March 21, 1939. R. LUDOVICI 2,151,479

ELECTRIC CIGAR LIGHTER

Filed July 31, 1937 2 Sheets-Sheet 1

Fig. 1.

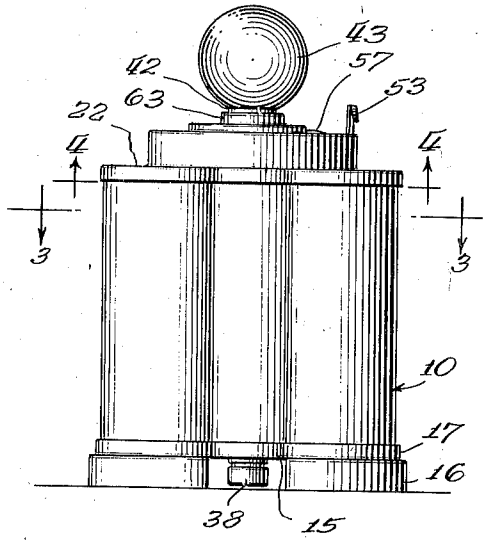


Fig. 2.

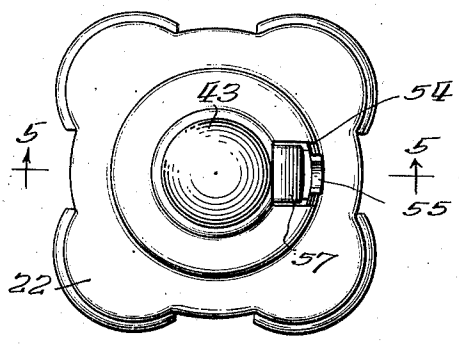


Fig. 3.

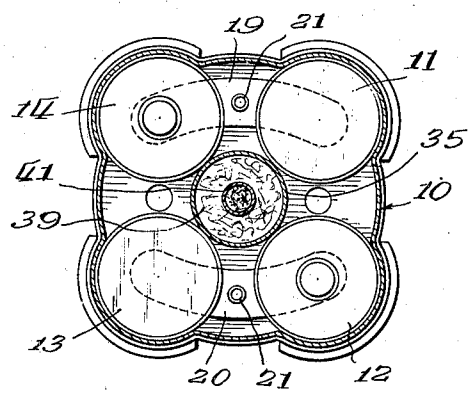
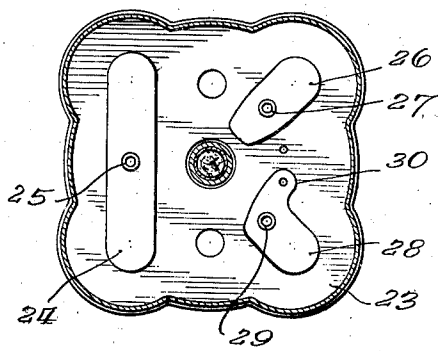


Fig. 4.



Inventor
Renato Ludovici
By Marshall S. Bayne
Attys

March 21, 1939. R. LUDOVICI 2,151,479

ELECTRIC CIGAR LIGHTER

Filed July 31, 1937 2 Sheets-Sheet 2

Fig. 5.

