

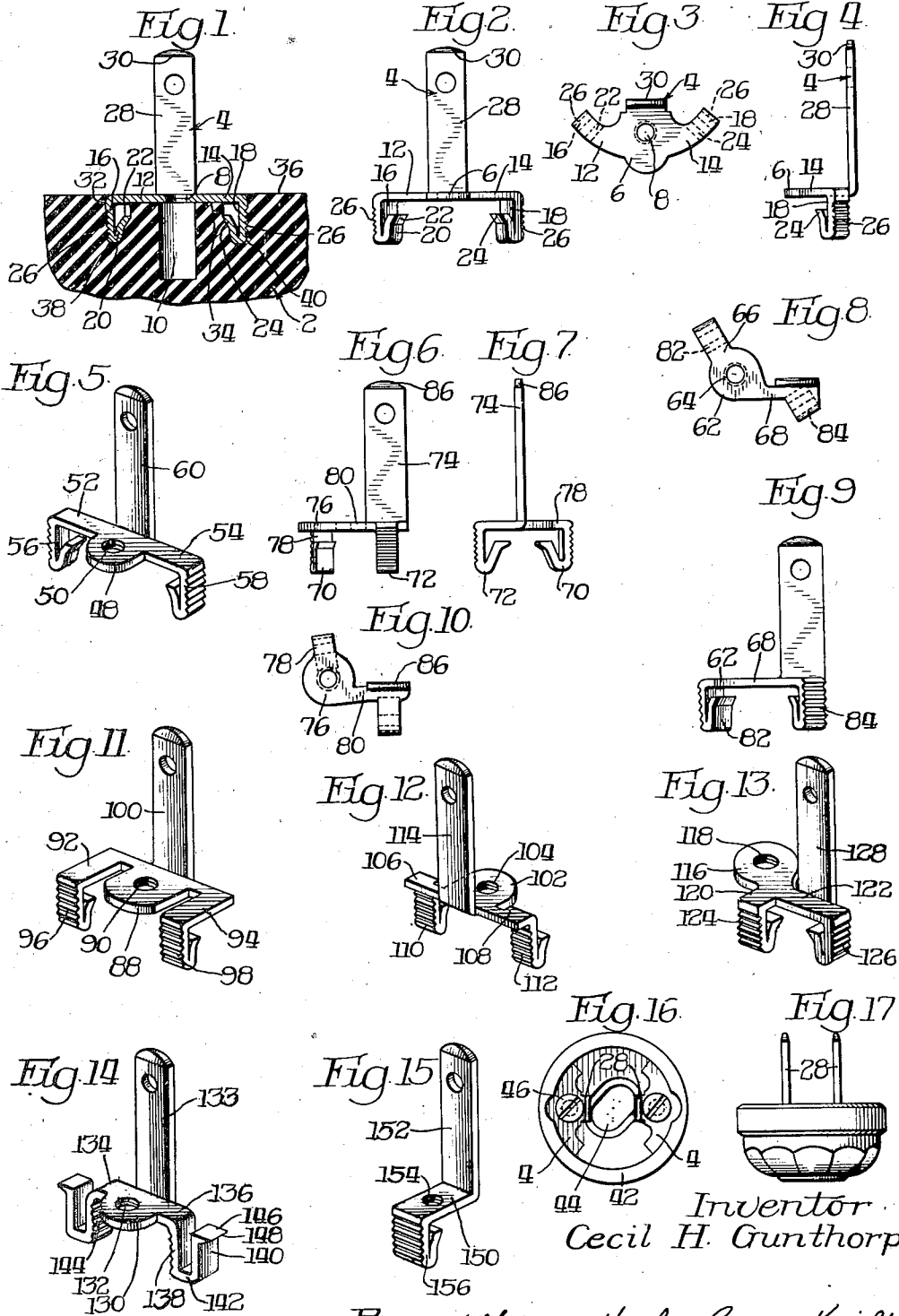
Oct. 20, 1936.

