

Sept. 30, 1952

W. F. SCHILLING

2,612,588

CIGARETTE LIGHTER

Filed Feb. 7, 1950

Fig. 1

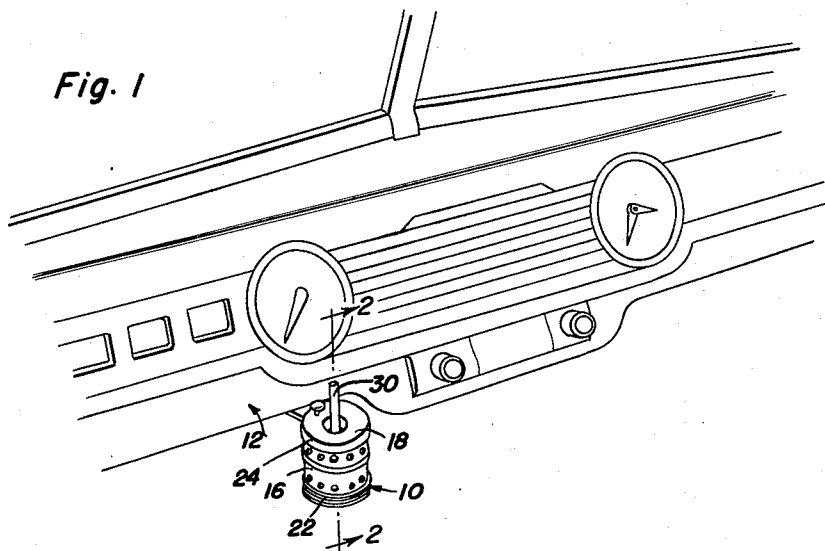


Fig. 2

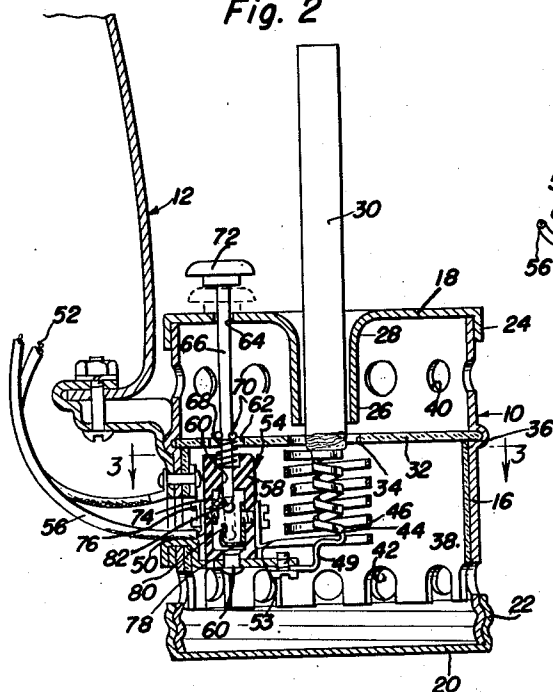
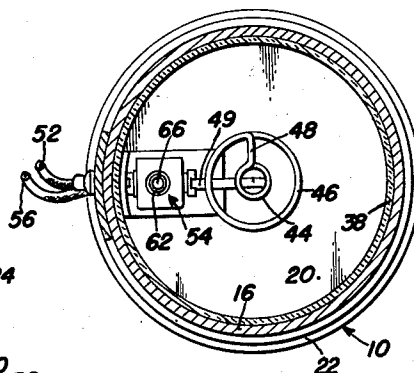


Fig. 3



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UNITED STATES PATENT OFFICE

2,612,588

CIGARETTE LIGHTER

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Application February 7, 1950, Serial No. 142,811

6 Claims. (Cl. 219—32)

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This invention comprises novel and useful improvements in cigarette lighters, and more particularly pertains to cigarette lighters for use in vehicles and the like.

An important object of this invention is to provide a cigarette lighter which will ignite a cigarette without necessitating the smoker to resort to the preliminary drawing of air there-through.

A further object of this invention is to provide a cigarette lighter, in accordance with the foregoing object, which will ignite only a predetermined portion of the tip thereof.

An important feature of this invention resides in the provision for a cigarette igniting heating element, and a heating coil surrounding the element to heat the adjacent air and cause convection currents which fan the heated tip of the cigarette.

Another important feature of this invention resides in the provision for a baffle so disposed as to cause the convection currents to pass adjacent the tip of the cigarette.

A further feature of this invention resides in the provision for a re-entrant sleeve in the casing, which sleeve guides the cigarette and also serves to conduct the heat away from that portion of the cigarette which it is not desired to ignite.

These, together with various ancillary objects and features are attained by this device, a preferred embodiment of which is illustrated, by way of example only, in the accompanying drawings, wherein:

Figure 1 is a fragmentary perspective view of the cigarette lighter shown attached to the dashboard portion of a vehicle;

Figure 2 is a fragmentary vertical sectional view taken through the longitudinal axis of the lighter; and

Figure 3 is a horizontal sectional view of the lighter.

Referring now more specifically to the accompanying drawings, wherein like numerals designate similar parts throughout the various views, it will be readily seen that there is provided a cigarette lighter indicated generally by the numeral 10 which may conveniently be attached to the dashboard 12 of a vehicle or the like.