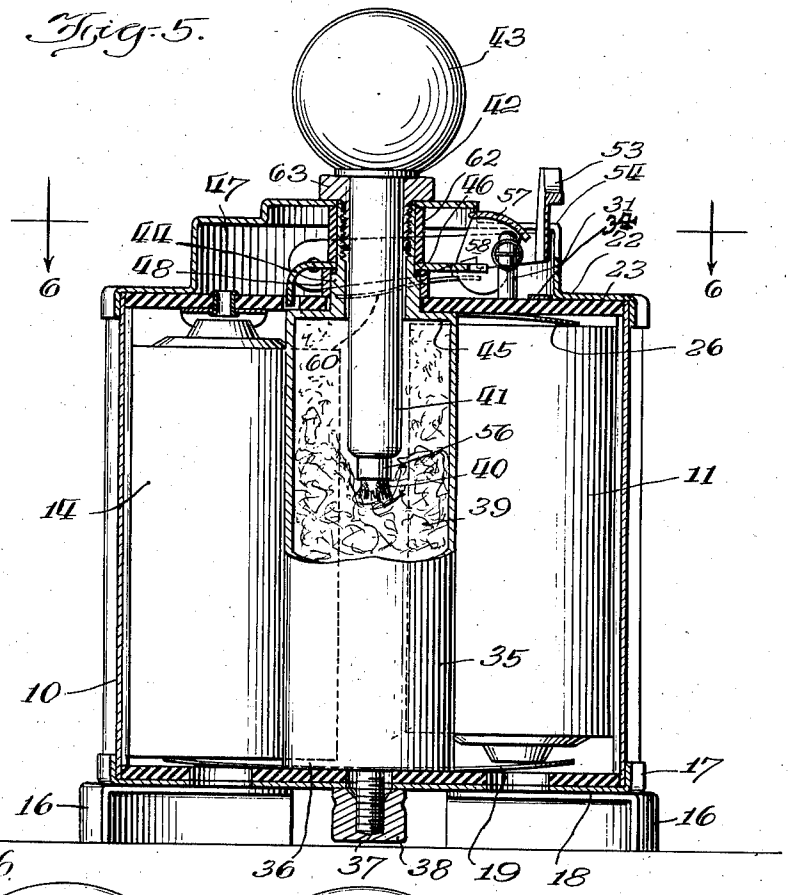


Fig. 6.

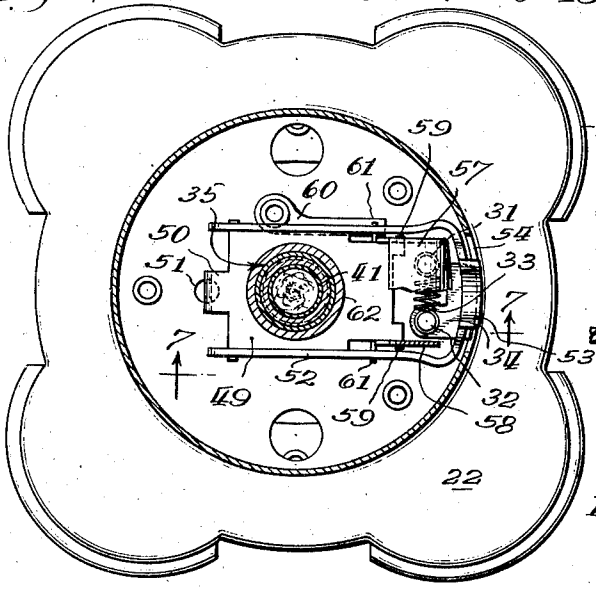
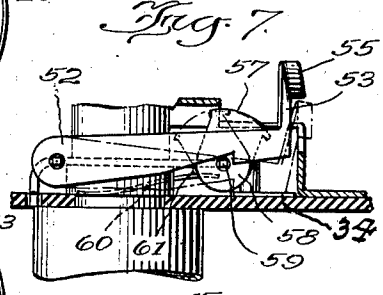


Fig. 7.



Inventor
Renato Ludovici
By Mannw S. Bayne
Attys

Patented Mar. 21, 1939 2,151,479

UNITED STATES PATENT OFFICE

2,151,479

ELECTRIC CIGAR LIGHTER

Renato Ludovici, Chicago, Ill., assignor to Shanklin Manufacturing Company, Chicago, Ill., a corporation of Illinois

Application July 31, 1937, Serial No. 156,665

6 Claims. (Cl. 175—296)

This invention relates generally to a cigar or cigarette lighter and more particularly to a lighter of this character having a wick which is adapted to be ignited by an electrically heated resistance element.

An object of this invention is to provide an electric lighter of the character described in which the resistance element is normally shielded so long as the electric circuit to said element is open, and will be automatically uncovered when the device is operated to bring about a closing of the circuit to said resistance element.

Another object of this invention is to provide an electric lighter of the character described, including a cap member having a mechanism provided therein for bringing about a closing of the electric circuit to the resistance element, said resistance element being normally shielded, and said shielding means being moved to position to uncover said resistance element when the mechanism is actuated to complete a circuit to said resistance element.

