Sept. 27, 1932. L. BARNETT 1,879,783

CONVERTIBLE CAP PLUG

Filed Feb. 8, 1927

Fig. 4.

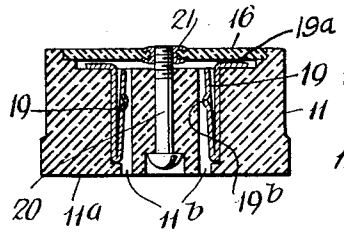


Fig. 1.

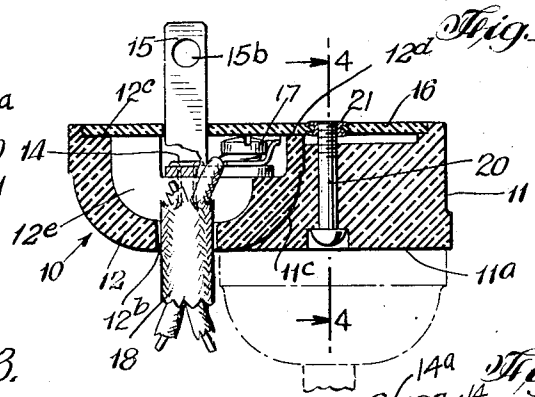


Fig. 3.

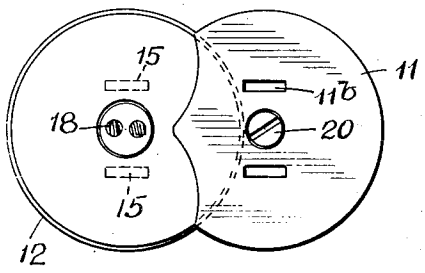


Fig. 2.

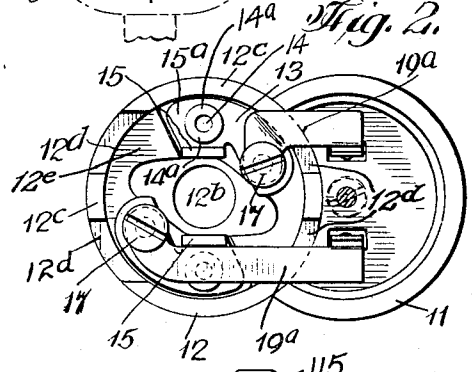


Fig. 5.

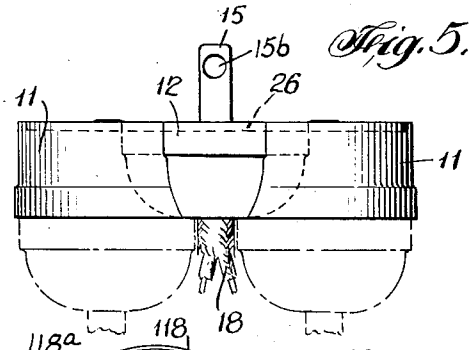
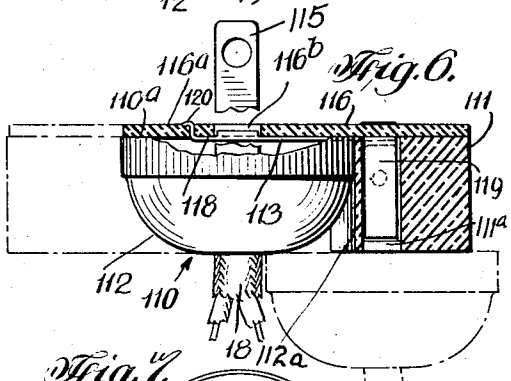


Fig. 6.



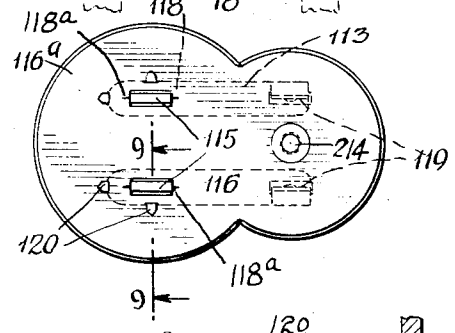


Fig. 7.

