and in the further rotation of the plug the screw is rotated and moves downward (or inward) until finally when the plug is fully screwed in, the movable contact 11 is in engagement with the center contact 5 of the socket, completing the circuit through the fuse in the fuse plug in the usual way. In the example given the plug is of smaller size than the socket 4 permitting the insertion into the socket shell of the adapter 8 with the safety device incorporated therein, after which the adapter cannot be removed by unauthorized persons; or in other words, provision may in this way be made for the insertion of the safety device in an ordinary socket by the insertion of an adapter therein.

When the fuse plug is removed the contact member 11 is rotated by spring 20 and thus moved to its upward or open-circuited position, as shown in Fig. 2, breaking the circuit through the center of the socket and adapter. If it is attempted to improperly close the circuit through the socket by insertion of a metal piece such as a wire, it will be found practically impossible to do so, since the wire or other implement must be manipulated in such manner as to rotate the contact member 11 instead of merely pushing it axially inward, and then to retain it against return rotation. Unskilled or unauthorized persons attempting to tamper with the socket will therefore find it practically impossible to move the center contact 11 to closed-circuit position and to retain it in such position and at the same time to establish a circuit from the contact 11 to the shell 8.

As a further precaution against tampering I provide the upper face of the insulating body 10 with one or preferably a plurality, such as two, concentric spaced ribs or flanges 40 and 41, to cooperate with annular grooves or channels in the lower end of the plug part

31 insulating material, such channels being provided by concentric flanges 42 and 43 surrounding a central boss 44. The ribs or flanges on the plug and insulator body 10 quite closely interfit and have substantially sharp lower edges or corners. The ribs or flanges on the insulating body 10 render it additionally difficult to establish contact between the shell and the central contact member 11 by insertion of a small metal object such as a coin; and especially in cooperation with the flanges on the lower end of the plug, they prevent closing of the circuit through the socket by inserting a piece of metal foil and reinserting the fuse plug. Fig. 2 shows the result of an attempt to short circuit the socket in this way. Prior to insertion of the fuse plug 30 a piece of metal foil 50 has been inserted in the adapter 8. The fuse plug has then been screwed part way in. Ordinarily the center contact of the fuse plug would bring a portion of the foil into engagement with the center contact of the socket and the outer portion of the foil would be held in contact with the shell, thus establishing an improper short circuit to prevent passage of any current through the adapter. But with the invention structure, as clearly shown in Fig. 2, the entry of the plug flanges 42 and 43 into the channels of the insulator 10 causes the tin foil to be severed into a plurality of annular strips, some of which are forced up into the upper channels and others are forced down into the lower channels, thus rupturing the strip and preventing completion of the circuit through it. In addition, the rotary movement of the stated flanges and the rotation of the moving contact member 11 serves to still more effectively rupture the foil strip, as sufficiently understood from Fig. 2 without further explanation.

Fig. 6 shows the invention improvements adapted to, or incorporated in an ordinary socket, such as that of the first example, without an adapter. In this case the insulating disc, or body 10^a is externally threaded, to directly engage in the thread 4 of the socket shell 3. The disc is screwed down into the socket until flange 13 seats in insulating disc 6. The insulator 10^a may have all the structural features of insulator 10, Fig. 1, and cooperates with the fuse plug 30 in the same way, and provides all the protective, or safety features, as above explained. The insulating body 10^a may be retained permanently in the shell in any suitable way, as by indenting the shell above the insulator; preferably, however, in some cases, as shown, the insulator with its circuit-breaking contact 11 is dimensioned to have a tight fit in the shell thread, and is provided in its upper surface with small spanner sockets 60, so that it is difficult or impossible to insert and remove the insulator except by the use of a special spanner, unavailable to unauthorized persons.

It has been found desirable to make special provision, under controlled conditions, for the use of fuse-plugs of different ranges of ampere-values. The invention provides means or arrangement for this purpose as follows: The threaded body 31 of the fuse plug and the insulating discs 10 or 10^a may be of such material or composition that they may be colored as desired, this coloration being obtained by incorporating the coloring matter in the composition, or in some cases by surface application. This coloration is utilized as one means of ready identification of plugs of certain amperage with sockets in which such plugs should be used, although in the border aspect of the invention, any other suitable identification means could be employed, such as corresponding numbers or letters. According to the color-identification plan, as here shown, a plug-body 31^b, Fig. 9 may be colored green, to indicate, say, a low ampere value, and insulating bodies 10^b may be similarly colored, these bodies being of the type suited for use in an adapter (Fig. 1) or directly in a socket (Fig. 6). Another plug body 31^c Fig. 10, may be colored red, to indicate a relatively high amperage, and the corresponding insulators 10^c are similarly colored. The proper insulator 10^b or 10^c having been placed in any socket (according to the circuit to be controlled by the fuse), observation of the color of the insulator immediately directs the selection of a suitable (similarly colored) fuse plug to be inserted in the socket.