A further object of this invention is to provide an electric lighter of the character described which will be simple in construction, assembly and operation, which may be produced along lines convenient for low cost manufacture, and which will, at the same time, be highly efficient for carrying out the purposes for which it is designed.

With the foregoing and other objects in view, which will appear as the description proceeds, the invention consists in certain novel features of construction, arrangement and combination of parts hereinafter more fully described, illustrated in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that various changes in the form, proportion, size and minor details of the structure may be made without departing from the spirit or sacrificing any of the advantages of the invention.

For the purpose of facilitating an understanding of my invention, I have illustrated in the accompanying drawings preferred embodiments thereof, from an inspection of which, when considered in connection with the following description, my invention, its mode of construction, assembly and operation, and many of its advantages should be readily understood and appreciated.

Referring to the drawings, in which the same characters of reference are employed, to indicate corresponding or similar parts throughout the several figures of the drawings:

Fig. 1 is an elevational view of an electric cigar lighter made in accordance with the principles of this invention;

Fig. 2 is a top plan view of the same;

Fig. 3 is a sectional view taken substantially on line 3—3 of Fig. 1;

Fig. 4 is a sectional view taken substantially on line 4—4 of Fig. 1, and showing more particularly the underside of the upper insulation sheet;

Fig. 5 is a vertical section taken substantially on line 5—5 of Fig. 2;

Fig. 6 is a section taken substantially on line 6—6 of Fig. 5;

Fig. 7 is a view taken substantially on line 7—7 of Fig. 6.

Referring to the drawings more specifically by characters of reference, the numeral 10 designates a hollow shell of suitable material such as metal or the like, with said shell being of generally rectangular formation as shown in the drawings, and is of a size and shape adapted to receive and house a plurality of dry cell batteries 11, 12, 13 and 14, by means of which the necessary electric current may be supplied to the lighting element as will be more fully presently described. Obviously, the shell 10 may assume a somewhat different shape and size and may, of course, be formed to house a number of dry cell batteries other than the number illustrated in the drawings.

In the embodiment illustrated, there is provided a base member 15, upon which the shell 10 is adapted to be supported, said base being provided with the feet 16 and the outwardly extending flange 17. Arranged within the base 15 is a sheet of insulation 18 of suitable insulating material, so that the dry cell batteries will be out of contacting engagement with the base 15, which is formed of suitable material similar to that from which the hollow shell 10 is formed.

Secured to the sheet of insulation 18 are a pair of oppositely arranged spring strips 19 and 20 of conducting material, said strips being secured intermediate their ends to the insulation sheet 18 by means of suitable rivets 21 or in some other suitable and well known manner.

The batteries 11, 12, 13 and 14 are adapted to rest on the insulation sheet 18 when the device is in fully assembled position, with the top of the battery 11 being connected to the bottom of the battery 14 by means of the spring strip 19 and the top of the battery 13 being connected to the bottom of the battery 12 by means of the spring strip 20.

The shell 10 is also provided with a cover member 22 within which is disposed a sheet of insulation 23 to the underside of which is secured a spring strip 24 by means of a rivet 25, said strip being adapted for connecting the top of the battery 14 to the bottom of the battery 13.

There is also provided in this insulation sheet 23, a spring strip 26 secured thereto by means of the rivet 27 and the angled strip 28 secured thereto by the rivet 29. The strip 28 is adapted to engage the bottom of the battery 11 and the strip 26 is adapted to engage the top of the battery 12. The strip 28 is also provided with a portion 30 to which is rigidly secured an electricity conducting post 31, said post being arranged on the upper side of the insulation sheet 23 as shown in Figs. 5 and 6 of the drawings. The post 31 is arranged to cooperate with a second post 32 of similar material, also secured to the upper face of the insulation sheet 23, said posts having connected thereto and supporting therebetween, as shown in Fig. 6, a fine resistance wire 33 made of a suitable alloy, and one which is capable of being heated to a strong heat. The alloy used for the resistance element 33 may also be one which will resist corrosion by the volatile liquids of the type ordinarily used as a fuel for lighters of this character.