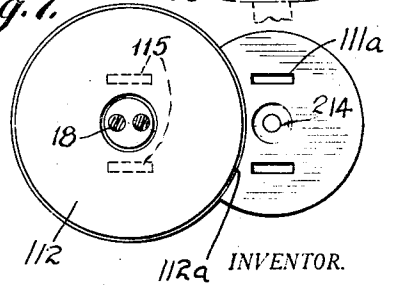
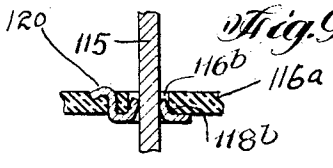


Fig. 8.

Fig. 9.



INVENTOR.

Louis Barnett

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UNITED STATES PATENT OFFICE

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CONVERTIBLE CAP PLUG

Application filed February 8, 1927. Serial No. 166,630.

This invention relates to attachment fittings for connecting portable appliance and lighting system to an electric power source and particularly is directed to improvements in the cap portions of separable attachment plugs.

An object of the invention is to provide an improved attachment plug-cap of the character described which may be used either as a standard cap-plug or may be converted into the receptacle type of cap-plug to provide an extra outlet when required.

Another object of the invention is to provide an outlet receptacle fitting of improved construction which is adapted to be fitted to a cap-plug of standard make to convert it into a receptacle type cap-plug.

Still another object of the invention is to provide cap-plugs and attachment outlet fittings comprising simple parts, which shall be cheap to manufacture, easy to assemble, form a rugged structure yet be neat in appearance, and practical and efficient to a high degree in use.

Other objects of this invention will in part be obvious and in part hereinafter pointed out.

The invention accordingly consists in the features of construction, combinations of elements and arrangement of parts which will be exemplified in the construction hereinafter described and of which the scope of application will be indicated in the following claims.

In the accompanying drawing, in which is shown several of the various possible illustrative embodiments of this invention,

Fig. 1 is a sectional view of an improved attachment cap-plug with an outlet receptacle fitting applied thereto embodying the invention showing one practical application for connecting a plurality of circuits to one power source tap.

Fig. 2 is a bottom plan view of the improved attachment cap-plug and outlet fitting showing the cover plate removed to expose the interior construction.

Fig. 3 is a top plan view thereof.

Fig. 4 is a cross-sectional view taken on line 4—4 in Fig. 1.

Fig. 5 is a front elevational view of the improved attachment cap-plug with a fitting applied thereto to provide a plurality of outlet receptacles.

Fig. 6 is a front elevational view of a modification of the invention showing a cap-plug of standard construction having an improved outlet receptacle fitting applied thereto, the latter being shown in section.

Figs. 7 and 8 are top and bottom plan views, respectively of the modification shown in Fig. 6.

Fig. 9 is a cross-sectional view taken on line 9—9 in Fig. 8.

Referring in detail to the drawing, 10 denotes an improved cap-plug, and 11, a receptacle outlet fitting detachably secured thereto to form a receptacle type of cap-plug embodying the invention adapted to be inserted into a baseboard, flush-receptacle or fixture socket outlet (not shown) in the well known manner.

The cap plug 10 may comprise a body portion 12 formed of insulating material such as porcelain, pheno-condensate products or other like suitable substances and metallic current carrying portions 13. The latter may be secured in any suitable manner to the insulating body portion 12 as by means of metallic eyelet anchors 14 which are preferably molded into said body portion. The current carrying portions 13 comprise terminal blades 15 extending outwardly from a side of the body portions 12, said side being fitted with a cover plate 16 made of insulating sheet material to form the bottom face 12c of the plug. The ends of the blades 15 project through the plate 16 and the other ends are formed with flat extensions 15a whereby they are firmly secured to the body portions 12 by the overturned ends 14a of said eyelet anchors. Binding screws 17 are provided for securing the ends of conductor wires 18 to the terminal extension 15a as shown in Fig. 1. Said wires 18 extend through a central passage 12b in said body portion for connecting the current carrying portions 13 to an electric appliance (not shown) in the well understood manner. The construction of the cap plug 10 thus far described is similar to stand-

ard types of cap-plugs well known in the art and shown at 110 in Fig. 6.

To provide for the improved convertible feature, the cap-plug 10 which is formed with a central recess 12*e*, may be made with recesses or channelled portions 12*d* on edge portions of the bottom face 12*c*. See Figs. 1 and 2. The recesses or channelled portions 12*d* are adapted to receive the cover plate 16, the latter extending outwardly of the body portion 12 and serving as a support for mounting the receptacle outlet fitting 11.