C. H. GUNTHERP

2,057,718

ELECTRICAL DEVICE

Filed May 23, 1932



Inventor
Cecil H. Gunthorp

By *Wilkinson, Huxley, Bryson & Knight*
attys

UNITED STATES PATENT OFFICE

2,057,718

ELECTRICAL DEVICE

Cecil H. Gunthorp, Des Plaines, Ill., assignor to
Economy Fuse and Manufacturing Co., Chi-
cago, Ill., a corporation of New York

Application May 23, 1932, Serial No. 612,930

10 Claims. (Cl. 173—361)

The present invention relates to electrical de-
vices or attachments, and more in particular to
attachment plug caps.

Among the objects of the present invention is
to provide an attachment plug employing rela-
tively few parts, which will permit of easy as-
sembly.

Another object of the present invention is to
provide novel means for attaching a terminal
member to a body of material forming the body
of a finished electrical device or attachment.

Still another object of the present invention is
to provide novel means for attaching the termi-
nal members of an attachment plug cap to the
body thereof, whereby the terminal members
are securely held in their proper associated rela-
tion therewith, as well as being in substantially
parallel relation.

The present invention comprehends the idea of
forming a terminal member with suitable means
for securing the same to a body of material, as
for example, a body of material forming an at-
tachment plug cap, such means being solely as-
sociated with the terminal member, whereby this
terminal member may be secured to the body of
material after the same has been formed and
fabricated.

Still another object of the present invention
is to provide a terminal member for electrical
devices or the like, having suitable means for at-
taching the same to a body of material, such
means including a leg of spring-like construction
adapted to have engaging relation with the body
of material for rigidly and securely connecting
the terminal member thereto.

Still a further object of the present invention
is to provide a terminal member of novel con-
struction for electrical devices and the like,
which includes a leg portion having a surface
adapted to engage with the body of material,
suitable means being provided for moving this
surface into its engaging relation with the body
of material for holding the terminal member in
its proper associated relation therewith.

A still further object of the present invention
is to provide a terminal member of novel con-
struction for electrical devices and the like,
which is formed with a leg portion provided with
a roughened surface having a plurality of pro-
tuberances and in which suitable means is pro-
vided for forcing these protuberances into the
body of material for securing the terminal mem-
ber thereto.

The present invention also comprehends the
idea of providing a novel terminal member hav-

ing depending legs which are suitably spaced
apart and which may be angularly disposed in
relation one to the other, or in parallel relation,
and having means for engagement with the body
of material forming the electrical device or the
like, the disposition of these leg portions being
such as to provide a firm and relatively stable
connection for the terminal member to the body
of material.

Still another object within the purview of the
present invention is to provide a terminal mem-
ber for electrical devices or the like, in which
the depending leg thereof is formed with a free
end portion which is adapted, when the leg is
inserted within a suitable recess or opening of the
body of material, to act as a spring or wedge
member adapted to hold the leg in its association
with the body of material.

A still further object of the present invention
is to provide a terminal member of novel con-
struction in which this free end portion of the
leg or legs is provided with a laterally extending
part formed with a knife-like edge, this laterally
extending part being adapted to dig into the ma-
terial for anchoring the terminal member and to
suitably position the same in relation to the body
of material.

Other objects, features, capabilities and ad-
vantages are comprehended by the invention, as
will later appear and as are inherently possessed
thereby.

Referring to the drawing:

Figure 1 is a fragmentary view in cross section
of an electrical device made in accordance with
the present invention;

Figure 2 is a view in elevation of a terminal
member made in accordance with the disclosure
in Figure 1 of the drawing;

Figure 3 is a top plan view of the member
shown in Figure 2 of the drawing;

Figure 4 is a view in end elevation of the ter-
minal member shown in Figures 2 and 3 of the
drawing;

Figure 5 is a view in perspective of another
terminal member made in accordance with the
present invention;

Figures 6 and 7 are views in elevation of an-
other terminal member made in accordance with
the present invention;

Figure 8 is a top plan view of the terminal
member shown in Figures 6 and 7 of the draw-
ing;

Figure 9 is a view in elevation of still another
terminal member made in accordance with the
present invention;

Figure 10 is a top plan view of the terminal member shown in Figure 9 of the drawing;

Figures 11 to 15 inclusive are views in perspective of still further terminal members made in accordance with the present disclosure;

Figure 16 is a plan view of an attachment plug cap made in accordance with the present invention and incorporating terminal members shown in Figures 1 to 4 inclusive of the drawing; and

Figure 17 is a view in elevation of the attachment plug cap shown in Figure 16 of the drawing.