It is desirable not only to facilitate such selection of plugs, but to prevent the operative insertion of a plug in a socket for which it is not suitable; for example, the use of a high ampere plug in a socket controlling a circuit which should not carry such a high current flow. For this purpose the plug and certain socket members are provided with matching formations, controlling the proper use of the plugs, and while broadly this feature of the invention is not confined to any particular arrangement or location of these formations, in a more limited aspect, it is convenient to combine them with the plug bodies 31 and socket insulators 10 or 10^a, and also to design them in correspondence with the color identification scheme above explained.

Thus, in Fig. 9, the ribs or flanges 40, 41, of the green socket insulator 10^b are arranged and dimensioned to interfit with the flanges 42, 43 of the green plug body 31^b, while the similar flanges of the red insulator 10^c and red plug body 31^c of Fig. 10 are arranged to match, or interfit with each other, but are dimensioned or arranged differently from those of Fig. 9. The proper plug may therefore be inserted in a socket pre-arranged to receive it; but if attempt is made to insert a plug such as 31^b in a socket

or adapter containing an insulator 10^c, as shown in Fig. 11, the flanges do not match, but their faces abut, or overlap, as there shown, and the plug cannot be screwed into the socket far enough to close the circuit through the fuse.

Evidently the matching and non-matching formations may be used with or without the identifying color-scheme, and vice-versa; also the other safety features may be used, with or without color identification or mechanical matching arrangement.

I claim:

1. In combination with an electric socket, an insulating support therein, a movable contact in the support, interengaging means between the support and contact admitting axial movement of the latter by rotation and preventing axial movement without rotation, and means normally rotating the contact to move it axially to outward, open-circuit position.

2. In combination with an electric socket, an insulating support therein, a center contact in the support and having screw-thread engagement therewith, and means normally rotating the contact to open-circuit position.

3. In combination with an electric socket, an insulating support therein, a contact mounted for rotation with accompanying axial movement in the support, and means normally moving the contact to open-circuit position, and a fuse-plug having a center contact adapted to cooperate with the contact first named and move it rotarially and axially to closed circuit position.

4. In combination with an electric socket, an insulating support therein, a center contact in the support and having screw-thread engagement therewith, and means normally rotating the contact to open-circuit position, and a fuse plug having a center contact adaped to cooperate with the contact first named and rotate it to closed circuit position.

5. In combination with an electric socket, an insulating support therein, a center contact in the support and having screw-thread engagement therewith, and means normally rotating the contact to open-circuit position, said center contact having a socket, and a fuse plug having a projecting center contact pin to cooperate with the contact socket.

6. In combination with an electric socket, an insulating support therein, a center contact in the support and having screw-thread engagement therewith, and means normally rotating the contact to open-circuit position, said center contact having a tapered socket, and a fuse plug having a projecting tapered center contact pin to cooperate with the contact socket.

7. In combination with an electric socket, an adapter and an insulating support therein, a movable contact in the support, and means normally moving the contact to open-circuit position to prevent passage of any current through the adapter.

8. An electric screw socket, comprising a threaded shell and a center contact, an insulator in the inner part of the shell, a revoluble center contact having threaded engagement in the insulator and a spring normally rotating the revoluble contact to a position away from the socket center contact.

9. An electric screw socket, comprising a threaded shell and a center contact, an insulator in the inner part of the shell, a revoluble center contact having threaded engagement in the insulator and a spring normally rotating the revoluble contact to a position away from the socket center contact, the revoluble contact having in its outer end a socket, and a fuse plug having a projecting center contact to cooperate with said contact socket and rotate the revoluble contact to engage with the socket center contact.

10. An electric screw socket, comprising a threaded shell and a center contact, an insulator in the inner part of the shell, a revoluble center contact having threaded engagement in the insulator, the lead of the contact thread being equal to that of the socket shell, and a spring normally rotating the revoluble contact to a position away from the socket center contact.

11. An electric screw socket, comprising a threaded shell and a center contact, an insulator in the inner part of the shell, a revoluble center contact having threaded engagement in the insulator, the lead of the contact thread being equal to that of the socket shell, and a spring normally rotating the revoluble contact to a position away from the socket center contact, the revoluble contact having in its outer end a tapered socket, and a fuse plug having a projecting tapered center contact pin to cooperate with said contact socket and rotate the revoluble contact to engage with the socket center contact.

