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COMPLETE SPECIFICATION

Improvements in or relating to Pyrophoric Lighters

We, BARNETT PEARLMAN, of 28, St. Stephens Close, Avenue Road, London, N.W.8, JOHN HENRY COLLINS, of 20, The Ridgeway, Golders Green, London, N.W.11, and ERNEST EDWARD BEECH, of 29, Shrubland Road, Walthamstow, London, E.17, all British subjects, 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 lighters of the type in which the striking mechanism and wick are adapted to be covered by a pivotally mounted cap.

According to the present invention the pivot of the pivotally mounted cover or cap is substantially at right angles to the axis of the striking wheel, the corner or cap being moved towards and held in its open and closed positions by means of a spring-pressed plunger provided in the lighter casing. In a preferred constructional form of the invention the plunger engages an extension of one side wall of the cover or cap, or an arm or like member connected thereto. The plunger is acted upon by a compression spring mounted in the lighter casing, for example in a tube closed at its lower end. The upper open end of the tube is mounted in a convenient part of the lighter casing, *i.e.* in an upper plate upon which are mounted the wick tube and the striking mechanism. The spring reaches its maximum compression and the system is in a metastable condition when the cap is half open, and a slight displacement in either direction causes the spring to expand and force the cap to its fully open or closed position.

The extension or projection of the cover or cap is preferably attached to the wall of the cap parallel and nearest to the pivot. The invention is particularly well adapted for use with lighters in which the striking mechanism is operated by means of a knurled thumb wheel coaxial with the striking wheel and a lighter of this type is shown as an example, in the accompanying drawing, in which

Figure 1 is a perspective view of the lighter in its open position.

Figure 2 is a side elevation of the

lighter in partial vertical section, in the closed position.

Figure 3 is a side elevation of the lighter in partial vertical section showing it in the open position.

As shown in the drawing a lighter casing 1 is provided with a cap 2 movable upon a pivot 3. To the inside of the cap 2, there is fastened an extension 4, having bent up sides through which the pivot 3 passes. The extension 4 extends across the full width of the inside of the cap 2, and its lower edge terminates within the upper part of the casing 1. The lower edge of this extension 4, when the cap is closed, as shown in Figure 2, engages a plunger 5 which is acted upon by a compression spring 6 contained in a tube 7 closed at its lower end and mounted adjacent to the rear wall 8 of the casing 1. The extension 4 makes contact with the plunger 5 between the rear wall 8 and a parallel plane drawn through the pivot 3. Thus the spring 6 acting through the plunger 5 exerts a turning moment tending to keep the cap 2 in its closed position. During the initial stage of opening the cap 2 the lower edge of the extension 4 depresses the plunger 5 and increases the compression of the spring 6 until the contacting edge of the extension 4 reaches its dead centre position on the plunger 5, after which the spring 6 begins to expand and forces the cap 2 to its fully open position as shown in Figure 3. When the cap is to be closed the reverse procedure takes place. The initial stage of closing causes compression of the spring 6 until the extension 4 reaches dead centre position on the plunger 5, after which the spring expands and forces the cap to its closed position.

As shown in Figure 2, the extension 4, when the cap 2 is closed, is parallel and adjacent to the rear wall 8 of the casing 1 and this forms a reasonably vapour-tight joint.

The striking mechanism of the lighter is shown in Figure 1. The striking wheel 10 is mounted on an axis substantially at right angles to the pivot 3. The wheel 10 is operated by a large knurled thumb wheel 9 which is mounted on the same axis, and projects through cut away portions in the cap 2 and the casing 1.

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With this construction of lighter a singular ease of operation may be obtained, as the cap may be opened and the thumb wheel rotated in substantially one movement. Apart from this ease of operation, the construction, although extremely efficient, is at the same time both simple and robust.

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 pyrophoric lighter having a cover or cap pivotally mounted upon the lighter casing and adapted to enclose the striking mechanism and wick, wherein the pivot of the cover or cap is substantially at right angles to the axis of the striking wheel, the cover or cap being moved towards and held in its open and closed positions by means of a spring-pressed plunger provided in the lighter casing.

2. A pyrophoric lighter as claimed in Claim 1, wherein the plunger engages an extension of one side wall of the cover or cap, or an arm or like member secured thereto.