Associated with the post 32 and connected thereto is a spring metal strip 34, which strip is of substantially the shape illustrated in the drawings and has its free end spaced from the other post 31. The purpose and function of this strip 34 will be presently more fully described.

Centrally disposed within the shell 10 is a metallic tube 35 which is of such a size in diameter as to substantially fill up the entire central space in the shell 10 between the batteries and to thereby hold said batteries in place and against movement or rattling when the lighter is in fully assembled position as shown more clearly in Figs. 3 and 5 of the drawings. The tube 35 is closed at its lower end by means of a wall 36 from which wall extends a threaded stud 37, which stud is adapted to extend through openings provided therethrough in the insulation sheet 18 and base member 15. A suitable nut 38 is adapted to be threaded on the said stud 37 for securing the tube 35 to the base and to hold the same in fully assembled position on said base.

Disposed within said tube is a supply of cotton 39 or similar material, which material is adapted to be saturated and to retain a supply of fuel for a wick 40 carried by a torch member 41, which member is provided with an annular flange 42 and a spherical head or handle 43, which may be of considerable weight, so as to practically seal, due to its own weight, the top or open end of the tubular member 35, thereby protecting the wick 40 from the atmosphere and also preventing the evaporation of the fuel within the tube 35 when the torch member is placed therein.

The tubular member 35 is provided with a reduced neck portion 44 which extends through a central opening in the insulation sheet 23 as shown in Fig. 5, with the shoulder 45 of the tube 35 being brought into contacting engagement with the spring strip 26 when the lighter is in fully assembled position. The neck portion 44 is provided intermediate its ends with a shoulder 46 and that portion of the neck extending above the insulation sheet 23 is adapted to be disposed within a compartment 47 formed within the cap 22.

Disposed within said compartment 47 and supported by the neck portion 44 is the novel operating mechanism for bringing about the closing of the circuit to the resistance element 33 when it is desired to ignite the wick 40.

The mechanism now to be described includes means which normally holds the resistance wire shielded and the circuit thereto open. However, when said means are actuated to close the circuit to the resistance element, it will automatically uncover or expose the resistance element.

Thus, in the embodiment illustrated, there is shown a split ring 48 of conducting material, which surrounds the neck portion 44 and upon which is adapted to be supported a plate member 49, also of conducting material, said plate member having a central opening through which the neck portion 44 extends and a depending rear portion 50 which extends into an opening 51 provided in the insulation sheet 23 for preventing any turning movement of the plate member 49 and its associated parts when the device is in assembled position.

Pivotally secured to said plate member 49 is a substantially U-shaped rocker member 52, the end of said rocker member remote from its pivotally mounted end being formed as an upstanding portion 53, which projects through an opening 54 provided in the cap member 22. When the latter is in assembled position, the upstanding portion 53 will be disposed directly above the spring strip 34, and when said member 53 is moved downwardly upon the application of pressure thereto, it will, upon urging its lowermost position, come in contact with said spring strip 34 and thereby electrically connect the post 31 to the post 32, thus completing the circuit to the resistance element 33. The member 53 is provided with a curved portion or groove 55 at its uppermost edge, and upon which is adapted to rest the neck portion 56 of the torch 41 when it is desired to ignite the wick 40 from the resistance wire 33.

The opening 54 in the cap 22 is disposed directly above the resistance element 33 and said opening is normally closed so as to shield said resistance element by an arcuate shaped pivotally mounted member 57. Said member 57 has a pair of side walls 58 by means of which it is pivotally secured to one end of the plate member 49 as shown at 59 in Figs. 6 and 7. The member 57 is arranged on said plate member 49 so that when it is in its normally inoperative position, it will be in the position shown in Fig. 5, in which position it will substantially close the opening 54 and thus effectively shield the resistance element 33.

It is held in that position by means of a spring member 60, one end of which is secured to a portion of the lighter and the other end of which engages under an ear 61 formed on the side walls 58 of the member 57, which spring is effective for normally urging said member in a clockwise direction as viewed in Figs. 5 and 6 of the drawings. An ear 61 is also provided on the other side wall 58 of the member 57, and upon these ears 61 is adapted to rest the arms of the U-shaped rocker member 52, with the result that said arms will be held in a raised position as shown in Fig. 7 of the drawings.

