

PATENT SPECIFICATION

405,122

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COMPLETE SPECIFICATION.



Improvements in or relating to Pocket Lighters.

We, CARTIER SOCIETE ANONYME, a Company organised according to the laws of France, of 13, Rue de la Paix, Paris, France, 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:—

When it is desired to reduce the space occupied by pocket lighters, some difficulties are met with for suitably disposing the parts and especially those that serve for the adjustment of the flint, especially if the lighter is of the type including a hinged lid and a spark wheel fitted with a milled wheel and rotatable about a vertical axis, this arrangement being however the most advantageous for readily operating the lighter. The object of the present invention is to provide a lighter that fully solves that problem since it occupies but a little space while permitting an efficient and accurate adjustment of the fluid.

The present invention consists in a pocket lighter comprising a spark wheel fitted with a milled wheel and rotatable about a vertical axis in contact with a horizontally arranged flint, characterised in that a spring disposed in the interior of the lighter and parallel to the axis of the spark wheel, presses the flint against the spark wheel through the intermediary action of a bell-crank lever.

The invention also consists in a pocket lighter according to the preceding paragraph, comprising a removable reservoir fitted inside the casing of the lighter, said reservoir being provided with a stopper and being intended to receive the supply of fuel, and having one or several capillary orifices permitting a continuous flow of said fuel from said reservoir to the wick. Said orifice or orifices is/are formed by a groove or grooves in the opening for said stopper.

We are aware that pocket lighters having removable fuel reservoirs with stoppers permitting a continuous flow of fuel to the wick have previously been proposed and we claim only the use of such a reservoir having an orifice or orifices formed by a groove or grooves in the open-

ing for the stopper for the said reservoir.

A preferred embodiment of our invention will be hereinafter described with reference to the accompanying drawings, given merely by way of example, and in which:—

Fig. 1 is a vertical section of the lighter according to our invention on the line 1—1 of Fig. 2, the fuel reservoir being removed;

Fig. 2 is a plan view of said lighter, the lid thereof being opened;

Fig. 3 is a vertical sectional view of the lighter on the line 3—3 of Fig. 2.

Fig. 4 is a part sectional view on the line 4—4 of Fig. 1;

Fig. 5 is a vertical section of the fuel reservoir removed from the lighter;

Fig. 6 is a plan view of said reservoir thus removed from the lighter;

Figs. 7 and 8 are fragmentary perspective views of the lighter with its lid closed and its lid open respectively.

The lighter shown in the accompanying drawings comprises an elongated prismatic casing 1, provided at its upper part with a lid 2, hinged at 3 on said casing. On casing 1 and under the lid thereof, there is fixed the horizontal plate 5 supporting the tube 6 that is intended to receive the wick. Said plate also supports a vertical spindle 7 on which are mounted milled wheel 8 and spark wheel 9. Finally, a slotted supporting member 10 including a horizontal guide 11 for flint 12 is also provided on said plate 5.

Inside said supporting member we dispose a lever 13 pivoted about a pin 14 fixed on said supporting member, the end 13^a of said lever 13 bearing against flint 12. Said lever 13 is also provided with a lug 13^b adapted to co-act with a sloping surface 15 of a vertical rod 16 guided inside supporting member 10. Said rod 16 is provided with a shoulder 17 against which is applied the end of a spiral spring 18 which is compressed in a vertical tube 19 fixed to the casing of the lighter. Said spring is held in position by a screw 20 which is screwed into the lower part of tube 19 and which permits by suitably screwing or unscrewing it, to modify the tension of spring 18.

[Price 1/-]

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It should be understood that under the action of said spring, rod 16 is pushed upwardly and tends through its inclined surface 15 to cause lever 13 to pivot in the direction of arrow F. in such manner as to apply end 13^a of said lever against flint 12 and to produce a good contact of said flint and spark wheel 9. Lever 13 is so devised that the strength of spring 18, transmitted through the bell-crank, may produce a substantially uniform pressure on the flint whatever the state of wear and tear of said flint may be. The ratio of lever arm 13^b to lever arm 13^a and the shape of the levers and of sloping surface 15 are suitably calculated for this purpose. The adjustment of the spring 18 is made once and for all by means of screw 20. Adjacent to tube 19, we provide inside the casing a second tube 21 which receives a small leaf spring 22, the free end 23 of which bears against a small lever 24 integral with the lid. Said spring 22 normally retains the lid in the closed position and assists its opening. The displacement of the lid is limited by the stops 2^a.

The lower part of casing 1 is open so as to permit introducing thereinto a small reservoir 4, intended to contain the supply of fuel. Said reservoir 4 is stopped by screw 25, and we provide one or several lateral grooves 26 so as to create one or more capillary ducts through which the fuel flows to a pad of cotton 27, which surrounds the lower end of the wick. Said reservoir is given a stepped shape which can be seen in Fig. 3 so as to fit alongside tubes 19 and 20 containing springs 18 and 22 respectively, disposed inside the casing.

The fact that spring 18 that serves to apply the flint against the spark wheel is disposed in the casing of the lighter makes it possible to use a hinged lid such as 2, and not merely a removable cap as is the case in some known lighters. The lid is of special shape as shown in Figs. 7 and 8 and is composed of the top face, a side face and a portion of the other side faces *a*, *b*, *c* of a hollow cube, shown in solid lines in Fig. 8. The other portions *d*, *e*, *e'* of the side faces of the complete cube omitted from the lid shown dotted in Fig. 8, are provided on the casing of the lighter at *d'* and *e'* and form a guard to protect the fingers of the user from coming into contact with the spark wheel and wick holder, the edge of the milled wheel 8 projecting through a slit 8^a in the guard.

The open face *d* of the lid makes it possible to easily reach guide 12 in order to replace the flint when the lid is in the open position.

Finally, face *a* of the lid carries a cap 6^a adapted to cover the wick carrying tube when said lid is closed in order to maintain the wick in a clean condition. The wick is ventilated whenever the lid is opened through the opening in that part of the casing adapted to be covered by the face *c* of the lid when the lighter is closed.

While we have disclosed in the above description what we deem to be a preferred embodiment of our invention, it should be well understood that we do not wish to be limited thereto, as there might be changes made in the arrangement, disposition and form of the parts without departing from the principle of our invention as comprehended within the scope of the appended claims.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to be performed, we declare that what we claim is:—

1. A pocket lighter comprising a spark wheel fitted with a milled wheel and rotatable about a vertical axis in contact with a horizontally arranged flint, characterised in that a spring disposed in the interior of the lighter and parallel to the axis of the spark wheel, presses the flint against the spark wheel through the intermediary action of a bell-crank lever, for the purpose specified.

2. A lighter as specified in claim 1, in which the hinged lid is composed of the top face, a side face, and portions of the other side faces of a cube, the other portions of which are arranged on the casing of the lighter where they form by the side of the spark wheel and the wick holder a guard for protecting the fingers from contact with the spark wheel and the wick holder, the edge of the milled wheel projecting through a slit in the guard.

3. An improved pocket lighter according to either of claims 1 or 2 characterised in that the fuel is contained in a small removable reservoir fitted within the casing and provided on the side adjacent the wick with one or more capillary orifices permitting a continuous flow of the fuel, said orifice or orifices consisting of one or more grooves in the opening for the stopper for the said reservoir.

4. An improved pocket lighter substantially as described with reference to the accompanying drawings.

Dated this 18th day of February, 1933.

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