Said fitting 11 is seen to comprise a body 11*a* preferably formed of material similar to the cap-body portion 12 and is provided with socket openings 11*b*. Spring contact members 19 of any suitable construction extend into said openings 11*a* and are formed with flat extensions 19*a*. The ends of the latter are secured by the binding screws 17 to connect the members 19 in circuit with the current carrying portions 13. The contact member 19 extends only partially into the openings 11*b* eliminating possible short circuits or injury to persons handling the device. If desired, each member 19 may be provided with a protuberance 19*b* adapted to releasably engage an opening 15*b* in terminal blades 15 of a cap-plug adapted to be inserted in the openings 11*b* for connecting with members 19.

The fitting body 11*a* preferably has one side 11*c* shaped to conform to the contour of the cap-plug 10 so that the openings 11*b* and the passage 12*b* may be spaced as close together as possible without causing interference with the extending conductor wires 18 of a plug cap connected in circuit at said fitting.

To secure the fitting 11 in position on the extension of plate 16 any suitable fastening means may be provided, such as a screw 20 extending through the body 11*a* between the openings 11*b*. The screw 20 engages a nut member 21 held against rotation on the plate 16. Said fastening means not only anchors the fitting 11 to the plate 16 but also retains cap-plug 10 and said fitting 11 in rigid assembly to form a unit as shown in Fig. 1.

It is to be understood that the fitting 11 may extend from either side of the cap-plug 10 or a pair of fittings 11 may be used to provide a unit with two receptacle outlets, as shown in Fig. 5. In forming the multiple outlet receptacle cap-plug 10, the plate 26 corresponding to plate 16 described above is made to extend outwardly in opposite directions with respect to the blades 15.

In using the invention, the cap plug 10 may be secured to the free ends of conductor wires 18 extending from an appliance (not shown) and connected in circuit at any suitable receptacle outlet in the well understood manner. If it is desired to convert said cap-plug into one of the receptacle outlet type cap-plugs, the fitting 11 is simply attached thereto as shown in either Fig. 1 or 5. By using an improved plug 10 with multiple outlet fitting shown in Fig. 5, three portable circuits can be tapped in at one power source outlet, two of them may be cap-plugs of standard construction.

In Figs. 6, 7 and 8 are shown a modified construction embodying the invention. Here, 110 denotes a cap-plug of any standard well understood construction which may be already connected to an appliance in use. An outlet fitting 111 is applied to the cap plug 110 to convert it into the receptacle type of cap-plug. For this purpose, the fitting 111 is provided with a plate 116 which is firmly secured to the body portion 112 of the fitting 111 by any suitable means such as eyelet anchor 214. Said plate 116 is made to extending outwardly from said body portion 112 as at 116*a*, the extended portion 116*a* forming a closure covering for the bottom side 110*a* of the cap-plug 110. Said portion 116*a* has a pair of slots 116*b* aligned to permit the free passage of the terminal blades 115 of the plug 110. The plate 116 serves also to retain the spring member contacts 119 formed at one end of the circuit carrying portions 113 in the position in socket openings 11*a* of the body portions 112. The other ends 118 of said current carrying portions 113 are extended to form detachably engageable contacts with the cap-plug terminal blades 115. To secure said ends 118 to the portions 116*a* there may be provided fastening lugs 120 which extend through said portion 116*a* as shown in the drawing, said ends 118 being formed with slots 118*a* conicident with the slots 116*b*. The rim portions of the slots 118*a* are bent into the slots 116*b* to form lips which serve as scraping and clamping contacts against the terminal blades, as shown in detail in Figs. 8 and 9.

The operation of converting a standard cap-plug 110 into a receptacle type fitting is thus seen to be a simple matter. The blades 115 are merely inserted through the slotted contact end 118 of the fitting 111. The plate 116 is made relatively thin so that the effective length of the terminal blades is not materially decreased. The converted attachment fitting thus formed is now ready for use. Connecting the cap plug 110 to a power source also connects the fitting 111 and retains it in a relatively fixed position with respect to the cap-plug.

The fitting body portion 112 is preferably made with a curved side 112*a* to conform with the contour of the cap-plug 110 like the curved side 11*c* provided on the body 11*a*, described above.

A fitting 111 may be extended from either sides of the cap-plug 110 as indicated in dotted lines in Fig. 6. If a plurality of fittings 11 is desired, they may be secured on the mount-

ing plate and applied to the cap-plug 110 to form a unit with several receptacle outlets in a manner similar to the construction of fitting 21 described above.

