

Dec. 8, 1936.

S. BRODY

2,063,723

PLUG CONNECTER WITH INTERCHANGEABLE FUSES

Filed Nov. 7, 1935

2 Sheets-Sheet 1

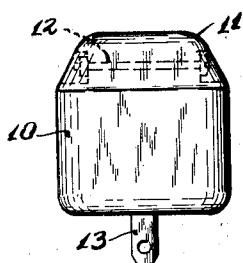


Fig. 1.

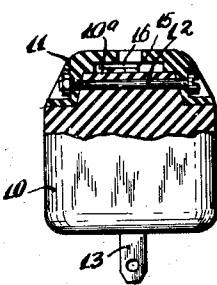


Fig. 2.

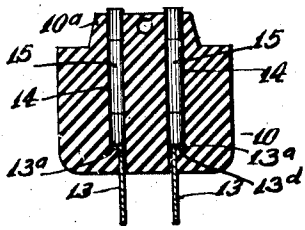


Fig. 3.

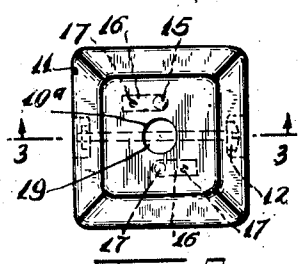


Fig. 4.

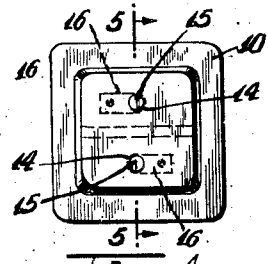


Fig. 5.

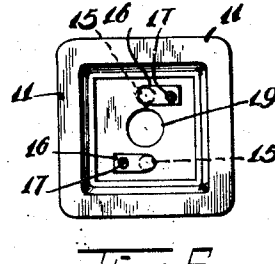


Fig. 6.

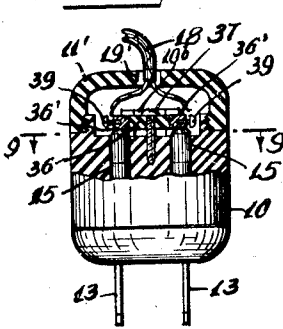


Fig. 7.

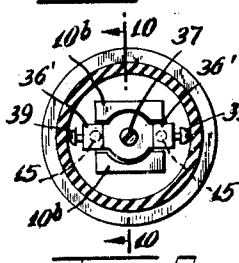


Fig. 8.

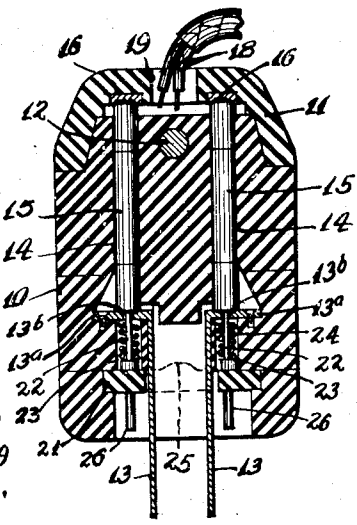


Fig. 9.

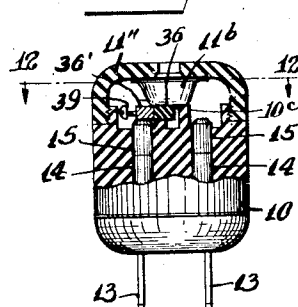


Fig. 10.

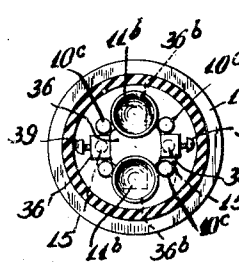


Fig. 11.

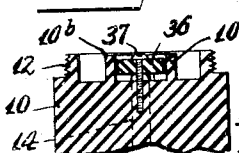


Fig. 12.

