Oct. 10, 1950 R. LUTHI 2,525,040

ELECTRICAL CIGAR OR CIGARETTE LIGHTER

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Fig. 1

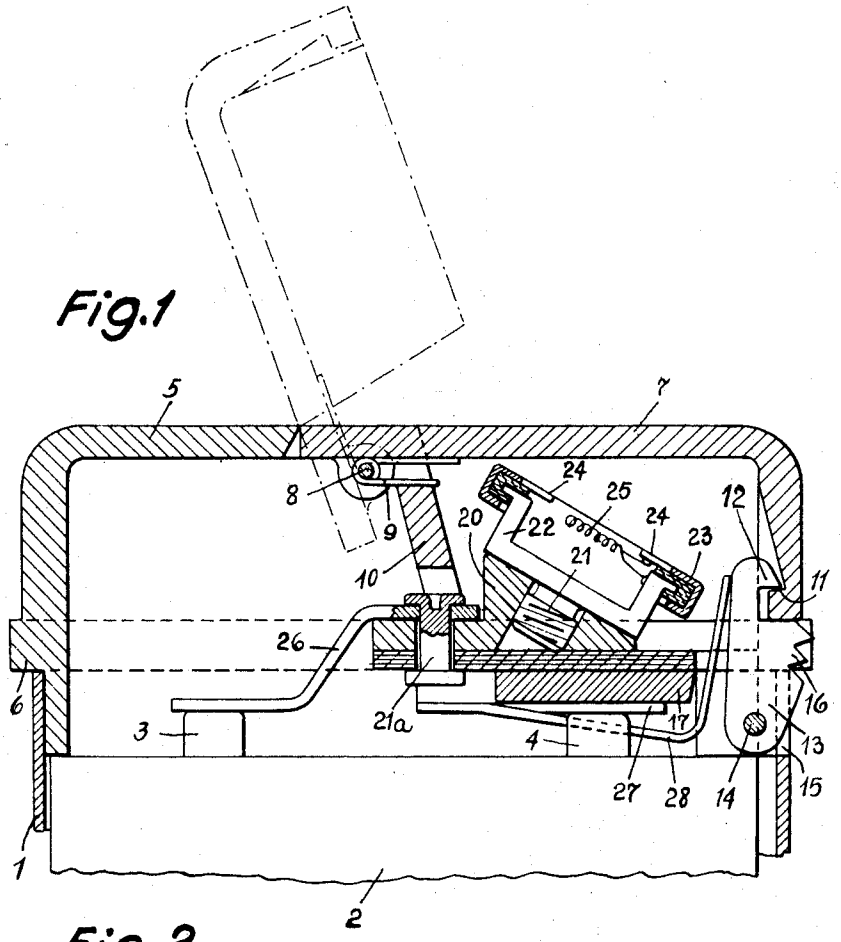
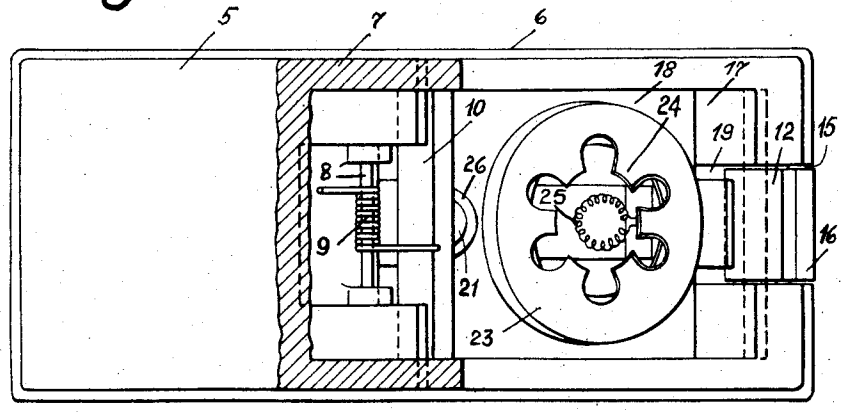


Fig. 2



INVENTOR
ROBERT LUTHI
BY Robert Luthi
AGENT

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ELECTRICAL CIGAR OR CIGARETTE LIGHTER

Robert Lüthi, Biel, Switzerland, assignor to Elbric S. A., Lausanne, Switzerland, a corporation of Switzerland

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4 Claims. (Cl. 219—32)

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The invention relates to an electric pocket lighter and has the main object of providing a pocket lighter which is of simple manufacture and use and which minimises voltage drops in the circuit caused by transition losses.