It should be noted that the detachable connection shown for the fitting 111 with the blades 115 of the cap-plug 110 may be provided for connecting the fitting 11 with the cap-plug 10, if desired.

It will thus be seen that there is provided a device in which the several objects of this invention are achieved, and which is well adapted to meet the conditions of practical use.

As various possible embodiments might be made of the above invention, and as various changes might be made in the embodiment above set forth, it is to be understood that all matter herein set forth or shown in the accompanying drawing is to be interpreted as illustrative and not in a limiting sense.

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

1. A fitting of the character described comprising a cap-plug having terminal blades projecting from one side thereof, said side having a recess formed therein adjacent the blades, and a receptacle outlet fitting having portions thereof extending into the said recess for detachably connecting with the terminal blades to form a unit.

2. A fitting of the character described comprising a cap-plug having terminal blades projecting from one side thereof, said side having recesses formed therein adjacent the blades, and a plurality of interconnected receptable outlet fittings each having a portion thereof fitted into one of said recesses for detachably connecting with the terminal blades to form a unit.

3. In combination a cap plug having terminal blades projecting from one face thereof, said face having a recess formed therein, said recess extending laterally to the periphery of said face, an insulating plate covering said face and having a portion protruding beyond said cap, and a receptacle outlet fitting supported by said plate and having portions thereof extending into the said recess for detachably connecting with the terminal blades.

4. In combination a cap plug having terminal blades projecting from one face thereof, an insulating plate covering said face and having a portion protruding beyond said cap, a receptacle outlet fitting supported by said plate and having one lateral face thereof shaped to conform to the adjacent lateral face of the said cap plug, receptacle terminals mounted within said fitting and means for electrically connecting said terminals with said blades.

5. In combination a cap plug having terminal blades projecting from one face thereof, said face having a recess formed therein and extending laterally to the periphery of said face, an insulating plate covering said face and having a portion extending beyond said cap, a receptacle outlet fitting supported by said plate, receptacle terminals disposed within said fitting and the laterally disposed metallic strips passing through said recess, said strips being electrically connected to said receptacle terminals, and means for detachably and electrically connecting said strips to said blades.

6. In combination a cap plug having terminal blades projecting from one face thereof, said face having a recess formed therein and extending laterally to the periphery of said face, an insulating plate covering said face and having portions extending beyond said cap, receptacle outlet fittings supported by said plate having a portion of one of its lateral faces shaped to conform to the lateral face of the cap plug, receptacle terminals disposed within said fittings, and the laterally disposed metallic strips passing through said recess, said strips being electrically connected to said receptacle terminals, and means for detachably and electrically connecting said strips to said blades.

7. A convertible cap plug of the character described having parallelly spaced blades projecting from one face thereof, said face having a central recess having a channelled portion formed therein, the peripheral rim wall of said recess being cut away in alignment with the space between said blades for receiving a portion of a detachable connection of a receptacle outlet fitting.

8. A device of the character described for converting a conventional cap plug having terminal blades projecting from one side thereof into a receptacle type fitting camprising an insulating body having socket openings and current carrying parts extending into said openings to form a receptacle outlet, said body having a lateral side protruding end shaped to conform to said side of the cap plug, said parts extending along the protruding end of the lateral side and terminating in detachable connections adapted to join portions of the cap plug blades.

9. An attachment fitting for a portable electric appliance comprising a cap-plug having current carrying parts including spaced parallelly aligned terminal blades projecting from one side of said plug, and a receptacle outlet portion having means detachably connecting with said plug blades to form a unit, substantially the entire length of said blades extending through and beyond said means to permit connecting blades to a power source.

10. In combination with a plug comprising a base and a cap, said cap having prongs positioned thereon and adapted to enter said

base, a receptacle adapted to be attached to said plug, said receptacle having a pair of parallel spaced conductors secured thereto, said conductors having their free extremities perforated so as to engage the prongs of said cap in such a manner as to lie in a plane at right angles to said prongs and said conductors being positioned between said base and said cap.

11. A receptacle adapted to receive a bulb, said receptacle having a pair of conductors extending therefrom and at right angles to the axis of said receptacle, said conductors lying parallel with each other in such a manner as to have their surfaces of greatest width in the same plane, each of said conductors having an opening formed in the end thereof for the purpose of permitting said conductors to pass over the prongs of a plug cap in the manner described.

In testimony whereof I affix my signature.

LOUIS BARNETT.