Nov. 6, 1934. S. L. WOLFSON 1,980,157

ELECTRIC CIGAR LIGHTER

Filed April 10, 1931

Fig. 1.

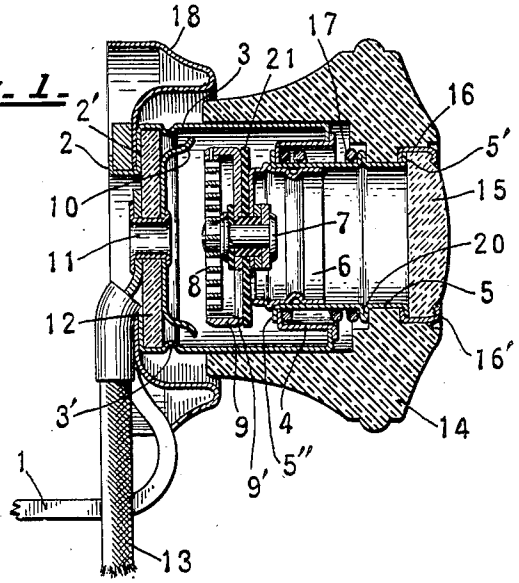


Fig. 4.

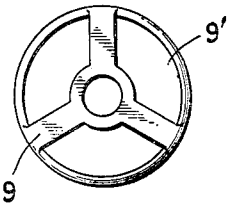


Fig. 2.

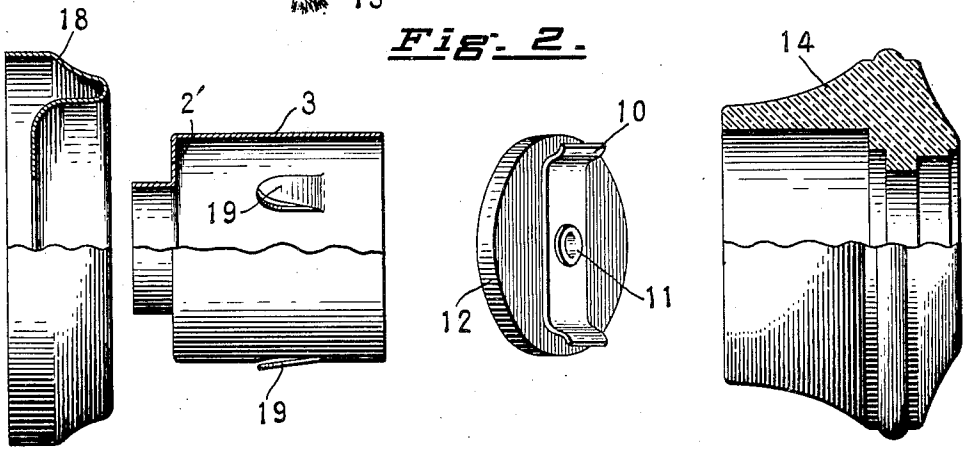
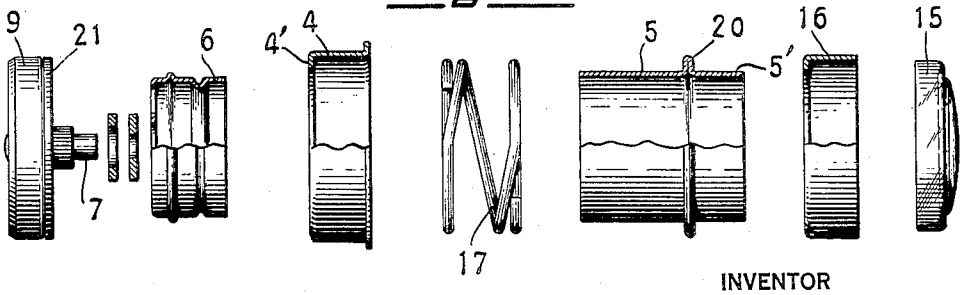


Fig. 3.