To complete the assembly of the lighter, there is mounted a split ring 62 surrounding the upper portion of the neck 44, said ring resting on the blade member 49, so that the latter is clamped in place between the rings 48 and 62. The upper free end of the neck 44 is internally threaded, and into which is adapted to be threaded a nut

63 having an annular flange which engages the top of the cap member 22 to thereby complete the assembly of the lighter.

The assembly and operation of the lighter should be readily understood from the foregoing. When the torch member 41 is in its housing 35, the parts will be in the position shown in Fig. 5 and in full lines in Fig. 7, in which position it will be noted that the circuit from the batteries to the resistance element 33 remains open and said resistance element is completely shielded by the member 57.

When it is desired to use the device for igniting a cigarette or cigar, the torch member 41 is withdrawn from the housing and the neck portion 56 of said torch member is laid across the grooved portion 55 of the member 53 with the wick 40 extending into the opening 54 and directly above the shield 57. The application of pressure to the member 53 will force the latter downwardly, until the bottom of said member is brought into contacting engagement with the strip 34, thereby electrically connecting the posts 31 and 32 to each other, and to the batteries, thus completing a circuit through the resistance element 33 which will readily become sufficiently heated to ignite the wick.

It will be noted that as the member 53 is pressed down, it will engage the ears 61 and thus force the blade member 57 to move about its pivots 59 in a counterclockwise direction and against the action of the spring 60, thereby uncovering the opening 54 and exposing the resistance element 33; as the wick will now be disposed directly above the heated resistance element, it will be readily apparent that the same will become ignited.

As soon as the torch member 41 is withdrawn, the spring 60 will be effective to return the parts to the position shown in Fig. 5, thereby breaking the circuit to the resistance element and at the same time moving the shield 57 to a position where it will again completely cover the opening 54.

After the torch has been used to ignite the cigarette or cigar, the same may be extinguished by replacing it in the tube 35, the annular shoulder 42 cutting off air for combustion and preventing evaporation of the lighter thereby.

It is believed that my invention, its mode of construction and assembly, and many of its advantages should be readily understood from the foregoing without further description, and it should also be manifest that while preferred embodiments of the invention have been shown and described for illustrative purposes, the structural details are nevertheless capable of wide variation within the purview of my invention as defined in the appended claims.

What I claim and desire to secure by Letters Patent of the United States is:

1. A cigarette lighter comprising a casing, a source of electric current in said casing, an electrically conductive reservoir for lighter fluid disposed in said casing and insulated therefrom, a torch carrying a wick at one end and having a handle at the other end adapted for disposition within said reservoir, a cap having a hollow chamber arranged on said casing, an insulation sheet having a central opening through which a portion of said reservoir extends, disposed between said casing and cap, a pair of contact posts mounted on said insulation sheet, a resistance wire carried by said posts, means mounted on said reservoir and cooperating with said contact posts for closing a circuit from said source of electric current to said resistance wire, and means associated with said first mentioned means for normally holding first mentioned means in circuit opening position, said second mentioned means being arranged for actuation by the torch for movement to a circuit closing position, in which position the wick of said torch will be disposed directly adjacent said resistance wire so as to be ignited thereby.

2. A cigarette lighter comprising a casing, a source of electric current in said casing, an electrically conductive reservoir for lighter fluid disposed in said casing and insulated therefrom, a torch carrying a wick at one end and having a handle at the other end adapted for disposition within said reservoir, a cap having a hollow chamber arranged on said casing, an insulation sheet having a central opening through which a portion of said reservoir extends disposed between said casing and cap, a pair of contact posts mounted on said insulation sheet, a resistance wire carried by said posts, means mounted on said reservoir and cooperating with said contact posts adapted for closing a circuit to said resistance wire, said means being normally held in circuit opening position and being arranged for movement to circuit closing position upon the application of one end of the torch thereto, in which position the wick of said torch will be disposed adjacent the resistance wire so as to be ignited thereby.

