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CIGAR LIGHTER

Filed Oct. 8, 1928

Fig. 1.

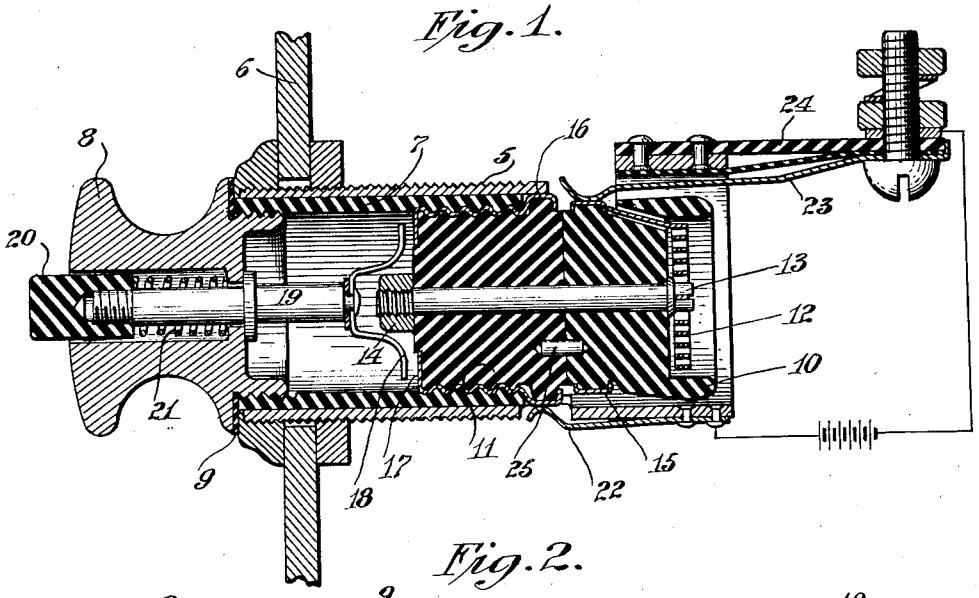


Fig. 2.

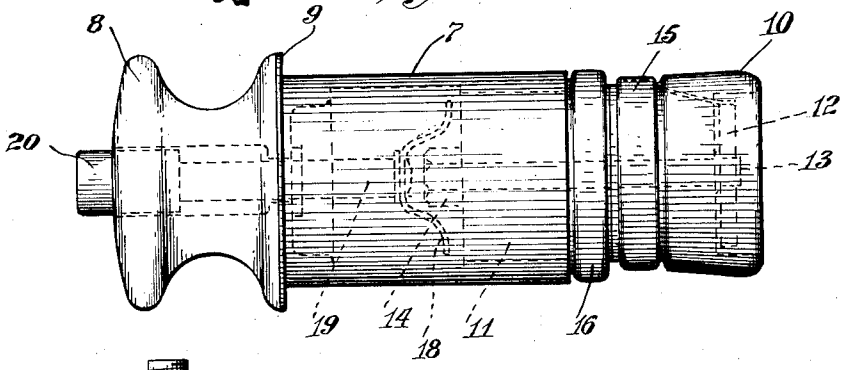
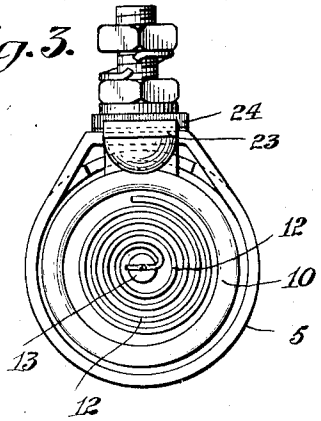


Fig. 3.



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CIGAR LIGHTER

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This invention relates to the so-called wireless type of lighter which has stationary current supplying terminals and a removable or separately portable lighter unit.

One object is to provide a simple and yet efficient, durable and attractive form of device suitable for installation in automobiles.

In its preferred form the device includes a stationary tubular holder provided with suitable circuit terminals and contacts, which holder is adapted to be secured to an instrument board or other support, and a removable lighter unit having a projecting knob and adapted to be inserted into the holder and provided with a push button switch member. This lighter unit has in turn a readily replaceable heater unit including a resistance coil.

Fig. 1 is a longitudinal sectional view showing one form of the device on a somewhat enlarged scale, the switch being shown in the open circuit position.

Fig. 2 is a side view of the lighter unit removed from the holder.

Fig. 3 is a rear end view of the holder and lighter unit.

The tubular member 5 is preferably of metal and may be secured in any suitable manner to a support 6 which may be the instrument board.

The removable lighter unit includes a tubular sleeve 7 preferably formed of insulating material. The knob 8 may be conveniently screw threaded into the outer end of the tube 7. If this knob is of metal an insulating washer 9 may be interposed at the rear of the knob to prevent grounding.