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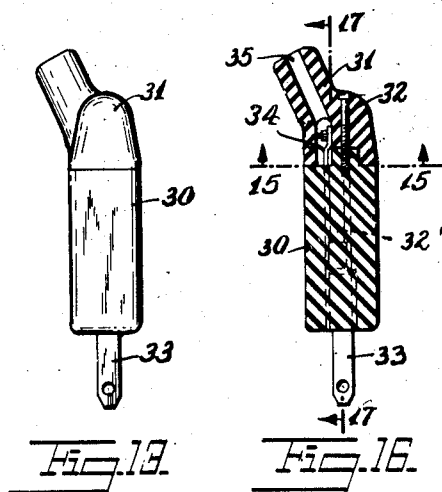
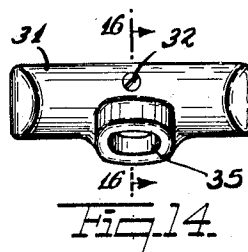
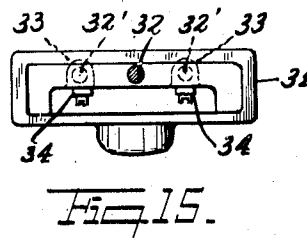
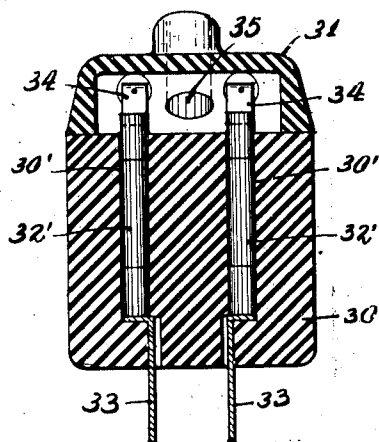
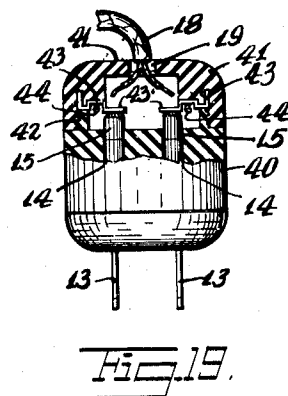
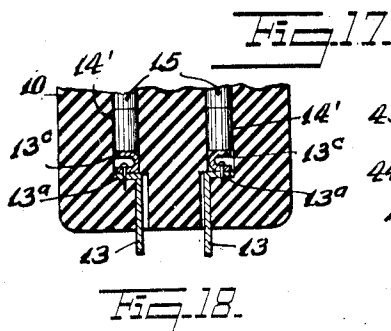
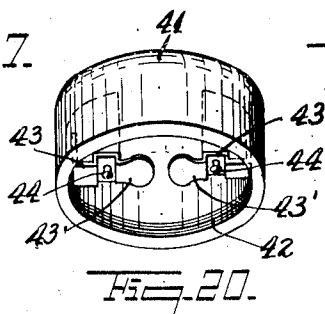
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PLUG CONNECTER WITH INTERCHANGEABLE FUSES

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2 Sheets-Sheet 2



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2,063,723

PLUG CONNECTER WITH INTERCHANGEABLE FUSES

Solomon Brody, Brooklyn, N. Y., assignor of one-fourth to Harry Pearlman, one-fourth to Meyer Golub, and one-fourth to Aaron Borowsky, all of Brooklyn, N. Y.

Application November 7, 1935, Serial No. 48,712

6 Claims. (Cl. 200—115.5)

This invention relates to new and useful improvements in a plug connector with interchangeable fuses, used for electrical devices.

The invention has for an object the construction of a device as mentioned which is characterized by a body having a removably mounted cap, and fuse elements removably mounted in said body.

More particularly it is contemplated to arrange the body with passages for receiving the fuses, and to associate spaced terminals with the fuses by which the electrical device may be engaged in a conventional electric socket.

Another object of the invention is a novel arrangement for detachably connecting said cap upon said body.

A further object of the invention is the provision of a simple means by which the fuses may be partially ejected from the body when desired.

Still further the invention contemplates the construction of a device as mentioned of relatively flat shape.

Another object of the invention is the construction of a device as described which is simple and durable and which may be manufactured and sold at a reasonable cost.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawings, and to the appended claims in which the various novel features of the invention are more particularly set forth.

In the accompanying drawings forming a material part of this disclosure;—

Fig. 1 is a side elevational view of a device constructed according to this invention.

Fig. 2 is a plan view of Fig. 1.

Fig. 3 is a view similar to Fig. 1 but shown with a portion thereof broken away to disclose interior parts.

Fig. 4 is a top plan view of the device with the cap removed.

Fig. 5 is a vertical sectional view taken on the line 5—5 of Fig. 4.

Fig. 6 is a bottom view of the cap of the device.

Fig. 7 is an enlarged vertical sectional view illustrating a modified form of the device.

Fig. 8 is a similar view to Fig. 3, but showing another form of the invention.

Fig. 9 is a horizontal sectional view taken on the line 9—9 of Fig. 8.

Fig. 10 is a fragmentary vertical sectional view taken on the line 10—10 of Fig. 9.

