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PATENT SPECIFICATION

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COMPLETE SPECIFICATION.

Automatic Lighter.

I, HERMANN THORENS, of Sainte-Croix Vaud, Switzerland, a citizen of Switzerland, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to an automatic lighter of the type in which a socket slidably mounted upon a reservoir is provided with a movable flap which is opened when the socket is moved downwardly with respect to the reservoir.

In lighters as hitherto suggested the downward movement of the socket was adapted to rotate a friction wheel carried by the socket against a stone from which the sparks were struck and which was maintained by means of a spring in contact with the wheel.

The present invention consists in an automatic lighter of the above type in which the downward movement of the socket with respect to the reservoir is adapted to open the movable flap and at the same time to actuate a stone holder carried by the socket, to bring the stone into frictional contact with a stationary sharp edge.

Referring to the annexed drawing which shows, as descriptive but not a restrictive example of one form of execution of a lighter according to the invention,

Fig. 1 is a partly sectional elevation of a lighter, showing the organs in their position when the lighter is not in use.

Fig. 2 shows the position of the organs when the spark has just been produced by the sliding of the socket on the body.

Fig. 3 is also an elevation of the lighter turned at 90 degrees comparatively to the preceding figures.

Referring to the accompanying drawings, the lighter represented in Figs. 1, 2 and 3 comprises a body *a* forming a

fuel reservoir in which is placed the wick coming out from the burner *b*. The latter is placed between the branches of a strap *c* whose bottom is fixed to the upper part of the reservoir. The branch *c*¹ carries the rubber which co-operates with the stone *d* in order to produce the spark; the branch *c*² forms a stop whose utility will be stated hereafter.

The reservoir is provided with a cavity *e* containing the stone-holder *f*; the latter consists of a bent up plate-spring. One of the extremities of said spring carries the stone *d* and the other one (*g*) is bent back at a right angle and catches in a little slit *h* of the sliding socket *i*. The tension of this plate-spring tends, on one side, to press the stone *d* against the rubber *c*¹ and, on the other side, to couple together the stone-holder and the sliding socket *i*, by means of said slit *h*.

In this case, the sliding socket forms the lid of the lighter; for this purpose, its extremity is provided with a flap *k* articulated by means of a joint, a spring always tending to hold this flap shut. The latter extends inwardly in a stop *k*¹ which, when the sliding socket is drawn downwards, butts against the upper part of the stop *c*². The meeting of these organs causes the lid to be opened.

The sliding socket is guided, by an inner projection, *m* engaging a groove *o* provided in the body *a*. This groove ends towards the lower part of the body, thus limiting the descending motion of the socket and preventing its removal from the body of the lighter.

When the lighter is not in use, the flap *k* is shut and the organs are in the relative positions shown in Fig. 1, the stone being placed above the burner and above the rubber. A descending motion of the sliding socket brings the organs of the lighter into the position shown in Figs. 2 & 3. The stone has been brought into

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- friction with the rubber and its surface has been rubbed, thus producing the spark which lights the wick. This descending motion of the sliding socket has brought the stop k^1 of the flap k into contact with the stop c^2 so that, somewhat before the spark is produced, the flap has been opened, thus uncovering the burner and allowing the flame to be lighted.
- 10 In order to make it easier to handle the lighter with one hand, the upper part of the sliding socket has been flattened, so that it may be held between the fore-finger and the middle-finger, the pressure of the thumb on the bottom of the body a causing the relative motion of the organs producing the spark.
- 15 When the organs are in the rest position, after the lighter has worked, the stone d is lodged in a recess of the strap c . It is thus completely out of the reach of the sharp edge of the rubber against which its entire length has been rubbed. It results therefrom that a rational wear of the pyrophoric element is obtained, thus allowing a perfect working of the lighter until the stone is entirely worn away. The latter may be very easily replaced; the stone-holder may be released from the lid and removed from the whole body when the hook g engaged in the slit h is pushed into the socket. The stop c^2 rests lightly on the wall of the sliding socket; the latter is thus submitted to the reaction caused by the pressure of the stone on the sharp edge of the rubber. This arrangement prevents a wedging of the sliding socket on the body.
- 20 Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is:—
- 45 1. An automatic lighter of the type set forth in which the downward movement of the socket with respect to the reservoir is adapted to open a movable flap and at the same time to actuate a stone holder carried by the socket, to bring the stone into frictional contact with a stationary sharp edge.
- 50 2. An automatic lighter as claimed in Claim 1, in which the movable flap is opened by means of a stop carried by the reservoir.
- 55 3. An automatic lighter according to Claim 2, in which the stone-holder consists of an independent piece contained in a groove provided in the body of the reservoir and which is coupled to the socket which carries it.
- 60 4. An automatic lighter according to Claim 3, in which the stone-holder consists of a bent up plate spring, one branch of said spring carrying the stone and the other a hook intended to be engaged in a slit of the socket in order to couple the stone-holder with the latter.
- 65 5. An automatic lighter according to Claim 4, in which the rubber consists of a strap whose bottom is fixed to the upper part of the reservoir.
- 70 6. An automatic lighter according to Claim 5, in which one of the branches of the strap carries the rubber, the other one forming the stop by means of which the flap of the socket is opened.
- 75 7. An automatic lighter according to Claim 6, in which the branch of the strap forming the stop rubs against the socket, so as to counter-balance the pressure of the stone-holder, thus preventing the reservoir from getting wedged in the socket.
- 80 8. An automatic lighter substantially as described and as illustrated in and by the accompanying drawings.
- 85 Dated this 17th day of July, 1922.
MARKS & CLERK. 90

[This Drawing is a reproduction of the Original on a reduced scale]