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ELECTRIC CIGAR LIGHTER

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Application April 10, 1931, Serial No. 529,033

26 Claims. (Cl. 219—32)

This invention relates to lighters for cigars, cigarettes, etc. of the type which are adapted to be heated on its support and then readily withdrawn from the electric supply connections for lighting a cigar, etc.

An object is to provide an inexpensive device of this type in which the heater element is carried on the inner end of a removable member.

Another object is to provide such a device which is of simple construction having an electric and heat insulating member serving as one of the bearing members for a slidable bearing during heating, removal and subsequent insertion.

Another object is to provide a device in which the igniter is housed and yet in which the glow of the igniter can be seen when it is heated.

Fig. 1 is a cross section of one embodiment of this invention.

Fig. 2 shows some of the parts before assembly.

Fig. 3 shows the heater element and some of the parts carried by the removable insulating socket member.

Fig. 4 is a detail of the heater element support.

Referring to Fig. 1, some customary support such as the usual bracket 1 attached to the dashboard of an automobile carries a supporting plug or tubular outer contact 3, which is secured thereto by the bent flange 2 fitting within and around a perforation in said bracket.

The outer end of said plug 3 is engaged by the wall or cup-shaped member or contact ring 4 slidable on the metal tube or sleeve 5. Also carried by the metal sleeve 5 is the removable metal base member 6 to which is clamped the heater coil or element 8 and its support or contact ring 9 by the stud or rivet 7. Yieldable interior contact member 10 is secured within the supporting plug as illustrated by means of the eyelet 11 passing through the disc 12 of insulating material such as fibre or a phenolic condensation product or a mixture thereof with asbestos. Disc 12 is held between the wall 2' and the bead 3'. The conducting lead 13 is secured as shown to the headed eyelet 11.

Slidably bearing on the plug 3 is the supporting knob or socket member 14 preferably of insulating material such as a phenolic condensation product or the like. As shown in Fig. 1, the right end of the metal sleeve 5 is closed by the glow window 15 of either transparent or translucent material held in place by the spun-over flange of the ferrule 16 to which is secured the socket and sleeve members 14 and 5.

The outer end 5' is flanged over to hold the ferrule 16 in place and to secure it in the socket or knob 14, the flange 20 serving as an abutment. When the sleeve 4 is in place the flange 5'' is turned to prevent the parts from separating. The coil spring 17 is compressed between the flange 20 and the flange 4' so as to normally keep the socket member 14 and the lighter element flange 9 carried thereby out of contact and away from the yieldable contact member 10. An ornamental dash plate 18 may be secured to the plug in the manner illustrated. If desired yieldable retaining portions 19 may be stamped out from the sides of the plug 3 to assist in frictionally retaining the socket member in place, although if desired such may be eliminated.

The socket member 14 may have a sufficiently tight fit upon the plug 3 so that no such members 19 are needed, or if desired the engagement between the plug 3 and socket member 14 may be looser if the plug is mounted to extend in an upward direction so that gravity may hold the socket member in place.

The electric current enters through the conductor 13, thence to the yieldable contact members 10 and when the socket member 14 is pressed to the left, in Fig. 1, so as to close the circuit between the yieldable contacts 10 and the heater supporting cup or ring member 9, the current then flows through the heater.

From the center of the heater the current passes through the stud 7, unit base 6, sleeve 5, cup or wall member 4 to the plug 3 which is grounded to the frame of the car. When the heater element becomes incandescent its condition may be viewed through the glow window 15 and when hot enough the socket member may be withdrawn. In withdrawing the socket member 14 the cup member 4 and spring 17 are carried by the sleeve 5 and the socket member 14 provides a convenient heat insulated grip or handle portion while the cigar or cigarette is being lighted from the heater element 8.

In assembling this lighter the insulating disc 12 carrying the yieldable contacts 10 is inserted into the plug 3 from the right end, as shown in Fig. 2, after which the flanges holding the disc in place may be bent up as illustrated in Fig. 1. The outer end of the plug 3 is then bent inwardly at 3' to provide an engagement for the cup 4 carried by the socket member 14.

