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I. FLORMAN

2,086,412

CIGARETTE LIGHTER

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FIG. 1.

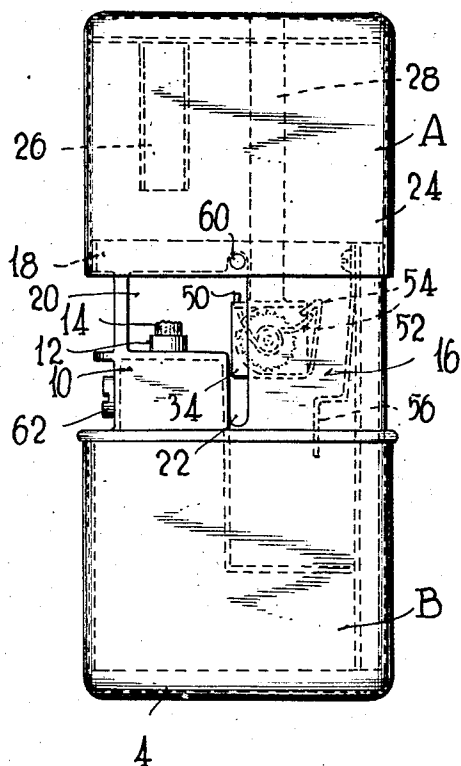
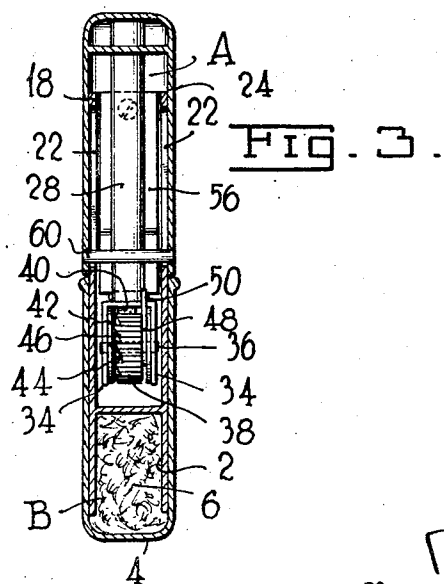
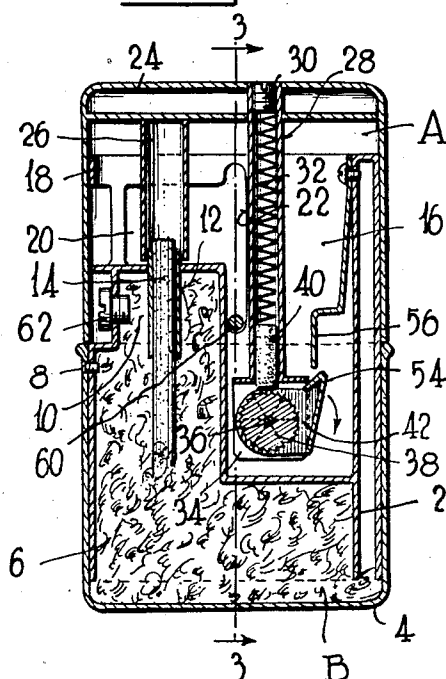


FIG. 2.



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CIGARETTE LIGHTER

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4 Claims. (Cl. 67—7.1)

My invention relates to cigarette lighters and particularly to pocket lighters of the pyrophoric type.

A particular object of the invention is to provide a lighter formed of two sections which, when they are pulled apart cause operation of the lighting mechanism to ignite a wick. A special object of the invention in a lighter of this type is to limit the relative sliding movement between the parts so that when they are pulled apart a certain distance no further motion is possible. This is an important feature inasmuch as where the parts are freely separable they are likely to be pulled apart so rapidly, in imparting the motion necessary to cause the lighting mechanism to operate, that any flame which is formed will be extinguished by the motion of the lighter through the air.

