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PATENT SPECIFICATION



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COMPLETE SPECIFICATION.

Improvements in Pocket Lighters.

I, LOUIS DE GOLL, of 11, rue Scribe, Paris (Seine), France, a citizen of the Republic of the United States of America, formerly a resident of the United States of America, 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 a pocket lighter of the kind comprising two members adapted to slide one within the other, one of the said members carrying a pyrophoric stone and the other a friction member and the spark being produced in a closed chamber.

The object of the invention is to construct a lighter of small bulk, in which the spark is suitably directed and meets the wick, tinder or other ignitable material with certainty, while the operation thereof does not necessitate any effort and thereby the wear of the pyrophoric stone is reduced to a minimum.

According to the invention the degree of friction between the pyrophoric stone and the friction member is adapted to be regulated by the pressure of the fingers on the outside of the lighter.

Various constructional forms of the invention are shown by way of example in the accompanying drawing.

In this drawing, Fig. 1 is a part sectional elevation of a tinder lighter constructed according to the present invention.

Fig. 2 is an elevation of a modified form of construction of this lighter.

Fig. 3 is a vertical section showing the application of the invention to a lighter utilising petrol, the cap being removed.

Fig. 4 is a horizontal section of the sheath or cap with which these various lighters are provided.

Fig. 5 is a detail view to a larger scale, showing in section, a modification of the method of mounting the member which rubs against the pyrophoric stone.

Fig. 6 is a vertical section, also to a larger scale, of the upper portion of the lighter, showing a further modification in the construction of the friction member.

As can be seen in the drawing, the lighter consists of a body member 1 with which a cap or sheath 2 engages by friction, the body of the lighter being hollow at its upper portion, so as to form a chamber 3, called the ignition chamber, in which the spark is produced. The cap 2 which is of approximately cylindrical form is provided with a projecting bearing 4 in which a pyrophoric stone 7 is mounted. The wall of the upper portion of the body of the lighter is cut away, as can be seen at 5 in Figs. 1, 3, 5 and 6, in order to open the chamber 3 and carries fixed thereto in any suitable manner a piece of metal or other suitable hard material 6 which is capable of rubbing against the pyrophoric stone 7 when the cap 2 is caused to slide upon the body 1 of the lighter. This friction causes a spark to be produced which, owing to the cut out portion 5 of the chamber 3, penetrates into this latter, the cap being not yet disengaged from this body 1, and reaches the material to be ignited, such as tinder, wick, or the like. As can be seen, at the moment when the ignition spark is formed, the chamber 3 is still closed by the cap 2, in such a manner that this spark, being produced in a closed space, is suitably confined and directed so that it reaches with certainty the material to be ignited.

The cap 2 consists of a blade of flexible metal coiled upon itself, as can be seen in Fig. 4, so that it is possible to exercise

a certain pressure upon the overlapping edges of the said blade and to press them together when the cap is being slid, thus ensuring an intimate contact between the stone 7 and the friction member 6. The cap could be given a slightly conical form, the elasticity of the metallic blade which constitutes it tending to separate the two overlapping edges and to open the cap; a ring slides upon this latter and can be brought into the desired position to produce the necessary clamping action of the friction member 6 against the stone 7. This arrangement is particularly advantageous in view of compensating for the wear of the stone 7. The conical form which is given to the upper portion of the body 1 of the lighter moreover facilitates this compensation; it is sufficient to incline to a slight extent the cap 2 in order to cause it to bear more closely against the conical portion in question while it is made to slide, so as to ensure the friction of the friction member 6 against the stone 7. It would, moreover, be possible to compensate for the wear of the stone by means of a spring interposed between it and the bottom of its recess.

The friction member could be constituted by any suitable means and could be mounted in any suitable manner. It could be formed for example by a portion of a broken file forced into place, and directed in such a manner as to come into contact with the stone 7. In order to compensate for wear of the stone, the friction member could also be mounted elastically as shown in Fig. 5. In this example, the friction member 6 passes obliquely through the wall of the body of the lighter and is provided with a heel piece 8 which prevents it from getting out of position, a spring 9, located in a small sleeve 10 fixed to the lighter, tending to force it outwardly and thus to hold it in contact with the stone 7 whatever may be the degree of wear of this latter.

The friction member could also form an integral part of the lighter as shown in Fig. 6. As can be seen in this modification, the upper portion of the body 1 of the lighter is curved in such a manner as to form an elastic nose 11, the edge of which abuts against the stone 7 and causes the production of a spark when the cap 1 is slid.

It is evident that these different arrangements, which permit of producing sparks in a closed space, are applicable both to lighters using tinder and to lighters using petrol. Figs. 1 and 2 show two forms of construction of lighters using tinder while Fig. 3 illustrates the application of the system to a lighter using petrol. In the examples shown in

Figs. 1 and 2, the tinder 12 is mounted in a tube 13 screwed or otherwise attached to the body 1 of the lighter and it can slide therein so that it can be brought into position necessary that its end to be lighted may be placed in proximity to the friction member, and in consequence close to the spot where the spark is produced. The movement of the tinder can be obtained in any suitable manner and for example by means of a sleeve or ring 14 provided with a claw or projection which engages a helicoidal slot 20 cut in the tube 13, said claw penetrating into the mass of the tinder. It will be understood that it is sufficient to rotate the ring 14 in one direction or the other in order to cause the tinder to rise or fall, causing it to turn slightly upon itself and to bring it to the desired position.