Referring now more in detail to the drawing, an electrical device made in accordance with the present invention is disclosed in Figure 1 as comprising a base or body of material 2 to which is secured a terminal member 4. As more clearly shown in Figures 2 to 4 inclusive, this terminal member 4 comprises a base 6 formed with a screw-threaded opening 8 which is adapted to receive a wire binding screw, the shank end portion of which is adapted to have movement within the recess or opening 10 provided in the body of material 2. This base 6 is further formed with the arcuately disposed arms 12 and 14 extending in opposite directions and which terminate in downwardly depending legs 16 and 18, respectively. Each of these legs 16 and 18 is of similar construction and is formed with an upturned lug or free end 20 which has an end portion 22 laterally disposed in relation to the lug 20 and which is formed with a knife edge 24. The outer faces of these leg portions 16 and 18 are roughened, as disclosed at 26, to form a plurality of protuberances for a purpose to be hereinafter more fully disclosed. In the present embodiment, these leg surfaces are shown as being of serrated formation, although it is of course understood that the roughening may take other and various forms. In oppositely disposed relation to the screw-threaded opening 8 and centrally disposed in relation to the leg portions 16 and 18 is an upstanding contact portion or blade 28 which may be formed with a beveled end 30 to assist in guiding and positioning the same.

As clearly shown in Figure 1 of the drawing, the body of material 2 may be formed with a recess 32 which is provided with a shelf or ledge 34, so positioned in relation to the upper surface 36 of the body of material as to form a seat for the base 6 of the terminal member 4, whereby the upper surface of the base 6 is substantially flush with this upper surface 36 when the terminal member 4 is in its proper position. This recess 32 is further formed with cavities or recesses 38 and 40 so positioned in relation to the cavity 32 as to receive the depending leg portions 16 and 18 when the terminal member is inserted in position. From the disclosure shown in Figure 1, it will be quite apparent that upon inserting the leg portions 16 and 18 into the cavities or recesses 38 and 40, respectively, the free end portions 20 of these legs engage with the walls of these cavities to force the roughened surface 26 of these legs into engagement with the body of material 2 to such an extent that the protuberances thereof dig into this body of material to prevent removal of the terminal member. These free end portions 20 of the legs serve in a spring-like capacity to cause intimate relation between the legs and the body of material, and are in turn formed with the laterally disposed portions 22, the knife edge 24 of which also digs into the material forming the cavities, whereby these legs are locked in position in association with the body of material 2 and for anchoring these terminal members in their proper position.

anchoring these terminal members in their proper position.

In accordance with Figures 16 and 17 of the drawing, the body of material 2 discussed in connection with Figures 1 to 4 inclusive, may take the form of the body part of the attachment plug cap 42. In Figures 16 and 17, the body 42 of the attachment plug cap is formed with the opening 44, on opposite sides of which may be disposed terminal members 4 made in accordance with the disclosure in Figures 1 to 4 inclusive, these terminal members 4 being formed with contact portions 28, and the same are so positioned in relation to the body 42 of this attachment plug cap member that these contact portions are in substantially parallel relation. These terminal members 4 are likewise formed with the screw-threaded opening 8 in the base thereof for receiving the wire binding screws 46. The legs 16 and 18 of this embodiment are spaced apart a relatively great distance to provide substantial rigidity for the terminal members, and the same are angularly disposed in relation to one another in order to provide against lateral movement of the blade portion 28 thereof.

In Figure 5 of the drawing is disclosed another construction for the terminal member of the present disclosure, the same comprising a base 48 formed with a screw-threaded opening 50 for receiving a wire binding screw, laterally projecting arm portions 52 and 54 being provided on this base member which terminate in downwardly depending leg portions 56 and 58, respectively, which are of a construction similar to the leg portions 16 and 18 of the hereinbefore referred to embodiment. In this terminal member, however, these leg portions 56 and 58 are disposed in spaced and parallel relation instead of being disposed at an angle one to the other. Extending upwardly from the base portion 48 is a contact portion 60 corresponding to the contact portion 28.

