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PATENT SPECIFICATION



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COMPLETE SPECIFICATION

Improvements relating to Pyrophoric Lighters

We, LA NATIONALE, SOCIÉTÉ ANONYME, a Company organised under the laws of Switzerland, of Geneva, 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:—

The device which ensures a fluidtight closure of the orifice through which the wick passes, of pyrophoric lighters with a combustible liquid, frequently comprises a small cap mounted with clearance in a guide secured to a pivoted cover, and a pressure spring which not only serves to hold the cap applied constantly on its seating, when the lighter is closed, but also for attaching the cap resiliently to its guide or to the cover.

This method of attachment of the cap however does not generally provide security against the cap being drawn off axially, and for example should the wick, when closing the lighter be bent accidentally over the end of the tube through which it passes and be clamped between the cap and the end of this tube, the cap is frequently detached from the cover and is lost when the lighter is next opened.

For remedying this disadvantage it is therefore essential to complete this method of attachment by a retaining device which, whilst providing for the axial clearance of the cap necessary under the action of the spring, definitely prevents its movement beyond a stop solely under the action of an axial force.

When, for this purpose, a stationary stop ring is provided in the guide for the cap, the placing in position of the cap and of the spring must be effected before the guide is secured to the cover, that is to say before the completion of the lighter, and when the parts are to be treated in an electrolytic bath or the grease is simply to be removed, the spring is liable to become rusty and no longer function.

A retaining means for the wick cover may be obtained easily by a supplementary member, a screw, pin or stop ring which is removable and which is secured in position after introducing the

cap and the spring into their guide. However, independently of the fact that it is not desirable to increase the number of parts of a lighter, the placing of the cap in the cover is still complicated in the majority of cases by reason of the presence of this supplementary member, and if this member is accessible there is the probability that a too inquisitive owner of a lighter will lose one or other of the parts of the device when endeavouring to take his lighter to pieces.

The present invention has for its subject a device which retains the cap without the necessity of a supplementary part and externally it does not disclose the very simple manner in which the cap is placed in position or removed.

In this device the cap and its guide are each provided with one of the parts of a retaining bayonet joint device, and it is the resistance to twisting of the compression spring which, when the bayonet joint device is in the retaining position, is utilised for opposing a rotation by which it can be brought into its disengaged position.

Two forms of construction of the subject of the invention are shown in the accompanying drawing, wherein:—
Fig. 1 is an axial section of the first form of construction.

Fig. 2 is a cross-section on the line II—II of Fig. 1.

Fig. 3 is an axial section of the second form of construction.

As shown in the drawing, the cover 1 of the lighter is provided with a guide 2 of tubular shape provided internally with a circular rib 3 provided with two diametrically opposite notches 4, this rib constituting one of the parts of the bayonet joint retaining device.

The cap 5, located in the guide 2, is provided at the top with the second part of the bayonet joint device, that is to say two oppositely located projections 6 adapted to pass through the notches 4 of the rib 3 when the cap is fitted into its guide, but preventing its withdrawal when these two parts have received a relative angular movement of about half a revolution about their common axis.

[Price 1/-]

The compression spring 8, which constantly tends to push the cap out of its guide, bears at one end with a turn, which is of larger diameter than the internal diameter of the guide 2, under the rib 3 of the guide and at the other end it bears with a turn, which is of smaller diameter than the diameter of the cap 5, against a shoulder 7 provided at the lower portion of the cap. The spring 8 thus bears with considerable friction against the rib 3 and shoulder 7 and this friction has to be overcome when it is desired to remove the cap 5, as hereinafter described.

The ends of the spring 8 bear with considerable friction against the respective cylindrical portions of the guide and the cap so that for mounting the cap in its guide and bringing it into the retained position it is necessary, after having brought the projections and notches of the bayonet joint device opposite one another, to press the cap into the guide until the projections have passed the rib 3 and then by turning the cap about its axis, cause one of the ends of the spring 8 to slide through about 90° on the member with which it is in considerable frictional contact. When the cap is then released its projections under the action of the resiliency of the compression spring 8 engage behind the rib 3 and are directed automatically along a diameter substantially perpendicular to that of the notches, that is to say in the most satisfactory retaining position of the bayonet joint device.