The guiding slot for the ring 14 could be formed longitudinally upon the tube 13 as can be seen at 15 in Fig. 2, the adjustment of the tinder being, in this case, obtained more simply by moving the ring 14 either upwardly or downwardly.

The model shown in Fig. 3 can be utilised as a lighter using petrol or as a small pocket lamp. The portion of this model which constitutes the body 16 of the lamp is fitted with a threaded shoulder which enables it to be screwed into the body of the lighter. This lamp body 16 can be constructed in any suitable manner and can be provided as usual with a nozzle 17 for the wick and with a packing 18; a screwed plug 19 closes its extremity and can be removed for the purpose of filling it with petrol.

It is evident that the different arrangements which have been described could be modified to a certain extent, both as regards their arrangement as well as the form of their details without the spirit of the invention being thereby altered.

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 pocket lighter of the kind comprising two members adapted to slide within one another and carrying a pyrophoric stone and a friction member, wherein the spark is produced in a closed chamber, the said pocket lighter being characterised by the fact that the outside member is capable of yielding under the pressure of the fingers for regulating the degree of friction.

2. A pocket lighter according to Claim 1, characterised by the fact that the outside member is formed of a blade of elastic material coiled upon itself with overlapping edges.

3. A pocket lighter according to Claim 2, characterised by the fact that a ring is fitted on the outside member, the movement of the said ring acting to diminish the diameter of the outside member. 5
4. A pocket lighter according to Claim 1, characterised by the fact that the friction member is formed integral with the inner member of the lighter, the upper end thereof being bent round to form a flexible nose bearing elastically against the pyrophoric stone. 10
5. A pocket lighter according to any of the preceding claims, characterised by the fact that the inner member of the lighter carries a tube containing tinder, and the said tube, having a slot in which moves a claw carried by a ring upon the said tube, for the purpose of adjusting the position of the tinder. 20
6. A pocket lighter according to Claim 1, characterised by the fact that a chamber containing material soaked in petrol and a wick for lighting are mounted within the inner member of the lighter. 25
7. Pocket lighters substantially as described and shown in the accompanying drawings. .
- Dated this 3rd day of December, 1923. 30
- For the Applicant,
LLOYD WISE & Co.,
10, New Court, Lincoln's Inn, London,
W.C. 2,
Chartered Patent Agents.

Fig.1. Fig.2.

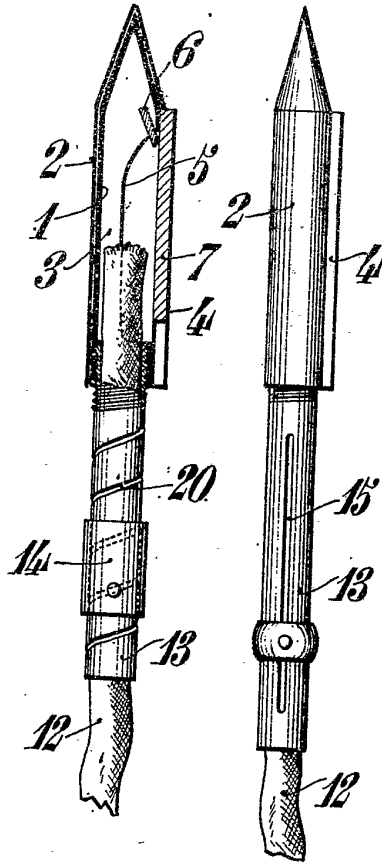


Fig.3.

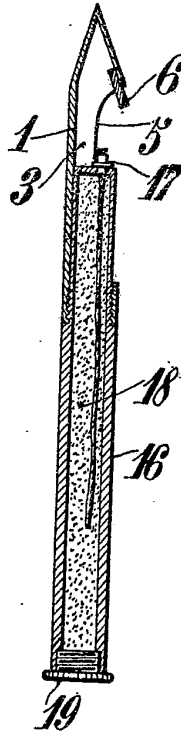


Fig.4.

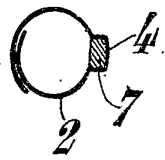


Fig.5.

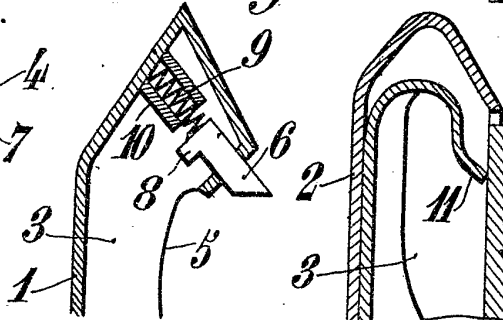
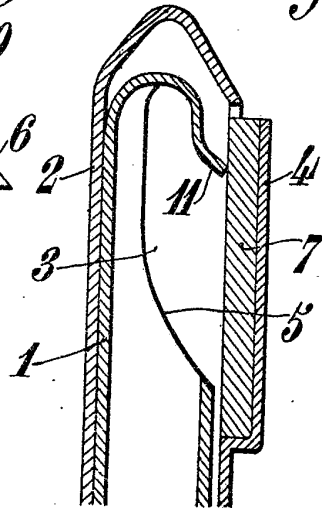


Fig.6.



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