The heater element mounted within its supporting ring 9 is held in place by the stud 7 clamping the members 9 and 6 together with the insulating disc 21 therebetween. The portions of the members 9 and 6 which are contigu-

ous the insulating disc 21 are not solid or imperforate but are either spoke-shaped or provided with perforations such as 9' as shown in Fig. 4 through which light from the heater element is passed to permit the heater element to be viewed through the glow window 15. The insulated disc 21 must, of course, be of some translucent or transparent or perforated insulating material.

The unit base 6 is secured within the sleeve 5 by means of a yieldable horseshoe shaped detent or otherwise so as to permit the base 6 to be normally carried and movable with the sleeve 5 but permit removal thereof for renewal of the heater element when necessary.

In order to assemble the parts shown in Fig. 3 within the socket member 14, the sleeve 5 is first inserted in the socket member 14 from the left and the ferrule 16 inserted from the right. The outwardly bent flange 5' on the right end of the sleeve 5 may then be formed to secure the ferrule 16 in place, after which the glow window 15 can be inserted and the ferrule 16 bent down as illustrated at 16' to retain it in place. The spring 17 is next placed on the sleeve 5 and then the cup member 4 placed over the spring, after which the outwardly bent left end 5'' of the sleeve 5 may be formed to retain the cup and spring permanently in place on the sleeve 5.

The wearing character of the socket member 14 is such that it may bear directly upon the supporting plug without the interposition of any metal wear resisting part being necessary.

One advantageous feature of the present construction is the location of the spring within the removable member so that it is spaced from the heater or resistance element and is located between the heater and the forepart of the removable member. The engagement of the heater rim housing with an outwardly inclined contact 10 at substantially opposite locations is another advantageous feature.

I claim:

1. A cigar lighter comprising a stationary and a removable element, the stationary element including an external tubular contact and an internal contact, the removable element including a knob having a wall slidable on the tubular contact, a conducting tube fixed within the knob and movable therewith, a contact ring slidable on said tube and adapted to engage the tubular contact when the movable element is mounted on the stationary element, a spring interposed between the contact ring and a portion of the knob which is stationary with respect to the tube, and a heater element mechanically supported by said tube and having one end electrically connected to the tube, the other end of said heater element constituting a contact ring adapted to engage the contact in the stationary element.

2. A cigar lighter element comprising an insulating knob, a metal tube fixed in the knob, a contact ring slidable on said tube, a spring interposed between said ring and said knob, a heater coil supported by said tube within said knob and having one end electrically connected to said tube, a second contact ring carried by said tube and surrounding and electrically connected to the outer end of said coil and adapted for engagement with a stationary contact, said knob having a wall adapted to be slidably supported upon a stationary contact tube, said spring normally holding the circuit open and the second contact ring out of engagement with its cooperative stationary contact.

3. A cigar lighter comprising a knob having a wall adapted to be slidably supported upon a stationary contact tube, a metal tube mounted within said knob and having external flanges embracing portions of said knob, a contact ring slidable upon said tube, a spring interposed between said ring and one of said flanges, a heater element mechanically supported by said tube beyond said ring and having one end electrically connected to said tube and a second contact ring coaxially carried by said tube end portion and electrically connected to the other end of said heater element, said spring normally holding the circuit open through said second contact ring by holding said knob and second ring away from a stationary contact member.

4. A cigar lighter element comprising an insulating knob having a central passage and having a wall adapted to be slidably mounted upon a stationary support, a metal tube fixed in said passage and having flanges interlocked with said knob, a contact ring slidable on said tube for electrically connecting said tube and said stationary support, spring means mounted on the tube and coacting with said contact ring and knob for normally holding the circuit open, a second contact ring carried by the inner end portion of said tube but insulated therefrom and adapted for cooperation with a stationary contact within said stationary support, and a heater coil having one end connected to the latter contact ring and the other end connected to said tube.