3. A cigarette lighter comprising a casing, a source of electric current in said casing, an electrically conductive reservoir for lighter fluid disposed in said casing and insulated therefrom, a torch carrying a wick at one end and having a handle at the other end adapted for disposition within said reservoir, a cap having a hollow chamber arranged on said casing, an insulation sheet having a central opening through which a portion of said reservoir extends, disposed between said casing and cap, a pair of contact posts mounted on said insulation sheet, a resistance wire carried by said posts, electrically conductive means mounted on said reservoir and cooperating with said contact posts for completing a circuit to said resistance wire, said means including a pivotally mounted member, the free end of which is normally held in a raised position, in which position the circuit to said resistance wire is open, said pivotally mounted member having a portion projecting through an opening in said cap, said projecting portion being adapted for engagement by that end of the torch carrying the wick and to be moved to circuit closing position, in which position the wick will be disposed adjacent the resistance wire so as to be capable of becoming ignited thereby.

4. A cigarette lighter comprising a casing, a source of electric current in said casing, an electrically conductive reservoir for lighter fluid disposed in said casing and insulated therefrom, a torch carying a wick at one end and having a handle at the other end adapted for disposition within said reservoir, a cap having a hollow chamber arranged on said casing, an insulation sheet having a central opening through which a portion of said reservoir extends, disposed between said casing and cap, a pair of contact posts mounted on said insulation sheet, a resistance wire carried by said posts, electrically conductive means mounted on said reservoir comprising a member pivotally mounted at one end and cooperating with said contact posts for closing a cir-

cuit to said resistance wire, the free end of said pivotally mounted member projecting outwardly through an opening in said cap, means normally urging said free end outwardly and to circuit opening position, said member completing circuit to said resistance wire when moved inwardly to the limit of its inward movement, the inward movement of said member being accomplished by pressing the wick end of said torch against the free end of said member, whereby upon the closing of the circuit to said resistance wire, the said wick will be disposed adjacent said wire so as to be capable of becoming ignited thereby.

5. A cigarette lighter comprising a casing, a source of electric current in said casing, an electrically conductive reservoir for lighter fluid disposed in said casing and insulated therefrom, a torch carrying a wick at one end and having a handle at the other end adapted for disposition within said reservoir, a cap having a hollow chamber ararnged on said casing, an insulation sheet having a central opening through which a portion of said reservoir extends, disposed between said casing and cap, a pair of contact posts mounted on said insulation sheet, a resistance wire carried by said post, electrically conductive means mounted on said reservoir and cooperating with said contact posts for completing a circuit to said resistance wire, said means including a member pivotally mounted adjacent one end thereof and having its free end projecting outwardly through an opening provided therefor in the cap, the resistance wire being arranged in alignment with said last mentioned opening, means normally urging said free end of said pivoted member outwardly, in which position the circuit to said resistance wire will remain open, a shield associated with said pivotally mounted member for shielding said resistance wire when said pivotally mounted member is in its circuit opening position, said shield being moved to a position to uncover said resistance wire when said pivotally mounted member is moved downwardly to circuit closing position, said last mentioned movement being accomplished by applying the wick end of the torch against the free end of said pivotally mounted member until the latter has been moved to circuit closing position, in which position the wick will be disposed adjacent the resistance wire so as to be capable of being ignited thereby.

6. A cigarette lighter comprising a casing, a source of electric current in said casing, an electrically conductive reservoir for lighter fluid disposed in said casing and insulated therefrom, a torch carrying a wick at one end and having a handle at the other end adapted for disposition within said reservoir, a cap having a hollow chamber arranged on said casing, an insulation sheet having a central opening through which a portion of said reservoir extends, disposed between said casing and cap, a pair of contact posts mounted on said insulation sheet, a resistance wire carried by said posts, said cap having an opening in the top wall thereof arranged directly above said resistance wire, means for closing said opening to shield said resistance wire, said means being held in closed position when the circuit to said resistance wire is open, and in open position upon the closing of the circuit to said resistance wire, whereby the wick end of said torch may be disposed adjacent said resistance wire to be ignited thereby.

RENATO LUDOVICI.