The cigarette lighter 10 consists generally of a casing 16, which may conveniently be cylindrically shaped, having an upper wall 18 and a lower wall 20. In order to permit the heating elements to be readily repaired, cleaned or replaced, the

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lower wall is preferably detachably secured to the casing 16, as by providing screw threads on the flange 22 which is secured to the lower wall. The upper wall 18 is attached to the casing 16 in any desired manner as by the downwardly depending rim 24 which frictionally embraces the casing.

A re-entrant sleeve 26 preferably having a flared portion 28 is secured to the upper wall 18 and is proportioned as to loosely receive a cigarette 30 positioned therein. Positioned below the inner end of the sleeve 26, in vertically spaced relation thereto, is a baffle 32 having a bore 34 therein, which bore, for reasons which will later become apparent, is axially aligned with the sleeve. The baffle, which is preferably of a heat resistant insulating material, such as mica, or the like, is supported by the annular groove 36 in the casing 16, and further supported by the heat resistant insulating lining 38 which is attached to the casing. Ventilating apertures 40 and 42 are provided in the casing 16, respectively, above and below the baffle 32 to permit air to circulate within the casing.

Positioned below the bore 34 in the baffle 32, and axially aligned therewith, is the heating element upon which the cigarette 30 is supported. This heating element preferably consists of inner and outer resistance coils 44 and 46, respectively, which coils may be formed of a single piece of wire or otherwise connected together, as by the connecting bar 48 located at their upper end. One of the other terminals 49 of the coil, such as that of the inner coil, is connected by the conducting bracket 50 to the casing 16, which casing is grounded as by conductor 52. The terminal of the outer coil 53 is connected by means of a switch 54 and conductor 56 to the anode of a battery or other source of power.

The switch 54 may consist of an electrically insulating, and preferably heat resistant block 58 which is secured as by a fastener 60 to the bracket 50. Reciprocally mounted in a bore 60 in the block, and extending through vertically aligned apertures 62 and 64 in the baffle and upper wall, respectively, is a plunger 66. This plunger is yieldingly urged to its upper position by the compression spring 68 which engages the detents 70 on the plunger. A handle 72 is secured on the upper end of the handle to facilitate depressing the plunger.

Slidably engaging the plunger is the contact point 74 which is connected as by the contact screw 76 to the conductor 56. A second contact point 78 having a detent 80 therein selectively

engages the convoluted end 82 of the plunger, which contact point is electrically connected to the terminal of the outer coil 53 as by a conventional contact screw. The contact 78 is preferably formed of an invar rod or the like which will expand sufficiently to release the plunger 66 upon reaching a certain predetermined temperature. Obviously, other switches may be resorted to without departing from the spirit of the invention.

In operation, a cigarette 30 is positioned in the sleeve 26 so as to rest upon the inner heating coil 44, and the plunger 66 is depressed. The coils will then be heated by the current flowing therethrough, the inner coil raising the temperature of the cigarette to substantially the kindling temperature of the tobacco, which will cause the tip to be ignited. The air adjacent the inner and outer coils will be heated thereby and will thus cause convection currents, which, due to the construction of the device, will flow through the bore 34 about the tip of the cigarette, the heated air transforming the glowing tip into a live coal which is capable of supporting combustion of the remainder of the cigarette, sufficient air being furnished through apertures 42, the heated and burned gases passing through apertures 40. As is apparent from a consideration of Figure 2, the sleeve 26 envelopes all except the tip of the cigarette so that only the tip will burn, the sleeve being of a heat conducting material transferring the heat away from the remainder of the cigarette.

From the foregoing, it is thought that the construction and operation of the device will be readily understood, and further discussion is believed unnecessary. However, since numerous modifications will readily occur to those skilled in the art after a consideration of the foregoing specification and accompanying drawing, it is not desired to limit the invention to that shown and described, but all suitable modifications may be resorted to falling within the scope of the appended claims.

Having described the invention, what is claimed 45 as new is:

1. A cigarette lighter comprising a casing having ventilating means therein, a reentrant sleeve in the upper wall of said casing, a baffle permanently attached to said casing and disposed below the inner end of said sleeve in vertical spaced relation thereto, a bore in said baffle axially aligned with said sleeve, a heating sleeve element positioned below said baffle and axially aligned with said bore for heating the tip of a cigarette resting thereon, an elongated heating

coil mounted co-axially of and about said heating element and located below the baffle for heating the adjacent air to cause convection currents for fanning the heated tip of the cigarette, means electrically connected to said heating element and said heating coil for energizing said heating element and said heating coil.

2. The combination of claim 1 including a switch in said energizing means, time delay means for opening said switch.

3. A cigarette lighter comprising a casing having upper and lower walls, a reentrant sleeve depending from the upper wall of said casing and extending axially into a the casing, a baffle supported by the casing in spaced parallel relationship to said upper and lower walls, said baffle having a central opening and said casing having upper and lower series of circumferentially spaced ventilating openings located, respectively, above and below the baffle, a vertical substantially cylindrical heating coil supported in the casing below the baffle and in alignment with said central opening and said sleeve, a second vertical substantially cylindrical heating coil supported beneath the baffle and disposed coaxial of and about the first named heating coil, and means operatively connecting said coils to a source of current.

4. The combination of claim 3 wherein said means includes a switch mounted in the casing below the baffle and a spring urged plunger slidably carried by the upper wall and baffle for selectively making and breaking the switch.

5. The combination of claim 3 wherein said heating coils include upper coplanar interconnected ends.

6. The combination of claim 3 wherein said casing includes a continuous channel whose interior communicates with the interior of said casing, said baffle including a peripheral edge seated in said channel.

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