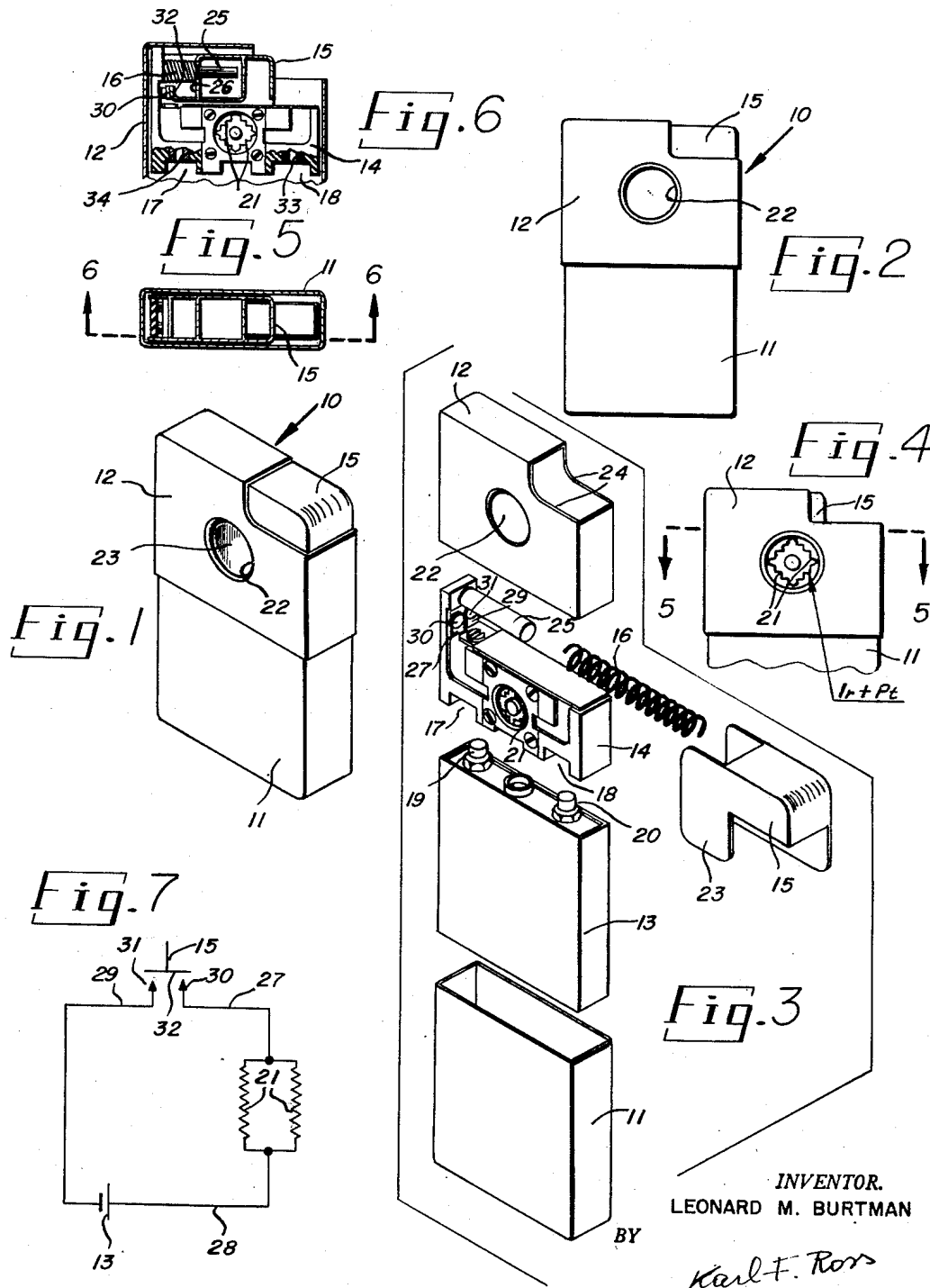


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ELECTRIC LIGHTER  
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## ELECTRIC LIGHTER

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2 Claims. (Cl. 219—32)

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My present invention relates to electric cigarette lighters and has for its principal object the provision of a simple, conveniently operable and efficient portable lighter of low weight and small dimensions. More particularly, it is an object of this invention to provide a lighter adapted to be energized by small, light-weight batteries, preferably batteries of the alkaline type such as disclosed in U. S. Patents Nos. 2,594,709-2,594,714, issued April 29, 1952, to Henri André and assigned to Yardney International Corp.

According to a feature of my invention there is provided a lighter comprising a housing which contains the battery, this housing having a normally obstructed opening for the insertion of a cigarette or like object to be brought into contact with an electric heating element concealed in said housing; there is further provided a switch, so positioned as to be operable with the fingers of the hand holding the housing, which upon its actuation uncovers the opening, thereby rendering accessible the heating element, and at the same time closes an energizing circuit from the battery to this element.