With this and other objects in view an electric pocket lighter according to the present invention has a casing in the bottom portion of which an electric current source is housed, and which is closed on top by a cover portion inserted into, and resiliently clamped to said bottom portion; the forward part of said cover portion is designed as a hinged flap which is held in the closed position by a pawl against the action of a spring; in the said cover portion an electric socket piece is housed in an electrically insulated manner below said hinged flap; this socket is electrically connected by a contact spring to one of the terminals of the said electric current source and holds the contact cap of the carrier of an incandescent wire one terminal of which is connected to said cap and the other terminal of which is connected to an electrically conductive ring surrounding said incandescent wire; this ring is supported by and electrically insulated from a bracket attached to the said contact cap; a contact spring is attached to a contact plate housed in the cover portion of the said casing, contacting the other terminal of the said electric current source; the free end of said contact spring, owing to its resiliency, tends to keep away from said ring and bears on the said pawl from inside, biasing the latter into the locking position. When however the said pawl is pressed inward by a force applied by the user, it disengages first the said pawl from the said hinged flap whereby the latter is released to turn up into its open position by the action of its spring. When the said pawl is further pressed inward, it contacts the said ring and connects the latter directly in an electrically conductive manner to the said other terminal of the electric current source, whereby the circuit of the incandescent wire is closed.

The terms "bottom," "top," "forward," "up" etc. used in the specification and claims are to be understood as referring merely to the ordinary position of the electric pocket lighter when in use, and not to any fortuitous position it may otherwise assume.

Other objects and features of the invention will become apparent from the description of an embodiment of the invention which will now be given merely by way of example with reference to the accompanying drawing, in which:

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Fig. 1 is a vertical section through the cover portion of an electric pocket lighter, and

Fig. 2 is a plan view of the said electric pocket lighter with the hinged flap shown in the open condition and partly broken away for clarity.

In the prismatic bottom portion 1 of the casing which has a rectangular outline in plan, an electric current source 2, viz. a dry cell battery or preferably a small accumulator, is housed, the terminals of which are denoted 3 and 4. This bottom portion 1 is closed on top by a cover portion 5 having a flange 6 resting on the upper edge of the bottom portion 1, said cover portion extending into, and being resiliently clamped to, the said bottom portion. Part of the cover portion 5 is constructed as a hinged flap 7 which is articulated on an axle 8 arranged parallel to the short sides of the cover portion in the middle, and under the surface, thereof, so as to be capable of being tilted up, which flap extends over the entire front part of the cover portion 5 embracing the front wall and side walls thereof right down to the flange 6.

A spring 9 arranged on the axle 8 acts on the said hinged flap, one end of which spring abuts against a partition wall 10 arranged in the cover portion, and the other end of which abuts against the inside of the said hinged flap 7 and tends to open the latter. At the inside of the front wall of the hinged flap 7 a rest 11 for a locking claw 12 of a pawl 13 is provided. This pawl 13 is pivoted on an axle 14 which is arranged on the front part of the cover portion 5 below flange 6. In the upper edge of the front wall of the bottom portion 1 and in the front wall of the cover portion 5 a slot 15 for the pawl 13 is provided, and the latter has a knurled projection 16 on its front face lying in the said slot 15 and extending right up to the outer face of the flange 16.

In the front part of the cover portion 5 a fixed intermediate bottom 17 is provided on which a plate 18 consisting of electrically insulating material is attached. The intermediate bottom 17 and the plate 18 have at the front a recess 19 in which the pawl 13 can move. On the plate 18 a socket piece 20 of metal is fixed by means of a rivet 21a the head of which lies under the plate 18 in a recess at the rear end of the intermediate bottom 17. This socket piece 20 is provided with a tapped hole into which the correspondingly threaded contact cap 21 of an incandescent wire element is screwed.

