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PATENT SPECIFICATION



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PROVISIONAL SPECIFICATION

Improvements relating to Lighters Using Vaporisable Fluids

I, ALEXANDER VANETZIAN, of 40, Chesterfield House, Chesterfield Gardens, London, W.1, of Iranian nationality, do hereby declare the nature of this invention to be as follows:—

This invention relates to lighters using vaporisable fluids ignited by a "flint" and steel striker mechanism. It is the object of the invention to provide an improved construction of such lighters particularly in regard to the means whereby the "flint" is supported and access is given thereto.

Various proposals have been made for supporting the "flints" in such lighters. They are usually pressed up against the striker wheel by a spring which in turn bears against a screw plug or other means of support. When a fresh "flint" has to be inserted in the lighter, the plug or support has to be withdrawn, when the spring is liable to jump out of its bore and may be lost.

Another known construction is one in which the spring is held up by a sliding plug across the end of which moves a sliding metal plate. In order to gain access to the "flint" the sliding metal plate must be withdrawn, for example, by the thumb engaging in a notch, and both the plug and spring are liable to jump out unless care is taken to catch them.

In the improved construction according to the present invention the spring which presses up the "flint" is engaged at its other end around a short projecting stem or prong on a hinged door which normally closes into a wall of the lighter and is held closed by a spring catch. On pressing a button connected to the spring catch the door is released and hinges outwardly under the pressure of the spring bearing upon the "flint", but as the spring engages with the stem or prong on the inner

face of the hinged door, it cannot jump out but follows the door as it hinges until it comes to rest. The spring can readily be withdrawn by hand by pulling it off the stem or prong on the door, drawing it out of its bore in the lighter and replacing the "flint" if this is required before reinserting the spring, engaging it with the stem or prong on the door and closing the door to engage it with its spring catch.

The device described provides a neat and effective support for the spring pressing up the "flint" and avoids all risk that this spring or the "flint" will be lost when opening up the lighter for turning or replacing the "flint".

A further feature of the invention consists in shaping the bore which receives the "flint" so that the "flint" is prevented from wearing away one-sidedly and forming a projection or "spear" which may jam against the striker wheel. This trouble is avoided by making the end of the bore in which the spring works so that it closely embraces the striker wheel on the one side and only leaves a comparatively narrow gap on the other for the sparks to pass out and to light the inflammable material evaporated from the wick when the striker wheel is turned. The spring then presses the "flint" straight against the middle surface of the striker wheel, and as the striker wheel wears away the surface of the "flint", the "flint" is guided radially toward the centre of the striker wheel until it is substantially all worn away with a curved surface corresponding to the shape of the circumference of the striker wheel.

Dated this 11th day of February, 1943.

For the Applicants:

GILL, JENNINGS & EVERY,
Chartered Patent Agents.

51/52, Chancery Lane, London, W.C.2.

COMPLETE SPECIFICATION

Improvements relating to Lighters Using Vaporisable Fluids

I, ALEXANDER VANETZIAN, of 40, Chesterfield House, Chesterfield Gardens, London, W.1, of Iranian nationality, do hereby declare the nature of this inven-

tion 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 lighters using vaporisable fluids (spirit) ignited by a "flint" and steel striker mechanism. It is the object of the invention to provide
 5 an improved construction of such spirit lighters particularly in regard to the means whereby the "flint" is supported and access is given thereto.

Various proposals have been made for
 10 supporting the "flints" in such lighters. They are usually pressed up against the striker wheel by a spring which in turn bears against a screw plug or other means of support. When a fresh "flint" has
 15 to be inserted in the lighter, the plug or support has to be withdrawn, when the spring is liable to jump out of its bore and may be lost.

Another known construction is one in
 20 which the spring is held up by a sliding plug across the end of which moves a sliding metal plate. In order to gain access to the "flint" the sliding metal plate must be withdrawn, for example, by the
 25 thumb engaging in a notch, and both the plug and spring are liable to jump out unless care is taken to catch them.

In the improved construction according to the present invention the spring which
 30 presses up the "flint" is engaged at its other end around a short projecting stem or prong on a hinged door which normally closes into a wall of the lighter and is held closed by a spring catch. On pressing
 35 a button connected to the spring catch the door is released and hinges outwardly under the pressure of the spring bearing upon the "flint", but as the spring engages with the stem or prong on the inner
 40 face of the hinged door, it cannot jump out but follows the door as it hinges until it comes to rest. The spring can readily be withdrawn by hand by pulling it off the stem or prong on the door, drawing
 45 it out of its bore in the lighter and replacing the "flint" if this is required before reinserting the spring, engaging it with the stem or prong on the door and closing the door to engage it with its spring catch.

The device described provides a neat
 50 and effective support for the spring pressing up the "flint" and avoids all risk that this spring or the "flint" will be lost when opening up the lighter for
 55 turning or replacing the "flint".

A further feature of the invention consists in shaping the bore which receives the "flint" so that the "flint" is prevented from wearing away one-sidedly
 60 and forming a projection or "spear" which may jam against the striker wheel. This trouble is avoided by making the end of the bore in which the spring works so that it closely embraces the striker wheel on
 65 the one side and only leaves a compara-

tively narrow gap on the other for the sparks to pass out and to light the spirit evaporated from the wick when the striker wheel is turned. The spring then
 70 presses the "flint" stright against the middle surface of the striker wheel, and as the striker wheel wears away the surface of the "flint", the "flint" is guided radially toward the centre of the
 75 striker wheel until it is substantially all worn away with a curved surface corresponding to the shape of the circumference of the striker wheel.