Fig. 11 is a similar view to Fig. 8, but showing a still further modification of the invention in

which a portion thereof is broken away to reveal the post structure.

Fig. 12 is a horizontal sectional view taken on the line 12—12 of Fig. 11.

Fig. 13 is a side elevational view of a device constructed according to another embodiment of this invention.

Fig. 14 is a plan view of Fig. 13.

Fig. 15 is a bottom view of the cap shown in Fig. 13.

Fig. 16 is a vertical sectional view taken on the line 16—16 of Fig. 14.

Fig. 17 is a sectional view taken on the line 17—17 of Fig. 16.

Fig. 18 is a fragmentary vertical sectional view showing a still further modified form of the invention.

Fig. 19 is a similar view to Fig. 8, but showing a still further modified form of the invention.

Fig. 20 is a bottom perspective view of the plug cap illustrated in Fig. 19.

The plug-connector fuse according to this invention comprises a body 10 having a removably mounted cap 11 held in position by a bolt 12. The body 10 has a reduced top portion 10^a which is adapted to engage in a similarly shaped recess in the cap 11. A pair of spaced terminals 13 are mounted on the body 10 and are adapted to engage in a conventional electric light socket.

The body 10 is formed with passages 14 in which fuses 15 may normally be housed. These fuses rest upon outturned end portions 13^a of the terminals 13. These end portions 13^a may have indented portions 13^d into which the lower ends of the fuses engage. The upper ends of the fuses engage against terminal clips 16 mounted or imbedded in cap 11. Terminal screws 17 are threaded in terminal clips 16. Electric wires 18 are connected with the terminals 17 and pass through an opening 19 in the top of cap.

A means may be provided for ejecting the fuses as illustrated in Fig. 7 and consists of an annular member 21 which is rotatively mounted in the body 10 at the bottom thereof. The terminals 13 pass through the center of the annular member. A pair of pins 22 are slidably mounted in passages 23 in the body and rest upon the top of the annular member. Each pin has a spring 24 coaxially mounted thereon and acting between the terminal and the lower end of the pin which is formed with a head for this purpose. The annular member 21 has several projecting cam portions 25 which are adapted, when the annular member is turned, to ride beneath the pins 22 and force them upwards. The

pins pass through apertures 13^b in outturned end portions 13^a of terminals 13 and are aligned with the lower ends of the fuses and when the annular member 21 is turned, the fuses will be
5 lifted. Several small pegs 26 project from the annular member 21 by which it may be readily turned.

If this device is engaged in the circuit of an electrical device and any one of the fuses blow
10 out it may be replaced by first removing the bolt 12 and then the annular member 21 is turned, so that the cam portions 25 lift the pins 22 which in turn lift the fuses 15. The fuses are now sufficiently ejected so that they may be manu-
15 ally removed.

In Figs. 8, 9 and 10, the cap 11' is threadedly engaged on the body 10 and a bridging contact plate 36 of insulation material, is removably se-
20 cured to the body 10 by a screw 37. The bridging contact plate 36 is held from rotation by raised posts 10^b.

This bridging contact plate 36 is formed with metallic extensions 36', preferably of brass or copper which are adapted to engage over the
25 fuses 15 in contacting position. Terminal screws 39 are threaded into the extremities of the metallic extensions 36'. The electric wires 18 are connected with these terminals and pass through an opening 19' in the top of cap 11'.

30 In other respects the form of this invention is the same as in the previous forms.

In Figs. 11 and 12, a still further modification has been illustrated. In this form of the invention, the contact plate 36 is not screwed
35 to the base 10 but it is forced into engaging position with fuses 15 by vertical projections 11^b of cap 11''. The contact plate 36 has projections 36^b adapted to engage the lower extremities of the vertical projections 11^b mounted on
40 the cap 11'' for holding the contact plate 36 against any vertical movement. The bridging contact plate is prevented from turning by raised posts 10^c of the body 10 (see Fig. 11).

In other respects this invention is similar to
45 that shown in Fig. 8 and the various parts may be recognized by the corresponding reference numerals.

In the form of the invention shown in Figs. 13 to 17 inclusive, the plug-connector fuse is
50 of relatively flat shape. It is composed of the body section 30 having a removably mounted cap 31. A screw 32 engages through the cap and serves to removably hold the cap on the body. The cap and body are formed with inter-
55 engaged parts for holding them in proper alignment.