5. A cigar lighter, comprising a stationary element and a removable element, the stationary element consisting of a tubular outer contact and an interior contact, the removable element comprising an insulating knob having a wall slidable upon the tubular outer contact, a tube having one end fixed in the knob, a contact ring slidable on said tube, a heater coil supported by said tube and having one end electrically connected to said tube and a contact member for the other end of said coil adapted to engage the interior contact in the stationary element when the knob is moved inwardly on the tubular outer contact, said contact ring electrically connecting the tubular outer contact with said tube and the other end of said heater coil, a spring interposed between the stationary part of said knob and said contact ring, and an abutment on said tube for limiting the movement of the contact ring with respect to the tube.

6. A cigar lighter comprising a stationary element and a removable element, the stationary element consisting of a tubular outer contact and an interior contact, the removable element comprising an insulating knob telescoping over the tubular outer contact, a tube having at least one end fixed to the knob, a contact ring slidable on said tube, a heater coil supported by said tube and having one end electrically connected to said tube, and a contact member for the other end of said coil adapted to engage the interior contact in the stationary element when the knob is moved inwardly on the tubular outer contact, said contact ring engaging and electrically connecting the tubular outer contact with said tube and the other end of said heater coil, a spring interposed between the stationary part of said knob and said contact ring, and an abutment fixed on said tube for limiting the movement of the contact ring with respect to the tube, and another abutment intermediate the tube ends for engagement with said spring and formed of bent tube material.

7. A cigar lighter comprising a stationary ele-

ment and a removable element, the stationary element consisting of a tubular outer contact and an interior contact, the removable element comprising an insulating knob slidable upon the tubular outer contact, a tube having at least one end fixed to the knob, a contact ring slidable on said tube, a heater coil supported by said tube and having one end electrically connected to said tube, and a contact member for the other end of said coil adapted to engage the interior contact in the stationary element when the knob is moved inwardly on the tubular outer contact, said contact ring electrically connecting the tubular outer contact with said tube and the other end of said heater coil, a spring interposed between the stationary part of said knob and said contact ring, and an abutment fixed on said tube for limiting the movement of the contact ring with respect to the tube, said last mentioned abutment including a bent metallic flange adjacent an end portion of said tube.

8. A cigar lighter comprising a stationary element and a removable element, the stationary element consisting of a tubular outer contact and an interior contact, the removable element comprising an insulating knob slidable upon the tubular outer contact, a tube having at least one end fixed to the knob, a contact ring slidable on said tube, a heater coil supported by said tube and having one end electrically connected to said tube, and a contact member for the other end of said coil adapted to engage the interior contact in the stationary element when the knob is moved inwardly on the tubular outer contact, said contact ring engaging and electrically connecting the tubular outer contact with said tube and the other end of said heater coil, a spring interposed between the stationary part of said knob and said contact ring, and an abutment fixed on said tube for limiting the movement of the contact ring with respect to the tube, said tube being formed of two parts secured together and of different axial length, the shorter part of said tube being adjacent the heater coil and secured thereto by a fastening means passing centrally through the heater coil.

9. A cigar lighter comprising a stationary element and a removable element, the stationary element consisting of a tubular outer contact and an interior contact, the removable element comprising an insulating knob slidable upon the tubular outer contact, a tube having at least one end fixed to the knob, a contact ring slidable on said tube, a heater coil supported by said tube and having one end electrically connected to said tube, and a contact member for the other end of said coil adapted to engage the interior contact in the stationary element when the knob is moved inwardly on the tubular outer contact, said contact ring electrically connecting the tubular outer contact with said tube and the other end of said heater coil, a spring interposed between the stationary part of said knob and said contact ring, and an abutment fixed on said tube for limiting the movement of the contact ring with respect to the tube, a disc of insulating material between said tube and contact member which engages the interior contact of the stationary element, said disc being clamped by an axial fastening means electrically connected to said tube.