The heater unit has a body of insulating material which may conveniently be formed of the parts 10 and 11, for instance of lava-ite or other heat resisting material to prevent transfer of heat to the other parts of the device. The incandescent member 12 is preferably in the form of a coil of resistance metal having its inner end connected to the central screw or tie rod 13. The nut 14 on the inner end of the screw 13 serves to hold the parts together and also serves as a contact. The outer body part 10 is provided with a contact ring 15 which is crimped or spun in place and electrically engages the outer end of the coil 12. This body part 10 preferably has a flange which surrounds the coil 12 and serves to restrict radiation from the coil. This not only protects the surrounding parts when the lighter unit is in the holder but also prevents the coil from cooling off too soon when the lighter unit is being used.

The other body part 11 is provided with a sleeve 16 which may be provided with a screw thread so that it can be screwed into the end of the tube 7. A flange of this sleeve 16 at the end of the body member 11 serves as a contact of the switch whose movable spring member 18 is adapted to bridge from the contact nut 14 to the flange 17.

This movable switch member 18 is carried by a plunger 19 which is supported in the knob 8 and provided with a push button 20 and a spring 21 for holding the switch member normally in open circuit position.

The tubular holder 5 serves as one terminal of an electric circuit and may be grounded in any suitable manner. The sleeve 16 may contact with this tube 5 as shown at the upper part of Fig. 1 but I prefer to provide in addition a spring contact finger 22 to ensure a perfect contact from the tube 5 to the sleeve 16 and its flange 17. The other side of the circuit is suitably connected to a spring contact finger 23 supported by an insulating bar 24 at the rear of the tubular holder. The front end of this spring 23 engages the contact ring 15 when the parts are in the position shown in Fig. 1. A dowel pin 25 or other interlocking member may be provided to prevent relative rotation between the body parts 10 and 11.

Normally the parts are in the position shown in Fig. 1 which is the open circuit condition. To heat the incandescent resistance member 12 it is simply necessary to push in on the button 20 until the spring 18 connects the flange 17 to the nut 14. The circuit may then be traced from the battery or other power source to the tube 5, spring 22, sleeve 16, flange 17, switch member 18, nut 14, screw 13, heater coil 12, flanged ring 15, spring finger 23 and back to the power source.

As soon as the coil has reached the proper degree of incandescence the lighter unit may be pulled out and used. Obviously, it will not be necessary to continue to press on the button 20 and yet when the pressure on the button is removed the spring 21 automatically moves the switch member 18 away from the heater contacts so that when the unit is again inserted into the holder 5 the circuit is not closed although the contact fingers 22 and 23 are automatically engaged respectively by the sleeve 16 and ring 15.

In case the coil 12 should be burned out or the body member 10 broken the heater unit may be readily removed by simply unscrewing it from the tube 7 and replacing it with a new unit.

It will be noted that the plug or insertable and removable lighter member is made largely of material which does not conduct electricity and is a poor conductor of heat and that the manually operated parts are not in the electrical circuit.

We have endeavored to confine, as much as possible, the heat generated to the operative portion of the lighter making it more efficient and practical in use.

The parts are so constructed that the lighter unit is held in place frictionally without catches or other parts which might get out of order or retard its free insertion or removal.

It will also be noted that the lighter unit may be inserted in any rotative position relative to the holder. Although we have shown the device as mounted horizontally, it is obvious that it might be mounted vertically or at an angle. On account of the shape and arrangement of the knob and push button it is possible to arrange the device so that it is practically invisible or in some out of the way place and the device can be operated without looking at it. The only parts which are normally visible when the device is not in use are the knob and push button which may be made ornamental and of a design to harmonize with the instrument board fittings, etc.

We claim:

1. A cigar lighter including a tubular holder having spring contacts near one end, a removable lighter unit insertible into said holder, and including an insulating sleeve having a knob at its outer end, and a heater unit detachably secured in the inner end, said heater unit including a heat resisting body having a coil at one end and a switch contact at the other end, a ring contact carried by the body and connected to the outer end of the coil and adapted to engage one of said spring contacts, a shell carried by said body and adapted to engage the other spring contact, a center contact at the inner end of said body connected to the center of said coil and a spring pressed push button in said knob having a movable switch member at its inner end adapted to connect said shell and said center contact.

2. A cigar lighter including a tubular holder in an instrument board and having contacts behind the board, a removable lighter unit insertible into the front end of said holder and including an insulating sleeve having a knob at its outer end, and a heater unit detachably secured in the inner end, said heater unit including a heat resisting body having a recess with a coil at one end and a switch contact screw extending to the other end, a ring contact carried by the body and connected to the outer end of the coil and adapted to engage one of said contacts, and means including a spring pressed push button in said knob having a movable switch member at its inner end adapted to complete the circuit to said center contact.

3. A removable unit for a cigar lighter comprising, a sleeve having a knob containing a push button at one end, and a removable heater unit secured in the other end, said heater unit having an insulating body with a resistance element at its outer end and a contact ring fast on the body and connected to one end of the resistance element, a center contact at the opposite end of the body connected to the other end of the resistance element and a contact shell on the body having a peripheral contact ring and an end flange, said push button having a movable switch member adapted to connect the center contact and said flange.