The body 30 has several passages 30' for the fuses 32'. These fuses rest upon terminals 33 which project from the bottom of the body. The
60 upper ends of the fuses are engaged by terminals 34 which are mounted on the cap 31. The cap is formed with a passage 35 for an electric cord to connect with the terminals.

In use this device is very similar to the preferred form but distinguishes in the fact that
65 the fuses will project from the top of the body when the cap is removed. Therefore they may be readily grasped and removed when necessary.

70 In Fig. 18, resilient clips 13^c are attached above the horizontal portions 13^a of terminals 13. The fuses 15 rest upon these resilient clips in passages 14.

In the device illustrated in Figs. 19 and 20,
75 the plug-connector fuse is substantially cylin-

drical shape. It is composed of the body section 40 and cap section 41, threadedly engaged at 42. Contact plates 43 are supported by cap 41. These contact plates are provided with
5 binding posts 44 for the connection of electric wires 18. The free ends 43' of contact plates 43 are adapted to engage fuses 15. In other respects, this form of the invention is similar to the previous forms except in the support of the
10 contact plates 43 which are removable with the threaded cap 41.

It is to be understood that the various parts may be of any suitable material and propor-
15 tion. The fuses may be of the standard type but may also be of a special construction.

While I have illustrated and described the preferred embodiment of my invention, it is to be understood that I do not limit myself to the precise construction herein disclosed and the right is reserved to all changes and modifica-
20 tions coming within the scope of the invention as defined in the appended claims.

Having thus described my invention, what I claim as new, and desire to secure by United States Letters Patent is:—
25

1. A plug-connector with interchangeable fuses, for electrical devices, comprising a body having a removably mounted cap, spaced terminals mount-
30 ed on said body and extending from the bottom end thereof, said body having passages for fuses, fuses within said passages and resting against said terminals, a bridging element for holding said fuses within said passages.

2. A plug-connector with interchangeable fuses, 35 for electrical devices, comprising a body having a removably mounted cap, spaced terminals mounted on said body and extending from the bottom end thereof, said body having passages for fuses, fuses within said passages and resting
40 against said terminals, a bridging element for holding said fuses within said passages, fastening elements and raised posts for releasably holding said bridging element from moving with-
45 in said body.

3. A plug-connector with interchangeable fuses, for electrical devices, comprising a body having a removably mounted cap threadedly engaged on the body, spaced terminals mounted on said body and extending from the bottom end thereof, said
50 body having passages for fuses, fuses within said passages and resting against said terminals, a bridging member within said cap, means for keeping said bridging member firmly in position over the top ends of the fuses, metallic extremities
55 protruding from the bridging member, said extremities being in contact with the top ends of the fuses and a binding post on each of the said metallic extremity of the bridging member.

4. A plug-connector with interchangeable fuses, 60 for electrical devices, comprising a body having a removably mounted cap threadedly engaged on the body, spaced terminals mounted on said body and extending from the bottom end there-
65 of, said body having passages for fuses, fuses within said passages and resting against said terminals, a bridging member within said cap, means for keeping said bridging member firmly in position over the top ends of the fuses, metallic
70 extremities protruding from the bridging member, said extremities being in contact with the top ends of the fuses and a binding post on each of the said metallic extremity of the bridging member, said means comprising a plurality of
75 projections within said cap pressing against the

upper surface of the bridging member when the cap is securely held on the said body.

5 A plug-connector with interchangeable fuses, for electrical devices, comprising a body having a
removably mounted cap threadedly engaged on
the body, spaced terminals mounted on said
body and extending from the bottom end there-
of, said body having passages for fuses, fuses
within said passages and resting against said
terminals, a bridging member within said cap,
10 means for keeping said bridging member firmly
in position over the top ends of the fuses,
metallic extremities protruding from the brid-
ing member, said extremities being in contact
with the top ends of the fuses and a binding post
15 on each of the said metallic extremity of the
bridging member.

6. A plug-connector with interchangeable fuses,

for electrical devices, comprising a body having
a removably mounted cap threadedly engaged on
the body, spaced terminals mounted on said
body and extending from the bottom end there-
of, said body having passages for fuses, fuses
5 within said passages and resting against said
terminals, a bridging member within said cap,
means for keeping said bridging member firmly
in position over the top ends of the fuses, me-
tallic extremities protruding from the bridging
10 member, said extremities being in contact with
the top ends of the fuses and a binding post on
each of the said metallic extremity of the brid-
ing member, said means comprising a plurality
of projections within said cap pressing against
15 the upper surface of the bridging member when
the cap is securely held on the said body.

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