10. A cigar lighter comprising a stationary element and a removable element, the stationary element consisting of a tubular outer contact and an interior contact, the removable element comprising an insulating knob slidable upon the tubular outer contact, a tube having at least one end fixed to the knob, a contact ring slidable on said tube, a heater coil supported by said tube and having one end electrically connected to said tube, and a contact member for the other end of said coil adapted to engage the interior contact in the stationary element when the knob is moved inwardly on the tubular outer contact, said contact ring engaging and electrically connecting the tubular outer contact with said tube and the other end of said heater coil, a spring interposed between the stationary part of said knob and said contact ring, and an abutment fixed on said tube for limiting the movement of the contact ring with respect to the tube, and another abutment for said spring, both abutments being intermediate the tube ends and formed of bent tube material, said tube being formed of two parts, one of which is adjacent the heater coil and secured thereto by a fastening means passing centrally through the heater coil, a disc of insulating material between said tube and the contact member which engages the interior contact of the stationary element, said disc being clamped by said central fastening means of the heater coil.

11. A cigar lighter comprising a socket member having a projecting metal tube constituting a circuit terminal with a spring finger projecting outward laterally therefrom and having an interior contact terminal insulated from the metal tube and a removable lighter member having an insulating knob slidable upon the outside of the metal tube and held frictionally in place by said spring finger, a metal sleeve having one end fixed within the knob, a metal ring slidable upon said sleeve and constituting a contact adapted to engage the outer end of the metal tube of the socket member, a spring surrounding the sleeve and interposed between a portion of the ring and a part of the sleeve so as to resiliently press the knob and sleeve outwardly away from the socket member, a resistance igniter carried by the rear end of the sleeve and having one end electrically connected to the sleeve and a contact carried by the rear end of the sleeve but electrically insulated therefrom and electrically connected to the other end of the igniter, said contact being adapted to engage the contact terminal within the socket member when the knob is pressed inwardly upon the metal tube and the spring has been compressed.

12. A lighter comprising a stationary element including a pair of contacts, a removable element slidably supported on one of said stationary contacts and including a pair of contacts, one of which normally engages the supporting contact of the stationary element and the second of which is adapted to engage the other stationary contact on sliding said removable element, said removable element also including a knob of insulating material, a tube fixed in the knob, a slidable contact ring on the tube shaped to engage and electrically connect said tube and the supporting contact of the stationary element, a spring between said ring and knob for normally holding said knob in position with its second contact disengaged from its cooperative stationary contact, a heater coil carried by said knob, said spring being adapted to be compressed against said ring and stationary supporting contact by sliding said knob toward the stationary contacts for closing the circuit between said normally open contacts.

13. In a cigar lighter of the type described,

the combination of a stationary unit having a hollow post and an insulated contact member within said hollow post, a hollow portable unit formed with an opening through its face wall, a cylindrical supporting member mounted in said opening and having at its inner end a transverse wall and an annular abutment flange, a friction sleeve formed with a transverse wall slidably mounted on said supporting member and adapted to telescopingly engage with said hollow post, a cup-shaped cooperating contact member mounted on said transverse wall, an igniter coil mounted in said last-named contact member, said transverse wall and the bottom wall of said cup-shaped contact member being apertured to permit light rays from said igniter coil to pass through said opening, and a coil spring encircling said supporting member and confined endwise between the front wall of said portable unit and the transverse wall of said sleeve.

14. In a cigar lighter of the type described, the combination of a stationary unit having a hollow post and an insulated contact member within said hollow post, a hollow portable unit formed with an opening through its front wall, a cylindrical supporting member mounted in said opening and having adjacent its inner end a transverse wall and an annular abutment flange, a sleeve formed with a transverse flange slidably mounted on said supporting member and being adapted to telescopingly engage with said hollow post, a cup-shaped cooperating contact member mounted on said transverse wall, an igniter coil mounted in said last-named contact member, said transverse wall and the bottom wall of said cup-shaped contact member being apertured to permit light rays from said igniter coil to pass through said opening, and a coil spring encircling said supporting member and confined endwise between the front wall of said portable unit and the transverse flange of said sleeve.