12. For co-operation with an electric socket having a screw shell and a center contact, an adapter comprising a screw shell to cooperate with the socket shell, an insulator in the adapter shell, and a center contact in the insulator and movably mounted therein to make contact with the socket center contact when moved inward by a screw plug inserted in the adapter.

13. For co-operation with an electric socket having a screw shell and a center contact, an adapter comprising a screw shell to cooperate with the socket shell, an insulator in the adapter shell, a center contact for said adapter shell and means acting between the insulator and its center contact to normally hold the latter in outward, circuit breaking position.

14. For co-operation with an electric socket having a screw shell and a center contact, an adapter comprising a screw shell to

co-operate with the socket shell, an insulator in the adapter shell, a center contact mounted in the insulator for rotation and axial movement and restrained from axial movement except by rotation, and means acting between the insulator and the center contact to rotate it in a direction to move it axially outward to circuit breaking position, the contact having outward means for engagement with a center contact member of a screw plug which when inserted in the adapter rotates the adapter contact to inward, contact-making position.

15. For co-operation with an electric socket having a screw shell and a center contact, an adapter comprising a screw shell to co-operate with the socket shell, an insulator in the adapter shell, a center contact mounted in the insulator for rotation and axial movement and restrained from axial movement except by rotation, and means acting between the insulator and the center contact to rotate it in a direction to move it axially outward to circuit breaking position, the adapter contact having an outward tapered socket to co-operate with a tapered projecting contact of a screw plug inserted in the adapter.

16. Electric socket and fuse plug equipment, comprising a socket including a screw shell, a center contact, an insulating body inwardly located in the shell, and a plug threaded to enter the shell by rotary movement and including an insulating body at its inward end, the insulating bodies having on confronting faces complemental interfitting rib and channel formations preventing full insertion of a plug other than one designed for the particular socket and socket insulator, a movable center contact in the socket insulating body, means normally urging the contact to outward, circuit breaking position, and the plug having a center contact member adapted to engage the insulator center contact and move it inward to engage with the socket center contact.

17. Electric socket and fuse plug equipment, comprising a socket including a screw shell, a center contact, an insulating body inwardly located in the shell, and a plug threaded to enter the shell by rotary movement and including an insulating body at its inward end, the insulating bodies having on confronting faces complemental interfitting rib and channel formations preventing full insertion of a plug other than one designed for the particular socket and socket insulator, a movable center contact mounted for axial movement by rotation in the socket insulating body, and means normally urging the contact to outward, circuit breaking position, the plug having a center contact member adapted to engage the insulator center contact and move it inward to engage with the socket center contact.

18. Electric socket and fuse plug equipment, comprising a socket including a screw shell, a center contact, an insulating body inwardly located in the shell, and a plug threaded to enter the shell by rotary movement and including an insulating body at its inward end, the insulating bodies having on confronting faces complemental interfitting rib and channel formations preventing full insertion of a plug other than one designed for the particular socket and socket insulator, a movable center contact mounted for axial movement by rotation in the socket insulating body, and means normally urging the contact to outward, circuit breaking position, the center contact of the socket insulating having an outward socket formation adapted to receive a projecting formation of the plug center contact whereby the center contact in the socket insulator is rotated and moved inward to engage with the socket center contact.

19. Electric socket and fuse plug equipment, comprising a socket including a screw shell, a center contact, an insulating body inwardly located in the shell, and a plug threaded to enter the shell by rotary movement and including an insulating body at its inward end, the insulating bodies having on confronting faces complemental interfitting rib and channel formations preventing full insertion of a plug other than one designed for the particular socket and socket insulator, a movable center contact in the socket insulating body, means normally urging the contact to outward, circuit breaking position, the plug having a center contact member adapted to engage the insulator center contact and move it inward to engage with the socket center contact, and another socket and plug having differently dimensioned interfitting rib and channel formations, whereby each plug can be inserted only in its corresponding socket.

20. An electric socket and fuse plug equipment comprising an adapter for insertion in a socket including a screw shell and a center contact, the adapter comprising a screw shell to engage the socket shell and receive a plug screw formation, an insulating body located inwardly in the shell, and a center contact in the insulating body, and a fuse plug having a thread formation to engage in the adapter, an insulating body at its inward end, and a center contact to engage the adapter contact, the respective insulating bodies having on their engaging faces complemental interfitting rib and channel formations preventing full insertion in the adapter of a plug other than one designed for it.