A further object of the invention is to provide a lighter of this type in which the sections, movement of which causes operation of the lighter, are not biased in any way either towards or from each other, and are freely slidable through a limited range with respect to each other except for the elements which operate the lighting mechanism.

Still a further feature of the invention resides in the fact that the lighting mechanism itself is utilized for resiliently holding the lighter in closed, inoperative position.

A further object of the invention is the provision of a novel filling arrangement, in which the fuel chamber of the lighter is filled at a point adjacent the wick, this point being, however, concealed and covered when the lighter is in closed position. This prevents the soiling of the clothes of the user by any fuel which might possibly leak out through the filling opening.

Further objects and advantages of the invention will appear more fully from the following description particularly when taken in conjunction with the accompanying drawing which forms a part thereof.

In the drawing:

Fig. 1 is a side elevation showing a lighter according to the invention in open operative position.

Fig. 2 is a cross section through the same in closed position.

Fig. 3 is a cross section on the line 3—3 of Fig. 2.

The lighter comprises two sections A and B. The lower section B or body of the lighter comprises a shell or framework 2 which is open at the bottom and is closed by a cap or shell 4. The inside of the shell 2 thus forms a fuel chamber 6.

The shell 4 may be secured on the frame 2 by means of a screw 8. The frame 2 has an upward extension 10 forming a part of the fuel chamber and holding in its top a tube 12 in which is arranged a wick 14. This wick is preferably formed of a rigid, porous material, such as meerschaum. The wick 14 thus extends into and receives fuel from the fuel chamber. The frame 2 also includes at its other side an upward extension 16 which extends above the wick 14 and includes an upper continuous ring or frame section 18 forming the top of the frame 2. This leaves a space 20 between the ring 18 and the extension 10 to permit access of air to the wick and to allow the user to bring his cigarette up to the wick to be lighted. There is also provided between the upward extension 16 and extension 10 and the member 18 a vertical slot 22 the purpose of which will be explained below.

The upper section A includes a cover or a shell 24 adapted to slide over the upper part of the frame 2 until it engages the upper edge of the shell 4. The arrangement then presents the appearance of a closed casing. Inside of this shell 24 is mounted a snuffer tube 26 which, when the cover or shell 24 slides downwardly, covers the wick so as to extinguish the flame and prevent the evaporation of fuel from the wick.

There is also provided on the cover an inwardly extending tube 28. This tube is closed at its upper end by a screw threaded plug 30 and encloses a coil spring 32. The tube 28 acts both as a flint holding tube and as a support for the lighting mechanism. At the lower end of the tube 28 is arranged a frame work 34 which supports a shaft 36 on which is mounted a flint wheel 38 in engagement with a flint 40 arranged in the bottom of the tube 28. Likewise mounted on the shaft 36 is an operating pawl member 42 having a tongue 44 adapted to engage with ratchet teeth 46 on the side face of the flint wheel 38. It is evident that when this member turns in one direction (counter-clockwise, Fig. 2) it will impart motion to the flint while upon turning in the other direction it will move freely with respect thereto. A spring such as a coil spring 48 is arranged with one end 50 resting against a fixed part of the frame 34 while the other end 52 rests against a hooked portion 54 of the member 42. This spring therefore tends to turn the flint wheel in a counter-clockwise direction (Figs. 1 and 2).

Mounted on the extension 16 of the frame 2 is a tongue 56 of resilient material which extends downwardly and lies in the path of the hook 54

of the element 42. This tongue is so arranged that upon upward movement of the shell 24 it will engage the hook 54 and cause the element 42 to turn in a clockwise direction against the action of the spring 48. When the cover or shell 24 reaches a certain point in its travel, the inclination of the surface of the hook 54 will cause it to slide over and displace the end of the resilient member 56, and then the member 42 will turn rapidly under the action of the spring 48, thereby rotating the flint wheel to throw sparks on to the wick.