It will be obvious that the removal of the cap can be effected just as easily by simply reversing the order and the directions of the operations above described.

Instead of maintaining the bayonet joint device in its retaining position by compressing the spring between the cap and its guide, the arrangement may be as shown in Fig. 3 in which the spring 8 is provided at its ends with two projections 9 located for example opposite one another and which engage, one with one of the notches 4 of the rib of the guide and the other with a notch 10 provided in the shoulder 7 of the cap and relatively displaced to the projections by an angle preferably of 90°.

When the cap has been placed in the guide and turned angularly in such a manner as to bring the projections 6 on a diameter substantially perpendicular to that of the notches, the projections 9 at the ends of the spring, which is not subjected to a twisting force, are then exactly opposite the notches with which they are adapted to engage. For withdrawing

the cap 5 it is necessary to overcome the resistance to twisting of the spring so as to bring the projections of the cap opposite the notches of the rib of the guide, then to withdraw the cap which entrains therewith the spring 8.

It will be understood that various modifications may be made in the details of construction of the devices described without departing from the scope of the invention. For example the bayonet joint device may be placed at a different height relatively to the guide or the compression spring may be located in the upper portion of the guide.

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 spring actuated wick cover device for a lighter with a liquid fuel, comprising a cap mounted with clearance in a guide secured to a pivoted cover and a compression spring which in the closed position of the cover tends to withdraw the cap from its guide and thus to press it constantly against the end of a tube through which the wick passes, characterised in that the guide and the cap each carry one part of a bayonet joint retaining device and the resistance to torsion of the compression spring prevents angular relative movement between the guide and the cap which would cause the two parts of the bayonet joint device to move from their engaging position into the disengaged position.

2. A device according to claim 1, characterised in that the spring prevents relative angular movement between the cap and the guide by bearing tightly against these two parts.

3. A device according to claim 1, characterised in that the spring is provided at its two ends with a projection which, when the cap is in the correct position in its guide, engages with a seating in each of the two parts and thus prevents angular movement thereof.

4. A device according to claim 1, characterised in that the relative angular movement between the cap and the guide is prevented by the tight engagement of the spring with one of these parts and by hooking a projection at its corresponding end with a recess in the other part.

5. A device according to claim 1, characterised in that the guide is formed by a tubular element provided internally with a circular rib provided with at least one notch through which there can pass a corresponding projection on the cap.

6. A device according to claims 1 and 5, characterised in that the spring bears

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at one end against the circular rib of the guide and at the other end against a shoulder on the cap.

7. A spring actuated wick cover device
5 for lighters, substantially as hereinbefore described with reference to the accompanying drawing.

Dated this 12th day of June, 1939.

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

Fig. 1

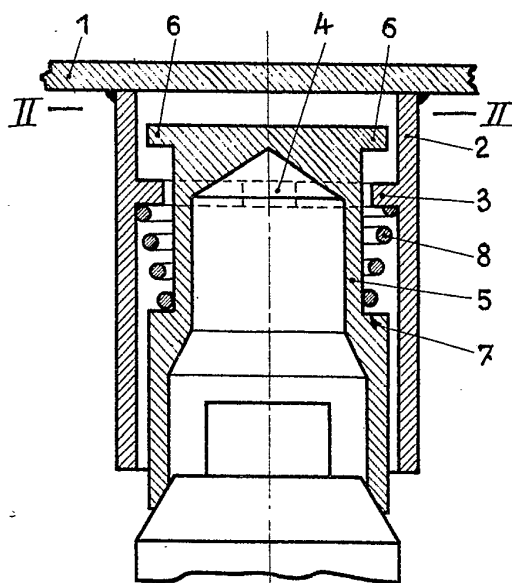


Fig. 2

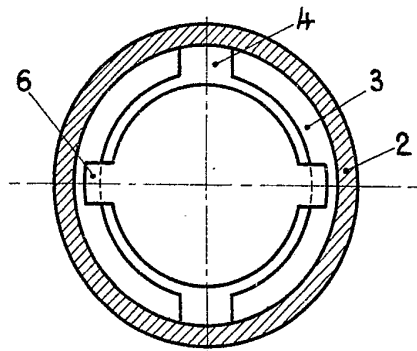


Fig. 3