In Figures 6, 7 and 8 of the drawing, is disclosed still another terminal member made in accordance with the present invention, and the same comprises a base 62 formed with a screw-threaded opening 64, arm portions 66 and 68 being provided integral with the base 62 and extending therefrom in angular relation one to the other. These arm portions 66 and 68 terminate in downwardly depending legs 70 and 72 corresponding in all essential details to the leg portions hereinbefore described. It will be noted that the contact member 74 of this embodiment, instead of being formed integrally with and being centrally disposed in relation to the base 62, extends upwardly from adjacent an end of the arm portion 68 and substantially above the leg portion 72. As in the embodiment shown in Figures 1 to 4 inclusive, these leg portions 70 and 72 depend from the angularly disposed arm portions 66 and 68 and are spaced apart at a relatively great distance, these leg portions being disposed in substantially parallel relation and providing a substantially rigid connection for the terminal member.

In Figures 9 and 10 is disclosed a still further alternative construction for the terminal member and the same comprises a base 76 having the arm portions 78 and 80 extending therefrom which terminate in downwardly depending legs 82 and 84, respectively, of similar construction to the leg portions hereinbefore described. As in the embodiment shown in Figures 6, 7 and 8, the contact portion 86 extends upwardly from the arm

portion 80 and substantially above the leg portion 84. This alternative construction for a terminal member varies from the construction of the terminal member shown in Figures 6 to 8 inclusive in that the leg portions 82 and 84, instead of being angularly disposed in relation to one another, are substantially in parallel relation.

In Figure 11 is disclosed a still further construction for a terminal member, and the same comprises a base 88 formed with a screw-threaded opening 90, this base 88 having arm portions 92 and 94 oppositely disposed in relation thereto and extending in substantially parallel relation, the same terminating in leg portions 96 and 98 corresponding in essential details to the leg portions above referred to. In this embodiment, the contact portion 100 extends upwardly from the base portion 88 and is in substantially parallel relation with the leg portions 96 and 98. As clearly shown in the figures, the leg portions 96 and 98 are in substantially parallel relation with one another and are spaced a substantial distance apart, thereby providing a construction which will result in a substantially rigid attachment for connecting the terminal member to the body of material.

In Figure 12 of the drawing is disclosed another embodiment made in accordance with the present invention, the same corresponding essentially to the construction shown in Figure 11 and comprising a base 102 formed with a screw-threaded opening 104, this base having the arm portions 106 and 108 integrally connected therewith and on opposite sides thereof and in substantially parallel relation therewith, these arms 106 and 108 terminating in downwardly depending leg portions 110 and 112, respectively. In this embodiment, the leg portions 110 and 112 are formed with the roughened surfaces facing toward the contact member 114 which extends upwardly from the base 102, and in this respect this embodiment varies from the embodiment shown in Figure 11.

In Figure 13 of the drawing is disclosed still another terminal member made in accordance with the present invention, and the same comprises a base 116 formed with a screw-threaded opening 118, this base 116 being formed with diverging arm portions 120 and 122 extending from one side thereof in angular relation, the same terminating in leg portions 124 and 126, respectively, which correspond in all essentials to the leg portions hereinbefore disclosed. In this embodiment, the contact member 128 is formed integral with the arm portion 122 and extends upwardly therefrom.

In Figure 14 of the drawing is disclosed still a further terminal member made in accordance with the present invention and the same comprises a base 130 formed with a screw-threaded opening 132, this base being provided with an upstanding contact portion 133 and having the laterally and oppositely extending arms 134 and 136, each of which terminates in a downwardly depending leg 138 which has an upstanding free end 140 integrally connected by a transverse portion 142 to form a lug substantially U-shaped and having the parts thereof in spaced relation. Each of the leg portions 138 is formed with a roughened surface 144 in accordance with the present disclosure, while the upstanding lug 140 thereof is provided with a laterally extending part 146 terminating in a knife-like edge 148, which serves in the capacity of the knife-like

edge 34 of the previously described leg portions.

In Figure 15 of the drawing, still another terminal member made in accordance with the present invention is disclosed as being formed from a piece of metal bent to provide a base portion 150 having an upstanding contact portion 152 disposed in substantially normal relation thereto, the base portion 150 being formed with a screw-threaded opening 154. This base 150 terminates at the edge opposite the contact member 152 in a depending leg portion 156 corresponding to either one of the leg portions shown in Figures 1 to 13 inclusive.