When the lighter is moving backward towards closed position the element 42 slides easily over the resilient member 56 back to the position shown in Fig. 2.

In order to limit relative sliding movement between the two sections of the lighter, I provide a pin 60 which is engaged and secured in the opposed side walls of the shell 24, and which passes through the slot 22. It is evident that this pin will limit the relative movement of the two parts of the lighter between the positions shown in Fig. 1 and in Fig. 2.

In order to fill the lighter, I provide a screw 62 arranged in the upward extension 10 of the frame, in an aperture which communicates with the fuel chamber at a point near the wick. This screw is so located that when the lighter is in closed position it is covered by the upper portion 24.

If the cotton which fills the fuel chamber 6 is to be removed for any reason, it is only necessary to take out the screw 8 and the shell may then be slid off the frame 2.

It will be noted that there is no mechanism biasing the lighter either to closed or open position, so that the motion is entirely controlled by the user. However, when the lighter is in the closed position as shown in Fig. 2, the lighting mechanism itself holds the lighter against accidental opening since such opening involves a compression of the spring 48.

While I have described herein one embodiment of my invention I wish it to be understood that I do not intend to limit myself thereby except within the scope of the appended claims.

I claim:

1. A cigarette lighter comprising two relatively slidable casing sections, one of said sections having a fuel chamber therein, a wick carried by said first section and communicating with said fuel chamber in such a position as to be exposed through the opening between said sections when they are moved apart, means limiting the relative movement between said sections, a flint tube carried by the second section extending downwardly therefrom, a flint mounted in said tube, igniting means carried by the lower end of said tube including a flint wheel engaging said flint, and means carried by said first section engaging said igniting means to operate the same when said second section is moved apart from said first section.

2. A cigarette lighter comprising two relatively slidable casing sections, one of said sections having a fuel chamber therein, a wick car-

ried by said first section and communicating with said fuel chamber in such a position as to be exposed through the opening between said sections when they are moved apart, means limiting the relative movement between said sections comprising a slot in one and a pin secured in the other and extending through said slot, a flint tube carried by the second section extending downwardly therefrom, a flint mounted in said tube, igniting means carried by the lower end of said tube including a flint wheel engaging said flint, and means carried by said first section engaging said igniting means to operate the same when said second section is moved apart from said first section.

3. A cigarette lighter comprising two relatively slidable casing sections, one of said sections having a fuel chamber therein, a wick carried by said first section and communicating with said fuel chamber in such a position as to be exposed through the opening between said sections when they are moved apart, means limiting the relative movement between said sections, a flint tube carried by the second section extending downwardly therefrom, a flint mounted in said tube, a frame carried by the lower end of said tube, a shaft mounted in said frame, a flint wheel mounted on said shaft, an operating element mounted on said shaft, a one-way connection between said operating element and said flint wheel, a spring acting on said operating element in a direction to cause movement of said flint wheel to ignite the wick, and means carried by said first section operable upon upward movement of said second section to push said operating element in a direction to compress the spring and then to release the same so that the operating element imparts motion to the flint wheel and ignites the wick.

4. A cigarette lighter comprising two relatively slidable casing sections, one of said sections having a fuel chamber therein, a wick carried by said first section and communicating with said fuel chamber in such a position as to be exposed through the opening between said sections when they are moved apart, means limiting the relative movement between said sections, a flint tube carried by the second section extending downwardly therefrom, a flint mounted in said tube, a frame carried by the lower end of said tube, a shaft mounted in said frame, a flint wheel mounted on said shaft, an operating element mounted on said shaft, a one-way connection between said operating element and said flint wheel, a spring acting on said operating element in a direction to cause movement of said flint wheel to ignite the wick, a tongue carried by said first section, said tongue lying in the path of a portion of said operating element when said second section moves, whereby upon upward movement of said second section said tongue pushes said operating element in a direction to compress the spring and then releases the same so that the operating element imparts motion to the flint wheel and ignites the wick.

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