The incandescent wire element consists of a metal bracket 22 attached to the contact cap 21 and of a metal ring 23 attached to said cap in an

electrically insulated manner and having inwardly directed carrier arms 24 which leave a central opening free, wherein lies a coiled incandescent wire, one terminal of which is connected to the said ring 23 and the other terminal of which is connected to the bracket 22 in an electrically conductive manner. The socket piece 20 is electrically connected to the terminal 3 of the current source 2 by means of a contact spring 26 which is also attached by the rivet 21a.

On the underside of the intermediate bottom 17 a contact plate 27 is attached which tightly bears on the contact piece 4 of the current source 2 when the flange 6 rests on the edge of the bottom portion 1. This contact plate 27 is integral with a contact spring 28 the free end of which abuts on the inside of the pawl 13, lying between the latter and the ring 23, and pressing said pawl 13 outward into the locking position.

The hinged flap 7 is held in the closed position by the locking claw 12 of the pawl 13 which engages into the rest 11 at the inside of the front wall of said flap. The pawl 13 is pressed outward by the contact spring 28. When now the projection 16 of the pawl 13 is pressed inward which projection lies in the slot 15 of the front wall of the cover portion 5 and is screened by the flange 6 of the cover portion 5, the locking claw 12 disengages itself from the rest 11 and releases the hinged flap 7 so that the latter is turned up by the spring 9. When now the pawl 13 is further pressed inward, the contact spring 28 is pressed against the edge of the ring 23 of the incandescent wire element whereby the circuit of the incandescent wire element is closed.

The main advantage of the electric pocket lighter according to the embodiment described as compared with known pocket lighters consists in that the contact spring arranged for closing the circuit of the incandescent wire carrier element can be brought directly into contact with the ring of the incandescent wire element connected to one of the terminals of the incandescent wire, so that the current has to flow through this contact spring only, and the voltage drop is minimised. This advantage is achieved owing to the elimination of unfavourable current transition points in hinges or other articulations.

Another advantage consists in that the pawl is advantageously arranged and sheltered in a slot in the front wall of the casing so as to prevent the unintentional opening of the hinged flap.

I wish to be understood that I do not desire to be limited to the exact details of construction shown and described, for obvious modifications will occur to a person skilled in the art.

What I claim as my invention and desire to secure by Letters Patent, is:

1. An electric cigar or cigarette lighter comprising a casing having a bottom portion housing an electric source, and a cover partly inserted in, and resiliently clamped to, said bottom portion, said cover including a flap hinged thereto, said flap forming the forward part of the cover; a pawl hinged on the casing and normally holding the hinged flap in its closed position; a spring acting on the flap and urging same toward its open position; an electric socket piece disposed under the flap and carried by, and electrically insulated from the cover; a contact spring extending from said socket piece to one of the terminals of said current source; a detachable incandescent wire element including a contact cap conductively and detachably connected to the socket, a bracket conductively carried by said cap, a conductive ring carried by, and electrically insulated from, said bracket, and an incandescent wire having one terminal connected to said ring, and the other terminal to said cap; means for contacting the other terminal of the current source, said means including a spring acting on said pawl to urge same normally into engagement with the flap and out of electrical contact with the ring, said pawl, when pressed inwardly, releasing the flap and bringing the second named spring into contact with the ring.

2. In the lighter as claimed in claim 1, a flange on the outside of the said cover for resting on the upper edge of the said bottom portion, a projection on the said pawl, and a slot in the front walls of the said bottom portion and the said cover, the said projection projecting from the said slot outwardly, but not beyond the said flange.

3. In the lighter as claimed in claim 1, an intermediate bottom arranged on the said cover under the said flap and a plate of insulating material attached on top of the said intermediate bottom and carrying the said socket piece, the said intermediate bottom and electrically insulating plate having at their forward end a recess for the said pawl.

4. The lighter according to claim 1, wherein said means include a plate carried by the cover for contacting said other terminal of the current source, and said second named spring is integrally formed with said plate.

ROBERT LÜTHI.

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