The above and other features and objects of the invention will become more fully apparent from the following description of a now preferred embodiment, reference being had to the accompanying drawing in which:

Fig. 1 is a perspective view of the preferred embodiment of my cigarette lighter, in inoperative condition;

Fig. 2 is a front elevation of the lighter shown in Fig. 1;

Fig. 3 shows, in perspective, an exploded view of the lighter;

Fig. 4 is a fragmentary front elevation of the lighter, showing the upper portion thereof with the switch in actuated position;

Fig. 5 is a section on the line 5—5 of Fig. 4;

Fig. 6 is a section on the line 6—6 of Fig. 5; and

Fig. 7 is a diagram of the energizing circuit for the heating element.

Referring to the drawing, and particularly to Fig. 3 which shows all the principal elements of a device according to the invention, there is shown a lighter 10 comprising a lower housing portion 11, an upper housing portion or cover 12, a battery 13 fitting into the lower portion 11, a contact block 14 normally concealed inside the upper portion 12, and a switch member 15 fitting into the same portion 12 and adapted to be slidably displaced, against the force of a compression spring 16, with respect to the cover portion 12.

The contact block 14 is provided with recesses

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17, 18, serving to receive the terminals 19, 20, respectively, of battery 13, and carries a resistance element 21 adapted to be energized, by current drawn from the battery, over a circuit presently to be described. Cover 12 has an opening 22 which registers with the resistance element 21 but is normally, i. e. in the position shown in Figs. 1 and 2, obstructed by an apron or shield 23 depending from the switch member 15. The cover 12 also has a cut-away portion at 24 from which the upper part of member 15 normally projects, to be engaged by the thumb of the user and inwardly displaced in horizontal direction when it is desired to light a cigarette. Such displacement of the switch member 15 is facilitated by the provision of a guide pin 25 which projects through an opening at the inner face 26 of this member and which is surrounded by the compression spring 16 bearing upon said face.

A first contact spring 27 is electrically connected to the left-hand end of the resistance element 21, as viewed in Figs. 3, 4 and 6, from the right-hand end of which a metal strip 28 (not shown in Figs. 1-6 but diagrammatically indicated in Fig. 7) leads to a conductive bushing 33 above recess 18 which forms a socket for the tip of the positive battery terminal 20. A second contact spring 29 leads to a conductive bushing 34 above recess 17 which forms a socket for the tip of the negative battery terminal 19. These contact springs terminate at their upper ends in a pair of spaced contact studs 30, 31, respectively, which are resiliently mounted on the contact block 14 by means of said springs. Switch member 15 has a projecting tongue 32, extending beyond the face 26 thereof, which in the inwardly displaced position of this member engages and electrically interconnects the two studs 30 and 31, thereby completing the circuit from battery 13 through the heating element 21. This will cause the element 21 to glow, thereby enabling the lighting of a cigarette which at this instant can be inserted through the opening 22 from which the protective apron 23 has been removed. When the thumb pressure is released, the spring 16 causes the switch member 15 to recede so as to break the connection between the contact studs 31 and 32, the apron 23 at the same time returning to its normal position obstructing the opening 22.

Tests have shown that the optimum power consumption of the heating element 21 ranges between 4 and 5 watts, so that with a battery voltage of about 1.5 volts a current of about 3 amperes should be drawn. Space limitations make it desirable to use, for this purpose, a resistance wire

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of relatively low conductivity which at the same time should exhibit sufficient mechanical strength to withstand the impacts incidental to transportation and use of the lighter. An iridium-platinum alloy, with a platinum content of about 95%, has been found to be highly satisfactory from both viewpoints.

It should be understood that the invention is not limited to the specific embodiment described and illustrated but that it is, on the contrary, capable of numerous modifications and adaptations without departing from the scope of the appended claims.

I claim:

1. An electric lighter comprising a housing of generally prismatic shape and substantially rectangular cross-section, said housing having a lower portion and an upper portion having faces projecting beyond corresponding faces of said lower portion and, said upper portion being provided with a lateral opening and with a cut-away corner, a battery in said lower portion having a positive and a negative terminal, a contact block in said upper portion, a heating element on said contact block registering with said opening, a switch member in said upper portion slidable with respect to said contact block between a normal and an off-normal position, said switch member having an extremity projecting through said cut-away corner for manual displacement toward said off-normal position, said extremity in said normal

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position having three faces substantially flush with respective faces of said lower portion, spring means in said housing tending to maintain said switch member in said normal position, a shield member secured to said switch member and interposed between said heating element and said opening in said normal position while rendering said heating element accessible through said opening in said off-normal position, conductor means on said contact block engaging said battery terminals and connecting the same in a normally open energizing circuit for said heating element, said energizing circuit including a pair of spaced contacts on said contact block, and a conductive element on said switch member bridging said contacts in said off-normal position thereof, thereby closing said energizing circuit.

2. A lighter according to claim 1 wherein said energizing circuit includes a pair of conductive spring members carrying said contacts at their extremities.

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