15. In a cigar lighter of the type described, the combination of a stationary unit equipped with an insulated annular contact member, a hollow portable unit telescopingly engaged with said stationary unit and formed with an opening through its face wall, a cylindrical supporting member fixedly mounted in said opening, and having a transverse wall, a cup-shaped cooperating contact member mounted on said transverse wall, an igniter coil mounted in said last-named contact member, said transverse wall and the bottom wall of said cup-shaped contact member being apertured to permit light rays from said igniter coil to pass therethrough, and a spring normally maintaining said contact members separated.

16. A cigar lighter of the cordless type including socket and plug members, one of which is removable and the other stationary, a heater element carried by the removable member, electrical connections carried by each of said members for engagement with the connections of the other member, the removable member being normally carried by the stationary member in an open circuit position and being bodily movable with respect to the stationary member into a closed circuit position for supplying current to the heater element, a spring carried by said removable member and arranged for cooperation with said stationary member to bodily move said removable member to an open circuit position from a closed circuit position upon removal of pressure from the removable member, said spring being helical and co-axially arranged within the removable member and adapted to extend into the stationary member and means extending radially between the spring and an end portion of the stationary member whereby the force of the spring may be applied to such end portion of the stationary member.

17. A cigar lighter of the cordless type including socket and plug members, one of which is removable and the other stationary, a heater element carried by the removable member, electrical connections carried by each of said members for engagement with the connections of the other member, the removable member being normally carried by the stationary member in an open circuit position and being bodily movable with respect to the stationary member into a closed circuit position for supplying current to the heater element, a spring carried by said removable member and arranged radially within at least a portion of said stationary member for cooperation therewith to bodily move said removable member to an open circuit position from a closed circuit position upon removal of pressure from the removable member and a contact ring and guide therefor within the removable member cooperating with said spring, said contact ring being movable with respect to the removable member when pressure is exerted upon the removable member in moving the same to a closed circuit position.

18. A cigar lighter of the cordless type including socket and plug members, one of which is removable and the other stationary, a heater element carried by the removable member, electrical connections carried by each of said members for engagement with the connections of the other member, the removable member being normally carried by the stationary member in an open circuit position and being bodily movable with respect to the stationary member into a closed circuit position for supplying current to the heater element, a spring carried by said removable member and arranged for cooperation with said stationary member to bodily move said removable member to an open circuit position from a closed circuit position upon removal of pressure from the removable member and a contact ring secured and guided within the removable member when said spring is compressed by pressure upon the removable member in moving the same to a closed circuit position, said contact ring having at least two circumferential bends for engagement between an end portion of the stationary member and said spring, and a supporting guide for said contact ring, said guide also supporting the heater and secured to the removable member.

19. A cigar lighter of the cordless type including socket and plug members, one of which is removable and the other stationary, a heater element carried by the removable member, electrical connections carried by each of said members for engagement with the connections of the other member, the removable member being normally carried by the stationary member in an open circuit position and being bodily movable with respect to the stationary member into a closed circuit position for supplying current to the heater element, a spring carried by said removable member and arranged for cooperation with said stationary member to bodily move said removable member to an open circuit position from a closed circuit position upon removal of pressure from the removable member, said removable member being of insulating material and having a conducting tube therein on which said heater is mounted adjacent the rear portion of the removable member, said spring being coiled about said tube, and

abutments on said tube for limiting the action of said spring.

20. An igniter replacement assembly for cigar lighters comprising two cup-like members facing in opposite directions with their bases secured together but electrically insulated from each other, one of said cup-like members constituting a terminal flange and containing an igniting resistance wire having one end electrically and mechanically connected thereto, the other end of the igniter wire being electrically connected with the other cup-like member, the latter cup-like member being longitudinally longer than the former and of smaller diameter and constituting a means for attaching said unit to a supporting knob at a distance from the resistance wire, and means passing through the bases of said cup-like members for clamping them together with an insulating washer between them, said clamping means being the electrical connection between the heater and said unit supporting cup-like member.

21. A removable member for a cigar lighter comprising a heater, a supporting handle portion therefor insulated from the heater, a cup shaped contact ring surrounding the heater, another cup shaped conductor ring oppositely disposed to the contact ring and insulated from and between the handle and the contact ring, both of said rings being radially within a surface of the removable member which is adapted to slide along the stationary member, and the conductor ring constituting a sole support for the heater and being removably secured to said removable member on the inside thereof.

