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PATENT SPECIFICATION

512,127



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COMPLETE SPECIFICATION

Improvements in Pyrophoric Lighters

I, ALEXANDER SIEGEL, a German Citizen, of 8, Parliament Hill, London, N.W.3, 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 pyrophoric or frictionally operated lighters having a friction wheel which can be rotated against a flint or pyrophoric material to produce sparks therefrom for the ignition of a wick and the invention is concerned with lighters, particularly pocket lighters, of this kind in which the friction wheel is rotated by opening movement of a pivoted wick cap and the opening swinging movement of the pivoted wick cap is communicated to the friction wheel, to rotate it, through a roller which is so located that it becomes jammed between the wick cap and the friction wheel as the cap swings up, but is released during the return movement of the cap.

The characteristic feature of the invention is that the opening movement of the pivoted cap is produced by pressure on an operating lever which is mounted on a supporting strip capable of flexing under the pressure applied to the operating lever so that the said lever has a combined longitudinal and slight swinging movement to pull the wick cap into open position.

The accompanying drawing illustrates a construction of pocket lighter according to the present invention and in the drawing:—

Fig. 1 is a side elevation of the lighter, Fig. 2 is an end elevation, and

Fig. 3 is a sectional side elevation of the operating mechanism, the section being taken on the centre line of Fig. 2.

The outer casing 1 of the body of the lighter contains the usual fuel reservoir within which is a wick tube having its upper end enlarged and projecting as indicated at 2 from the top of the body of the lighter and the wick tube contains the usual wick 3 (Fig. 3) which projects slightly from the top of the tube 2. The body of the lighter also contains the usual

flint tube 4 from the top end of which projects the flint 5 which is pressed upwardly in the usual manner, by means of a spring within the tube 4, to abut against a friction wheel 6 which is mounted on a central sleeve 7 freely rotatable on a spindle 8 which is mounted at its ends in the parallel arms of a bracket 9 fixed to the top of the lighter body. The projecting end of the wick 3 is normally covered by the usual wick cap 10 which is integral with a hollow arm 11 also pivoted on the spindle 8, so that the wick cap 10 is capable of a swinging opening and closing movement.

There is also provided a hollow operating lever 12 having a roughened finger grip 13 fitted over the end of the operating lever and attached to it by screw 14. This lever 12 is mounted so as to be capable of a combined longitudinal and slight rocking movement on a supporting strip 15 which projects upwardly through the top of the body of the lighter and is attached at its upper end to the lever 12 by small projections or ears 16 which fit into holes in the sides of the lever 12 as indicated in dotted lines in Fig. 2.

There is also provided a return spring 17 which is attached at one end to the bottom of the bracket 9 and at the other end is attached to the stud 18 riveted to the upper end of the strip 15.

The sides of the operating lever 12 extend on each side of the arm 11 carrying the wick cap, and the lever 12 is coupled to the arm 11 by pins 19 projecting from the sides of the arm 11 into holes in the extended sides of the lever 12. The lower edges of the sides of lever 12 are cut away as shown by the dotted line 20 in Fig. 3, to enable the end of the lever 12 to clear the spindle 8 during its movements.

Inside the hollow arm 11 and located between the wick cap 10 and the friction wheel 6 is a hardened steel roller 21 which is kept in place in the space between the wick cap and the friction wheel by a light spring 22 projecting down from the top of the arm 11.