21. An electric socket and fuse plug equipment comprising an adapter for insertion in a socket including a screw shell and a center contact, the adapter comprising a screw shell to engage the socket shell and receive a plug screw formation, an insulating body located

inwardly in the shell, and a center contact in the insulating body, and a fuse plug having a thread formation to engage in the adapter, an insulating body at its inward end, and a center contact to engage the adapter contact, the respective insulating bodies having on their engaging faces complemental interfitting rib and channel formations preventing full insertion in the adapter of a plug other than one designed for it, the contact in the adapter insulating body being mounted for inward movement by rotation therein, and having an outward socket formation to receive a projecting member of the plug center contact, and means acting between the adapter insulating body and its center contact to normally rotate and move the latter out to circuit breaking position.

22. An electric socket and fuse plug equipment comprising an adapter for insertion in a socket including a screw shell and a center contact, the adapter comprising a screw shell to engage the socket shell and receive a plug screw formation, an insulating body located inwardly in the shell, and a center contact in the insulating body, and a fuse plug having a thread formation to engage in the adapter, an insulating body at its inward end, and a center contact to engage the adapter contact, the respective insulating bodies having on their engaging faces complemental interfitting rib and channel formations preventing full insertion in the adapter for a plug other than one designed for it, and another adapter and plug, the interfitting rib and channel formations of which are differently arranged whereby each plug can be inserted only in its proper adapter.

23. An electric socket and fuse plug equipment comprising an adapter for insertion in a socket including a screw shell and a center contact, the adapter comprising a screw shell to engage the socket shell and receive a plug screw formation, an insulating body located inwardly in the shell, and a center contact in the insulating body, and a fuse plug having a thread formation to engage in the adapter, an insulating body at its inward end, and a center contact to engage the adapter contact, the respective insulating bodies having on their engaging faces complemental interfitting rib and channel formations preventing full insertion in the adapter of a plug other than one designed for it, the contact in the adapter insulating body being mounted for inward movement by rotation therein, and having an outward socket formation to receive a projecting member of the plug center contact, and means acting between the adapter insulating body and its center contact to normally rotate and move the latter out to circuit breaking position, and another adapter and plug, the interfitting rib and channel formations of which are differently arranged, whereby each plug can be inserted only in its proper adapter.

24. In combination with an adapter comprising a screw shell to fit in a socket shell, an insulating support and a circuit-breaking center contact member therein movably mounted to co-operate with the socket center contact, a fuse plug having a thread formation of diameter to engage within the adapter thread and having also a center contact adapted to engage and actuate the circuit-breaking contact member of the adapter.

25. In combination with an adapter comprising a screw shell to fit in a socket shell, an insulating support and a circuit-breaking center contact member therein movably mounted to co-operate with the socket center contact, and having an outwardly presenting socket formation, a fuse plug having a thread formation of diameter to engage within the adapter thread and also having a projecting center contact adapted to engage in and actuate the socket formation of the circuit-breaking member.

26. In combination with an adapter comprising a screw shell to fit in a socket shell, an insulating support and a rotary circuit-breaking contact member having screw engagement in said insulating support, and a fuse plug having a center contact member adapted to engage and operate said circuit-breaking contact member.

27. In combination with an adapter comprising a screw shell to fit in a socket shell, an insulating support and a rotary circuit-breaking contact member having screw engagement in said insulating support, and also having an outwardly presenting tapered socket, and a fuse plug having a thread formation of diameter to engage within the adapter thread and having also a projecting tapered center contact adapted to enter and co-operate with the socket formation of the circuit-breaking contact member.

28. For co-operation with a socket or adapter of the character set forth having a movable circuit-breaking contact member located therewithin, a special fuse plug having a peripheral screw thread formation and also having a projecting center contact member adapted to co-operate with a movable circuit-breaking contact member located within the socket or adapter.

29. For co-operation with a socket or adapter of the character set forth having a movable circuit-breaking contact member located therewithin, a special fuse plug having a peripheral screw thread formation and also having a projecting tapered center contact member adapted to enter and engage a socket formation of a movable circuit-breaking contact member located within the socket or adapter.

30. A fuse socket and plug comprising a threaded socket shell, an insulating body

therein, and a movable circuit-breaking center contact member in said body, and a plug having a threaded formation to co-operate with the shell and also having a projecting center contact member to co-operate with said circuit-breaking contact member, said circuit-breaking contact member having an outwardly presenting tapered socket formation, and the center contact of the plug having a substantially complemental formation to actuate the circuit-breaking contact by frictional engagement and rotation.

In testimony whereof I affix my signature.

LAMBERT SCHMIDT, JR.