3. A pyrophoric lighter according to Claim 2, wherein the extension or arm is attached to the wall of the cap parallel and nearest to the pivot.

4. A pyrophoric lighter according to Claims 2 or 3, wherein the extension or

arm lies in a position substantially parallel and adjacent to the rear wall of the lighter casing when the cap is in the closed position. 35

5. A pyrophoric lighter according to any of Claims 1 to 4, wherein the plunger is actuated by a compression spring held in a tube provided in the lighter casing, said tube being closed at its inner end and lying substantially parallel to the sides of the lighter casing. 40 45

6. A pyrophoric lighter according to Claim 5, wherein the tube is adjacent to the rear wall of the lighter. 45

7. A pyrophoric lighter according to any of Claims 1 to 6, wherein the striking wheel is actuated by a coaxial knurled thumb wheel. 50

8. A pyrophoric lighter according to Claim 7, wherein the thumb wheel is larger than the striking wheel, and a substantial portion thereof projects through cut-away positions of the casing and the cap. 55

9. A pyrophoric lighter substantially as described, with reference to the accompanying drawing. 60

Dated this 26th day of August, 1939.

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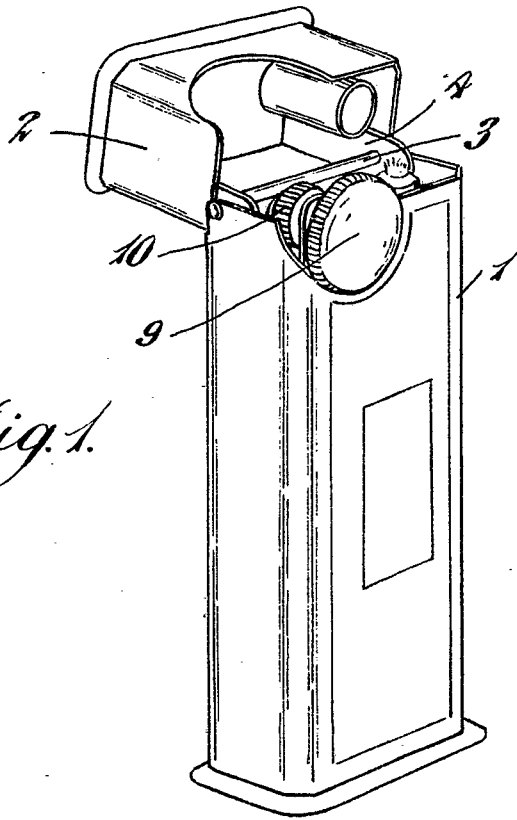


Fig. 1.

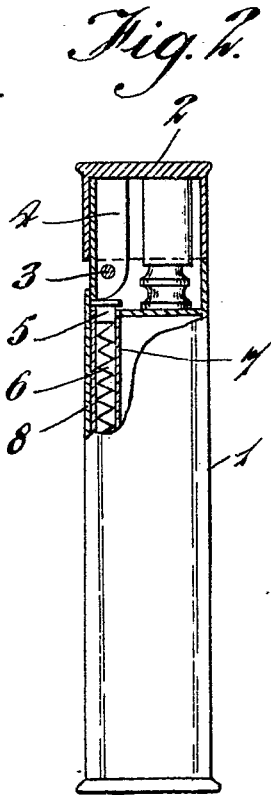


Fig. 2.

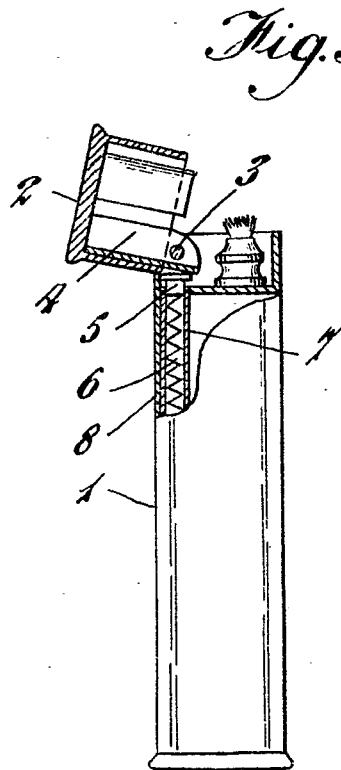


Fig. 3.

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