The operation of the mechanism is as follows:—

[Price 1/-]

When pressure is applied to the finger grip 13 to actuate the lighter the pressure transmitted to the operating lever 12 causes the latter to make a combined longitudinal and slight turning movement by reason of the downward flexure of strip 15 and this movement of the lever 12 causes the wick cap 10 and its supporting arm 11 to be swung upwardly. During this opening motion of the wick cap, the hardened steel roller 21 becomes jammed between the wick cap 10 and the friction wheel 6 and rotates the latter against the flint 5 to produce a spark for the ignition of the wick 3. By reason of slight slackness in the pivots and the connection between the arm 11 and the operating lever 12, the initial motion when pressure is applied to the end of the lever 12 enables the latter to pull the wick cap 10 slightly back towards the friction wheel 6 and jam the roller 21 tightly between the wick cap and the friction wheel. During the return movement of the wick cap and its supporting arm, the roller is no longer jammed between the wick cap and the friction wheel, and the cap can return to its normal position without rotating the friction wheel. During the closing movement of the wick cap, the roller 21 runs round on the surface of the stationary friction wheel.

A similar mechanism can obviously be used in lighters for standing on a table or forming part of a smoker's stand.

I am aware that it has been proposed, in a pyrophoric lighter having the friction wheel rotated through the usual

pawl and ratchet, to provide a presser bar connected at one end by crank pins to the wick cap arm and pivoted at the other end to a link hinged on the casing so that the pressure bar pulls the wick cap open as it is depressed.

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:—

1. A pyrophoric lighter of the kind in which a friction wheel is rotated by opening movement of a pivoted wick cap which actuates the friction wheel through a roller, which becomes jammed between the cap and the wheel as the cap is swung open but is released during the return movement of the cap, characterised in that an operating lever is provided for opening the wick cap and the lever is mounted on a supporting strip capable of flexing under pressure applied to the operating lever, so that the said lever moves with a combined longitudinal and slight swinging movement to pull the wick cap into open position.

2. A pyrophoric lighter having operating mechanism substantially as hereinbefore described with reference to the accompanying drawing.

Dated this 9th day of February, 1939.

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FIG. 1.

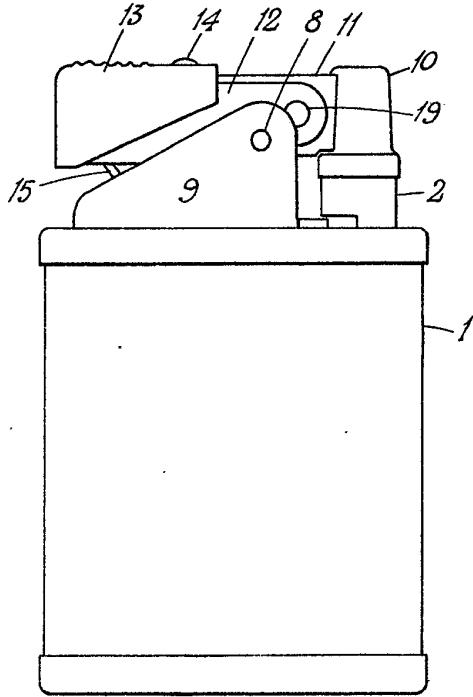
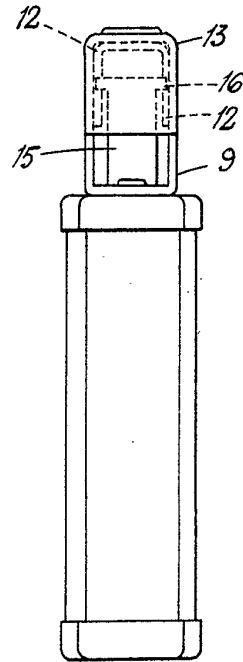


FIG. 2.



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

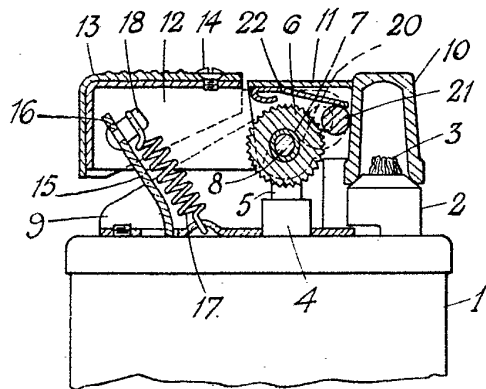


FIG. 3.