The invention is illustrated in the accompanying drawings as applied to a
 80 spirit lighter with a reserve compartment which forms the subject of my patent application No. 12473 of 1942 (Serial No. 558,277) but it is in no way limited to its use with this particular type of lighter.
 85 In the drawings:—

Figure 1 shows the spirit lighter in section on the line I—I of Figure 2;

Figure 2 is a plan view of the spirit
 90 lighter;

Figure 3 is a partial section on the line III—III of Figure 2;

Figure 4 is a front view;

Figure 5 is a detail view of the striker mechanism in section on the line V of
 95 Figure 1; and

Figure 6 is a detail view showing the hinged door at the back open.

Referring to the drawings the spirit
 100 lighter there shown has an outer shell closed by a sliding door 8 with a thumb-nail notch at 9 for pulling it out. The inner shell consists of two compartments
 105 10 and 11 soldered or braced together, each with a wick tube 12. Each compartment has a screw plug 13 for filling purposes in its base, one plug carrying a prong 14 and the other a receptacle 17 for spare flints. The prong 14 is used for adjusting the
 110 ends of the wicks 38 at the slots 16 in the wick tubes 12. The wick tube not in use is closed by a screw cap 18. The slide 8 is held in place by a spring catch 20 engaging in one of the notches 19 in the
 115 inner shell. The top of this shell is acted upon by a spring 21 secured to a partition plate 22 in the outer shell and which tends to push out the inner shell when the slide 8 is withdrawn.

A block 23 secured by screws 24 to plate
 120 22 has a transverse bore accommodating the "flint" 25 and its spring 26 which is shown as having a button 44 on its end to bear against the "flint". The front
 125 end of the bore in which the "flint" works is made to fit closely around the striker wheel 27, with only the necessary clearance and a gap for the sparks to pass to the wick, so that there is no room for the "flint" to project past the wheel 27
 130

and to form a "spear" as sometimes happens with other forms of spirit lighters.

At its rear end the spring 26 is engaged
 5 with a pointed stem or prong 34 projecting from the face of a hinged door 28. The door is pivoted on a hinge pin 29 and has a lug 30, Figure 3, at the top which is normally engaged by a spring catch 31.
 10 This catch is released when required by depressing a button 32 rivetted to the spring and projecting slightly through the top plate 33 of the outer shell of the spirit lighter. The door 28 fits flush in the
 15 wall of the lighter when closed, but the pressure of the spring 26 on the door causes it to spring open whenever the catch 31 is depressed. When the door 28 is allowed to open as in Figure 6 the prong
 20 34 maintains engagement with the end of the spring 26 causing this to bend laterally, so that the spring is retained and cannot jump out. The spring is readily released from the prong and withdrawn to
 25 give access to the "flint" for changing it when required, the end of the spring being re-engaged with the prong 34 before the door is closed again.

The striker wheel 27 is fixed on a bush
 30 35 rotatably mounted on a pin 36 whose end is screwed into plate 22. The bush is turned by a milled wheel 37 fixed on it for operating the striker wheel 27. The wicks are indicated at 38, while 43 is a
 35 filling of cotton wool or other absorbent material in the compartments of the inner shell to hold the spirit therein. A hinged cover 39 normally encloses the striker mechanism. It has an angular lug 40
 40 turning on a hinge pin 41, and held either in its closed position, or when opened as shown in dotted lines in Figure 3, by means of a spring 42 bearing against the flat faces of the lug 40.

45 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 device for supporting the "flint" 50 of a spirit lighter, wherein the "flint" is accommodated in a bore in the lighter and pressed toward the striker wheel by a spiral spring, the rear end of this spring being engaged with a projecting stem or
 55 prong on a hinged door so that when the door is opened for giving access to the "flint" the rear end of the spiral spring remains engaged with the prong and this spring cannot jump out. 60

2. A device according to claim 1 for supporting the "flint" of a spirit lighter, wherein the hinged door carrying the prong which engages with the end of the spiral spring, fits flush in the wall of the
 65 shell of the lighter and is normally held closed by a spring catch which can be depressed for releasing the door by a button, whereupon the door springs open under the pressure of the spiral spring, but this
 70 latter remains in engagement with the prong on the door.

3. A device according to claim 1 for supporting the "flint" of a spirit lighter, wherein the walls of the bore in which the
 75 "flint" and the spiral spring are accommodated are extended to embrace the striker wheel closely leaving only the necessary clearance and a gap at the side where the sparks are ejected for igniting
 80 the spirit at the wick.

4. A spirit lighter having mechanism in accordance with claim 1 for holding the
 "flint" in engagement with the striker wheel, and for giving access to the
 85 "flint" and its spiral spring, such mechanism being constructed and adapted to operate substantially as described with reference to the accompanying drawings.

Dated this 30th day of June, 1943.

For the Applicants:

GILL, JENNINGS & EVERY,

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