4. A cigar lighter including an insulating sleeve, a knob secured to the outer end thereof, a push button switch member in said sleeve and a detachable igniter unit having a screw threaded connection with the other end of said sleeve, said unit including an insulating body, a resistance element secured to the rear end of said body, two circuit terminals carried by said body, one of said terminals being connected to one end of the resistance element, a switch contact connected to the other end of said element and a switch contact connected to the other terminal.

5. A replaceable heater unit for cigar lighters comprising two insulating bodies, a central tie rod having a contact at the rear end and a resistance coil in a recess at the other end and having one end secured to the opposite end of said rod, a flanged contact ring secured on one body and connected to the other end of the coil, and a screw shell secured on the other body and having a contact ring at one end and a contact flange at the other end.

6. A cigar lighter comprising a tubular housing open at the front, means for supporting said housing at its front end, two spaced-apart, stationary contacts carried by the rear

end of the housing one contact being arranged with its action surface in front of the other, a lighter member adapted to be inserted into said housing from the front and consisting of a tubular body, a knob secured to the front end of the body, an insulating base carried by the rear of the body, a heater wire mounted in the rear of said base, two contact rings carried by said base, spaced apart from each other and adapted to engage respectively the stationary contacts of the housing when the lighter member is inserted in the housing, a double-break spring-pressed switch member mounted in the tubular body and having a push button extending through the knob, one of said rings being connected to one end of said heater wire and switch contacts connected respectively to the other end of the heater wire and to the other ring, and adapted to be bridged by said switch member when said push button is operated.

7. A cigar lighter comprising a tubular housing open at both ends, means for supporting said housing at its front end, two spaced-apart spring contacts carried by the rear end of the housing, a lighter member adapted to be inserted into said housing from the front and consisting of a tubular body, a knob secured to the front end of the body, an insulating base carried by the rear of the body, a heater wire mounted in the rear of said base, two contacts carried by said base, spaced apart from each other longitudinally of the base, the rear base contact being of smaller diameter than the other base contact and adapted to engage respectively the spring contacts of the housing when the lighter member is inserted in the housing, a resilient switch plunger member mounted in the tubular body and having a push button extending through the knob, one of said base contacts being connected to one end of said heater wire and switch contacts connected respectively to the other end of the heater wire and to the other base contact and adapted to be bridged by said resilient switch member when said push button is operated.

8. A cigar lighter comprising a tubular metal housing open at the front, means for supporting said housing at its front end, two spaced-apart spring contacts carried by the rear end of the housing one of said contacts being insulated from the housing, a lighter member adapted to be inserted into and removed from said housing from the front and consisting of a tubular insulating body, a knob secured to the front end of the body, a heat resisting insulating base carried by the rear of the body, a heater wire carried by said base, two contact rings carried by said base, spaced apart from each other one in front of the other and adapted to engage respectively the spring contacts of the housing when the lighter member is inserted in the housing, the insulating base being of larger diameter than the rear ring, one of the said rings being connected to one end of said heater wire and means for connecting the other end of the heater wire to the other ring.

9. A cigar lighter comprising a stationary tubular housing open at the front, means for supporting said housing near its front end, two spaced-apart spring contacts carried at opposite sides of the rear end of the housing and pressing inwardly toward each other, a lighter member adapted to be inserted into and removed from said housing from the front between said contacts and consisting of a body, a knob secured to the front end of the body, a heat-resisting insulating base carried by the rear of the body, a high-resistance heater wire secured to the rear of said base, two contacts carried by said base spaced apart from each other and adapted to engage respectively the spring contacts of the housing when the lighter member is inserted in the housing, one of said base contacts being connected to one end of said heater wire, and means for connecting the other end of the heater wire to the other base contact.

10. A cigar lighter comprising a tubular housing open at the front, means for supporting said housing near its open end, two spaced-apart spring contacts carried by the rear end of the housing, a lighter member adapted to be inserted into and removed from said housing from the front and rotatable therein and consisting of an insulating body, a knob secured to the front end of the body, a heat resisting base carried by the rear of the body, a heater wire carried by said base, two contact rings carried by said base, spaced apart from each other with a groove between them and adapted to engage respectively the spring contacts of the housing when the lighter member is inserted in the housing, the base being of larger diameter than the rear ring, one of said rings being connected to one end of said heater wire and a spring pressed switch member for connecting the other end of the heater wire to the other ring.

11. A cigar lighter comprising a tubular housing open at both ends, means for supporting said housing, two spaced-apart contacts carried by said housing, a lighter member adapted to be readily inserted into and removed from said housing from the front and consisting of an insulating body, a knob secured to the front end of the body, an insulating base carried by the rear of the body, a heater wire carried by the rear of said base, two contacts carried by said base, spaced apart from each other and adapted to engage respectively the spring contacts of the housing when the lighter member is inserted in the housing, a spring pressed switch plunger member mounted in said body and having a push button extending through the knob, one of said base contacts being con-

nected to one end of said heater wire and switch contacts connected respectively to the other end of the heater wire and to the other base contact and adapted to be bridged by said switch member when said push button is operated.

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