It will be quite apparent from the above disclosure that the terminal members are of such a construction that the same are rigidly and securely held in associated relation to the body of material to which the same are attached. The legs of certain of the embodiments are so disposed in spaced relation as to securely attach these terminal members to the body of material and serve to prevent lateral movement of these terminal members in relation to the body of material even though the same may be subject to severe use.

While I have herein described and upon the drawing shown illustrative embodiments of the invention, it is to be understood that the invention is not limited thereto but may comprehend other constructions, arrangements of parts, details and features without departing from the spirit of the invention.

I claim:

1. An electrical device comprising a body having a recess comprising a relatively shallow portion and a relatively deep portion, a terminal member therefor comprising a base disposed in said shallow portion and substantially flush with said body, said base having a contact member extending therefrom, and a leg extending from said base and into said deep portion, said leg having a part extending from said base and a return part, said return part being resiliently compressible relative to said first part whereby said parts engage oppositely disposed walls of said deep portion to hold said member in place.

2. An electrical device comprising a body having a recess, a terminal member therefor comprising a base disposed on said body and having a contact member extending therefrom, and a leg extending from said base and being received in said recess, said leg having a part formed with a roughened surface engaging a wall of said recess and a resiliently compressible return portion engageable with an opposite wall of said recess for forcing said roughened surface into engagement with said wall for holding said member in place.

3. An electrical device comprising a body having a recess, a terminal member therefor comprising a base disposed on said body and having a contact member extending therefrom, and a leg extending from said base and being received in said recess, said leg having a part formed with a roughened surface engaging a face of said recess and a resilient return portion and compressible upon engagement with an opposite face of said recess for forcing said roughened surface into engagement with said first-named face and adapted to embed itself in said opposite face for locking said member in place.

4. An electrical device comprising a body having spaced recesses, a terminal member therefor comprising a base disposed on said body and having a contact member extending therefrom, and spaced legs extending from said base and being

received in said recesses, each of said legs having a part engaging a face of a recess, and a resilient lug extending laterally thereof and compressible upon engagement with an opposite face of said recess to hold said terminal member in place, said leg having an end portion adapted to embed itself into said face to lock said terminal member in said recess, said legs being angularly disposed with respect to one another.

5. An electrical device comprising a body having a recess, a terminal member therefor comprising a base disposed on said body and having a contact member extending therefrom, and a leg extending from said base and being received in said recess, said leg having a part extending from said base and a return part, said return part being resiliently compressible relative to said first part whereby said parts engage oppositely disposed walls of said recess to hold said member in place.

6. A terminal member comprising a base, a contact member extending from one side of said base, and a leg extending from the other side of said base, said leg having a part extending from said base provided with a roughened surface and a resiliently compressible return part, said last-named part having a laterally extending end formed with a substantially knife edge at its outer extremity.

7. A terminal member comprising a base, a contact member extending from one side of said base, and a plurality of legs extending from the other side of said base, each of said legs having a part extending from said base and a resiliently compressible return part, each of said first-named parts being in non-parallel relation and having a roughened surface.

8. A terminal member comprising a base, a contact member extending from one side of said base, and a plurality of legs extending from the other side of said base, each of said legs having a part extending from said base and a resiliently compressible return part, each of said first-named parts being in parallel relation and having a roughened surface.

9. An electrical device comprising a body having a plurality of recesses, a terminal member therefor comprising a base disposed on said body and having a contact member extending therefrom, and a plurality of legs extending from said base, each of said legs having a part extending from said base in non-parallel relation to the others and engageable with a wall of a recess and a resiliently compressible part engageable with the opposite wall of the recess for forcing said leg parts into contact with the walls of said recess for holding said member in place.

10. An electrical device comprising a body having a plurality of recesses, a terminal member therefor comprising a base disposed on said body and having a contact member extending therefrom, and a plurality of legs extending from said base, each of said legs having a part extending from said base in parallel relation to the others and engageable with a wall of a recess and a resiliently compressible part engageable with the opposite wall of the recess for forcing said leg parts into contact with the walls of said recess for holding said member in place, said compressible part having an end portion adapted to embed itself into said opposite wall to lock said terminal member in place.

CECIL H. GUNTHERP.