22. A removable member for a cigar lighter comprising a heater, a supporting handle portion therefor insulated from the heater, a contact ring surrounding the heater, another contact ring insulated from and between the handle and the first mentioned contact ring, both of said rings being radially within a surface of the removable member which is adapted to slide along the stationary member and said second ring being slidable with respect to the heater in a direction longitudinally of the removable member, and said second ring being shaped for butt engagement with a portion of a stationary member adapted to support the removable member.

23. A cigar lighter of the cordless type including socket and plug members, one of which is a stationary hollow post and the other removable, the removable member having a large portion of its body comprised of insulating material constituting the surface of the removable member which is adapted to slide along the stationary member, said stationary member being of metal, a heater element carried on the rear portion of the removable member, electrical connections carried by each of said members for engagement with the connections of the other member, the removable member being normally carried by the stationary member in an open circuit position, at least the insulating portion of the removable member being bodily movable along the stationary member to a closed circuit position to supply current to the heater element, a helical spring coaxially carried by the removable member between the heater and the front of the removable member and remote from the heater, and said spring being adapted to bodily move at least the insulating portion of the removable member and one of its electrical contacts from a position in which the heater circuit is closed to a position in which the circuit through the heating element is open upon removal of pressure from the removable member.

24. A cigar lighter of the cordless type including socket and plug members, one of which is a stationary hollow post and the other removable, the removable member having a large portion of its body comprised of insulating material constituting the surface of the removable member which is adapted to slide along the stationary member, said stationary member being of metal, a heater element carried by the removable member, electrical connections carried by each of said members for engagement with the connections of the other member, the removable member being normally carried by the stationary member in an open circuit position, at least the insulating portion of the removable member being bodily movable along the stationary member to a closed circuit position to supply current to the heater element, a helical spring coaxially carried by the removable member for cooperation with the stationary member and adapted to bodily move at least the insulating portion of the removable member and one of its electrical contacts from a position in which the heater circuit is closed to a position in which the circuit through the heating element is open upon removal of pressure from the removable member, said spring being longitudinally between the heater and a forepart of the removable member and longitudinally away from the heater zone, said spring being also radially inside of the outer surface of the stationary member and radially within the insulating body part of the removable member, and said spring being also longitudinally within the insulating portion of the removable member and adapted to be placed at least in part longitudinally intermediate the ends of the stationary member.

25. A cigar lighter of the cordless type including socket and plug members, one of which is removable and the other a stationary hollow post, a heater element carried by the rear portion of the removable member, electrical connections carried by each of said members for engagement with the connections of the other member, the removable member being normally carried by the stationary member in an open circuit position and being bodily movable with respect to the stationary member into a closed circuit position for supplying current to the heater element, a spring carried by said removable member and arranged for cooperation with said stationary member to bodily move said removable member to an open circuit position from a closed circuit position upon removal of pressure from the removable member, said spring being helical and co-axially arranged within the removable member between the heater and a forepart of the removable member and away from the heater, said spring being also radially inside the surfaces of the plug and socket members along which one slides with respect to the other.

26. A cigar lighter of the cordless type including socket and plug members, one of which is removable and the other a stationary hollow post, a heater element carried by the removable member, electrical connections carried by each of said members for engagement with the connections of the other member, the removable member being normally carried by the stationary member in an open circuit position and being at least in part bodily movable with respect to the stationary member into a closed circuit position for supply-

ing current to the heater element, a spring carried by said removable member and arranged for cooperation with said stationary member to bodily move at least a substantial part of said removable member to an open circuit position from a closed circuit position upon removal of pressure from the removable member, said spring being helical and coaxially arranged within the removable member, said spring being also radially inside the surfaces of the plug and socket members along which one slides with respect to the other, and said spring being also contiguous neither of said sliding surfaces but being carried substantially contiguous an inner and coaxial surface and spaced from the heater.

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